KEEP IT SIMPLE, SCIENTISTS

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STRUCTURE OF PRESENTATION

- The challenges of editing within the limits of formal academic writing, and the challenges faced by English-as-second-language (ESL) writers.
- Inconsistencies in ESL writing (sometimes they write too much; sometimes too little)
- Scientific terminology (like walking over a minefield for editors)
- How do you deal with Titles? (these are usually quite precious to authors, so need to be handled carefully)
- Maintaining the author's voice (so easy to get wrong)

EDITING WITHIN THE CONSTRAINTS OF ACADEMIC WRITING

- Scientific journals expect a very formal, sometimes outmoded style of writing.
- Different journals have different rules (some engineering journals forbid the use of the active voice).
- Moreover, peer reviewers of scientific papers differ in what they consider to be proper English (some are very fussy).
- English-as-second-language (ESL) writers try to emulate their English native peers.

ESL AUTHORS OFTEN TRY TO EMULATE POOR ROLE MODELS

Most scientists are not good writers!

Consider this sentence from a paper published in a prestigious academic journal:

"The combined effect of the physiological and chemotactic responses of the bacteria motion results in nontrivial collective behaviors, which have been the focus of inquiry since Adler's introduction of assays in which *E. coli* move in migrating "bands."

You don't need "effect" and "responses" because they mean essentially the same thing!

The combined physiological and chemotactic responses of the bacterial motion induce nontrivial collective behaviors, which have attracted attention since Adler assayed the movement of *E. coli* in migrating "bands."

ACTIVE VERSUS PASSIVE VOICE

My employers encourage use of the active voice

BUT… some journals expressly forbid it.

I have seen this sentence in journal guidelines more than once:

"Avoid the use of "we". Personal pronouns have no place in an engineering journal".

Unsure whether to adopt the active voice but know the target journal?

Check the journal guidelines.

WHEN YOU HAVE TO USE THE PASSIVE VOICE

Okay, so the author's target journals wants to stick with turgid, uninspired prose. You can still make it better.

In a recent edit, I was not allowed to use personal pronouns. Therefore, I was not allowed to change

"The amount of introduction of renewable energy developed a new analysis algorithm in consideration of utilization of the level effect of renewable energy with wide-area interconnection…" into

"We developed a new analysis algorithm for determining the amount of renewable energy in a wide-area transmission network. The protocol aims to level the effect of fluctuations in the renewable energy by…"

- But I was able to change it to

"A new analysis algorithm for determining the amount of renewable energy in a wide-area transmission network was developed. The protocol aims to level the effect of fluctuations in the renewable energy by…"

INCONSISTENCY—ANOTHER PROBLEM WITH ESL WRITING

- Blurs the boundaries between your changes and the author's meaning.
- For example, in the above case, the authors never used the word "fluctuations". I inserted it.
- Why did I do that? Surely if the author hasn't inserted a word, you have no right to do so, either?
- Actually, sometimes you do! (but please leave a comment for the author).
- In this case, the reader has no other way of knowing that "level effect" refers to "smoothing out the fluctuations in the electric power".
- The authors thought that "level effect" was adequately simple and descriptive, because they had described the term earlier. Actually it is not.

THE MINEFIELD THAT IS TERMINOLOGY

- ESL scientists (every one of them) will assume you are an expert and can edit their papers.
- If you were an expert in every paper you edited, you could edit only a very small number of papers.
- Therefore, you are a generalist by default.
- Do you have to learn and master all the terminology that exists? No!
- Google any strange term, and if Google doesn't tell you what it means, then nothing will (in other words, it's almost certainly wrong). As discussed with the audience during this talk, Google references should be cross-referenced against each other (as Google is not always a reliable source) or against reliable resources such as dictionaries and glossaries).

WHEN THE AUTHORS ARE CORRECT

A recent paper that I edited contained the following sentence:

"As a comparison, the record of the group sunspot numbers (2 citations) are shown in Fig. 2(b)."

What does this mean? That the sunspot numbers in both citations had been grouped into one dataset? Later in the document, I found

"Since the characteristics of 27-day cycles can change according to the phase of solar decadal cycles, we divided the period into high/low solar activities based on group sunset numbers".

That phrase again! Could this be a standard terminology? After a Google search, I learned that…

Group sunspot number is the number of grouped sunspots observed over a daily, monthly or yearly period.

WHEN THE AUTHORS ARE INCORRECT

In the same paper, the author consistently referred to the Sibelian airmass. I then wondered, should this be Siberian airmass?

A Google search found no sensible matches, so I corrected the term throughout (with a comment for the authors to confirm).

Sometimes, authors will consistently misspell the Latin name of an organism.

Take-home message: If you see something suspicious, Google it and check that the returned references are accurate and consistent. The term might be proper usage in the author's specialist field. Especially if used consistently.

MORE UNUSUAL TERMINOLOGIES

Other examples of phrases that seem wrong but are actually correct:

- Non-stationary. Shouldn't this be altered to "dynamic"? No, because in statistics it means a process whose statistical properties change over time (i.e., exhibit a trend). It is the opposite of a stationary process, which exhibits no trend over time.
- Vicarious calibration: Shouldn't this be altered to "distant calibration"? No, because in remote sensing, it means independent checking of the quality of remotely sensed data. It is a real terminology in this field.
- Coupon: I encountered this term in an engineering paper. Surely it is wrong? Isn't a coupon a strip of paper offering a discount or a free gift? No; in engineering it is a polished strip of material that assays the corrosiveness of a gas or liquid!
- Phantom: When I first encountered this term in a medical physics paper, it seemed wrong. But no once again; a phantom is used to estimate the radiation dose administered to patients

WHEN AUTHORS OVERCOMPLICATE THE TITLE OF THEIR PAPER

A Title is supposed to summarise the paper's content. Some authors do not like you meddling with their "baby".

Many ESL authors make their Titles far too long (more than 12 words is too long; most journals do not accept > 15 words).

How do you simplify a Title while retaining the nuances?

- Remove words and phrases such as "The", "A study on…", "A novel…" These are useless for search purposes and are mostly discouraged by journals.
- Remove words and phrases that relate to the specifics of an experiment.

WHEN AUTHORS OVERSIMPLIFY THE TITLE OF THEIR PAPER

Sometimes ESL authors make their Titles too short. For example, I recently mock-reviewed a paper titled

"Geometric Nature Rules Structure/Potential-energy Correspondence".

The paper found whether the thermodynamic properties of a material can be determined from its structural information (such as a micrograph).

The Title implied only a correspondence between the geometric information and potential energy.

The "whether" aspect was missing, so the Title was misleading. A possible alternative is "Does Geometric Nature Rule the Structure-Potential energy correspondence?"

MAINTAINING THE AUTHOR'S VOICE IN ESL SCIENTIFIC EDITING

The parameters of academic journal writing are very strict. ESL authors often use a mix of over-formal and over-casual language. How do you get the balance right?

Answer: "After years of experience, you know which informal words are accepted and standard in scientific publications".

- You can relax words such as "performed" or "conducted".

For example, an author might write "experiments were carried out in the chemical laboratory of…"

- I used to correct "carried out" to the more formal "performed" or "conducted". However, "carried out" is often used in academic papers, and it preserves the author's voice.

OTHER EXAMPLES

- "There are many examples of X in the literature" should be left intact. Changing it to "Many examples of X can be found in the literature" does not alter the meaning of the sentence. But it does alter the author's voice.
- Terms like "inputting", "huge" and "massive" are also acceptable.
- Remove terms such as "etc." or "and so on", which ESL authors love to put at the end of their sentences. These are fine in oral presentations, but not in formal writing.
- Often you will come across sentences such as "The Internet plays a key role in everyday life". Change "key" to "integral", "crucial" or "important" if you want your senior editors or employers to love you.

WHEN IT ALL GOES WRONG

And it sometimes does!

- In a paper on modelling the financial market, the author used the word "stalking" and I changed it to "following". To this day, I regret that decision.
- Some authors love it when you have perfected their work; others get upset that you have changed the nuance of their writing.
- Occasionally an author will accept your edits, send their paper for peer review, and the reviewers comment that the English is substandard.
- When they know that the authors are ESL, some reviewers are extra vigilant about looking for English "errors".
- Other times, the reviewers themselves are not native English speakers.

Take home message: You can please some of the authors all of the time, and all of the authors some of the time, but you can never please all of the authors all of the time!

Looking forward to some lively discussion. Any questions?