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language used by non-Anglophones might even protect English from its own success.

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Scientific Globish versus scientific English

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The proposed adoption of 'scientific Globish' as a simplified language standard for scholarly communication may appeal to authors who have difficulty with English proficiency. However, Globish might not justify the hopes being pinned on it and might open the door to further deterioration of the quality of English-language scientific writing.

There is an old joke about a Georgian scientist who had to lecture in English at an international conference. During a coffee break he asked his American colleague, 'How was my talk?' 'Very good', replied the American, 'I understood very much of it. And you know what? I'd never thought that Georgian was so similar to English.'

This joke is not an example of the finest in Russian humor, but like every joke, it has its element of truth. The truth is that without a solid command of the English language, you undermine your chances of professional success, particularly if you wish to make your voice heard to the broadest possible audience. The Georgian scientist in the joke could be replaced with a Russian, a German, or perhaps a Chinese scientist – in fact, anyone who has not had the advantage of being born a native English speaker.

Proficiency in English, as in any other language, can be acquired by only one means – learning. We learn, therefore we are. Real learning presupposes evolution of our knowledge, skills, and views, a constant movement upward in our understanding of the complexities of things. Learning is instrumental in shaping our brains and our careers. In all spheres of human activity, including languages and science, the rule is the same: the better you learn, the more you achieve.

Recently, Momen [1] and Norris [2] published what seem to be attempts to relieve scientists of the burden of learning English. Both authors, one a non-native and the other a native English speaker, argue for the development of a simplified scientific English, termed 'Scientish' [1] or 'scientific Globish' [2], as a language standard for scholarly communication. The term 'Globish' denotes the international auxiliary language proposed by Jean-Paul Nerrière, which relies on a vocabulary of 1500 English words and a subset of standard English grammar [http://en.wikipedia.org/wiki/Globish_(Nerriere)]. The chief benefits of scientific Globish are thought to be these. (i) Globish would be much easier to learn than English owing to its limited vocabulary [2], simplified grammar [1], and phonetic spelling [1]. (ii) Journal referees would not discriminate on the basis of language proficiency [2]. Consequently, the dissemination of academic knowledge would be greatly facilitated and scientists from non-English-speaking nations would not feel marginalized. Despite the attractiveness these proposals may have for international authors who have difficulty publishing their work in English, a closer look suggests that Globish might not justify the hopes being pinned on it and that it might open the door to further deterioration of the quality of English scientific writing.

Many of us may have noticed that the English we use to write our papers, notably experimental reports, is already a kind of Globish. Because scientific English is now the property of specialists all around the world, its grammar, lexis, and style are constantly influenced by alien linguistic habits [3]. It is already simplified in more ways than one: the vocabularies of scientific disciplines are largely technical (and thus fairly limited), the use of tenses is restricted (e.g., the future perfect is almost never found in research texts), and the same expressions are repeated over and over ('In this study, we examine . . .', 'Quantification was done by . . .', 'The results indicate that . . .', etc.). Does it

really need to be simplified any further? We still call the body of published knowledge the 'scientific literature', a term reminding us that the standards of academic writing are expected to be at least no lower than those accepted for literary works. What sort of literature would we have if people were encouraged to use only 'a limited vocabulary, familiar words, and short sentences' [2]? What would be left of the beauty and power of the living English language, so admired by its educated foreign lovers?

The best writing is as simple and as complex as the writer's message demands. Simple sentences are perfect for expressing simple ideas such as 'the Earth is round', but complex ideas or a description of a multistep experimental procedure sometimes requires fairly complex grammar as well as a large vocabulary. After all, scientific reporting aims to transfer advanced knowledge and skills. It is difficult to see how this transfer could be possible with only a basic amount of English at one's disposal – except if one was reporting something that was not so advanced. Would not the next logical step be to relax the criteria used to evaluate the scientific significance of manuscripts, especially for scientists in countries where research funding is even scarcer than manuals of English?

'Clear enough' and 'good enough' [2] cannot be equated. Consider: 'The samples were analyzed **using** gas chromatography'; '**To analyze the samples**, gas chromatography was used'; '**On analyzing the samples**, the levels of naphthalene were found to be high.' Although the meaning of each sentence is 'clear enough', each is grammatically unsound because of the dangling modifier it contains (in bold), and each therefore is bad enough (for more on dangling modifiers, see [4,5]).

There is no pressing need for scientific Globish because the educational literature is replete with books dealing extensively with the principles of grammatical and readily intelligible academic writing [4–7]. Of special interest is J.M. Williams' *Style: Ten Lessons in Clarity and Grace* [5] – a thought-provoking study guide that shows by numerous examples how sentences can be complex and yet perfectly clear. The globalized world has facilitated access to education, and an array of resources for English-language writers can now be found on the Internet by using a search engine with these and similar keywords: 'scientific writing', 'scientific English', 'guide to grammar', 'writing tips', and 'help with English'. Advice on correct grammar, punctuation, and style can also be obtained directly from native English experts who volunteer their services at question-and-answer websites (e.g., Allexperts or Answerway). Therefore, everyone has ample opportunity to learn.

Concerning peer-review language bias, it does create a climate of suspicion. Ironically, the worst complainers about English usage appear to reside in non-English-speaking parts of the globe, and some of these 'language watchdogs' write in horrible English like 'Finaly the authors should to correct there english be fore the editors can to accept it'. That said, experience indicates that referees' critiques of English are constructive more often than not. In addition, no one can make any guarantees about the acceptability of every paper written in scientific Globish because proficiency in a language implies much more than familiarity with words and idioms. Most of the hassle that editors and referees have with manuscripts comes not from errors in usage but from a lack of coherent organization of thoughts into sentences and of sentences into paragraphs (https://www.soils.org/files/publications/editor-handbook/editors-handbook.pdf). Should we, then, also simplify the style requirements, so that the feelings of writers with insufficient thought-organizing skills would not be hurt?

Instead of switching to Globish, non-anglophone universities and institutes might opt for employing an in-house consultant (not necessarily a native English speaker) who would help authors to write and revise their manuscripts in good English. Language bias could be reduced if editors and referees follow the suggestions offered by Eastwood *et al.*: editors can help to quantify the perception of bias against authors by analyzing the rejections recommended by their reviewers, can encourage reviewers not to discriminate on the basis of language or other cultural factors, and can grade reviews on the basis of constructive criticism offered; as a further measure, masked copies of reviewers' comments can be shared among reviewers [8]. As justly pointed out by Drubin and Kellogg [9], all members of the scientific community – authors, editors, referees, native and non-native English speakers – should work together to optimize scientific communication. But for such a collaborative effort to succeed, it is vital that all parties concerned recognize the indispensability of learning and teaching the actual English language, with its unlimited potential to convey human ideas, in preference to something that could only be used as a crutch to hobble on. Serious language learning would be a far better way to handle English-related problems in scientific publishing, and the English language would be saved from unnecessary surgical interventions.

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