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GEOGRAPHY IN THE ORGANIZATIONAL STRUCTURE OF ACADEMIC INSTITUTIONS – SELECTED ISSUES

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Abstract
The goal of this article is to indicate the position that geography occupies within the organization structure of universities in given countries and to provide an overview of the research of research that predominated in the institutions and departments connected to geography in these universities. Separately, I draw attention to the structure of geographical institutions in Poland and identify the most serious institutional and organizational issues that hamper their effectiveness and development. The results seem to point to a process of gradual disintegration of the field. Research teams in the area of physical geography are clearly drifting towards the "hard sciences", and within them, particularly the natural sciences, while research agendas that deal with socio-economic geography are strongly leaning towards the humanities. The link between physical geography and its related fields of study (geology, ecology, geophysics), however, seems to be the prevalent one, which explains the increasingly interdisciplinary nature of research teams handling modern-day environmental problems. Finally, an overview of institutes of geography has established that these typically fall under departments of natural sciences rather than social sciences or the humanities.

Keywords: *Geography, institutes of geography, physical geography, human geography, research agendas*

1. INTRODUCTION

A cursory look at the world of contemporary science reveals a dual tendency that permeates it. On the one hand, research is becoming increasingly specialized; on the other, complex interdisciplinary studies realized by a diverse team of researchers have seen increased prominence and importance. The specificity of research is a growing tendency, but the conclusions are to respond to broad, sweeping questions. New scientific fields are being created, constituting a hybrid of already existing fields (Dogan 1996). It is becoming increasingly difficult to classify the sciences (classic typologies are, today, primarily of historical interest) as well as to define the extent of research areas. All this brings about organizational problems pertaining to the activities of academic structures, the organization of research, the realization of research projects, awarding academic titles etc. One can have the impression that the organizational structures of science can no longer keep up with the dynamic development of science itself.

This general current of specialization, diversification and hybridization also swept geography along. Today, it is a challenge to delineate the discipline's thematic boundaries, which have

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been clearly widened, while at the same time part of its traditional repertoire of topics has been claimed by other disciplines, both classical (geology, economics, sociology, ecology) and contemporary (tourism, land management). Parallel to this, a discussion is underway regarding the state of the field as well as its future. Lisowski (2011) points out that geography is losing its essence, as "space", "environment" and "region" become keywords in other areas. He also quotes two prominent British geographers, whose contrasting opinions either liken the state of contemporary geography to the Great Fire of Rome (Hamnett 2003) or see the future in brighter colors (Thrift 2002).

An interesting topic for discussion that is intimately connected with the trends described above is the institutional and organizational status of geography. One of the strands in this active discussion is the question of the organizational and research structure of research centers dedicated to geography. Admittedly, however, this topic is rarely touched upon in the literature on the subject, and when it is, it typically accompanies broader considerations on the education system and geography's place in it (Dawson, Hebden 1984; Haigh 1982; Johnston, Sidaway 2007; Hardwik 2001; Murphy 2007) or the role of contemporary geography as a science (Clifford 2002; Pitman 2005; Johnson 2003, 2006; Thrift, Walling 2000; Thrift 2002;Turner 2002). Pitman (2005), for instance, argues that the present education system produces physical geographers who lack fundamental knowledge in economics as well as social geographers with little background or experience in the physical sciences. Clifford (2002), in turn, claims that in British and American universities, geography has been removed from the "mainstream" of academic fields, and we can expect this tendency to be exacerbated in the future. As far back as the 1980s, Haigh (1982) and Smith (1987) were already alerting the academic community about the crisis of geography at American universities. Nevertheless, Murphy (2007) counters that recent years have strengthened the institutional position of geography at the same institutions. Hardwik's (2001) previous research was along the same lines, indicating the increase in the number of students of geography at universities in the United States. In Poland, similar studies are focused around three main issues: the development of a combined research- and teaching-focused faculty (Czyż 2002; 2008); the institutional and organizational conditions surrounding the evolution of geography (Kamiński 1996; Liszewski, Łoboda 2008; Matczak 2008); and the assessment of the revel and usefulness of research being conducted in academic institutions (Bajerski 2008; Bański 2011).

The examples above illustrate the point that the place of geography in the institutional structure of universities and the diversification of the system of organizing geographical research agendas are interesting topics for investigation, and can help us draw conclusions that will lead to broader reflections. It is therefore pertinent to ask the following questions: how diverse is the organization of geography in universities in different countries and what is the thematic range of the institutions of advanced geographical research that are active there? Answering these question is the fundamental goal of this analysis.

Polish institutions in particular are singled out and discussed separately in this paper. Based on this overview, I have outlined several problems, both institutional and organizational, that geography struggles with in Poland.

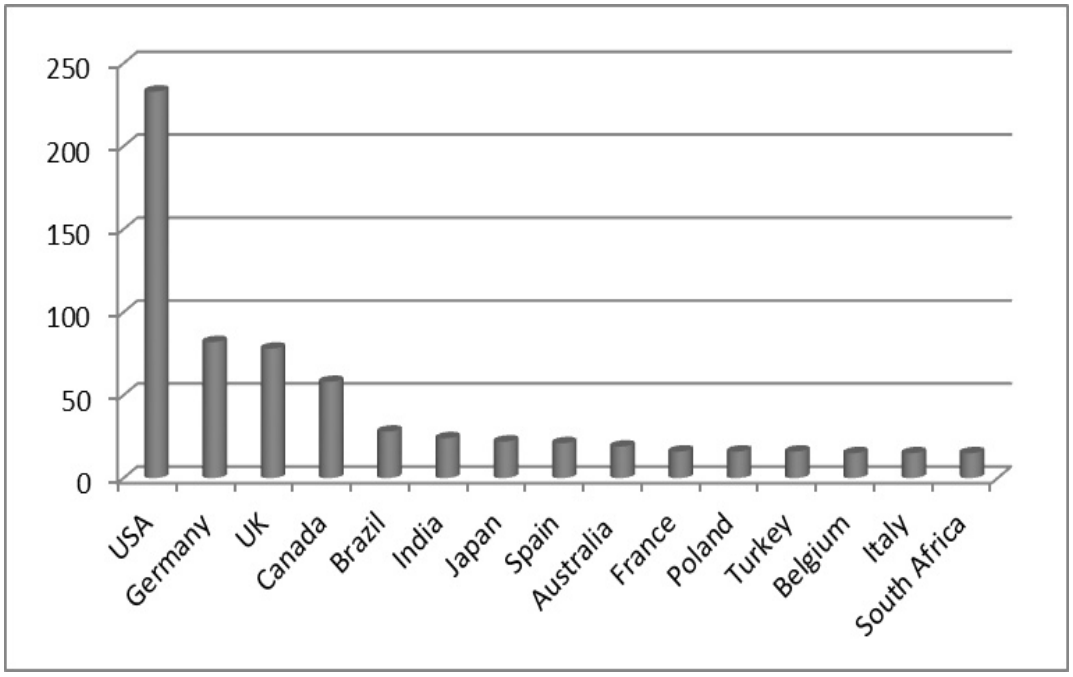
2. SELECTION OF GEOGRAPHICAL INSTITUTIONS

According to the Geography Departments Worldwide database (http://univ.cc/geolinks), in 2012 there were 940 active academic institutes operating on different levels (from faculties to institutes and departments) worldwide[1]. The majority is located in the United States (233),

[1] In total, the database comprises 9052 institutions of higher education (academies, universities, universities of technology etc.).

followed by Germany (82), Great Britain (78), Canada (58) and Brazil (28). An analysis of research areas in each geographical unit brings up three main subfields that most of these areas fall into (human geography: 745 institutions, physical geography: 671 institutions, GIS and cartography: 703 institutions).

However, these data should be examined with a caveat in mind. For certain countries, the database treats geographical units (institutes, departments, teacher training schools) operating within the same institution separately. Additionally, for the United States, the database includes all types of schools – that is, both universities and colleges, of which the latter typically limit themselves to imparting education and can award Bachelor's degrees at most.



Source: http://univ.cc/geolinks, accessed 8 March 2013

Figure 1. Countries with the largest number of schools that include subunits dedicated to the study of geography, according to Geography Departments Worldwide, 2012

The selection of geographical institutions to around which to structure this study was carried out on two levels: first I isolated six countries, and subsequently I examined five universities in each. I was interested in countries that are commonly considered to belong in the "top tier of geographical studies". The specific selection was made using the h-index (Hersch index)[2] derived from the SCImago[3] database (www.scimagojr.com) for works in the areas of *Geography*, *Planning* and *Development* that were published between 1996 and 2010. Consequently, I chose the United States, Great Britain, Canada, the Netherlands, Australia and Germany.

These countries are in the vanguard in terms of both number of works cited and number of citations (Table 1). Two small sovereign Asian territories – Hong Kong and Singapore – enjoy a relatively high ranking, undoubtedly a consequence of their strong association with British geography.

In selecting universities for the study, I was guide by the Academic Ranking of World Universities (www.shanghairanking.com), whose criteria include quality of teaching, quality of teaching Staff and research results. I made the assumption that geographical units attached

[2] The *h*-index is used to measure the academic productivity and impact of scholars by based on the number of published papers and number of citations they have received in other works.
[3] The SCImago database comprises 448 titles in the areas of geography, planning and development.

to high-ranking universities are also among the top schools in their field in the country in question. We can also surmise that these research centers also play an important role on a global scale. In other words, such centers reflect the contemporary themes and "hot topics" of world geography, pioneer new research agendas and pave new pathways, and their faculty are among the most active in research and the dissemination of its results.

That said, not all of the most prestigious institutions have a school or institute of geography within their organizational structure (Table 2). Also, in some cases, geography may be a subject of research or study in academic units with a wider focus, but not form the cornerstone of a separate institute. My analysis is limited to those universities that include precisely defined geographical units that focus primarily on geography[4].

Table 1. Ranking of countries by h-index based on the SCImago database in the *Geography, Planning and Development* category for 1996-2010

Rank (h index)	Country	h index	Number of works cited	Number of citations	Citations per publication
1	Great Britain	87	18 605	122 607	7.25
2	United States	87	26 779	132 994	5.75
3	Canada	54	5 678	31 396	6.39
4	The Netherlands	41	2 919	15 613	6.22
5	Australia	40	5 546	23 176	5.24
6	Germany	39	5 715	17 245	3.32
7	China	35	4 110	12 336	3.79
8	Sweden	35	1 478	8 784	7.16
9	France	34	5 091	11 057	2.39
10	Hong Kong	34	1 173	7 557	7.45
11	Belgium	32	1 243	6 158	7.88
12	Switzerland	32	1 294	5 954	5.54
13	Spain	32	2 383	6 339	3.74
14	New Zealand	32	1 078	6 134	6.92
15	Singapore	29	904	5 113	6.61
16	Italy	28	1 982	6 441	4.38
17	Denmark	26	1 069	5 416	6.52
18	Japan	26	2 551	5 240	2.43
19	Norway	26	1 248	4 903	4.52
20	South Africa	25	2 128	6 764	3.66

Source: own elaboration based on the SCImago database (http://www.scimagojr.com/)

The base sources of information were the websites of the respective academic institutions. In some cases, relevant literature and other online sources were used to supplement the information. In obtaining data for Germany and Dutch universities, the English language versions of each university's website was the source of choice in most cases.

The grand majority of world universities has an English language version, but it typically contains much more scarce information than the original.

[4] I disregarded this rule in the case of two Australian universities (the *University of Sydney* and the *University of Western Australia*), where geography is represented by research teams that number approximately between a dozen and 19 researchers working within the scope of interdisciplinary institutes. They carry out independent geographical research, but the organizational structure of their host institution does not reflect this, as there is no independently operating geographical research center.

Table 2. Institutions of higher education according to the Academic Ranking of World Universities 2011 (institutions with working geographical subunits are underlined)

National rank	United States		Great Britain		Canada		The Netherlands		Australia		Germany	
	University	World rank	University	World rank	University	World rank	University	World rank	University	World rank	University	World rank
1	Harvard University	1	University of Cambridge	5	University of Toronto	26	Utrecht University	48	University of Melbourne	60	Technical University Munich	47
2	Stanford University	2	University of Oxford	10	University of British Columbia	37	Leiden University	65	Australia National University	70	University of Munich	54
3	Massach-setts Institute of Technology	3	University College London	20	McGill University	64	Radboud University Nijmegen	102 - 150	University of Queenslan d	86	University of Heidelberg	62
4	University of California, Berkeley	4	Imperial College of Science, Technology and Medicine	24	McMaster University	89	University of Amsterdam	102 - 150	University of Sydney	96	University of Goettingen	86
5	Princeton University	7	University of Manchester	38	University of Alberta	102-150	University of Groningen	102 - 150	University of Western Australia	102 - 150	University of Bonn	94
6	Columbia University	8	University of Edinburgh	53	University of Montreal	102-150	VU University Amsterdam	102 - 150	Monash University	151 - 200	University of Frankfurt	100
7	University of Chicago	9	King`s College London	68	The University of Calgary	151-200	Delf University of Technology	151 - 200	University of New South Wales	151 - 200	University of Freiburg	102-150
8	Yale University	11	University of Bristol	70	University of Waterloo	151-200	Erasmus University	151 - 200	Macquarie University	201 - 300	University of Munster	102-150
9	University of California, Los Angeles	12	University of Notthingham	85	Dalhousie University	201-300	University of Wageningen	151 - 200	University of Adelaide	201 - 300	University of Tübingen	102-150
10	Cornell University	13	University of Shieffeld	97	Laval University	201-300	University of Maastricht	201 - 300	Flinders University	301 - 400	University of Würzburg	102-150

Source: own elaboration based on the Academic Ranking of Word Universities (http://www.shanghairanking.com).

To enrich the study, expand the material for analysis and facilitate comparison, similar breakdowns of chosen universities in Spain (*University of Barcelona, University of Alcala, University of Sevilla, University of Salamanca*), Russia (*Lomonosov Moscow State University, Irkuck University, Saint-Petersburg State University, Far Eastern Federal University)* and Japan *(Tokyo Metropolitan University, University of Tsukuba, University of Hiroshima, Nagoya University*) were made.

In line with the aforementioned criteria for selection, the research centers associated with these countries are not among the "cream of the crop" on a global level. However, Spanish, Russian and Japanese geographers are highly active in international structures and circles and represent a very diverse set of cultures, which may make the results of my research "more attractive".

Typically universities simultaneously teach, train and conduct research. The majority also makes it possible to enroll in a doctoral program. In very broad terms it can be assumed that

the available degrees and courses are illustrative of the particular research specialization each institution has. However, my focus is the place of geographical institutions within the organizational structure of selected universities and their primary research agendas. I do not consider specific majors or forms of instruction and imparting education.

3. GEOGRAPHY IN THE ORGANIZATIONAL STRUCTURE OF UNIVERSITIES

3.1. United States

Most top American universities do not have independent units dedicated exclusively to the study of geography, but geography accompanies other fields of study in interdisciplinary teams (e.g. at *Princeton University*, *Stanford University* and *Columbia University*). *Harvard University* no longer conducts any geographical research whatsoever; the research center closed its doors in 1948, raising controversy and sparking an intense debate (Smith 1987). The research at *Stanford University* primarily revolves around environmental topics (climate dynamics, changes in land use, pollution, the water balance in the context of food policy and security).

Similar examples can be found in other prominent American institutions; for instance, at the *Massachusetts Institute of Technology*, geographers participate in research that examines global climate change, while at *Columbia University*, climate change is supplemented with biogeography and paleogeography in close collaboration with geologists and representatives of other fields of study.

Within the structure of American universities, institutes of geography usually form part of Colleges of Letters and Science. For the most part, they are classified as belonging to the social sciences (Table 3). Research conducted in these institutes is diverse in its degree of specificity, but most of it is interdisciplinary in nature. For example, the *University of California-Berkeley* hosts research projects that fuse geography with architecture, archeology and history, culture and agricultural studies. Studies are usually conducted by groups of scientists and doctoral students that revolve around a professor who represents the appropriate area of research specialization.

Geographical research institutions have a highly diverse set of specializations, and the research projects executed within their walls are usually both interdisciplinary and strongly connected to contemporary issues of global (*Nature-Society, Biogeographic Processes, Population Movement and Flows*), regional (*Economic Development in China, Multicultural Europe*) or local (*The Southern Border, California*) concern. We are able to make a clear distinction between the two subfields of geography: physical geography and human geography.

As previously mentioned, human geography is commonly classified as a social science and tends to make up separate institutes of geography at universities, while physical geography is put together with geology, ecology and geophysics as a natural science and part of many an institute of Earth sciences or environmental studies. At some universities, however, these subfields do come together to jointly form centers of geographical research (e.g. *University of California Berkeley, Boston University, Indiana University*).

The scope of research in human geography is delineated by the degrees offered in institutes of geography. Physical geography, on the other hand, is harder to characterize in terms of scope because it interlocks and interacts profoundly with other natural sciences. Additionally, an overview of research strands and projects offered at American universities suggests that climatology and hydrology are better classified as geophysical than geographical sciences.

Table 3. Geographical research centers in the organizational structure of selected American universities and their main research strands.

University	Structural unit	Research fields or strands
University of California Berkeley	College of Letters and Science; Division of Social Sciences; Department of Geography;	California, Economic Development in China, Natural Resources and Population, Meteorology, Climatology, Biogeography, The American City, Africa: Ecology and Development, Physiography and Geomorphology, Geographic Information Science, Cartographic Representation, Multicultural Europe, The Southern Border, Prehistoric Agriculture, Local and Regional Transformation, Development and Underdevelopment, American Cultural Landscapes;
University of California Los Angeles	College of Letters & Science; Division of Social Sciences; Department of Geography;	Biogeographic Processes, Cultural and Historical Geographies, Earth Systems Science, Globalization, Urban, Political and Economic Geographies, Population Movement and Flows, Geographies of Nature and Society, Hydrological and Geomorphological Processes, Geographic Methods and Techniques;
University of Washington	College of Art and Sciences; Division of Social Sciences; Department of Geography;	Nature-society, The cities, Development, Mobility, Public participation, Racialization and Space, Social Justice, Sustainability;
University of Wisconsin-Madison	College of Letters & Science; Division of Social Sciences; Department of Geography;	People-Environment Geography, Human Geography, Physical Geography, Cartography and GIS;
San Francisco State University	College of Science and Engineering; Department Geography and Human Environmental Studies;	Human Geography, Environmental Studies, Physical Environment, Resource Management, Techniques of Geographic Analysis, Urban Environment, Transportation and Land Use;

Source: own elaboration based on official website of each university.

3.2. Great Britain

In Great Britain, the organization structure of universities is usually three- and, in some cases, four-tiered. The university is divided into *schools*, which are further subdivided into *faculties*, and those in turn branch out even further into *departments*. Departments host *research groups* that conduct studies revolving around a specific *research cluster*.

Centers for the study of geography are present at most of the top-tier British universities, but their place in the organizational structure of the institution is not the same across the board. Typically, the geographical research unit is part of a larger structure comprising a diverse array of research fields (physics, chemistry, geology or history, sociology, economics etc.). Depending on the university, geography can form part of natural sciences departments (e.g. at *University of Cambridge*, *University of Birmingham*) or fall within the humanities (e.g. at *University of Oxford*, *University College London*). Geography can sometimes even function alongside law, philosophy and literature (*University of Dundee*). However, in the most common scenario, geography exists alongside related disciplines such as geology, ecology, biology or sociology and economics.

An overview of research agendas in British institutions reveals that, in most cases, studies are conducted in three primary subfields: physical geography, human geography and cartography with GIS. That said, there is a certain imbalance in the topics covered according to the general profile of the department: geographical research units operating within humanities departments focus their work on human geography. Physical geography plays a much more limited role here, and primarily deals with interactions between human beings and their environment. Departments that deal with natural sciences boast a range of topics and research strands in physical geography, at the expense of advanced research in human geography.

Research teams in British universities carry out both "base studies" and research on contemporary transformations in the natural and socio-economic environment. The names of these working groups are strictly connected to the specific problem under examination (e.g. *Social Research Methods Group, Globalisation, Development and Place Research Group, Research Group of Spatial Modelling*).

The choice of topic is usually made with the premise of conducting an interdisciplinary study on relevant, pressing contemporary issues (globalization, climate change, transformation of the environment etc.), with particular emphasis on the interplay between man and the environment and the modern-day dynamics of environmental changes as a result of human activity.

Table 4. Geographical research institutions in the organizational structure of selected British universities and their main research strands.

University	Structural unit	Research fields or strands
University of Cambridge	School of Physical Sciences; Faculty of Earth Sciences and Geography; Department of Geography;	Historical and Cultural Geography, The Glacial and Quaternary, The Spaces of Economy and Society, Society, Environment and Development, The Environmental Processes;
University of Oxford	Division of Social Sciences; School of Geography and Environment;	Biodiversity, Ecosystems and Conservation, Climate Systems and Policy, Landscape Dynamics, Technological Natures: Materials, Cities, Politics, Transformations: Economy, Society and Place;
University College London	Faculty of Social and Historical Sciences; Department of Geography;	Cities and Urbanisation, Environment, Landscape and Society, Environmental Change, Environmental Modelling, Mobility, Identity and Security;
The University of Manchester	Faculty of Humanities; School of Environment and Development; Geography	Geographical Political Economy, Space, Culture and Society, Environmental Processes, Quaternary Environments and Geoarchaeology, The Centre for Urban and Regional, The Centre for Urban Policy Studies;
The University of Edinburgh	School of GeoSciences; Human Geography Research Group;	Just Geographies, Nature's Geographies, Materialising Geographies, Lived Geographies;

Source: own elaboration based on official website of each university.

3.3. Canada

Geographical research centers exist in most renowned institutions of higher education (Table 5). Depending on the university, they can form part of humanities or natural sciences departments. In the former, they deal primarily with human geography, while physical geography is the focus of those that fall within the latter.

An overview of available research strands in selected institutions indicates that physical geography garners greater interest among Canadian geographers, but further studies on a larger sample of universities would be needed to corroborate this. Much like in the United States, Canadian geography has deep-running ties with the natural sciences and often falls under interdisciplinary institutes and departments. One good example of this is the *Department of Earth and Atmospheric Sciences* at the *University of Alberta*, where research is conducted a range of topics, from geology to geochemistry, geophysics, oceanography and geomorphology.

The Department's research profile is clearly directed toward holistic studies of the natural environment where it is difficult to distinguish specific research subfields. Interestingly, within this eclectic set, there is a place for human geography, comprising the following research foci: water governance, the social aspects of extreme natural phenomena and suburbanization processes. Socio-economic research remains, however, primarily complementary to standard environmental studies. *McMaster University* exhibits the same

trend of relative marginalization of human geography with respect to the main current of research in physical geography and other Earth sciences.

Table 5. Geographical research institutions in the organizational structure of selected Canadian universities and their main research strands.

University	Structural unit	Research fields or strands
University of Toronto	Department of Geography and Program in Planning;	Cities and Everyday Life, Nature, Society and Environmental Change, Political Spaces, Biogeochemistry and Contaminants, Climate Processes and Climate and Carbon Cycle Modelling, Earth-Surface Processes and Hydrology, Paleoclimate and Biogeography;
University of British Columbia	Faculty of Arts; Department of Geography;	Climate and Global Change, Cities, Forests and People, Geographical Analysis, Geopolitics, Biopolitics and Security, Globalization and Development, Nature, Society and Sustainability, Social Theory, Water, Snow, and Ice;
McGill University	Faculty of Science; Department of Geography;	Earth System Science, Political, Urban, Economic and Health Geography, Environmental Management, Land Surface Processes, Environment and Human Development, GIS and Remote Sensing;
McMaster University	Faculty of Science; School of Geography and Earth Sciences;	Hydrologic Sciences, Spatial Analysis, Environment and Health, Social Geography;
University of Montreal	Faculty of Arts and Science; Department of Geography;	Fluvial dynamic, Asian study, Biodiversity and Ethnoecology, Transport geography, Marine Geography;

Source: own elaboration based on official website of each university.

3.4. The Netherlands

In the Netherlands, specialized geographical research centers are active at five universities (*University of Utrecht*, *University of Nijmegen*, *University of Groningen*, *University of Amsterdam i University of Wageningen*). Studies in physical geography are also conducted at the Vrije Amsterdam University (*Faculty of Earth and Life Sciences*), but geography does not have a separate research unit attached to it there.

Research centers in the form of institutes or faculties (Table 6) are integrated into the structure of natural sciences departments (e.g. *Faculty of Geosciences, Utrecht University, Faculty of Environmental Sciences, Wageningen University*). The predominant research focus, however, is socio-economic, which is probably a result of physical geography being much more closely connected with institutes of Earth and environmental sciences.

One the basis of this information, we can conclude that Dutch geography is divided into two subfields: physical geography and socio-economic geography. One indication of this are the main topics of research in academic institutions, from which we can glean that the relations between these two subfields seem weaker than, for instance, in British geography.

The specific research foci of Dutch institutions goes beyond local contexts and national outlooks, often transcending into the continental or the global. At the same time, researchers tackle highly relevant an highly current problems related to migration flows, urbanization and environmental management. Much attention is also given to land and spatial management as well as regional planning.

Table 6. Geographical research institutions in the organizational structure of selected Dutch universities and their main research strands.

University	Structural unit	Research fields or strands
Utrecht University	Faculty of Geosciences; Department of Physical Geography; Department of Human Geography and Spatial Planning;	Urban Geography, Economic Geography, Geography and Development, Cartography, Regional and Cultural Geography, Environmental Governance for Urban and Regional Planning;
University of Groningen	Faculty of Spatial Sciences; Department of Cultural Geography; Department of Economic Geography;	Social and Cultural Geography, Landscape Studies, Rural Studies, Social Impact Assessment, Tourist Studies; Economic Geography, Regional Labour Market, Methods of Spatial Research, Real Estate, Planning, Development and Management of Work Location;
Wageningen University	Faculty of Environmental Sciences; Cultural Geography Group;	Tourism, Leisure and Migration Studies, Landscape, Community, Heritage;
University of Nijmegen	Department of Human Geography;	Governance and Places, Border Research, Migration and Development;
University of Amsterdam	Faculty of Social and Behavioural Sciences; Amsterdam Institute for Social Science Research; Human Geography, Planning and International Development Studies;	Geographies of Globalization (Political Geographies of Globalization and Re-territorialization, Changing Geographies of Urban Economics, Comparative Financial Geography), Urban Geography (New Urban Dynamics, Live courses and Time-space Behaviour, Spatial Inequalities and Segregation);

Source: own elaboration based on official website of each university.

3.5. Australia

Geography is a popular area of study and research in Australia. All of the leading institutions of higher education offer degrees in geography, but not in every case do they function within separate structural units. For the most part, schools of geography fall under departments of natural sciences (e.g. *Melbourne School of Land and Environment, Faculty of Science The University of Queensland*), but there are also those that include house geography within the humanities (e.g. *Arts Faculty of Monash University*).

The placement of the field in a given department conditions the research profile of each geographical institute, although in natural sciences departments there is a clear preference for physical geography while humanities departments are more inclined towards human geography (Table 7).

In general terms, the natural strand of research predominates once again. Among all the analyzed countries, Australian universities exhibit the greatest concentration on environmental aspects, which is expressed through an evident focus on ecology and issues related to environmental protection.

The monitoring of modern-day environmental processes plays a significant role, as do landscape planning and spatial management methods. With respect to regional studies, research centers prefer to focus on Australia and Oceania as well as Asian countries (primarily the Far East).

Table 7. Geographical research institutions in the organizational structure of selected Dutch universities and their main research strands.

University	Structural unit	Research fields or strands
University of Melbourne	Melbourne School of Land and Environment; Department of Resource Management and Geography;	Animals, Cities, Climate Change, Environment, Land, Fire, Food, Society, Water;
University of Queensland	Faculty of Science; School of Geography, Planning and Environmental Management ;	Landscape Ecology and Conservation, Biophysical Remote Sensing, Climatology, Cleaner Production, Environment and Social Planning, Population, Housing and Regional Analysis, Earth Systems Science, Information and Management;
University of Sydney	Faculty of Science; School of Geosciences; Geography Research Unit;	Asia-Pacific geographies, Social, Economic and Environmental Sustainability in Regional Australia, Landscape Evolution and Processes, Sustainability, Citizenship and Cultural Spaces in Cities, Geocoastal Research;
University of Western Australia	Faculty of Natural and Agricultural Sciences; School of Earth and Environment; Geographical Sciences Center;	Environmental Geomorphology, Coastal and Estuarine Processes, Biogeography and Landscape Ecology, Climate Science, Environmental Management, Environmental Change, Disaster and Hazard Planning and Management, Geographic Information Systems and Remote Sensing, Marine Ecology and Biogeochemistry, Regional Development, Economic and Social Geography, Development Geography, Urban and Regional Planning;
Monash University	Arts Faculty; School of Geography and Environmental Science;	Environment and Society, Geographical Information Systems, Indigenous Archaeology, Physical Geography, Urban and Economic Geography;

Source: own elaboration based on official website of each university.

3.6. Germany

The primary structural unit in German universities is the *faculty*, subdivided into *institutes*, which in turn further branch out into smaller organizational cells or research teams. The system has a structure that is complex, but most of all transparent and well-organized. The structure of one university is often akin to that of another (Table 8).

Geography usually appears as a separate institute operating within a department with a diverse academic profile (e.g. *Faculty of Geosciences, University of Munich; Faculty of Mathematics and Natural Sciences II, Humboldt University Berlin; Chemistry and Earth Sciences Faculty, Heidelberg University*), but mostly follows the general trend of association with the natural sciences. An analysis of the organizational structure of ten Germany universities verifies this. Based on the information obtained, we can stipulate that geography in Germany is a natural science.

Unlike in British and American research units, the names of German departments and research teams correspond to the classic breakdown of geography into subfields (e.g. *Department of Human Geography*, *Soil Science and Geomorphology Research Group*, *Department of Geography of Transport*).

A more in-depth look at the research foci of selected universities led me to believe that, broadly speaking, research is slightly less interdisciplinary than in universities that are heirs to the Anglo-Saxon tradition – that is, it is more reluctant in venturing out of the thematic confines of geography and assumes a smaller degree of individualism. The issues that *are* tackled are of a broader, more general dimension. These observations are inherently difficult to quantify, and they should be seen exclusively as contributions to the discussion, and emphasizing that they constitute the subjective impressions of the author.

Most Germany research centers include departments or research teams dedicated to cartography and GIS. Universities in the other countries under analysis do not give cartography and GIS so much attention as to make it a subject of study in itself, but rather a tool used for other research. Another distinctive element of the German system are separate research teams that focus on teaching geography and land management.

Table 8. Geographical research institutions in the organizational structure of selected German universities and their main research strands.

University	Structural unit	Research fields or strands
Georg-August University Göttingen	Natural Sciences, Mathematics and Informatics; Faculty of Geoscience and Geography; Institute of Geography; Departament of Human Geography; Departament of Landscape Ecology; Departament of Cartography, GIS and Remote Sensing; Departament of High-Altitude-Mountain Geomorphology;	Geography of tourism, Cultural landscape development Terrestrial Biogeochemistry, Ecosystem Processes Global change, Climate Change challenge Geomorphology, High Mountain Geomorphology, Didactics in Geography;
University of Munich	Faculty of Geosciences; The Department of Geography;	Physical Geography and Remote Sensing (Hydrological Processes and Remote Sensing), Geography and Landscape Ecology (Land Use Change, Environmental Problems, Climate, High Mountains Region), Human Geography (Human-Nature Relations, Economic Geography and Tourism (Business and Geography, Tourism Economy);
Heidelberg University	Chemistry and Earth Sciences Faculty; Institute of Geography;	Physical Geography, Human Geography, Economic and Social Geography, Geography of North America, GISciences;
University of Bonn	Faculty of Mathematics and Natural Sciences; Institute of Geography;	Climatology and Landscape Ecology, Geomorphology and Hydrology, Geography of Developing Regions, Urban and Regional Geography, Spatial Socioeconomics, Historical Geography, Remote Sensing, GIS and Cartography;
Humboldt University Berlin	Faculty of Mathematics and Natural Sciences; Institute of Geography;	Physical Geography: Geomorphology, Soil Geography, Quaternary, Climate and Vegetation Geography, Hydrology, Human Geography: Economic Geography, Applied Geography/Spatial Planning, Geography of Transport, Geography of Metropolis and Innovation, Social and Population Geography Geomatics;

Source: own elaboration based on official website of each university.

3.7. Other Countries

The basic structural unit of the Spanish university is the *faculty*, branching out into institutes of two different kinds. Geography is represented on the *faculty* level, typically in conjunction with history (e.g. *Faculty of Geography and History, University of Barcelona; Faculty of Geography and History, University of Sevilla, Faculty of Geography and History, University of Santiago de Compostela*). Universities occasionally have departments of environmental studies (e.g. *Faculty of Environmental Sciences, University of Alcala*), where geography is a component at the institute level. Larger universities typically subdivide a department into two geographical institutes – one that focuses on physical geography, and another that examines the socio-economic aspects of the field – while smaller universities usually have one general geography profile.

Within the structure of the institutes we can distinguish *laboratories* and research groups. Depending on the institution, the research profile of the department may concentrate on one

of the standard specializations of geography or be connected to specific aspects of the region in where the university is located.

In Japanese universities, geographical units are universally a part of a larger department, usually environmental sciences (e.g. *Faculty of Urban Environmental Sciences, Tokyo Metropolitan University*; *Graduate School of Environmental Studies, Nagoya University*). Moreover, universities often maintain two separate tracks – research and teaching – of which the former deals with research exclusively while the latter handles the education of students in the field. However, research foci and available degrees are identical between the two, and correspond to those offered by European universities.

Geographical institutes in Russia are structurally equivalent in most universities. Geography is usually represented at the department (that is, first-tier) level, which subdivides into institutes. A three-tier structure consisting of a department, an institute and a faculty can sometimes be found. The names of institutes and faculties reflect the classic fields of specialization in geography (e.g. *Departament of Geomorphology and Paleogeography, Lomonosov Moscow State University*; *Departament of Economic and Social Geography, Lomonosov Moscow State University; Division of Cartography and Geoinformatics, Saint-Petersburg State University*).

4. THE ORGANIZATIONAL STRUCTURE OF GEOGRAPHY IN POLAND

Poland hosts 15 institutions of higher education that carry out research and education activities for future faculty on a Master's or Doctorate level, as well as 1 scientific institution – the Polish Academy of Sciences. Two universities have established separate departments for the study of geography (University of Warsaw and University of Łódź), while the remaining 13 institutions host geography either within their departments of Earth sciences or as institutes that form part of larger departments. In those cases, geographers work alongside researchers and scholars in the geological or biological sciences.

The size of geographical research center, estimated by the number of research units and the number of the research staff, varies greatly (Table 9). Each center has its unique research profile that results from both "base" and regional studies.

The research specialization of different institutions is primarily a factor of belonging to different traditional "geographical schools" developed by distinguished geographers as well as a result of location. Most institutions carry out geomorphological research, a staple of Polish geography. Other subareas of physical geography are also amply represented, although individual institutions reveal clear regional specializations. It is easier to point out differences in specialization in socio-economic geography, which is much more limited with regard to number of researchers.

The commitment and activity of researchers as well as the quality of published work differ by university. One of the ways of assessing research units is the so-called *parametric value*, which is assigned based on researchers' academic activity (number of papers, number of grants, right to award academic titles and degrees, etc.) as well as the palpable effects of their studies (implementation of recommendations, new technologies, patents and other practical results).

The primary goal of assigning a parametric value is to give support to the strongest and most competitive institutions, while those that obtain worse results must fend for themselves. The undisputed leaders here are the Adam Mickiewicz University in Poznań and the Institute of Geography and Spatial Organization of the Polish Academy of Sciences, followed by the other universities, which amongst themselves are highly diversified in terms of research potential.

Table 9. Basic data on centers of geographical study in Poland in 2008.*

Abbreviation	University/ Academy	Faculty	Institute	No. of depts and labs	No. of full profs	No. of Ph. D. profs
AMU	Adam Mickiewicz University in Poznan	Faculty of Geographical and Geological Science	Institute of Physical Geography and Environmental Planning Institute of Socio-Economic Geography and Spatial Management Institute of Geoecology and Geoinformation	21	35	122
UW	University of Warsaw	Faculty of geography and Regional Studies	Institute of Physical Geography Institute of Socie-economic Geography and Spatial Management Institute of Regional and Global Studies	18	13	90
UJ	Jagiellonian University	Faculty of Biology and Earth Sciences	Institute of Geography and Spatial Management	13	11	44
US	University of Silesia	Faculty of Earth Sciences	-	29	5	66
UŁ	University of Łódź	Faculty of Geographical Sciences	Institute of Urban Geography and Tourism Science Institute of Earth Sciences Institute of Socio-economic Geography	25	9	No data
UG	University of Gdańsk	Faculty of Oceanography and Geography	Institute of Geography	10	4	44
NCU	Nicolas Copernicus University in Toruń	Faculty of Biology and Earth Sciences	Institute of Geography	13	7	42
UMCS	Maria Curie-Sklodowska University in Lublin	Faculty of Biology and Earth Sciences	Institute of Earth Sciences	12	9	63
UWr	University of Wrocław	Faculty of Earth Science and Environmental Management	Institute of Geography and Regional Development	8	3	50
USz	University of Szczecin	Faculty of Geosciences	Institute of Marine Sciences	10	10	32
PUC	Pedagogical University of Cracow	Faculty of Geography and Biology	Institute of Geography	7	3	34
UHS	Jan Kochanowski University of Humanities and Sciences	Faculty of Mathematics and Sciences	Institute of Geography	16	4	23
PU	Pomerania University in Słupsk	Faculty of Mathematics and Natura Sciences	Institute of Geography	8	2	27
KWU	Kazimierz Wielki University in Bydgoszcz	Faculty of Natura Sciences	Institute of Geography	No data	No data	No data
IGSO	Polish Academy of Sciences	-	Institute of Geography and Spatial Organization	6	10	45

** The source for this table was the Ekspertyza o stanie nauk geograficznych w Polsce w okresie 1995-2008 (Assessment on the State of the Geographical Sciences in Poland in the 1995-2008 Period), PAN Committee on Geographical Sciences (by Kostrzewski and Roo-Zielińska), which did not include the University of Economy in Bydgoszcz.*

Geography in Poland does not belong to the "mainstream" of science, and thus on a theoretical level it is more of a "receiver" than a "giver". The opportunities offered by the synthesis of diverse sources of knowledge that is inherent to geography are countered by the modern-day trend to specialize and differentiate research areas, which are becoming increasingly fragmented as a result. The best example of this is the creation of subject committees within the Polish Geographical Society and the foundation of new societies (e.g. the Association of Polish Geomorphologists or the Polish Association for Landscape Ecology), or others that are increasingly specialized (Association of Polish Geography Teachers).

On the institutional and organizational level, a debate is currently being played out on dividing geography into two separate subfields: physical geography and socio-economic geography. The reasons for this are several. First, observers have noted the increasing duality in the subareas of geography. The links between the two disciplines are sometimes weaker than those between each of the two individually and other disciplines in the social and natural sciences. In Poland, socio-economic geography is more keen on entering into informal alliances and maintaining affiliations with social disciplines, but often makes use of physical geography when investigating the spatial diversity and temporal variability of socio-economic processes and phenomena. By contrast, physical geography establishes partnerships with the physical sciences, making use of achievements in economic geography (Bański 2010).

A second problem lies in the process of awarding degrees and academic titles, which are subsequently verified by the Central Committee for Academic Degrees and Titles. This committee is composed of several sections, among which are the Economic Sciences section, responsible for awarding degrees and titles in socio-economic geography and other areas, and a separate Mathematical, Physical, Chemical and Earth Sciences section, responsible for physical geography and other areas. Classifying the candidates into the appropriate section is a common problem. Thirdly, similar issues haunt the bodies that assess research projects in the National Science Center.

It is likely that in institutional and organizational terms, Polish geography will maintain the status quo, because it is in the interest of both subfields. Geographers are conscious of their disadvantageous position with respect to other disciplines and are afraid to lose their sovereign identity. Both subfields have too little clout in the Polish academic and scientific arena to individually face the challenges set forth by contemporary science. Geography in the elementary (primary) and secondary school system is also on the wane, and a noticeable drop in the number of geography classes has been noted in schools nationwide.

A consequence of the lack of a clearly defined place for geography in the Polish system of education are the diverse membership patterns of geographical institutes within the structures of academic institutions. For instance, the Polish Academy of Sciences' Institute of Geography and Spatial Organization, which had previously belonged to the Department of Earth Sciences[5] with the Institute of Geophysics, the Institute of Geological Sciences and the Institute of Oceanography, among others, was incorporated into the Department of Technical Sciences in 2011, now appearing alongside the Institute of Water Construction, the Institute of Biocybernetics and Biomedical Engineering, the Institute of Chemical Engineering and others.

A separate part of the Polish Academy of Sciences is the Committee for Geographical Sciences, which represents Polish geography in national and foreign institutions and formulates general research and development goals in Polish geography. However, the

[5] The Polish Academy of Sciences is divided into Departments that include different research Institutes.

Committee belongs to yet another Department of the PAS – the Department of Natural and Earth Sciences.

Polish geography faces a number of significant choices that will indicate the path of its future development. These primarily refer to research strands, their character and structural form. Experiences and conclusions deriving from the development of world geography will be instrumental in making the right decisions.

5. CONCLUSIONS

In the organizational structure of the university, centers of research in geography are typically in the second tier. Only in the case of Spain, Russia and several universities in Poland do we see separate departments of geography – first-tier units. Undoubtedly, this is connected to the nature of the organizational structure of universities in countries where academic tradition has produced a large number of independent departments. In the remaining countries, the first-tier category is reserved mostly for a broad range of sciences and arts (e.g. the humanities, natural sciences, social sciences, the arts), and it is only in a lower tier that the distinction is made between units dealing with a specific science (geography, physics, sociology) or set of related sciences (e.g. Earth sciences, environmental sciences).

With the exception of American universities, separate geographical institutes are present at most top national universities. This may translate into the popularity of geographical studies and research. However, this conclusion is weakened by the fact that the highest-ranking universities in the world (e.g. *Harvard University, Stanford University, Columbia University, Princeton University, Yale University*) do not have geographical institutes within their organizational structure. Perhaps this is a sign of the declining role of geography as a science or the emergence and breaking away of independent subfields that are more and more distant from geography.

Centers for geographical research are most often associated with departments of Earth sciences or departments of natural and environmental sciences, which also accommodate other sciences such as geology and ecology or, more rarely, biology, geophysics and chemistry. This encourages the conclusion that geography is primarily seen as a natural science. Geography is encountered much less frequently in social sciences and humanities departments. In cases where it does appear there, studies on physical geography are largely marginalized.

An in-depth examination of the structure of geographical institutes and their main research topics also suggest that the processes of disintegration of the discipline are stronger than those that flow in the direction of its integration. This was confirmed by the observations on the institutional and organizational problems of Polish geography. Research teams that engage in research on physical geography display a clear affinity for and tendency toward the sciences, especially the natural, while those that specialize in socio-economic geography are drifting toward the humanities.

The ties between physical geography and its related fields (geology, ecology, geophysics) seem to be stronger though, leading to the proliferation of interdisciplinary research teams that take on environmental issues of great relevance to both present and future. Laffan's (2010) work provides interesting data on the disintegration and disaggregation of geography, spotlighting the internal relations within the discipline and its connections with related areas based on citations in academic journals. Studies have shown that the links between journals of physical geography and socio-economic-geography are weaker than those that connect each of the two to their related non-geographical subfields. Similar conclusion have been drawn by Thrift (2002) and Johnston (2003).

The thematic structure of geographical research is very diverse. Looking at the two basic subfields of geography, we can conclude that the most "balanced" research in terms of topic among the analyzed countries can be found in Great Britain and Germany. Institutes in those two countries have equally rich and fruitful research agendas in physical and socio-economic geography. American and Dutch universities place more emphasis on socio-economic geography. In the United States, this results from the concentration of research on physical geography in institutes of Earth sciences along with a host of other disciplines.

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