

($P < 0.05$ for all categories of negative connotation, McNemar's test).

Comment

Many diagnostic labels that are used for symptoms unexplained by disease have the potential to offend patients. Although "medically unexplained" is scientifically neutral, it had surprisingly negative connotations for patients. Conversely, although doctors may think the term "functional" is pejorative,⁶ patients did not perceive it as such. As expected, "hysterical" had such bad connotations that its continued use is hard to justify, although it is the only term in this list that specifically excludes malingering.

Diagnostic labels have to be not only helpful to doctors but also acceptable to patients. Many of the available labels did not pass this basic test, but "functional" (in its original sense of altered functioning of the nervous system³) did. This label has the advantage of avoiding the "non-diagnosis" of "medically unexplained" and side steps the unhelpful psychological versus physical dichotomy implied by

many other labels. It also provides a rationale for pharmacological, behavioural, and psychological treatments aimed at restoring normal functioning of the nervous system.⁴ We call for the rehabilitation of "functional" as a useful and acceptable diagnosis for physical symptoms unexplained by disease.

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A paradigm shift in the medical literature

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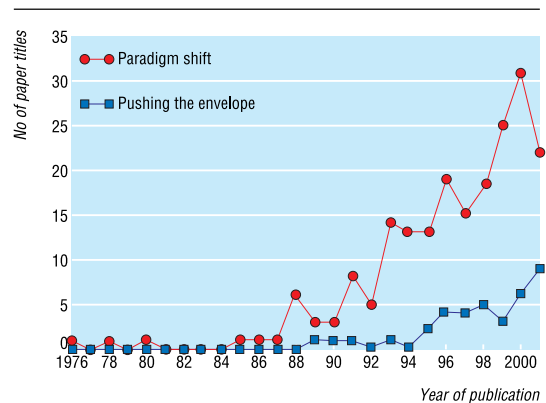
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Medical literature is expanding massively. More and more journals are appearing and an increasing amount of research and comment is being produced to appear in these journals. Funding for universities is decided on the amount and quality of research produced, and therefore more pressure is placed on researchers and clinicians to (publish or perish). A piece of research needs to be sound in method and results, but the title needs to be appealing to attract the attention of editors and catch the eye of the reader. Titles including words suggesting results of great impact will cause more interest and tempt journal subscribers to read beyond the title or abstract—this one did, didn't it!

Papers with catchy titles work best. Titles need to contain phrases that are in popular use and suggest innovation and exploration. I examined the use of two such phrases that are, or have been, in popular use: "paradigm shift" and "pushing the envelope."

Method and results

I used PubMed (www.ncbi.nlm.nih.gov/entrez/query.fcgi) to search for published articles containing the words for the two phrases. Searches were limited to "paradigm and shift" and were limited to title words. The database was searched for a 25 year period, 1976-2001. The same search strategy was repeated for "pushing and the and envelope." This search does not determine the word order in the paper title, but for the words to make sense in a sentence, the word order will have to remain grammatically correct and the sense remain approximately the same.



Number of papers published with the words "paradigm shift" or "pushing the envelope" in the title

I found 201 paper titles for 1976-2001 for the phrase "paradigm shift" and 37 for "pushing the envelope." The figure shows the results of the searches. As a phrase for inclusion in the title of published medical research, the phrase "paradigm shift" had low popularity in the early years of the study but picked up in the mid-1980s and began to rise exponentially before seeming to drop in the past year or two. In contrast, "pushing the envelope" remained dormant for most of the period of study but in the early 1990s has picked up and seems to be mirroring the success of "paradigm shift."

Comment

According to www.dictionary.com, an online dictionary and thesaurus, the word "paradigm" has three defini-

tions. The one that applies most closely to medical literature is the third: “A set of assumptions, concepts, values, and practices that constitutes a way of viewing reality for the community that shares them, especially in an intellectual discipline.” In addition, the word paradigm was first used in English in the 15th century and meant “an example, or pattern.” The same dictionary gives seven definitions for “envelope.” The one most applicable to medical research is “The set of limitations within which a technological system ... can perform safely and effectively.” Obviously, “pushing the envelope” means expanding those boundaries and limitations—an exciting concept.

The phrase “paradigm shift” was popularised by Thomas Kuhn, professor of history and philosophy of

science, in his 1962 book *The Structure of Scientific Revolutions*¹ and has been used regularly since then. There seems to be a good few years to be had yet in using the phrase “pushing the envelope,” but its days will surely be numbered.

There needs to be a new, exciting form of words for the titles of papers for the future. We must not confine our meditations but should begin to think outside of the box.

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1 Kuhn TS. *The structure of scientific revolutions*. Chicago: University of Chicago Press, 1962.

Readability of British and American medical prose at the start of the 21st century

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Articles published in the *BMJ* and *JAMA* are available on the internet, albeit for a fee in the case of *JAMA*. We wanted to determine whether the materials published by these two pre-eminent journals, while physically accessible to a broad population, are likely to be comprehensible to them.

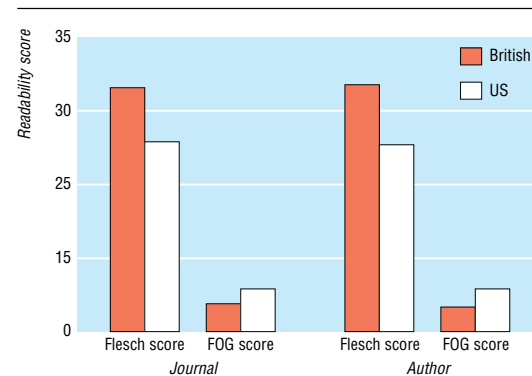
Methods and results

We obtained electronic versions of articles from the *BMJ* and *JAMA* published in the first six months of 2001. We limited our analysis to articles that were published as “Papers” in the *BMJ* or “Original Papers” in *JAMA*, had structured abstracts, and had first authors with either British or US institutional affiliations. The *BMJ* published 42 such articles and *JAMA* 68.

For each article, we noted the national affiliation of the first listed author. We used Readability Calculations software from Micro Power and Light (Dallas, TX) to calculate two validated readability scores—the Flesch ease of readability index¹ and the FOG index.² Flesch scores of <30 and FOG scores of >16 indicate extremely difficult reading, comparable to perusal of a legal contract.³

We performed independent *t* test analysis of these dependent variables, using both the journal (*BMJ* or *JAMA*) and the national affiliation of the first author (UK or US) as grouping variables. We performed a stepwise regression analysis to determine the independent contribution of journal, national affiliation of the first author, and the number of tables, figures, and references to the variation in ease of readability scores.

Articles published in the *BMJ* were easier to read than those published in *JAMA*, as indicated by higher mean Flesch scores (31.5 (SD 8.1) *v* 27.8 (6.4), *P*=0.009) and lower FOG scores (16.9 (1.6) *v* 17.8 (1.3), *P*=0.001). Similarly, articles written by British affiliates were easier to read than those written by US affiliates, as indicated by higher Flesch scores (31.9 (8.0) *v* 27.7 (6.5), *P*=0.003)



Mean ease of readability scores by journal and first author nationality. (For Flesch scores, higher values indicate easier readability; for FOG scores, lower values indicate easier readability)

and lower FOG scores (16.7 (1.5) *v* 17.9 (1.4), *P*<0.001) (figure).

In stepwise multivariate regression analyses, only first author's nationality significantly contributed to the model, accounting for 7% of the variance in the model predicting Flesch scores (*F*=9.2, *P*=0.003) and 13% of the variance in the model predicting FOG scores (*F*=16.7, *P*<0.001).

Comment

Medical articles published by two major international journals are extremely difficult to read, according to two readability formulas that have been validated in many settings. Articles in the *BMJ* were easier to read than those in *JAMA*, and articles written by British authors were easier to read than those written by US authors. These differences persisted after correction for potential confounders.

The study has several limitations. Firstly, our outcome measures have been used in, but not validated

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