WRITING A SCIENTIFIC PAPER STEP BY STEP
UNIVERSTITE PARIS SACLAY – 14-16 MARCH 2016

Gustave Flaubert : manuscript of *La légende de Julien l'Hospitalier* (1875/76)

PROGRAMME

1. OVERCOMING WRITER'S BLOCK
- The dangerous method: trying to write it right the first time
- Internal language, external language
- Understanding writing blocks

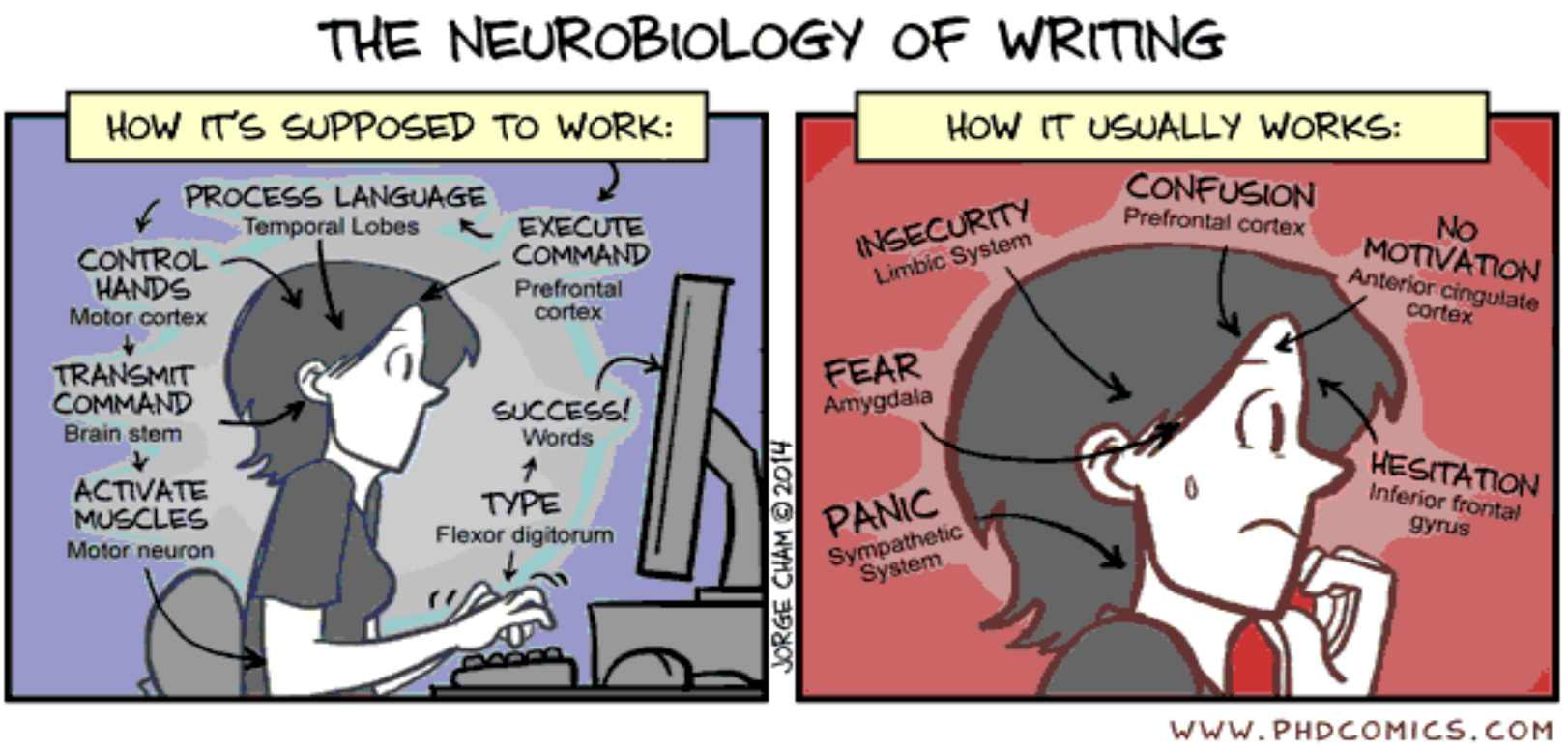
2. PREPARING A WRITING PROJECT
- Developing a concept
- Getting started : asking the right questions
- Structuring ideas

3. PUTTING WORDS DOWN ON PAPER
- Dividing a research paper into manageable parts
- Collecting ideas- techniques
- Strategies for quickly writing the first draft

4. EXPANDING THE OUTLINE
- Coherence and logic in argumentative writing
- Conciseness: methods of eliminating wordiness
- Strategies for improving sentence clarity
- Constructing effective paragraphs

5. CATCHING YOUR READER'S ATTENTION
- The title - accurate, informative, attractive
- Choosing appropriate key words
- The first impression: the abstract

6. AVOIDING PLAGIARISM
- What is plagiarism?
- Paraphrasing
- Reading a text with a critical eye



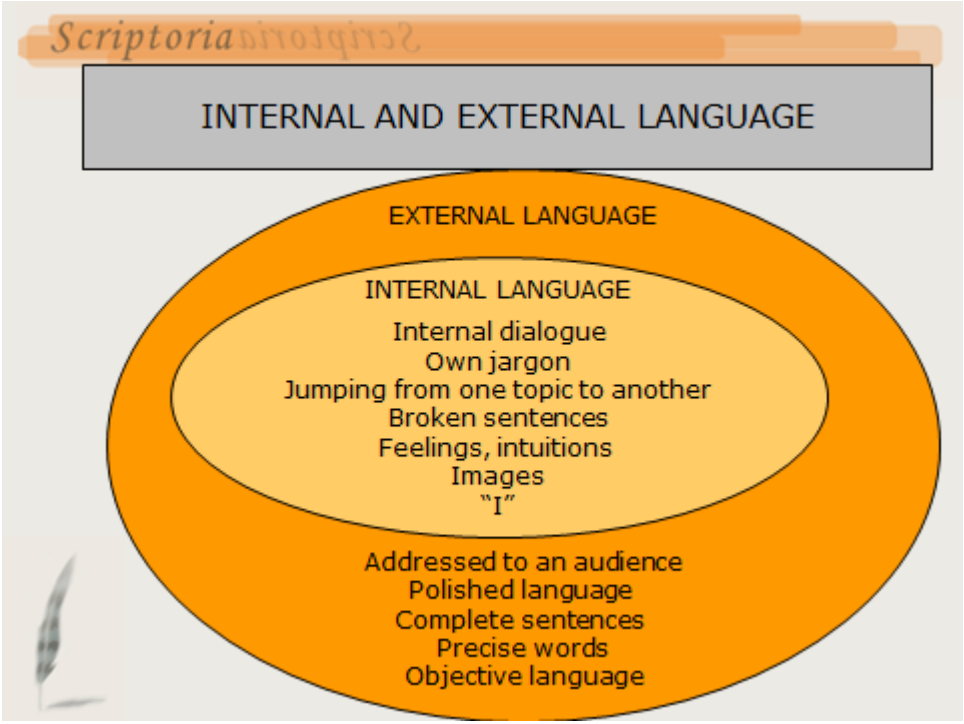
WHAT TO DO IN CASE OF WRITER'S BLOCKS?

- Address your text to a friend and write your first draft as a letter.
- Tell a friend what you want to write about.
- Reread what you've already written.
- Remember that this version is not the last one. You will revise and edit it later.
- Change the tool: if you can't write with the computer, try with a pencil or talk on a dictaphone.
- Change the place: try in the kitchen, in a pub, in a park.
- Repeat to yourself: first of all I write for myself, to learn, to understand.
- Brainstorm or cluster your topic.
- Begin with the easiest part of your paper.
- Have a FREEWRITING session.
- Use TIME BOXING.

TIME BOXING is a time management technique. Time boxing means fixing a limited period on a given task and doing the best within that time box: do only what you have decided to do - no smartphone, no Internet, no coffee break. Instead of working on something until it is done, you only work on it for a short period of time. It is either done at the end of this period or you commit to another time frame at a later time.
Please note: the time boxes should not exceed 45 minutes, then after that, concentration declines. It is recommended to have a short break between time boxes.

Why is "time boxing" helpful?

- You become aware of time: you are forced to prioritize tasks - and to focus on doing the most relevant ones.
- You can check on how much time you spend working on a given task.
- Time boxing curbs procrastination: an open ended task might be frightening. It is easier to begin on a task if you know when it will end.
- Time boxing curbs perfectionism. By fixing the time available to work on a given task, you have to prioritize the essentials and avoid stressing the details. This ensures that the work is finished on time — and not ruined by too much fiddling around.
- With Time boxing you can make the best of idle times (these are times in your day when you are doing nothing much. Do you have some minutes free ? For example you can brainstorm a question, recapitulate what you read yesterday or visualize your mind map.



ELEVENY

- To focus the essentials
- To write an idea concisely
- To find out most relevant key words
- To prepare the title
- To structure thoughts
- To prepare a summary with one's own words

FREEWRITING by Peter Elbow . Taken from *Writing Without Teachers*. New York: Oxford UP, 1973, 1-7.

The most effective way I know to improve your writing is to do freewriting exercises regularly. At least three times a week. They are sometimes called "automatic writing," "babbling," or "jabbering" exercises. The idea is simply to write for ten minutes (later on, perhaps fifteen or twenty). Don't stop for anything. Go quickly without rushing. Never stop to look back, to cross something out, to wonder how to spell something, to wonder what word or thought to use, or to think about what you are doing. If you can't think of a word or a spelling, just use a squiggle or else write "I can't think what to say, I can't think what to say" as many times as you want; or repeat the last word you wrote over and over again; or anything else. The only requirement is that you never stop.

What happens to a freewriting exercise is important. It must be a piece of writing which, even if someone else reads it, doesn't send any ripples back to you. It is like writing something and putting it in a bottle in the sea. Freewritings help you by providing no feedback at all. When I assign one, I invite the writer to let me read it, but also tell him to keep it if he prefers. (…)

Freewriting may seem crazy but actually it makes simple sense. Think of the difference between speaking and writing. Writing has the advantage of permitting more editing. But that's its downfall too. Almost everyone interposes a massive and complicated series of editings between the time the words start to be born into consciousness and when they finally come of the end of the pencil or typewriter onto the page. This is partly because schooling makes us obsessed with the "mistakes" we make in writing. Many people constantly think about spelling and grammar as they try to write. I am always thinking about the awkwardness, wordiness, and general mushiness of my natural verbal product as I try to write down words.

But it's not just "mistakes" or "bad writing" we edit as we write. We also edit unacceptable thoughts and feelings, as we do in speaking. In writing there is more time to do it so the editing is heavier: when speaking, there's someone right there wait ing for a reply and he'll get bored or think we're crazy if we don't come out with something . Most of the time in speaking, we settle for the catch-as-catch-can way in which the words tumble out. In writing, however, there's a chance to try to get them right. But the opportunity to get them right is a terrible burden: you can work for two hours trying to get a paragraph "right" and discover it's not right at all. And then give up. Editing, in itself , is not the problem. Editing is usually necessary if we ant to end up with something satisfactory. The problem is that editing goes on at the same time as producing. . . .

The main thing about freewriting is that it is nonediting . It is an exercise in bringing together the process of producing words and putting them down on the page. Practiced regularly, it undoes the ingrained habit of editing at the same time you are trying to produce. It will make writing less blocked because words will come more easily.

Next time you write, notice how often you stop yourself from writing down something you were going to write down. Or else cross it out after it's been written. "Naturally," you say, "it wasn't any good." But think for a moment about the occasi ons when you spoke well. Seldom was it because you first got the beginning right. Usually it was a matter of a halting or even a garbled beginning, but you kept going and your speech finally became coherent and even powerful. There is a lesson here for writing:trying to get the beginning just right is a formula for failure--and probably a secret tactic to make yourself give up writing.

THE LEARNING DIARY

The practitioner allows himself to experience surprise, puzzlement, or confusion in a situation which he finds uncertain or unique. He reflects on the phenomenon before him, and on the prior understandings which have been implicit in his behaviour. He carries out an experiment which serves to generate both a new understanding of the phenomenon and a change in the situation. Donald Schön

What is a LEARNING DIARY good for?

- To explore a topic
- To order thoughts and to make sense of a situation or of information
- To record experience
- To facilitate learning from experience
- To enhance creativity
- To generate ideas
- To connect ideas with others
- To develop critical thinking or the development of a questioning attitude
- To increase ability in reflection and thinking
- To enhance problem solving skills
- To improve writing
- To support planning and progress in research or a project

What to write in a LEARNING DIARY?

- Weekly balances (*What have I done? What have I found? What should I do next week?*)
- Feelings
- Questions, problems
- Thoughts, observations
- Brainstorms, clusters, mind maps about a topic
- Brief texts - related (or not) to your topic
- Outlines
- Title projects
- Ideas for introduction and conclusion
- Ideas for the first sentence of the introduction

How to reflect?

Reflection is an important aspect of research. Take time out to reflect on how things have gone well and what could have been handled differently. The 'Reflection' section of the log book helps you to think about how you handled a situation. In this section you can record:

- What you did.
- When you did it.
- Techniques that you learned about.
- Techniques that you used.
- What you learned.
- What you did well.
- What could you do differently next time.
- Any support you need

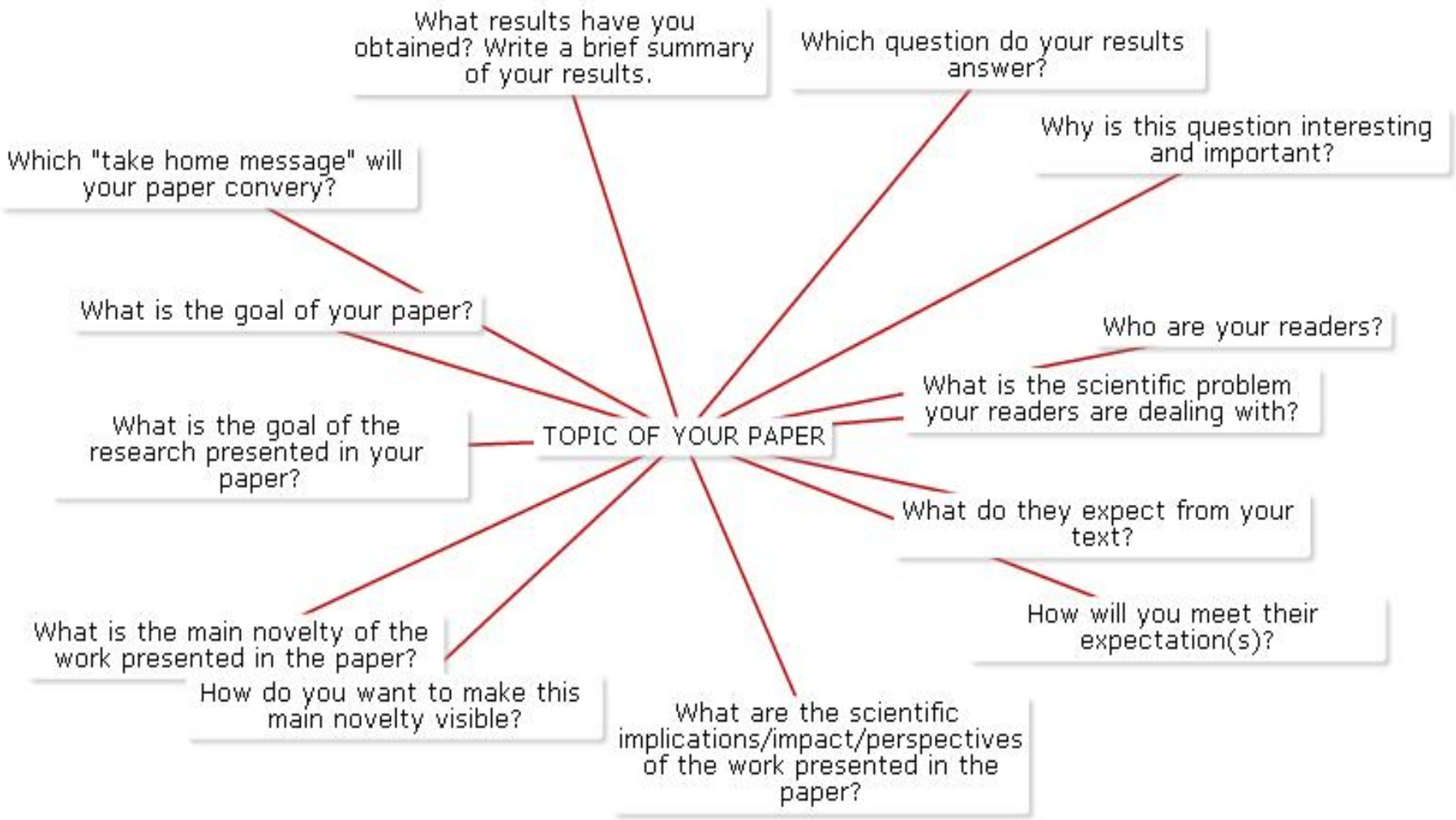
Warming up. Freewrite for 10 minutes on one of the following:

- The question *What do I retain of what I have read/heard yesterday ?*
- The question *What have I done yesterday ?*
- All the questions you currently have about your research.
- The question *What can I write about now?*
- One of the prompts or questions you wrote in an earlier section of this chapter.
- Your dreams.

Consider what you have written. Identify one interesting idea in your text ; note it and write with usual speed all what comes up to your mind about this idea.

PREPARING A CONCEPT

Many scientists think that there is nothing more important than their results. But, in fact, neither the results nor the paper itself is of utmost importance to the scientific world. The primary function of a scientific paper is to transmit a message to convince the reader and the community that this is important research. It is therefore a good strategy to first think about the message before sitting down to write.
Amin S Bredan & Frans van Roy



SCIENTIFIC PAPERS STRUCTURE (IMMRAD)

The Introduction and the Discussion should function as a pair. At least implicitly, the Introduction should have posed one or more questions. The Discussion should indicate what the findigs say about the answers. Robert Day

1. **Introduction**
- What is the problem addressed by my study? (Please note: a problem is a fact).
- What is the current state of knowledge or understanding regarding this problem?
- Why is my work necessary regarding the state of the arts?
- What questions are posed by my study?
- What is the goal of my study?
- What is the general method of investigation of my study?
- What are my hypotheses and predictions?

2. Materials and Methods: When and where was the experiment performed and data collected?

Materials	**Methods**
- What did I use?	- What did I do?
- How did I use it?	- How did I do it?

4. Results: What happened?

5. Discussion
- Did the experiment support or reject the hypothesis? Why? How?
- If they rejected it, was there some error or bias that affected the outcome?
- What analyzed evidences produced those conclusions?
- What do those conclusions mean regarding the addressed problem?
- How do my results and interpretations agree (or contrast) with previously published works?

6. Conclusion (sometimes part of the discussion)
- What improvements could be made in the future?
- What other experiments could be developed from these results?
- What are theoretical implications/impact/perspectives of my study ?
- Are there possible practical applications?

7. Acknowledgments: Who helped me?

8. References: Who have I cited in my paper?


What is the problem addressed by your study?
What is your research question?
What is the goal of your study?
What have you done?
What are your main results?
What is the main novelty revealed by your results?
What are possible perspectives of your study?
THE STORY OF YOUR RESEARCH

THE ABSTRACT

If you want me to give an hour and a half long speech, give me 5 minutes to prepare it. If you want me to give a five minute speach, give me an hour and a half to prepare it. Winston Churchill

- Write down the message you want to convey
- Identify in your text (complete what is missing):
  - The problem originating your study
  - The research question
  - The goal of your study
  - The main results
  - Your conclusions
  - Implications of your work
- Delete all superfluous words, ideas, sentences.
- Check the remaining sentences: do they all contribute to convey your message?
- Ensure the logical progression of your sentences : are they clearly connected ?
- Make your first sentence attractive.
- Make the connection between last and first sentence visible.

THE TITLE

For every person who reads the whole of a scientific paper, about 500 read only the title. One way to improve this statistic could be to make the title declarative by including what the paper says, not just what it covers. Björn Gustavii

First impressions are strong impressions: the title is the first contact with your potential readers;

How to choose significant key words? Think of your audience, that means, of the targeted journal. Which keywords a scientist interested in your topic might enter in the search motor?

Tips:

- catch the eye of your reader
- start with the most important information
- emphasize the main novelty of your study
- if you mention the problem and the solution: first the problem, then the solution
- use significant keywords
- don't waste words (remove words conveying no information like *study, problem, approach*)
- avoid words such as *new, novelty*: rather tell what is new, novel, original in your study
- don't overspecify (think of your audience)
- don't underspecify

Note: on the Internet, 40% of titles are not found because of affixes such as *pre-, post-, anti-, ---induced.* Avoid!

Some journals have a maximal length concerning the number of characters for the title. Check the Authors Guidelines.

Many journals and searching systems only use titles, so that use of the most significant keywords in your title is vital

THE KEY WORDS

50% concrete, concerning the subject; 50 % large (to be found by a search motor through searching more general problematics).

EXAMPLES

Collect appealing titles in all fields; find out which strategies the authors use to catch your attention

.

- ADAPTIVE HYPERSPECTRAL IMAGER: DESIGN, MODELING AND CONTROL, JOURNAL OF OPTICS
- HOW LONG IS A GIANT SPERM ? *NATURE*
- IMMUNIZATION IN ALZHEIMER'S DISEASE: NAÏVE HOPE OR REALISTIC CLINICAL POTENTIAL? *MOLECULAR PSYCHIATRY*
- TO DIP OR NOT TO DIP? THE UNIQUE RELATIONSHIP BETWEEN DIFFERENT BLOOD PRESSURE PATTERNS AND CARDIAC FUNCTION AND STRUCTURE, J*OURNAL OF HUMAN HYPERTENSION*
- POSSIBLE ASSOCIATION BETWEEN HEAVY COMPUTER USERS AND GLAUCOMATOUS VISUAL FIELD ABNORMALITIES: A CROSS SECTIONAL STUDY IN JAPANESE WORKERS*, JOURNAL OF EPIDEMIOLOGY AND COMMUNITY HEALTH*
- REVERSE REMODELING IN HEART FAILURE — MECHANISMS AND THERAPEUTIC OPPORTUNITIES, *NATURE REVIEWS CARDIOLOGY*
- IMMUNOTHERAPY ALONE *VS* NO MAINTENANCE TREATMENT IN ACUTE MYELOGENOUS LEUKAEMIA, *BRITISH JOURNAL OF CANCER*

EXERCISE

- Write a brief text presenting the main novelty of your work
- Underline the most significant key words.
- Combine the keywords. Try different versions, for instance :
  - a question
  - a question and an answer (use punctuation marks such as . — : ?)
  - a catchy titel + an explanation (use punctuation marks such as . — : ?)
  - a problem and a solution (use punctuation marks such as . — : ?)
  - what you want

Never delete a previous version! Rather copy the lastest one and work on it.

Example:

- How to detect smart attacks using a multiple model approach?
- A multiple model approach and the detection of smart attacks
- A multiple model approach: detection of smart attacks
- Smart attacks detection. A multiple model approach
- Smart attacks: a multiple model detection

Writing a Text Step by Step

Occasionally, I recognize what I call the squid technique: the author is doubtful about his facts or his reasoning and retreats behind a protective cloud of ink. Doug Savile

Revision is not checking to make sure that every word is spelt correctly and every comma in place. Instead, revision concerns global issues such as structure, content, logic. The main difference between beginners and experienced writers concerns revision: beginners move directly from drafting to editing. Experienced writers do not bother with editing until the global issues are resolved.

THE WRITING PROCESS

1. Collecting ideas
   - Brainstorm
   - Questions
   - Cluster
   - Mind map
   - Freewriting

2. Writing an outline

3.Wirting a first draft
Objective: putting words down on paper

4. Revising the content
   - Deleting all superfluous
   - Developing main ideas

4. Editing the style
   - Deleting all superfluous
   - Making the text readerfriendly

5. Correcting spelling, grammar and punctuation

HOW TO WRITE THE FIRST DRAFT?

- Don't use your documents. You can read them before writing your first draft.You can use them for the next step.
- Write quickly the main ideas.
- If it helps you to write using "I",do it. You can delete it later if necessary.
- If you don't find the right word, use another, you can replace it later.
- If the sentence is clouded, write it as it comes. You can replace it later. So it doesn't impeach other ideas to come.
- If you are dealing with questions, write them down: *should I mention this here or in the next paragraph? Is it 9,8 or 8,5?*
- Don't worry about style, grammar, punctuation.
- Write quotes, examples or numbers approximately.
- TURN OFF YOUR INTERNAL CENSOR!

HOW TO REVISE YOUR FIRST DRAFT?

BE EXPLICIT
Define or explain the concepts which need to be defined or explained
If you quote sentences, if you use tables or illustrations, comment on them, integrate them into the text.
Explain what you do (*to state it briefly / in brief,... the points for and against... incidentally.... another point is that...)*
Avoid insinuations, indirect suggestions or allusions: express exactly what you want to say.
BE LOGICAL
Control your argumentation: is it possible to follow it step by step?
Justify your affirmations
If necessary, illustrate your affirmations with examples
THE THREE RULES FOR A LOGICAL STRUCTURE: • progression : each sentence must add new information to the previous one. • continuity: each sentence must draw upon information from the previous one. • no-contradiction: a sentence must not contradict previous ones
Draw conclusions after each argumentation
BE CRITICAL
Enunciate the questions you ask yourself, underline the paradoxes you find.
Use TENTATIVE rather than ASSERTIVE language.. You can use *possibly* and *probably* : *This is possibly caused by* or *This is probably related to...* You can use the modal verbs *may* and *might*; e.g. *This might explain the differences…* You can use *seems to*; e.g. *This seems to be the cause of…* You can replace *never* with *rarely* and *every* with *many or much*.

DIVIDE YOUR TEXT INTO PARAGRAPHS

HOW TO STRUCTURE A PARAGRAPH?

- 1 paragraph ⇔ 1 topic.
- The first sentence (called topic sentence) introduces the topic.
- The following sentences develop the statement made in the topic sentence.
- The final sentence emphasizes the thought of the topic sentence or states some important consequence.
- The length of a paragraph is usually 100-300 words.

CLEAR SCIENCE WRITING: ACTIVE VOICE OR PASSIVE VOICE?

from www.biomedicaleditor.com/active-voice.html

WHAT IS ACTIVE VOICE?

An author may write a sentence in one of two "voices"—active or passive. The active voice emphasizes the performer (or agent) of the action:

Wind disperses plant seeds.
Smith et al. Investigated the relationship.
We have analyzed the results.

The active voice is **direct** (performer–verb–receiver), vigorous, clear, and concise. The reader **knows** who is responsible for the action.

WHAT IS PASSIVE VOICE?

The passive voice, **in contrast, emphasizes the** receiver **(or product) of the action:**

Plant seeds are dispersed [by wind].
The relationship was investigated [by smith et al].
The results have been analyzed [by us].

The passive voice is **indirect** (receiver–verb–performer) and can be weak, awkward, and wordy. Passive voice uses a form of the verb *to be* followed by a past participle (e.g., *dispersed, investigated*) and a *by* phrase. If the *by* phrase is omitted (the truncated passive), the reader will not directly know who or what performed the action.

A particularly awkward and ambiguous form of the passive voice occurs when an author uses *it* as the receiver rather than the first-person pronouns ***I* or *we***: *it is concluded that the treatment is effective.*these types of passive-voice sentences are a form of hedging. In addition to being awkward, sentences written in the passive voice, if not constructed carefully, may contain grammatical errors such as dangling modifiers.

Changing from passive to active voice corrects the error and strengthens the sentence:

Dangling: *to investigate the source of nutrients, eggshell membranes were compared.* (incorrect passive)
Correction: *to investigate the source of nutrients,* ***we*** *compared eggshell membranes.* (active)
Dangling: *after analyzing the samples, the plants were measured daily.* (incorrect passive)
Correction: *after analyzing the samples,* ***we*** *measured the plants daily.* (active)

Despite these disadvantages, the passive voice has a legitimate place in writing. In addition to allowing an author to **vary the sentence structure,** the passive voice has other important functions. To learn more, see "the value of the passive voice." (www.biomedicaleditor.com/passive-voice.html)

TRADITION AND THE PASSIVE VOICE.

More than a century ago, scientists typically wrote in an active style that included the first-person pronouns *i* and *we*. Beginning in about the 1920s, however, these pronouns became less common as scientists adopted a passive writing style.

Considered to be objective, impersonal, and well suited to science writing, the passive voice became the standard style for medical and scientific journal publications for decades.

There were exceptions, however. For instance, in 1953, one elegantly written paper began:

We wish to suggest a structure for the salt of deoxyribose nucleic acid (d.n.a.) (watson jd, crick fhc. Molecular structure of nucleic acids. *Nature.* 1953;171:737-738.)

The opening sentence of Watson and Crick's classic article is **simple, direct, and clear.** But suppose the authors had taken the passive point of view:
In this paper, a structure is suggested for the salt of deoxyribose nucleic acid (d.n.a.).
The emphasis is now on the receiver of the action (the structure), but at a price—the sentence has lost its clarity (*who suggested?*), energy (*passive verb*), and overall impact.

EMPHASIZE THE ACTIVE VOICE.

Nowadays, most medical and scientific style manuals support the active over the passive voice. For example, the AMERICAN MEDICAL ASSOCIATION'S *AMA MANUAL OF STYLE* recommends that "in general, authors should use the active voice, except in instances in which the author is unknown or the interest focuses on what is acted upon."
The ***publication manual of the American Psychological Association*** (APA) has similar advice: "Prefer the active voice....the passive voice is acceptable in expository writing and when you want to focus on the object or recipient of the action rather than on the actor."
These manuals and other books on science writing recommend using the active voice as much as possible. An author may decide to focus on the receiver—and thus use the passive voice—when the performer is unknown or of less importance. For many authors, this occurs most often in the methods section.
Do **scientific and medical journals,** in their instructions for authors, advise them to write in the active voice?
Many journals indirectly do so by referring authors to a style manual that supports the active voice, or by publishing articles in which active-voice sentences are common and acceptable.
Although some journals ask authors to limit first-person pronouns or restrict them to certain sections, others not only **encourage** authors to write in an active style, but **prefer** them to use first-person pronouns over passive voice. Here is a small sampling:

- *Behavioral ecology:* "the first-person active voice is preferable to the impersonal passive voice."
- *British medical journal:* "please write in a clear, direct, and active style....write in the active [voice] and use the first person where necessary."
- *The journal of neuroscience:* "overuse of the passive voice is a common problem in writing. Although the passive has its place—for example, in the methods section—in many instances it makes the manuscript dull by failing to identify the author's role in the research....use direct, active-voice sentences."
- *The journal of trauma and dissociation:* "use the active voice whenever possible: we will ask authors that rely heavily on use of the passive voice to re-write manuscripts in the active voice."
- *Nature:* "nature journals like authors to write in the active voice ('we performed the experiment...') as experience has shown that readers find concepts and results to be conveyed more clearly if written directly."
- *Ophthalmology:* "active voice is much preferred to passive voice, which should be used sparingly....passive voice...does *not* relieve the author of direct responsibility for observations, opinions, or conclusions (e.g., 'the problem of blood flow was investigated...' vs. 'We investigated the problem of blood flow...')."
- *Science:* "use active voice when suitable, particularly when necessary for correct syntax (e.g., 'to address this possibility, we constructed a lzap library ...,' not 'to address this possibility, a lzap library was constructed...')."

HOW TO IMPROVE YOUR STYLE?

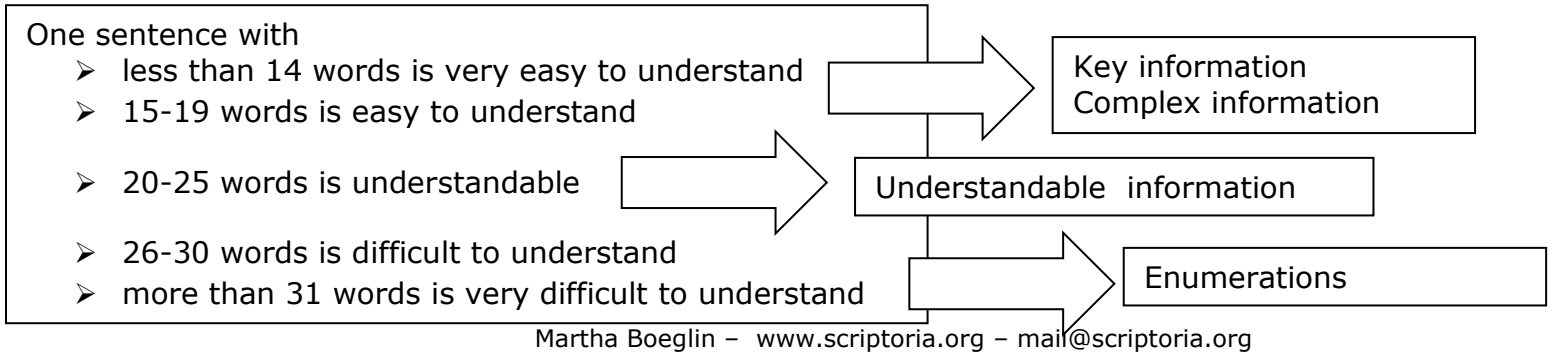
Vigorous writing is concise. A sentence should contain no unnecessary words, a paragraph no unnecessary sentences, for the same reason that a drawing should have no unnecessary lines and a machine no unnecessary parts. This requires not that the writer make all his sentences short, or that he avoid all detail and treat his subjects only in outline, but that every word tell. W. Strunk

- **Delete all superfluous**:
  - **Avoid an overuse of adjectives**: the function of an adjective is to add new information to the noun. If it does not, you can either replace it with a more precise one, explain what you mean, quantify… or delete it.
  - **Avoid adverbs**. Most of them are unnecessary. You will clutter your sentence if you choose a verb with a precise meaning and add an adverb carrying the same meaning (e.g. *the radio blares loudly*). **Omit VERY**.
  - **Avoid needless pronouns**: *Who is, which is, that is* and the like are often superfluous. For instance *Spondyloarthritis, which is a chronic inflammatory disease, causes pain in the spine.* → *Spondyloarthritis, a chronic inflammatory disease, causes pain in the spine.)*
  - **Avoid platitudes** such as *Respiratory diseases are important health problems throughout the world and often lead to morbidity and disease*.

OMIT NEEDLESS WORDS

Avoid	**Prefer**
A considerable amount of	Much
A considerable number of	Many
A great number of times	Often
A majority of	Most
A number of	some
A small number of	A few
In the absence of	Without
In the first place	First

- **Make sure that all nouns and verbs are precise**
- **Never use YOU and WE to address the reader.**
- **Avoid overusing noun forms of verbs ("nominalizations"):** instead of *the implementation of the method was successful → the method was successfully implemented.*
- **Avoid contractions** such as *won't, didn't, we'll.*
- **Write clear sentences: one sentence, one idea.**
- **Vary the length of your sentences.**



Coherence - Tips and Tricks

- **Begin the sentence with the main information**.

- **Keep related words together (for example: subject and verb)**

- **Pronouns.** *This, that, these, those, he, she, it, they,* and *we* are useful pronouns for referring back to something previously mentioned. Be sure, however, that the noun they are referring to is recognazible. *Example* : *When **scientific experiments** do not work out as expected, **they** are often considered failures until some other scientist tries **them** again. **Those** that work out better the second time around are the ones that promise the most rewards.*

- **Use formal vocabulary (e.g. *discuss* rather than *talk about, continue rather than carry on).***

- **Avoid negations.** Put statements in positive form. Make definite assertions. Use the word *not* as a means of denial or in antithesis, never as a means of evasion (instead of *not important* : *trifling*, instead of *did not pay attention to*: *forgot*).

- ***Connect sentences with connectors -** avoid the overuse and misuse of certain logical connectors, especially besides, too informal.*

CONNECTORS
To add: and, again, and then, finally, further, nor, too, next, lastly, in addition, first (second, third and so on).
To compare: whereas, but, yet, however, nevertheless, on the contrary, compared to, up against, although, meanwhile, in contrast.
To prove: because, for, indeed.
To show exception: yet, still, however, nevertheless, in spite of, despite.
To show time: thereafter, soon, after ... hours, finally, then, later, previously, formerly, first (second, etc.), next, and then.
To repeat: in brief, as has been noted.
To emphasize: in fact, indeed.
To show sequence: first, second, third, and so forth. A, B, C, and so forth. next, then, following this, at this time, now, at this point, after, hence, next, subsequently, finally, consequently, previously, before this, thus, therefore.
To give an example: for example, for instance, in this/another case, on this occasion, in this situation, to demonstrate, to illustrate, as an illustration.
To summarize or conclude: in brief, on the whole, summing up, to conclude, in conclusion, hence, therefore, accordingly, thus, as a result.

COMMONLY MISUSED WORDS

ABOVE - (the above method, as mentioned above) - often used in reference to something preceding, but not necessarily above; a loose reference, convenient to writers but not for readers. Also, remember that if something was mentioned previously, to do so again is redundant.
ACCURATE - (an accurate estimate) - accurate implies complete freedom from error or absolute exactness. An estimate is an approximation. Try "a reliable estimate."
AFFECT, EFFECT - Affect is a verb that means to influence. Effect, as a verb, means to bring about; as a noun, effect means result.
ALIQUOT - aliquot means "contained an exact number of times n another." Commonly misused to mean subsample.
ALL OF, BOTH OF - Just 'all' or 'both' will suffice.
ALSO SEE - (also see Jones 1950) - Often unnecessary.
ALTERNATE, ALTERNATIVE - alternate implies occurring in succession or every other one; alternative implies a choice among two or more incompatible objects, ituations, or courses of action.
AMONG - used when comparing more than two items.
AND/OR - use one or the other.
AND THEN - use one or the other.
APPARENTLY, APPARENT - means obviously, clearly, plainly evident, seemingly, ostensibly and observably. Consider using one of these more specific terms.
APPEAR - not synonymous with seems. *He always appears on the scene, but never seems to know what to do.*
AS - do not use to mean because, or inasmuch as.
AS WELL AS - =and.
AT THE PRESENT TIME, AT THIS POINT IN TIME - =now.
BELOW - (see 'above'; direction does not change ambiguity).
BETWEEN - used when comparing only two items.
BY MEANS OF - just 'by'.
CARRIED OUT - colloquial; use 'conducted', 'performed' or 'was studied'.
CASE - if necessary, use 'in this instance'.
CHECKED - (The traps were checked). imprecise. use 'examined' or another more precise word.
COMPARE WITH, COMPARE TO - 'compare with' means to examine differences and similarities; 'compare to' means to represent as similar. Usually, one compares with or contrasts to. **COMPRISE** - means to contain or include, not constitute. "The whole comprises the parts, the parts do not comprise the whole."
DATA - plural. "These data, data were, too few data."
DIFFER FROM, DIFFER WITH - One thing differs from another, although you may differ with a colleague.
DIFFERENT THAN - never! always DIFFERENT FROM.
DUE TO - implies causality when only a relationship may be intended. Try 'related to' or, if causality is intended, 'because of'.
DURING THE COURSE OF, IN THE COURSE OF - just 'during' and 'in' will usually suffice.
EITHER...OR, NEITHER...NOR - apply to no more than two items or categories; similarly, former and latter refer to the first and last of only two items or categories.
EQUALLY AS GOOD, EQUALLY AS GOOD AS - 'equally good'.
ETC. - avoid entirely!
FELT - (it was felt that...) - One feels cloth, but believes ideas.
GIVEN - (at a given time) - fixed, specified or specific are more precise. Given has numerous meanings.
HIGH(ER), LOW(ER) - Commonly used imprecisely or ambiguously for greater, less, larger, smaller, more, or fewer.
HOWEVER - do not use with another conjunction at the beginning of a sentence or independent clause ('However, because...' or 'However, since...').
IN FACT, AS A MATTER OF FACT - usage tends to weaken preceding and subsequent statements by implying that they might be less than factual. If a lead word is needed, try 'indeed'.
IN ORDER TO - 'To' will suffice.
IN VIEW OF THE FACT THAT - 'because'.
INTERESTING, INTERESTING TO NOTE - presumption; let the reader decide what is interesting.
IRREGARDLESS - no such word! Use regardless or irrespective.

IT SHOULD BE MENTIONED, NOTED, POINTED OUT, EMPHASIZED - delete completely and make the point emphatically!
IT WAS FOUND, DETERMINED, DECIDED - delete, and state observation declaratively.
LESS(ER), FEW(ER) - 'less' refers to quantity, 'few' refers to number.
NON - a prefix, usually not hyphenated. Avoid overuse. 'Non' defines things negatively and is not descriptive of what they are. Do not use as a substitute for established prefixes or where 'not...' will serve. (incorrect, unreliable, not reliable).
ONCE, WHEN - avoid the use of 'once' for 'when', as 'once' can mean: one time, formerly, simultaneously, and immediately.
OUT, IN - (...14 out of 17; to find out if) - in most instances, these can be omitted without altering meaning.
PARTIALLY, PARTLY - 'partially' implies bias in favor of one or the other. Partly is more precise when portion or proportion is meant.
PERCENT, PERCENTAGE - use percent (%) with numbers, use percentage in reference to proportion expressed in hundredths.
PREDOMINATE, PREDOMINANT - predominate is a verb, predominant is an adjective. The adverb is predominantly, not predominately.
PREVALENCE, INCIDENCE - prevalence is the number per unit of population at a specific time (23 per 1000 individuals in 1989). Incidence is number in a population per unit time (23 cases per year).
PRIOR TO, PREVIOUS TO - adjectives that modify nouns; prior or previous events. Replace 'prior to' or 'previous to' with 'before'.
PROVEN - be careful of this word; rarely is anything provenn science. We test hypotheses and sometimes fail to reject one, but this is not proof.
PROVIDED, PROVIDING - 'provided that' is a conjunction; providing is the participle.
RESPECTIVE, RESPECTIVELY - omit if possible.
SAID - (Jones (1978) said that...) - use wrote, noted
SINCE - denotes a relationship in time. Do not use as a synonym for because.
SMALL IN SIZE, RECTANGULAR IN SHAPE, GREEN IN COLOR - redundant in repetition.
TAXA AND VERB AGREEMENT - species and subspecies take singular verbs whereas genera and higher taxa take plural verbs. Peromyscus maniculatus is common in northern Illinois. Peromyscus are widely distributed in North America.
THAT, WHICH - two words that can help, when needed, to make intended meanings and relationships unmistakable, which often is important in scientific writing. If the clause can be omitted without leaving the modified noun incomplete, use which and enclose the clause within commas or parentheses; otherwise use that.
THIS, THESE - commonly used to begin sentences when the antecedents to which they refer are unclear. 'Elephants, whales, and bats are mammals although bats fly like birds. These animals are endothermic.' Mammals? Birds? Mammals and Birds?
TO BE - (the differences were found to be significant) - frequently unnecessary.
TO SEE - replace with 'to determine' or another more precise term.
TOTAL - (a total of ten squirrels were observed) – usually superfluous.
UTILIZE, UTILIZATION - use!
VARYING, VARIOUS, DIFFERENT, DIFFERING - commonly misused as synonyms. Varying amounts or differing conditions imply individually changing amounts or conditions rather than a selection of various amounts or different conditions.
VERY, QUITE, CONSIDERABLE, SOMEWHAT - avoid modifiers that impart indefinite measure. 'A very large bear' is as undefined in size as a 'large bear'.
VIABLE ALTERNATIVE - it would not be an alternative if it were not viable.
WHERE - implies a locality; do not use as a synonym for 'in which'.

This list of commonly misused words was initially prepared by the *Iowa Experiment Station Publications at Iowa State University*, and was modified by the editors of the *Journal of Mammalogy.*

PROOFREADING FOR COMMAS

The correct use of commas can be confusing, but there are a few general rules that can clarify their use. First, some technical terms: A clause is a group of words that contains a subject and a predicate. The subject of a clause is who or what is being talked about. The predicate of a clause is what the subject is doing. An independent clause stands alone and expresses a complete thought. A dependent clause does not stand alone and does not express a complete thought.

Compound Sentence Commas

A compound sentence contains two or more independent clauses connected either by a comma and a coordinating conjunction or by a semicolon.

1. Skim your paper, looking for the seven coordinating conjunctions: For, And, Nor, But, Or, Yet, So (Think FANBOYS.)
2. Stop at each of these words and see whether there is an independent clause on either side of it. If so, you have three options for correcting the sentence:
   - Place a comma before the coordinating conjunction: The Aggie Senior Ring originated in 1889, and it serves as a link between seniors and former students.
   - Connect these independent clauses using a semicolon: The Aggie Senior Ring originated in 1889; it serves as a link between seniors and former students.
   - Write two separate sentences: The Aggie Senior Ring originated in 1889. It serves as a link between seniors and former students.

Introductory Commas

For introductory commas after dependent clauses, try this strategy:

1. Skim your paper, looking only at the first two or three words of each sentence.
2. Stop if one of these words is a dependent clause marker such as the following:
   after, although, as, as if, as long as, as soon as, because, before, if, in order that, since, so that, than, though, unless, until, when, whenever, wherever, while
3. If you see one of the words in the list above, you have found an introductory dependent clause. Place a comma between the last word of the dependent clause and the first word of the independent clause. Dependent clauses at the end of the sentence do not require commas.

Examples: When students at Texas A&M reach their senior year, they are called "zips." They are called "former students" after they graduate because there are no ex-Aggies.

For other introductory commas, use the following strategies:

1. Skim your paper, looking only at the first word of each sentence.
2. Stop if the word or phrase:
   - Ends in -ing
   - Begins with to
   - Begins with a preposition (about, above, across, against, among, around, at, after, before, behind, beside, between, beyond, by, down, during, into, for, from, in, except, near, of, off, to, over, past, throughout, through, toward, on, up, without, until, with, under are some common ones.)
   - Is an introductory word (well, yes, moreover, etc.)

3. Place a comma before the first word of the independent clause.

Examples: Attending an Aggie football game, one can see the bond among Aggies. To encourage their team, fans in the stands wave their 12th Man towels.

Disruptive Commas

For disruptive commas between compound verbs or objects:

1. Skim your paper, stopping only at the coordinating conjunctions:
   and, but, or, nor, for, yet, so (Think A. B. Fonsy.)
2. Check to see whether there is an independent clause on each side of the conjunction. If so, place a comma before the conjunction. If not, do not place a comma before the conjunction.

Disruptive comma: The football games are thrilling, but are not the only example of the Aggie Spirit.
Correct: The football games are thrilling but are not the only example of the Aggie Spirit.

For disruptive commas between subjects and verbs:

1. Find the subject and verb in each of your sentences.
2. Make sure that you have not separated the subject from its verb with one comma.

Disruptive comma between subject and verb: Yell Leaders elected by the student body, build motivation and spirit for many events in Aggieland. Correct: Yell Leaders elected by the student body build motivation and spirit for many events in Aggieland.

Series Commas

1. Skim your paper, stopping at the conjunctions and or or.
2. Check to see if these conjunctions link words, phrases, or clauses written in a series.
3. If so, place commas after all of the words, phrases, or clauses in the series except the last ones. Example: Reveille, the Quad, and Wildcatting are all traditions unique to TAMU.

Non-essential Commas

1. Skim your paper, looking for a phrase or clause in each sentence that explains or gives more information about a word or phrase that comes before it.
2. If you can delete the phrase or clause and still keep the meaning, the phrase or clause is usually non-essential and needs two commas, one before and one after unless the phrase or clause is at the end of the sentence. In that case, use one comma before it.
3. As an alternative test for a non-essential phrase or clause, try saying "by the way" before it. If that seems appropriate to the meaning, the phrase or clause is probably non-essential. Example: Non-regs, undergraduate students not in the Corps of Cadets, were allowed to attend Texas A&M for the first time during the 1960's.

REFEREES CHECKLIST

(FROM: *JOURNAL OF APPLIED STATISTICS*

Contents

Are the facts, arguments and conclusions in the paper technically valid and accurate?

Is the previous work adequately referenced and integrated with the new results?

Structure

Is the title brief yet clear enough to identify the paper?

Does the list of keywords index all the features of interest in the paper?

Does the summary indicate the main topics and results?

Does the introduction outline the purpose, scope and approach of the paper?

Are the main results and conclusions given early in the paper?

Are there details which could be reduced, put in a Appendix, or omitted?

Exposition

Does the paper say in words what it is about, what the findings and implications are, and why they matter?

Are all of the mathematical details necessary?

Is any symbol or abbreviated technical term used unnecessarily?

Are text tables limited to what is needed for exposition and illustration?

Are all numbers sufficiently rounded?

Is there a verbal summary for each table?

Are the captions clear?

Does every graph have a clear message? If not what is its point?

Are any passages unclear or verbose?

HOW TO AVOID PLAGIARISM ?

When using secondary sources in your papers, you can avoid plagiarism by knowing **what must be documented**.

SPECIFIC WORDS AND PHRASES

If you use an author's specific word or words, you must place those words within quotation marks **and** you must credit the source.

INFORMATION AND IDEAS

Even if you use your own words, if you obtained the information or ideas you are presenting from a source, you must document the source.

- **Information:** If a piece of information isn't common knowledge (see below), you need to provide a source.
- **Ideas:** An author's ideas may include not only points made and conclusions drawn, but, for instance, a specific method or theory, the arrangement of material, or a list of steps in a process or characteristics of a medical condition. If a source provided any of these, you need to acknowledge the source.

COMMON KNOWLEDGE

You do not need to cite a source for material considered common knowledge:

- **General common knowledge** is factual information considered to be in the public domain, such as birth and death dates of well-known figures, and generally accepted dates of military, political, literary, and other historical events. In general, factual information contained in multiple standard reference works can usually be considered to be in the public domain.
- **Field-specific common knowledge** is "common" only within a particular field or specialty. It may include facts, theories, or methods that are familiar to readers within that discipline. For instance, you may not need to cite a reference to Piaget?s developmental stages in a paper for an education class or give a source for your description of a commonly used method in a biology report?but you must be sure that this information is so widely known within that field that it will be shared by your readers.
- If in doubt, be cautious and cite the source. **And in the case of both general and field-specific common knowledge, if you use the exact words of the reference source, you must use quotation marks and credit the source.**

From http://writing.wisc.edu/Handbook/QPA_plagiarism.html

TEMPLATE FOR TAKING NOTES ON RESEARCH LITERATURE

The greatest part of a writer's time is spent in reading, in order to write; a man will turn over half a library to make one book.
Samuel Johnson

Effective readers take notes—it improves recall and comprehension. You may think you'll remember everything you read in researching class assignments, professional papers, proposals, or your thesis, but details will slip away. Develop a template for recording notes on articles you read, or adapt the template below for use. As you accumulate a large collection of texts, this template will help you distinguish articles and quickly locate the correct reference for your own writing. The time spent filling out the form will save you hours of rereading when you will write your text. Whenever you read an article, pertinent book chapter, or research on the web, use the following template (or something similar) to record your notes for later easy access.

Key Words
Complete citation. Author(s), Date of publication, Title, Journal, Volume #, Issue #, pages: If web access: url; date accessed
General subject
Specific subject
Message
Addressed problem
Result(s)/Conclusions
Summary of key points (write sentences)
Quotations: Page:
Context (How does this work tie in with key issues and findings by other authors? By yourself?)
Relevance (in relation to the topic; to your own study)
Cited references to follow up on (references related to your subject AND frequently cited articles: they may be important for your own work)
Open questions
Other comments
The section of your paper where you intend to refer to this text:

After reading your notes, take a couple of minutes to get to the core of the text. Answer the following 2 questions:

- *What is the main question being asked in the article ?*
- *What is the conclusion the authors point toward?*

SUMMARIZE A TEXT WITH YOUR OWN WORDS

- Read the text quicly to find the main ideas of each paragraph.
- Underline the main ideas.
- Circle **key terms**.
- Find the **message** of the text. The message is a sentence that expresses the central idea of the article.
- Note the main idea of each paragraph on a piece of paper with your own words - alternatively: draw a mind map - note the main ideas of each paragraph on the main branches.
-
- Read your text again, with usual speed, and look for secondary ideas.
- Write secondary ideas under the corresponding main idea of each paragraph – or draw secondary branches on the mind map, connecting them to the related main ideas. Use colors to distinguish main ideas from secondary ones.
- Take the article away so that you cannot look at it
- Before summarizing the article, ask yourself: *why do I need to summarize this?* (= what is my objective?) AND *who I am summarizing this for?* (= who is my reader?).
- State the message of the article using your own words.
- Write brief summaries of each section, following your outline.
- Write a **first draft** of the summary. Edit your version. Eliminate needless words. Be concise.
- Compare your version to the original.

CRITICAL ANALYSIS OF A PAPER

Why do we critique the literature?
- To learn about it
- To reveal areas that are ripe for development
- To work out where our ideas come from

ROWENA MURRAY

- Summarize the objectives, methods, results, and conclusions as the authors have presented them.
- Identify and characterize the strengths of the article (That is, what are the useful features? Did you find a certain section of the article to be particularly helpful? Why?)
- Identify and characterize the weaknesses of the article.
- Conclude your analysis. What could be the broader implication of this research? What could be the future directions of this research?

HOW TO WRITE A LITERATURE REVIEW?

1. As you read your source material, record similarities and differences in the information.
3. Based on the similarities and differences you notice, write down the main research question that the source material answers. A good research question should be open-ended.
4. List up the key ways the research answers the question. Make sure your answers account for both the contradictions and repetitions you discovered. Organize these answers into categories.
5. Create a grid and fill it in with details from source material.

RESEARCH QUESTION:				
GOAL OF THE REVIEW:				
Ideas / Title of the paper	Idea 1	Idea 2	Idea 3	Idea X
Paper 1				
Paper 2				
Paper 3				
Paper X				

How to organize the text body ?

Prepare your review. Ask yourself :

- who is the addressed reader ?
- what is the goal of this literature review ?
- what is its scope ? You can choose between a chronological, thematic or methodological scope:

- Chronological
  - by publication: order your sources by publication chronology; this is interesitng when the order shows an important trend.
  - by trend: examine the sources under another trend, such as the history of your topic. Divide it into subsections according to eras within that period for instance.
- Thematic: organize your review around an issue.
- Methodological: focus on the methods of the researchers. A methodological scope will influence either the types of documents in the review or the way in which these documents are discussed.

The conclusion:

1. An objective conclusion: it is the balance of your literature review. It aims to propose an anwer or answers to the research question posed in the introduction, focusing on the information given by the documents.
2. A personal conclusion: here you can for instance emphasize the limitations of the studies, or missing points, questions for further research: what questions about the field has the review sparked? What coul be questions for a further research ?

The introduction:

- Present briefly the documents used
- The research question
- The goal
- If necessary :
  - current situation: information necessary to understand the topic or focus of the literature review.
  - history: The chronological progression of the field, the literature, or an idea that is necessary to understand the literature review, if the body of the literature review is not already a chronology.
  - methods and/or standards: The criteria you used to select the sources in your literature review or the way in which you present your information. For instance, you might explain that your review includes only peer-reviewed articles and journals.
  - outline of your review

IMPROVE YOUR TEXT

QUESTIONNER : YOU ARE A MIRROR HELPING YOUR AUTHOR TO REFLECT. PLEASE DON'T GIVE ANY FEEDBACK; JUST ASK THE FOLLOWING QUESTIONS. GIVE YOUR AUTHOR ALL THE TIME HE/SHE NEEDS TO ANSWER TO YOUR QUESTIONS. BE ALL EARS: THE QUALITY OF YOUR LISTENING WILL AFFECT THE QUALITY OF YOUR AUTHOR'S THOUGHTS. YOU ONLY NEED TO LISTEN AND TO ASK THE FOLLOWING QUESTIONS. THE TEXT IN *ITALICS* IF FOR YOU, NOT FOR THE AUTHOR.

1. What is he topic of the written text?
2. Who is the intended reader?
3. What is the goal of this text?
4. What is the main idea of THIS text? *(an idea is a sentence with a **conjugated** verb: not a question, not the goal. If necessary repeat this question untill the author finds the main idea).*
5. Where is the main idea ? (*Ask to see where it is exactly: in which sentence, in which words?).*
6. Can the reader easily identify it as the main idea?
7. If not, what should you do?
8. How many paragraphs does your text have?
9. Write in the margin the questions each paragraph should answer to.
10. Does each sentence of one single paragraph contribute to answer to the corresponding question?
11. Look at the structure of a paragraph on the page 14. Do your paragraphs apply this structure?
12. If they don't, look at your paragraphs: what could you write as a first sentence? As a last one?
13. Is the progression of the paragraphs logical?
14. Do you use the passive voice? If you do, check the pages 15 and 16: do you use it correctly?
15. Which objections could have an objector concerning the content, your work (not the form of the text)?
16. What could you answer to this objection? Using which arguments, which examples? *(Once your author mentioned an objection and arguments, ask if he/she can think of other objections; repeat the questions 15 and 16 until there are no more objections).*
17. Does your audience need additional information? What? Where?
18. What can you do to arise your reader's interest?
19. Could you summarize what you need to do to improve your text?

Identifiy the problems.

Find the rules to fix each of them.

Introduction:

Volunteerism is an interesting practice which is used in venture operations. It is well-known that volunteer work is very often associated with happiness, life satisfaction, self-esteem, sense of control over life, etc. This article is a case study of the phenomenon of volunteerism in France.

We will try to give, through a case study based on students' involvements with associations of their choice, keys for a better understanding of the activity and means to reconsider the role of management science in corporate where it is mainly present, compared to social activities where it isn’t so present.

Step by step in this article, volunteerism will be shown in its all forms and all different ways of application. We will see why we should seriously take volunteerism in consideration through the good effects volunteerism has on the individual's health.

Since it is a principal driving force in the running of the city the concept of volunteerism is exemplified in the village of Cun du Larzac. Significant studies show how this project has been driven with its inhabitants and “external help” which is the considerable number of volunteers who dedicate their time to contribute to the development of the township project.

Scriptoria

Page 31

AUTHORS
SAY NOTHING

1 FEEDBACK

- A (=author) reads aloud his/her texts.
- Then B gives a feedback based on following questions:
  - What is the "take home message" of the 3rd text (the message =one sentence with a conjugated verb) ?
  - What are the differences between the first and the third text?
  - What is the function of the eleveny in this particular case?
- Then C gives his/her feedback.
- Then B reads his/her texts, A gives a feedback, then C etc.

NOMINATE A
TIME KEEPER

2. EVALUATION

(brainstorm, first draft, eleveny, second text, discussion in the group, time boxing writing within a limited frame of time) :

- What have you observed concerning your way of writing?
- What was helpful? Why?
- What is the connection between this exercise and the topic of this workshop - writing a scientific paper?

NOMINATE A SPOKESPERSON TO PRESENT THE RESULTS OF THE EVALUATION

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INTERNETOGRAPHY

Organization

- Smartphone distractions: 5 ways to minimize them and get productive: www.techbuzzonline.com/minimize-smartphone-distractions
- Create one unique environment for writing and thinking where you can concentrate: www.ommwriter.com
- Stop procrastinating: www.stopprocrastinatingapp.com
- Relax your eyes: http://themech.net/eyesrelax

Writing

- Improve your style with W. Strunk's "The Elements of Style: http://www.bartleby.com/141/
- Academic phrasebank: http://www.phrasebank.manchester.ac.uk
- Basic punctuation rules: http://www.grammarbook.com/punctuation/semicolons.asp
- Writing readable prose: when planning a scientific manuscript, following a few simple rules has a large impact by Bredan, A. & Van Roy, F.*:* www.ncbi.nlm.nih.gov/pmc/articles/pmc1559667