

# Research assessment and linguistic diversity: Why a multilingual approach brings about higher social benefits

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# 1 The internationalisation of research and teaching in Europe

- The **internationalisation** of teaching research and research is not a new phenomenon, certainly not in Europe. The international mobility of students and intellectuals in Europe (albeit on a very small scale) was already a reality in the Middle Ages (Verger 1991) and later in modern times (Charle 2018).
- The percentage of foreign students in French and German universities in
  - **1897** it was, respectively, 6.2% and 6.7%,
  - in **1909** 11.5% and 7.4%,
  - In **1928** and 22.2% and 4.9%.
  - In **1930**, this percentage was 20.5% in Austria, 13.3% in Belgium, 22.1% in France, 2.9% in Germany, 1.6% in Great Britain, 5.6% in Italy, 28.7.% in Switzerland (Charle 2018).
- There was a belief that science was one of the engines of **economic, social, and moral progress** and that its internationalisation through trade was a positive phenomenon.
- **Multilingualism** was an inherent aspect of internationalisation. During the XIX and the first half of the XX century, scientific research was primarily communicated in English, French, German, and other languages too (Ammon 2001; 2015), and it was not an obstacle to scientific progress.

# The internationalisation of research and teaching in Europe (cont)

- The term “**knowledge-based economy**” - created by Fritz Machlup (1902–83), an Austrian-American economist, and popularized by the American writer Peter Drucker (1909–2005) - became a popular term in the **public policy debate** in 1990s.
- The Organisation for Economic Co-operation and Development (OECD) argued that the knowledge factor has an increasing influence on the competitiveness of economies and economic growth (OECD 1996).
- The term "knowledge-based economy“, therefore, refers to an economic system in which technology, research and highly skilled workers occupy a central place (Foray 2009).
- The knowledge-based economy highlights the **strategic importance of universities and research centres** as drivers of economic development.

# The internationalisation of research and teaching in Europe (cont.)

- The EU strategy in these areas is organised around three directions:
  1. **The Bologna Process** (1999). Creation of a European Higher Education Area by promoting the mobility of students and academic staff across Europe, setting up a common system for the transfer of 'training credits' between European universities, and harmonising the architecture of higher education, based on three cycles - Bachelor's, Master's and PhD. (NB The mobility programme **Erasmus** was launched in 1987)
  2. **The Ljubljana Process**. Establishment of a European Research Area (ERA) through measures designed to encourage the free movement of researchers and to rationalise and coordinate European, national and regional research programmes.
    - ✓ In 2007, the **European Research Council (ERC)** was set up, a new Community agency whose main objective is to fund cutting-edge research activities in Europe.
  3. A series of initiatives aimed at establishing a European area of lifelong learning.

## 2 Towards monolingualism in research

- The use of English became established in scientific research in Europe in the 1970s and 1980s (Truchot 2018), and has become dominant starting in the 1990s (Ammon 2001; 2015), although with differences among disciplines.
- Several factors involved, among which some are policy-driven
  1. The gradual internationalisation of research since the end of the Second World War around the United States where much of the leading research was concentrated.
  2. Development of bibliometric indicators, language choices of scientific publishing companies and university rankings
  3. National systems for the evaluation of research

# A) Towards monolingualism in research: the role of bibliometrics (cont.)

- Indicators based on citation analysis, examples:
  - The journal impact factor  $JIF = \frac{Citations_{y-1,y-2}^y}{Articles_{y-1,y-2}}$
  - *h*-index : *h*=6 means that an author has published at least 6 articles that received at least 6 citations each
- Databases: *Web of Science* (Thompson Reuters), *Scopus* (Elsevier), *Google Scholar*
- The myth of *objectivity* and *simplicity*, e.g.
  - Measure of *quality* or simple *visibility*?
  - ‘Negative’ citations have the same value as ‘positive’ citations
  - Valid? The order in which articles appear within the same volume and the number of pages influence the number of citations (Coupé et al., 2015).

# A) Towards monolingualism in research: the role of bibliometrics (cont.)

*“English is the **universal** language of science. For this reason, Thomson Reuters **focuses on journals that publish full text in English**, or at very least, bibliographic information in English. There are many journals covered in Web of Science that publish articles with bibliographic information in English and full text in another language. **However, going forward, it is clear that the journals most important to the international research community will publish full text in English.**”*

[http://thomsonreuters.com/products\\_services/science/free/essays/journal\\_selection\\_process](http://thomsonreuters.com/products_services/science/free/essays/journal_selection_process) (21.08.2012)

- In 2005, 98.7% of the articles contained in the WoS were in English, 0.23% in French, 0.21% in Chinese and 0.01% in Japanese (Merlet et al. 2007: 8).
- Brazil alone produces 5,986 scientific and technical journals (the majority of which are in Portuguese), but only 17 were registered in the WoS in 2005 (Hamel, 2007: 63).
- A research conducted in Great Britain in 2014 on 75,513 scientific papers published in the area of biodiversity conservation, shows that almost 36% of the reference literature was not published in English (Amano, González-Varo and Sutherland 2016).



# A) Towards monolingualism in research: the role of bibliometrics (cont.)

- In **Scandinavia** and **China**: bonuses to individual researchers who publish in a journal with an impact factor higher than 15 (Hicks & Wouters, 2015).
- In **Spain**, periodic evaluation of universities' research activities tend to privilege publications in journals listed in the Web of Science (Gazzola, 2012).
- In **Italy**, a share not lower than 7% of State funding to universities must be allocated on the basis of bibliometric indicators reflecting quality of scientific research (Gazzola, 2012).
  - 'Direct evaluation' (**mechanical** evaluation of products based on bibliometric indicators and citations).

# A) Towards monolingualism in research: the role of bibliometrics (cont.)

Model for direct evaluation in 'Chemistry' adopted by ANVUR (*Italian National Agency for the Evaluation of Universities and Research Institutes*) in the evaluation of research outputs published between 2004-2010

Impact factor  
20% 20% 10% 50%

Number of citations	20%	A	IR	IR	IR
	20%	A	B	C	D
	10%	A	B	C	D
	50%	IR	IR	IR	D

The results of peer-reviewing and bibliometric analysis, across disciplines, however, converge only in 32.5% of cases (Baccini and De Nicolao 2016). N=9,199, year 2013.

# A) Towards monolingualism in research: the role of bibliometrics (cont.)

The Times Higher Education's [\*World University Ranking\*](#) is the weighted sum of 13 indicators divided into 5 areas:

1. Teaching - the learning environment (30% of the overall score);
2. Research - volume, income and reputation (30%);
3. **Citations of scientific articles published by academic staff** (30%);  
Scopus database - research influence
4. International outlook (7.5%);
5. Industry income -knowledge transfer (2.5%).

# A) Towards monolingualism in research: the role of bibliometrics (cont.)

The [QS ranking](#) is the weighted sum of 6 indicators

1. Academic Reputation (40%)
2. Employer Reputation (10%);
3. Faculty/Student Ratio (20%);
4. **Citations per faculty (obtained from the Scopus database - 20% of the final score);**
5. International Faculty Ratio (5%)
6. International Student Ratio (5%).

## b) Towards monolingualism in research: The role of national evaluation agencies

- The case of the Italian **PRIN** (the Italian acronym for “Projects of Significant National Interest”).
  - Before 1997, project proposals were exclusively in Italian.
  - Applicants were required to use both Italian and English starting in 1998 to increase the pool of international evaluators.
  - As of 2015, proposers could submit their applications in either Italian or English, depending on their preference.
  - Since 2017, the application for PRIN funding can only be submitted in English, with the option of attaching an Italian version at the proposer's discretion.
- The **Italian Science Fund**, launched in 2021 following the ERC model (“starting grants” and “advanced grants”) to finance research projects to be carried out in Italian universities: the only language allowed for project submissions *and* oral interviews is English, regardless of discipline.

# 3. Issues

## 1 Fairness (Amano et al 2023).

1. Study of 900 researchers in environmental sciences revealed that non-native English-speaking researchers require as much as **twice** the **time** needed by native speakers to read, write or review publications in English.
2. When submitting papers for publication, non-native speakers are about **2.5 times more likely to have their work rejected** for linguistic reasons – and they are **12.5 times more likely to have to make language-related revisions**.
3. So, even with equal or greater technical competence, they may have **fewer career opportunities**.

# Issues (cont.)

**2 Spillover effects on teaching.** The shift towards monolingualism in research has preceded the shift towards monolingualism in teaching (Truchot 2018).

- Mobility of researchers and members of the faculty. Linguistic diversity as “obstacle” to mobility like customs barriers (Salomone 2018). → Use of international faculty at the Master level and then Bachelor
- Lack of scientific literature
- Prepare students and PhD researchers to academic career
- Long-term effects on the ability of the new generations trained only through the medium of English to acquire and develop terminology and use national languages
- Lowering the quality of education, unequal distribution of the social costs of education, and difficulty in retaining human capital in the country.

# Issues (cont.)

## 3 Domain loss and the “neo-medieval diglossia”

- “The question of the difference between a dialect and a language is a thorny one, and some have said that a dialect is just a language that lacks an army and a navy. When it was the official language of the Venetian Republic, used in public documents, Venetian was to all intents and purposes a language, and with a great literary production. **But a dialect is also a language that has lacked a university and, that is, the practice of scientific and philosophical research and discussion, which is enriched every day with new terms and new concepts**” (Eco 2011).
- If modern languages were to lose their “high” functions, it would create a “sociolinguistic divide”, which would contribute to increasing the **social divide** between the people and the elites. This divide would result in bilingual elites fluent in English-speaking feeling at ease in any large global city, while the local population would be excluded from technical-scientific communication, or at the very least, find it challenging to understand. As Trabant notes, there is a risk of moving to a “**neo-medieval diglossia**” (Trabant 2014).



# Issues (cont.)

## 3 Domain loss and the “neo-medieval diglossia” (cont.)

- In Sweden and Norway, there are already laws requiring the state's commitment to ensure that Swedish and Norwegian remain 'complete' languages, i.e. languages equipped in vocabulary and formal and symbolic status to be used in every sphere of social life (resp. “Språklag” 2009, “Lov om språk” 2022)
  - In research publications (Sivertsen, 2020) show that while 15% of research publications in Norway in 2011 was in Norwegian, the percentage drops till 9% in 2019.
  - The natural sciences and technology have hardly any research publication in Norwegian at all.
  - In medicine and health research, 5% of the publications are in Norwegian. For the humanities, the percentage of Norwegian research publications dropped from 42 to 27% from 2011 to 2019, and in the social sciences in the same time period there was a drop from 33 to 24% research publication in Norwegian language (Sivertsen, 2020; Språkrådet, 2021)
  - The number of Ph.D.s written in Norwegian has dropped from 15% in in the 1990s (Språkrådet, 2021) to 7% in 2022 (Statistics Norway).

# VQR 2015-2019

Area	Description	Italian	English	Other L2	Total
Area 1	Mathematical and computer sciences	0.4%	99.5%	0.1%	9,208
Area 2	Physical sciences	0.1%	99.9%	0.1%	15,344
Area 3	Chemical Sciences	0.0%	99.9%	0.0%	10,057
Area 4	Earth sciences	0.1%	99.7%	0.2%	5,735
Area 5	Biological sciences	0.0%	99.9%	0.1%	16,796
Area 6	Medical Sciences	0.2%	99.8%	0.0%	26,964
Area 7	Agricultural and Veterinary Sciences	0.2%	99.8%	0.1%	10,079
Area 8a	Architecture	44.9%	53.2%	1.9%	5,435
Area 8b	Civil Engineering	0.2%	99.8%	0.1%	4,876
Area 9	Industrial and Information Engineering	0.1%	99.9%	0.1%	19,088
Area 10	Ancient, Philological-Literary and Historical-Artistic Sciences	57.6%	27.8%	14.6%	13,726
Area 11a	Historical, Philosophical and Pedagogical Sciences	65.6%	28.6%	5.9%	9,180
Area 11b	Psychological Sciences	2.5%	97.4%	0.2%	3,834
Area 12	Legal Sciences	86.9%	11.0%	2.0%	13,552
Area 13a	Economics and Statistics	2.4%	97.5%	0.1%	7,728
Area 13b	Economic and Business Sciences	15.1%	84.6%	0.3%	5,906
Area 14	Political and Social Sciences	49.9%	47.1%	3.0%	5,140
<b>Total</b>		<b>17.5%</b>	<b>80.7%</b>	<b>1.7%</b>	<b>182,648</b>

# Issues (cont.)

## 3 Domain loss and the “neo-medieval diglossia” (cont.)

- The Evaluation of Research Quality (VQR) exercises aim at evaluating the research outcomes of public universities and research institutes, as well as those of private institutions that voluntarily submit their research outcomes for evaluation. ANVUR (National agency for the evaluation of universities and research) carries out VQR
- Currently, VQR is carried out every five years
  - **VQR 2004-2010**, 22.8% of publications were in Italian, and 62.1% in English, 1.9% other language, 13.2% missing (N=184,878)
  - **VQR 2011-2014**, 21.8% of publications were in Italian, and 76.6% in English, 1.7% other language (N=118,036)
  - **VQR 2015-2019**, 17.5% of publications were in Italian, and 80.7% in English, 1.7% other language (N=182,648). Italian > 50% only in Ancient, Philological-Literary and Historical-Artistic Sciences, Historical, Philosophical and Pedagogical Sciences, Legal Sciences
- In Italy a bill has been presented in 2022 («Proposta di legge C. 734») to preserve the vitality of Italian vis-à-vis English

# 4. Complex Language Policy

- Tension between the goals and incentives of society and those of HE institutions.
  - a) Society (macro): preserving the use of the national language, attracting and *retain* talent after bearing the costs of its training, avoiding sociolinguistic divides,
  - b) HE institutions (meso): to improve their positions in rankings and have access to research funds
  - c) Individual researchers (micro): readership, career perspectives.
- The complexity stems from the fact that the incentives and constraints faced by actors at the macro and meso/micro levels are not aligned, and indeed they clearly diverge (Grin 2022).
- Need for complex language policy, where “complex” refers to understanding the problems arising from misalignment of incentives at the micro/meso and macro level

# 5. Proposals

1. Preserve freedom of choice in the language used in publications, but not artificially disincentivised by public policy mechanisms
2. Need to move beyond QS and THE with a new EU ranking that factors in the promotion of multilingualism.
3. Linking EU funding to universities to this ranking so that incentives at the macro-, meso- and micro- levels are better aligned.
4. Promote multilingualism in funding applications as a rewarding criterion for both output and process (gender equality or EDI - type), but without out for bureaucratisation
5. Remove the ban on the use of national languages like in the Italian Science Fund
6. Increased use of AI and machine translation at the with the costs borne by the publishers

# Thank you for your attention

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