

Scientific Lingua Franca and National Languages at the Crossroads¹

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Penser l'Europe is an international seminar organised annually by the Romanian Academy, during which the major problems of European integration are discussed. In 2003 the dialogue was focused on 'the languages of Europe'. It was reported that in Europe there are 40 official languages and 90 spoken languages, whereas worldwide 3200 languages are in use. We asked ourselves what their future in the process of globalisation would be. It is undoubtedly difficult to have an immediate and simple answer. We can quote a few sombre linguists who, with reference to the dynamics of languages, predict that in 300 years' time only Chinese, English and Spanish will survive. This is not a happy prospect.

With respect to the European languages used in hard sciences: without a worldwide referendum, English has become de facto language of international (scientific and diplomatic) communication. What are the relationships between English and the national languages? Is it right to have only one language for science? Is it possible that this uniqueness may simplify our spirit and our science? This is what we should contemplate. The policy of the European Union is to protect national languages. What would the right policy be for a country like Romania to ensure normal integration into European life for its citizens and, at the same time, to maintain a 'clean' national language so as to preserve its cultural identity?

A *lingua franca* is a tool for multinational integration, a language of inter-ethnic communication. It does not replace the native language; its purpose is to make language the common ground of comprehension and understanding instead of a barrier between nations. In antiquity, the role of a *lingua franca* was played by old Greek, whereas in the Middle Ages it was Latin. From these two languages most of the present scientific terms and syntagma derive. Then it was the turn of French, German and Italian to be important for culture, science and diplomacy, especially for the aristocracy.

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National languages are the foundations of the cultural variety of European and other countries, a means of instruction and a way to foster the cultural level of each citizen. To truly comprehend Rousseau or Voltaire, it is best to read it in French, to understand Kant and Hegel's philosophical concepts, they should be read in German, and to enjoy Verdi's operas it is best to listen to them in Italian.

There is an apparent conflict between the national language and the lingua franca: the need for global integration on the one hand and the quest for national identity on the other. In this respect, the globalisation era is not flawless, but if manipulated with consideration and care, its good functions will prevail.

Background of today's situation in sciences

During the past 200 years the field of knowledge has evolved at an astonishing pace. In the 18th century, at the time of Isaac Newton, most people were illiterate and the average life expectancy was 30 years; the extensive scientific explorations of the 19th and 20th centuries led people out of poverty, extended their lives, while the industrial revolution changed individual and societal life completely. Scientists have started discovering the complex relationship between genes and are looking for ways to delay the ageing process and to heal illnesses like AIDS, cancer and Alzheimer disease. Science has revealed the secrets of the atom, the molecules of life, and we are witnessing the genetic, the quantum and the computer revolution.

Yet, soon there will be 6 billion people on earth who will have to be nourished, kept healthy and wealthy and will have to understand one another. The longer the world's population lives, the more rapid scientific advances become an absolute requirement for improving the quality of life. All this will become possible due to the progress of science in various parts of the world, and to the rapid and efficient communication of new discoveries throughout the globe. Besides the need for transnational scientific communication, it is essential that each individual of the 21st century be well informed and educated so as to understand the world as a whole as well as his/her country or community.

In our country, habits and traditions have changed over time. Romanian is a Roman language. It is the only country in this part of Europe that preserved a Latin language, a fact considered an enigma and a miracle. Teaching is done in Romanian. Before 1989, schools and universities used to teach two

foreign languages, one of them being the compulsory Russian (which was never an official language in Romania). Few students learned Russian well and we presume that this was due to two reasons: the reaction to communist oppression and the difficulties experienced by individuals speaking a Latin language-in becoming skilled in a Slav language. Since Russian science is valuable and the Russian literature a treasure, this is regrettable, but a *fait accompli*.

After 1989 all Romanian pupils and students have been able to choose between English, French, German, Italian and Spanish and, at special schools, Russian or Chinese. Within universities there are departments for foreign languages or full courses in an international language. The idea is to prepare the students to be future members of the 'global village'. Must they have mastered the national language just as well? The answer is definitely: Yes!

In natural sciences it was a tradition to publish in Romanian with an abstract in a widely used foreign language. This tradition has changed and life sciences' scientific journals, such as those of the Romanian Academy, publish mostly in English or French; moreover, many researchers publish their results in international journals in order to be properly cited. It is our opinion that we need to find the means by which international or Romanian sciences' discoveries and developments reach everybody in the country. At the same time national languages, which are the foundations of the cultural variety of European countries, have to be maintained 'cleanly' as well as protected.

Is science a national affair?

It is our belief that science knows no country, but every country must know science. The verities of and discoveries in science have to be unrestricted, accessible, common knowledge. As scientists we regard science as a universal endeavour, which is why the scientific community shares results and co-operates in joint projects.

We imagine science to be - like Brancusi's 'endless column' - infinite, with no limits, no frontiers. Science is a continuous exploration to disclose nature's secrets, including our own. The end products of science and knowledge from different parts of the world have to benefit the entire planet. As Goethe said: "First of all, science and art belong to the whole world, and the barrier of nationality disappears before them."

What should be done now and in future?

The future belongs to multinational science, which is a complex blend of all national research. To communicate, one needs one (or maybe two) *lingua(e) franca(e)*. Despite the language difficulty, Romanian scientists publish in international journals, and are encouraged to do so, because Romanian publications do not have the same status as English-refereed articles.

What is gained by accepting a lingua franca? What is lost?

The answer follows from the first function of a language: to communicate with other people in the community, to make one's ideas and results known, to clarify controversial issues. What could be lost by accepting one lingua franca? Non-English-speaking scientists may have difficulties, their papers may be rejected as lacking clarity since the mentality, imagination and the manner of thinking in a 'foreign language' is slightly different. The main question is not to accept or reject a lingua franca, but rather how to handle it.

Concomitantly, there is a need to publish in the national language as well, at least for the students and the general public who deserve to be informed about scientific news. To prepare the citizen of tomorrow, today's students must learn about science's development from their educators or teachers. There is therefore a need to educate the educators. If they do not speak a foreign language well, they must be able to find all relevant information in their native language. The same applies to the ordinary citizens of a non-English-speaking country. Thus, we believe that general reviews need to be published in Romanian for the benefit of all citizens.

The Anglicisation of the scientific language has an effect on the indigenous language because some terms are hard to translate, and, as such, the Romanian scientific language (in fact, not only the scientific language) has imported a number of terms that are to some extent corrupting the indigenous language. We are trying, as far as possible, to keep our mother tongue 'clean'. French is an excellent example of such an attempt. However, sometimes this principle is quite difficult to live up to with respect to untranslatable terms. Clearly, in general there is a need to understand one another well; otherwise the integration process may be seriously hampered.

Moreover, the beauty and the cultural heritage of each European country will remain unknown outside its borders if we are not able to make them a joint European treasure.

In conclusion, we believe that the national languages and the scientific lingua franca intersect. We need both. For the Europe of tomorrow and the multicultural society of the 21st century, students should learn their native language and at the same time increase their multilingual competencies. Books and poems that enrich the national heritage should always be written in the native language. Translations into other languages, although often difficult, slow, expensive and with many imperfections, should be encouraged.

Returning to the question of how to communicate new discoveries to the scientific community (*e.g.*, the decoding of the human genome): obviously, it will be a loss for the development of life sciences if such discoveries are not known worldwide. Is one lingua franca or are two *linguae francae* needed? This will be decided by the scientific community. However, one should always be aware that the scientific progress also has to reach the public at large.

Can we think of a solution? The scientists and scholars of tomorrow should be educated and equipped with the ability to communicate thoughts and ideas with logical arguments. They should be multilingual and broad-based people who can be either writers, who utilise a 'clean' mother tongue and enhance the national cultural heritage, or scientists, who publish specific papers in a lingua franca and are at the same time able to write reviews and books in the national language for the general public. We believe that no lingua franca, although necessary in science, can usurp the role of a national language. The power and the richness of the European culture are based on the diversity and strength of national cultures that together shape the large European space.