Writing for Journal Publications: A Case Study of Eight Computer Scientists in Algeria

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Abstract

Journal publications written in English are a sine qua non condition for national and international recognition. Recent literature in applied linguistics and other fields has denounced the existence of some conventions and “rules” that govern a given research writing. That is, using a concise, clear and error-free language is demanded in order to increase accessibility and ease of understanding. With the aid of textual descriptive analysis, this paper attempts to review the most common linguistic reasons behind papers’ rejection. Eight papers of Ph.D. computer science students were collected and analyzed qualitatively in order to diagnose the main problems and challenges Ph.D. students face while writing for scholarly publication. Other than other linguistic lacunes, it is found out that the authors had problems mainly with using the right tone, choosing the correct words and the adequate tense use. Indeed, the results of this study are supposed to be of some use to writers who want to know what writing conventions, if there are any, are adequate for paper publication. Finally, some recommendations related to students’ problems in writing for scholarly publication are made.

Keywords: Scientific writing, linguistic conventions, journal publication, revisions

Introduction

Publication is a significant achievement in a scientist’s life. More than a personal achievement or a social gain, it is public knowledge recognition in the world of academia. Academic publications are usually perceived as given access to research world; currently, the dictum “publish or perish” has found its way as a top concern of a researcher’s priorities’ list. As a consequence, a computer scientist’s ultimate goal is not only to code and decode from scratch but to share with others what he has found. The more recognizable the journal is, the better. This implies that a computer scientist has to reach the maximum audience possible. This latter suggests that the language variable in a scholar communication is an indispensable tool for most researchers. Importantly, English has established itself as the publishing language of the scientific world and its mastery becomes a necessity for all knowledge-seekers. That is, inability to communicate in this international web preoccupied by English leads surely to paper rejection and exclusion. Yet, it is only when researchers feel the importance of getting a paper published that the need of mastering the language becomes a matter of survival.

As the dominance of English in international research has been becoming a significant issue in publication, this has made writing academic articles in English become increasingly indispensable. However, many Ph.D. students tend to focus on content and give less attention to language usage and proofreading.

Yet, because the primary goal of scientific research is to advance academic exchange among researchers, there comes a need to explore and understand how scientific communities and researchers are dealing with large issues in relation to international communication. The purpose of this study is to examine rejected papers after their submission in an attempt to identify the most spotted linguistic deficiencies by reviewers. We sought to answer the following questions:

1) What are the most common linguistic features that were identified by editors?
2) To what extent papers are rejected due to poor language use?

Literature Review

By now, English has established itself as a common language for scientific communication. The global spread of English has been reported for “quite a long-time probably since the British Empire was its greatest expansion” (Kaplan, 2001. P.9). The hegemony of English over the world of scientific research has become an undeniable fact, a truism.

Studies by Ammon (2011) on language use and international communication have shown that most of the world's research is documented in English. Thus, research presented and registered in English represents the lion’s share in all indexed papers. In this line of thought, it is evident that most of, if not all, the largest publishers of scientific journals (Taylor & Francis, Elsevier, Blackwell) use English as their in-housing publishing language; that most of recognizable journals in computer science (IEEE, Springer) are produced in English, and that most of editors or reviewers are natives or native like-speakers of the language. Illustrating these issues, Hamel (2007) reported that in 2003, a journal named AILA reviewers declared to be an “English only” journal. In the same vein, Truchot (2001) stated that the most important databases are found in the USA, they are the most used and most influential. Truchot, (2001) also adds that 80% of the
international journals are run by “handful and powerful” Anglophones publishing houses which accept only works in English in their publications.

The fact that English has knocked out all other languages has created some controversy due to the fear of English becoming a monopoly (Hamel, 2007). It is likely that this “Linguistic centrism” goes hand in hand with scientific knowledge as it declines other languages and excludes Non-Native Speaker (NNS) from scientific dissemination. Researchers from both sides may be deprived from each other’s sciences. On the other hand, scientific research published in any other language is likely to remain unread. On the other hand, non-English speakers might be marginalized because of “language barriers” and editorial prejudices.

This claim can be supported by many previous researches which were conducted in multiple non-native speaking countries from which we mention Algeria (Slougui, 2009), Vanzuela (Salager-Mayer, 2008); Korea (Cho, 2009), Turkey (Hasanuddin & Akhadiah 2019), Australia (Merga, Mason & Morris 2019), Spain (Plo Fergurson, 2001; Pastor & Mestre 2013). As Cho (2009) claimed, sentence structure and ideas expression were deemed as the most complex aspect in research writing for Korean Ph.D. students. In a similar attempt to shed light on how language hinders scientific communication, Slougui (2009) examined the case of Algerian scientists and concluded that rhetorical conventions that govern a scientific text are basically socially grounded.

Considerable empirical evidence has depicted that the use of second language in scientific writing places an extra burden on non-native researchers and constitutes an uneven scale that can be considered as “language injustice” (Hanauer et al., 2018; Yen & Hung, 2018). Yen and Hung (2018) explain that a part of this injustice is the inherent structural privilege that native speakers of English have in publishing. They show that “the low rate of presentation of non-Anglophone scholars in academic journals casually results from the linguistic disadvantages faced by these scholars” (p.17). Hanauer et al. 2018) maintained that the burden of producing a scientific paper for Mexican and Taiwanese researchers constitute a “linguistic injustice” and a barrier to science that should be reviewed by relevant constituents.

In an attempt to establish a unified, well established, and a structured format for publishing papers known as “IMRAD”: i.e., Introduction, Methods, Results and Discussion, Cuschieri & Savona-Ventura (2018) suggest in their work some publishing style guidelines to assure a successful publication. These guidelines are supposedly the criteria that reviewers usually base their decision on; they can be summarized as follows:

1. The relevance, importance, timeless and prevalence of the problem under study.
2. The writing style quality (clear, easy to follow, logical and straightforward).
3. The appropriate, comprehensive and rigorous study design.
4. The thoughtfulness of the literature review as well as whether the literature review was up-to-date and focused.
5. The presence of sufficient sample size to avoid biases.

Until recently, while a lot attention has been given to enhance students’ ability in writing academic papers for international publications, there has been only a few on the errors to avoid and problems
the non native authors are facing. Cushieri et al. (2018) mentioned that the reasons’ behind papers’ rejection can be due to incomplete statistics, over interpretation of results, inappropriate description of results, inappropriate description of population, or poorly written paper. Hasanuddin and Akhadiah (2019) proposed the inclusion of blended learning in order to reinforce collaborative learning as it can improve the quality of scientific writing because in collaborative learning “students are very active, motivated and always intrigued by their hearts and minds to solve problems faced in the same group and they can compete competitively, and motivate other students to achieve the maximum learning outcomes” (Hasanuddin and Akhadiah, 2019, p.34).

In a different context, yet with the same concern, Merga, Mason & Morris (2019) performed a study in Australia in which they collected views from 246 Australian doctoral graduates who successfully finished their Thesis By Publication (TBP). As there is a demand to better understand the skills and attributes necessary to get a TBL, Merga, et al. (2019) asserted that while skills can be contended as acquired competencies such as reading; attributes are relative characteristics such as resilience. These key competencies as declared by the authors are needed to be adopted in the doctoral journey of every Ph.D. student as they will help in to develop their skills and attributes to successfully publish during their candidature.

Considering the existent literature, the study is of significant importance as it could fill an unoccupied research niche on topic of non native authors’ language problem in writing papers for international publication, and may serve as an initiating study for further research and discussions. More specifically, the work aims at answering the question of what language problems Ph.D. authors are facing when writing English academic papers oriented to international publications.

**Methodology**

The study counted mainly on document reviewing and analyzing. Major references, journals’ comments for authors, as well as online publications, were consulted by the author to come up with consolidated suggestions and recommendations for future research writers and authors for possible international publications. Eight papers that were rejected because of poor language use and other content reasons by Phd computer science students contributed to our data. The study is based mainly on a textual analysis in which rejected papers were compared to the corrected ones using the editors’ comments, students’ revision, and the final version of the article. The approach involved the provision of highlights that authors need to consider in carrying out the production of a journal-length article. Moreover, the descriptive method employed sought to underline the necessary guideposts as well as rudiments that would be of some use to potential authors of articles and also make it accessible to get the articles approved for publication.

In his article, Fahy (2008) lists some rules for a writing a scientific paper. These rules enable writers to “confidently apply” the skills of scientific writing (Fahy, 2008). They are restricted mainly to tense usage, lexical choice, articles, propositions, phrasal verbs and the tone of the author. It is based on these major linguistic features that we based our text analysis on. Skimming through our corpus, we found that the writer’s *tone, tense use ad lexical choice* were the most frequently revised by editors.
Data Analysis

**Tone Revision in a Scientific-technical Paper**

Tone is generally defined as a literary technique that encompasses an attitude towards a subject or an audience. As far as scientific research is concerned, the scientific method requires that research can be carried as objectively as possible, including the observation phase, measurement and analysis. It should not contain promotional language as “good” or “bad” and should rather be used with standardized units of measure and equipment which are proved or disproved by mathematical and statistical configurations. Likewise, the results should be revealed in an objective manner. In this respect, Ober (2008) comments that “Tone in writing refers to the writer’s attitude towards the reader and the subject of the message. The overall tone of a written message affects the reader just as one’s tone of voice affects the listener in everyday exchanges” (p. 104).

The most troublesome part in using promotional language is in authors’ claiming the overall significance of a given research or a given results. They can claim the superiority of software or a concept, or over praise a discovery where the evidence does not entirely support it. In the corpus under study, most of revisions were concerned with the omission of hyperbolic language as shown in the table below:

<table>
<thead>
<tr>
<th>Original Text</th>
<th>Revised Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relying on a third trusted authority enhances clearly the overall security</td>
<td>Relying on a third trusted authority enhances the overall security</td>
</tr>
<tr>
<td>And this is probably due to the discontinuities in the geometry</td>
<td>And this is due to the discontinuities in the geometry</td>
</tr>
<tr>
<td>Obviously, the number of equivalence classes can be at least one class</td>
<td>The number of equivalence classes can be at least one class</td>
</tr>
<tr>
<td>They typically compare exchanges database</td>
<td>They compare generally exchanges database</td>
</tr>
<tr>
<td>Most of the existing works have chosen different architectures</td>
<td>The existing works have chosen different architectures</td>
</tr>
<tr>
<td>The theoretical model of a coil, widely admitted is given in figure 3</td>
<td>The theoretical model of a coil is given in figure 3</td>
</tr>
<tr>
<td>In addition, communication with the recent widespread UAV’s can also be possible</td>
<td>In addition, communication with UAV’s can also be possible</td>
</tr>
<tr>
<td>Mostly, they can give a large number of EM configurations.</td>
<td>They can give a large number of EM configurations.</td>
</tr>
<tr>
<td>All recent research pointed that…..</td>
<td>Recent research pointed that…..</td>
</tr>
<tr>
<td>This sensor will be surely able to control the EM</td>
<td>This sensor will probably be able to control the EM</td>
</tr>
<tr>
<td>Obviously, this will ensure data reliability</td>
<td>This will ensure data reliability</td>
</tr>
</tbody>
</table>
The results **will clearly** lead to changes in the detection performance

| The results **will clearly** lead to changes in the detection performance | The results **might** lead to changes in the detection performance |

The use of hyperbolic language is identified as a major problem by many editors. In the revision process, this tone was replaced by what is called in the world of linguistics as “hedging”. Hedges are defined as “words whose job is to make things fuzzier or less fuzzy”. (Lakoff 1972, P.195 as cited in Clemen 1997, p.236). Hyland (1998) claims that, in academic writing, hedges “imply that a statement is based on plausible reasoning rather than certain knowledge and allows readers the freedom to dispute it” (p.4). In this respect, writers are trying to produce a paper with conviction along with considering the role of the reader in the confirming knowledge. That is to say, hedges enable writers to adequately operate their claims allowing readers to participate at the same time with their in-text interpretation.

As far NNS are concerned, Hyland (1996) states that writers need to have control over this trait of academic discourse so that they will be able to “use language with subtly, to mean precisely and with discrimination” (Hyland, 1998 p.224). Along with the acquisition of a neat understanding of the linguistic knowledge of hedging devices, the importance of considering social and cultural context is highlighted (Hyland, 1996). Hence, ‘Second language (L2) learners’ inability to use hedges in their academic writing might stem from socio-cultural reasons and lack of awareness on disciplinary culture and appeals.

**Lexical Choice in Scientific Writing**

Recent literature has shown that NNS academic writing differs from the writing of a NS in both the product and process of composition (Fuentes, 2009). Jafarpur (1996) made an observation of L2 writing in which he compared it to a native composition with evaluating the NNS lexical, grammatical knowledge compared to its counterparts. Of course, NS writers did better. However, Jafarpur (1996) clarified that NNS writing demonstrated a better command of content than linguistic knowledge. This claim, supported by other authors (Stotch & Tapper, 1997) seems to justify the NNS prioritization of content and the text form, while the NS focus seemed to be first on form then content. In this line of thought, Thonus (2004) stated that, in the reviewing phase, one should make NNS writers aware of the necessity of structure revision. In addition, some linguistic features that appeared in L2 writing seem to have stemmed from one’s first language (L1).

The lexis of scientific research has been classified by Godman and Payne (1981) to two categories: technical terms and non-technical. Technical ones are “those for which there is a congruity of concept between scientists, whatever the language used”. Non-technical ones, however, “consist of all other terms occurring in the language of science (ibid). That is to say, non-technical terms involve general language terms such as propositions, phrasal verbs, and article. In this study, we will focus mainly on the second type.

Lexical revision thus, is any modification, substitution or omission that occurred to any non-technical term. After comparing our samples before and after reviewing, we will consider the
shades of meaning that the original words along with the modified version. Hereby, we suggest a classification that allows us to categorize these lexical errors into the following categories:

![Classification of Lexical Errors](image)

*Figure 1. Suggested classification of lexical errors*  

Traditionally, lexical errors have been divided into two categories, *interlingual*, which are related to L1 transfer; and *intralingual* lexical errors which are produced due to lacunas in the learning process. What has been added recently, however, are *the conceptual* lexical errors that stand for the errors caused by the failure of the writer to match an idea with its correct format (Pastor & Mestre, 013). Based on this classification, we performed an error analysis that could help, not only in the understanding of lexical errors, but as a source of knowledge that can be used to improve production in a second language.

### Interlingual Lexical Errors

- **Calques**
  - The principle/the main idea is cross checking the plausibility of these two types of messages.
  - The system has also its inconvenients/disadvantages.
  - New conception/concept.
  - TFDD is proposed/suggested.
  - The result is obvious/clear because no connected components exist.

### Adoption of words/expressions from L1 to L2

- The triangular forms allow a great/high flexibility on the desired shape.
- Where it show a strong inductive behavior with a phase upper/superior to 60°.
- Since that/Since then, several algorithms have been created.
- After that/after, Watson and Dacieuk designed a new minimized model.
- Approach based cryptology/cryptology based approach.
At any time/ whenever an obstacle appears between two neighboring vehicles…..
- After the verification/ after meeting the verification
- In index 1/ at index 1
- Update with / to the update the next level
- To allow nodes to fast react/ reacting as quickly as possible against both inside and outside attackers.

- **Intralingual Lexical Errors**
- **Erroneous Collocation**

  - By analyzing historical past interaction.
  - In spite of preserving/ despite being able to preserve privacy
  - As future prospects/ in the future we plan to add other metrics
  - During the whole experiments time
  - Figure 5 presents our system functionality
  - Etm aims to prevent/at preventing.

- **Omission**
  - crytography/ cryptography
  - dely/ delay

- **Conceptual Lexical Errors**
  - This document/ this paper
  - The size of the sensors elements might be selected to gain better/ optimize precision in the detection.
  - Mathematical model retained/ chosen.
  - The electronic field calculated at the front surface of the load displayed/ illustrated.
  - The EM field computation results reveal that this sensor is able to adapt/ control the EM field.
  - A sample of CERP shows its susceptibility/ capability to detect the plies orientations.
  - Complexity of this proposition/ algorithm.
  - Simulation results gleaned/ obtained.
  - It can defend against inside attackers that are arduous / not easily thwarted.
  - Our scheme utilizes/ uses.
  - We give a detailed account/ describe our model.
  - It is rigorous/hard to see how groups can be formed based on heterogeneous entities.
  - To ensure a good/ adequate efficient message.
  - State / official vehicle.
  - Insuring data quality/ reliability.
  - Simulation results have depicted/ showed.

As it might be observed, **conceptual lexical errors** are the prevailing category. With every single correction, it can be seen that words and list of words were always replaced by more definite ones.
The texts were often shortened by native proof readers implying that the Algerian researchers seem to use more words than necessary to express themselves. Moreover, we assume that the frequent cause of lexical poor usage was due to using words with similar meaning in an interchangeable manner. This is signaled as an error because in many scientific contexts, one verb is adequate and the use of an inappropriate verb may cause distortion to the right concept. Therefore, most of the errors illustrated were produced as a result of having selected a general word that doesn’t serve the meaning desired. To a non-specialist, this does not make any difference, but in scientific writing, a word serves only the meaning for which it is intended.

**Tense Revision**

The use of present or past forms of verbs has a great impact on scientific papers. Correct tense use is derived from scientific ethics. The use of past or future is in a way or another indicator of the status quo of the work being reported.

Regarding tense use, because of these conventions, a scientific paper usually switches between present and past. An abstract or a summary refers primarily to previous work or unpublished results and uses the past tense. Most of the introductions tell about previous findings or set the background of research in the present. Both of the data and methods as well as the findings describe what the author reached using the past tense. Finally the discussion part finds a link between the authors’ results and previous literature. This section is considered to be the most difficult as it requires the writer to switch wittingly between past and present.

A thorough examination of our corpus shows a consistent pattern in the use of tenses. We noted the use of different tenses in abstracts and much of the introduction and results section were reported in the present. We also noted an unwitty use of present perfect mainly appearing in the conclusion. Whereas some papers were fully written in the past, with little or no use of the present, other papers were mostly in the present tense, using both present simple and present continuous interchangeably. The following examples taken from our papers show tense changes that occurred before and after revision:

<table>
<thead>
<tr>
<th>Table 3. Tense revision</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Introduction</strong></td>
</tr>
<tr>
<td>Original Text:</td>
</tr>
<tr>
<td>It is more adapted to delay sensitive cases</td>
</tr>
<tr>
<td>Revised Text:</td>
</tr>
<tr>
<td>It was more adapted to delay sensitive cases</td>
</tr>
<tr>
<td><strong>Materials and Methods</strong></td>
</tr>
<tr>
<td>Original Text:</td>
</tr>
<tr>
<td>Our scheme used some content-based parameters</td>
</tr>
<tr>
<td>Revised Text:</td>
</tr>
<tr>
<td>Our scheme use some content-based parameters</td>
</tr>
<tr>
<td><strong>Discussion and Results</strong></td>
</tr>
<tr>
<td>Original Text:</td>
</tr>
<tr>
<td>The work labeled with entity-oriented category attempt to eliminate</td>
</tr>
<tr>
<td>Revised Text:</td>
</tr>
<tr>
<td>The work labeled with entity-oriented category attempted to eliminate</td>
</tr>
<tr>
<td><strong>Discussion and Results</strong></td>
</tr>
<tr>
<td>Original Text:</td>
</tr>
<tr>
<td>Our results show</td>
</tr>
<tr>
<td>Revised Text:</td>
</tr>
<tr>
<td>Our results showed</td>
</tr>
</tbody>
</table>
As table 3 shows that, the main revisions that occurred dealt with the verb form (present and past) more than its aspect (perfect or continuous). We also notice an absence of the “ing” form. Moreover, depending on whether the author is referring to his own work or others’, the tense is chosen accordingly. In abstracts, not so many tense modifications were made.

As we have suggested, changes that were introduced to verb forms are essentially governed by the convention of scientific writing. The choice of tense use rests solely on scientific ethics and rhetoric considerations.

Conclusion
Writing a research paper can be a demanding, complex and a long process. Publishing a research work can be even more difficult. The “rules” of writing a scientific paper are rigid and different from any other kind of prose writing. Being ignorant of scientific ethics and attributes of scientific writing, namely precision and clarity may result in the paper’s rejection. After collecting and analyzing randomly selected rejected papers, we came to conclude that these papers were rejected because of some linguistic deficiencies (other than content reasons) as they had problems with regulating the right tone, using the correct tense and finding the exact correct word. As such, wordy language was always replaced by a simple and precise one.

Based on the findings disseminated from this research, it is suggested that more training and workshops are required at the university level to make students enhance their writing skill and raise awareness that the text format and language is as important as the content. Hereby, phd students who are willing to publish are encouraged to read a lot and practice writing regularly like blogging or making a journal log.

On the whole, the findings from this study, we suggest, may open up areas for research on the effect of introducing writing strategies to scientific writers that might help them overcome their difficulties in writing in English.

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