

COMMUNICATING COMPLEX IDEAS CLEARLY: KEY TO CRACKING THE CODE OF PUBLISHABILITY

Simplify, simplify.

(Henry David Thoreau)

"...Many academics pay no attention to their audience: they write, but they don't communicate. Stylish academics cultivate an authoritative yet conversational voice that bridges the gap between writer and reader.

Whether or not they choose to use the pronoun "I," they always sound like human beings."

(Helen Sword)

This paper addresses the issues of scientific publishability in light of Italo Calvino's memos regarding good writing. It deals with both extralinguistic and language issues of publishability in English. Some argumentation and rhetoric aspects are also considered. Overviewed are: logical fallacies, Toulmin model of argumentation, as well as order of arguments, editing, and carefully selected scientific and academic writing resources. The so called "reverse editing" notion is also introduced, and relevant examples are provided.

Key words: scientific discourse, clear writing; readability; logical fallacies; the Toulmin model of argumentation, Ebbinghaus serial position effect, editing, "reverse editing;" writing resources

У статті розглянуто питання наукової публікації у світлі настанов Італо Кальвіно щодо зрозумілої і красивої писемної мови. Увагу приділено як екстралінгвальним, так і лінгвальним чинникам англійських публікацій, у тому числі, аргументативним і риторичним. Подано огляд типових логічних помилок, моделі аргументації Тулміна, а також розглянуто порядок аргументів, редагування та ретельно відібрані джерела навчального матеріалу з наукового письма. Введено поняття так званого "зворотнього редагування" та наведено відповідні приклади.

Ключові слова: науковий дискурс, зрозуміле письмо, читабельність, логічні помилки, модель аргументації Тулміна, позиційний показник Еббінгауза, редагування, зворотнє редагування, навчальні матеріали з писемного мовлення

В статье рассматриваются вопросы научной публикации в свете заметок Итало Кальвино о понятной и красивой письменной речи. Внимание уделяется как экстралингвальным, так и лингвальным вопросам англоязычных публикаций, в том числе, аргументативным и риторическим. Дается обзор типичных логических ошибок, модели аргументации Тулмина, а также рассматривается порядок аргументов, редактирование и тщательно отобранные источники учебного материала по научному письму. Вводится понятие так называемого "обратного редактирования", приводятся соответствующие примеры.

Ключевые слова: научный дискурс, понятное письмо, читабельность, логические ошибки, модель аргументации Тулмина, позиционный показатель Эббингауза редактирование, обратное редактирование, учебные материалы по письменной речи

There are two kinds of writing: clear and unclear. This applies to both fiction and nonfiction. This paper aims to unveil some techniques behind

the good academic and scientific writing in light of academic publishability, based on the overview of the state of the art of the field.

As early as 1988, perhaps one of the most underestimated writers of the 20th century, Italo Calvino, dedicated his book "Six Memos for the Next Millennium," to the qualities of great writing that will shape the XXI century literature. Calvino highlights five qualities of good writing:

- **lightness**
- **quickness**
- **exactitude**
- **visibility**
- **multiplicity**

He also intended to add **consistency** to the list [9]. All of the traits listed above seem to be applicable not just to fiction, but to academic and scientific writing as well.

Speaking of **lightness**, scientific writings should be easily comprehensible and understandable, or, figuratively speaking, "decipherable." Truly, it's worth using "the issue was raised" instead of ambiguous "the issue was brought up." **Quickness** is about minimizing digressions. Calvino gives an apt example of the text based solely on them (Laurence Sterne's "The Life and Opinions of Tristram Shandy, Gentleman"). Calvino praises the American short story tradition, and says that his favorite short story is the one by the Guatemalan writer Augusto Monterroso: "*When I woke up, the dinosaur was still there.*" **Exactitude** is about the language as precise as possible in choice of words and in expression of subtleties of thought and imagination. **Visibility** deals with various ways of pictorial representation of information. **Multiplicity** allows a work to escape the limited perspective of his or her own viewpoint, or, as Calvino put it, "individual ego" [ibid.]

In science, the research subject should be current, novel, not derivative. Science values analytical skills and original, independent critical thinking. And scientific writings should clearly demonstrate that. Yet, as the scientist Helen Sword observes in her book "Stylish Academic Writing," of the estimated 50 million academic articles at large in the world today, all too many contain prose that is "weary, stale, flat" (to quote Hamlet) [22]. She argues that elegant data and ideas deserve elegant expression. Hence good writers should:

- **answer the question**
- **provide evidence**
- **avoid plagiarism**
- **be precise**
- **write simply**: avoid muddly syntax and obscure vocabulary, make your prose carefully structured and clutter-free

- **write concretely**, bring theoretical concepts to life with stories, anecdotes, case studies, metaphors, vivid nouns, active verbs (use MORE verbs, make your prose verb-driven), illustrations, and examples, examples, examples.

"The bottom line? Stylish academic writers are committed to making their research consequential and accessible. They spend time on their writing so that their readers won't have to" [23].

Professor Sword notes that jargon-laden, impersonal prose of scientific writing is an unfortunate persistent myth: "nearly everyone, including the editors of academic journals, would much rather read lively, well-written articles than the slow-moving sludge of the typical scholarly paper... Stylishness is in the eye of the beholder, of course, and stylistic preferences can vary significantly across disciplines. Nevertheless, all stylish academics adhere to three key principles that any writer can master: communication, concreteness and craft" [ibid]. She gives several real-life examples of converting "stodgy" writing to "stylish" (slightly doctored to protect the authors' identities):

Stodgy: *The human capacity to synthesize linguistic complexity is exemplified by the grammatical phenomenon of verb irregularity.*

Stylish: *"This book tries to illuminate the nature of language and mind by choosing a single phenomenon and examining it from every angle imaginable. That phenomenon is regular and irregular verbs, the bane of every language student." (Steven Pinker)*

Stodgy: *Occurrences of jargon in scholarly discourse typically denote a complex series of sequential thought processes reduced to a simplifying denominator.*

Stylish: *"Jargon marks the place where thinking has been. It becomes a kind of macro, to use a computer term: a way of storing a complicated sequence of thinking operations under a unique name." (Marjorie Garber)*

Stodgy: *A significant variability in nutrient-gathering behaviors has been observed in various insect species.*

Stylish: *"Insects suck, chew, parasitize, bore, store, and even cultivate their foods to a highly sophisticated degree of specialization." (Richard Leschen and Thomas Buckley)*

To help writers check their work, it seems like a good idea to consult Helen Sword's online **readability test** called Writer's Diet Test [24]. Another good resource is Flesch Kincaid readability test [13].

Among the principal traits of good academic writing, US scientists Dr. Torsten Pieper, and his colleague, Dr. Joseph Astrachan highlight **the methods** used to explore the issue. The latter should be appropriate (for example, data collection and analysis of data), applied rigorously and explain why and how the data support the conclusions. Dr. Pieper also stresses the importance of **varied research methods (quantitative and qualitative)**, noting that well over 75 percent of submissions coming from the US use quantitative methods compared to about 50 percent from Europe. The authors also emphasize the importance of **connections to prior work** in the field to make the article's arguments clear. And, just like Helen Sword, they say that the article should tell a good story, meaning it is well written and easy to understand, the arguments are logical and not internally contradictory [28].

Now let's turn to one more excellent resource on academic and scientific writing. Tom Boellstorff emphasizes the following five tips in his paper "How to Get the Article Accepted at American Anthropologist (or Anywhere):"

- **be professional** (avoid typographical and grammar errors; mixed fonts, strange formatting etc.)
- **link your data and your claims** (surprisingly often, authors present insufficient evidence for their claims: the data and argument of the manuscript are at cross-purposes with each other);
- **avoid sweeping generalizations and other logical fallacies**; (e.g., not enough evidence to support a theory)
- **use citations effectively** (it is crucial to cite the relevant literature on the topic in the manuscript, but avoid long quotes, stick with short ones);
- **structure the manuscript** (the conclusion should not be too short, the subsections should be equal in length; introduction should be linked to the subject of the paper; the thread of one's argument needs to be carried consistently throughout the manuscript [7]).

Speaking of logical fallacies, let us briefly summarize them. Fallacies are generally divided into two basic categories: fallacies of insufficient evidence and fallacies of relevance.

- **fallacies of insufficient evidence (improper authorities and sources):**
 - ◆ appeal to an unreliable authority (*argumentum ad vericundiam*)
 - ◆ appeal to ignorance (*argumentum at ignorantiam*)
 - ◆ "slippery slope" argument (false cause with subsequent conclusions)
 - ◆ weak analogy (analogy is not a proof)
 - ◆ inappropriate appeal to authority (the arguer is an authority, but in some other field)
 - ◆ the claim conflicts with expert opinion
 - ◆ biased authority (the arguer is biased and subjective)
 - ◆ unreliable source

- ◆ the source has not been cited correctly or has been taken out of context
- ◆ anecdotal fallacy
- **fallacies of relevance (the arguments are logically irrelevant to the conclusion and rely on an emotional appeal)**
 - ◆ **appeal to the people** (*argumentum ad populum*) – manipulating people's values and beliefs:
 - **bandwagon argument** (to feel like a part of a crowd)
 - **appeal to vanity and snobbery** (to feel like admired and famous people)
 - **against the person** (*argumentum ad hominem*) – not the argument/claim, but its author is being criticized; this also includes
 - "you too"/"look who's talking" (*ad quoque*) tactic
 - "two wrongs make a right" (they are wrong, so if I'm wrong, too, that is excusable)
 - ◆ **appeal to force** (*argumentum at baculum*)
 - ◆ **appeal to pity** (*argumentum at misericordiam*)
 - ◆ **appeal to emotion**
 - ◆ **appeal to fear**
 - ◆ **appeal to novelty**
 - ◆ **appeal to poverty**
 - ◆ **appeal to wealth**
 - ◆ **appeal to wealth**
 - ◆ **appeal to an accident** (overgeneralizing one specific case)
 - ◆ "straw man" (the opponent's argument is distorted in order to make it easier to attack)
 - ◆ "red herring" and "missing the point" (*ignoratio elenchi*) (sidetracking the audience by an irrelevant issue, supporting a different conclusion)
 - ◆ "attacking the motive" (criticizing the author's motives)
 - ◆ **equivocation** (using ambiguity and shifts of meaning)
 - ◆ **begging the question** (*petitio principii*) (assuming as a premise the thing he or she is trying to prove as a conclusion) [18; 26]

It seems like a good idea to be well-versed in general principles of argumentation theory, as well as rhetoric(s) and new rhetoric(s) [1; 2; 3; 4; 5; 11; 25]. For the purposes of academic communication, The Toulmin Model of Argumentation is especially relevant. According to his model, Toulmin argues that a good argument needs good justification for a claim. In *The Uses of Argument* (first edition came out in 1958), Toulmin suggests the following components for analyzing arguments:

obligatory:

- **Claim** (thesis statement)
- **Grounds** (facts, evidence, data that answer the question "why?")
- **Warrant** (implicit connection between the claim and the ground, or why the evidence supports the claim)

and additional:

- **Backing** (extra proof)
- **Rebuttal/Reservation** (counter-arguments and counter-examples)
- **Qualifier** (linguistic devices conveying various degrees of certainty and possibility) [25].

For that matter, let us also emphasize the order of arguments. It was Hermann Ebbinghaus who first discovered the so-called Serial Position Effect. In writing, that means putting your weakest arguments in the middle and your strongest arguments in the start and the strongest – in the end [12], though ideally all arguments should be well-supported.

Let us briefly summarize the concerns of academic writing:

- plagiarism
- data mismatch
- inadequate methods
- ambiguity of claims, one-sided arguments
- poor titles and structuring of the manuscript
- poor abstracts
- verbosity

When writing **abstracts**, one should state the **problem and its importance**, as well as the **solution to the problem, and what follows from it**. To avoid verbosity, we suggest several revision tips. We call them "reverse editing", because first we inevitably have to learn the "verbose" patterns – to be able to "convert" them into compressed, succinct ones later on. Examples:

- **use more verbs**
~~is an illustration~~ – illustrates
~~perform conversion~~ – convert
~~make use of~~ – use
- **avoid double negation**
~~not impossible~~
~~not unless~~ – only if
~~not without~~ interest
with
- **use active vs. passive voice**
~~As can be seen from table 7...~~ – Table 7 shows
~~At Z, X is manufactured~~ – Z manufactures X
~~recently done~~ research –
recent

- **eliminate "that-phrases" and "which-phrases":**
the approach ~~that was used~~
~~that we need more time is obvious~~
what I mean to say is ~~that ...~~
~~the fact that~~
information ~~which has~~ indirect bearing on the issue
with
the images ~~that represent~~ information –
representing
- **revise "there is/are" phrases"**
~~There have been~~ several long-run changes ~~that~~ have helped ...
- **use adjectives or nouns as adjectives instead of of-phrases:**
"laboratory equipment" instead of "the equipment of the laboratory"
- **avoid cumbersome phrases**
~~very~~ important
~~really~~ very
~~highly~~ useful
as ~~per~~ usual
~~end~~-result
~~in order~~ to
~~due to the fact that~~ – because
by ~~means of~~
for ~~the purpose of~~
~~in the attempt to~~ – attempting
~~in response to~~ – responding
~~in the event of~~ – if
~~has/have the ability to~~ – can
for ~~the solution of the problem~~ – to solve the problem /
for solving the problem
~~we made the analysis of~~ – we analyzed
~~end~~-result
small ~~in size~~
by ~~using~~ – with
can ~~result in reducing~~ – can reduce
~~one can search it in Google~~ – it is searchable in Google
~~in an automatic way~~ – automatically
~~from a different angle~~ – differently
~~It is surprising~~ – Surprisingly, [10; 16].

Another advice we'd like to give is to **read extensively in one's professional field**, and also to **read widely for interdisciplinary thinking**. We recommend the following general interest periodicals:

The Economist
Newsweek
IEEE Spectrum
Scientific American
National Geographics
The Telegraph
The Guardian
The Wall Street Journal
The New Yorker
The New York Review of Books

There are some good books on writing well: the ones by Strunk and White [21] Hilary Glasman-Deal [15], Carol Reeves [20], Wayne C. Booth, Gregory G. Colomb, Joseph M. Williams [8], William Zinsser [27], Paula LaRocque [17], Lynn Gaertner-Johnston [14], Tetyana Yakhontova [6] and others. We would also recommend some of our own books [10; 16].

Think about numerous ways of making your writing creative. Use rhetorical questions, effective headings and subheadings, lively narration, vivid examples, even humor. But first and foremost, imagine your readers, and your talking to them. Clearly.

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