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Section 2: Country Trends

The Language of (Future) scientific communication

Dr Daphne van Weijen

English is generally considered to be the lingua franca of the scientific community. For example, roughly 80% of all the journals indexed in Scopus are published in English. The adoption of English as the universal language of science is due in part to historical political and economic factors which favored English over other potential candidate languages such as Chinese, French, German, Russian, or Spanish (1), (2), (3). Indeed, German was actually the favored language in scholarly communication for the first part of the 20th century (4). However, although English is now clearly established as the main language of international scientific communication, researchers continue to publish their work in other languages than English as well. Furthermore, research suggests that the extent to which researchers still publish in their native language, as opposed to English, differs across the disciplines. They seem to be more likely to publish in languages other than English within the Social Sciences, Applied Sciences and Humanities, than in the natural, theoretical and hard sciences (1), (2). This article reports on a short study using Scopus data to determine (a) whether the use of languages other than English for scientific communication is increasing or decreasing, and (b) in which subject fields researchers publish most when publishing in their native languages instead of in English.

The preferred language of publication

In an earlier issue of **Research Trends**, we published a brief article on the use of English as the international language of science from 1996 to 2007 (3). Results of that study indicated that researchers were more likely to publish their work in English than in their native language in most of the Western European countries included in the sample. The ratio for English to Dutch and English to Italian publications was particularly high, compared to those of the other countries in the study (German, France, Spain and the Russian Federation). However, please note that Scopus covers non-English language journals only if they include English article titles and abstracts. We decided to replicate this analysis, to determine whether this trend has continued in these countries over the past four years.

As in the earlier study (3) published in 2008, the ratios of the number of journal articles published in English and in each country's official language are presented in Figure 1. We chose to extend the analysis to include Brazil and China in addition to the 6 countries included in the original analysis, as these are considered rising research economies. This is confirmed by the fact that the compound annual growth rate (CAGR) for articles indexed in Scopus between 1996 and 2011 from Brazil was 13% and China 19%, which is far greater than the 3 to 5% CAGR that is usually expected.

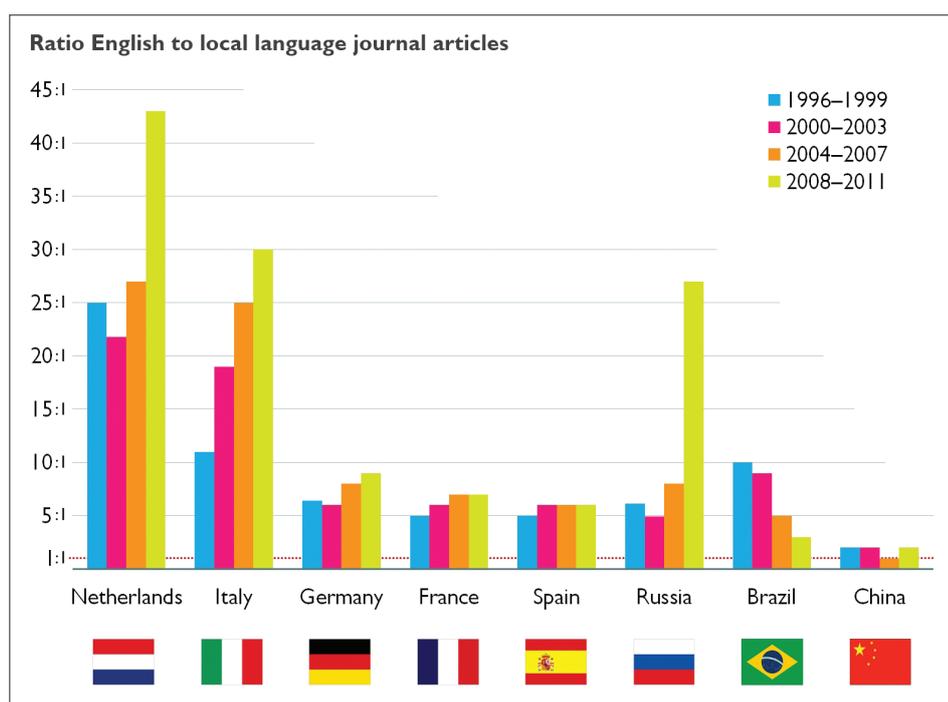


Figure 1: Ratio of the number of journal articles published by researchers in English to those in the official language of eight different countries, 1996–2011. Source: Scopus.

Language	"Hard" Sciences		"Soft" Sciences		Multi-disciplinary & Undefined
	Life Sciences	Physical Sciences	Health Sciences	Social Sciences, Arts & Humanities	
English	23.4	44.7	19.5	10.7	1.7
Chinese	8.7	72.5	13.0	2.9	2.9
Dutch	14.9	3.2	52.3	26.1	3.5
French	8.6	16.3	36.4	36.5	2.3
German	7.3	34.5	32.5	23.5	2.2
Italian	4.7	12.1	38.6	40.6	4.0
Portuguese	26.1	11.5	38.4	22.1	1.9
Russian	17.2	45.0	21.0	8.4	8.4
Spanish	10.8	13.2	44.4	29.6	2.0

Table 1: Overview of the percentage of articles published in the four main categories per language, as a percentage of the total publication output in that language from 1996 to 2011.

Figure 1 shows that, in line with the original study, the use of English has continued to rise strongly in the Netherlands, Italy and the Russian Federation over the past four years. It has also increased somewhat in Germany, but remained relatively stable in France, Spain and China. However, in Brazil, the ratio between the use of English and Portuguese is clearly decreasing, although this might be due in part to an increase in the coverage of Brazilian journals published in Portuguese instead of English in Scopus. However, overall, the use of English clearly continues to increase over time.

Subject specific use of English?

The next question is whether there are subject fields in which researchers still publish regularly in their own language instead of in English. To answer this question, a general search was carried out in Scopus to determine the number of articles published in each of the selected languages between 1996 and 2011. The languages included in the search were the same as those presented in Figure 1, with the addition of English, so a comparison could be made between English and the other languages.

Table 1 provides an overview of the percentage of articles published in the four main categories per language, as a percentage of the total publication output in that language from 1996 to 2011.

The results indicate that researchers publishing in English, Chinese or Russian tend to publish most in fields related to the 'harder' Physical and Life Sciences, such as Physics, Engineering and Materials Science. On the other hand, researchers who choose to publish in Dutch, French, Italian, Portuguese or Spanish tend to publish their work most in fields related to the 'softer' sciences, such as the Health Sciences, Social Sciences, Psychology and Arts and Humanities. This ranges from almost 80 percent for the Netherlands and Italy to roughly 60 percent for Germany and Portugal. Although these ranges are similar across countries, there is a high level of variation in the actual fields within these main categories. For example more than half of all Dutch language publications are related to Health Sciences, which includes Medicine, Dentistry, Nursing and Veterinary Science, while in Italian nearly 41 percent of all publications are related to Social Sciences, Arts and Humanities.

Overall, these results appear to confirm that researchers publishing in languages other than English tend to do so somewhat more in the softer disciplines than in the harder ones (1), (2). Although English clearly continues to be the preferred language of scientific communication, there are still plenty of disciplines within which researchers continue to publish in their native language as well.

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