

Communicative conventions in multilingual scientific discourse: a multidimensional study on language contact and language change

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Scientific discourse is highly constrained by formal and linguistic conventions governing the written presentation of research. Requiring a certain level of background knowledge and subject expertise on the readers' part, articles published in academic journals, for instance, are characterized by an extensive use of technical and specialist vocabulary as well as condensed syntactic structures. In addition to this, the English language is dominant in international science. On the one hand, this is reflected in a high degree of interference effects impacting on the German language in general. On the other hand, the predominant role of the English language in this field has resulted in a large amount of non-native scientific writing and German-English translations, which may exert an influence on the English language.

Within this context, this paper adopts a multi-dimensional approach to the corpus-based analysis of communicative conventions in multilingual scientific discourse: firstly, the horizontal layer of scientific discourse is reflected using sub-corpora in English and German from the following scientific domains (archaeology, astronomy, biology, chemistry, mathematics, physics and engineering). Secondly, the vertical layer is investigated on the basis of contrasting scientific (expert to expert) and popular-scientific (expert to layman) discourse in English and German. Finally, English-German and German-English translations are considered with respect to standardization and interference effects.

To this end, all sub-corpora of the multidimensional corpus are processed using part-of-speech tagging, phrase chunking and terminology extraction tools. On this basis, the texts are analyzed in view of the following LSP register features (e.g. Halliday & Martin 1993, Biber 1995, Luukka & Markkanen 1997): term density; verbal vs. nominal style; frequency, length and complexity of syntactic phrases; frequency, length and complexity of sentences; nominalisations; compounding; pre- and postmodification; hedging; passive; impersonalization etc. Drawing on empirical evidence, the findings of the sub-corpora involved are contrasted in terms of language typology, degree of expertise and interdisciplinary diversity. Additionally, translations from the language pair English-German are evaluated against the non-translated texts in terms of the specific properties of translated text. Given the strong dominance of the English language in the natural sciences and standardization effects from German into English, our hypothesis, here, is that we will find both interference effects in translations from English into German and standardization tendencies in the English translations of German texts (cf. Toury 1995).

In a final step, the findings gained from the comparison of contemporary scientific discourse are contrasted to the typical patterns observed in diachronic corpora of scientific texts. This comparison is intended to provide insights on changes in the communicative conventions of scientific discourse over the last decades. Moreover, the potential impact of language contact in general and translations in particular is discussed.

References

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