

CLEAN COMMUNICATION FOR POWERING THE ERA OF GREEN ENERGY

ETHAN BARLOW

The University of Tennessee, Knoxville

ABSTRACT

Rotten communication spoils the brightest of ideas. Sadly, scientific writing is no exception. How many scientific papers fail to make the desired impact because they task readers with deciphering the writers' intended meanings? It's difficult to know for sure, but what *is* apparent is that it's the communicator's, not the reader's, job to create clarity. If writers shroud their content in obscure, poorly crafted language, what incentive do most readers have to care or to even keep reading? In a world suffering from environmental crises, global interest in ongoing science is imperative. To this end, chemical engineer and associate professor at Ege University in Turkey, Dr. Suphi Ocel, published an article (2017) in the *Journal of Cleaner Production* called "Green energy engineering: Opening a green way for the future." Despite his efforts to draw attention to a sustainability-focused profession and to inspire enthusiasm for renewable energy solutions, Dr. Ocel composed an article that will leave readers, both scientists and non-scientists alike, scratching their heads. To craft truly effective prose that will showcase the exciting prospect of innovations in green energy, scientists must apply plain-language principles.

“GREEN ENERGY ENGINEERING”: GOOD IDEA, BAD DELIVERY

Clearly, Dr. Oncel’s piece is well-intentioned. Our current path toward an unsustainable future concerns him, so he wants us to embrace greener energy before it is too late. In that respect, we should commend him. But his article lacks the clarity his readers need to fully understand his message. Furthermore, not only does this poorly crafted prose fail to communicate his message, but it also damages his ethos, the way his audience perceives him. With just one glance at his abstract, readers will likely skip the article entirely and, perhaps, avoid other articles by the same author in the future.

To get a sense of how effectively, or ineffectively, he delivers his scientific commentary on green energy engineering, take a look at Dr. Oncel’s (2017) abstract; then decide whether you would want to keep reading the rest of the article.

ORIGINAL ABSTRACT

Today economy, energy and environment are crucial topics of discussion with a special emphasis on the key words like sustainability, environment friendship and equity. But in reality for a long period of time these words are only left in the dictionary of science without much real life effort until societies see the alert from the nature that something is terribly wrong. At the turn of the millennium all the pillars of our civilization come to an agreement that a new approach towards the habits considering the lifestyle should be needed with a special emphasis on energy, to have a greener start for the future. Within this context the definition of “green energy” is vital and its backbone “green energy engineering” is the key. The green energy engineering is a novel field in engineering that will find the solutions and disseminate the new ideas for the progress of green energy approach designing its boundaries around major subtitles like renewable alternatives,

efficient energy management and economy interrelation. This article for the first time name this engineering field as “green energy engineering” and introduces its principles with a special emphasis on the education and profession. (p. 3095)

Right from the start, something seems off about this article. Should we blame the writer’s poor grammar mechanics, owing to his unfamiliarity with the English language? Perhaps, but there’s more going on than just these basic errors. Fixing them would, no doubt, vastly improve this abstract, but a reader must still begrudgingly labor through the sludge of bad style. Scientific writers shouldn’t just write to be technically and grammatically correct; they must also dedicate time and energy to making their prose as transparent, clean, and powerful as possible.

FROM PAINFUL PROSE TO PLAIN ENGLISH

How can we present Dr. Oncel’s article in a clear and coherent way while staying true to his original content? The remedy to the difficult prose shown above is plain language. In a nutshell, plain language (or, for our language purposes, plain English) is about communicating in a way that one’s audience will easily understand—while carrying the force and the effect that the author intends.

For one, scientific writers who communicate in plain language must craft prose that is economical. In other words, they should strive to make their content as concise and as unburdensome as possible, sparing their readers unnecessary mental strain. No one wants to re-read each sentence multiple times because the writer didn’t do his/her job as a communicator.

At the same time, however, scientific writers must also accomplish their goals for writing their particular papers or reports. Based on the abstract above, one might surmise that Dr. Oncel’s goal is to inform both the scientific community and the general public about this new field in engineering called “green energy engineering” and to convey its importance for sustainability. Then, one would judge his effectiveness based on how well his writing served

this goal. One might ask questions such as these: “Did he adapt his style to his particular audience?” “Did he present information in an interesting way?” “Am I now well-informed about the topic and more excited than ever about the future of green energy?” If not, then the writer’s prose was ineffective at fulfilling its rhetorical purpose.

That sounds simple enough, but what specific tools do plain-language communicators employ? Some of the primary ones are cutting fatty phrases/words, changing passive voice to active voice, breaking up overloaded sentences, and choosing the words that best serve one’s audience. Obviously, many scientists might push back and argue that some of these go against the longstanding conventions of scientific writing. However, tradition should not take priority over effective communication. Every paragraph, every sentence, and every word should exist to benefit the reader and to guide him/her to understanding. That is what plain language is all about. And that is what scientific writing *should* be about.

Now for the question at hand: How would plain language improve Dr. Oncel’s article on green energy engineering? Well, if we apply these principles to his abstract, we might arrive at something like this:

REVISED ABSTRACT

Today, the crucial topics of discussion are economy, energy, and environment. Within these discussions, scientists often emphasize key concepts like equity, sustainability, and environmentalism. But societies have not taken these scientific concepts seriously—that is, until nature signaled that the time for apathy is over. At the turn of the millennium, the world has largely come to agree that we need a new approach to our habits and lifestyles, one that emphasizes clean energy, if we are to have a greener start for the future. But what is the key to defining green energy and unlocking this new era? The answer is green energy engineering. GEE is a novel field in engineering that will find solutions and disseminate new ideas for

approaching green energy, focusing on renewable alternatives, efficient energy management, and economic interrelation. This article, for the first time, names this engineering field “green energy engineering” and introduces its principles with an emphasis on the education and profession of green energy engineers.

Which abstract was more readable? Most readers would prefer the second one because it not only makes sense grammatically but also rhetorically. Whereas the first abstract might seem a bit sloppy, the second seems more polished and coherent. The reason for these improvements is plain language. Breaking it down further, one can see the following PL techniques at work:

1. TRIMMING FAT

Fatty words or phrases (also known as deadwood) don’t belong in scientific writing. They merely encumber the reader, while adding no rhetorical substance to one’s content. Essentially, fatty prose is the use of more words than is necessary. Thus, by condensing fat in the original abstract, one already improves it considerably:

“special emphasis”



emphasis

“in reality for a long period of time”



historically

“all the pillars of our civilization”



the world

When scientific writers use too many of these unnecessary words and phrases, they make their content far more dense than it needs to be. After all, “special emphasis” is just a redundant way of saying “emphasis”; “in reality for a long period of time” is just a verbose version of “historically”; and “all the pillars of our civilization” is a wordy, weak metaphor for “the world.” Most readers do not appreciate such tedious and wasteful language.

Sometimes, rather than condensing a wordy phrase to a terse one, it’s best to cut it out entirely if it has no value at all. Such is the case with “in reality for a long period of time.” In the context of the sentence, it makes little sense to try to salvage this fatty phrase.

2. RESTORING ACTIVE VOICE

Generally, active voice creates the syntactical order readers expect:

Subject → Verb → Object
“I ate it.”

On the other hand, when writers use passive voice, reversing this subject-then-object order, they often add more words to the sentence:

Object → Verb → Subject
“It was eaten by me.”

For most people, this second sentence is less effective than the first one. By placing the subject behind the action, writers not only lengthen the sentence but also put more emphasis on the subject than the object. What comes last is usually what delivers the most punch. In some irregular cases, maybe one wants to conceal the actor’s identity until the very end for suspense: “Hey! Who ate the last donut?” “It was eaten . . . by *me*!” But in most cases, this longer, unnatural construction is unnecessary.

Sometimes, however, passive voice disguises the actor entirely:

Object → Verb
“It was eaten.”

Who did the deed? We’re still waiting to find out. In scientific writing, this sort of passive construction is common, but still less direct. Readers typically want to know *who is doing what*, but they also don’t want to do more mental work by reading longer sentences. That is why, for clean communication, we should favor active voice.

It’s especially beneficial when sentences become more complex. In the revised abstract, notice how we gain much more clarity by substituting passive for active:

“... these words are only left in the dictionary of science
without much real life effort until societies ...”



**... societies have not taken these scientific concepts
seriously until ...**

“... a new approach towards the habits considering the lifestyle
should be needed ...”



... we need a new approach to our habits and lifestyles ...

Dr. Oncel does the reader no favors by hiding the subjects. In the first original passage, he is vague about who is ignoring the scientific discourse on sustainability, environmentalism, and equity (the concepts he mentioned earlier in the abstract). One might deduce that “societies” are the hidden actor here, but, because of the passive construction, this information does not present itself naturally.

Likewise, in the second original passage, who needs the “new approach”? Again, passive voice obscures this information. Most likely, Dr. Oncel means that all humans must accommodate the environment with their daily choices. Then why not make it clear that “we,” as in everyone, must be part of this planet-saving pact? Sadly, many scientists avoid personal pronouns like the

plague, even though these often spare readers the mental anguish of figuring out for themselves *who is doing what*.

By translating these passages to plain English, in active voice, one improves them tremendously. Of course, trimming fat also helped to create these more clear and concise revisions, but active voice was the key to restoring the actors' identities and repairing the natural flow.

3. BREAKING UP BUSY SENTENCES

Long sentences are not inherently bad, but busy ones are. A busy sentence tries to convey too much information, which can often overwhelm the reader. If scientific writers want to communicate in plain language, they must feed their readers digestible, bite-sized bits of information. Notice how breaking up the opening sentence in Dr. Oncel's abstract enhances readability:

“Today economy, energy and environment are crucial topics of discussion with a special emphasis on the key words like sustainability, environment friendship and equity.”



Today, the crucial topics of discussion are economy, energy, and environment. Within these discussions, scientists often emphasize key concepts like equity, sustainability, and environmentalism.

The original sentence is not long. It's not impossible to understand either. It's just too much at once, especially for an opening statement, which is supposed to leave a positive first impression on the reader. Here, Dr. Oncel lists three different concepts twice, for a total of six concepts, in one sentence.

Was this cramming efficient, though? Not really. The revision, which splits this congested sentence into two sentences, uses an equal amount of words. However, this two-sentence revision is actually more efficient, as it lets the reader more easily absorb the concepts and understand how they relate to

each other. Moreover, separating the two series of items gives the reader a chance . . . to breathe.

In breaking up busy sentences, one must also use transitions. After all, these are what glue one idea to the next. “Within these discussions,” for example, signals to the reader that what follows will elaborate on the previous sentence. Erasing this transition would isolate both sentences, forcing the reader to figure out their relationships.

To further enhance rhetorical effectiveness, one might also rearrange a few words. This is part of the plain-language process. While breaking up busy sentences, one should consider how some words might be better suited elsewhere. For instance, perhaps “economy, energy, and environment” ought to be more emphatic than “crucial topics of discussion.” Placing these three concepts last in the sentence achieves this effect. Additionally, with regard to the second list, maybe one prefers this more parallel sequence: (1) equity, (2) sustainability, and (3) environmentalism. Although they each overlap with the aforementioned concepts, most readers would associate equity with economy, sustainability with energy, and environmentalism with environment. This order not only seems more organized but also, once again, helps the reader see the relationships between the parts.

What about the different word choices? This next PL technique explains these changes.

4. CHOOSING THE RIGHT WORDS

Writers who use plain English are constantly fishing the vast sea of the English language for the best possible words for each scenario. Their goal is to find the most precise, yet concise, words that will paint a vivid picture in their readers’ minds. Thus, in this process, it is often necessary to swap dim words and expressions for sharper ones.

Returning to the previous sample sentence from the abstract, how might a scientific writer like Dr. Oncel sharpen his/her message?

“ . . . key words like sustainability, environment friendship and equity.”



... key **concepts** like equity, sustainability, and **environmentalism**.

The original words, highlighted gray, do not provide as clear an image as the words highlighted green. Unlike fatty words and phrases, the problem here is not excess but a lack of more precise terms. It's not a sin to say "words" when referring to important abstract ideas such as equity, sustainability, and environmentalism; but "concepts" describes them more exactly. Moreover, "environment friendship" is a term that does not jive with most native English users. "Environmentalism," on the other hand, elicits instant recognition for most, if not all, English users. Is all of this just nitpicking? Perhaps, but when these imprecisions show up repeatedly, they dull the entire piece.

The very next sentence also suffers from weak word choice. Evidently, it's not the strongest way to articulate our environmental crises:

"... societies see the alert from the nature that something is terribly wrong."



... **nature signaled that the time for apathy is over.**

This revised sentence demonstrates the power of tacitness. In both samples, readers understand that "something is terribly wrong" with nature, but the second one delivers the more emotional punch, despite implying it. Again, the problem is not that this particular passage contains fat; the issue here is that it's too uninspiring.

Likewise, this next passage requires a little more imagination:

Within this context the definition of "green energy" is vital and its backbone "green energy engineering" is the key. The green energy engineering is a novel field in engineering that will find the solutions and disseminate the new ideas for the progress of

green energy approach designing its boundaries around major subtitles like renewable alternatives, efficient energy management and economy interrelation.



But what is the key to defining green energy and unlocking this new era? The answer is green energy engineering. GEE is a novel field in engineering that will find solutions and disseminate new ideas for approaching green energy, focusing on renewable alternatives, efficient energy management, and economic interrelation.

The word choice in this revision enhances Dr. Oncel's narrative that societies are searching for a new approach to energy and that green energy engineering is the answer to their plight. Rather than stating matter-of-factly that a "definition of 'green energy' is vital," why not pose it as a question that many are already asking: How do we define green energy, and how do we achieve a greener future? Anticipating the readers' silent thoughts and encouraging them to think about these issues are effective ways of engaging one's audience. Additionally, when writers demonstrate that they have the answers to these nagging rhetorical questions, their ethea (plural for ethos) score extra points.

Note, also, other word choice improvements: denominalizing "definition" into its more active and concise verb form, "defining"; expanding the "key" metaphor with the verb, "unlocking"; replacing the awkward phrase, "designing its boundaries around" to a more succinct phrase, "focusing on"; and abbreviating "green energy engineering" to "GEE" for quicker reading. There are, of course, many other possibilities—and each writer will, no doubt, have his/her own ideas—but the takeaway here is that these are all carefully chosen words that bring the rhetorical vision into focus for the reader.

CONCLUSION

Ultimately, plain-language communicators must predict which words and which configurations of those words will best serve their audiences. So too must scientists put themselves in the readers' shoes and write for the readers' benefit. Otherwise, they present a cloudy image of their scientific insights.

Dr. Oncel, despite his promising vision of green energy engineers transitioning us to a more sustainable era, didn't put his ideas into plain English. This is not so much because he's a non-native user of English; it's because the kind of scientific prose he's trying to imitate is flawed. Such ineffective communication is a barrier between his audience and his message, draining his article of power. The need for sustainable ideas has never been greater; thus, the need for communicating these ideas well has never been greater. To inspire the masses, scientists must not only be effective scientists, but also effective communicators.

REFERENCE

Oncel, S. (2017). Green energy engineering: Opening a green way for the future. *Journal of Cleaner Production*, 142(4), 3095–3100. <https://doi.org/10.1016/j.jclepro.2016.10.158>.