

## Practising scientific English

Terminologie di uso più frequente  
negli articoli scientifici in inglese





# 1.1 Introduction

## ■ What makes good writing?

- 1. Good writing communicates an idea clearly and effectively.
  - 2. Good writing is elegant and stylish.

Takes having something to say and clear thinking.

Takes time, revision, and a good editor!

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## Steps to becoming a better writer:

- In addition to taking this class, other things you can do to become a better writer:
  - Read, pay attention, and imitate.
  - Write in a journal.
  - Let go of "academic" writing habits (deprogramming step!)
  - Talk about your research before trying to write about it.
  - Write to engage your readers—try not to bore them!
  - Stop waiting for "inspiration."
  - Accept that writing is hard for everyone.
  - Revise. Nobody gets it perfect on the first try.
  - Learn how to cut ruthlessly. Never become too attached to your words.
  - Find a good editor!
  - Take risks.

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## Another amusing example

- "These findings imply that the rates of ascorbate radical production and its recycling via dehydroascorbate reductatse to replenish the ascorbate pool are equivalent at the lower irradiance, but not equivalent at higher irradiance with the rate of ascorbate radical production exceeding its recycling back to ascorbate." (from *Photochemistry and Photobiology...*)

- Is this sentence readable?
- Is it written to inform or to obscure?

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## A classic hallmark of "academic writing": spunky verbs become clunky nouns...

- "Adoptive cell transfer (ACT) immunotherapy is based on the ex vivo **selection** of tumor-reactive lymphocytes, and their **activation** and numerical **expression** before **reinfusion** to the autologous tumor-bearing host."
- "These findings imply that the rates of ascorbate radical **production** and its **recycling** via dehydroascorbate reductatse to replenish the ascorbate pool are equivalent at the lower irradiance, but not equivalent at higher irradiance with the rate of ascorbate radical **production** exceeding its **recycling** back to ascorbate."

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After much work on my part, I translated this too...

- "These findings imply that, at low irradiation, ascorbate radicals are produced and recycled at the same rate, but at high irradiation, they are produced faster than they can be recycled back to ascorbate."

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# 1.1 Introduction

What makes a good writer:

- Having something to say.
- Logical thinking.
- A few simple, learnable rules of style (the tools you'll learn in this class).

**Take-home message: Good writing can be learned!**

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## One more example!

Dysregulation of physiologic microRNA (miR) activity has been shown to play an important role in tumor initiation and progression, including gliomagenesis. Therefore, molecular species that can regulate miR activity on their target RNAs without affecting the expression of relevant mature miRs may play equally relevant roles in cancer.

From an article in *Cell*

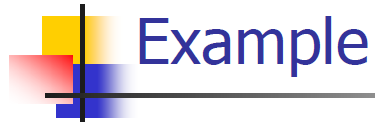




17 / 57



75%



## Example

Note the use of nouns  
instead of verbs.

Dysregulation of physiologic microRNA (miR) activity has been shown to play an important role in tumor initiation and progression, including gliomagenesis. Therefore, molecular species that can regulate miR activity on their target RNAs without affecting the expression of relevant mature miRs may play equally relevant roles in cancer.

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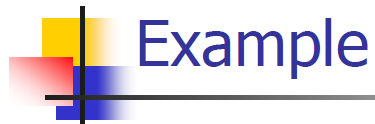
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## Example

Note the use of vague words.

Dysregulation of physiologic microRNA (miR) activity has been shown to play an important role in tumor initiation and progression, including gliomagenesis. Therefore, molecular species that can regulate miR activity on their target RNAs without affecting the expression of relevant mature miRs may play equally relevant roles in cancer.

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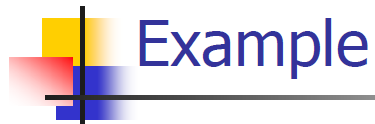
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## Example

Note the use of unnecessary jargon and acronyms.

Dysregulation of physiologic microRNA (miR) activity has been shown to play an important role in tumor initiation and progression, including gliomagenesis. Therefore, molecular species that can regulate miR activity on their target RNAs without affecting the expression of relevant mature miRs may play equally relevant roles in cancer.

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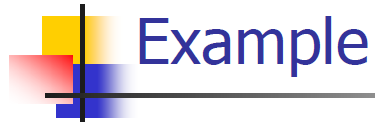
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## Example

Note the distance between the subject and the main verb of this sentence.

Dysregulation of physiologic microRNA (miR) activity has been shown to play an important role in tumor initiation and progression, including gliomagenesis. Therefore, molecular species that can regulate miR activity on their target RNAs without affecting the expression of relevant mature miRs may play equally relevant roles in cancer.

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## Possible rewrite...

- Changes in microRNA expression play a role in cancer, including glioma. Therefore, events that disrupt microRNAs from binding to their target RNAs may also promote cancer.

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## Principles of Effective Writing

- "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 the education and rank."
- -- William Zinsser in *On Writing Well*, 1976



# Long words and phrases that could be short...

## Wordy version

- A majority of
- A number of
- Are of the same opinion
- Less frequently occurring
- All three of the
- Give rise to
- Due to the fact that
- Have an effect on

## Crisp version

most  
many  
agree  
rare  
the three  
cause  
because  
affect

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# Example 1

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"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."

stripped of clutter.





## Example 1

~~"This paper provides a review<sup>S</sup> of the basic tenets of cancer biology study design, using ~~as~~ examples studies<sup>md</sup> that illustrate the methodologic challenges or that demonstrate successful solutions to the difficulties inherent in biological research."~~

This paper reviews cancer biology study design, using examples that illustrate specific challenges and solutions.

**Notice how we strip that sentence  
of all the garbage to get it down**



5:22 / 17:08






## Example 2

“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.”

a profile of lower cardiovascular risk,  
lower blood pressure levels, and





## Example 2


*is associated with*  
"As it is well known, *I* increased athletic activity *has been related to a* *profile* of lower cardiovascular risk, lower blood pressure *levels*, and improved muscular and cardio-respiratory performance."  
*fitness*

→

Increased athletic activity is associated with lower cardiovascular risk, lower blood pressure, and improved fitness.

Notice how much clutter we've  
stripped away from that sentence.





## Example 2


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

→

Increased athletic activity is associated with lower cardiovascular risk, lower blood pressure, and improved fitness.

Increased athletic activity lowers cardiovascular risk and blood pressure, and improves fitness. (stronger level of evidence)





## Example 3

- *The experiment* "The experimental demonstration is the first of its kind and is a proof of principle for the concept of laser driven particle acceleration in a structure loaded vacuum." *provides*

→

The experiment provides the first proof of principle of laser-driven particle acceleration in a structure-loaded vacuum.





# Cut unnecessary words

---

- Be vigilant and ruthless
- After investing much effort to put words on a page, we often find it hard to part with them.

But fight their seductive pull...

- Try the sentence without the extra words and see how it's better—conveys the same idea with more power





## Cutting extra words

### Example:

"Brain injury incidence shows two peak periods in almost all reports: rates are the highest in young people and the elderly."

More punch→

"Brain injury incidence peaks in the young and the elderly."




11:13 / 17:08





- ▶ 1.1: Introduction; principles of effective writing  
11 min
- ▶ 1.2: Examples of what not to do  
6 min
- ▶ 1.3: Overview, principles of effective writing  
6 min
- ▶ 1.4: Cut the clutter  
17 min
- ▶ 1.5: Cut the clutter, more tricks  
4 min
- ▶ 1.6: Practicing cutting clutter  
9 min
- ★ **Quiz:** Unit 1 Homework  
16 questions
- ▶ **Demo Edit 1 (Optional)**  
23 min

---

English 

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1.5: Cut the clutter, more tricks

https://www.coursera.org/learn/sciwrite/lecture/nORC2/1-5-cut-the-clutter-more-tricks

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Back to Week 1

Lessons

This Course: Writing in the Sciences

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Unit 1

1.1: Introduction; principles of effective writing  
11 min

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Demo Edit 1 (Optional)  
23 min

Stanford MEDICINE

Eliminate there are/there is

There are many ways in which we can arrange the pulleys.  
→We can arrange the pulleys in many ways.

There was a long line of bacteria on the plate.  
→Bacteria lined the plate.

2:40 / 4:12

1.5: Cut the clutter, more tricks

Interactive Transcript

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0:02

12:22  
23/08/2018



- ▶ 1.1: Introduction; principles of effective writing  
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23 min

---

English 

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## Common clutter:

- 1. Dead weight words and phrases

- As it is well known
- As it has been shown
- It can be regarded that
- It should be emphasized that

- 2. Empty words and phrases

- basic tenets of
- methodologic
- important

**“Some words and phrases are blobs.”**

-- William Zinsser in  
*On Writing Well*,  
1976

And that's really true, some words and phrases are so amorphous.



12:05 / 17:08

12:05







## Common clutter, continued:

- 4. Unnecessary jargon and acronyms
  - muscular and cardiorespiratory performance
  - Gliomagenesis
  - miR
- 5. Repetitive words or phrases
  - studies/examples
  - illustrate/demonstrate
  - challenges/difficulties
  - successful solutions
- 6. Adverbs
  - very, really, quite, basically, generally, etc.



Eliminate negatives

Omit needless prepositiones

There is /there are

She was not often righth      She was usually wrong

Turn a negative into a positive sentence



**Practise on real sentences**



## Text of practice exercises

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

Anti-inflammatory drugs may **protect against** Alzheimer's Disease

Clinical seizures ~~have been estimated to occur in 0.5% to 2.3% of~~ the neonatal population.

Clinical seizures **occur** in 0.5% to 2.3% of the **newborns**.



~~Ultimately p53 guards not only against malignant transformation but also plays a role in developmental processes as diverse as aging, differentiation, and fertility.~~

**Besides preventing cancer,** p53 plays a role/roles in aging, differentiation, and fertility.



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.~~

Injuries to the brain and spinal cord **are** among the most  
devastating and expensive.



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

An IQ test measures an individual's verbal communication, reasoning, motor and spatial capabilities.



~~As we can see from Figure 2, if the return kinetic energy is less than  $3.2 U_p$ , there will be two electron trajectories associated with this kinetic energy.~~

Figure 2 **shows that** a return kinetic energy less than  $3.2 U_p$  **yields** two electron trajectories



1.5: Cut the clutter, more tricks

https://www.coursera.org/learn/sciwrite/lecture/nORC2/1-5-cut-the-clutter-more-tricks

course

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- Demo Edit 1 (Optional) 23 min

**Eliminate negatives**

- Not honest
- Not harmful
- Not important
- Does not have
- Did not remember
- Did not pay attention to
- Did not succeed

dishonest  
safe  
unimportant  
lacks  
forgot  
ignored  
failed

1.5: Cut the clutter, more tricks

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0:02

12:19 23/08/2018





## Long words or phrases that could be short...

- The expected prevalence of mental retardation, based on the assumption that intelligence is normally distributed, is about 2.5%.
- → The expected prevalence of mental retardation, if intelligence is normally distributed, is 2.5%.

**If intelligence is normally distributed.**





## *Blaise Pascal on the elegance in brevity:*

“I have only made this letter rather long because I have not had time to make it shorter.” (*“Je n'ai fait celle-ci plus longue que parceque je n'ai pas eu le loisir de la faire plus courte.”*)

--*Lettres provinciales*, 16, Dec.14,1656

(though reference also attributed to St. Augustine, and Cicero....)





## Repetitive words or clauses

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



Courtesy of John Hodges:

Pascal's  
nom de  
plume  
"Montalte"

LES PROVINCIALES  
OU  
LES LETTRES ECRITES  
PAR  
LOUIS DE MONTALTE  
VN PROVINCIAL DE SES AMIS;  
&  
AUX RR. PP. JÉSUITES:

*Sur la foy de la Morale, & de la Politique de ces Peres.*



A COLOGNE,  
Chez PIERRE de la VALLEE.  
M. DC. LVII.

M. DC. LVII.

1657

(he died 1662)

This jpeg done by: J. Anomdeplume  
in Phoenix



Je n'ay fait celle-cy plus longue que parce que  
ie n'ay pas eu le loisir de la faire plus courte.  
-- NOWADAYS, BELOW --  
Je n'ai fait celle-ci plus longue que parce que  
je n'ai pas eu le loisir de la faire plus courte.

12  
Où, mes Peres, il faut espérer que si vous ne changez d'esprit, il restera de vos  
maux ceus que vous trompez depuis si long temps, soit en les laissant dans leurs de-  
fordres par votre mauvaise conduite, soit en les composant par vos médita-  
tions. Il fera concevoir aux uns que les fautes regles de vos Cateches ne les mettront  
point à couvert de la colere, & il imprimera dans l'esprit des autres la juste crainte  
de se perdre en vous imitant, & en donnant crance à vos impostures, comme vous  
vous perdez vous-mêmes en les imitant, & en les faisant dans le monde. Car il  
ne s'y fait pas tromper: on ne se moque point de Dieu, & on ne viole point impu-  
nément le commandement qu'il nous a fait dans l'Evangile, de ne point contemner  
notre prochain, sans être bien assuré qu'il est coupable. Et ainsi quelque profes-  
sion de piété que fassent ceux qui se rendent faciles à recevoir vos menées, & sous  
quelque prétexte de dévotion qu'ils le fassent, ils doivent appréhender d'être exclus  
du royaume de Dieu pour ce seul crime, d'avoir imprimé d'aussi grands crimes que  
l'horreur de la schisme à des Peres catholiques & à des Religieuses dans leurs pen-  
sées, que des impostures aussi grossières que les vôtres. Le Démon, dit M. de Ge-  
nival, est fort à l'aise de ceux qui n'ont rien, & dans l'esprit de ceux qui doutent. Et la médi-  
sance, dit S. Bernard, Cont. 14. est un poison qui efface la charité, et l'on s'en l'autre.  
De siens qu'une seule calomnie peut être mortelle à une infinité d'ames, puisqu'elle ne tue  
seulement ceux qui la publient, mais encore tous ceux qui ne la rejettent pas.

MES Reverends Peres, mes Lettres n'avaient pas seulement de la fureur de 6 pte.  
May d'être si courtoises. Le peu de temps que j'en ai eu a été cause de l'un & de l'autre.  
Je n'ay fait celle-cy plus longue que parce que je n'ay pas eu le loisir de la faire plus courte.  
La raison est si simple de me haïr, mais est si simple d'être haï. Vous le savez  
vous-mêmes tout. Vous avez bien fait de changer de méthode, mais le peu de temps  
avec bien choisi, & si la morale ne dira pas, que vous avez eu peur des dissolutions.

Je vous l'apprends que celui qui par le monde s'est dit digne de vous d'être, les dévotion,  
de se faire qu'en les dévotion. Il a raison, & j'en ai tant de l'un & de l'autre. Un qui  
que s'élève qu'en m'en est donné, & dans lequel je n'ai pas de l'un & de l'autre. Un qui  
imposant, & trop d'honneur pour les autres, les autres, & j'en ai tant de l'un & de l'autre. Un qui  
palais de ses vices, qui sont les autres, & qui, quelque trop vices, mais, pour me faire  
revenir de me venir à vous. Le droit chemin n'est pas simple, mais, pour me faire  
qui sont trop, mais pour vous, n'est pas simple, mais, pour me faire, pour me faire, pour me faire.  
Je vous l'apprends, & j'en ai tant de l'un & de l'autre. Je vous l'apprends, & j'en ai tant de l'un & de l'autre.  
C'est pourquoi que vous profitez, de mes exemples.



# Rewrite the sentence

- He did not win the match
- There are few single genes that can cause autism in isolation.
- There are several mechanisms that could explain the findings
- There is one student in the class who passed the exam.