

# Story, science, and simplicity:

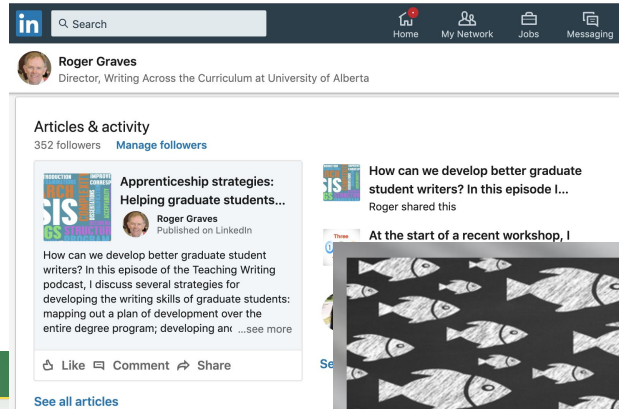
Writing for the non-specialist audience

Faculty Workshop Series, Becoming a Better Writer

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<https://rogergraves.podomatic.com/> 2

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1/7/2020

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By Roger Graves

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### Roger's Activity

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9. due to the fact that: because, due to, since  
10. during the period of: during  
11. for a period of: for  
12. has a requirement for: needs, requires

### Clear and Concise

Become a Better Writer workshop series

**Clear and concise: Strategies for writing better**  
Roger Graves on LinkedIn  
October 30, 2019  
21 · 4 Comments  
76 views of your article

Roger Graves posted this

# The Plan

In this workshop we'll review ideas discussed in previous sessions, including plain or low styles of writing, readers and the strategies they use to make meaning from written texts, and techniques for writing clearly.

We'll then enlist those tools in the campaign to raise public awareness of scholarship and research through mainstream newspapers, web outlets such as [The Conversation](#), and in public gatherings.



# The workshop series so far

## Become a Better Writer

### *A Faculty Professional Development Workshop Series*

1. Introduction: Becoming a More Productive Writer
2. Styles of writing: an introduction and orientation to writing style
3. Clarity and concision
4. Genres of Academic Writing: Research Articles
5. Genres of academic writing: Personal style and the teaching philosophy statement

# Writing for non-specialists: Part 1

Writing for non-specialists requires two separate kinds of skills including technique-oriented strategies related to style:

[Styles of Academic Writing](#) (slides)

[The Plain or Low Style](#) (slides)

[An Introduction and Orientation to Writing Style](#)  
(blog)

[Writing with Style: The Plain or Low Style](#) (blog)

Style: A template for analysis

Words

Feature	% of passage in <u>target</u> text	% of
Monosyllabic/polysyllabic		
Active/passive		
"To be" verbs (is, are, be)		
Concrete/familiar/colloquial/plain		
Conceptual/abstract/abstruse/embellished		

(pdf)

## Part 2:

The second skill relates more to a conceptual understanding of that audience or readership:

what they know and don't know, and how you can leverage what they do know to build a bridge to the new, technical knowledge you want to convey



# Part 1: Simplicity





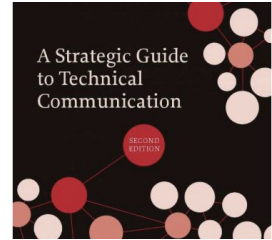
# Readability factors

Readability studies of printed materials about cancer have shown them to be written at a Grade 10 level or higher, which leads to the following problems for seniors:

- information overload
- unclear messages
- difficult vocabulary
- incomprehensible technical language
- uninviting tones
- content that does not specifically target their cohort
- little organization

Friedman, D. B., & Hoffman-Goetz, L. (2003). Cancer coverage in North American publications targeting seniors. *Journal of Cancer Education*, 18(1), 43-47.

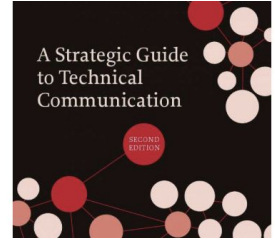
# What is plain language?



- A worldwide effort to improve the clarity and accessibility of how legal contracts, government documents, and other important information is written
- Write short sentences, using specific, uncomplicated terms that most readers can understand
- A good basis for writing to both academic and non-academic audiences

# Plain language guidelines

- Plain language involves an ethical relationship between reader and writer
- Writers want to communicate clearly with readers
- Take your readers' point of view
- Organize ideas around what your reader needs to know



# Know your readers

- What level of knowledge do they have?
- What is their cultural background?
- What is their income level?
- What do they want to know?
- What information will they use most frequently?
- What questions are they asking about the topic you are writing about?

**THE CONVERSATION**

Academic rigour, journalistic flair

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# Ways to organize information

## 1.3. Care-Ethical Responsibility

In Tronto's view of care ethics, Responsibility is a "central moral category" ([1993](#), p. 131). When a need is identified, one must decide if one feels responsible for it and if so, how to respond (p. 106). Responsibility in care ethics differs from other, more traditional notions of responsibility in five major ways.

First, it is not universal, but dependent on context: the best ethical response is a function of the situation and actors involved. Responsibility in care ethics considers both what should be done and what those involved are capable of doing. For example, in engineering, one might wish to claim universally that

# Word-level plain language

- Use words that are accurate, appropriate, and familiar.
- Use technical jargon sparingly; do not use business jargon at all.
- Use active verbs most of the time.
- Use strong verbs (not nouns) to carry the weight of your sentences.

Furthermore, adopting a care ethics perspective also helps spotlight stakeholders who might otherwise be missed. A conventional ethical perspective might focus on causal responsibility, looking across the lifecycle from the design engineers and the companies for whom they work, to the consumers and eventual disposers of a designed artifact or system. These are stakeholders who actively influence a given situation. In addition to these stakeholders, responsibility in care ethics reminds us to consider stakeholders who are affected by the situation and to even prioritize the needs of disadvantaged (e.g., vulnerable, powerless, or underprivileged) stakeholders. These affected stakeholders could also have a role to play in addressing or preventing problems.

# Sentence-level plain language

- Be concise
- Vary sentence length and sentence structure
- Use parallel structure (especially in lists)
- Put your readers in your sentences
- Begin most paragraphs with topic sentences
- Use transitions to link ideas

# Keep sentences short

- Working memory can only process about 25 words in a chunk.
- Use 25 words as your limit for sentences.
- Aim for 15 to 22 words (or 2 ½ to 3 lines of type in a document).
- Keep paragraphs short.
  - What is short? 6 to 8 lines of text.

We're not starting from scratch. Qualitative research studies, performed by our team and others, provide information about what people care about when it comes to health data. For example, it's important that privacy is protected, that there is a public benefit and that the findings from health data research don't disadvantage any groups. (5/22/26)

"Plain language about health data is essential for transparency and trust"

<http://theconversation.com/plain-language-about-health-data-is-essential-for-transparency-and-trust-123319>



# What's wrong with long?

- Readers miss important points due to overextending memory
- They may not reread long sentences
- They may stop reading your document altogether.

# Plain style: Methods section

**This work explores** samples of student writing on the topic of electronic waste recycling in industrializing countries. **These samples were written** in 2011 by undergraduate students at a large public research institution<sup>3</sup> in the western United States. **Students** from a variety of engineering majors in a large, entry-level electrical engineering course **were provided with** an article on the health and environmental impacts of waste electronics in China and India. **They were also given** three questions pertaining to the article and asked to write a short (one to two page) essay as guided by the provided questions (see below). **The assignment was optional** and students were incentivized with extra credit to be applied to their course grades. **The students had** 1 week to complete the assignment.

(17/20/32/29/18/9)

simple/simple/simple/simple/compound/simple

FAVES	GRADE	ISSUES	REACH	WORDS
☆	D	12	62%	124
Readability Grade Levels				
☹	Flesch-Kincaid Grade Level		13.1	★
☹	Gunning Fog Index		15.4	★
Readability Scores				
☹	Flesch Reading Ease		37.8	★

Campbell, R. C., & Wilson, D. (2017). Engineers' Responsibilities for Global Electronic Waste: Exploring Engineering Student Writing Through a Care Ethics Lens. *Science and engineering ethics*, 23(2), 591–622. doi:10.1007/s11948-016-9781-2

# What's wrong with long?

## Exceptions?

When an idea makes more sense in one long sentence than in several short sentences, use a longer sentence.

In our publication [“Notches on the dial: a call to action to develop plain language communication with the public about users and uses of health data”](#) in the *International Journal of Population Data Science*, we present a plan to work with the public on simple communications about health data. (49 words)

"Plain language about health data is essential for transparency and trust"

<http://theconversation.com/plain-language-about-health-data-is-essential-for-transparency-and-trust-123319>

# How do I shorten sentences?

- Include only one or two ideas in a sentence.
- Explain qualifiers or modifiers to an idea in separate sentences.
- Explain any conditions attached to the main idea in separate sentences.
- Avoid using “and” to connect ideas that can be rewritten in separate sentences

In a recent article we present a plan to work with the public on simple communications about health data.<sup>1</sup> (19 words)

"Plain language about health data is essential for transparency and trust"

<http://theconversation.com/plain-language-about-health-data-is-essential-for-transparency-and-trust-123319>

# How to shorten sentences

- Don't sacrifice clarity to keep a sentence short.
- Don't shorten sentences by leaving transitions out.
- Do link related ideas by using *that*, *which*, or *who*.

For example, it's important **that** privacy is protected, **that** there is a public benefit and **that** the findings from health data research don't disadvantage any groups.

"Plain language about health data is essential for transparency and trust"

<http://theconversation.com/plain-language-about-health-data-is-essential-for-transparency-and-trust-123319>

# Use simple sentence structures

- Simple sentence structures ensure that your writing is direct, positive, and active
- Use simple, declarative sentences (**subject** + **verb** + **object**)
- Example

“**Your refund arrived today.**”

**We want to work with the public to create some standardized text that helps people understand what is happening with their health data.**

"Plain language about health data is essential for transparency and trust"

<http://theconversation.com/plain-language-about-health-data-is-essential-for-transparency-and-trust-123319>

# Three strategies

1. Connect modifiers to the words they modify:

**Not**

“Please let me know whether you can meet the newest deadline as soon as possible.”

**Instead**

“Please let me know as soon as possible whether you can meet the newest deadline.”

# Strategy #2

If the paragraph exceeds 6 to 8 lines of text, change the format or use bullets to list information.

## Not

“The manual is divided into three section that are tailored to the background knowledge of various users such as the first time user who doesn’t know how to turn the program on to the novice user who is ready to learn more advanced functions to the expert user who want to adapt the source code of the program.”

## Instead

“The manual is divided into three sections tailored to the user’s background knowledge:

- First-time users who can’t turn on the program
- Novice users ready to learn more advanced functions
- Expert users who want to adapt the source code of the program.”



# Strategy #3

If you use bullet points, use parallel structure for parallel ideas

## Not

“To access the font formatting instructions follow these steps: 1) click on the help icon on the main toolbar, 2) next you need to scroll through the options until you find formatting, 3) next users would want to click on the “font” choice.”

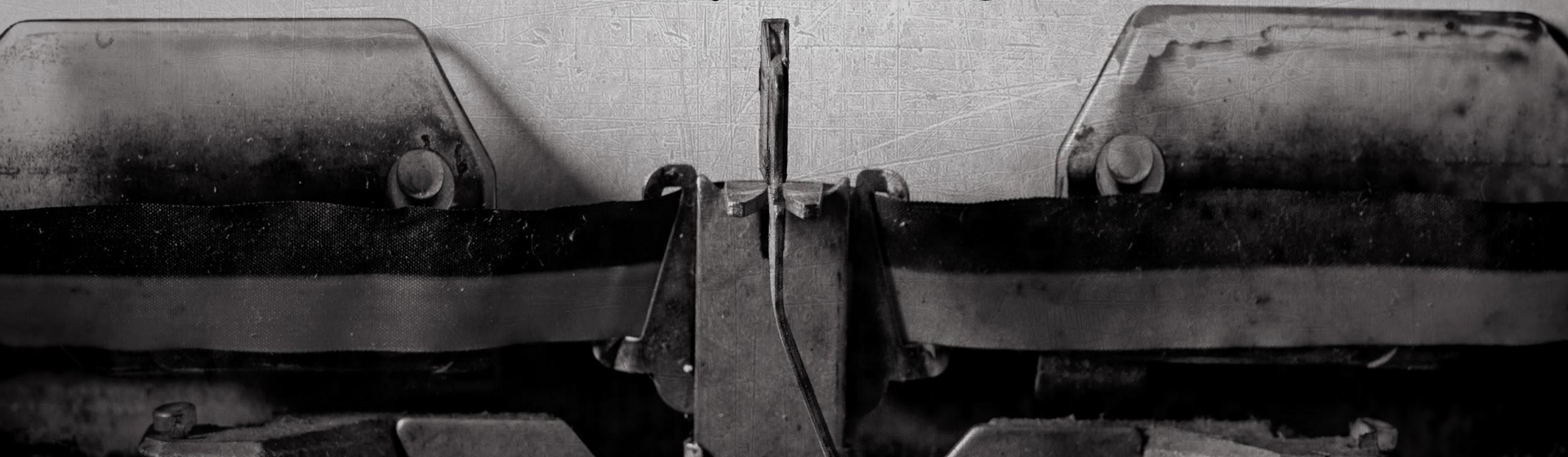
## Instead

“To access the font formatting instructions follow these steps:

- a. Click on the help icon on the main toolbar
- b. Find the formatting option
- c. Click on the “font” choice”

Part 2:

Storytelling



Read this story

# **I study viruses: How our team isolated the new coronavirus to fight the global pandemic**

March 25, 2020 3.10pm EDT



# Story arc

I study viruses: How our team isolated the new coronavirus to fight the global pandemic

March 25, 2020 3:10pm EDT



Arinjay Banerjee,  
using his special skills,  
helped isolate the  
virus

We study virus, which are  
simple and complex,  
innocuous and murderous

We now have copies  
to use to study and  
find vaccines

Our team now has a  
chance to win against  
the virus

The story of me and my  
group's research into  
the corona virus

The  
characters  
(setup)

# I study viruses: How our team isolated the new coronavirus to fight the global pandemic



March 25, 2020 3.10pm EDT

Coronaviruses get their name from the crown, or corona, of spikes that adorn the outer surface of the virus, as seen on this illustration of a highly magnified virus particle (Image courtesy of the Centers for Disease Control and Prevention)

Email

Twitter

15

Facebook

LinkedIn

Print

As most people rush to distance themselves from COVID-19, Canadian researchers have been waiting eagerly to get our (gloved) hands on the hated virus.

We want to learn everything we can about how it works how it changes and how it interacts with the human immune system, so we can test drugs that may treat it, develop vaccines and diagnostics and prevent future pandemics.

This is what researchers live to do. Much of our everyday work is incremental. It's important and it moves the field forward, but to have a chance to contribute to fighting a pandemic is especially inspiring and exciting.

## The secret lives of viruses

Firefighter trope

## The secret lives of viruses

20 words/  
2 sentences

Viruses are fascinating. They are inert microscopic entities that can either hide out, innocuous and undetected, or wreak pandemic havoc.

39 words/  
2 sentences

They are simultaneously complex and simplistic, which is what makes them so interesting — especially new, emerging viruses with unique characteristics. Researching viruses teaches us not only about the viruses we study, but also about our own immune systems.

2 sentence  
paragraphs

---

*Read more: Coronavirus weekly: expert analysis from The Conversation global network*

---

49 words/  
2 sentences


The emergence of a new coronavirus in a market in Wuhan, China, in December 2019 set in motion the pandemic we are now witnessing in 160 countries around the world. In just three months, the virus has infected more than 360,000 people and killed more than 16,000.

Rising  
Action




## Viral isolation

The outbreak sent researchers around the world racing to isolate laboratory specimens of the virus that causes COVID-19. The virus was later named severe acute respiratory syndrome coronavirus 2, or SARS-CoV-2.



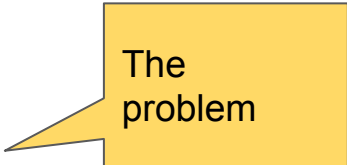
Inciting incident

In countries that experienced earlier outbreaks, including China, Australia, Germany and the United States, researchers were able to isolate the virus and develop their own inventories of SARS-CoV-2, but logistical and legal barriers prevented them from readily sharing their materials with researchers beyond their borders.



Complicating action

What Canadian researchers needed to join the fight in earnest was a domestic supply of clean copies of the virus — preferably from multiple Canadian COVID-19 cases. Even in a pandemic, developing such a supply is not as easy as it might sound, and multiple teams in Canada set out to isolate and develop pure cultures of the virus, not knowing which would be successful, or when.



The problem

Ultimately two teams in Canada would isolate the virus for study: one at the University of Saskatchewan and one that featured researchers from McMaster University, Sunnybrook Health Sciences Centre and the University of Toronto.

Climax

Arinjay Banerjee, a postdoctoral research fellow at McMaster who typically works in my virology lab, volunteered his special expertise. We were proud to have him share his talent with the team in Toronto, where he set to work with physicians and researchers Samira Mubareka, Lily Yip, Patryk Aftanas and Rob Kozak.

Hero

For Banerjee, it was like a batter being called to the plate with the score tied in the bottom of the ninth. He had come to work at McMaster because of its Institute for Infectious Disease Research and its Immunology Research Centre, and because the university maintains a research colony of bats.

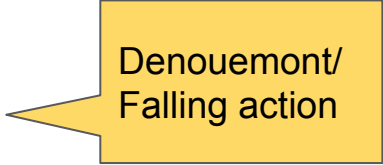
Sports metaphor



We can use tricks to draw out a virus. Sometimes the tricks work and sometimes they don't. In this case, the researchers tried a method Banerjee and the team had previously used while working on the coronavirus that causes Middle Eastern Respiratory Syndrome: culturing the virus on immunodeficient cells that would allow the virus to multiply unchecked. It worked.

Since specimens from patients are also likely to contain other viruses, it is critical to determine if a virus growing in the culture is really the target coronavirus. Researchers confirm the source of infection by extracting genetic material from the virus in culture and sequencing its genome.

They compare the sequence to known coronavirus sequences to identify it precisely. Once a culture is confirmed, researchers can make copies to share with colleagues.



Denouement/  
Falling action

## Canadian viral strains

Both the Saskatchewan and Ontario teams are now able to make and share research samples with other Canadian scientists, enabling important work to proceed, using a robust domestic supply that reflects the evolving virus in its most relevant mutations.



Resolution

That in turn gives Canadian researchers a fighting chance to deliver a meaningful blow to COVID-19 while there is still time. I'm glad our colleagues at other Canadian institutions will also have versions of the virus to use in their research.

There is still so much work for all of us to do.

# Other story arcs

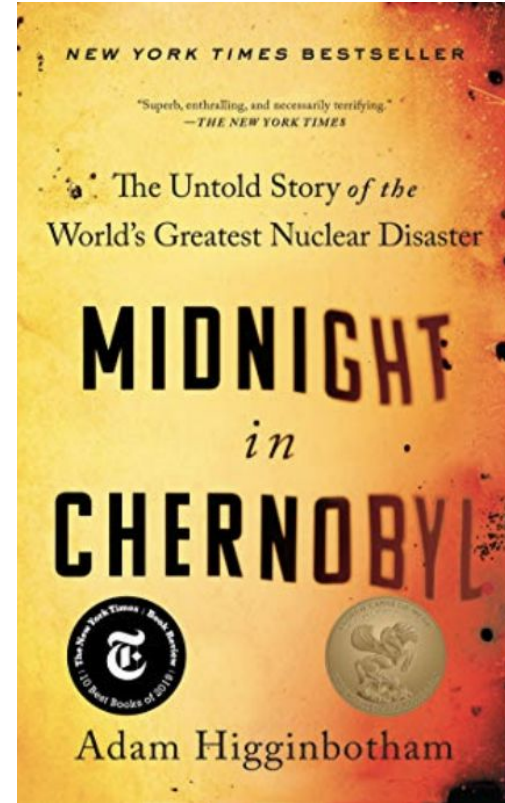
Maps/diagrams

Cast of characters

Prologue: setting the scene

Chronological narrative begins  
(traditional arc)

Epilogue



# Other story arcs

1. “rags to riches”: a rise in happiness



2. “riches to rags”: a fall in happiness



3. “man in a hole”: fall–rise



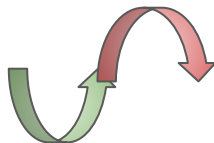
4. “Icarus”: rise–fall



5. “Cinderella”: rise–fall–rise



6. “Oedipus”: fall–rise–fall



...and they lived  
happily ever after.