

'Internationalization and knowledge circulation: challenges for research and teaching

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1. Defining internationalization
2. Relations between mobility, internationalization and circulation of knowledge
3. Data from a research – portuguese researchers (*Project MobiScience*)
4. More important challenges to Higher Education Institutions

Internationalization

Different approaches (Knight and Wit, p.16-17)

☐ Activities

- Focus on more visible activities: student exchange, joint initiatives, foreign students.

☐ Competence

- Focus on new skills, knowledge, attitudes and values in students, faculty and staff.

☐ Ethos

- Focus on developing intercultural culture or climate on campus.

☐ Process

- Focus on the integration or infusion of an international or intercultural dimension in all processes of a given institution.

Relations
towards other
countries

Knight, Jane and Wit, Hans "Strategies for internationalization of higher education"

"Available at: [http://www.uni-](http://www.uni-kassel.de/wz1/mahe/course/module6_3/10_knight95.pdf)

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Internationalization in higher education and research

- Language (improving courses)
- Focus on comparative research and uniform programs
- Participation in international meetings
- Foster networks
- Expand horizons

Relevant elements to internationalize (internal diagnosis)

- Patterns of collaboration between universities, research units with other universities and industry.
- Patterns of working considering different research cultures and distinct disciplines.
- Electoral cycles and its effects on feeding internationalization activities.

1. Research needs international circulation of knowledge
2. Interaction is fundamental for circulation and transference
3. Interactions demands networks

- Power communities
- Eurocentric communities
- Peripheral science communities
- Semiperipheral science communities
- *Brain drain/brain gain/brain circulation*

(Authors: Alatas; Smelser)

Hayrinem Alestalo and others (2000:168) argue that for most neo liberal policy makers, knowledge based society “is not used in Bell's or Touraine's original meaning to illustrate the processes where cultural services replace material goods and theretical knowledge becomes a source of innovation and policy formulation. **On the contrary, the information society is used as a utopia of a new technocratic society that is supposed to be able to solve social exclusion and other problems of capitalist system** (Castells, 1996, 1997)”.



- ❑ A Research is being ever more conducted abroad, outside national borders.
- ❑ Scientific results are achieved in a process of interaction, involving international linkages.
- ❑ Interaction means evaluation, learning and creation.

(Stoer, 1975, Hakala, 1998).

Internationalization and knowledge circulation

- Mobility is a structural condition for knowledge circulation (e.g. Ackers, 2005).
- Mobility is a multidimensional phenomenon, with multiple directions (King, 2002).
- Mobility influences careers by the way of **networks** (Musselin, 2004; Morano-Foadi, 2005)

Despite the facilities offered by new technologies of communication, **physical mobility is essential**

Physical Mobility----- long and medium duration

Virtual mobility ----- + Very short duration

Patterns of collaboration differ between scientific fields (Jons, 2010)

Tacit knowledge

Physical co-presence of the actors

Physical proximity

“as a mediating factor in the highly tacit and context-dependent processes of learning, knowledge exchange and innovation” (Morgan, 2004, p.3).

Proximity (Boshma, 2005)

- ☐ Social – trust and codes of communication
- ☐ Cognitive – sharing of knowledge bases
- ☐ Organisational – governance structure

Longer term mobility may have the greatest impact, leading to the establishment of stronger and more longstanding relationships (Fontes and Videira, 2011)

IMPORTANT: There is a relevant distinction between codified and tacit dimensions of knowledge (Williams).

Mobility and internationalization

- Acquisition of advanced knowledge in new fields**
- Integration in scientific networks that could be mobilised for country development after return**

“Ideas are not necessarily scientific ideas. They are organizational ideas, of how to do things, of how to manage...[they are ideas] about management, teaching, knowledge of the business world, of what is happening. All that knowledge is extremely useful, that is, we are not doing science closed from the outside world, we are doing science for something that links us with the rest of the world.” (Researcher)

Degree of tacit ness

The impact of mobility on knowledge networks / flows

“Doing science is not only about sitting down and writing a good paper, doing science is also about having friends in the scientific world and understanding questions in the same manner...when you are abroad with your colleagues there is sort of a click in scientific terms that is a bit intangible to allow explanation “ (researcher)

Mobility



Diaspora networks

- ☐ Acquisition of advanced knowledge in new fields
- ☐ Integration in scientific networks
- ☐ Use of networks, when returning

Duration of networks

Type of flows

Type of organizational strategies

Empirical research

Focus:

- Scientists (PhDs) in Portuguese research organisations
- 3 fields: IT, Health, Sociology

Method

- E-mail questionnaire survey (2009/2010).
- Asked for detailed CV
- “Core” research units (*Unidades Financiamento Plurianual*)
- Good coverage of research system
- Inquired: 86 Units \cong 2600 scientists
- 469 answers \rightarrow **353 cases** usable
- On-going: selected interviews
- 40 Interviews to scientists and head of research units

Mobility and internationalization

- Higher international mobility between 1990 and 2000
- USA and UK are the main attractors of PhD/Pos-Doc
- The numbers of Pos-docs in USA show an increase last years.
- (natural sciences, engineering and health)
- MIT, Carnegie Mellon and UT Austin protocols foster this mobility)
- . The patterns of internationalization measured by number of publications in co-authorship show that the level of exogamy still be low.

Discourses of head of research units on mobility and internationalization

☐ **Strongly reactive**

☐ **Active**

☐ **Strongly active**

Impacts of mobility

Access to networks
with influence on
research units and
individuals trajectories

Language

Personal fulfilment



Mobility increase
the need of
leadership in
research teams

Prestige

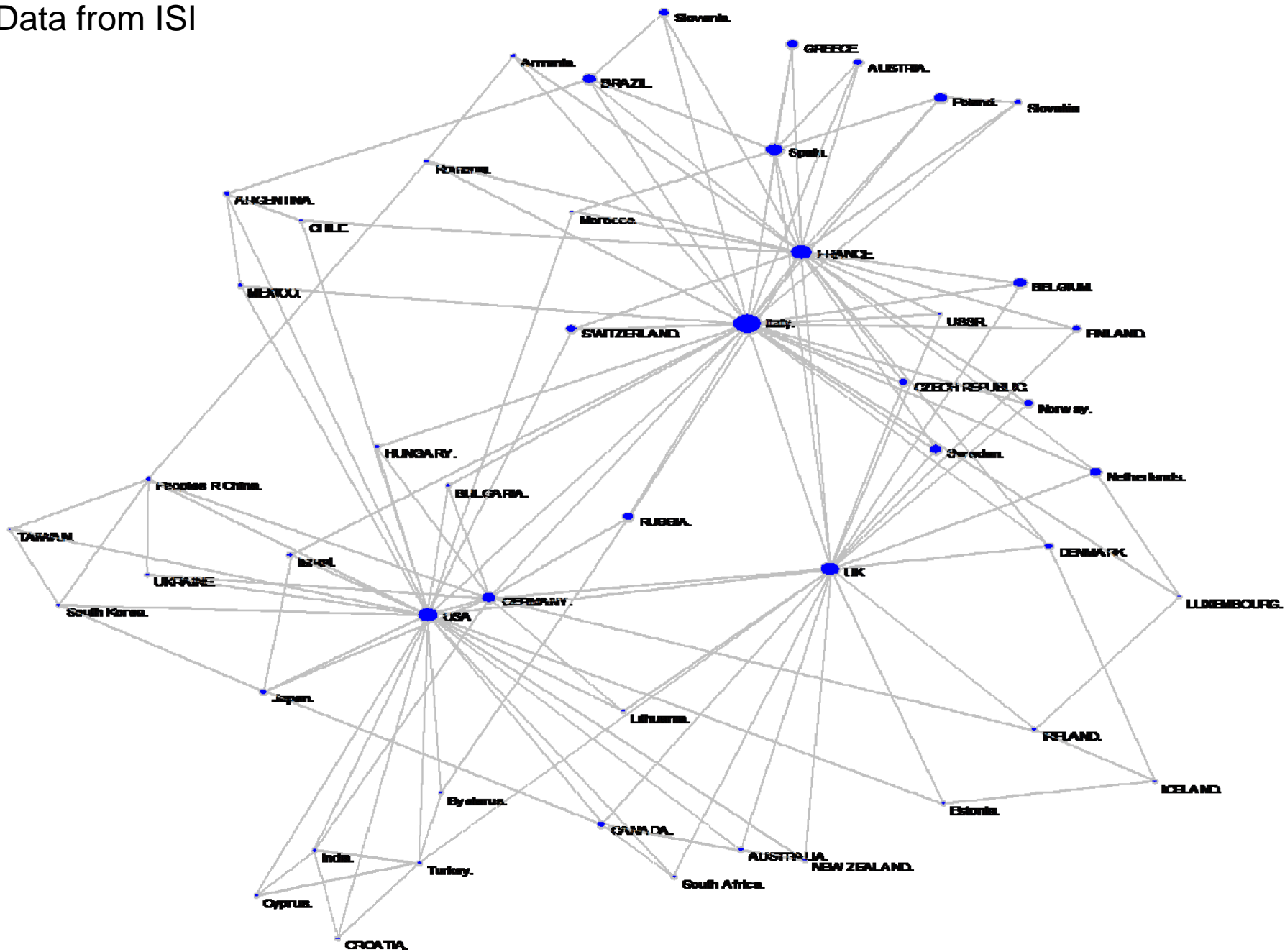
- “Without going abroad to breed this interchange...it’s not to breed oxygen, or knowledge, because I think nowadays everybody has easy access to knowledge...the point is really these face to face links, of proximity and affinity, mutual understanding of what is important.

Networks resulted from earlier phases (PhD) are persistent and relevant today

"[The U.S. experience] allowed me to get rich as a researcher and as a person. And quantitatively enriched my career. It would not be as productive if I had stayed in Portugal, but more importantly for me was the fact that I have opened horizons mobility and thus not stay closed on its own navel. To me, that's what kills the research itself. In terms of material conditions were better abroad than it would have been here, probably. Especially in the USA. There's a difference between the U.S. and Europe in this regard. To European projects, we trying to match things, but there is a big difference in material terms. But this is not the most important. There is also a difference in the quality of the researchers I work with, but here [Europe] there are also good researchers. The main issue is the same in terms of research culture (Portuguese researcher, Engineering area). "

Country-country collaboration

Data from ISI



challenges for research and teaching

- Internationalization is a critical point
- Internationalization should be not only student-centered or indicators seeking, there is a need to ensure mechanisms of support (organizational and scientific).
- Internationalization should reward people for developing international collaboration especially in teaching and research.
- Internationalization means having presence in other countries .

(Barker –Lebo, 2007)

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