

## Brazilian English, A Second Look

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I am honored to be invited once again to take part in this Meet-the-Editors workshop. It is good to see old friends and to meet new ones, and to discuss the topic of sharing scientific work in English-language journals.

One of my jobs as Assistant Editor of *Reviews of Modern Physics* was to polish the English of authors from outside the United States and to train our copymarkers to do the same. Not even Nobel Prize winners, whose acceptance lectures we published every year, escaped our editorial attention. Two or three of them really needed work on their English. Most, however, wrote very well. The Nobel lectures were among our most accessible articles, not only because they were written for a general audience, but also because the laureates were smart—Albert Einstein once remarked that it takes intelligence to write about something simply—and because their passion and curiosity for their subject infused their writing.

Which brings us to your writing. Two years ago, I read a sampling of articles published in *Physical Review B* and *PR Letters* by authors from Brazilian institutions. I knew that these journals do not edit for language as *Reviews of Modern Physics* did. They publish too large a volume of articles to give that kind of close attention. So, if there are problems with English in the original papers, they go unfiltered into print, unless the authors are lucky enough to have a referee point them out. I was looking for classes of errors that recur often in the work of Brazilian authors, errors that you could watch for and, being forewarned, could avoid. The resulting talk, entitled “Brazilian English, an Unscientific Survey,” looked at the eleven most frequent types of problem.

This year I read another set of articles, from several journals of the American Physical Society. A list of the 29 articles surveyed is available on request as supplementary material.

### Articles Surveyed from APS journals

Physical Review B	14
Physical Review Letters	8
Physical Review A	3
Physical Review C	1
Physical Review D	1
Physical Review E	1
Physical Review X	1

Total: 29

They include fourteen from PR B, eight from PR Letters, three from PR A, and one each from C, D, E, and X. At least one author from each paper, and often all co-authors, give their affiliations at institutions in Brazil. Seventeen have authors at the IFSC.

My talk today will follow the approach of the earlier survey, identifying the most common problems that I found. However, as we have only an hour, there will not be time enough to go into these in depth. I will devote the most time to the top five most frequent errors and supplement with examples on a problem set that I hope you all picked up. During the course of the talk, we'll pause for you to try your hand at correcting some problem sentences. Don't be surprised if you recognize a sentence or two from your own article.

## Why the Survey is Unscientific

- Sample size is small.
- Sample includes some foreign co-authors
- Co-authors who did the actual writing are unknown.
- Condensed matter physics and the IFSC are over-represented (17 papers).
- Some subjectivity is built into the process.

There are several reasons why this survey can only be called informal or unscientific. First, of course, 29 articles is a small sample (though it took me a long time to read).

Second, some collaborations include writers from institutions outside Brazil. Others, based in Brazil have co-authors with Chinese or Russian or Indian names, but I have no way of knowing whether these are Brasileiros or visitors from abroad.

Third, I don't know which co-authors did the writing for their group. Was it the senior researcher or his graduate student? Who is responsible for the good writing and for the errors? No idea! I must assume that everyone in the group saw the final version, so that all the co-authors bear at least some responsibility.

Fourth, condensed matter physics and the IFSC are overrepresented. I wanted plenty of examples from this community, as you are my core audience. Are condensed matter physicists more or less adept in their written English than people in other disciplines or subfields of physics? That is a question I do not address, and I leave it for you to determine.

Assigning errors to one category or another was often subjective. The same phrase might be counted as using the wrong word or as misusing an English idiom. Under which category should I count it? I made many such choices. If I went back and re-read these articles, my counts might be distributed slightly differently, but the general picture would still be the same. And finally, not every sentence was simply right or wrong. Wordiness, for example, occurs over a continuum and may be slight, moderate, or unacceptable. At what point can one say that a sentence is too long or too complex? Another example, the use of articles. In some instances, "the" is needed or is wrong. In others it is optional. How many occurrences count as excessive? I counted only extreme cases.

With these provisos, I still believe that the survey is an accurate snapshot of the English used by speakers of Brazilian Portuguese, which I am calling Brazilian English. It ranges from polished and smooth to poor and broken, but when there are mistakes, the same kinds of mistake recur over the whole range. I hope that today's brief look will alert you to these potential errors and help you to avoid them, thereby improving the chances of a good reception for your work and a good perception of your institution. I imagine that most of you are here because, like an athlete or a musician, you know you are good, but you are hoping to get better. However, there may be one or two who are thinking, "*Well, our article was published. Our results are out there. Why worry about trivial details of language?*" As an editor and poet, I of course value good language, not just as a tool for reaching others but also as a desirable thing in itself. In the food industry they speak of a quality called presentation. It is what makes the difference between a plate of food that looks like this:

What makes a good presentation ...



And one that looks like this:

and a not so good presentation?



English offers many opportunities for creating a polished presentation. When there are better ways of doing something—and of saying something—I recommend the better way.

So here, in order of frequency, are the ten most common weaknesses that I found in the surveyed articles.

## The ten most common problems

1. Articles – 210 occurrences
  - a) Use of an article (*the, a, an*) when none is needed
  - b) Lack of an article when one *is* needed
  - c) Choice of the wrong article

## The ten most common problems

### 2. Choice of the wrong word (other than article or preposition) – 174 occurrences

<i>to exploit</i>	when you mean	<i>to use, employ</i>
<i>estimation</i>	when you mean	<i>estimate</i>
<i>to trigger</i>	when you mean	<i>to stimulate, inspire</i>

## The ten most common problems

### 3. Idioms and common expressions in scientific English – 144 occurrences

*In most of the cases* when you mean *In most cases* to  
*this aim* when you mean *to this end* as  
*seen* when you mean *as can be seen*



## The ten most common problems

### 4. Prepositions - 86 occurrences

<i>associated with</i>	not	<i>associated to</i>
<i>dependence on</i>	not	<i>dependence with</i>
<i>discussion of</i>	not	<i>discussion about</i>

## The ten most common problems

### 5. Wordiness – 86 occurrences (a tie with prepositions)

- a) Redundant or unnecessary phrases
- b) Cumbersome or labored sentence construction
- c) Preponderance of long Latinate words over short Anglo-Saxon words
- d) Excessively long sentences.

Sentences with these features obscure their intended meaning and require the reader to struggle through a dense jungle of words. They most often occur in abstracts and opening paragraphs, a kind of throat-clearing before the authors get underway. We shall revisit this complex of problems later on.

## The ten most common problems

6. Tense – 72 occurrences

a) Change of tense in mid discussion

b) Past tense (*we studied*) vs. present perfect (*we have studied*)

## The ten most common problems

### 7. Word Order – 60 occurrences

- a) Misplaced modifying phrases, “dangling” participles, e.g.,  
Using Eq. (3), the amplitude increases ...
- b) Misplacement of *also* and *only*. e.g.,  
Also our setup allows ...

## The ten most common problems

### 8. Comparisons - 39 occurrences

#### a) Problems when describing similarities and differences:

differently from	vs.	unlike
larger than	vs.	large as compared to

#### b) *Like* (for things) vs. *as* (for actions)

## The ten most common problems

9. Use of an infinitive where English does not use -  
36 occurrences

*a useful tool to detect*

*a useful tool for detecting, for the detection of*

*we suggest to take the limits*

*we suggest taking the limits*

## The ten most common problems

10. Relative pronouns, especially *which* vs. *that* – 35 occurrences

We study cylindrical gravitational waves for their simplicity, **which** allows us to investigate ...

We focus on response functions **that** can be locally addressed.

In the first example, a comma precedes the word *which*, a clue that what follows is set apart from the main thrust of the sentence. Here, “*which allows us to investigate ...*” is extra information, but the sentence would still make sense without it. The pronoun *that*, on the other hand is not set off by a comma, because it leads to something necessary for the sentence, the point of what it is saying.

These are the ten most common problems. Others showed up in smaller numbers. I will list them without comment, though they are not off the table for discussion if you are interested in them.

## Other Problems

- a) Subject-verb agreement
- b) Run-on sentences; omission of semicolon before "see Fig."
- c) Plural modifiers where English uses singular, e.g.,  
*zero-modes excitations* for *zero-mode excitations*  
*parameters changes* for *parameter changes*
- d) References to *this, these, it* without a clear antecedent
- e) Parallelism
- f) Confusion of the number *one* and the article *a*
- g) Unnecessary use of *some*

So, let's look more closely at the first five problems, starting with Articles.



Weed out superfluous articles (*the, a, or an*) before these types of words



Most plural nouns

atoms, impurities

Most abstractions

diffusion, orthogonality  
entropy

Nouns that follow *type of, pair of, choice of*, etc.

type of crystal, number of profiles

In Portuguese, every noun gets an article, even people's names. You say *onde é o Carlos?*, Where is the Carlos?, which sounds peculiar to an English speaker. No doubt removing that article sounds peculiar to your ear. But some articles must be removed. Which ones? Here are the main ones, though there are some exceptions.

But these are not weeds. DO use articles for

Most singular nouns	an effect, a deep hole the exponent
These abstractions: existence, presence, absence	the presence of
Anything that is specific or limited by the context	the diffusion we observe. the frequency range from 30 to 80 MHz

And here are some that require articles. Note that the word *diffusion* is an abstraction, which would usually not take an article.. But here it is specific and limited, *the diffusion we observe*, so it is preceded by *the*.

Your Problem Set has a number of further examples taken from the surveyed articles. Please take a few minutes to read the sentences in Part 1 and delete any instances of *the* that are unnecessary. If you find a sentence from your own article, let me say now that I do not mean to hold anyone's words up for ridicule. Indeed, I thank all the authors whose papers contributed data and examples. My main purpose was, first, to identify the most common weak spots, and second, to illustrate these with sentences taken from real articles. All these sentences are from papers that were accepted and published. You are in good company.

Well, how did you do? Answers are provided at the end of the problem set. Do you have any questions?

Let's move on to the second most frequent source of trouble, Word Choice. Here we are concerned with larger, more interesting words than *the* and *an*, the sort of words you might look up online, where you would find several alternatives and not know which is best for a scientific context. Time does not allow us to consider all the interesting choices made in the surveyed articles, but here are a few that came up repeatedly:.

### Words to watch out for

to boost, to trigger	in place of	to stimulate, to prompt, to foster
to demand	in place of	to require
evidently, apparently	in place of	clearly, plainly
to exploit	in place of	to use
to demonstrate	in place of	to show
novelty		

Considering these in turn, why do I discourage use of *boost* and *trigger*?

*To boost* and *to trigger* are not the best descriptors of academic work.



Better choices: to prompt, stimulate, spur, lead to, or encourage.

To boost and to trigger are rather colorful and colloquial for a scientific article. To boost is to lift something or someone higher, for example, to help someone onto a horse or over a wall. And to trigger is to cause something to happen suddenly and forcefully. Both have strong and unacademic visual associations. When talking about something like earlier work or a discovery that influenced research in your field, you have other, more appropriate choices—for example, the discovery *led to*, *stimulated*, *prompted*, or *encouraged* further work.

Are your demands appropriate?



Theoretical conditions take the verb  
*to require*.

$T \ll 1000 \text{ K}$

Some characters may *demand*, but for you to demand that  $T$  be less than 1000 K is a bit over the top. When expressing a constraint or condition, the appropriate verb is *to require*.

Be careful of *evidently* and *apparently*.

They are not as the same as *clearly* or *plainly* but mean “it appears that.”



These two words look like synonyms of *clearly* or *plainly*, but they are not. They could be translated “It appears ..., but it is not yet certain.” A classic use of *apparently* is in TV crime shows, when the detective notices that no doors or windows have been forced and says, “Apparently the victim knew her killer.” He is remarking on how the evidence appears but he is not yet ready to confirm it. If you wish to be more decisive than this, use *clearly* or *plainly*.

Do not *exploit* when you can *use*.

To exploit is to make unfair demands of an employee. Theoretical models, new materials and methods are not *exploited*, but rather *used* or *employed*.



Children forced to work in a textile mill or a mine for 12 hours a day are being exploited. A grad student whose advisor asks her to walk the family dog and wash the car is being exploited. But when you are talking about a material, a method, or a theoretical model, you should use or employ it, not exploit it..

A figure *displays, shows or presents*, but rarely *demonstrates*.

*To demonstrate* is an active verb. A proof—experimental or theoretical—demonstrates something, but a figure just sits on the page.



A figure is not very active. You get information from it by looking at it. A proof on the other hand—whether it is theoretical or experimental—goes through several steps and confirms something. For that level of activity, you can say that the proof *demonstrates*. When talking about a figure, it is more appropriate to say it *shows* or *presents*.



*Novelty* sounds lightweight, not serious.

Yes, novelty does mean newness, but it also means a small and inexpensive toy or souvenir item, and this second meaning colors the first.



Of course you want to tell the reader what is new about your work, and newness IS the first definition of novelty. However, the second meaning—a small toy or souvenir item—gives this newness an air of unseriousness that does not belong in your paper. Rather than refer to the novelty of your work, you might mention a new feature or tell what your approach enables or accomplishes for the first time.

Are you ready for an exercise in choosing the right word? Please look at the second exercise on your Problem Set. It contains sentences from the surveyed articles with blanks to fill in from the choices below. We will pause for a few minutes while you do the exercise.

Now we come to the third most common problem in Brazilian English, idioms and common expressions. Every language has a multitude of these. Using them will make your writing style smoother and decrease the perceived distance between you and your reader—if you get them right. The articles in my survey contained 144 near misses, evidence that the authors were trying but did not quite produce what someone whose first language was English would have said.

What are the correct versions of these idioms?

Wrong

in most of the cases  
for the sake of convenience  
one of such advances

The reason is associated with

Right

in most cases  
for convenience  
one such advance or  
such an advance

The reason is that

Often where people go wrong with idioms is in adding words—not taking advantage of the economy an idiom offers. You can see that the right versions here are shorter. Other common expressions are actually longer in their correct version.. Are you familiar with these?

In these expressions, the correct version is longer.

Wrong

x and also y  
agree within 5%  
such behavior is absent  
  
in the last decades

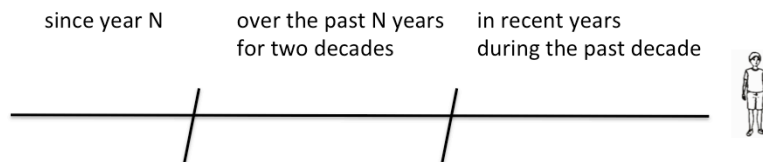
Right

x as well as y  
agree to within 5%  
such behavior does not  
occur, is not observed  
over the past 20 years

A word about the last two. Unlike a physical object, *behavior* is an action and therefore should be described as occurring or not occurring, rather than being present or absent. And then there is the expression “in the last decades.” This comes up frequently in papers by those writing in English as a second language.

## Which expression best describes the past?

Recent decades are not the most common choice in English.



“In the last decades” is not used in English, partly because “last” implies only one and doesn’t go with plural decades. So, to correct this, you might propose “in *past* decades,” which sounds rather historical, or “in recent decades.” But this has a problem, too. Any time span greater than 10 years is not recent, unless you are considering time on a cosmic scale. Moreover, one uses “*over*” rather than “in” when describing spans and ranges. So what about “Over the past N decades”? Okay. It’s grammatically correct. But in practice, an English speaker would not say this either. He or she does not think of the past in quanta of 10 years and is more likely to say “Over the past N years” or “Since 1916.”

These are only a few of the idioms I encountered in the surveyed articles. Plainly (and not just apparently), we can’t cover the wide variety of these expressions in a short talk. You are, however training your ear for them simply by reading the literature in your field, especially articles by writers for whom English is the first language. The articles you read for your work contain just the idioms that are most useful for discussing that work. There is no problem set for this category, so let’s move on to the next problem area, Wordiness. ...

## Wordiness

Components of a wordy style include

- Redundant phrases

- Preponderance of long Latinate words over short  
Anglo-Saxon words

- Cumbersome constructions, like of-of-of

- Very long sentences

Wordiness tied for fourth place with Prepositions as a problem for some authors, though not all, by any means. Let's look briefly at each component of a wordy style.

## Redundant Phrases

Redundancy may express mistrust of the language ... or of the reader's intelligence.

circular annulus  
fluctuations of fluxes  
sufficient statistics such that  
equally valid also  
quite distinct different scaling behaviors  
We take the first step forward towards ...  
This will serve the purpose of illustrating ...  
we have that

I have a personal theory that people with a wordy style do not trust the intelligence of their readers, so they try to make things abundantly clear, These authors need to have a bit more faith.

“We have that,” placed before an equation is a special case. I am guessing that this phrase came into use by people who feel that a sentence should provide a verb in word form, rather than rely on a symbol in the equation to serve as a verb— equals, is greater than, are proportional to, etc. If this is a concern for you, it is legitimate to say “we have” before an equation, but the word *that* serves no useful purpose and should be omitted.

Is your vocabulary weighted too heavily with words of Latin origin?

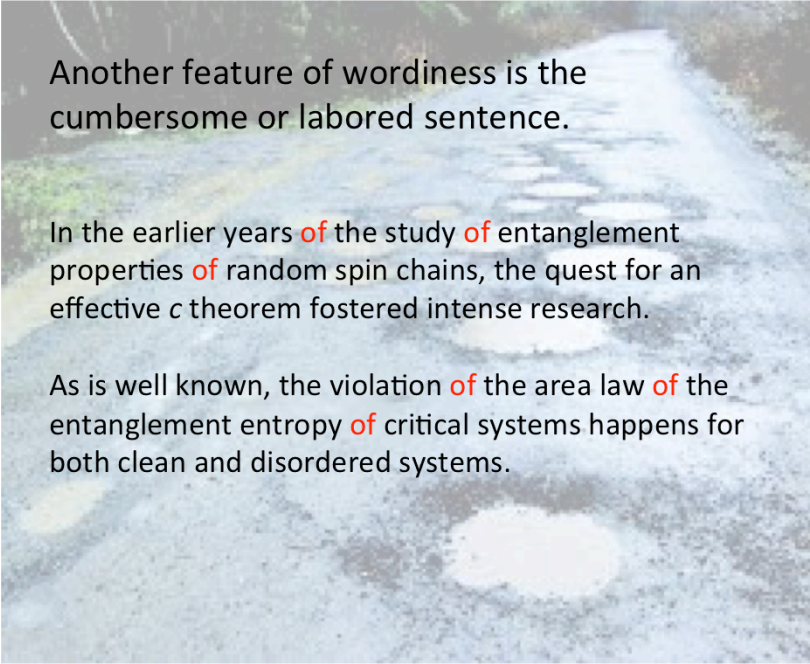


initial  
location  
determine  
utilize  
similar to  
attempt

first  
place  
find  
use  
like  
try



The English language has a mixed ancestry, with the two largest components words of Latin origin and of Germanic or Anglo-Saxon origin. To a native English ear, a mix of these, an interplay of the two types, sounds most pleasing. Speakers of a Romance language like Portuguese are likely to lean more heavily on words of Latin origin. Here are some familiar Latinate words. Nothing wrong with them. But to an English speaker, sentences dense with these words, though correct, sound pedantic and stuffy. Lighten up such sentences by replacing a few Latinate words with their more compact counterparts in English.



Another feature of wordiness is the cumbersome or labored sentence.

In the earlier years of the study of entanglement properties of random spin chains, the quest for an effective c theorem fostered intense research.

As is well known, the violation of the area law of the entanglement entropy of critical systems happens for both clean and disordered systems.

Wordy articles often are difficult to read because of cumbersome sentences. The presence of the word “of” three times or more in the same sentence is a clue that something could probably be said more smoothly and economically.




A less frequent feature of wordiness is the overlong sentence.


The local energy fluence at the radio detectors with an identified signal is fitted with a two-dimensional distribution function of the signal, adapted to the observation altitude of AERA, which takes into account azimuthal asymmetries arising from the superposition of geomagnetic and charge-excess effects as well as ring-shaped areas of enhanced emission caused by Cerenkov-like time compression due to the refractive index in the atmosphere.

The final component of wordiness is the overlong sentence. These occurred far less often than the other features of wordiness, but here is an example. Whew! No errors in English, perfectly clear, but if I had been the editor of this article, I would have suggested breaking this into two or more sentences.





This brings us to the fourth of the five problem areas we will look at today, Prepositions..



Preposition are like mosquitoes—small but numerous.



Words like *of*, *to*, *for*, *in*, *onto*, and *with* are so common, almost no-one in the survey escaped an occasional mishap. But no-one did too badly either. The total errors, 86, were about half the number of the previous category and averaged out to about 3 per article.



I consider preposition errors inevitable when writing in a foreign language, since every language uses them slightly differently. They come up in almost every sentence, so the potential for disaster is greater than you might think. The good news is... no disaster in Brazilian English. In my sample there were an average of 3 preposition errors per paper. So, I don't think we need to talk about them at length. Instead, I've listed a few of the trickier ones for you in Problem Set 3. These are given in incorrect form. Can you provide a correct version for each?

I trust you did very well on this one. As before, the answers are given at the back of the handout. Any questions?

We are now up to the last problem we are going to address today, Tense. And we'll only look at one aspect of tense, as there will be more about it in my talk on Wednesday..

Time Travel: Which time are we in?



A rather strange feature that I found in about one-third of the surveyed articles was the practice of shifting from past to present or from present to past, within the same discussion or even the same sentence. I didn't count all instances because some had transitional material that softened the abruptness of the switch. But I wonder if this is a common feature of Portuguese writing..

### Time Travel: Which time are we in?

Sentences like the following are distracting and disorienting:

We **studied** a set of coupled harmonic oscillators, which **gives** a discrete version of Klein-Gordon field theory.

The Raman excitation profiles of these bands **were obtained** experimentally and it **is found** that the  $A_{1g}$  feature is enhanced when the excitation laser is in resonance with  $A$  and  $B$  excitons of  $\text{MoS}_2$ .

Perhaps the authors of these sentences are trying to accommodate both history (what they did) and truth (which is timeless, so they state it in the present). This is not how it is done in English.

When you begin a discussion in one tense, stay with it.

Santos **finds** a heavy concentration of H, which **indicates** ...

or

Santos **found** a heavy concentration of H, which **indicated** ...

Whether to use the past or the present is a personal decision. Either would be correct, but not both. The same principle applies on a larger scale to paragraphs. Sometimes the Present Perfect tense can be used to transition between earlier work and current work, or other kinds of transitions are used. When this is done appropriately, the change seems natural and there is no disorientation. Just be careful not to switch back and forth unnecessarily.

This concludes our survey of the most frequent problems in Brazilian English and our closer look at the top five in the surveyed papers. Such a study would not be complete, however, without mentioning the strengths and positive qualities that I found. On the whole, these papers were well organized, clear, and professional. A few that came from this Institute were particularly well written, and one was a model of what I call reader-friendly presentation. I will be pointing out some example sentences from this paper in my talk Wednesday., examples of how to engage the reader and not be boring. Good writing cannot be quantified as errors can, but there was plenty of good writing among the articles I read.

It has been a very full day, and I thank all of you who stayed to the very end. I don't want to detain anyone further, but if you have questions you would like to discuss, please do come up to talk with me afterwards. Have a good evening!.

Have a good evening!