

## Letter

# Penetration of the English language in science: the case of a German national interdisciplinary critical care conference

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Globalization in business, politics and other aspects of our everyday life is viewed by many as an inevitable reality. The English language has undoubtedly benefited significantly from the new era, in gradually penetrating into other cultures in many fields such as music, arts, education, and more recently science. Previous reports indicate that such penetration is also evident in the field of biomedical sciences [1,2], primarily supported by the paper and online publication in the English language of the majority of about 6,000 journals indexed in PubMed. The adoption of a universal language in science, namely English, could facilitate communication between individuals from different countries and enhance the timely interchange of ideas among researchers and scientists with potential benefits to scientific advancement and development [3]. Language barriers could also potentially be eliminated and diffusion of knowledge could be promoted through the World Wide Web in real time.

However, the dominance of the English language in the scientific field, including teaching, academic education, research publications, meetings, conferences and scientific societies, could also lead to poorer outcomes in the field of research and development because of the possible exclusion of those not able or not willing to adapt. It might also contribute to the gradual elimination of other languages and potentially other cultures, with unknown consequences for the advancement of science. Biodiversity in nature is viewed as an important factor in the maintenance of a balanced and healthy environment. Perhaps a similar diversity in languages and cultures promotes instead of obstructs scientific advancement [4]. German researchers have contributed significantly to science in many different fields, including the biomedical sciences. In the past century, the German language was recognized among Europeans as the language most frequently used in science [5]. To evaluate the possible penetration of English into the German language, we studied the use of English at a German national medical conference.

We assessed the use of the English language in the published abstracts of a major German national conference, namely the German Interdisciplinary Conference of Intensive Care Medicine and Emergency Medicine (Deutscher Interdisziplinärer Kongress für Intensivmedizin und Notfallmedizin, Deutschen Interdisziplinären Vereinigung für Intensivmedizin und Notfallmedizin (DIVI)). The abstract books of all seven DIVI conferences, organized between 1991 and 2004, were reviewed to count the number of abstracts presented at each conference as well as the subsets of abstracts presented in English. All abstracts presented in English were reviewed further to identify the country of origin of the authors. These abstracts were categorized into three groups. The first group included those abstracts presented solely by investigators based in German universities, hospitals or institutions. Abstracts that were the result of collaboration between investigators from Germany and other countries were included in a second category, and abstracts presented by investigators from countries other than Germany were classified into a third group.

Table 1 shows the total number of abstracts presented in the seven DIVI conferences, as well as the proportion of abstracts presented in English. As is shown, no abstract was presented in English during the first, second and third DIVI conferences. However, there was a gradual increase in the proportion of abstracts presented in English during the subsequent DIVI conferences (from 1.6% to 25.1%). Of the total of 98 abstracts presented in English during the last four DIVI conferences, 86 were written by solely German investigators, on the basis of the information provided. Three abstracts were the result of collaboration between investigators from Germany and other countries (Austria, Israel and the USA). The remaining nine abstracts were presented by investigators from countries other than Germany (Poland (4), UK (2), Austria (1), Slovakia (1) and the USA (1)).

Table 1

Abstracts presented at the DIVI conferences (1991–2004)			
DIVI Conference	Year	Number of abstracts, <i>N</i>	Abstracts in English, <i>n</i> (%)
1	1991	246	0 (0)
2	1993	300	0 (0)
3	1995	442	0 (0)
4	1997	320	5 (1.6)
5	2000	445	9 (2.0)
6	2002	226	31 (13.7)
7	2004	211	53 (25.1)

There is a growing debate around the world about the rapid penetration of the English language into various expressions of human activity, including science [6-9]. It is estimated that half of the world population will use English by the year 2015. The results of our analysis suggest that the penetration of English into a German national interdisciplinary medical conference that has been attended mostly by German-speaking investigators was astounding. The fact that about one-quarter of the abstracts were presented in English at the last DIVI conference (2004) deserves the attention of German scientists as well as the broad scientific community worldwide. It should also be noted that most (88%) of the abstracts in English were presented by investigators based solely in German universities, hospitals or other German institutions.

There are several possible explanations for the observed penetration of the English language in the German national medical conference studied that might also operate in other scientific activities in most non-English-speaking countries. There is a language effect that pressures investigators to publish their work in journals indexed by Index Medicus and the Institute for Scientific Information because of the visibility of papers appearing in the PubMed database and the influence of their impact factor, respectively. Practical reasons might therefore guide investigators to prepare their work in English for submission for publication. In addition, the use of English can be considered an important qualification distinguishing researchers who are fluent in English from others lagging behind in many non-English-speaking countries. German investigators might also present abstracts in English at their national conference after those same abstracts have already been presented at an English-speaking international conference. Finally, it is possible that the organizing committee of the studied conference might have invited the use of English in an attempt to increase the number of non-German-speaking delegates.

In conclusion, we found that about one-quarter of the abstracts presented at a German medical conference were

written in English, indicating a significant penetration of the English language into a German national multidisciplinary conference. We believe that the results of our study merit attention from the scientific community around the world for two main reasons: first, because a considerable penetration of English was evident at a particular conference that is attended mostly by German-speaking scientists and clinicians, who elected to present their abstracts to a German-speaking audience in English, and second, because the German language, with its tradition and rich history in science as well as its popularity, was thought to be one of the most difficult languages in Europe to penetrate. Our findings suggest that researchers around the world should engage in an open and unbiased discussion about the future of languages in science.

### Competing interests

The author(s) declare that they have no competing interests.

### Authors' contributions

MEF and EF conceived the study. FCC and KR collected the data. MEF drafted the manuscript. All authors contributed in the writing and preparation of the manuscript. All authors read and approved the final manuscript.

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