

SWE

Scientific Writing in English

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course webpage: <http://webstaff.itn.liu.se/~chrsc91/teaching/s21/swe/>

Today and June 24:

Intro

- + Good writing
- + Cutting the clutter
- + How to make a story sticky
- + Punctuation

June 29:

Punctuation ctd.

- + Paragraphs, sentences
- + Common mistakes
- + Parts of paper

June 30 (or later that week?): Homework discussion

Written exam

Part 2: Discuss timing with me!

Text:

- The wording of anything written or printed; the structure formed by the words in their order; the very words, phrases, and sentences as written. (Oxford English Dictionary)
- Narrative text (story-telling) and expository text (no room for fiction and descriptive literary tools)

Scientific text?

- Expository text
- Written specifically to explain or explore a (scientific) idea
- Ensure that the information is credible and real
- Follows the problem-solution structure
- More straightforward than other texts
- Provides facts in a way that is educational and purposeful
- Goal: make the essay as clear as possible and edit it in order to remove all information that is not strictly necessary

Working with scientific texts:

- ❖ Read — understand
 - ❖ Listen — understand
 - ❖ Write — make it easy for others to understand, and enjoy!
 - ❖ Present
- It is the author's job to make the reader's job easy.**

(Joshua Schimel, Writing Science, How to write papers that get cited and proposals that get funded, Oxford University Press, 2012)

- ❖ Scientific texts
- ❖ Technical writing
- ❖ Research
- ❖ Teaching
- ❖ ...

Literature:

- ❖ William Strunk Jr. and E.B. White, *The Elements of Style*.
- ❖ Joshua Schimel, *Writing Science: How to write papers that get cited and proposals that get funded*, Oxford University Press, 2012.
- ❖ William Zinsser, *On Writing Well: The Classic Guide to Writing Nonfiction*, HarperCollins, 1998.
- ❖ Lyn Dupre, *BUGS in Writing: A Guide to Debugging Your Prose*, Addison-Wesley Professional, 1998.
- ❖ Tim Skern, *Writing Scientific English*, Facultas wuv, 2009.
- ❖ R.L. Trask, *The Penguin Guide to Punctuation*, Penguin Books, 1997.
- ❖ Chip Heath & Dan Heath, *Made to Stick: Why Some Ideas Survive and Others Die*, Random House New York, 2010

- ❖ Kristin Sainani, Stanford online course “Writing in the Sciences”

Good Writing

What makes good writing??*

- Communicate an idea clearly and effectively
- Write elegantly and stylishly

takes time, revision
(and a good editor)

We need:

- Something to say
- Clear thinking

*from Kristin Sainani, Stanford online course "Writing in the Sciences"

What makes a good writer??*

- ❖ Talent?
- ❖ Years of English classes?
- ❖ Inspiration?
- ❖ ...?
- ❖ Having something to say.
- ❖ Logical thinking.
- ❖ A few simple, learnable rules of style.

*from Kristin Sainani, Stanford online course “Writing in the Sciences”

How do we get there?

Homework 0:
read something you
would not have read
otherwise.

- Read!! and pay attention.
- Talk about your research/work before you try to write about it.
- Stop waiting for inspiration.
- Start writing. Write a first draft.
- Revise.
- Learn how to cut.
- Find a good editor/peer editing group.

Effective storytelling:

1. Content: what makes a story engage and stay with us?
2. Structure: how do you put together that content and make it easy for us to get?
3. Language: how do you write the story in the most compelling way possible?

from Joshua Schimel, *Writing Science: How to write papers that get cited and proposals that get funded*

Writing Principles

Writing Principles

- ❖ Active voice is preferred.
- ➔ Do not switch to passive voice without a reason.
- ❖ Use precise words.
 - Avoid jargon, redundancies, and vague words.
- ❖ Use strong verbs, do not turn them into clunky nouns.
- ❖ Cut unnecessary words and phrases.
- ❖ Use paragraphs to structure your work.
- ❖ Avoid repetition.

Active Voice

Use the active voice

Passive: you can say only that an event or action took place, without necessarily admitting what or who the causal agent was.*

- More than 300 aircraft were ordered.

Active voice:

- + American Airlines ordered more than 300 aircraft.

Passive voice is boring even if you name the agent:

More than 300 aircraft were ordered by American Airlines.

Of course, you can still write some sentences in the passive voice.

“Passive voice emphasises the receiver of an activity (the object), rather than the actor (the subject), and there may be occasions when that emphasis is important.”

*from Lyn Dupré: “BUGS in Writing: A Guide to Debugging Your Prose”, Addison-Wesley

Use the active voice

- ❖ “You should not mix in one sentence parts that contain the verb form *to X* (to laugh, to cry, to write, and so on), called *infinitives*, and parts in passive voice.”

To get advice, an expert must be consulted.

creates the expectation of an agent

To get advice, you must consult an expert.

Correct, but ugly, in passive mode:

For advice to be gotten, an expert must be consulted.

*from Lyn Dupré: “BUGS in Writing: A Guide to Debugging Your Prose”, Addison-Wesley

Cut the Clutter

Cutting the clutter

From William Zinsser, *On Writing Well, The Classic Guide to Writing Nonfiction*:

Clutter is the disease of American writing. We are a society strangling in unnecessary words, circular constructions, pompous frills and meaningless jargon. Who can understand the clotted language of everyday American commerce: the memo, the corporation report, the business letter, the notice from the bank explaining its latest "simplified" statement? What member of an insurance or medical plan can decipher the brochure explaining his costs and benefits? What father or mother can put together a child's toy from the instructions on the box? Our national tendency is to inflate and thereby sound important. The airline pilot who announces that he is presently anticipating experiencing considerable precipitation wouldn't think of saying it may rain. The sentence is too simple—there must be something wrong with it.

But the secret of good writing is to strip every sentence to its cleanest components. Every word that serves no function, every long word that could be a short word, every adverb that carries the same meaning that's already in the verb, every passive construction that leaves the reader unsure of who is doing what—these are the thousand and one adulterants that weaken the strength of a sentence. And they usually occur in proportion to education and rank.

Government memo, 1942

Such preparations shall be made as will completely obscure all Federal buildings and non-Federal buildings occupied by the Federal government during an air raid for any period of time from visibility by reason of internal or external illumination.

"Tell them," Roosevelt said, "that in buildings where they have to keep the work going to put something across the windows."

from William Zinsser, *On Writing Well, The Classic Guide to Writing Nonfiction*

Cutting the clutter

“I have only made this letter rather long because I have not had time to make it shorter.” —Blaise Pascal, 1656

Cutting the clutter

Example 1:

“This paper provides a review of the basic tenets of cancer biology study design, using as examples studies that illustrate the methodologic challenges or that demonstrate successful solutions to the difficulties inherent in biological research.”

In this paper we review cancer biology study design, using examples that illustrate specific challenges and solutions.

from Kristin Sainani, Stanford online course “Writing in the Sciences”

Example 2:

This paper provides a review of 3D aircraft object recognition methods based on 2D images.

Cutting the clutter

Example 3:

“As it is well known, increased athletic activity has been related to a profile of lower cardiovascular risk, lower blood pressure levels, and improved muscular and cardio-respiratory performance.”

from Kristin Sainani, Stanford online course “Writing in the Sciences”

Cutting the clutter

You wrote the text, most likely you will find it difficult to delete words that took a long time to come up with in the first place.

Try the sentence without the extra words.

Decide which is better: gives the same idea with more power.

Example 4:

Yet, only very recently, cases are reported where companies in the bus, railway and airline industry are using advanced OR techniques for solving crew planning problems (almost) optimally.

Simplify!

a considerable amount of	
absolutely essential	
a majority of	
a number of	
an order of magnitude more	
are of the same opinion	
completely full	
considering the fact that	
decline	
due to the fact that	
each and every	
end result	
exact same, exactly the same	
exhibit a tendency	
having gotten	
help and	
higher in comparison to	
in close proximity to	
in spite of the fact that	

“From research to manuscript”, M. Katz and from Kristin Sainani, Stanford online course “Writing in the Sciences”

Simplify!

in the final analysis	
including but not limited to	
last but not least	
methodology	
multiple	
nearly unique	
orientate	
prove conclusively	
referred to as	
regarded as being	
seeing that	
the question of whether	
very unique	
the reason that/why is because	

“From research to manuscript”, M. Katz

Example 5: Dead weight words and phrases

It is well known (eg. [5, 25]) that both the aircraft routing and crew pairing problems are individually NP-hard.

Example 6: Long words or phrases that could be short

For this reason, the paper restricts itself to hub-and-spoke systems.

Example 7: Repetitive words or clauses

A robust cell-mediated immune response is necessary, and deficiency in this response predisposes an individual towards active TB.

Put statements in positive form

She was not often right.

from Kristin Sainani, Stanford online course “Writing in the Sciences”

Put statements in positive form

She did not want to arrive late.

He did not believe his homework was incomplete.

Put statements in positive form

not honest	
not harmful	
not important	
does not have	
did not remember	
did not pay attention to	
did not succeed	

from Kristin Sainani, Stanford online course "Writing in the Sciences"

Cutting the clutter

Eliminate there are/there is

On the topic of generating the schedule itself using mathematical models, there are a few articles that have been published.

Cutting the clutter

Omit needless prepositions:
“that” and “on” are often superfluous

On the topic of generating the schedule itself using mathematical models, there are a few articles that have been published.

Cutting the clutter

Eliminate there are/there is

If at a turn node, there are more arriving flights than departing flights, it means that there is a plane that sits on the ground for a while and then turns to a departing plane at one of the turn nodes below it.

Cutting the clutter

We also assume that for every equipment type there is a single station where balance-checks for that equipment type can be done and that this station is also a regular maintenance station.

There is a one-to-one correspondence between Euler tours in the original graph and Hamilton circuits in the line graph.

Anti-inflammatory drugs may be protective for the occurrence of Alzheimer's Disease.

Injuries to the brain and spinal cord have long been known to be among the most devastating and expensive of all injuries to treat medically.

Cutting the clutter

We will refer to this model as a flight (leg) based spill model.

Cutting the clutter

The airline has to decide the equipment type to use on each leg so that it can fly the schedule, while matching capacity to demand as much as possible and minimizing the total operating cost.

Cutting the clutter

An IQ test measures an individual's abilities to perform functions that usually fall in the domains of verbal communication, reasoning, and performance on tasks that represent motor and spatial capabilities.

from Kristin Sainani, Stanford online course "Writing in the Sciences"

Express co-ordinate ideas in similar form.

Express co-ordinate ideas in similar form

“This principle, that of parallel construction, requires that expressions of similar content and function should be outwardly similar. The likeness of form enables the reader to recognize more readily the likeness of content and function. [...]

The unskilful writer often violates this principle, from a mistaken belief that he should constantly vary the form of his expressions.”

[Strunk, W., Jr. and White, E.B.: The Elements of Style]

Express co-ordinate ideas in similar form

Formerly, science was taught by the textbook method, while now the laboratory method is employed.

Formerly, science was taught by the textbook method; now it is taught by the laboratory method.

An article or a preposition applying to all the members of a series must either be used only before the first term or else be repeated before each term.

The French, the Italians, Spanish, and Portuguese

The French, the Italians, the Spanish, and the Portuguese

In spring, summer, or in winter

In spring, summer, or winter (In spring, in summer, or in winter)

from Strunk, W., Jr. and White, E.B.: The Elements of Style

Express co-ordinate ideas in similar form

Correlative expressions (both, and; not, but; not only, but also; either, or; first, second, third; and the like) should be followed by the same grammatical construction.

It was both a long ceremony and very tedious.

A time not for words, but action.

from Strunk, W., Jr. and White, E.B.: The Elements of Style

Express co-ordinate ideas in similar form

Not Parallel:

If you want to be a good pilot, you must study hard, permanently plan ahead, and you should be a good team player.

from Kristin Sainani, Stanford online course "Writing in the Sciences"

Write with verbs

Write with verbs

- ❖ Use strong verbs
- ❖ Avoid turning verbs into nouns
- ❖ Don't bury the main verb

from Kristin Sainani, Stanford online course "Writing in the Sciences"

Use strong verbs

Compare:

“Loud music came from speakers embedded in the walls, and the entire arena moved as the hungry crowd got to its feet.”

With:

“Loud music **exploded** from speakers embedded in the walls, and the entire arena **shook** as the hungry crowd **leaped** to its feet.”*

*from the novel: Bringing Down the House, Ben Mezrich
from Kristin Sainani, Stanford online course “Writing in the Sciences”

Use strong verbs

Pick the right verb!

The WHO reports that approximately two-thirds of the world's diabetics are found in developing countries, and estimates that the number of diabetics in these countries will double in the next 25 year.

The WHO estimates that two-thirds of the world's diabetics are found in developing countries, and projects that the number of diabetics in these countries will double in the next 25 years.

from Kristin Sainani, Stanford online course "Writing in the Sciences"

Use strong verbs

Pick the right verb!

The WHO **reports** that **approximately** two-thirds of the world's diabetics are found in developing countries, and estimates that the number of diabetics in these countries will double in the next 25 year.

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from Kristin Sainani, Stanford online course "Writing in the Sciences"

Use strong verbs

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from Kristin Sainani, Stanford online course "Writing in the Sciences"

Use strong verbs

- ❖ Use “to be” verbs purposefully and sparingly.
- ❖ Don't kill verbs by turning them into nouns.
 - During DNA damage, recognition of H3K4me3 by ING2 results in recruitment of Sin3/HDAC and repression of cell proliferation genes.
 - During DNA damage, H3K4me3 recruits ING2 and Sin3/HDAC, which together repress cell proliferation genes.
 - During DNA damage, ING2 recognises H3K4me3, which together recruit Sin3 and repress cell proliferation genes.
- ❖ Don't bury the main verb.
 - **In one study** comparing the effect of aircraft noise to the effect of alcohol on cognitive performance, it **was found** that simulated aircraft noise at 65 dB(A) had the same effect on individuals' ability to recall auditory information as being intoxicated with a Blood Alcohol Concentration (BAC) level of at 0.10.
 - One study found that simulated aircraft noise at 65 dB(A) had the same effect on individuals' ability to recall auditory information as being intoxicated with a Blood Alcohol Concentration (BAC) level of 0.10.

from Kristin Sainani, Stanford online course “Writing in the Sciences”

Use strong verbs

Really long subject!

Negatives

Passive verb

Buried predicate

“Hedge” word

The fear expressed by some teachers that students would not learn statistics well if they were permitted to use canned computer programs has not been realized in our experience. A careful monitoring of achievement levels before and after the introduction of computers in the teaching of our course revealed no appreciable change in students' performances.

from Kristin Sainani, Stanford online course “Writing in the Sciences”

Use strong verbs

Important studies to examine the descriptive epidemiology of autism, including the prevalence and changes in the characteristics of the population over time, have begun.

from Kristin Sainani, Stanford online course "Writing in the Sciences"

Writing: Reasons, Types & Audience

Writing: Reasons, Types & Audience

Determine length, structure, and the (language) level of your writing

Why?	What?	For whom?
disseminate ideas	(conference) paper	peer (same field)
proof we understood a topic	seminar paper, thesis, survey	professors (and peers)
educate somebody	newspaper article, book	laymen
clarify own ideas	(research) notes	ourselves, coauthors
ask for support	grant/fellowship proposal	peers, grant agencies
“make money”	recommendation letters	employers

Writing: Reasons, Types & Audience

- ❖ Assess the background of your readers.
- ❖ Judge your reader's level of expertise.
- ❖ Determine the degree to which formality is required.
- ❖ (Know enough about the demographics of your audience that you can avoid inadvertently insulting or infuriating some of your readers or listeners.)

from Lyn Dupré: "BUGS in Writing: A Guide to Debugging Your Prose", Addison-Wesley

How to make a story sticky?

How to make a story sticky?

Why do some ideas stay with you while others are eminently forgettable?

SUCCES*

S: Simple

U: Unexpected

C: Concrete

C: Credible

E: Emotional

S: Stories

*from Chip and Dan Heath, Made to Stick (Random House, 2007)

How to make a story sticky?

Simple:

Simple message that captures the essence of an issue.

Prioritise.

NOT simplistic: a simple message does not trivialise the issue.

Even a great idea loses its meaning if it is bogged down by details.

“It’s the economy, stupid.”

Schemas:

Express your thoughts in a language that builds off ideas that your readers already know.

How people learn: start with existing schemas and then attach new information.

It’s hard to learn if you cannot fit it into an existing schema.

Establish schemas and then expand and modify them.

If you build off established schemas it makes ideas feel simple.

from Chip and Dan Heath, *Made to Stick* (Random House, 2007)
and from Joshua Schimel, *Writing Science*; how to write papers that get cited and proposals that get funded

How to make a story sticky?

Unexpected:

Use surprise—generate *interest* and *curiosity*.

The surprise shouldn't be too outlandish!

Best way to keep the reader's attention is to open gaps of knowledge.

And then fill those gaps.

from Chip and Dan Heath, *Made to Stick* (Random House, 2007)

How to make a story sticky?

Concrete:

“If those who have studied the art of writing are in accord on any one point, it is this: the surest way to arouse and hold the reader’s attention is by being specific, definite, and concrete.” [Strunk, W., Jr. and White, E.B.: The Elements of Style]

Abstract ideas are difficult to remember and understand, and they leave room for interpretation.

Explain your ideas in terms of human actions, in terms of sensory information.

“A bird in hand is worth two in the bush.”

Proverb: abstract truth, concrete language.

from Chip and Dan Heath, Made to Stick (Random House, 2007)

How to make a story sticky?

Credible:

Honesty and trustworthiness of a source.

A few people enjoy authority on certain topics, but most of us do not.

We have to establish the credibility of our ideas:

- Ground them in previous work, cite the sources
- Describe the methods how you obtained your data, present the data clearly
- Show that your conclusions grow from the credible data

Not just presentation of statistics:

- Can be helpful to illustrate a relationship between two concepts
- Rarely meaningful in themselves
- Remember that it's the relationships, not the numbers, that are important

from Chip and Dan Heath, *Made to Stick* (Random House, 2007)

How to make a story sticky?

Emotional:

“How do we get people to care about our ideas?”

Research shows that people are more likely to make a charitable gift to a single needy individual than to an entire impoverished region.

We are wired to feel things for people, not for abstractions.

from Chip and Dan Heath, *Made to Stick* (Random House, 2007)

How to make a story sticky?

The Truth About Movie Popcorn

Art Silverman stared at a bag of movie popcorn. It looked out of place sitting on his desk. His office had long since filled up with fake-butter fumes. Silverman knew, because of his organization's research, that the popcorn on his desk was unhealthy. Shockingly unhealthy, in fact. His job was to figure out a way to communicate this message to the unsuspecting moviegoers of America.

Silverman worked for the Center for Science in the Public Interest (CSPI), a nonprofit group that educates the public about nutrition. The CSPI sent bags of movie popcorn from a dozen theaters in

CSPI called a press conference on September 27, 1992. Here's the message it presented: "A medium-sized 'butter' popcorn at a typical neighborhood movie theater contains more artery-clogging fat than a bacon-and-eggs breakfast, a Big Mac and fries for lunch, and a steak dinner with all the trimmings—combined!"

showed, coconut oil was also brimming with saturated fat.

The single serving of popcorn on Silverman's desk—a snack someone might scarf down between meals—had nearly two days' worth of saturated fat. And those 37 grams of saturated fat were packed into a *medium*-sized serving of popcorn. No doubt a decent-sized bucket could have cleared triple digits.

The challenge, Silverman realized, was that few people know what "37 grams of saturated fat" means. Most of us don't memorize the USDA's daily nutrition recommendations. Is 37 grams good or bad? And even if we have an intuition that it's bad, we'd wonder if it was "bad bad" (like cigarettes) or "normal bad" (like a cookie or a milk shake).

from Chip and Dan Heath, *Made to Stick* (Random House, 2007)

How to make a story sticky?

Emotional:

Slightly awkward for scientists.

Good science = objective about your work

But, fundamental: curiosity.

Engage our curiosity: ask a novel question.

E is closely aligned with U—unexpected things create curiosity.

Shift from “what’s my answer?” to “what’s my question?”

Engage and then satisfy our curiosity.

from Joshua Schimel, Writing Science; how to write papers that get cited and proposals that get funded

How to make a story sticky?

Stories:

See your work as a story and present it that way.

Stories are modular: a single large story consists of a collection of small stories.

Think about the internal structure of your paper and how to integrate story modules.

When a leader makes an argument in support of a new idea, these arguments encourage evaluation, judgment, debate, and criticism. When a new idea is presented as part of a story, however, the audience is engaged in the idea and welcomed to participate in exploring its implementation.*

from Joshua Schimel, *Writing Science*; how to write papers that get cited and proposals that get funded

* from Kylie Goodell, review of Chip and Dan Heath, *Made to Stick* (Random House, 2007)

Story Structure

Story structure

Opening (O).

Whom is the story about? Who are the characters? Where does it take place? What do you need to understand about the situation to follow the story? What is the larger problem you are addressing?

Challenge (C).

What do your characters need to accomplish? What specific question do you propose to answer?

Action (A).

What happens to address the challenge? In a paper, this describes the work you did.

Resolution (R).

How have the characters and their world changed as a result of the action? What did you learn from your work?

OCAR

from Joshua Schimel, Writing Science; how to write papers that get cited and proposals that get funded

OCAR

There exist other story structures that do not follow this order, here, we concentrate on just that.

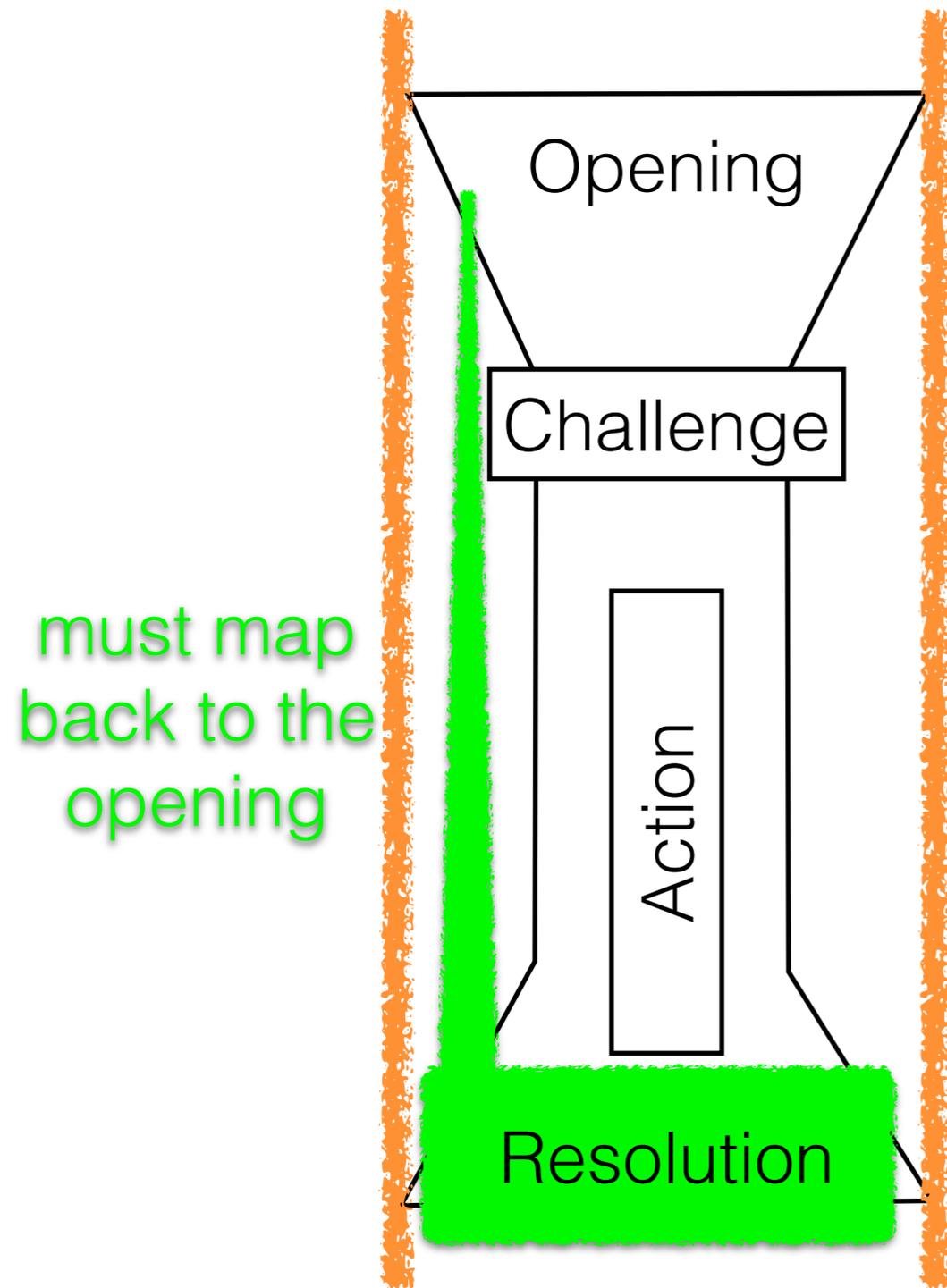
OCAR needs a “patient” reader.

Paper’s challenge at the end of the introduction.

Paper’s conclusion at the end.

Other structures, see for example Joshua Schimel, *Writing Science*; how to write papers that get cited and proposals that get funded.

Story structure



Introduction: introduce characters and question. Give Background. Narrow down to your specific question.

Materials, Methods, Results: What you did and what you found

Discussion: What it means

Conclusion: Take home message

from Joshua Schimel, Writing Science; how to write papers that get cited and proposals that get funded

Story structure

Opening (O).

Identify the problem that drives the research/the report, introduce the characters, and target an audience.

Identify a problem of broad interest and give the reader a sense of where the story is going.

Do not use an opening that explains a widely held schema.

Ok to explain things to yourself in a first draft, but when you revise, figure out where the real story starts.

You must know the intended audience to tailor the writing to them.

Schimel et al. submitted proposals to two agencies:

- National Science Foundation
- Agency with a management focus (California Environmental Protection Agency)
- The influence of fog on ecological and hydrological processes in coastal zones has long intrigued scientists.
- California's coastal forests are among its most distinctive and treasured national resources.

from Joshua Schimel, *Writing Science*; how to write papers that get cited and proposals that get funded

The Funnel: Connecting the O and C

Opening: Identifies a large problem

Challenge: Defines a specific question

Main body of the introduction must connect these elements.

Build the argument that to make progress on the large problem, you must answer the specific question.

Frame the knowledge gap: U and E

from Joshua Schimel, Writing Science; how to write papers that get cited and proposals that get funded

Challenge (C).

Describe the specific knowledge you hope to gain.

Start with the question that drove your work!

“to learn X, we did Y.”

Not just “we did Y”, and leave out “to learn X...”

from Joshua Schimel, Writing Science; how to write papers that get cited and proposals that get funded

Action (A).

“You are not just presenting your results, you are telling a story.”

In a paper: Materials, Methods, Results, most of the Discussion.

Embed the action within the larger story.

What is the point of all that work?

What do these results mean?

Do they answer your question?

from Joshua Schimel, Writing Science; how to write papers that get cited and proposals that get funded

Story structure

Resolution (R).

People remember the last thing you say.

“Take-home message”

Show how your understanding has advanced.

Good resolution: reiterates the action, answers the questions raised in the challenge, and demonstrates how those answers contribute to the larger problem.

Do not put anything but that new insight in your resolution.

If the most important thing you discover is that there is a new question, make the question concrete, and be clear how it grew from your work—you didn't fail to fill one knowledge gap but identified a new one.

Not good:

- Weak: summarise the results, tell your reader that they are important, but do not clarify how. Not an answer to the questions raised.
- Distracting: include ideas that should be in the introduction or in a textbook.
- Undermine your conclusions: “more research is needed to clarify our findings”.
➔ Focus on what you *haven't* accomplished.

from Joshua Schimel, Writing Science; how to write papers that get cited and proposals that get funded

Resolution (R).

To conclude, 3-methyl-ambrosia offers a new approach for thyroid carcinoma therapy. Our data provide evidence on safety and in vivo activity of this compound in patients with this condition, although the proof for clinical benefit remains to be established in future clinical trials.

While further clinical trials will be necessary to establish the full benefits of 3-methyl-ambrosia as a therapeutic agent, our data provide evidence that it is safe and shows in vivo activity against thyroid tumors. 3-Methyl-ambrosia therefore may offer a new approach for treating patients with thyroid carcinoma.

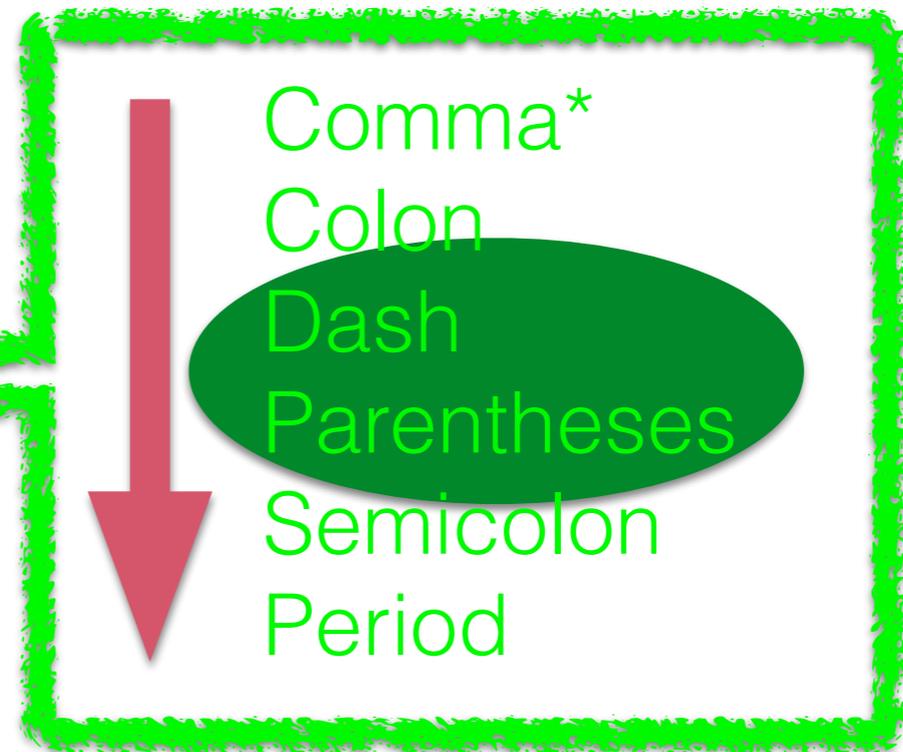
from Joshua Schimel, Writing Science; how to write papers that get cited and proposals that get funded

L4

Punctuation

less formal

- Use punctuation
- ❖ Correctly
 - ❖ To vary sentence structure



Increasing power to separate

*from Kristin Sainani, Stanford online course "Writing in the Sciences"

Punctuation

Why correctly?

What should this mean?

We had one problem only Janet knew we faced bankruptcy

We had one problem: only Janet knew we faced bankruptcy.

We had one problem only: Janet knew we faced bankruptcy.

We had one problem only, Janet knew: we faced bankruptcy.

We had one problem only Janet knew we faced: bankruptcy.

Bad punctuation:

We had one problem only, Janet knew we faced bankruptcy.

from R.L. Track, Penguin Guide to Punctuation

Punctuation

FULL STOP/PERIOD:

- ❖ Marks the end of a sentence expressing a statement.

Something wrong?

Norway has applied for EC membership, Sweden is expected to do the same.

Two complete sentences, but the first one has been punctuated only with a comma.

Norway has applied for EC membership. Sweden is expected to do the same.

Each statement has its own full stop.

Norway has applied for EC membership, and Sweden is expected to do the same.

We used the connecting word *and* to combine the two statements into a longer statement.

from R.L. Track, Penguin Guide to Punctuation

COMMA:

- ❖ When making lists.
- ❖ Bracketing information that is not central to the sentence.
- ❖ After linking words like however, furthermore, additionally, ... at the start of a sentence, or after a phrase that qualifies or introduces the main part of the sentence.
 - In this section, we survey the airline fleet assignment problem.
- ❖ NO comma goes before “that” in sentences like:
 - ..., and we demonstrate that schedule reliability is highest for direct routing.

COMMA:

❖ *Listing comma:*

- As a kind of substitute for the word *and*, or sometimes for *or*.
- Used in a list when three or more words, phrases or even complete sentences are joined by the word *and* or *or*.
- In a series of three or more terms with a single conjunction, use a comma after each term except the last. (Oxford comma, serial comma.)
 - ➔ ...red, white, and blue.
 - ➔ He opened the letter, read it, and made a note of its contents.

from R.L. Track, Penguin Guide to Punctuation and Strunk, W., Jr. and White, E.B.: The Elements of Style

Punctuation

Oxford comma



<https://www.youtube.com/watch?v=0jS3VyRYYCQ>

COMMA:

❖ *Joining comma:*

- Joins two complete sentences into a single sentence, and it must be followed by a suitable connecting word: and, or, but, while and yet.
- ➔ Norway has applied for EC membership, and Sweden is expected to do the same.
- ➔ Many airlines use a combination of hub-and-spokes and direct routings, and Jeng has shown that a mixed system is generally more efficient.

Punctuation

COMMA:

❖ *Gapping comma:*

- To show that one or more words have been left out when the missing words would simply repeat the words already used earlier in the sentence.
- ➔ Some Norwegians wanted to base their national language on the speech of the capital city; others, on the speech of the rural countryside.

❖ *Bracketing comma:*

- A **pair** of bracketing commas is used to mark off a weak interruption of the sentence—that is, an interruption which does not disturb the smooth flow of the sentence.
- ➔ These findings, we would suggest, cast doubt upon his hypothesis.
- ➔ An airline schedule, for our purposes, is a list of flight legs that the airline plans to fly.

from R.L. Track, Penguin Guide to Punctuation

Punctuation

❖ Do not join **independent clauses** by a comma.

If you join two or more clauses, that are

- Grammatically complete and
- Not joined by a conjunction

➔ Use a **semicolon**

⦿ It is nearly half past five; we cannot reach town before dark.

We could just write it as two sentences.

⦿ It is nearly half past five. We cannot reach town before dark.

If we insert a conjunction, the proper mark is a comma.

⦿ It is nearly half past five, and we cannot reach town before dark.

If the second clause is preceded by an adverb (accordingly, besides, so, then, therefore, or thus), and not by a conjunction, the semicolon is still required.

[Strunk, W., Jr. and White, E.B.: The Elements of Style]

Punctuation

COLON:

- ❖ A colon signifies that what follows it expands on or explains what precedes it.**
- ❖ To introduce a list, quote, explanation, conclusion, or amplification.
 - ⦿ Participants of this course are: , , ...
 - ⦿ In the following, passenger travel time components are grouped into three categories: In-flight time, ground time [...], planned delay time included in the schedule as a buffer against random delays.
 - ⦿ Washington has a simple solution to most governments it doesn't like: isolate them, slap sanctions on them, and wait for their downfall.*
- “The colon has more effect than the comma, less power to separate than the semicolon, and more formality than the dash.” [Strunk, W., Jr. and White, E.B.: The Elements of Style]
- ❖ To divide the title of a manuscript into two halves.
 - ⦿ Selecting Aircraft Routes for Long-Haul Operations: A Formulation and Solution Method
 - ⦿ The Fleet Assignment Problem: Solving a Large-Scale Integer Program
 - ⦿ Airline Scheduling: An Overview

*from Kristin Sainani, Stanford online course “Writing in the Sciences”

**from Lyn Dupré: “BUGS in Writing: A Guide to Debugging Your Prose”, Addison-Wesley

COLON misuse*:

- In one project we have a nutritionist, a psychologist, statisticians, a computer specialist, and dietitians: a whole range of specialties.
 - ➔ In one project we have a whole range of specialties: a nutritionist, a psychologist, statisticians, a computer specialist, and dietitians.

*from Kristin Sainani, Stanford online course “Writing in the Sciences”

SEMICOLON:

- ❖ Connects two independent, complete clauses into a single sentence when all of the following conditions are met:
 - The two sentences are felt to be too closely related to be separated by a full stop.
 - There is no connecting word which would require a comma, such as and or but.
 - The special conditions requiring a colon are absent.
- ➔ It was the best of times; it was the worst of times.*
- ❖ Separates items in lists that contain internal punctuation.
 - They dramatically reduced the number of series in production: in 1935, fourteen series were circulating; in 1940, nine; by 1980, when the syndicate was in its final years, only four. **

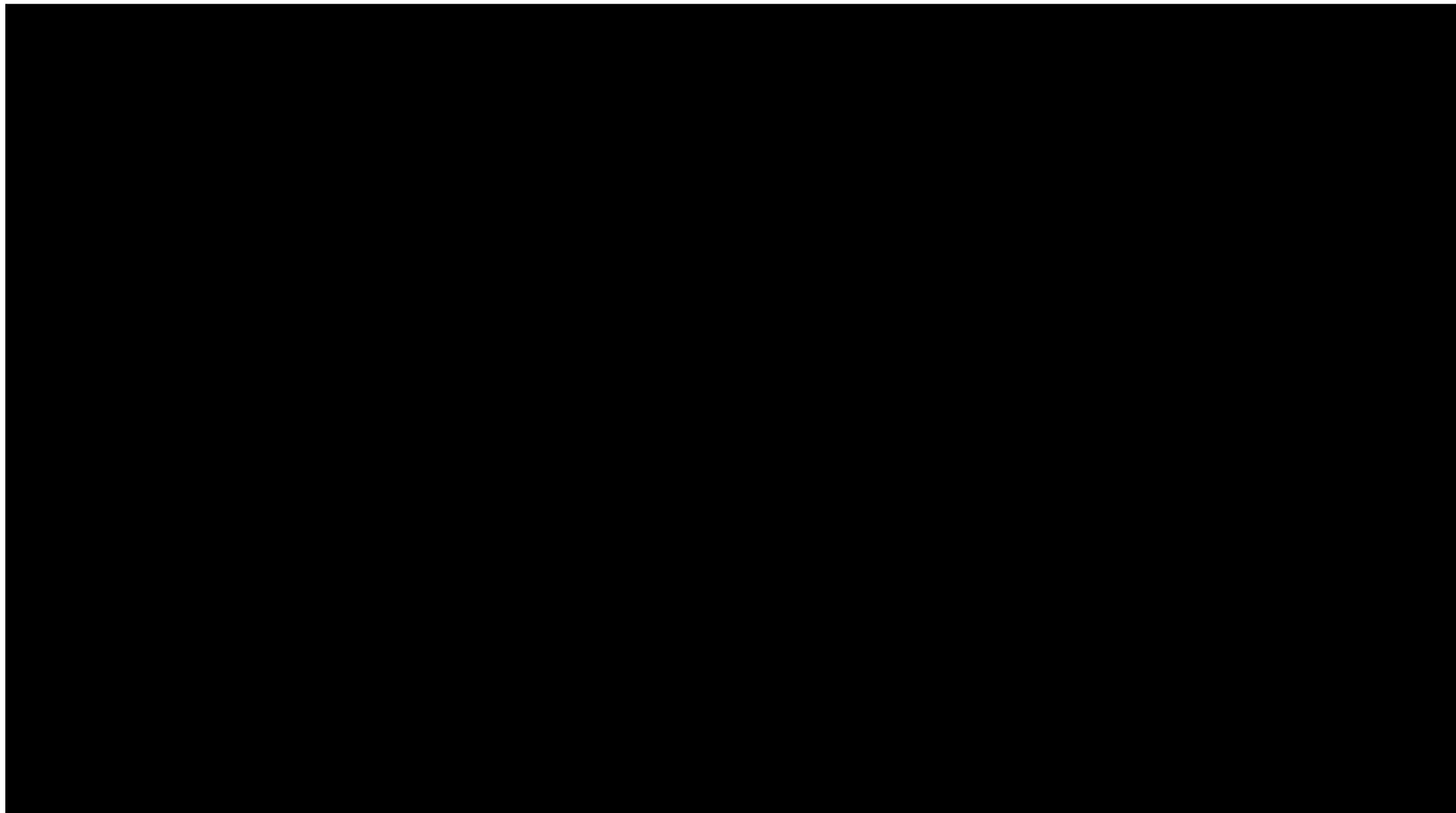
from R.L. Track, Penguin Guide to Punctuation

*Charles Dickens, A Tale of Two Cities

**from Kristin Sainani, Stanford online course "Writing in the Sciences"

Punctuation

SEMICOLON:



<https://www.youtube.com/watch?v=-OoNjz6s4jg>

Punctuation

A semicolon must be preceded by a complete sentence and followed by a complete sentence!!

SEMICOLON:

- ❖ I don't like him; not at all.
- ❖ In 1991 the music world was shaken by a tragic event; the death of Freddy Mercury.

Correct?

- ❖ I don't like him, not at all. (bracketing comma)
- ❖ In 1991 the music world was shaken by a tragic event: the death of Freddy Mercury.

from R.L. Track, Penguin Guide to Punctuation

PARENTHESES:

- ❖ Use parentheses to insert text (an afterthought or explanation) into a sentence that is grammatically complete without it.
 - ⦿ Large simulation models are required to determine to what extent some disturbance of the schedule (e.g., through inclement weather, or through airspace congestion) propagates throughout the system.
 - ➔ If you remove the text in parentheses, the rest of the sentence should not change.
 - ➔ Allow reader to skip over the material.

DASH:

- ❖ To add emphasis.
 - ❖ To insert an abrupt definition of description almost anywhere in the sentence.
 - ❖ To set off a short summary after a complete main clause.
 - ❖ Do not overuse it!
-
- “A dash is a mark of separation stronger than a comma, less formal than a colon, and more relaxed than parentheses.” [Strunk, W., Jr. and White, E.B.: The Elements of Style]
 - “Use a dash only when a more common mark of punctuation seems inadequate.” [Strunk, W., Jr. and White, E.B.: The Elements of Style]

DASH:

- At the bottom of Pandora's box lay the final gift—hope.
- Through various forms of discount fares, it is possible to change the time preference and—to a lesser extent—even the destination of a sizeable part of the passenger demand.

How would the feel of the sentences change with parentheses or commas?

With commas instead:

- Through various forms of discount fares, it is possible to change the time preference and, to a lesser extent, even the destination of a sizeable part of the passenger demand.

clunky and long...

With parentheses instead:

- At the bottom of Pandora's box lay the final gift (hope).
- Through various forms of discount fares, it is possible to change the time preference and (to a lesser extent) even the destination of a sizeable part of the passenger demand.

buries the info

Punctuation

Researchers who study shipworms say these mislabeled animals—they're clams, not worms—are actually a scientific treasure.

emphasis and added information

Researchers who study shipworms say these mislabeled animals, they're clams, not worms, are actually a scientific treasure.

not strong enough to set off a clause

Researchers who study shipworms say these mislabeled animals (they're clams, not worms) are actually a scientific treasure.

buries the information

from Kristin Sainani, Stanford online course "Writing in the Sciences"

Punctuation

The store—which is windowless and has clusters of unsmiling security guards standing at its entrances, as if it were the embassy of a particularly beleaguered nation—caters to rich Brazilians, members of the ten per cent of the population who command nearly half the national income, and wear Chanel, Valentino, or Dolce & Gabbana.

long description

The store, which is windowless and has clusters of unsmiling security guards standing at its entrances, as if it were the embassy of a particularly beleaguered nation, caters to rich Brazilians, members of the ten per cent of the population who command nearly half the national income, and wear Chanel, Valentino, or Dolce & Gabbana.

too long-winded without an abrupt pause

The store (which is windowless and has clusters of unsmiling security guards standing at its entrances, as if it were the embassy of a particularly beleaguered natio) caters to rich Brazilians, members of the ten per cent of the population who command nearly half the national income, and wear Chanel, Valentino, or Dolce & Gabbana.

takes away from the description

from Kristin Sainani, Stanford online course “Writing in the Sciences”

EXCLAMATION MARK:

- ❖ Used at the end of a sentence or short phrase which expresses very strong feeling.
- ❖ Do not use. (Exception: math notation $n!$)

QUESTION MARK:

- ❖ At the end of a sentence which is a direct question.
- ❖ Used in introduction and discussion parts of a paper.

Punctuation

Three kinds of dash:

- hyphen
- en dash
- em dash

HYPHEN:

- ❖ Tie together two words that modify a third, when the third follows the first two.
Compound adjectives.
- ❖ You should not place a hyphen between two words:
 - That together constitute a noun
 - That together describe an activity
- ⦿BAD: Decision-making under uncertainty can be stressful.
- ⦿But: BAD: Decision making paradigms are scarce.
- ⦿GOOD: We have not used pre-processing strategies.

from Lyn Dupré: “BUGS in Writing: A Guide to Debugging Your Prose”, Addison-Wesley

Punctuation

Three kinds of dash:

- hyphen
- en dash
- em dash

EN DASH:

- ❖ Use an en dash when you use a dash to indicate a range.
- ❖ Use an en dash to indicate an equal-weighted pair that is currently serving an adjective.
 - GOOD: If you travel the San Francisco–New York route, you can use a red-eye flight.

from Lyn Dupré: “BUGS in Writing: A Guide to Debugging Your Prose”, Addison-Wesley

Punctuation

Three kinds of dash:

<https://www.youtube.com/watch?v=NnAaywvd1uk>

Punctuation

APOSTROPHE:

❖ **Contractions.** Shortened forms of words from which one or more letters have been omitted: it's, we'll, they've, can't, o'clock (of the clock).

❖ **Unusual Plurals.** As a general rule, we never use an apostrophe in writing plural forms.

In the rare case in which you need to pluralise a letter of the alphabet or some other unusual form which would become unrecognisable with a plural ending stuck to it.

➡ Mind your p's and q's.

➡ How many s's are there in Mississippi?

❖ **Possesives.** The basic rule is: a possessive form is spelled with 's at the end.

➡ my brother's house

The rule applies in most cases even with a name ending in s:

➡ Thomas's job

Three types of exception:

1. A plural noun which already ends in s takes only a following apostrophe: the girls' excitement.

2. A name ending in s takes only an apostrophe if the possessive form is not pronounced with an extra s: Socrates' philosophy, Ulysses' companions.

3. Pronouns: The cow lowered its head.

from R.L. Track, Penguin Guide to Punctuation

Colon:

Evidence-based medicine teaches clinicians the practical application of clinical epidemiology, as needed to address specific problems of specific patients. It guides clinicians on how to find the best evidence relevant to a specific problem, how to assess the quality of that evidence, and perhaps most difficult, how to decide if the evidence applies to a specific patient.

*from Kristin Sainani, Stanford online course “Writing in the Sciences”

Punctuation - Practice

Dash:

A long descriptive clause that could be set off by a dash.

Finally, the lessons of clinical epidemiology are not meant to be limited to academic physician-epidemiologists, who sometimes have more interest in analyzing data than caring for patients. Clinical epidemiology holds the promise of providing clinicians with the tools necessary to improve the outcomes of their patients.

No transition.

*from Kristin Sainani, Stanford online course "Writing in the Sciences"

Paragraphs

“Make the paragraph the unit of composition:
one paragraph to each topic.”

[Strunk, W., Jr. and White, E.B.: The Elements of Style]

Paragraphs

“But how do you make a paragraph [...] a unit of composition?”

What do those terms even mean?

Paragraphs tell stories.

Not surprisingly, therefore, a paragraph becomes a unit of composition when it tells a complete short story with a coherent structure, a story that fits into and contributes to the larger work.

If you string sentences together until you need to come up for air, and then throw in a paragraph break, you will not have a unit of composition.”



one paragraph

Joshua Schimel, Writing Science; how to write papers that get cited and proposals that get funded.

Paragraphs

- ❖ 1 paragraph = 1 idea
- ❖ Beginning of each paragraph: signal to the reader that a new step in the development of the subject has been reached.
- ❖ As a rule, begin each paragraph with a topic sentence; end it in conformity with the beginning. [Strunk, W., Jr. and White, E.B.: The Elements of Style]
 - Reader remembers the first sentence and the last sentence best.
 - ➔ Make the last sentence stick!
- ❖ Point-first paragraph:*
 - topic sentence that makes a point, which the rest of the paragraph develops
- ❖ Point-last paragraph:*
 - assemble an argument, pulling threads together to weave them into a conclusion
- ❖ Logical flow of ideas.
- ❖ Parallel sentence structure.

*Joshua Schimel, Writing Science; how to write papers that get cited and proposals that get funded.

Logical flow of ideas:*

- ❖ Sequential in time
- ❖ General \rightarrow specific
- ❖ Logical arguments (if a then b; a; therefore b)

*from Kristin Sainani, Stanford online course “Writing in the Sciences”

Paragraphs

In deregulated markets, passenger airlines have the freedom to choose flight schedules and prices for routes generated by flight schedules. These decisions are very important for an airline that wishes to maximize its profit. The flight schedule fixes a large fraction of an airline's cost, and also the routes the airline can offer. The schedule determines the quality of the airline's service in terms of departure times and transit durations of routes. Quality of service and prices affect the airline's ability to attract travelers.

Logical structure:

1. Airlines have freedom to choose flight schedules and prices for routes.
2. Flight schedule fixes large fraction of cost, the routes, and quality of service.
3. Quality of service and prices affect choice of travelers.

G. Dobson and P.J. Lederer: Airline Scheduling and Routing in a Hub-and-Spoke System.

Paragraphs

Usually, when a defendant absconds, a bondsman hires a bounty hunter to find and arrest him within the grace period (which, in California, is six months). If that fails, the bondman tries to seize any collateral that the defendant put down to secure the bond, or sues the defendant's "indemnitors," who signed the bail application as guarantors. But Zabala hadn't put down any collateral, and so far Green—one of the few bondsmen who always do their own bounty hunting—had found neither him nor his indemnitors. The grace period was nearly up. Soon, Green would have to pay the court thirty-one thousand dollars.

Organized by time sequence and general —> specific

1. First, a bondsman hires a bounty hunter to find and arrest the defendant within the grace period.
2. Then, if that fails, the bondman seizes collateral or sues indemnitors.
3. Now, in this specific case, the defendant (Zabala) is AWOL (absent without leave) and has no collateral or available indemnitors
4. Conclusion: the bondswoman (Green) is out of options.

Writer didn't write "first", "then", the organization of sentences gives readers these clues without spelling them out.

*from Kristin Sainani, Stanford online course "Writing in the Sciences"
example from *The New Yorker*

Paragraphs

Usually, when a defendant absconds, a bondsman hires a bounty hunter to find and arrest him within the grace period (which, in California, is six months). If that fails, the bondman tries to seize any collateral that the defendant put down to secure the bond, or sues the defendant's "indemnitors," who signed the bail application as guarantors. But Zabala hadn't put down any collateral, and so far Green—one of the few bondsmen who always do their own bounty hunting—had found neither him nor his indemnitors. The grace period was nearly up. Soon, Green would have to pay the court thirty-one thousand dollars.

Logical structure:

Transition words used
long short long

A bondsman has these and only these options:

1. Hire a bounty hunter to find and arrest the guy within a grace period.
2. If (1) fails, seize collateral or sue indemnitor.
3. Pay the money herself.

In this case,

1. Grace period nearly done without arrest.
2. No collateral, no indemnitors.

... Green (the bondswoman) will be responsible for the \$31,000.

*from Kristin Sainani, Stanford online course "Writing in the Sciences"
example from *The New Yorker*

Paragraphs

topic sentence that makes a point, which the rest of the paragraph develops

An Argument: We conclude that the increase of the diurnal temperature [DTR] over the United States during the three-day grounding period of 11-14 September 2001 cannot be attributed to the absence of contrails. While missing contrails may have affected the DTR, their impact is probably too small to detect with a statistical significance. The variations in high cloud cover, including contrails and contrail-induced cirrus clouds, contribute weakly to the changes in the diurnal temperature range, which is governed primarily by lower altitude clouds, winds, and humidity.

G.P. Yanh Hong, P:Minnis, Y.X. HU, and G.North, "Do Contrails Significantly Reduce Daily Temperature Range?" *Geophysical Research Letters* 35 (2008): L23815
FROM: Joshua Schimel, Writing Science; how to write papers that get cited and proposals that get funded.

Paragraphs - Practice

Headache is an extraordinarily common pain symptom that virtually everyone experiences at one time or another. As a pain symptom, headaches have many causes. The full range of these causes were categorized by the International Headache Society (IHS) in 1988. The IHS distinguishes two broad groups of headache disorders: primary headache disorders and secondary headache disorders. Secondary headache disorders are a consequence of an underlying condition, such as a brain tumor, a systemic infection or a head injury. In primary headache disorders, the headache disorder is the fundamental problem; it is not symptomatic of another cause. The two most common types of primary headache disorders are episodic tension-type headache (ETTH) and migraine. Although IHS is the most broadly used/recognized classification system used, a brief comment on others would be appropriate – especially if there are uses that have epidemiologic advantages.

from Kristin Sainani, Stanford online course “Writing in the Sciences”

Paragraphs - Practice

Headache is an extraordinarily common pain symptom that virtually everyone experiences at one time or another. As a pain symptom, headaches have many causes. The full range of these causes were categorized by the International Headache Society (IHS) in 1988. The IHS distinguishes two broad groups of headache disorders: primary headache disorders and secondary headache disorders. Secondary headache disorders are a consequence of an underlying condition, such as a brain tumor, a systemic infection or a head injury. In primary headache disorders, the headache disorder is the fundamental problem; it is not symptomatic of another cause. The two most common types of primary headache disorders are episodic tension-type headache (ETTH) and migraine. Although IHS is the most broadly used/recognized classification system used, a brief comment on others would be appropriate – especially if there are uses that have epidemiologic advantages.

from Kristin Sainani, Stanford online course “Writing in the Sciences”

Sentences

“A sentence tells a story, just the shortest one possible.”

Joshua Schimel, *Writing Science*; how to write papers that get cited and proposals that get funded.

“You can’t write strong papers with weak sentences.”

Joshua Schimel, *Writing Science*; how to write papers that get cited and proposals that get funded.

Sentences

A sentence tells a story \Rightarrow principles of story structure that we already saw apply:

- Readers need to meet the characters (opening)
- Readers need to learn what they did (action)
- Readers need to learn what the outcome was (resolution)

O	Opening: Who is the story about?	Subject
C/A	Challenge/action: what happened	Verb
R	Resolution: what was its outcome?	Object

Give the information in order, otherwise the reader has to hold it aside until you provide the essential pieces.

In English, the last word or phrase in a sentence's main clause carries the strongest emotional weight.

Joshua Schimel, *Writing Science*; how to write papers that get cited and proposals that get funded.

Sentences

- ❖ A sentence has a single topic.
- ❖ Whatever you put at the beginning of a sentence, readers interpret as the topic: who or what the sentence is about.
- ❖ It should be a schema or character the readers are familiar with. (Common knowledge or introduced earlier)
- ❖ Then develop the schema by adding new information.
- ❖ If you put new information at the beginning of a sentence, you possibly confuse your reader: you give them new information, but you suggest it is old.

- ❖ Endings are power positions = stress
- ❖ Use the power of the stress by putting key words there: the main message and new ideas or terms.

Joshua Schimel, Writing Science; how to write papers that get cited and proposals that get funded.

Sentences

Viruses = “old information”
Expands understanding of where viruses are important

1. Viruses were not studied in the sea until 1989 yet are its most abundant biological entities.
2. The most abundant biological entities in the sea are viruses, yet they were not studied until 1989.
3. The most abundant biological entities in the sea were not studied until 1989: viruses.

both about biological entities in the sea - “sea creature” schema

Emphasises when they were first studied

Emphasises that the surprising information is that the most abundant entities are viruses.

Joshua Schimel, Writing Science; how to write papers that get cited and proposals that get funded.

Sentences

- 1.The topic should be short and clear.
- 2.The main verb should follow it immediately.
- 3.The key message should come at the stress.

Joshua Schimel, Writing Science; how to write papers that get cited and proposals that get funded.

Sentences

- ❖ Use a mixture of short and long sentences.
- ❖ Good long sentence: make the key point in a short initial clause, and then add others to add depth and nuance.

Joshua Schimel, *Writing Science*; how to write papers that get cited and proposals that get funded.

Spelling

Spelling

A New Language For California

The new Californian Governor has just announced an agreement whereby English will be the official language of the state, rather than German, which was the other possibility. As part of the negotiations, the Terminator's Government conceded that English spelling had some room for improvement and has accepted a 5-year phase-in plan that would become known as "Austro-English" (or, perhaps even better, "Austrionics"). In the first year, "s" will replace the soft "c". Certainly, this will make the sivil servants jump with joy. The hard "c" will be dropped in favour of the "k". This should klear up konfusion, and keyboards kan have one less letter. There will be growing publik enthusiasm in the sekond year when the troublesome "ph" will be replaced with the "f". This will make words like fotograf 20% shorter. In the 3rd year, publik akseptanse of the new spelling kan be expekted to reach the stage where more komplikated changes are possible. Governments will enkourage the removal of double letters which have always ben a deterrent to akurate speling. Also, al wil agre that the horibl met of the silent "e" in the languag is disgrasful and it should go away. By the 4th yer peopl wil be reseptiv to steps such as replasing "th" with "z" and "w" with "v". During ze fifz yer, ze unesesary "o" kan be dropd from vords kontaining "ou" and after ziz fifz yer, ve vil hav a reil sensibl riten styl. Zer vil be no mor trubl or difikultis and evrivun vil find it ezi tu understand ech oza. Ze drem of a united urop vil finali kum tru. If zis mad yu smil, pleas pas it on to oza pepl.

from Tim Skern, Writing Scientific English

Please use a spell checker!

BUT: a spell checker will not find all mistakes!

Each sentence except one possesses a word that is spelled wrongly because it is used in an incorrect context:

1. You must proof that two plus two equals four!
2. A prove that two plus two equals four is given on the first page.
3. Vaccines safe lives.
4. Spellcheckers chance the way we read our texts.
5. The theory of global warming remains to be proven.
6. Spellcheckers effect our ability to spell.
7. How do tortoises remain a life when hibernating?
8. Only a few scientists have received two Nobel Prices.
9. The affect of technology on the environment is substantial.
10. Tumour cells loose the normal controls of growth.
11. We judge how we live our lives form our own perspective.
12. The ability to write concisely and accurately is not heredity.

Common mistakes

From the book “BUGS in Writing: A Guide to Debugging Your Prose” by Lyn Dupré

BAD: The example sentence contains a genuine error or mistake (for example, bad grammar); you should avoid the bad portion completely.

UGLY: The example sentence is technically correct, but is not acceptable for one reason or another; you should avoid the ugly portion.

GOOD: The example sentence is acceptable and correct.

SPLENDID: The example sentence demonstrates an improvement over a given good solution or example, or represents correct application of several points under discussion.

Common mistakes

If you are the sole author, do not be afraid to refer to yourself as *I*.

If you have coauthors, then say *we*.

In almost all cases, you should call your reader *you*.

UGLY: The author wishes to remind the reader that it is often helpful to know the probabilities of class memberships, rather than knowing only the class memberships themselves.

GOOD: We suggest here a novel neural-network algorithm for cluster formation.

from Lyn Dupré: “BUGS in Writing: A Guide to Debugging Your Prose”, Addison-Wesley

Common mistakes

So, So That, Such That have distinct meanings.

- ❖ *So* means therefore.
- ❖ *So that* means in order that.
- ❖ *Such that* means in such a way that.

GOOD: Peter flew from San Francisco to Boston, so he took Lyn out to dinner.

GOOD: Peter flew from San Francisco to Boston, so that he could get a chestful of fresh air.

GOOD: Peter flew from San Francisco to Boston, such that he was tired and sore the next day.

from Lyn Dupré: “BUGS in Writing: A Guide to Debugging Your Prose”, Addison-Wesley

Common mistakes

Which versus That

That identifies the objects about which you are speaking, whereas *which* merely provides further information about those objects.

We can answer the question Which airplane is about to accelerate?
(The one that is on the runway.)

GOOD: The airplane that is on the runway is about to accelerate.

GOOD: The airplane, which is on the runway, is about to accelerate.

Does not answer the question.

What we have is a parenthetical remark that informs us that the airplane, in addition to being about to accelerate, is on the runway.

from Lyn Dupré: "BUGS in Writing: A Guide to Debugging Your Prose", Addison-Wesley

Common mistakes

Which versus That

A *that* clause picks out one among many, whereas a *which* clause often implies that there is only one.

ABC makes several computers. Among this set, the one that will sell fastest is the one with the most features.

GOOD: The ABC computer that has the most bells and whistles will sell faster.

GOOD: The ABC computer, which has the most bells and whistles, will sell faster.

We might draw the conclusion, that ABC makes only one computer, or at least only one computer that ABC makes is relevant for our discussion. This ABC computer is in competition with other brands of machine, yet we are assured, that it will sell fastest, because we have the added information that it has more features than do its competitors.

from Lyn Dupré: "BUGS in Writing: A Guide to Debugging Your Prose", Addison-Wesley

Common mistakes

Which versus That

You should **not** set off **that** clauses by commas, whereas you **should** set off **which** clauses by commas.

from Lyn Dupré: “BUGS in Writing: A Guide to Debugging Your Prose”, Addison-Wesley

Common mistakes

Which versus That



<https://www.youtube.com/watch?v=yV34JvZ-IQI>

Common mistakes

Which versus That

One more thing: Which always refers to whatever happens to be sitting in front of the comma preceding the which.

BAD: Richard argued with the lamp, which was foolish.

GOOD: Richard argued with the lamp, which behaviour was foolish.

from Lyn Dupré: "BUGS in Writing: A Guide to Debugging Your Prose", Addison-Wesley

Common mistakes

Missing That

UGLY: Max believes Brian is a superb programmer.

GOOD: Max believes that Brian is a superb programmer.

from Lyn Dupré: “BUGS in Writing: A Guide to Debugging Your Prose”, Addison-Wesley

Note that vs. notice that

Note that: strong emphasis

Notice that: weaker emphasis

In many cases, even note that is redundant.

GOOD: In interpreting our report, note that seven of the 10 subjects in this study died before all the data had been collected; thus, the results may be slightly unreliable.

SPLendid: Seven of the 10 subjects in this study died before all the data had been collected; thus, the results may be slightly unreliable.

from Lyn Dupré: "BUGS in Writing: A Guide to Debugging Your Prose", Addison-Wesley

Common mistakes

Affect vs. Effect

- ❖ The noun effect denotes the result of a process, event, or activity.
- ❖ The verb effect denotes bringing an object into existence, or bringing about a state of affairs.
- ❖ The noun affect denotes an emotional state.
- ❖ The verb affect denoted producing an influence on, or producing an effect. It also means having a fondness for, or pretending.
- The most pronounced effect of Lyn's vacation in Canada was a noticeable disappearance of Lyn's sense of humor. Effect used as a noun.
- Max effected a change in Lyn's outlook by meeting her at the gate and holding her extremely tight. Effect used as a verb.
- Max having thus arranged Lyn's homecoming, Lyn's affect changed to one of buoyant delight and glee. Affect used as a noun.
- Max and Lyn thus demonstrated how companions can affect each other's moods. Affect used as a verb.

from Lyn Dupré: "BUGS in Writing: A Guide to Debugging Your Prose", Addison-Wesley

Common mistakes



<https://www.youtube.com/watch?v=8Q-2SuqvdJw>

Indices vs. Indexes

Both comprise more than one index, but the type of index denoted is different.

- ❖ Use indices to refer to a number of expression that indicates a position or location in mathematics.
 - The indices i and j indicate that the entry a_{ij} lies in the i -th row and j -th column of A .
- ❖ Use indexes to refer to the plural of all other types of index.

from Lyn Dupré: “BUGS in Writing: A Guide to Debugging Your Prose”, Addison-Wesley

Common mistakes

Only:

The location of only in your sentence determines the meaning.

GOOD: Only I love you.

GOOD: I only love you.

GOOD: I love only you.

from Lyn Dupré: “BUGS in Writing: A Guide to Debugging Your Prose”, Addison-Wesley

Common mistakes

also:

The placement of also modifies the meaning of your sentence.

GOOD: Max also loves Lyn.

GOOD: Max loves Lyn also.

expanded versions:

GOOD: Max is angry at Lyn; Max also loves Lyn.

GOOD: Dona loves Lyn; Max also loves Lyn.

GOOD: Max loves Sarah; Max loves Lyn also.

Place also before the verb when also modifies either the agent (for example Max) or the activity (for example, loves).

- He is one way and she also is that way.
- He also is = He too is ...

Place also after the verb (and, usually, after the recipient) when also modifies the recipient of the activity (for example Lyn).

- He is one way and he is also another way.
- He is also = He is, in addition, ...

from Lyn Dupré: "BUGS in Writing: A Guide to Debugging Your Prose", Addison-Wesley

Common mistakes

Set *someone* (meaning a person) and *everyone* (meaning all people under discussion) as one word.

BAD: I wish I had some one with whom to work.

GOOD: Someone just told me the exam time.

BAD: Not every one at university appreciates good writing.

GOOD: Everyone prefers to read well-written prose, given the alternative of reading garbage in a downpour.

Set *every one* (meaning not just certain of the individuals, but rather every one of them) as two words.

BAD: Everyone of the files was a text file.

GOOD: Every one of the files was a text file.

Set *no one* (meaning not one person) as two words.

BAD: Noone turned up at the meeting.

None can mean *not any* or *not one*.

If your phrase would be recast as *none of them*, then you should use a plural form of the verb;

if the phrase would be recast as *none of it*, then you should use a singular verb.

BAD: None of the rats is squeaking.

GOOD: None of the kittens are lonely.

from Lyn Dupré: "BUGS in Writing: A Guide to Debugging Your Prose", Addison-Wesley

Common mistakes

“If you use numerous abbreviations and acronyms, you make it difficult for your reader to understand your meaning.[...]

Avoid the temptation to shorten every term in sight.”

- ❖ Use the most standard abbreviations.
- ❖ Define them on *first* use, and use them *always* thereafter.
- ❖ Use standard abbreviations for units of measure.
- ❖ You can use standard Latin abbreviations.
 - *E.g.* means *for example* (always followed by a comma)
 - *I.e.* means *that is* (always followed by a comma)
 - *Etc.* means *and so on* (always preceded by a comma)
 - *Et al.* means *and others*, use only in reference citations.

BUT: Use Latin abbreviations only in parentheses,
do not use them in a regular text line.

from Lyn Dupré: “BUGS in Writing: A Guide to Debugging Your Prose”, Addison-Wesley

Plural abbreviations

You should (usually) simply append an s to an abbreviation to form the plural; you should not use an apostrophe.

GOOD: Construction of (parts of) the solution by pushing off the "innermost" structures (the runways), and the design of the "middle-ware" (STARs/SIDs and control sectors within the TMA) are topics of forthcoming work in the project.*

* STARs: SStandard Arrival Routes, SIDs: Standard Instrument Departures, TMA: Terminal Manoeuvring Area

Common mistakes

- ❖ Contraction: A term formed of multiple words which missing letters are signified by an apostrophe.
 - They're
 - He's
 - We've
 - ...
- ❖ Part of spoken language and ok in casual writing.
- ❖ You should not use contractions in formal writing.

- ❖ *Data* is a plural; the singular is *datum*.

Common mistakes

- ❖ Above and below are not substitutes for preceding and following.
- ❖ Preferably tell your reader exactly where he can find something.
 - GOOD: Several test problems were run using the heuristic techniques described in Section 1.
- ❖ When you refer by number to a part of a document, you should set the word denoting the part with a lead capital letter: Chapter 4, Section 2, Figure 2.3, Table 5, Equation 6,
- ❖ Do not use capital letters for, for example, step 1, phase 2, day 5.

Whether versus **If**

- ❖ You should use *whether* when you could substitute *whether or not* without destroying the meaning of your sentence.
 - BAD: He wanted to check if she has time tonight.
 - GOOD: He wanted to check whether she has time tonight.
- ❖ You should use *if* when you are simply placing a constraint.
 - GOOD: If the distance between cities is very small, then direct service is optimal; otherwise, other networks, such as hub and spoke are optimal.

from Lyn Dupré: “BUGS in Writing: A Guide to Debugging Your Prose”, Addison-Wesley

Its versus **It's**

- ❖ Its: belonging to it
- ❖ It's: it is
- ❖ Avoid it's in formal writing
 - BAD: Forecasting is an extensive topic on it's own, and its beyond the scope of this paper to survey the methodologies used for forecasting.
 - GOOD: Forecasting is an extensive topic on its own, and it is beyond the scope of this paper to survey the methodologies used for forecasting.

from Lyn Dupré: "BUGS in Writing: A Guide to Debugging Your Prose", Addison-Wesley

Common mistakes

Literally means **not metaphorically**.

It is not a substitute for extremely, substantially, hugely, vastly, etc.

BAD: There was a literal explosion of science at the new research laboratory.

BAD: She was literally green with envy when she thought about the fun Steve and Judy were having in Geneva.

Use literally to underline that you do *not* mean metaphorically.

GOOD: When Max heard the news, his jaw literally dropped.

Use literal to mean accurate, or word for word, as well as not metaphorical.

GOOD: I would like to know the literal translation of *mors certa, amor incerta est*.

from Lyn Dupré: “BUGS in Writing: A Guide to Debugging Your Prose”, Addison-Wesley

Common mistakes

Use virtual to mean in effect, or in essence—to denote an object that serves the same purpose or has the same function as, but for whatever reason is not the same as, another.

It does not mean actual.

BAD: During a nasty argument about summer plans, Lyn was so frustrated that she virtually sat down on the trail and refused to budge.

GOOD: The system provides a virtual address space.

You can use virtually to mean almost entirely (but not entirely), or nearly.

GOOD: Max was so exhausted that he was virtually on the verge of collapsing into the linguini.

from Lyn Dupré: “BUGS in Writing: A Guide to Debugging Your Prose”, Addison-Wesley

Common mistakes

- ❖ Stick with the same tense, and do not change to another without good cause.
- ⦿ BAD: Lyn was trying to reach Max. She dials the telephone, but the ring went on and on. She had wondered whether she will call him later. Or, perhaps she has just gone to bed.
- ❖ When you write similar sections, you should use the same tense across sections.
- ❖ When you inform your reader of what topics you intend to discuss in a later portion of your manuscript, you can use future tense or present tense.
- ❖ When you remind your reader of topics you have discussed in an earlier portion of your manuscript, use the simple past tense: Write we did.
- ❖ In both cases: Add the information where to find the discussion (Section 3).

from Lyn Dupré: “BUGS in Writing: A Guide to Debugging Your Prose”, Addison-Wesley

- ❖ In general, you should place adverbs *after* the verbs they modify, and usually should place them at the end of the phrase or clause to which they belong.
 - GOOD: If a large plane is assigned to fly a leg with very little demand, it is a waste of fuel and high fixed landing costs are incurred unnecessarily.
 - (But: passive↑)
- ❖ If you place the adverb *before* the verb, you emphasise the adverb.
 - Once you get to the auditorium, slowly walk through the door, even if your desire is to rush in headlong is powerful.

from Lyn Dupré: “BUGS in Writing: A Guide to Debugging Your Prose”, Addison-Wesley

Lists: Intext lists

- ❖ You should use intext lists for short items that do not require special emphasis. Intext lists all constitute one sentence, so each entry obviously cannot be itself a sentence.
 - BAD: There are many errors that you can make: (1) You can forget that entries in an intext numbered list must together constitute a sentence. (2) You can put periods at the end of the entries of intext numbered lists.
 - GOOD: Instead, just remember two rules: (1) the entire are only clauses in a sentence, and (2) they should be separated by commas or semicolons.

from Lyn Dupré: “BUGS in Writing: A Guide to Debugging Your Prose”, Addison-Wesley

Lists: Intext lists

- ❖ You should use unnumbered intext lists in most cases. Exemptions:
 - You specify the number of entries in the list,
 - You want to emphasise the number of entries,
 - You want to refer later to the entries by number.
- ❖ If no entry contains a comma \Rightarrow separate entries with a comma
- ❖ If any entry itself contains a comma \Rightarrow use a semicolon
- ❖ Do not use a colon to introduce an intext list that has sentences as entries (that is, the list has periods in it).
- ❖ Always use both a left and a right parenthesis around a number in an intext numbered list. That is: (1), (2), etc.

from Lyn Dupré: “BUGS in Writing: A Guide to Debugging Your Prose”, Addison-Wesley

Lists

- ❖ Use displayed lists to emphasise list entries.
- ❖ Types of displayed lists:
 - Unnumbered displayed lists (not easy to read)
 - Bullet displayed lists
 - Numbered displayed lists
 - Multicolumn lists
- ❖ You can start each entry with a tag. Follow it with a colon, a period or an em space:
 - GOOD:
We suggest three levels of constraints:
 1. Coupling constraints. This concerns rules that relate to the whole set of selected duties of rosters. [...]
 2. Path feasibility constraints. Rules at this level determine the feasibility of a duty or roster[...].[...]
 3. Node/arc feasibility constraints: A constraint at this level determines if a particular task can be assigned to a certain crew member due to licenses [...].[...]

from Lyn Dupré: “BUGS in Writing: A Guide to Debugging Your Prose”, Addison-Wesley

- ❖ Use a period after the number in a numbered displayed list.
- ❖ Do not use only right parenthesis, only left parenthesis or pairs of parentheses in a numbered displayed list.
- ❖ You should always begin each entry in a displayed list with a **capital letter**, whether the entry is a word, a sentence fragment, a full sentence, or numerous sentences.
 - BAD: The system helps the management to determine:
 - the capacity needed to perform the tasks.
 - the permanent and temporarily staffing levels needed to meet the required capacity.
 - allowed vacations, standbys required etc. for the given period.

from Lyn Dupré: “BUGS in Writing: A Guide to Debugging Your Prose”, Addison-Wesley

- ❖ No end punctuation for those entries that constitute less than one full sentence.
- ❖ Never use commas or semicolons in such cases (as you would with an intext list).
 - BAD: The system helps the management to determine:
 - the capacity needed to perform the tasks.
 - the permanent and temporarily staffing levels needed to meet the required capacity.
 - allowed vacations, standbys required etc. for the given period.
 - GOOD: The following is correct:
 1. No end punctuation for fragments
 2. No “and” at the beginning of the final entry
- ❖ Use a period as end punctuation if your entry constitutes one or more sentences.
- ❖ Do not mix sentences and fragments as entries of the same list.

from Lyn Dupré: “BUGS in Writing: A Guide to Debugging Your Prose”, Addison-Wesley

Numbers

- ❖ Spell out zero through nine, use numerals thereafter.
 - GOOD: The airplane is 231 feet and 10 inches long.
- ❖ Spell out all numbers at the beginning of a sentence that follows a period or a colon.
- ❖ You should use numerals for all units of measure.
 - BAD: The runway had a length of four kilometers.
 - GOOD: The runway had a length of 4 kilometers.
- ❖ You should use numerals when you are referring to the number itself.
- ❖ You should use numerals when you are counting.
 - GOOD: The figure on page 3 shows xy.

from Lyn Dupré: “BUGS in Writing: A Guide to Debugging Your Prose”, Addison-Wesley

Cap/Ic for Chapter Titles, Section Headings

Nine rules in order of precedence:

1. Always capitalize the first word, unless, for another reason, the first letter would never be set as a capital.
2. Always capitalize the final word (unless, again, for another reason, the first letter would never be set as a capital).
3. Always capitalize words containing five or more letters (unless the first letter would never be capitalized).
4. Do not capitalize prepositions (*on, in, over, from, to, with* and so on).
5. Do not capitalize articles (*a, an, the*).
6. Do not capitalize the *to* in an infinitive. Do capitalize the other part of the infinitive.
7. Do not capitalize connectives (*and, or*, and so on).
8. Capitalize every word.
9. Consider each word in a hyphenated word to stand alone, and capitalise it or do not capitalise it according to the preceding rules.

from Lyn Dupré: "BUGS in Writing: A Guide to Debugging Your Prose", Addison-Wesley

Rules for using percentages:

- ❖ You should spell out percent in most contexts, rather than using the percent sign (%).
 - ⦿ BAD: The average dwell time was improved for many sectors, whereas workload balance was slightly degraded as a result of 23.4% increase in tz-hit count of sector 10.
 - ⦿ GOOD: The average dwell time was improved for many sectors, whereas workload balance was slightly degraded as a result of 23.4 percent increase in tz-hit count of sector 10.
- ❖ You should always use numerals, rather than spelled-out numbers, with percent.

from Lyn Dupré: “BUGS in Writing: A Guide to Debugging Your Prose”, Addison-Wesley

Respectively

- ❖ Use respectively when you write about n items, each of which is associated with one of another n items.
- ❖ Without respectively, the first n items are assumed to be associated with all n of the second set of items.
- ⦿ BAD: Sarah, Jane, and Helen are mothers to Lisa, Mary, and Jenny.
- ❖ You should use a comma before respectively when you set respectively after the terms to which it applies.
- ⦿ BAD: Soren and Lois know nothing about accounting and motion physics respectively; the negation of this assertion, however, is not true.
- ⦿ GOOD: Sarah, Jane, and Helen are mothers to Lisa, Mary, and Jenny, respectively.

from Lyn Dupré: “BUGS in Writing: A Guide to Debugging Your Prose”, Addison-Wesley

Parts of a scientific paper

Parts of a scientific paper



Title (Authors)
Abstract (Keywords)
Introduction
Materials + Methods
Results + Discussion
Conclusions
Bibliography
Appendix

How we read

Materials + Methods
Bibliography
Appendix
Results + Discussion
Conclusions
Introduction
Abstract (Keywords)
Title



How we write

Parts of a scientific paper

Definitions, experimental setup,
“ingredients” of research

Materials + Methods

Bibliography

Appendix

(experimental) outcome
of the results: expected, unexpected....

Results + Discussion

recap results, limitations, future work

Conclusions

basics, why is this work interesting/
important; relation to other papers

Introduction

Abstract (Keywords)

summary of the paper, main results

Title

Start with big picture, fill in details later!

An abstract tells your reader what the contents of your document are.

- ❖ Keep your abstract short, clear, and directly to the point.
- ❖ Be aware of your audience.
- ❖ “Assume that your reader is tired, bored and pressed for time. Give her a clear notion of what your document contains, and convince her that what you have to say is important.”
- ❖ Provide an overall picture of your topic.
- ❖ Do not go into details.
- ❖ Write it last, after you have finished the rest of your document.

from Lyn Dupré: “BUGS in Writing: A Guide to Debugging Your Prose”, Addison-Wesley

References

Use a consistent style.

If you do not use bibtex or the like:

- ❖ Include the author's or editor's names.
- ❖ Set in italics, and in mixed capital and lowercase letters the title of the book or journal. Place a period at the end of the title.
- ❖ Give the location of the publisher as a city and country.
- ❖ Give the publisher's name
- ❖ A reference to a book should include: the authors, the title, the publisher, the location of the publisher and the year of publication.
 - ❖ T. C. Hu, *Integer Programming and Network Flows*, Addison-Wesley, Reading, MA, 1969
- ❖ A reference to a journal article should include: the authors, the title, the journal name, the volume, the page numbers, and the year of publication.
 - M. Xue. Airspace sector redesign based on Voronoi diagrams. *Journal of Aerospace Computing, Information, and Communication*, 6(12):624–634, Dec. 2009.
- ❖ A reference to a paper published in the proceedings of a conference should include: the authors, the title, the title of the proceedings, the page numbers, the location of the conference, and the month and year of the conference.
 - G. Sabhnani, A. Yousefi, and J. S. B. Mitchell. Flow Conforming Operational Airspace Sector Design. In *10th AIAA Aviation Technology, Integration, and Operations (ATIO) Conference*, Fort Worth, TX, Sept. 2010.

Figure Captions

- ❖ Includes the figure number, possibly a title and further explanation of the figures content.

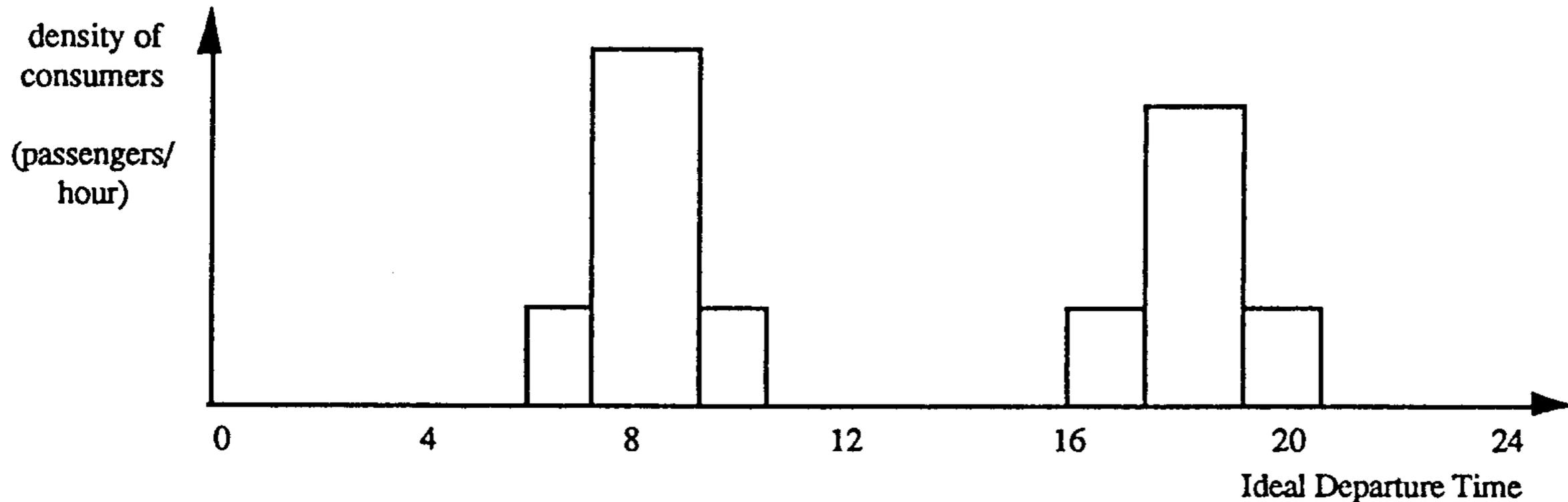


Fig. 1. Example of consumer density.

From: G. Dobson, and P.J. Lederer, Airline Scheduling and Routing in a Hub-and-Spoke System, *Transp. Science*, Vol. 27, No.3, pp. 281-297, August 1993.

All figures, tables, algorithms should be referenced in the text.

You can use footnotes to add information to your document that is relevant/interesting, but does not belong in the text.

Use full sentences for your footnotes, rather than only fragments.^{1,2}

1.This footnote is an example for a full sentence.

2.just a fragment

The writing process

How to write

Putting your facts and ideas together in organized prose

1. Prewriting/Organization
2. First draft
3. Revision

- Collect, synthesize, and organise information
- Brainstorm take-home messages
- Work out ideas away from the computer
- Develop a road map/outline

- Read your work out loud
- Get rid of clutter
- Do a verb check
- Get feedback from others

from Kristin Sainani, Stanford online course “Writing in the Sciences”

1. Prewriting:

- ❖ Gather information first THEN write the first draft.
- ❖ Create an organisational system that suits you.
- ❖ Develop a road map:
 - Arrange key facts and citations from the literature into a road map
 - Think in paragraphs and sections
- ❖ Work out take-home messages

from Kristin Sainani, Stanford online course “Writing in the Sciences”

2. First draft:

- ❖ Don't be a perfectionist!
- ❖ Goal: get ideas down in complete sentences in the right order.
- ❖ “Writing the first draft is the hardest step for most people. Minimise the pain by writing the first draft quickly and efficiently!”

from Kristin Sainani, Stanford online course “Writing in the Sciences”

3. Revision:

- ❖ Read your work out loud
- ❖ Do a verb check
- ❖ Cut clutter
- ❖ Do an organisational review
- ❖ Get feedback from others

Underline the main verb in each sentence. Watch for:

(1) lackluster verbs (e.g., There are many students who struggle with chemistry.)

(2) passive verbs (e.g., The reaction was observed by her.)

(3) buried verbs (e.g., A careful monitoring of achievement levels before and after the introduction of computers in the teaching of our course revealed no appreciable change in students' performances.).

from Kristin Sainani, Stanford online course "Writing in the Sciences"

3. Revision:

- ❖ Read your work out loud
- ❖ Do a verb check
- ❖ Cut clutter
- ❖ Do an organisational review
- ❖ Get feedback from others

Watch for:

- Dead weight words and phrases (it should be emphasized that)
- Empty words and phrases (basic tenets of, important)
- Long words or phrases that could be short (muscular and cardiorespiratory performance)
- Unnecessary jargon and acronyms
- Repetitive words or phrases (teaches clinicians/guides clinicians)
- Adverbs (very, really, quite, basically)

from Kristin Sainani, Stanford online course “Writing in the Sciences”

3. Revision:

- ❖ Read your work out loud
- ❖ Do a verb check
- ❖ Cut clutter
- ❖ Do an organisational review
- ❖ Get feedback from others

In the margins of your paper, tag each paragraph with a phrase or sentence that sums up the main point. Then move paragraphs around to improve logical flow and bring similar ideas together.

from Kristin Sainani, Stanford online course “Writing in the Sciences”

3. Revision:

- ❖ Read your work out loud
- ❖ Do a verb check
- ❖ Cut clutter
- ❖ Do an organisational review
- ❖ Get feedback from others

Without any technical background, they should easily grasp:

- the main findings
- take-home messages
- significance of your work

Ask them to point out particularly hard-to-read sentences and paragraphs!

from Kristin Sainani, Stanford online course “Writing in the Sciences”

Final draft:

- ❖ Check for consistency
- ❖ Check for numerical consistency
- ❖ Check your references
- ❖ Use a spellchecker

from Kristin Sainani, Stanford online course “Writing in the Sciences”

Editor's Corner

A letter from the frustrated author of a journal paper

Editor's Note: It seems appropriate, in this issue of JSS containing the findings of our annual Top Scholars/Institutions study, to pay tribute to the persistent authors who make a journal like this, and a study like that, possible. In their honor, we dedicate the following humorous, anonymously-authored, letter!

Dear Sir, Madame, or Other:

Enclosed is our latest version of Ms. #1996-02-22-RRRRR, that is the re-re-re-revised revision of our paper. Choke on it. We have again rewritten the entire manuscript from start to finish. We even changed the g-d-running head! Hopefully, we have suffered enough now to satisfy even you and the bloodthirsty reviewers.

I shall skip the usual point-by-point description of every single change we made in response to the critiques. After all, it is fairly clear that your anonymous reviewers are less interested in the details of scientific procedure than in working out their personality problems and sexual frustrations by seeking some kind of demented glee in the sadistic and arbitrary exercise of tyrannical power over hapless authors like ourselves who happen to fall into their clutches. We do understand that, in view of the misanthropic psychopaths you have on your editorial board, you need to keep sending them papers, for if they were not reviewing manuscripts they would probably be out mugging little old ladies or clubbing baby seals to death. Still, from this batch of reviewers, C was clearly the most hostile, and we request that you not ask him to review this revision. Indeed, we have mailed letter bombs to four or five people we suspected of being reviewer C, so if you send the manuscript back to them, the review process could be unduly delayed.

Some of the reviewers' comments we could not do anything about. For example, if (as C suggested) several of my recent ancestors were indeed drawn from other species, it is too late to change that. Other suggestions were implemented, however, and the paper has been improved and benefited. Plus, you suggested that we shorten the manuscript by five pages, and we were able to accomplish this very effectively by altering the margins and printing the paper in a different font with a smaller typeface. We agree with you that the paper is much better this way.

One perplexing problem was dealing with suggestions 13–28 by reviewer B. As you may recall (that is, if you even bother reading the reviews before sending your decision letter), that reviewer listed 16 works that he/she felt we should cite in this paper. These were on a variety of different topics, none of which had any relevance to our work that we could see. Indeed, one was an essay on the Spanish–American war from a high school literary magazine. The only common thread was that all 16 were by the same author, presumably someone whom reviewer B greatly admires and feels should be more widely cited. To handle this, we have modified the Introduction and added, after the review of the relevant literature, a subsection entitled “Review of Irrelevant Literature” that discusses these articles and also duly addresses some of the more asinine suggestions from other reviewers.

We hope you will be pleased with this revision and will finally recognize how urgently deserving of publication this work is. If not, then you are an unscrupulous, depraved monster with no shred of human decency. You ought to be in a cage. May whatever heritage you come from be the butt of the next round of ethnic jokes. If you do accept it, however, we wish to thank you for your patience and wisdom throughout this process, and to express our appreciation for your scholarly insights. To repay you, we would be happy to review some manuscripts for you; please send us the next manuscript that any of these reviewers submits to this journal.

Assuming you accept this paper, we would also like to add a footnote acknowledging your help with this manuscript and to point out that we liked the paper much better the way we originally submitted it, but you held the editorial shotgun to our heads and forced us to chop, reshuffle, hedge, expand, shorten, and in general convert a meaty paper into stir-fried vegetables. We could not – or would not – have done it without your input.

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