



## **DISCIPLINIZATION: PROCESS AND PROBLEMATIC**

### **A COMPARATIVE REPORT OF EIGHT EUROPEAN COUNTRIES**

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# DISCIPLINIZATION: PROCESS AND PROBLEMATICS

## Introduction

This report focuses on issues of disciplinization in academe and the possibilities for interdisciplinary research in eight European countries: Finland, France, Germany, Hungary, Norway, Spain, Sweden and the UK. All these countries except Norway are members of the EU, and all are signatories to the Bologna Agreement. They are partners in a specific targeted research project (STREP)<sup>1</sup> on ‘Changing Knowledge and Disciplinary Boundaries Through Integrative Research Methods in the Social Sciences and Humanities’, funded under the European Commission’s Framework 6, Priority 7: ‘Citizens and Governance in a Knowledge Based Society’. A key objective of this project is to understand the barriers to interdisciplinarity in the social sciences and humanities. This report therefore and specifically centres on the question of how disciplinization in universities impacts on their ability and opportunities to teach and research in an interdisciplinary manner.

Within the scope of this project, disciplinization is understood as the process of establishment of a discipline within the academy. There are several points to be taken into account while observing these processes, since they are in many ways context dependent, and prove to be indicative of the ways in which university structures operate in each of the respective countries. These processes also tend to reflect more general attitude towards the status of knowledge as such, and towards knowledge production in general in the given society, at the given moment in time.

When it comes to disciplinization, all the reports analysed here focus on the processes of inclusion of an area of studies within the boundaries of the existing university structures, that is, on the processes of legitimation of a certain kind of knowledge. This goes from the simple recognition that a certain area of study is not represented/researched in the given university, to the level of inclusion that makes it present as a recognised discipline. In that sense, all the reports necessarily point to a special dynamic which occurs between institutionally ‘legitimized’ forms of knowledge, and those which still have to undergo the processes of legitimation.

In that sense, the term ‘discipline’ echoes here the legacy of its complex etymology, evoking the ancient relation between learning and disciplining. Various paths to disciplinization that are examined here prove to be strongly dependent on some form of authority which in the end has the power to legitimize, that is to discipline (or not) the status of a certain kind of knowledge within the existing educational structures. Disciplining in this sense brings with it a kind of social recognition, like support for its practitioners in the form of working places (professorships, for example), and research funds. Institutional legitimation also means a certain level of submission to the given forms of institutional organisation, and to the controlling mechanisms that govern academic life. The long-lasting debate over the disciplinization of Women’s Studies/ Gender Studies can offer a very good example in this sense. Being interdisciplinary and multidisciplinary in its interests and methodological orientation, Women’s Studies/ Gender Studies had to strive for disciplinary recognition in order to get visibility and access to funding. Thus the case of Women’s Studies/ Gender Studies can be taken as an example for very different facets of the disciplinization processes. Its inclusion in academia – as well as the inclusion of Cultural Studies, Gay and Lesbian Studies or

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<sup>1</sup> See [www.hull.ac.uk/researchintegration](http://www.hull.ac.uk/researchintegration) for further details.

Area Studies – confirms that the more traditional, intrinsic definitions of a discipline, which rest upon specificity of disciplinary subject and method of study, cannot serve the purpose any more. Foucault saw the disciplines as a “system of control in the production of discourse” (Foucault 1970:224), thus pointing to the fact that organised forms of knowledge do not only explain and represent the world, but organise it for us as well. Nowadays, disciplines are seen as collectivities engaged in differentiating activities, or ‘boundary-work’ of some sort, with an aim to develop arguments to support the existing division of knowledge (Shumway and Messer-Davidov 1991: 208). New, interdisciplinary areas of study tend to oppose this ‘boundary-work’, questioning traditional disciplinary divisions. Being forced to ‘disciplinize’ themselves within academia, they also have to engage in some sort of similar activities in order to protect themselves, producing strategies that support recognition and legitimation of their own knowledge-production.

As the reports analysed here demonstrate, the processes of disciplinization rest on specific dynamics between the static forces of inherited structures, and the drive for change brought by new disciplinary claims. Every claim for inclusion and recognition of a new area of study necessarily affects the whole system, not only in a practical sense, for example, affecting distribution of existing funds. It also affects the way other neighbouring disciplines define and represent themselves. Each discipline is partly defined by its relation to the other disciplines, and the change in one field affects the others as well.

Turner proposes a definition of disciplines which rests on two parts: a nominal part (a discipline has to have a name which is shared and used), and on a functional part (for persons trained in the name of a discipline, there has to be employment in the market on the grounds of a diploma, given to confirm and recognise this training) (Turner 2000: 47). This definition seems to be in accordance with the reforms that most European universities undergo at present, mainly (but not exclusively) initiated by the Bologna process. Current reforms have their nominal aspects, mainly related to an effort to offer a common frame and common denominators for different educational and research traditions in Europe, and its functional dimensions, bringing the logic of the market into the area of higher education.

At present, disciplinization processes appear to be a point of intersection between inherited (national) traditions and new (European) reforms, as well as between the static forces of traditional university structures and the systems of value judgements which are discipline based, and the new, dynamic forces which question many of the assumptions upon which the inherited systems are based. Processes of disciplinization are directly related to the issues of power in academia. Also, they are very much dependent upon the relations between the state and the higher education sector. All of these factors strongly affect the concrete process that underlies the present situation concerning the legitimation of knowledge within present-day academia.

## **1. Changes in the educational system**

The institutional structuring of disciplines in the national contexts depends to a large extent on historical traditions. However, from the 1980s a number of reforms took place within the educational systems in Europe, which have resulted in the loosening of traditional structures and allowed for the establishment of new disciplines. These reforms were grounded in the recognition that without an educated workforce no country could maintain its competitiveness in the global market; decentralisation was seen as a solution to this problem (Eurydice 2000: 7). Instead of taking legislative measures, many governments opted for a greater involvement of universities in

decision-making processes, although Spain and France did not adopt such measures to the same extent. Universities were given more autonomy in order to promote efficiency and develop an entrepreneurial attitude. The autonomy extended to the field of institutional governance, expenditure of the budget, and the planning of courses (Eurydice 2000: 9). HE institutions were also given the competence to deal with staff appointments.

These reforms impacted on existing models of funding. One model relates funding to input; the amount of money depends on the number of students and the number of courses offered. Within the other model, funding is related to output, which means that the number of exams passed is taken as an index (Eurydice 2000:10). In certain cases government involvement in disciplinization has increased by providing financial incentives for courses that train students for jobs in the labour market (Eurydice 2000: 12)

Apart from the reforms of the 1980s and 1990s, the implementation of the Bologna process (signed in 1999) has induced a number of changes in some countries. All the countries included in this report are signatories to the Bologna Agreement, although the actual implementation has proceeded to a different extent in each of them. The relevance of the Bologna process for disciplinization is mostly related to its influence on restructuring the educational system. The creation of the European Higher Education AREA is based on the idea that government legislation creates a basis for the transformation of institutional structures and processes. Part of the co-operation between higher education institutions and the government is the interpretation of the extent to which HEIs can determine the content of courses (Reichert and Tauch 2003: 1). And although the autonomy of HEIs increases, this process is counterbalanced by the “growing influence of other stakeholders” in society, as well as by extended external quality assurance procedures and outcome-based funding mechanisms (Reichert and Tauch 2003: 11).

One of the factors that affect disciplinization is the regulation of curricular design, since the idea of the Bologna process is to establish common “qualification descriptors, level descriptors, skills and learning outcomes” and to set up “meaningful internal and external quality assurance procedures”. The idea of defining a “common core of learning outcomes” in the given disciplines seems to lead to a standardisation of disciplines and curricula on a supranational level. The setting up of quality assurance agencies also sets desirable standards for the institutional background in terms of the teaching quality (Reichert and Tauch 2003: 11). These processes may hamper initiatives to institutionalise new (inter- or multidisciplinary) subject areas.

According to the actual plans, the disciplinary structure at the Bachelor level will be most regulated with common measurable outcomes, with an increasing flexibility at the Masters and the doctoral level. Masters degrees are supposed to be reformed with regard to their relation to doctoral training and research (Reichert and Tauch 2000: 8). The role of research is planned to change as well. The aim is to establish a link between education and research and to integrate research projects into teaching (Reichert and Tauch 2000: 15).

The present state of disciplines and the existing barriers between them have been established under the influence of a number of factors, such as traditions of higher education institutes, professional associations, and the interpretation of reform policies. In the following sub-section the various actors and their role in the processes of disciplinization will be reviewed within the national contexts of eight European countries.

## **2. Actors in defining disciplinary boundaries**

The strength of disciplinary boundaries is determined by a number of factors. The codification of existing disciplines, the quality assurance or accrediting agencies, the disciplinary organisation of funding bodies, all of these are influential aspects of disciplinization. This sub-section will look at the degree of involvement of the various actors in the creation of disciplines in the context of national traditions.

### **2/a. Codification of disciplines**

The first entry for each country will look at the way disciplines are codified, or registered at a national level. Codification here refers to the way in which some formal body tends to regulate the disciplinization processes. Primarily, it means that only the appropriate ministries can give permission to create a new discipline, or that the ministries function as a barrier to bottom-up processes of innovation. If disciplines are not codified in law, there are other agents that can act as barriers to the institutionalisation of new disciplines at the next level of the process, such as accreditation agencies, academies or funding councils.

### **2/b. Actors in education**

The second entry for each country will focus on the actors in higher education. Since higher education is funded in large part by the government in all countries in the report, the respective ministries of education have an important role in decision-making. As a result of the recent reforms, the autonomy of universities in decision-making has increased, although to a different extent in each country; in a number of cases it was extended to the internal allocation of funds, recruitment, setting up new courses, determining curricula and organisation of research activities. The loosening of centralised power was concomitant with shifting to the regulation of the quality of education through accreditation and introducing a process of assessment and accreditation defined at national level. Apart from self-evaluation, peer review and comparative assessment between countries and institutions are now also being used as a means of measurement. In most cases a central agency is installed which monitors and co-ordinates the activities. These agencies are in some cases independent of ministries, in others they are linked to them. The function of accreditation or quality control agencies is primarily seen as quality improvement and in some countries it is considered as a means of accountability to society (Reichert and Tauch 2003: 11). Meeting the criteria set by the assessment agencies can also be related to funding (Eurydice 2000: 15).

Mediating agencies can play various roles in disciplinization, depending on their policies on interdisciplinarity, the structure of the evaluating panels, and on their policies to cope with the evaluation or accreditation of new disciplines or interdisciplinary innovations. As such, these agencies can function as a barrier to interdisciplinarity, or as an agent promoting institutionalisation of new disciplines.

The devolution of regulatory powers from government level to mediating agencies in a number of countries has at the same time increased the burden of financial management of HEIs, while resources have become scarcer. At the same time there is increasing pressure to become competitive in a “market” where student numbers determine funding, and where increasing student numbers may not entail a comparable increase in the number of teaching staff. Instead of exercising centralised power, regulation and standardization is thus conducted in the name of expertise or peer review (Rose 1993: 295).

## **2/c. research**

The third entry deals with actors in research, being limited to the bodies relevant for research in the Social Sciences and the Humanities. Research activities occur both at universities and at research institutes in all the countries discussed here. The governments allocate funding through funding councils or other mediating bodies, so their disciplinary division often determines the opportunities for innovation.

At universities the possibility of conducting research in the new areas depends on the extent to which researchers can determine the focus of their own activities in relation to their obligation to the universities. If research is funded by funding councils, peer review and the lack of relevant panels may create bias in terms of what is considered relevant research or excellent work. At the same time, funding councils may be discipline focussed, and unless there are governmental incentives to promote interdisciplinary or thematic work they may be slow to accept and appreciate innovation.

### **2.1. The United Kingdom**

From the end of the 1970s, major cuts were made in the government funding for universities, which was combined with the idea that taxpayers should get better value for their money (Edwards 1997: 225). Due to the marketization of education, universities can initiate courses as long as there is demand for them, which can be proven by the number of interested applicants. Funding is allocated on the basis of the number of students enrolled at the university in a given discipline. These financial drivers can lead to the closure of subject areas or departments that cannot attract sufficient number of students. The overall effects of these are greater concentration within traditional disciplines, smaller ones being absorbed into bigger ones (Griffin et al 2005: 60).

#### **a. Codification**

Disciplines are not codified by law.

#### **b. Education**

In the United Kingdom higher education is not extensively regulated by the state. The government intervenes through higher education acts, which are implemented by the governmental Department for Education and Skills (Griffin et al 2005: 16). These acts determine student numbers, funding allocated to universities and how universities account for their activities. Universities can change the curricula of their courses, establish degree courses at under and postgraduate level, determine their admissions criteria, course contents, staff appointments, their internal disciplinary structuring and the grouping together of disciplines (Griffin et al 2005: 65).

But HE is not left without regulation and external control mechanisms. Since the second half of the 1980s, an indirect control over the disciplines has been exercised / through the regular Teaching Quality Assessment (TQA), and the Research Assessment Exercise (RAE). The acting bodies are the funding councils and Quality Assurance Agency, which conduct the TQA and RAE. (It is important to note here that no new discipline has managed to lobby effectively for inclusion in these). They both operate through assessing disciplines with the help of peer review, where peers are selected from the same discipline (Griffin et al 2005: 64-5). In practice, such a system promotes disciplinaryity within the existing frames. Thus a special dynamics has been created. The autonomy of higher education institutions means that disciplinary structures are not restricted at local level. However, the introduction of the Research Assessment Exercise

and Teaching Quality Assessment at national level does function as a regulatory force resisting innovations since their structure is based on disciplinary divisions (Griffin et al 2005: 31).

### **c. Research**

Research is considered to be an important part of activities of academics employed at universities; the evaluation of their research activities is of the highest importance for their academic standing. In order to conduct research in a discipline, it is essential to get recognised by a funding agency at national level. The RAE was designed with the aim to secure better distribution of scarce resources, and to support only the best research (Griffin et al 2005: 18). If a discipline is not recognised and assessed in the RAE, it has to be “returnable” in one of the recognised disciplines. Each discipline has a panel of judges composed of mostly senior academics or they conduct a peer review, which means they draw up the disciplinary parameters according to which they measure the submitted applications. The panels cater for interdisciplinarity to differing degrees, for example consulting with other relevant panels, or including experts with interdisciplinary interests. In spite of this, it is difficult to submit work covering a range of disciplines. In order to keep up their research record, researchers in non-traditional disciplines have to carry out research activities in traditional disciplines, which function as a measure of quality. Individual staff have no power to determine which disciplinary panel their research will be submitted to (Griffin et al 2005: 41). This structure also has an impact on the content of research; in order to be rewarded it is best to work within the canon of the given discipline (Griffin et al 2005: 64).

The research councils fund research activities; in the Humanities it is mainly the task of the Arts and Humanities Research Board (AHRB) while in the Social Sciences it is the Economic and Social Research Council. Both of these bodies claim to promote interdisciplinarity, but they are both based on disciplinary peer assessment. In spite of the freedom of universities to set up courses and degrees, the quality assessment and funding bodies in the U.K. tend to reinforce disciplinary divisions, and increase the pressure on academics to identify with a single discipline (Griffin et al 2005:66).

## **2.2. Norway**

Norwegian education was influenced by both Anglo-American and German tradition, but in the 1970s and 1980s the educational system became Americanised. The recent changes meant an increased freedom of choice and greater flexibility for the pupils (Widerberg et al 2005: 6-7). Norway was the first country to change the structure of higher education as part of the Bologna Process, while at the same time implementing the Quality Reform in 2003. The latter facilitated the establishment of interdisciplinary programs and encouraged cross-disciplinarity between faculties and departments (Widerberg et al 2005: 15).

Due to the lack of long disciplinary traditions and the efficient implementation of the reforms, Norway has achieved some advance in terms of interdisciplinarity in education (Widerberg et al 2005: 6). There are an increasing number of interdisciplinary programmes offered at universities (at Oslo University 17 programs out of 55), and university prospectuses for education no longer present disciplines but “topics” (Widerberg et al 2005: 21). The current situation in terms of disciplinarity is the realisation of a top-down (national policy) intention to increase interdisciplinarity (Widerberg et al 2005: 11).

In spite of all these achievements, there are still a great emphasis on national curricula and exams (Widerberg et al 2005: 15). Also, there is a number of inter- or multidisciplinary subject areas that become institutionalised for a short term only, whose success depends on the number of students applying each year. On the other hand, the development of stable and long-term infrastructures that provide opportunities for research and publication in the given discipline might require longer time and other means.

#### **a. Codification**

Disciplines are not codified.

#### **b. Education**

In Norway, the Parliament regulates all higher education institutions, and the Norway Net Council (*Norgesnettrådet*) was established in 1994 with the aim of dealing with educational issues (Widerberg et al 2005: 9). The Ministry of Education and Research is the highest public administrative agency for educational matters, and it implements national education policies. The state finances universities and university colleges and decides budgetary frameworks (Widerberg et al 2005: 10). Together with the Quality Reform, a new budget system was introduced, according to which four criteria are used in the allocation of grants to departments. Together with the basic allocation, universities are getting money for every student taking an exam in any discipline; also, publications of faculty members are supported, and external research projects are supposed to bring in overhead money. Marketization of the educational system is also present, which means that courses have to be attractive and advertised. The whole system encourages departments to administer more interdisciplinary programs because they result in more money, i.e. more interested students for the courses/exams, and more research funds, since funding bodies tend to support large interdisciplinary projects (Widerberg et al 2005: 32).

Since 2003, the state funded higher education institutions are accredited by the Norwegian Agency for Quality Assurance in Education (NOKUT) (Widerberg et al 2005: 14). It is an independent state body, and its decisions cannot be changed by the ministry. It is responsible for quality assurance, evaluation, and the recognition of quality systems, institutions and degree programs (Widerberg et al 2005: 15). It sets a number of criteria that the institutions have to meet in order to ensure the quality of education, which in turn determines the amount of funding from the state budget. Its requirements are not concerned with the question of disciplines and/or interdisciplinarity (Widerberg et al 2005: 23).

#### **c. Research**

The most important national research funding body is the Research Council of Norway. In 2003 it was restructured into three divisions, the Division for Science, the Division for Strategic Priorities and the Division for Innovation (Widerberg et al: 26). The Division for Science contains five departments, including the Department for Social Sciences and the Department for Humanities. Their objective is to develop the disciplines and the recruitment to the disciplines, but also to initiate and support interdisciplinary research programs. These departments also finance various centres, programs and projects of university departments.

In the last few years strategic planning of research has resulted less discipline orientation. Research tends to be more topic-oriented, rather than discipline-oriented, and while previously the funding was divided between the disciplines, interdisciplinary

programs are now competing for the money. While universities are responsible for the development of disciplines, the Research Council supports interdisciplinary programs and applicants who are affiliated to large projects and research environments (Widerberg et al 2005: 29). The Research Council of Norway also funds a number of research institutes, organised into thematic or interdisciplinary research groups, which focus mainly on applied research.

### **2.3. Sweden**

Sweden followed the Humboldt model till 1967 when the American model took over, and universities established connections with public welfare, trade, and industries (Holm and Liinason 2005: 3). As in Norway, freedom of choice and flexibility in the educational system increased. The objectives are to get 50% of students into higher education and to emphasise collaboration with business and industry. Until 1993, the higher education system was governed by the state. In 1993, however, decision-making processes were decentralised, applicability was emphasised, and competition between HEIs was encouraged.

Since 1999, distribution of funding follows the division of higher education into four basic academic sectors, namely the Humanities and the Social Sciences, Medicine, the Natural Sciences, and Technology. This division was made with the aim to promote interdisciplinarity, which is seen as a means of improving research results, and the appropriate way to face the complexity of the present-day society (Holm and Liinason 2005: 6). University programs do not have to be in disciplines, they just have to remain within the boundaries of the four academic sectors. Consequently, the division into four academic sectors should be followed by HEIs as well, but not all the faculties have accepted these ministerial policies (Holm and Liinason 2005: 33).

#### **a. Codification**

The National Agency for Higher Education has a national register of subjects which is also used by the Swedish Research Council and the National Statistics Office (Holm and Liinason 2005:8). In terms of higher education institutions, the register only corresponds to the structure of the old universities, and it does not include certain interdisciplinary subjects. In that sense, it does not correspond to the realities of the present HE system and is not binding.

#### **b. Education**

The Swedish government distributes annual subventions, elects the chairperson, the members of the board, the vice-chancellor, and it is responsible for policy instruments. Universities are responsible for the quality assurance of the first cycle education content, and for postgraduate education and research. They can establish professorships and appoint professors. Within the universities, the faculty board distributes resources to departments, adjusts the content of research, and deals with PhD training and undergraduate education (Holm and Liinason 2005: 5).

Today all decision-making power is with the university and the faculty boards, and they can decide on their internal organisation. The chair of the board and the members are elected by the government, and the staff and students elect their own representatives. Although students can choose the courses and combine them into degrees, the recognition of the government is almost a prerequisite for the establishment of a discipline in terms of degree-awarding power, since this approval is the criterion on the basis of which state subsidies are granted (Holm and Liinason 2005: 5).

In Sweden, funding for education is distributed in the form of governmental grants for all undergraduate studies. Similarly to Norway, governmental grants are based partly on the number of students, partly on students' achievements measured by the number of degrees awarded. Higher education institutions are allocated a general grant, and faculty grants are divided into one bill for each academic sector, which is further divided between the departments within the faculty. In research, there is a wish to establish structures that promote interdisciplinarity, therefore the public grants for research and PhD training are also allocated in one of the four academic sectors since 1999 (Holm and Liinason 2005: 5).

The accreditation body is the National Agency for Higher Education (although there is also a Nordic Network of Quality Assurance Agencies). It acts on behalf of the government and it comprises experts from HEIs, students and labour market representatives. Every six years the NAHE evaluates degree programs and the major subjects. It is the government that gives recognition to higher education institutions, which determines the right to award degrees and to receive state subsidies in the form of annual grants (Holm and Liinason 2005: 5) In the national quality assessment carried out by NAHE the issue of disciplinarity has been raised as a part of the assessment, since the evaluation of disciplines may not be suited to the evaluation of interdisciplinary or cross-departmental programs (Holm and Liinason 2005: 20).

### **c. Research**

Government claims that interdisciplinarity is an important tool in achieving better results in research. In 2001 the government established a new research funding policy according to which ten smaller research councils were restructured; at present, there are 3 research councils, 9 research foundations. One of their objectives is to encourage interdisciplinarity (Holm and Liinason 2005: 4). The most important funding body is the Swedish Research Council. In spite of the governmental intention to support interdisciplinarity, the on-line application system of the Swedish Research Council is based on the disciplinary structure of the national register of subjects. The two other research councils, FAS (Forskningsrådet för Arbetsliv och Socialvetenskap, Swedish Council for Working Life and Social Research) and FORMAS (Forskningsrådet för Miljö, Areella Säringar och Samhällsbyggande, the Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning) are divided thematically. The Swedish Research Council, the public funding agency, has also been restructured (Holm and Liinason 2005: 17). There are a number of academies with research institutes in various disciplines (Holm and Liinason 2005: 48).

## **2.4. Finland**

In Finland there are ten multi-faculty universities, and disciplines are placed into faculties within different universities in various ways. The first half of the 1990s was characterized by severe economic recession. With economic improvement in the 1990s new initiatives appeared with the intention of turning the country into a competitive "knowledge based" society (Keskinen and Silius 2005: 3). The implementation of the Bologna process has also started. But, contrary to the other Nordic countries reviewed in this report, there are no signs of centralised support to change the structure of disciplines.

Both research and education occur in all the universities, all of which are state-owned and receive funding from the government (Keskinen and Silius 2005: 4). State funding has been decreasing. In 2005 it covers only 65% of the universities' budget (Keskinen and Silius 2005: 7). HEIs receive lump-sum funding from the Ministry of

Education, and decide on how to divide it. The rector negotiates with the faculties and the departments, and they agree on the number of degrees to be offered and on the allocation of resources. Funding is based on “management by results” which means that performance and efficiency are rewarded. Both the degree-based funding and the “management system by results” are organised in terms of traditional and strong disciplines, therefore they are unfavourable to new and small fields of study. The measurement of results does not include interdisciplinary activities (Keskinen and Silius 2005: 46).

#### **a. Codification**

The Ministry of Education defines the overall structure of the degrees, but it does not interfere with the curricula. It declares for concrete universities which degrees they can award, and in order to stop providing the awarded degrees, a new decision of the Ministry is needed (Keskinen and Silius 2005: 9).

#### **b. Education**

With the Universities Act 1998, the autonomy of universities increased, and decision-making was transferred from the Ministry of Education to the HEI. This autonomy includes the right to allocate resources within the university, to appoint academic staff, to elect decision-making bodies and to conduct research without governmental intervention (Keskinen and Silius 2005: 9). However, universities are not free to establish new disciplines and there are no central incentives to move across barriers in terms of setting up new disciplines or new degrees. Degrees are only given in disciplines registered by the ministry. Also, due to scarce resources and increasing numbers of students, while at the same time the number of teaching staff is decreasing, academics have to bear a heavier burden, which makes it more difficult to find time and energy for innovation. (Keskinen and Silius 2005: 46).

The power of the Ministry of Education exercised through its budgetary and regulatory control has been relaxed with the introduction of “management by result” instruments that stress performance and efficiency (Keskinen and Silius 2005: 6). The evaluation of higher education is conducted by the Finnish Higher Education Evaluation Council, which is not structured along disciplinary lines. It evaluates the teaching in universities and polytechnics using different kinds of evaluators and peer panels. In Finland there is no system of accreditation and the government has stated that it will not implement this kind of structure even after Bologna.

#### **c. Research**

The body responsible for research is the Academy of Finland, which is a research council (Keskinen and Silius 2005: 8). It is divided into four larger sections, namely the Research Council for Culture and Society, the Research Council for Biosciences and Environment, the Research Council for Natural Sciences and Engineering, and the Research Council for Health. This division can be seen as an attempt to cross the disciplinary boundaries, similar to Swedish one (Holm and Liinason 2005: 16).

The Research Council for Culture and Society now covers the Humanities and Social Sciences (until 1995 they were under separate research councils); the fields of research listed by the Academy of Finland correspond more or less to the disciplinary structure of the universities. Evaluations of research proposals go through several phases, the first one being expert or peer review. Reviews are done through disciplinary and multidisciplinary panels, but they are mostly discipline-based (Keskinen and Silius

2005: 17). In 2004 a number of interdisciplinary panels have been set up as an experiment (Keskinen and Silius 2005: 18).

## 2.5. Germany

Higher education in Germany is strongly founded on the Humboldtian idea of academic freedom, and independence of the university from immediate economic interests. Major reforms started early in 1990s, with the reunification of Germany, which in practice meant also the major restructuring of East German universities. This large-scale transformation created a favourable situation for innovative approaches, which made East German universities more open to new disciplines as well. In the 1990s significant reductions of public funds occurred, together with marketization and the internationalisation of universities, which was favoured by the Bologna process (Krebs et al 2005: 5). It is also important to note here that the German educational system is strongly influenced by the federal organisation of the state.

Part of the Humboldtian legacy in Germany is related to funding. The state finances education, and thereby provides independence from economic interests for both teachers and researchers in terms of their academic work (Krebs et al 2005: 4). However, currently growing economisation foregrounds the questions of applicability and utility of education. It means that the disciplines which were traditionally linked to the so-called *Geisteswissenschaften* are now considered to be of lesser importance than those which are oriented towards satisfying labour-market needs. As a result, cost cutting measures have affected the disciplinary structure of the humanities and the social sciences.

### a. Codification

At present, the accreditation system replaces the former framework regulations of state examinations in Germany. There is a central body, the Accreditation Council (*Akkreditierungsrat*), which is an independent institution and sets the standards of accreditation on a national level (Krebs et al 2005: 7). Disciplines, however, are not codified.

### b. Education

There is tradition of strong governmental involvement in higher education. The regular costs are covered by the state. Due to the federal structure of the state, the Ministries of Education of federal states control and finance universities. The central body is the Federal Ministry of Education and Research. The federal states can promote different educational policies, as defined in their own respective Acts of Higher Education; but the basic level of coordination between them is secured by the Framework Act of Higher Education (HRG), which defines the necessary level of homogeneity between all the federal states' laws and regulations (Krebs et al 2005: 4).

There are also separate bodies mediating between the state and HEIs, such as the Standing Conference of the Ministers of Culture (*Ständige Konferenz der Kultusminister der Länder in der Bundesrepublik Deutschland*), the German Rectors' Conference (*Hochschulrektorenkonferenz*) and the Science Council (*Wissenschaftsrat*) (Krebs et al 2005: 5).

Germany is currently implementing the Bologna process, which affects traditional disciplinary and degree structures. It also means the transferring of the regulation of courses and examinations from the ministries to the accreditation agencies. The former national framework regulations for examinations are replaced by a system of accreditation, which is supposed to provide transparent quality standards for the

Bachelor and Masters courses that are being introduced. Ideally, it is also supposed to encourage universities to create more innovative courses (Krebs et al 2005: 7).

The Accreditation Council (*Akkreditierungsrat*) was set up by the KMK in 1998 with the objective of establishing and accrediting smaller accreditation agencies and co-ordinating the standards of evaluation. Its members were appointed by the German Rectors' Conference and the KMK. Assessment is done by peer review; reviewing panels consist of experts nominated by the accreditation agency, who are representatives from various disciplinary fields (Krebs et al 2005: 7).

Education is state funded. The concept of "global budgeting" (*Globalhaushalt*) has been introduced, which means that annual funds are provided by the state for the university to allocate, distribute and administer. This also means that more hierarchical management structures have been implemented within the HEIs (Krebs et al 2005: 9). The growing economisation of higher education is linked also to quality management, which is visible in the so-called target agreements (*Zielvereinbarungen*), which concern "strategic development and efficiency goals" (Krebs et al 2005: 11). They are made between the governments of the federal states and the universities of that state, and sometimes between the faculties and the university steering committees.

### **c. Research**

Most of research activities in Germany occur at universities. The national research foundation is the German Research Association (*Deutsche Forschungsgemeinschaft: DFG*), and the strongest private one is the Volkswagen Foundation. Research is mainly state-funded and the money is given both to the universities and to the public research institutions. For research in the fields of social sciences and humanities, the DFG is the most important source of funding. These two fields are in one panel, although there are disciplinary sections for application (Krebs et al 2005: 17-18). In 1996 the DFG established four Centres for Human Sciences in the new federal states, with an aim to promote interdisciplinarity and project-oriented research in the humanities, particularly in Cultural Studies.

## **2.6. Hungary**

Hungarian higher education from the 1920s was dominated by the German model, and after the Second World War university education was under Soviet influence. As a result, the German model of science policy, according to which research had been located at the universities, was abandoned in favour of a more strict division between institutions of higher education and research institutes of the Hungarian Academy of Sciences (*Magyar Tudományos Akadémia*) (Némedi 2002: 438). Since the 1990s, as a result of governmental policy, some research activities have been relocated to the universities. The needs of the labour market, international higher education trends and the problems of resource allocation made it necessary to transform the whole educational system. This can be seen in the creation of larger institutions by integrating smaller ones, and the adoption of the objectives of the Bologna process (Jakab et al 2005: 3-4).

### **a. Codification**

The Ministry of Education defines the existing disciplines in the Higher Education Act (Law 169/2000) according to the OECD Frascati Manual 1993 (Jakab et al 2005: 26).

## **b. Education**

The governmental body is the Ministry of Education. From 1988, the autonomy of universities increased. The state does not regulate the internal organisation of universities, professional qualifications and the content of teaching. The right to appoint rectors and college directors, to appoint professors and to establish educational institutional units is within state authority. The state decides on the allocation of funds to the various fields, and it funds research in the higher education institutions (Jakab et al 2005: 54). Universities can decide on the course content, and students are allowed to attend courses of their own choice besides the obligatory ones.

As the implementation of the Bachelor degree level starts in September 2005, the Hungarian Accreditation Committee (HAC) was established on behalf of the Ministry of Education. Other bodies involved in the Bologna process are the National Bologna Committee, which includes the Higher Education and Research Committee (HERC), the College Directors' Conference and the Hungarian Rectors' Conference. The responsibility of the HERC is to assess whether the planned training is required for the labour market. The accrediting and quality assurance providing body is the Hungarian Accreditation Committee. Besides accrediting degree programs, the HAC regulates doctoral schools, and makes decisions on the disciplines in which an institution may offer post-graduate and doctoral training. The HAC evaluates universities and colleges every eight years. Its decision-making panels are organised on a disciplinary basis. Interdisciplinary programs are accredited by interdisciplinary committees (Jakab et al 2005: 7).

Education is financed by the state. Funding of education is based on the number of students, but universities do not have to market their courses. In fact, there are usually more applicants than state-funded places at HEIs.

## **c. Research**

In research the most important academic body is the Hungarian Academy of Sciences (HAS), a non-governmental but state-funded organisation. It maintains disciplinary research institutes, co-operates with university research centres, and supports research groups affiliated to various university chairs (Jakab et al 2005: 8).

Research is also carried out by the universities and it is funded from the state budget. The allocation of research funds between the departments from the state budget is the task of the universities themselves. The proportion of funds each department receives increases if the department employs doctors or members of the HAS to conduct research. The departments of newly established disciplines without many members or doctors of the HAS will therefore be disadvantaged to a certain degree.

There is also a possibility to apply for funding for specific projects. The main funding bodies in the Humanities and Social Sciences are the Hungarian Scientific Research Fund (OTKA), and the National Priorities Social Science Research Fund (OKTK) (Jakab et al 2005: 23-4).

## **2.7. Spain**

The educational system is traditionally very centralised, uniform and state dependent, although Spanish universities have experienced deep changes since the 1970s. Such strong ties between the state and the university make the latter dependent upon actual political regimes. Following a period of strong centralisation of the Franco regime, and a time when university lecturers were persecuted for their political views, the Constitution of 1978 granted universities a degree of independence from the government and recognised their freedom to teach and do research. In 1983, under the

first socialist government, a major reform of HE structures took place through the University Reform Law (*Ley de Reforma Universitaria* - LRU). In 2001 a new Organic University Law was approved (*Ley Organica de Universidades* - LOU), but in certain parts it is seen as a step back towards more rigid centralisation (nation-wide staff selection system). Since it proved to be inefficient and expensive, a new reform is expected with the new government. It is also important to note that the members of the academic community tend to resist innovations, which they see as a threat to their stable position within the university. This situation contributes to the present state in which the authority of the Ministry of Education is seriously challenged. Academics are civil servants. At the beginning of their career they have to be registered in a discipline, and later cannot move between different areas of study (Carrera Suárez et al 2005: 3).

#### **a. Codification**

Disciplines are strongly codified in Spain. They are defined by the University Coordination Council (*Consejo de Coordinación Universitaria* - CCU), a governmental body established in 1980, which works in close cooperation with the Ministry of Education. The CCU defines “*áreas de conocimiento*”, that is, recognised fields of knowledge, which are characterised by the homogeneity of their object of knowledge, a common historical tradition, and existence of communities of academics. The present list was created in the 1980s and is still valid. Later changes respond mostly to subdivisions and some regroupings. Today, there are 178 *áreas de conocimiento* recognised by the CCU, which are the organisers of academic life. All staff must be ascribed to one of these areas, recruitment is made within their limits, evaluation of research, and practically all crucial education and career matters are circumscribed by them, although broader disciplinary categories are used for some purposes. The Government establishes, and, when appropriate, revises, the catalogue of knowledge areas, being previously informed by the CCU (Carrera Suárez et al 2005: 26).

#### **b. Education**

The Ministry of Education is the main actor on the national level. A so-called Organic University Law (*Ley Organica de Universidades* - LOU) from 1983 set the structure of today's universities in terms of research, disciplines, and decision-making processes. The emphasis was on research, and an attempt was made to give more freedom to the universities in appointing their own staff. It was a decisive step in organising universities into research units (Departments). Also, curricula became more diversified with the adoption of the credit system in 1987 (Carrera Suárez et al 2005: 3). At the same time, a high level of universities' dependence on ministerial decisions was preserved in many respects. The state has a decisive role when it comes to the establishment of degrees, the approval of individual and national curricula, and the approval of recognised disciplines. The state is also strongly involved in permanent academic appointments, through a national competitive exam system, supervised by the Ministry of Education. On the other hand, the Organic University Law from 2001 opened an alternative possibility for universities to select non-civil servant staff with separate contracts, which is at present a point of debate in Spain (Carrera Suárez et al 2005: 4). The Ministry of Education is also involved in the promotion of academics through research and professorships, the setting of national research policies, and funding for both education and research. Decision-making power has been increased in regional universities, but state authority is still strong. Besides the Ministry of Education, there are several other influential bodies. The University Co-ordination Council (CCU) informs decisions on academic degrees, the criteria for the creation of

university departments, the approval of new universities and new disciplines (*áreas de conocimiento*), and the establishment of compulsory criteria for national curricula. The Council is divided according to fields of science (Carrera Suárez et al 2005: 4).

The General Secretariat for Education is in charge of co-ordinating and managing elementary and secondary education (national curricula, certificates, student grants, awards etc). The Secretariat of State for Universities and Research manages decisions on university matters at national level. It has two subdivisions, one of them is the General Directorate of Universities (*Dirección General de Universidades - DGU*), which is the higher education section, and is in charge of policies for innovation in higher education, and of quality assessment. It also approves degrees, regulates doctoral studies and postdoctoral research, and assesses teaching quality (Carrera Suárez et al 2005: 4). The other subdivision is the Secretariat for Scientific and Technological Policy (*Secretaría de Política Científica y Tecnológica*), which regulates research (Carrera Suárez et al 2005: 5).

The Spanish Agency for Quality Assurance and Accreditation (*Agencia Nacional de Evaluación de Calidad y Acreditación, ANECA*) evaluates the quality of degrees, universities, and the merits of non-permanent lecturers for the accreditation now required for contracts (Carrera Suárez et al 2005: 6).

### **c. Research**

The key to public funding of research in Spain are the periodic framework plans known as *Plan Nacional de I+D+i* (National R&D&I Plan) for three-year periods, co-ordinated by the Ministry of Education. These plans are complemented by similar programmes from regional governments. The national research plans are structured into “National Programmes” and “Strategic Actions” which establish the thematic priorities, outside of which it is virtually impossible to obtain funding. Both tend to take into account European Union directives and Framework Programmes. The Ministry of Education funds research activities at national level. The Secretariat for Scientific and Technological Policy is in charge of the promotion of research, controls research funding and co-ordinates the National Plans for Research and Technological Innovation. The National Plan for R&D is discipline-based but it allows specific actions to be added with the approval of CICYT, if they are related to the general objectives and are financed (Carrera Suárez et al 2005: 20).

The *Consejo Superior de Investigaciones Científicas* (CSIC, Higher Council for Scientific Research), is a public research body devoted exclusively to research in priority areas and projects (Carrera Suárez et al 2005: 19). Evaluations are carried out by the National Agency for Evaluation and Prospective (*Agencia Nacional de Evaluación y Prospectiva ANEP*) – which evaluates R&D&I projects and research teams; the evaluation procedures are strictly regulated (*Orden ECI/4073* of November 30<sup>th</sup> 2004) and on the first level it is strongly discipline-oriented since the experts are chosen from recognized *áreas de conocimiento*. The National Committee for the Evaluation of Research Activities (*Comisión Nacional Evaluadora de la Actividad Investigadora, CNEAI*) evaluates individual lecturers’ research for the crucial recognition of research activities on a six-year cycle basis (Carrera Suárez et al 2005: 24).

## **2.8. France**

French higher education underwent considerable changes from 1968. However, it is still strongly centralised. The tradition of establishing scientific societies proved to be of decisive importance in terms of disciplinary divisions. By the 18<sup>th</sup> century the

French *Académie des Sciences* had managed to assume such a decisive role in the French governmental bureaucracy that it could develop increasing control over science and was able to determine who was considered a scientist (Shumway 1991: 204-5). This power of disciplinary professional associations is still a determining factor of French academia. Higher education is characterised by the existence of discipline-based “faculties” in five disciplinary fields in the “academies” and by nationally effective rules and regulation in terms of academic careers managed by nationally centralised institutions (Le Feuvre and Metso 2005: 5-6).

#### **a. Codification**

The disciplines are defined by the National Council of Universities (*Conseil national des universités – CNU*), the institutional body of the Ministry of Education. The CNU consists of eleven subject areas and disciplinary sub-groups. The humanities and the social sciences include four sub-groups: 1) law and political science; 2) economics and management; 3) literature and foreign languages; 4) social sciences (including philosophy and art). Within these sub-groups, an autonomous CNU section represents each discipline (Le Feuvre and Metso 2005: 18). The disciplinary nature of the CNU sections function as a barrier to interdisciplinarity and other kinds of innovation.

#### **b. Education**

The French higher education system is organised along strongly codified disciplinary lines. The disciplines determine degree courses, staff recruitment, evaluation and promotion procedures. The university system is co-ordinated by the Minister of Education and a national council of public instruction which includes representatives of all disciplines (Le Feuvre and Metso 2005: 6). Undergraduate and postgraduate degrees are awarded on the basis of national guidelines, and new degree programs have to be approved and accredited by the Ministry. It is only recently that self-governance and autonomy have been given to universities (Le Feuvre and Metso 2005: 5).

The numerous national evaluation bodies either fall under the responsibility of the Ministry of Education or the Ministry of Research. Some of these bodies evaluate HE institutions as a whole and do not focus on particular disciplines, whereas others, like the National Council of Universities, are organised along disciplinary lines (Le Feuvre and Metso 2005: 19).

The evaluation bodies under the direct responsibility of the Ministry of Education are the National Committee of Evaluation (*CNE Comité national d'évaluation*) and the National Council of Higher Education and Research (*Conseil supérieur de l'enseignement supérieur et de la recherche – CNESER*). The CNE evaluates all universities and other HE institutions on the basis of their four-year contracts. The CNESER is the consulting body on higher education and research policy and it is responsible for maintaining the “national cohesion” of higher education. The CNESER is also active in the allocation of the resources between different institutions (Le Feuvre and Metso 2005: 19).

The *Conférence des Présidents d'université – CPU* (Conference of University Vice-Chancellors), the *Conseil national des universités – CNU* (National Council of Universities) and the *Mission scientifique des universités – MSU* (University Scientific Mission) are involved in policy negotiations for the HE and research sectors (Le Feuvre and Metso 2005: 19).

The government funds HEIs. Funding is based on the number of students enrolled. In order to increase the autonomy of universities the government in the last twenty years introduced a policy called “contractualisation”. According to this, each university can negotiate a budget with the Ministry for a four-year plan of teaching and research (Le Feuvre and Metso 2005: 17).

### **c. Research**

Research occurs both at national research institutes and in higher education institutions, and this activity is strongly linked to teaching on behalf of the academics.

The Ministries of Research and Education are the main funding bodies for public research. Public sector research institutions are composed of several autonomous institutions; the CNRS (*Centre National de la Recherche Scientifique*) is by far the largest. It covers approximately the same disciplinary fields as university-based research. Its Department of Social Sciences and Humanities (*Département des Sciences de l'Homme et de la Société*) covers 453 research units. The CNRS sections focus less on a single discipline, but they are still tightly connected to disciplinary structures (Le Feuvre and Metso 2005: 25).

The National Committee of Scientific Research (*Comité National de la Recherche Scientifique – CN*) delimits the disciplinary and interdisciplinary fields for the research sector. It is integrated into the CNRS and plays a role in its recruitment procedure as it evaluates the candidates applying for tenured positions. It also evaluates the proposals for the creation of new research units and the activities of existing ones (Le Feuvre and Metso 2005: 25).

The National Committee for Research Evaluation (CNER) and the Higher Council for Research and Technology (CRST) are the main research evaluation boards. They have to approve the annual research and development budget and the creation of any new research institutes (Le Feuvre and Metso 2005: 26).

## **3. Models of Disciplinization**

This section will present the various models of disciplinization in eight European countries. The term is used to describe the process through which certain subject areas become institutionalised. Among the criteria for successful disciplinization are: the capacity of institutions to offer courses in the subject area, to award undergraduate and postgraduate degrees, to be eligible for research funding, and to have staff appointed to teach and research the field (Griffin et al 2005: 32). Education and research are dealt with separately since these are occasionally located at separate institutions, and even in cases where both research and education are located at universities, decision-making and funding bodies might differ and work along different criteria from higher education institutions. Besides, although educational reforms and restructurings have occurred in all European countries, these reforms may or may not have affected research activities directly. National science policies may follow different trends in terms of disciplinarity, particularly in fields where national, economical or political interests are involved.

The first section will establish the state of disciplinarity in terms of flexibility versus rigidity of boundaries in education and research at various levels in each country. The second part is focused on the actors involved in the processes of disciplinization in each country in order to indicate the extent of their influence on the possibilities for establishing new disciplines, and to see how the current educational reforms affect the transfer of authority to new actors within these processes. The third part describes the

process of disciplinization focusing on the problems and barriers hindering the creation of new disciplines in each national context.

### **3.1. Indicators of the level of disciplinization in education**

Indicators of the level of institutionalisation of a discipline in education are the following:

- Courses may be offered for students but no degree can be awarded in the discipline
- Degrees can be awarded at either Bachelor, Masters or PhD level
- Departments or other large units are established at universities where teaching and research is conducted
- Professorships are awarded in the discipline – academics can (where they have to) register as belonging to the discipline

Since all the European countries analysed here are adopting the three-cycle degree structure laid down in the Bologna Agreement, under- and postgraduate degrees here include Bachelor, Masters or PhD levels. Degree programs may or may not be directly related to the establishment of a disciplinary department. However, the existence of a department is a strong indicator of institutionalisation, since it suggests permanent staff, degrees in the given discipline, regular funding and the location for networking with other departments or institutions.

### **3.2. Indicators of the level of a discipline's recognition in research**

- A centre with or without permanent staff and/or funding are established at the universities where research and teaching is conducted in the discipline.
- Research institutes or larger institutional formations are established in the discipline.
- A disciplinary panel to evaluate and/or a relevant section for the discipline exist where applications for funding can be submitted to the funding bodies.
- Publication opportunities exist in the discipline where research findings can be published.

The institutionalisation of a discipline in terms of research can happen on different levels. Research centres can be established at the universities, either within existing departments, with staff who may or may not teach as well, or in the form of a separate research unit. But research centres can also be established outside the university, if the funding can be secured. Research centres are often created as an initial form of establishment of a discipline. Therefore the staff doing research there may originally come from various disciplines. A larger institutional form where research can take place in a discipline is the research institute. Having a research institute in a given discipline is a strong sign of recognition since it may indicate regular funding, permanent staff, and publication opportunities.

Access to funding on equal terms with the already recognised disciplines is of crucial importance for the establishment of a new discipline. Thus, the system of funding, and the evaluation processes in research are presented here with an aim to show the importance of the way funding bodies are structured for the disciplinization of new areas of study. Thus recognition of a new area of studies in research (in the form of funding given to projects) often depends on the institutional possibility to include in the processes of evaluation experts or panels which are not disciplinarily bound. A higher

level of recognition of a discipline in research are the existence of a separate section within the funding bodies where applications can be sent.

## **4. Disciplinary divisions in education and in research**

In this section, the current disciplinary divisions and rigidity of the barriers between them which may hinder disciplinization in research and education will be discussed. Due to the Bologna Process, disciplinary divisions may be undergoing changes in some of the represented countries. As this project has shown, disciplinary divisions are not only content-dependent, that is, they are not founded only on intrinsic arguments. The role of the state in educational and research matters and in funding also influences the way disciplines are structured within respective national traditions. The rigidity of disciplinary barriers is also influenced by the general attitude towards innovations in separate national contexts. At present, innovation in education is mainly related to the requirements to meet the European directives aiming for efficiency and competitiveness, or as a necessary tool which provides much-needed adaptability to the continuously changing demands of the labour market and of the students.

### **4.1. Education**

#### **4.1.1. Courses and curricula development**

The first and most easily accessible level of introduction for a new subject area is that of separate modules or courses at undergraduate or graduate levels of study. In most countries, the reforms of the early 1990s resulted in an increase of autonomy for HEI in developing the content of courses and curricula, without closer supervision from the relevant ministries. But in actual practice, the level of autonomy can differ significantly among the European countries. In this report we focus particularly on two kinds of factors influencing disciplinization. The first is related to different forms of central control over curricula and courses, as laid down within different national traditions. The second is related to differences in governmental interpretations of the current trends concerning interdisciplinarity.

##### 4.1.1.1 HE reforms, university autonomy and disciplinarity

The affirmation of the marketization of higher education has been related to a tendency to transfer decision-making power from centralized state bodies to the HEIs, but with an increasing responsibility for the latter to compete for scarcer resources. Norway and the UK have both introduced a market-oriented concept of higher education. It is based on the assumption that universities themselves are responsible for recruiting as many students as possible to their programs. In both countries, any type of course can be offered as long as there is demand, since funds are allocated on the basis of student numbers. On the other hand, if a course does not attract enough students it will be stopped. This approach provides much freedom for innovation on this initial level, but the long-term running of new programs and therefore the stabilisation of new subject areas is not guaranteed. In both countries, universities have a high level of autonomy in terms of internal decision-making, and governmental approval is not needed for offering degrees. The U.K. has also promoted modularisation, which is the division of degree courses into sub-units of varying length, with credit-ratings. Modularization was seen as a part of an effort to cross disciplinary barriers but it was not very successful (Griffin et al 2005: 63).

In Finland and Hungary and Sweden, course content is not regulated, and universities can plan their curricula. In Sweden the only restriction concerns the demand that programs have to remain within the four sectors (see above) and meet the degree and quality requirements. The decision-making power is with the faculty boards at all levels of education. In Finland and Hungary, programs tend to be disciplinary with a few exceptions, therefore course content, although not regulated, is expected to remain within disciplinary borders.

In countries with a strong central control and sharp disciplinary divisions, the reforms of the 1990s have not brought major changes. In Germany, France and Spain course content and curricula are regulated and/or codified by the ministries, government funded agencies or professional associations. The disciplinary regulation of course content can be linked to examinations, professional qualifications and/or to degrees. In all these countries the implementation of the Bologna process has resulted in a certain level of loosening of ministerial regulation and control.

In Germany examination regulations (*Prüfungsordnungen*) are regulated by the state, while the content of courses leading to Magister and Diploma degrees are determined by the universities, and state only needs to give its approval. Thus the Ministry thus has an important role in regulating the content of education. However, the Bologna process has affected course structures. With the setting up of the Bachelor and Masters courses the ministries have ceded their responsibility for the authorisation of courses (although this varies in different federal states). This role has been taken over by accreditation agencies (Krebs et al 2005: 6).

In Spain, state intervention in curricula is still very strong. Basic common contents are fixed for each degree. At present 40% of course content is fixed and 60% is to be predetermined in post-Bologna degrees (Carrera Suárez et al 2005: 9).

Traditionally, course content in France was regulated by the Ministry of Education through strict national guidelines for both undergraduate and postgraduate degree programs. The intention behind the regulation was to achieve “national cohesion”, and to offer degrees of the same standing across the whole of the country (Le Feuvre and Metso 2005: 58). However, as a part of the Bologna process, the previous disciplinary requirements of accreditation have been cancelled and course content is no longer regulated quite so strictly on the national level.

#### 4.1.1.2. Governmental interpretations of the current trends concerning interdisciplinarity

The most obvious promotion of interdisciplinarity at the governmental level occurs in Norway. Interdisciplinarity is both encouraged and, at least partly, put into practice by the ministries. Faculties and departments now tend to offer cross-disciplinary degree programs, although the majority of the programs are still within the traditional disciplines. Courses are organised around topics and the topics are not regulated, they only have to meet accreditation requirements (Widerberg et al 2005:15).

In Sweden interdisciplinarity is promoted through the division of knowledge into four major academic sectors which are recognised by the government, and both institutional and research funding follow this division. The government is supportive of interdisciplinarity, but practice does not always follow policy statements.

In the UK, interdisciplinarity is most visibly present in adult education, where staff are recruited from a variety of disciplines (Griffin et al 2005: 54). In order to promote co-operation between disciplines, modularization was introduced at the end of the 1980s. It meant that the content of degree courses was divided into sub-units and received credit ratings (different from ECTS). Among other things, the intention was to

encourage students to study in various departments and disciplines. However, modules tend to remain mostly within the disciplines because students tend to select their modules in that way. Also, because of funding, departments encourage students to stay within their frames.

In Finland, in Germany and in Hungary some interdisciplinary study programs have been set up over the last years in the social sciences and humanities, for example Women's Studies, Political Science, Cultural Anthropology, Communication and Media Studies, as well as the *Sonderforschungsbereiche* in Germany (Keskinen and Silius 2005: 46; Jakab et al 2005: 12; Krebs et al 2005: 18).

Countries with strong governmental control over all aspects of education course content and curricula seem to be the least open for interdisciplinarity – in spite of certain initiatives – as is the case in Spain and France.

#### **4.1.2. Degrees**

Obtaining the power to award degrees in a subject area is a crucial step in the process of disciplinization. It implies the existence of relatively stable institutional structures which can secure continuous high level quality education. The freedom to award a degree in a new discipline depends on a number of factors:

- The level of university autonomy
- The role of assessment or accrediting agencies in disciplinization processes
- The extent to which degrees are codified by the ministries in each respective country

##### 4.1.2.1. University regulated degrees

In the U.K. degrees are not codified or controlled by the government, nor by any other disciplinary body; it is the number of applicants that preconditions the establishment and the continued existence of a degree program. Sweden is slightly different since degrees need to receive governmental recognition, however, there is no disciplinary restriction either. While there is no governmental control and regulation of degrees, evaluating or accrediting agencies have been installed to guarantee high standards and transparency in education.

In Norway inter- or multidisciplinary is encouraged in terms of degree programs. Any new degree can be offered irrespective of traditional disciplines. University prospectuses no longer present their programs according to disciplinary, faculty and departmental divisions, but use the category of “topics”, which indicates that the courses on offer are organised around a central theme, often comprise interdisciplinary programmes. The Norwegian accreditation agency (NOKUT) does not accredit degrees, only degree programs and institutions, and it is not concerned with the question of disciplines or interdisciplinarity.

In the UK, any degree can be introduced if students can be recruited. Degrees are traditionally of two kinds. A single honours degree consists of one discipline, while a joint honours degree comprises two disciplines, although often not to the same depth (the two subjects are often weighted differently e.g. major/minor subjects). Both Masters and PhD levels are free from disciplinary constraints and a potential site for realising interdisciplinarity and innovative work (Griffin et al 2005: 55). However, recognition of a degree is more difficult at national level. The Quality Assurance Agency conducts the Teaching Quality Assessment (TQA). If a new discipline is not listed in the funding council list of disciplines, it is not assessed and may not benefit from a good evaluation (used for marketing purposes). As the number of students is

directly related to funding, not being able to 'boast' about one's TQA/RAE ratings can lead to the closure of the program (Griffin et al 2005: 28-9).

In Sweden one of the objectives of the reform was to enable students to select various courses and combine them into degrees. Degrees are therefore not necessarily linked to traditional disciplines. The only barrier imposed by the government is that of the four academic sectors, but border crossing is possible at every level. PhD training is also carried out by the universities or colleges in one of the sectors. At this level the possibility for interdisciplinarity is increased. The National Agency for Higher Education (NAHE) assesses if an institution can be granted the right to award degrees. This seems to be in contradiction to the national policy of operating only in the four sectors. However, since the NAHE accredits academic degrees every six years, there is a chance for establishment of new programs (Holm and Liinason 2005: 5).

#### 2.2.2.2. Degrees regulated by disciplinary accreditation agencies

In Germany and Hungary the implementation of the Bologna process was concomitant with the installation of assessment agencies that approve degree programs and institutions. These assessment agencies are funded by the state (or federal state in Germany), but act independently. They do not claim direct control over disciplines, but act as quality assuring bodies and their decisions and recognition determines the existence of a discipline in the domain of education. In Germany government regulation of examinations and supervision of course content have been relaxed for the first time with the adoption of the Bologna process. In both countries accrediting agencies accredit degrees, although in Germany the ministries of the federal states can intervene (Krebs et al 2005: 8).

In Hungary the transfer of power from the government was made easier by the reform in 1993, which has given back a lot of decision-making power to universities. Previous college (3 years) and university (5 years) degrees are being transformed according to the Bologna requirements. Until now degrees could be awarded only in disciplines recognised by the Ministry of Education. However, the degree system is currently undergoing change and new degrees are accredited by the Accreditation Committee (HAC). In order to allow for further change the degrees will be revisited every 5 years. To date, only the Bachelor degree structure has been elaborated. Masters degrees will follow in the next phase of implementation. According to the policy of the HAC, Masters degree programs should not be restricted to the disciplinary structure of the Bachelor programs, although actual implementation of this remains to be seen. Existing PhD schools are disciplinary, as well as multi- or interdisciplinary. However, degrees are given according to the discipline of the department where the student is registered (Jakab et al 2005: 51).

In Germany undergraduate and postgraduate degree requirements are regulated by law. Previous undergraduate degrees such as the *Magister* degree, diploma (*Diplom*) and state examination (*Staatsexamen*) are being transformed into Bachelor and Masters degrees. The requirements for the degrees are laid down in the national Higher Educational Act (HRG) and in the Higher Educational Acts of the federal states. The requirements for the diploma degrees are determined by the respective departments, and for the *Magister* degrees in humanities and social sciences by exam requirements (*Prüfungsordnung*). The requirements for the PhD are set down in the so-called PhD requirements (*Promotionsordnung*). While all these degree regulations reinforce disciplinarity, at postgraduate level there is more freedom to cross barriers. As doctoral students work in close relationship with their supervisor, the discipline of the supervisor has a strong influence on the student. Students are allowed to choose their second

supervisor from a discipline other than the first one (Krebs et al 2005: 35-6). Apart from the mostly disciplinary doctoral training there are interdisciplinary doctoral courses called Graduate Courses (*Graduiertenkollegs*) (Krebs et al 2005: 18). The adoption of the Bachelor and Masters degrees and the establishment of accrediting agencies have resulted in the transfer of regulations from the ministries to these agencies. The agencies are responsible for ensuring transparent quality standards for the new Bachelor and Masters degree programs. Contrary to the previous rigidity the new system of accreditation is also intended to facilitate innovation (Krebs et al 2005: 7).

### 2.2.2.3. Centralised regulation of degrees

In Finland, France and Spain, degrees are regulated by the respective Ministries of Education and there are no accrediting agencies operating independently from the ministries. However, the Finnish case is somewhat different since there, contrary to the other two countries, there is no long tradition of well-established disciplinary structures. In France and Spain, on the other hand, the existence of such long traditions and the high level of dependence of HEIs on the state administration frame the regulation of degrees. In Finland, it is the role of the Ministry of Education to determine which universities can award degrees in which disciplines. On the other hand, course content and curricula are not regulated (Keskinen and Silius 2005: 9). Higher education is divided into basic, intermediate and advanced studies, and while Bachelor degrees have been introduced since the 1990s, they have not become very popular. Degrees are awarded mostly in the traditional disciplines, but due to lack of resisting disciplinary structures, there exist also interdisciplinary Women's Studies, Area Studies, and Development Studies. However, in some of the new programs that admit students from various universities, degrees are still awarded in the students' main subjects (Keskinen and Silius 2005: 21).

In France, prior to implementation of the Bologna Agreement, the first general university studies degree (*diplôme d'études universitaire générales*) is given after the first two years of study. The next cycle (Bac+3) provides a *licence* and the Bac+4 provides the *maîtrise*. Bac + 5 leads either to a highly professional and specialised diploma or to preparation for the doctorate, which is completed within four or five years.. However, each university has the right to establish its own university degrees (*diplômes d'université*) which are not recognised nationally, hence they receive no funding from the government and have to be financed by the institution's own resources. The *Grand Écoles*, which are highly selective and prestigious professional institutions, also award their own degrees (Halimi 1997: 242).

Degree courses are organised along disciplinary lines. Before a degree can be awarded in a discipline it has to be recognised by the Ministry of Education. The centralised decision-making body of the Ministry is The National Council of Universities (CNU), which recognises only those disciplines for which it has a separate section, and the members of CNU are elected on a disciplinary basis. Therefore the establishment of new degrees at national level is a complex process which involves long negotiations with ministerial bodies (Le Feuvre and Metso 2005: 17). The Ministry of Education accredits undergraduate and postgraduate degree programs. Accreditation is given for four years, when the degree course is re-evaluated.

The adoption of the Bologna process will cause considerable changes in French higher education. A new degree structure based on four degrees will be introduced, and the accreditation of HE institutions and new degree programs will be carried out by external assessment agencies on a regular basis. It means also the relaxation of the strict national regulation of course content in each discipline. The official text will be

considered only as guidelines rather than predefined norms (Le Feuvre and Metso 2005: 53-4). Marketization of HE is also going to be influential here. If universities want to offer new inter-, multi-, or trans-disciplinary programs they have to prove that there is demand for them before they can be accredited (Le Feuvre and Metso 2005: 59).

In Spain, disciplinization is directly related to the awarding of degrees, which is regulated by the Ministry of Education. The Organic University Law (LOU), passed in 2001, transferred a number of responsibilities to regional governments, among them the establishment of degrees (*áreas de conocimiento*). Even if there are new optional subjects in existing studies, no degrees can be given without the approval of the ministries. There are differences in terms of disciplinarity between various levels of education. At undergraduate level (the first and the second cycle) only degrees approved by the Ministry of Education are recognised nationally. Official degrees are currently divided into the First Cycle (2/3 years) and the Second Cycle (2 years). The First Cycle (3 years) leads to a Diploma (*Diplomatura*), and the Second Cycle, which implies further specialisation, leads to a Degree (*Licenciatura*). Other types of postgraduate studies (like Master degrees, for example) are not regulated at the national level in terms of their content, but they are more dependent on student numbers or external funds, as they need to be self-financing. They tend to be professionally oriented, and do not occur very often in the humanities or in the social sciences (Carrera Suárez et al 2005: 8).

Within the third cycle, only doctoral programmes are official and they are nationally regulated; other postgraduate courses, the “*títulos propios*”, are specific to each university. The structure of PhD programs is more open as regards content than the programs at undergraduate level. They are generally more innovative and flexible, as well as more interdisciplinary. Many PhD programmes, however, are closely linked to traditional disciplines, since the PhD thesis must be registered and submitted in a department which is often based on a discipline (Carrera Suárez et al 2005: 33). The Ministry of Education has recently tried to encourage some multidisciplinary by introducing the category of “interdepartmental PhD programmes”.

It is unlikely that the Bologna process will bring considerable change in terms of the rigidity of the degree structure in Spain. A reform of the catalogue of the official degrees is being carried out by the government, with the help of the *Consejo de Coordinación Univeritaria* (CCU). Centralised control is also visible in the fact that the government has decided to reduce the number of degrees at undergraduate level from the existing 150 to only 60. Disciplinary change can only happen now under the pressure to merge two degrees to comply with this regulation (Carrera Suárez et al 2005: 40-1).

#### **4.1.3. Departments and faculties**

The establishment of a department is probably one of the most significant signs of recognition of a discipline within a higher education institution, since this presupposes the existence of permanent staff, regular funding and a regular inflow of students.

Institutional units within HEIs are different in every country, depending on their respective traditions. Departments are usually discipline based, while other, smaller units deal with the various sub-disciplines. Orientation towards interdisciplinarity challenges such organisation. Institutional changes take longer to be implemented, hence most departments still exist in the traditional disciplines even if inter- or multidisciplinary activities occur at the level of courses and degree programs.

Institutional units can also function as barriers for co-operation and disciplinization, particularly in cases where they form separate administrative units. On

the other hand, wherever the creation of small units is possible without commitment to any recognised discipline, it can function as a place for innovative teaching and research activities.

In Finland, Norway, Sweden and the UK, universities are allowed to decide their organisational structure. Departments are mostly based on a single discipline, but there are also multidisciplinary ones. In Norway, in spite of the disciplinary departmental structure, cross-departmental work is now encouraged at every level.

In Hungary departments are discipline based, and related to degrees. Therefore, the foundation of a new department is related to the establishment of a new degree program. If the degree program is inter- or multidisciplinary in itself, the department will be the same. In Hungary, institutes belong to the larger HEIs, and they consist of departments which deal with more specialised elements of a given discipline. Faculties are also administrative units in Hungarian HE, which embrace fields of science. While co-operation between departments within the same faculty is possible, it is more difficult to collaborate across faculty borders (Jakab et al 2005: 13).

In countries still characterised by strong disciplinary traditions and centralised regulation over matters of higher education, such as France, Germany and Spain, the initiation of change in disciplinary divisions between institutional units is as difficult as the establishment of new degree programs. In Germany, as a result of traditionally strong centralised control over all aspects of education, the disciplinary structure of the institutional background is relatively firm. Traditionally, there were faculties that corresponded with fields of science. In the 1980s departments were set up as organisational units, being sometimes focused on one discipline only. The 1990s brought another reorganisation of faculties, for financial reasons and to increase effectiveness (Krebs et al 2005: 12). Despite the mainly discipline based organisation of HE, a form of interdisciplinary collaboration between several faculties called Graduate Courses (*Graduiertenkollegs*) has been promoted recently. It is initiated and funded by the DFG to support younger scientists and to create interdisciplinary research environments.

In Spain the organisation of faculties and schools is directly related to the degrees granted. There is national regulation that universities must be organised into Faculties (*Facultades*), University Schools (*Escuelas Universitarias*), Technical Schools (*Escuelas Técnicas*), Polytechnical Schools (*Escuelas Politécnicas*) and Polytechnical University Schools (*Escuelas Universitarias Politécnicas*), as well as into Departments (*Departamentos*), University Institutes of Research (*Institutos Universitario de Investigación*), and centres for distance learning. Faculties and Schools (referred to collectively as “centres”) are in charge of the co-ordination of teaching and of the academic and administrative management of education. They also organise the curricula of the first degrees, within the national directives. Departments are organised according to *áreas de conocimiento* and are, initially, knowledge or research-oriented units, responsible for organising and supporting research and doctorate programmes (Carrera Suárez et al 2005: 8).

In France, HEIs were traditionally organised in discipline-based faculties which were under strict state control. The institutional division in the universities reflects the traditionally sharp division between the disciplinary sections of the CNU (Le Feuvre and Metso 2005: 6).

#### **4.1.4. Professional career track**

One of the key elements in the establishment of a new discipline is whether there are sufficient numbers of academics to carry out teaching and research activities.

Impediments in the mobility of teaching staff across disciplines can prevent initiatives to create and institutionalise new subject areas. A professional career in terms of mobility may depend on the following factors:

- A discipline-based research record
- The extent of ministerial involvement in recruitment
- The prestige of belonging to a disciplinary scientific association
- Habilitation and tenure
- Registration in a discipline

#### 4.1.4.1 The decentralised model of HE

In Norway and the UK, academics are not required to register within a given discipline and do not have to pursue a single discipline throughout their career. Professorships do not need to be approved by the state. Applicants for an academic position must hold a Masters or a PhD [(although in the UK older senior academics often do not hold PhD degrees since it was not compulsory in the past). In Norway there are also separate applications for research positions, while in the U.K. research is an important part of the academic career. Universities are responsible for recruitment and appointments. Since academics do not need to register themselves in any discipline, and the state does not intervene in appointments or recruitment, transferring to a new subject area is not difficult (Widerberg et al 2005: 41-2; Griffin et al 2005: 47).

On the other hand, in spite of the fact that in the U.K disciplinary background does not restrict the career track of academics, there are certain barriers which constrain flexibility. In the first place, career progression is strongly tied to research record. While changing disciplines in teaching can be common, it is difficult to be successful in research outside disciplinary boundaries, since the funding bodies, as well as most of the prestigious journals are often discipline-based.

#### 4.1.4.2. Ministerial criteria for positions

In Finland and Sweden, it is the universities who appoint professors and who are responsible for their recruitment, but the government establishes the criteria for each position (Holm and Liinason 2005: 33, Keskinen and Silius 2005: 33). Professionals have to hold Masters or PhD degrees in the given discipline. With the required qualifications in a certain discipline, academics can also teach another subject as long as the staff at the other department thinks one is good enough and can teach relevant issues regarding the subject. This can be rather common in new, interdisciplinary subjects.

#### 4.1.4.3. The disciplinary career track: habilitation and tenure reconsidered

In Germany and Hungary there is a tradition of *habilitation*. It is a form of qualification that normally takes place after the PhD. Young scholars write their habilitation thesis (*opus magnum*) or produce several outstanding scientific publications during their employment as assistants. The Habilitation is a requirement for full professorship in a discipline (Krebs et al 2005: 36). Professors have very strong positions being employed as civil servants. This can imply additional rights and benefits, such as job security, medical insurance and pensions. As a result of the current reforms this status is in danger, since there is a new idea of introducing performance-related pay (Krebs et al 2005: 5).

In Hungary universities have now been given the right to recruit and appoint their staff, and the institution of habilitation as a prerequisite to positions is being

debated. In Germany universities traditionally appoint professors through a disciplinary appointment committee, but the ministries can intervene (Krebs et al 2005: 37-8). The habilitation also exists in Spain and in France, but there it is more inextricably linked to ministerial power.

#### 4.1.4.4. Registration in a discipline is required

In France and Spain, a disciplinary career is for life. Processes of qualification and registration are strictly within a single discipline, which is recognised by the state.

Professions in Spain are very closely determined by degrees obtained, and although this has recently been seen as an obstacle to employment and to innovation, the tradition is perpetuated by professional bodies and, in some areas, by categories applied to the recruitment of civil servants. Departments recruit and select staff, although still within a national competitive exam system, with external examiners appointed by the Ministry of Education. Staff may teach their discipline in several centres, but will belong only to one department and to one discipline. Academic positions are determined by the recognised *áreas de conocimiento* which are strictly codified. Each lecturer has to register in one of them and it determines her whole academic career. Changing a discipline is a complex process, which needs approval by the Ministry of Education. Posts are ascribed to one of these areas, and entrance exams or *habilitaciones* are categorised by them. Applicants for habilitations are evaluated by professors chosen from the same *área de conocimiento*. Interdisciplinarity is usually a clear disadvantage in these exams, since non-disciplinary work is not valued (Carrera Suárez et al 2005: 33-4).

In France the centralised and state-controlled system strongly influences academic careers as well. The National Council of Universities (CNU) is in charge of the “qualification”, recruitment and promotion of academic staff. Applicants for academic jobs have to be qualified in at least one of CNU’s disciplinary sections. Applicants for tenured positions such as professorship and senior lectureship need a second “qualification” after the submission of their habilitation thesis. The CNU qualification is restricted to one discipline and universities define academic positions in accordance with CNU sections. Recruitment is made at national level, and the selected candidates have to be approved by the Ministry of Education (Le Feuvre and Metso 2005: 42).

#### 4.1.4.3. Special Research Positions: Academies of Sciences

In Finland and in Hungary the most prestigious scientific positions in research is. In Finland these positions are the Academy Professor and the Academy Fellow Researcher, both based on disciplinary merit (Keskinen and Silius 2005: 33). In Hungary correspondent and full membership in the Hungarian Academy of Sciences (HAS) has the highest prestige. These positions are also state-funded and are given for life. The HAS is a disciplinary organization, based on traditions, although some new sections have been established (Jakab et al 2005: 22). In spite of educational reforms, the high prestige inherent in these disciplinary institutions helps to sustain traditional disciplines and may implicitly degrade the value or esteem of new interdisciplinary innovations.

## **4.2. Research**

### **4.2.1. Research at universities**

Research activities may be located within the universities, or in separate research institutes. In the first case, research in a new discipline can take place either within a department, or if there is no department, a research centre might be set up. Research outside the university can take place at research institutes, which can offer a firm institutional background, but do not necessarily solve problems with funding.

### **4.2.2. The governmental promotion of research in new areas**

In Norway, both the organisation of HEIs, and the funding system, facilitate research in new areas. Higher education institutions are engaged not only in teaching but also in research. Departments are encouraged to become research sites, and in certain cases research centres may not deal with teaching activities. The Research Council of Norway is responsible for funding research. It promotes interdisciplinarity and favours large, interdisciplinary projects (Widerberg et al 2005: 29).

On the other hand, even in cases when research-funding bodies are open towards interdisciplinarity, they may not necessarily support the institutionalisation of new areas of study. It may in practice hinder the formation of the relatively stable structures necessary for conducting sufficient research in a new discipline.

### **4.2.3. The governmental promotion for crossing disciplinary boundaries by restructuring funding bodies**

The governmental intention to facilitate co-operation between disciplines in research is observable in Finland and Sweden, but not to the same extent as in Norway. In both countries, the national funding system underwent restructuring into fewer research councils in order to undermine the division between the disciplines.

The Research Council for Culture and Society covers the humanities and the social sciences in the Academy of Finland and the Swedish Research Council both include interdisciplinarity in their objectives, but in practice they operate on the basis of disciplinary evaluation panels and peer review (Holm and Liinason 2005:40; Keskinen and Silius 2005: 17). The academic sector and discipline has to be designated in the applications to those bodies (Keskinen and Silius 2005: 18). The evaluation of research is disciplinary based, and the application form is based on the register of disciplines (Holm and Liinason 2005: 20). Since 2004, when an international evaluation was conducted in the Academy of Finland, the evaluation of interdisciplinary research projects has been discussed, but no decision has been made yet (Keskinen and Silius 2005: 18).

In Sweden there are also other sources of research funding, among them the Swedish Council for Working Life and Social Research (FAS) and the Environment, Agricultural Sciences and Spatial Planning (FORMAS) and both support interdisciplinary research (Holm and Liinason 2005: 23). The only approved research sites are the universities and university colleges. Old universities tend to carry out disciplinary research while new ones – due to looser structural organisation - endorse interdisciplinarity more often. In 2001, the government established research schools in order to renew postgraduate education in all disciplines. They are located at HEIs and tend to be multi- or interdisciplinary (Holm and Liinason 2005: 21).

#### **4.2.4. Structural barrier to researching new disciplines in HEIs**

One of the structural barriers to innovation in research is the disciplinary structure of HE institutions. Research activities of staff tend to be related to the discipline in which they are employed. In countries where the university structure as well as professional identities are centrally controlled it is problematic to initiate research outside the traditional disciplinary framework, unless there is particular context created for it by the relevant central authority. This is characteristic of France, Germany, Hungary and Spain, where a considerable proportion of research in the humanities and social sciences takes place in the universities and is linked to faculties or departments. In Hungary, the prerequisite for the two most prestigious researcher positions at universities is affiliation with the Hungarian Academy of Sciences, which is divided along disciplinary lines (Jakab et al 2005: 42). In this way the disciplinary division of the HAS influences research activities at the universities.

However, even in government-controlled disciplinary educational systems there have been attempts to weaken disciplinary boundaries. In Germany there are long-term research programs at universities designed for cross-disciplinary collaboration called Special Research Centres (*Sonderforschungsbereiche*) (Krebs et al 2005: 18). In Hungary, it is possible to set up research centres that carry out research in a field that requires interdisciplinary approaches, but often there is no additional funding for this kind of work. In Spain, so-called University Institutes of Research have been established for research and in France several research units have been merged in a single university campus in order to facilitate interdisciplinary activities (Carrera Suárez et al 2005: 9). French universities have also established Human Science Houses (*Maisons des sciences de l'Homme*) and new Doctoral Schools to promote interdisciplinary co-operation (Le Feuvre and Metso 2005: 58).

The U.K. is a special case, since degree programs are relatively flexible in terms of disciplinarity, while research, which is the most prestigious activity in academe, is rather restricted in terms of disciplinarity. University research is funded on the basis of the Research Assessment Exercise, which is conducted on a disciplinary basis (Griffin et al 2005: 25). The foci of the RAE even impact on the topic of research conducted (Griffin et al 2005: 58).

#### **4.2.5. Funding bodies as an obstacle to innovation in research**

Research funding either comes from research councils or from the ministries. The division of the funding bodies into decision-making panels is traditionally based on disciplines. However, these panels or councils might be organised differently to cater for inter- or multidisciplinary research. Disciplinary panels and the lack of relevant sections where applications for inter- or multidisciplinary research can be submitted and evaluated hamper research in new subject areas, even if there is recognition of the necessity for compliance with international research trends as far as dispensing with discipline-bound research is concerned.

In the UK funding councils are divided according to fields of sciences, and within that division, into more common disciplines (Griffin et al 2005: 28). The Economic and Social Research Council (ESRC) caters for the social sciences, the Arts and Humanities Research Council (AHRC) for the humanities, and the British Academy for both. In the ESRC and AHRC, subject panels are disciplinary, although there are shared disciplines, and both claim to support interdisciplinarity (Griffin et al 2005: 22).

In Germany, the social sciences and the humanities are funded mostly by the German Research Association (DFG). It has a common section for the humanities and social sciences, although the internal structure of panels is based on the traditional

disciplines. The DFG has established four Centres for Human Sciences in the new federal states with the aim of developing interdisciplinary, co-operative, project-oriented research (Krebs et al 2005: 17).

In Hungary, research is done in the Academy of Sciences, which is a strictly disciplinary organisation, although institutes in the newly emerging disciplines have been established. The panels in the Hungarian Scientific Research Fund (OTKA) are disciplinary. Some disciplines or areas are not even listed, and the National Priorities Social Science Research Fund (OKTK) is thematically organised.

In France and Spain, the relevant ministries are the main funding bodies of research. Apart from research at universities they also fund research institutions where they have attempted to diminish the disciplinary barriers. In France the largest public sector organisation dealing with thematic areas of research is the CNRS (*Centre national de la recherche scientifique*; its disciplinary division is similar to that of universities, and it has a department of social sciences and humanities (Le Feuvre and Metso 2005: 20). In Spain the Higher Council for Scientific Research (*Consejo Superior de Investigaciones Científicas - CSIC*) is a research institution which has established permanent application-oriented Interdisciplinary Thematic Networks (Carrera Suárez et al 2005: 38).

#### **4.2.6. Publication opportunities**

Publication of research findings in a new inter- or multidisciplinary area may be crucial to professional recognition, particularly in countries where research activities are the basis of the evaluation of professional academic work. In all the countries participating in the current project, the majority of professional and prestigious journals are disciplinary, although there are initiatives to cross the disciplinary boundaries everywhere.

### **5. The process of creating new disciplines in education and in research, and the problems**

In this sub-section we will look at the process of disciplinization of new subject areas, and the formation of new institutionalised units. Two distinct ways can be recognised here, the “top-down” approach or, alternatively, the “bottom-up” approach. The top-down approach means that a need for training or research in a new subject area is recognised and change initiated from the higher level of state administration, that is from ministry, results in the establishment of an appropriate degree and the necessary institutional background for its realization. When disciplinization happens through a bottom-up process, the change is initiated by the practitioners in a given discipline, and it starts on a small scale, using different strategies, like inclusion of new modules/courses within the existing disciplinary frames, and lobbying for recognition on the side of academics interested in establishing a new discipline. This recognition is necessary for institutional support and funding which facilitates the teaching of courses and the awarding of degrees, and it renders possible research activities, the publication of findings and the organisation of conferences. If all of these are established, the discipline can be regarded as institutionalised.

The difficulties involved in the processes of disciplinization depend on the respective national contexts. There are various factors which determine these contexts, with two main and opposing forces, the strength of centralised power on the one hand, with the respective ministries as its main actors, and the autonomy granted to universities to organise their own degrees, courses and staff recruitment. In a number of

countries where the implementation of the Bologna reforms has caused restructuring, new actors, primarily related to the processes of peer reviewing and accreditation, have emerged. Giving power to independent accrediting or assessment agencies may be considered as a form of breaking up rigid traditions of ministerial control and disciplinary codification. However, it seems that the accreditation boards and agencies are selected on a disciplinary basis, enhancing evaluation based on the standards of the evaluators' respective disciplines. At the same time, an inherent part of the reform is a periodic review of degree programs, which tends to facilitate necessary modifications.

### **5.1. Disciplinary barriers in education and research**

As the previous sub-sections have shown, in terms of the rigidity of disciplinary divisions three groups can be distinguished. In the first group, which includes the Norway, Sweden and the UK, education is market-oriented, implying that universities are responsible for attracting sufficient number of students to their courses; it also means that through sufficiently high number of students attending courses and/ or getting degrees, governmental funding can be sustained. There is a difference, however, in the governmental approach to disciplinarity in these countries. In Norway and Sweden there is considerable ministerial incentive to create new interdisciplinary programs both in research and in education. Therefore, perhaps the concept of disciplinization in these countries is to be interpreted as creating an institutional background for testing various ways of multi- or interdisciplinary co-operation.

The common feature of the second group is related to the similar effects of the adoption of the Bologna process, the effect of which is a loosening-up of the former rigid disciplinary structures, even if the previous boundaries have been replaced by new ones. In Finland, Germany and Hungary, a small number of new disciplines (in the form of degree courses) have been or are being institutionalised. Previously centralized control has been questioned, and the necessity for change has been accepted. This change has produced an environment that does not encourage, yet remains open to, the establishment of, new disciplines within the system of higher education. In these countries, the introduction of a degree (which implies the establishment of concomitant institutional forms) requires approval either from an accrediting body or from the respective ministries. Both Germany and Hungary have set up accreditation agencies that are responsible for the establishment of new degrees, their evaluation and for quality control. Finland has a somewhat different situation. Although Bachelor degrees were introduced optionally in Finland, they did not become popular among students, and Masters degrees are determined by the Ministry. Still because of the more relaxed regulation of the education system, it is listed in this group.

The third group includes France and Spain, where the common feature is rigidity of the system, which hinders opportunities to establish new disciplines. Both countries are characterized by strong ministerial control of all aspects of education, although in different ways. Quality control, accreditation and evaluation are the responsibility of the respective bodies of the ministries. Disciplines here are the basic units along which the educational system, as well as the administrative system, is structured.

In terms of research, successful disciplinization in most countries would mean the establishment of a new section or panel in the funding bodies where applications and evaluations within a new area of study can be made. In countries where interdisciplinarity and new modes of collaborative research are promoted, it might be difficult to talk about institutionalising new disciplines, since current research policies go against the establishment of disciplinary boundaries.

## 5.2. The top-down model of disciplinization

In countries with a market-oriented approach to the higher education system, such as Norway, Sweden and the UK, a top-down approach to disciplinization in education is less present. In other countries, the creation of disciplines in education as the result of ministerial initiative occurs if it corresponds to the political or economical policies of the government in power. In France, for example, an economic motive for top-down institutionalisation can be observed by the fact that the ministry was supportive of the institutionalisation of information sciences (Le Feuvre and Metso 2005: 30). In Hungary, in order to encourage rural development, Regional Studies (comprising Geography, Law and Economics) were established. At first, this discipline appeared in the form of a research network in 1983, and by 1986 a disciplinary journal was regularly published. Three years later it was institutionalised in higher education (Buskó 2002: 52).

In Spain, where there is strong central control over education, and where disciplines are codified, implementing change is a complex procedure. The ministry (in consultation with academics) has to approve the discipline and add the new degree to the list of disciplines (*area de conocimiento*). Top-down disciplinization is also determined by the political and economical context. The end of 1970s saw a growth in the number of degrees, coinciding with the expansion and further specialization of university studies, and a decade later, in 1987, changes were introduced in order to adapt the structure of the curricula to the credit system. Thus, most of the present curricula were approved in or around 1990. Due to the complexity of the system of codification, new degrees are established only when there is a reasonable economical and political drive behind it (Carrera Suárez et al 2005: 28). In the 1990s degrees in East Asian Studies in the humanities, Tourism and Criminology in the social sciences were established. East Asian Studies were created because the minister of economy at that time identified East Asia as a strategic region for the future both in terms of economy and of politics, and thought that increasing knowledge about the area would lead to a stronger Spanish presence there.

The actors responsible for research policy in Finland, Norway and Sweden and Finland seem to have taken steps to abolish disciplinary barriers. Both in Norway and in Sweden there is ministerial policy to encourage interdisciplinarity in research, which is seen as a step necessary to face the complexity of present-day society (Widerberg et al 2005: 6). The research policies of the Research Council of Norway and of the Swedish Research Council are both directed towards large, collaborative and interdisciplinary research projects (Widerberg et al 2005: 28-9; Holm and Liinason 2005: 38). The Finnish Research Council and the Swedish Research Council have both been reorganised into four sections to move into the direction of interdisciplinarity. At the same time it must be noted that, while there are initiatives attempting to change the disciplinary nature of research, often there is not sufficient funding for thorough transformations. Therefore, in an environment where the idea of disciplinary research is considered obsolete, and instead thematically oriented, collaborative, inter- or multidisciplinary project work is encouraged, the top-down institutionalization of disciplines in research for longer periods seems obsolete.

In countries where research funding is based on application for funds to a funding body divided along disciplinary lines, the insertion of a new section can be problematic. In terms of research in humanities and social sciences, government can call attention to its strategic interests through thematic funding bodies or by commissioning research within the existing structures.

### **5.3. The bottom-up model of disciplinization**

The bottom-up model in all cases is characterized by the initiatives of academics willing to lobby for their interest. If this is successful, they may start offering courses in the new area, and later when the number of courses in the new area increases, they may get recognition in the form of certification. At which level a degree can be awarded depends upon the structure of the national education system in terms of disciplinarity. In some countries undergraduate or Bachelor degrees are easier to introduce, in others the postgraduate or Masters degree level is more open to innovations. The permission to award a degree may lead to the establishment of a department. At this level of recognition, possibilities to offer PhD training are created, and to get professorships. This facilitates the formation of a professional identity.

#### **5.3.1. Market-oriented educational systems**

The process of disciplinization at undergraduate level in countries with a market-oriented educational system (Norway, Sweden and UK) is relatively easy at the initial stage, since no permission or approval of government bodies is needed to offer courses, to award degrees and to structure HE institutions in accordance with the need to introduce new disciplines. No registration of the disciplines is needed, only a regular inflow of students to ensure continuous funding. In Norway and Sweden the successful completion of a degree program is also required as part of the basis for the allocation of resources. However, one of the problems within this system is related to the need to ensure long-term existence of new initiatives, which can be jeopardised either by lack of students, or because established degrees in the discipline are not completed.

#### Norway

In Norway the implementation of the Bologna process together with the Quality Reform have led to the restructuring of higher education, that is, the introduction of Bachelor and Masters degrees and to the marketization of the higher education system (Widerberg et al 2005: 9). This means that universities in Norway have to advertise their programs to ensure a sufficient number of students, since funding is related to this. The Ministry of Education and Research had an explicit intention to overcome disciplinary division and to support the creation of new, interdisciplinary programs both at undergraduate and at postgraduate level. The reforms produced the following impact: degree programs have been shortened, disciplinary education weakened, and a number of new degree programs cross disciplinary boundaries (Widerberg et al 2005: 15). Also, the present focus on the needs of the labour market might result in a reduction of the importance of academic disciplines (Widerberg et al 2005: 55).

Part of the reforms was the setting up of an accreditation agency, the Norwegian Agency for Quality Assurance in Education (NOKUT), responsible for quality control of the HE institutions and the degree programs. If an institution does not meet the criteria, NOKUT has the right to withdraw accreditation (Widerberg et al 2005: 15). However, contrary to most quality assurance agencies, NOKUT is not structured on the basis of disciplines nor concerned with questions of disciplinarity or interdisciplinarity (Widerberg et al 2005: 23). Neither the government, nor the accreditation agency influence which disciplines exist or which ones are to be developed (Widerberg et al 2005: 23).

Initiating degree programs, whether disciplinary or interdisciplinary, is therefore easy in Norway. At the beginning of the implementation of the reforms, small and specialised disciplines took the opportunity and looked for partners to cooperate with in the planning of degree programs which might be attractive for students. Since the funding is partly given for exams in disciplines regardless of the program in which they are taken, it was a way for small disciplines to be financed as well.

This strategy was used by the Centre for Women's Studies and Gender Research in Oslo, and this is (Widerberg et al 2005: 31) an example which shows how a centre - non-permanent at the start - and with small administrative capacities managed to develop a Bachelor program entitled "Gender, Feminism and Equality". They started by carefully planning the courses, which were taught by the staff of the centre. Then they decided to offer courses at Bachelor level, at which point they received the right to give credits for the completion of the courses. However, examination rights and their administration still belonged to the given faculty. When the Bachelor degree program was developed and approved by faculty, the Centre was allowed to establish its own board and administrative body. Now several Masters Degree programs can be accessed from this Bachelor degree (Widerberg et al 2005: 33). In order to keep the program running, accreditation of the NOKUT is needed, but as long as the quality of education is approved, the running of a new degree program (even in a non-traditional discipline) is not hindered.

In Norway research is the task of universities and research institutes, funding is topics-oriented rather than discipline-oriented, and large projects are supported (Widerberg et al 2005: 13). The implication of this, again, is that the rigidifying of a subject area (disciplinization) is not supported by national funding bodies (Widerberg et al 2005: 28-9). On the other hand, if a new initiative represents a combination of various disciplinary contents, methods and perspectives requiring collaboration, it might well be supported.

## Sweden

Similarly to Norway, interdisciplinarity in Sweden is encouraged through governmental policy both in research and education. Degree programs and courses can be initiated by universities. They do not have to be in any predefined disciplines, only to be listed in one of the four sectors such as the Humanities and Social Sciences; Medicine; the Natural Sciences; and Technology. The National Agency for Higher Education evaluates and accredits degree programs on the basis of meeting the criteria of degree and quality requirements. However, the disciplinary evaluation by panels is still in operation in spite of the promotion of interdisciplinarity. The government can also allocate earmarked grants for establishing a new subject, as happened in Göteborg with Gender Studies (Holm and Liinason 2005: 26).

The process of disciplinization in Sweden is the following: first associations for researchers are created and courses offered at universities, then the academics involved apply for state funds from the National Board of Universities and Colleges. They then set up research centres and offer undergraduate courses. At a later stage, when there are more professorships, and larger research funding, PhD degrees can also be offered in the discipline (Holm and Liinason 2005: 25).

The Swedish Research Council evaluates applications on the basis of disciplinary panels. However, research at higher education institutions is approved of and funded by the university and the faculty board. In order to establish a research centre, academics can lobby from these administrative units. "Faculties" are administrative units related to one of these sectors. However, in certain cases university

units may be divided differently causing a structural division between sectors. Research can be done in multi- or interdisciplinary research schools. These have been set up by the universities themselves in order to renew postgraduate education in all areas corresponding with their research policy, and each school has a host institution and one or more partner institutions (Holm and Liinason 2005: 36).

### **5.3.2. The UK: the problem of quality assessment agencies**

In the UK academics or researchers may introduce a new discipline by inserting individual, optional courses into more traditional disciplines. The modular system of teaching is of great help here. After successfully running the courses for a period of time and ensuring sufficient number of students, a small group of staff can prepare an application to establish a degree either at under- or at postgraduate level. The application is then submitted to a review involving an external peer academic on a relevant committee or board, where it is either accepted or rejected. It is the responsibility of the universities and the staff involved in teaching to advertise the course from then on (Griffin et al 2005: 27).

In spite of the relative openness of the education system in this respect, there are specific barriers that may hinder the establishment of a discipline on a national infrastructural level. One of the obstacles to the long-term institutionalisation of a discipline might be the inability to recruit enough students, which in the end can lead to the closure of the program. The other problem is related to the recognition of a discipline through the process of evaluation, which gives it prestige and accessibility to research money (Griffin et al 2005:28).

In the cyclical Teaching Quality Assessment (TQA) departments are evaluated and awarded grades, and the results publicised to advertise excellence. The TQA is carried out by the Quality Assurance Agency and operates on a disciplinary basis (Griffin et al 2005: 28). If a new discipline does not participate in the TQA exercises it cannot publicly prove its value, which means that it becomes invisible and vulnerable to closure. To be able to participate in the TQA, the discipline has to be recognised by the funding councils. Academics participating in the discipline can form a new subject association, which can, as an official body, lobby for subject recognition at governmental level. Governmental recognition is achieved through the funding councils and the quality assurance agencies. If the new discipline cannot achieve recognition by the funding councils, its research-active staff have to be assessed through one of the recognised disciplines. In that case, the assessors are likely to be from the established discipline (Griffin et al 2005: 29).

Apart from the assessment of teaching quality, research activities are also assessed at national level. Research is a crucial part of an academic's work in the U.K., and it carries the highest prestige. Hence good results in terms of research assessment are essential both in terms of building a professional career for academics, and for the long-term institutionalisation of a given discipline. The Research Assessment Exercise (RAE) is designed to evaluate the research activities of each researcher within a disciplinary unit. Universities are required to submit the output of research-active staff by discipline. The determining factors are the number of publications, the impact factor of those publications and the prestige of the publishing site. If there is no prestigious journal in a new discipline, its evaluation becomes problematic (Griffin et al 2005: 57). The RAE is thus a decisive factor in terms of funding and prestige, and influential to the extent that it determines institutional research policies and research areas at universities. So far no new discipline has succeeded in their efforts to be included in either the TQA or the RAE (Griffin et al 2005: 65).

Lack of recognition of a new discipline by the evaluating bodies can cause problems on several levels. Not being able to advertise which is the basic means of recruiting students can lead to the closure of programs in a discipline, and not getting good research ratings can lead to decreasing funds for the university.

In short, the case of the UK is specific in so far as it is very easy to establish new disciplines at the level of teaching and even at the level of granting new degrees. At the same time, at the higher level of recognition, which includes assessment bodies and funding bodies, resistance to new disciplines is evident, and hard to overcome.

### **5.3.3. Relatively flexible model of disciplinary structure**

Finland, Germany and Hungary are all actively promoting the Bologna process, which has caused certain changes in disciplinary structures. In all these countries, the reforms of the 1990s and the implementation of the Bologna process have resulted in the reduction of governmental intervention and regulation of HEI, and an increase of university autonomy in terms of course content, curricula and appointments. The marketization of the education system has not taken place there, and universities do not have to advertise. Contrary to Norway and Sweden, there are no extensive efforts in practice to cross disciplinary boundaries, although one of the discursive features in the creation of the new system is that, instead of disciplines, degree programs are now being discussed.

The introduction of the Bologna process in Germany and Hungary means the introduction of the appropriate structure of degrees, that is Bachelor as an undergraduate, and Masters and PhD as postgraduate degree programs. In both these countries accrediting agencies have been installed, which are funded by government, but independent in terms of decision-making. As peer review and disciplinary expertise have a central role in the accreditation process, the institutionalisation of new disciplines, at least at Bachelor level, can be hampered. The Masters level seems currently to be more flexible, although its implementation remains to be seen.

In Finland, the two-tier system will be introduced in 2005 (Keskinen and Silius 2005: 45). Unlike the other two countries, there is no accreditation agency distinct from the government, which retains the right to determine the degrees that can be issued.

In all of these countries new disciplines can be established in academia, although the system tends to encourage such initiatives at Masters or PhD level.

#### Finland

In Finland, the government determines the degrees that can be awarded. This makes the establishment of new disciplines at the level of basic or intermediate studies relatively easy, since this remains within the scope of recognized university autonomy. Initiating new programs at advanced level, which requires the right to award degrees, is more difficult, since it is in the Ministry's remit. Awarding degrees is also the determining factor in funding, and less money makes it more difficult to establish new teaching posts (Keskinen and Silius 2005: 21).

The process of disciplinization in Finland usually starts with the introduction of courses in a given subject area at the basic level of studies. With the number of courses increasing, more teaching and administrative posts are required, which would necessitate the institutionalisation of the new discipline as a separate unit. If the staff involved are successful in finding resources, intermediate level studies can also be introduced. For the advanced level, recognition of the government is needed, in order to be able to award a degree. This may be difficult, but lobbying and determination of the

universities can force the ministry to legitimate an already existing situation (Keskinen and Silius 2005: 20-1).

However, after the introduction of the two-tier system in 2005, only Bachelor and Masters degrees will be awarded, and this may change the disciplinization process. The ministry can have an impact on disciplinization by reserving funds for projects or study programs, for example with the implementation of the Bologna process it provided funds to plan Masters programs to cover new (possibly interdisciplinary) fields of study (Keskinen and Silius 2005: 21). According to the plans, every year in the future there would a possibility to implement new Masters programs (Keskinen and Silius 2005: 45).

The Finnish report mentions also a different interpretation of the concept of disciplinization, according to which a wider subject area can get institutionalized through already existing disciplines. In this case, no recognition and elaboration of standards and content is needed. Cultural Studies in Finland, for example, does not aim at disciplinization in the sense of rigidifying structures or content as a discipline, but rather promotes a post-disciplinary approach. Namely, it has institutionalized itself flexibly within several disciplines, keeping its research projects visible (Keskinen and Silius 2005: 32).

One of the factors that may make the introduction of new programs difficult is the growing staff-student ratio. New programs require the establishment of new teaching positions, for which there are not sufficient resources.

## Germany

In Germany, disciplines have so far been strictly regulated by the government and the federal states. With the implementation of the Bologna process, a nationally regulated examination framework is replaced by accreditation performed by an independent body, which aims to guarantee high standards of quality for the Bachelor and Masters degree programs. While the Bachelor degrees are mainly based in one discipline, Masters courses are supposed either to enable further specialization in the same discipline as the Bachelor degree, or to add another disciplinary perspective (Krebs et al 2005: 51-2). However, the power of intervention of the states remains strong here, since even after the successful completion of accreditation process, state permission is required for the initiation of new courses. The procedures to obtain governmental authorization differ in each state. They are introduced on the basis of the target agreements between the universities and the respective ministries (Krebs et al 2005: 8).

The federal accreditation agency, the Accreditation Council (*Akkreditierungsrat*) established in 1998, is responsible for accrediting state accreditation agencies and other discipline-specific accreditation agencies. The Accreditation Council also coordinates the standards of accreditation of institutions, authorizing courses and examination regulations. It also encourages these smaller accreditation agencies to design accreditation procedures that would not be determined by disciplinarity (Krebs et al 2005: 6-7). At present, it has been recommended that in the test-phase extensive national regulation should be replaced by peer review (Krebs et al 2005: 51). On the other hand, such a procedure might lead to a standardization of disciplines because it is not clear which part of the academic community will influence present disciplinary changes (Krebs et al 2005: 8).

According to the example given in the national report, the first step in the process of disciplinization of a new area as a Masters degree program is the agreement of the given department and of the university president. If the approval is given, the

university applies for accreditation, and then the process of accreditation takes place. The application (which may be checked by the responsible ministry) is sent to the appropriate state accreditation agency, which sets up a team of evaluators or peer experts (*Fachgutachter*). The higher education institution may also nominate experts into the team. The team then has to be approved by the Permanent Accreditation Commission (*Ständige Akkreditierungskommission - SAK*), which nominates further experts (*Gutachter*) (Krebs et al 2005: 8). The Permanent Accreditation Commission is divided by disciplinary fields, and social sciences are divided from the humanities. The experts evaluate the draft for the program and peer reviewing is a part of the process. They then prepare a final report that has to receive the approval of the Permanent Accreditation Commission (Krebs et al 2005: 8). The governments of the federal states can participate in the accreditation process if they wish to, in which case the universities have to take into consideration the relevant guidelines concerning degree courses (*Strukturvorgaben*) of the federal state.

If the aim is the establishment of a Minor course (as part of a *Magister* degree), a course (*Studienprogramm*) for graduate students can be established. This can be done within research centres, which can be set up with the support of the existing departments and the approval of the ministry of the federal state. Such centres can conduct teaching and research, and may be financed by the university, but may also have to look for external resources (Krebs et al 2005: 29-30). This process is likely to change when only Bachelor and Masters degree programs are taught at universities.

## Hungary

Due to the political changes at the end of the 1980s, university autonomy increased even before the implementation of the Bologna process. According to the latter, from September 2005 universities will be free to initiate new programs as long as they are accredited. As in Germany, the accreditation agency has a key role in this process. However, there is only one central agency. The Hungarian Accreditation Committee is structured along disciplinary lines, although the agency has a policy to deal with multidisciplinary programs by setting up multidisciplinary panels. In the future the structure of degree programs will be revisited every 5 years, which means that a possibility for change is built into the system (Jakab et al 2005: 54).

Institutionalisation happens in several stages. At first, there are only a few courses offered in a new subject area, which can be developed into a field of specialization. A separate non-degree program can also be offered, research centres at universities may be set up, and at last a department can be established. The extent of the recognition of a discipline within educational institutions can be measured by the degree-granting power of a given program of studies.

A specialisation consists of a number of courses covering the selected subject area. At the end of the course of study in the chosen field there is usually a comprehensive examination, and a note in the degree certificate that the person has fulfilled the necessary requirements. However, specialisation programs do not usually provide a path to continue with the given subject. On the other hand, this form of institutionalisation does not require the accreditation of an external organisation. Due to the Bologna reform specialisation as a form of education may be withdrawn, since it does not correspond to the structure of the two-cycle system (Jakab et al 2005: 29).

Institutional legitimation of new subject areas can also be achieved through the establishment of research centres. Such units offer a frame for co-operation between the staff of one or several departments on a specific research or educational project. In order to achieve their aims, they may initiate new training and research programs. The

approval of research centres depends on the respective faculty. Research centres receive no extra funding, but may be given space within the institution and may use the infrastructure and the facilities. The centre has to carry out research and/or teaching, and may apply for external funding for various projects (Jakab et al 2005: 30).

Departments may establish degree programs at various levels. Currently, university degree programs are offered in the disciplines codified in the ministerial policy paper (Jakab et al 2005: 26). The first Bachelor degree programs will start in September 2005. At present only the proposed requirements for Bachelor degrees have been laid down, and those for the Masters programs are still being drawn up. Once the Bachelor degree programs are introduced, each program offered has to be enlisted in a discipline as part of the accreditation criteria. However, Masters degree programs may offer training in not yet institutionalised areas of study or in multidisciplinary programs.

Due to the Bologna process, the number of disciplines (as points of entry) will decrease (Jakab et al 2005: 27). New programs must specify in what way the qualification is going to satisfy the demands of the labour market, or some social need. The Hungarian Accreditation Committee does not encourage the institutionalisation of new subject areas, and new undergraduate education programs are accepted only if the material taught is significantly different (at least 40%) from similar degree programs. MA programs can be accredited if there is at least one running accredited undergraduate degree program in the discipline (or in each of the disciplines) covered by it. The HAC at this level is more open to multi- or interdisciplinarity, but these programs have also to be firmly rooted in an existing discipline.

The requirements for establishing a PhD school are very high, although they may be multi- or interdisciplinary PhD schools. It is the doctoral committees of the Hungarian Accreditation Committee – whose members are also members of the disciplinary Hungarian Academy of Sciences – who approve the operation of doctoral schools and decide on the field of science, and on the discipline in which a university may pursue doctoral training.

The procedure of program accreditation is the following: First the higher education institution sends an application to the HAC Secretariat. Once the discipline of the program is identified there, an expert committee is suggested by the HAC (in case of interdisciplinary programs an interdisciplinary committee) is set up. They use peer review to assess the proposal. Then they give their opinion to the respective College of the HAC (field of science committees). The College formulates a decision, then the Plenum votes on the issue and passes a resolution. Finally, the HAC president informs the Minister of Education and the higher education institution of the decision (Jakab et al 2005: 33).

#### **5.3.4. Government-controlled higher education: rigid disciplinary structures, complex processes of innovation**

In countries with a strong codification of disciplines, the official recognition of a discipline is a more complex and longer process and ministerial approval is needed. Both in France and Spain the disciplinary structures are firmly rooted in the institutional background of higher education and research. Therefore any attempt to innovate is easily hampered. However, in both countries the implementation of the Bologna process has resulted in the slow opening-up of this structure.

## France

As the disciplinary divisions are determined by the CNU (Conseil National des Universités) sections, new disciplines or interdisciplinary formations, both in teaching and research, can only be institutionalised by the creation of a new section. The extent of this rigidity is shown in the fact that the CNU underwent a number of reforms throughout the 1990s, without any changes to its strictly disciplinary character (Le Feuvre and Metso 2005: 30).

The creation of a new section in the CNU which is the basis for establishing a discipline requires the validation of such demands by centralised state decision-making bodies. The academic staff proposing the creation of a new discipline have to undergo long and complex negotiations with representatives of the Ministry of Education (Le Feuvre and Metso 2005: 30). A successful initiative leads to the publication of a decree and, simultaneously, a new CNU section is set up (Le Feuvre and Metso 2005: 17).

Bottom-up initiatives usually proceed in the following way: groups of academics initiate a change by debating at local recruitment boards or at academic conferences the need for a new section in the CNU. Once the priorities are defined they have to submit a request to the relevant administrative section of the Ministry. The Ministry then consults with influential academics and experts in the relevant field and decides whether or not to give permission to set up the new section (Le Feuvre and Metso 2005: 30).

The CNU also acts as the “gate-keeper” institution to academic jobs in France. Once a person has submitted and successfully passed a PhD or *Habilitation* thesis, they cannot apply for an academic position until they have been “qualified” to do so by the relevant disciplinary (or, more rarely interdisciplinary) section of the CNU. The CNU is also responsible for academic promotions (Le Feuvre and Metso 2005: 17). Therefore the establishment of a new disciplinary section refers also to the way professional requirements in the field are regulated.

It is easier to establish a new CNU section if the bottom-up initiative corresponds to ministerial interests. According to the example in the national report, at a certain point there was a demand for more professionals in teaching computer sciences. Members of this profession organized themselves at national level and lobbied to obtain support from the ministry to be able to create a new sub-section of the CNU. Ministerial support in this case was given, since the development of computer sciences can be seen as an important factor in maintaining the competitiveness of France in the global economy (Le Feuvre and Metso 2005: 30).

National recognition of a new discipline or interdisciplinary subject area can depend on how well it fits into current policy objectives. In this highly centralised educational system inside contacts in the central boards of the HE or research sector can be helpful. However, the obscure ways of the disciplinization process may also hinder the institutionalisation of disciplines with a less powerful lobby (Le Feuvre and Metso 2005: 31).

At present, the rigid disciplinary character of French HE is being loosened up by a number of factors. The Bologna process, which is currently being implemented in France works in that direction, and a national assessment process is being introduced for new degree programs in order to maintain “national coherence” between the different regions (Le Feuvre and Metso 2005: 53). At the same time, HE institutions are given more autonomy in determining course content. Universities and courses are evaluated and renewed every four years, and this evaluation process has led to an increase of university autonomy with regard to course development. The Ministry of Education no longer determines every degree program; instead, it provides only national guidelines. Secondly, in the new doctoral schools PhD students can receive inter- or

transdisciplinary training. Finally the Ministry of Research and the most important national public research bodies have set up a number of inter- and transdisciplinary research programs (Le Feuvre and Metso 2005: 28).

## Spain

In Spain, disciplines are traditionally defined as *áreas de conocimiento* (“knowledge areas”) by the *Consejo de Coordinación Universitaria* (CCU) on behalf of the Ministry of Education. Disciplines are closely related to degrees; therefore the end result of successful disciplinization is the establishment of a degree. Every new degree must be approved by government, and the system continues to be very rigid regarding individual change in universities. New areas are created basically through lobbying on the part of the academic field interested and is a way to secure lectureships and chairs, more specific assessment of research and general recognition, but may encounter opposition from other interest groups (established areas that would lose power or significance) (Carrera Suárez et al 2005: 26).

Establishing a new degree is a complex process. First of all, the *Consejo de Coordinación Universitaria*, CCU prepares a report about the proposed degree. Then the Government gives its approval and attaches the general directives, such as the structure and compulsory subjects. Before a university can offer the degree, the regional government has to approve it formally. The university prepares an elaborated syllabus, then both the CCU and a disciplinary subcommittee check if it complies with the general directives, and following a number of approvals by various government bodies, official recognition is published in the BOE (*Boletín Oficial del Estado*, where all official documents are made public). The degree becomes officially valid when the university then publish the entire syllabus in the BOE (Carrera Suárez et al 2005: 27).

This complex and lengthy process does not encourage the introduction of new degrees at first-degree level. As a result, not many additions have been made to the catalogue apart from the traditional disciplinary and professionally oriented degrees (Carrera Suárez et al 2005: 27). The decreasing number of students and the fact that lecturers are ascribed to only one discipline are additional barriers to the institutionalisation of new subject areas. New subject areas are usually introduced as optional subjects in existing studies. Due to this rigidity, area studies, cultural studies, cinema, media or performing arts studies – to mention a few disciplines existing elsewhere – have not been institutionalised in education, in spite of the fact that there is research conducted in these fields.

It is easier to innovate at postgraduate level, where universities are granted increased autonomy to develop more innovative programs and at which level cooperation between departments and universities is encouraged (Carrera Suárez et al 2005: 42). The possible extent of disciplinization is offering seminars, the establishment of a research group, or a centre, but it implies that academics have to do double the amount of work, since only success in a recognized area is appreciated. Research in the new subject area can be carried out if the National Plan for R&D creates a sector for it.

## **6. Conclusion**

### **6.1. The main actors in disciplinization**

As this overview of the main actors in disciplinization has shown, there are significant differences between the countries analysed in this report. The range of differences goes from a very open and unbiased attitude towards disciplinization (at

least at the initial stages of the process), towards more rigid structures where each and every step of the process tends to be state-controlled. The difference in the levels of openness of the system towards innovation seem to go together with the greater autonomy of universities when it comes to the matter of self-government, but also with the higher levels of marketization in the systems of higher education.

The actors in disciplinization can be divided into 3 main groups. In the first place, universities are the main sites of disciplinization processes. In countries without strong regulations concerning disciplinary divisions, universities keep this primary role throughout the whole of the process. On the other hand, it is observable that in such cases some kind of higher-level control is introduced at a later stage, usually through the quality assessment bodies or accreditation mechanisms.

However, it is not only state regulations that determine universities' attitudes towards disciplinization processes. The way different HE institutions are structured at present strongly influences their readiness to open up towards innovative programs. In this respect, national and/or local traditions have a lot of influence, and can appear as an obstacle even in cases when state regulations leave enough space for new initiatives.

The second group of actors in disciplinization are various quality assessment and accreditation bodies, institutionalised in all the countries together with the more recent reforms in HE. As the present overview has indicated, these bodies can have a very different role when it comes to disciplinization. Although they often promote interdisciplinarity at the level of official policy statements, in practice, they tend to be discipline-oriented. In reality, this means that they often tend to resist innovations, both in teaching and research. Some of these bodies are independent of the government, while others are closely linked with national ministries and other governmental institutions. The third group of actors in disciplinization is governmental bodies, which promote and apply state policy and state control in HE in the most immediate way. Again, the level of differences between different countries is significant here, since in the cases of the most open systems the government tends to be less directly involved, while in more strictly regulated systems there are a number of governmental bodies which end up being involved in rather complicated disciplinization processes.

In other words, this overview of the actors in disciplinization and their role in the actual processes can tell us much about the relations between the state and higher education, and about the main attitude towards knowledge and knowledge production in each of the respective countries.

## **6.2. The level of entry in establishing new disciplines**

On the grounds of all that has been said until now, it is possible to make some kind of a "ranking" according to the level of entry of a new discipline in academia.

On the one hand, there are countries where new disciplines can be established easily at any level of study, such as the UK and Norway. But in these countries there are other controlling mechanisms, outside academia, which make disciplinization projects difficult in the long run. The obstacles are, as a rule, related to funding and the ways money is distributed.

In Finland it is easiest to start a new discipline at basic and intermediate level. However, at advanced level a degree needs to be awarded which is the level where the difficulties arise, since government recognition is needed.

In Germany, interdisciplinary *Graduiertenkollegs*, doctoral programs and special research areas (*Sonderforschungsbereiche*) have been established in the process of the reform. Better chances for inclusion of inter- or multidisciplinary occur at the level of postgraduate level, that is, at Masters and PhD level (Krebs et al 2005: 52).

In Hungary, Bachelor degree programs are codified, therefore establishing a new one is only possible at times of accreditation every 5 years. Masters programs are planned to be more open, although how they will be structured remains to be seen at the time of implementation. PhD schools are related to departments, although some are multi- or interdisciplinary (it is argued that integration was done in order to meet the accreditation requirements). Establishment of new disciplines seems hardly possible at this level, but the conduct of multi- or interdisciplinary work is promoted.

Both in France and in Spain disciplinary structures are very rigid and difficult to change at undergraduate level. Postgraduate and PhD programs tend to be more open towards inter- or multidisciplinary or promote “interdepartmental PhD programmes” (Carrera Suárez et al 2005: 39). However, due to the rigid disciplinary structure, the institutionalisation of new disciplines seems difficult even at these levels of higher education.

## **6.2 Supportive factors in disciplinization**

Although there are no general rules about the procedures concerning disciplinization in the different European countries, there are some general factors that are of particular importance in all the cases discussed within this report.

Among the first and most important is organized action of academics and more generally professionals interested in the establishment of a new discipline. Even in the most open university structures, where new disciplines can easily be introduced at any level of study, such actions are needed in order to ensure their lasting existence.

Thus lobbying on the side of interested academics and professionals proved to be of the highest importance both in the cases of marketized educational system (Norway; UK), and in the cases of strict ministerial regulation (France, Spain). While in the UK lobbying is needed to make a new discipline visible and thus entitled for evaluation processes, in France it is needed in order to initiate the action of the relevant Ministry. In other words, some kind of bottom-up approach is present also in cases where the system calls for different routes in disciplinization processes.

In that sense, the role of professional organizations should be mentioned here, since they can be of significant importance in making new disciplines recognized within the scientific community. The history of sociology in Germany (Krebs et al 2005: 22) and in Hungary (Jakab et al 2005: 12), where the establishment of a professional association was of decisive importance for the introduction of a new discipline, and the role of Women’s Studies Network UK Association (Griffin et al 2005: 36) exemplify this very well.

The level of interest among the student body proved to be another supportive factor in processes of disciplinization. In cases where the financing of the university is related to the number of students, it can be of decisive importance.

The same is true as regards the market needs for future graduates in a discipline. If the needs of the market can be identified, proving a high level of employability, the introduction of a discipline will be supported. This factor is given particular importance within all of the recent university reforms, as well as within the Bologna process.

The system of peer reviewing and the establishment of accreditation agencies, part of quality assurance, can also be seen as a favourable, supportive factor in disciplinization processes. This is particularly the case in those countries where state control was traditionally rather firm, and where the establishment of independent quality assessment bodies contributes towards conferring greater autonomy to

universities in managing their own programs. The case of Germany is particularly indicative in this respect, but similar processes can be observed in France as well.

### **6.3 Obstacles to disciplinization**

The same elements, which in some cases support disciplinization, can prove in other situations to be an obstacle in the embedding of new disciplines. The need to prove the existence of a market for a new discipline is not necessarily an easy task, as well as it is not always easy to attract students for a new discipline. At this level, interrelatedness of different factors in disciplinization can be observed, since potential interest of students is founded not only on the attractiveness of a discipline as such, but also its degree-granting possibilities, its prestige and visibility, and career opportunities. Hence a new discipline can easily be disadvantaged in this respect, having neither developed professional networks nor supportive mechanisms to make it visible.

Quality assurance mechanisms can also become a barrier for new disciplines, since the evaluating bodies tend to be discipline-based, that is, to follow the existing frame of disciplinary divisions. Thus evaluation is made from the perspective of the existing disciplines, disregarding the specific needs and qualities of a new one. This is particularly the case with interdisciplinary studies, which resist “disciplining” in a traditional sense.

Evaluation is also one of the key factors in research, which is of decisive importance for the academic status of a discipline. A discipline not visible and recognized by quality assurance and the funding bodies necessarily faces serious problems in its attempt to secure its existence, taking into account the prestige which goes with research projects and the fact that many universities consider research money to be an important source of income.

In a similar way, the cases where the money given to universities is tied to the numbers of completed degrees, the right to grant degrees strongly affects the status of a discipline in a most immediate way, as is the case in Finland.

The primary obstacle to disciplinization proves to be the rigid, state-controlled system of HE, in which the state tends to keep the control over disciplinary divisions and the curricula. But in these cases certain paths can be followed in order to introduce changes. Also, a general tendency to loosen up this kind of a control has been observed in this report.

The structure of academic jobs, and the way professorships are conferred can also be a very strong obstacle for new disciplines. This is not only the case in countries such as Spain, where the titles are directly bound to a discipline, but also in less regulated systems, like the Swedish one, where increased numbers of promotions to professorship level seem to be strengthening disciplinarity (Holm and Liinason 2005: 36).

On the other hand, it is important to note that resistances against new disciplines do not come from institutional structures only. Strong resistances can also be generated from academics. They can have various reasons, from theoretical to practical ones. Many discipline-oriented academics feel a need to protect the status and the borders of their own discipline; hence they resist major changes in the given disciplinary structures from a theoretical point of view. More general resistances can also be generated by a negative attitude toward innovation. But the practical reasons can be very strong as well, from a fear of job losses (as was the case with resistance against the establishment of a separate Women’s Studies Centre in Norway), to the very immediate concerns over the sharing of funds allocated to a given university.

## 6.4. Final remarks

As all the reports analysed here have shown, disciplinization processes actually cut across the whole of the European HE system, and reflect a number of crucial issues regarding all major aspects of academic life. Disciplinization has its formal side, which concerns the actual procedures set up by institutions themselves or by the respective governments. It is equally related to the issues of power relations, since HE is a site of special interest in each country. Finally, processes of disciplinization have also to be seen within an epistemological framework, since they are closely related to the way knowledge is understood and represented. The present report has addressed some of the complexities related to disciplinization, hoping to provoke further discussions in that direction.

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