

English as the *Lingua Franca* of science - a difficult language by any standard

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English is widely spoken, used in general communications, and broadcast on radio and television across most countries. A high percentage of people – especially professionals such as scientists and doctors – have little choice but to become proficient in it as the *Lingua Franca*. But speaking it relatively fluently is not the same as writing in English. Not only is it difficult to express oneself clearly, but great accuracy is required in learned scientific and medical papers in both the language and the soundness of the content. Generally, non-native English speakers experience considerable difficulty, and can become frustrated when their papers are criticised for their poor presentation (eg in spelling, choice of words, syntax, and grammar). It might be thought, erroneously, that modern software handles many of these problems, but the evidence is to the contrary – most authors make the same mistakes and omissions over and over again. Another problem is that many authors follow the pattern and presentation in language (phrases and expressions) of other published papers in poor English, which is accelerating and exacerbating the continuing decline in the quality of scientific communications.

The tragedy is that, although proficiency in English can be learned by many non-native speakers one way or another (perhaps at the many commercial institutes that offer courses throughout the world), very few universities provide courses in scientific writing and publishing in English. Training courses are desperately needed to remedy this problem, from undergraduate right through to professorial level. A research article is the product of hard work and its culmination. It needs to be original and outstanding if it is to succeed in being published in a good journal. While training should be more readily available, there are some books available on the subject. Most of these books are difficult to follow and lack an interactive element. Explanations are required regarding the best use of English, and this only comes with face-to-face contact.

For non-native English speakers whose mother tongue is least akin to English, there are undoubtedly major difficulties. Chinese speakers would have to start from the very beginning in learning English. People with languages that have some resemblance to English, eg Greek, Roman, Slavic, Teutonic, etc., find much of the difficulty arises in transliterating their papers. English is very complex; it has rules, idioms, colloquialisms, and oddities that distinguish it from many other languages. Even if a fair attempt can be made to express oneself in English, the writing usually needs a lot of attention to put it in its best possible form, acceptable to an experienced native English speaker within the same professional discipline, and definitely to editors of learned journals. How many authors keep dictionaries, a thesaurus and other aids at hand, or go online to seek the best use of English words through Wiki? Submissions

suggest very few take the trouble to be properly equipped for the job, leaving aside the general absence of some formal training. It is important to have the assistance of a native English speaker, preferably nearby. If necessary, a commercial editing service should be used. But often the “improvements” are done through companies that employ people lacking a good command of English and having little editing experience and often poor working knowledge of the subject matter.

I would like to take a few examples of how people speaking Serbo-Croatian, Polish, Russian, and similar languages might get to grips with writing better English. One colleague in Slovakia notes a problem with using the right tense of verbs; others in Russia find the use of “a” and “the” a nightmare because these are not used in their own languages. There is generally a problem with using the correct word, let alone spelling it properly (English seems to be full of anomalous spellings!). English is remarkably rich in the number of words that seem suitable in a particular context, but usually only one of them conveys the exact meaning that is intended. Unfortunately, one word becomes prominent and slips into common usage to cover many that could make a sentence much more explicit. To take one simple example, the word *evaluate* is used *repeatedly* throughout almost every scientific paper published today, as if none other was more suitable, when in fact more than a dozen words would be more apposite in a particular context. Instead of *to evaluate*, try using one of the following verbs in your next draft paper: to measure, assess, consider, calculate, predict, explore, determine, inspect, examine, enquire, discover, explain... (as an exercise, consider some of these alternatives that might be better in the phrase “...this result encouraged us to evaluate the reaction between...”).

I have sympathy with many authors in finding the correct tense of a verb. In some languages, the tense is implied by the context in which the verb is used, or there are only a small number of tenses available (past, present, and future). English has gone crazy with tenses and every one of them is very specific in its context. Difficulties also arise in moving between the active and passive forms, and in using the present participle. Prepositions are notoriously difficult to choose; as American English moves increasingly away from (classical) English, this problem is being exacerbated. Sentence order is another issue: in English the main clause should come upfront, and not be preceded by a number of qualifying subclauses.

My final piece of advice for non-native English speakers is, once again, to always seek the help of an experienced native English speaker before submitting a paper to a journal, no matter how well you think it has been written.