THE MOVING DISCIPLINARY BOUNDARIES OF RESEARCH STRUCTURES AND FUNDING

May 2005

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1. Introduction

This report makes a comparison between eight European countries in relation to research funding and research structures, and the relationship between research and higher education is discussed. The aim is to analyse differences and similarities among the countries and to highlight some recent trends in the research sector. The report also asks what kind of disciplinary divisions exist in research and funding structures, how they are constructed and reproduced, and to what extent they change. Thus, the barriers and possibilities for interdisciplinary research are also examined.

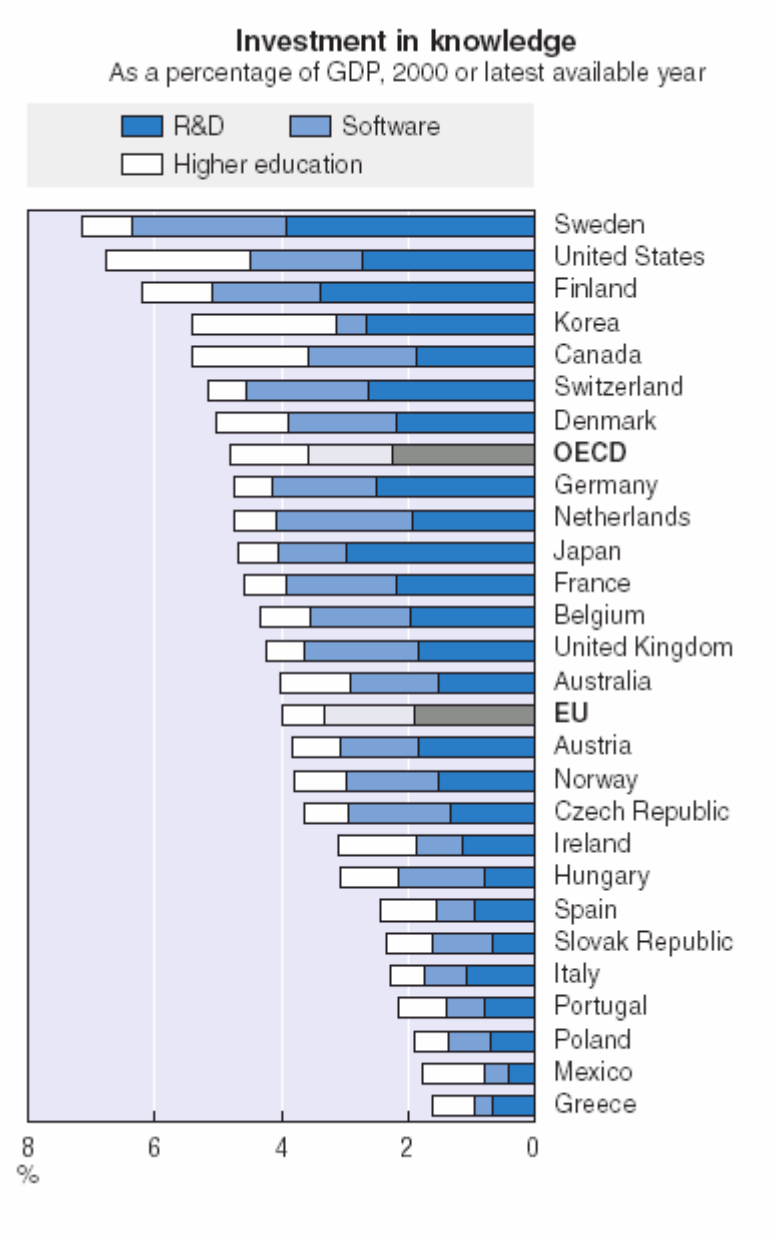
The analysed countries are Finland, France, Germany, Hungary, Norway, Spain, Sweden and the United Kingdom. The comparative report is based on national reports from all these countries conducted by researchers in the project "Research Integration" (Carrera Suárez, Vinuela Suárez and Rodríguez González 2005; Griffin with Medhurst and Green 2005; Holm and Liinason 2005; Jakab, Lukic and Kovári-Krecsmáry 2005; Keskinen and Silius 2005; Krebs et al. 2005; Le Feuvre and Metso 2005; Widerberg with Braaten and Hjelde 2005). In addition, research literature and articles from magazines and newspapers have been used to gather information. The material has been analysed thematically.

Most of the research and writing of this report has been conducted by Suvi Keskinen. Harriet Silius has taken part in the construction of the report structure, revised the text and written parts of it.

Today, knowledge and research play a central role in the policies of national governments and international economic organisations. Contemporary OECD and EU policies are based on the idea of a 'knowledge-based society' and a 'knowledge-based economy'. In this view, adopted also by the governments of most member countries, knowledge is regarded as a key factor for the economy. It is expected to produce economic growth, competitiveness and welfare (Nieminen and Kaukonen 2001: 7). These kinds of policies have, to varying degrees, been adopted and implemented by the governments of the studied countries, as we will see later in the report. Science and technology are anticipated to provide innovation and economic development to improve the position of the country or region in the global economic market, characterised by hardening competition. This has led to growing governmental interest in and partly also funding of Research and Development (R & D). According to the idea of a 'knowledge-based economy', the role of national governments is twofold. Firstly, governments need to provide financial support for research, and secondly, they should advance co-operation between science and society (ibid: 8).

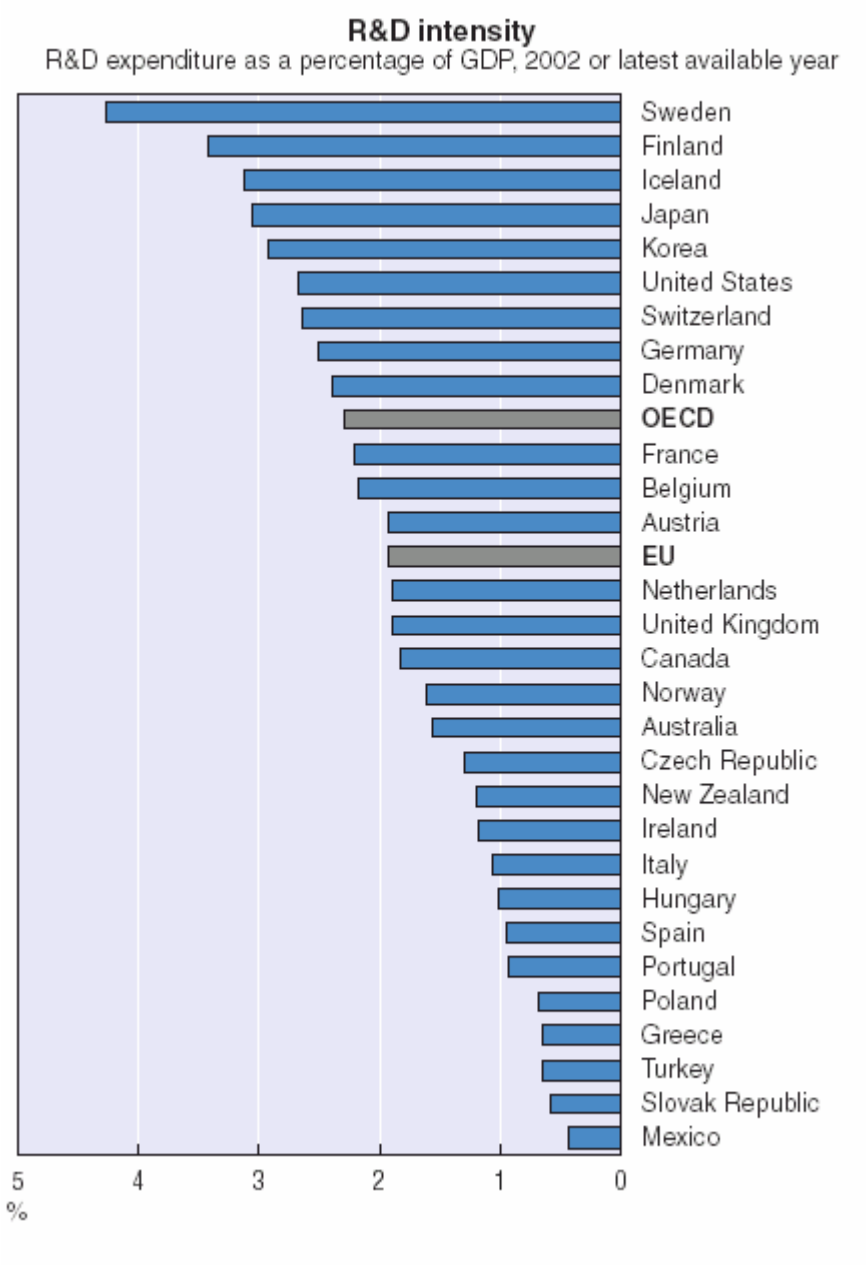
In relation to national investments in higher education and Research and Development (R & D) the eight European countries differ from one other. The comparative statistics on funding in these areas in relation to GDP show that Sweden and Finland are among countries that invest most in this field, whereas Spain and Hungary are among countries in which the share of investment is low (OECD 2004). The other countries are situated between these two poles.

Table 1: Investment in knowledge in relation to GDP in OECD countries



(Source: OECD 2004: 8)

Table 2: R & D expenditure in relation to GDP in OECD countries



(Source: OECD 2004: 9)

We can roughly divide the eight countries considered here into two groups according to the relationship between the state and the universities. The first group is characterised by a centralised (top-down) steering form, the second group has a de-centralised (bottom-up) steering form of the higher education system (on these concepts, see Heen 2002). The countries in the first group (France, Spain and to a certain extent Hungary) have a state-driven system in which central decisions are

made by the Ministry of Education and its associated agencies. In Hungary the centralised steering system is a result of the socialist period and has been partly reorganised since the fall of socialism in 1989. However, in comparison with the other countries Hungary resembles more the state-driven system of France and Spain than the system of the others.

The countries in the second group (Finland, Germany, Norway, Sweden and the UK) are characterised by a relative autonomy of universities and some steering instruments by the state. The UK represents an example of a highly market-driven higher education system. Although the other countries with a de-centralised steering form have not moved as far as the UK, calls for increased efficiency and competition have started to appear in science policy arguments and to some extent characterise the new steering instruments introduced in these countries.

The call for efficiency and increased competition has also been observed in other comparative research projects on European higher education. For example the TSER/HEINE-project which studied governmental steering strategies in eight European countries (Austria, England, Finland, Flanders, Italy, the Netherlands, Norway and Portugal) came to the conclusion that a general move towards a 'supermarket steering model' could be detected (Gornitzka and Maassen 2000: 14). The authors used the term 'supermarket steering model' to refer to a system in which the role of the state is minimal and efficiency is connected to market-driven activities. Universities are assessed according to criteria of efficiency, economy, flexibility and survival. This model could not be found in its pure form in any of the countries studied by the TSER/HEINE-project (although England came closest to it), but most of the countries had reduced the traditionally tight state control of universities. They had introduced quasi-market mechanisms and increased the self-regulation of universities. However, the role of the state was not vanishing. Instead the steering forms could be described as a combination of market and state.

2. The organisation of research activities and disciplinary divisions

2.1 The relationship between universities and research institutes

In the studied European countries most public research is conducted in the university sector or in autonomous research institutes. The university sector consists of universities and (in several countries) professionally oriented higher education institutions. These are generally called university colleges, polytechnics or *Fachhochschulen*. However, the way in which research activities are divided between the university sector and research institutes varies. The countries can be divided into three models according to the relationship between these.

The first model consists of countries in which the university sector is the primary locus of research activities, although some research is conducted at research institutes. This is the most common way of organising research activities in the eight countries. The countries belonging to this model are Germany, the UK, Sweden, Finland and

Spain. All these countries have a way of organising research activities that we call the *university-centred research model*.

In Germany the majority of research in the Humanities and Social Sciences is conducted in the university system. The key positions related to the organisation of research are professorial chairs in faculties or in university-based research institutes (Krebs et al 2005: 17).

In the UK, the universities are the most important organisations in which research takes place. The former polytechnics and some colleges of higher education were granted university status in 1992. Thus, the number of universities expanded enormously. However, this process also led to a division between the 'old' and the 'new' universities. The 'old' universities are more dependent on research funding as an income than the 'new' ones, which are more teaching oriented (Griffin et al. 2005: 6, 11).

In Sweden too, the differences between the 'old' universities and the later established 'new' universities or university colleges play a role in the organisation of research activities. The 'new' universities and university colleges have been given the task of co-operating and promoting regional trade and industry. This can also be seen in the research structure of these institutions (Holm and Liinason 2005: 7).

In Finland, most public research takes place in universities. The polytechnics have started to engage in research activities, but their role is still very limited. There are also a few state-financed research institutes in the Humanities and Social Sciences with an emphasis on applied research (Keskinen and Silius 2005: 19-20).

In Spain, most research is conducted at public universities and their associated research institutes. Although there are several private universities in Spain, they are not usually involved in research. There is also a public research body of importance called the Higher Council for Scientific Research (CSIC, *Consejo Superior de Investigaciones Científicas*) which employs personnel for research in certain priority areas and which has established sections across the country (Carrera Suárez et al. 2005: 19).

Countries in which research institutes have a central role in addition to university-based research belong to the second model. The research institutes are independent organisations and have been established outside the university system, although they sometimes cooperate with the universities. This kind of organisation of research activities we call the *parallel research model*. The countries following this model are Norway and France.

In Norway there are more research institutes than in any of the other Nordic countries[1]. Most of the Norwegian research institutes are in the Social Sciences and only a few conduct research that can be categorised as Humanities (Widerberg et al.

[1] Widerberg et al. (2005: 29) consider one important reason for this development to be the fact that the Norwegian public administration was rather underdeveloped during the early years and thus eager to make use of the results of external research investigations. Why the development led to the establishment of research institutes instead of increasing university research in these areas is an interesting question, however not examined in more detail in the report.

2005: 29-30). In the past the role of the research institutes was even more important than nowadays, since most of the research projects funded by the Norwegian Research Council were located at the research institutes. Scholars at the universities were usually engaged only in their individual research projects and did not apply for funding from the research council. During the last ten years the situation has changed however. With the introduction of a new budget system and reforms in the higher education system university teachers are also expected to bring in research money for their departments (Widerberg 2005). Thus, the role of the universities in research has increased, although research institutes remain important.

In France too, there is a large sector of public research bodies in addition to research conducted at universities. Over half of the research in Social Sciences and Humanities takes place in public funded research institutes (Le Feuvre and Metso 2005: 25). The most important public research body is the CNRS (*Centre National de la recherche scientifique*) which employs about 2/3 of research staff in public sector establishments outside universities. Most of the CNRS research staff however work in the Natural Sciences and under 20 per cent in the Social Sciences and Humanities. CNRS-funded research can be conducted in three kinds of institutions: autonomous research centres, centres attached to a particular university, or 'mixed' centres. The 'mixed' centres are associated both with a national research body and a particular university or another higher education institution. At the universities and the other elite higher education institutions (*Grandes Écoles*) research is conducted by teaching staff as part of their work. Scholars at the universities are expected to participate in research activities and some of them are members of research units, but there is no obligation to join research collectives (ibid: 20-21). The universities have lately increased their proportion of research activities at the expense of the autonomous CNRS research units. However, the CNRS research institutes and the units associated with the CNRS are still at the top of the status hierarchy in publicly funded research (ibid: 24).

Hungary represents the third type of organisation of research activities. In Hungary, research institutes are the main forum for conducting research, but since the 1990s the role of the universities has gradually increased. We call this the *separated research model*. The historical background of this dates back to the period after World War II when Hungary adapted the Soviet system of a strict division between universities and research institutes (Jakab et al. 2005: 3). Professional training and education became the tasks of the higher education institutions (universities and more professionally orientated colleges). Research was concentrated in the institutes of the Hungarian Academy of Sciences (HAS)[2]. Since the fall of state socialism in 1989 the Hungarian higher education system has gone through major changes. The government has supported and continues to support university research considerably and it has become possible to establish research units and research programmes in the universities. Today research takes place at university departments too, but most research is still organised and supervised by the Hungarian Academy of Sciences (ibid: 8). The HAS maintains research institutes and funds research groups attached to different university chairs. In addition, the establishment of a doctoral programme at universities requires co-operation with the HAS and its members (ibid: 9). Thus, the division between research and education continues to be typical for the Hungarian

[2] According to Jakab et al. (2005: 8) only a small amount of research was located at the universities during the socialist period.

system (ibid: 20; Jakab 2005). However, it seems that recent changes in the higher education system and science policy have led Hungary closer to the parallel research model, described earlier.

2.2 The connection between research and education

The relationship between research and education follows to a large extent the models presented above. In this section, we examine in more detail the different forms it takes. At one end of the continuum we find Germany in which research and education are closely connected. This relates to the Humboldtian tradition in the German higher education policies and structures. The Humboldtian ideals were based on the unity of research and education, academic freedom in research and education, and the coexistence of all disciplines in the university (Krebs et al 2005: 2). In the German system, doctoral training is a fundamental part of most research projects. For example, the German Research Foundation (DFG, *Deutsche Forschungsgemeinschaft*) together with the German Academic Exchange Service (DAAD) funds international PhD programmes to encourage further development of graduate schools (ibid: 17-18). In these programmes workshops, consultations and seminars are provided and the creation of research networks is supported. The aim is to develop the organisation of doctoral studies and the supervision procedures at the universities. The seminars from the undergraduate level to doctoral seminars at the university departments have usually been influenced by the research topics of the chairs and are sometimes integrated into their research projects (Krebs 2005).

At the other end of the continuum we find Hungary where the division of research and education has been sharp and, despite changes over the last 15 years, still is characteristic for the system. The other *university-centred* and *parallel research model* countries can be placed between these two ends of the continuum. The *parallel model* countries are closer to the end where research and education are separated, whereas the *university-centred model* countries are situated closer to the end where research and education are linked. Tentatively, the following continuum could be drawn:

Figure 1: The link between education and research in the eight countries:

Strong link research & education — Weak link research & education

GER FIN SWE UK ESP NOR FRA HUN

It should, however, be noted that there are different combinations of research and education in all eight European countries. The university sector includes structures which connect research and education closely, but also structures where these are distinct from each other. In these studied countries some university staff are so-called teacher-researchers whose work combines these two aspects. In France, permanent teaching staff are expected to use 50 per cent of their working time to research, whereas the other half of their time is divided between teaching and administrative

work (Le Feuvre and Metso 2005: 21). The proportion is exactly the same in Finland for professors. In Norway too, university teachers and professors use half of their working time for research and the other half for teaching and administrative work (Widerberg 2005). Similar teacher-researcher positions exist at the universities in the other studied countries. There are, however, staff at universities who only teach and others who are full-time researchers. At the universities researchers with no educational obligations work in the departments or in research institutes affiliated to the universities.

In countries like France and Hungary, which have a large independent research institute sector, there are also mixed structures. For example in Hungary some research units of the Hungarian Academy of Sciences (HAS) are located at the higher education institutions (Jakab et al. 2005: 22). The institutes of the HAS may be organised as research units at universities or they can co-operate with university departments in PhD training. This means that they engage in education besides their basic task of conducting research. In France, research institutes may employ university-based staff on a part-time basis and researchers in these units are sometimes asked to do teaching at universities, especially at post-graduate level (Le Feuvre and Metso 2005: 19). Thus, the division between research and education is not total even in these structures.

The multiplicity of combinations of research and education in the universities and partly also in the research institute sector gives a more detailed and complex view of the structures we presented earlier in relation to the three research models. In addition, it provides the necessary background to understand recent changes and anticipate future trends concerning the relationship of research and education. According to Chevaillier and Eicher (2002: 96) one important change in all European countries except Germany and Sweden (and to some extent the Netherlands) is the more intense division between funding for research and funding for teaching. This means that the criteria and procedures for research funding are increasingly differentiated from those of funding higher education. In some of the countries discussed in this report the share of external funding for university research is growing and universities are encouraged to raise more research funding from different sources. An interesting question is where this will lead and how it will affect the relationship between research and education. We will return to this question later in the report.

2.3 Strict disciplinarity or spaces for interdisciplinarity?

An analysis of the three research models and their linkage to disciplinary divisions shows a variation between countries with the same model. Strong independent research institutes can promote interdisciplinary research, but they can also be organised very tightly along disciplinary boundaries. In the countries of the *university-centred model* there are also considerable differences both between and within the countries.

The research institutes in Norway are fora of problem-oriented and applied research. They consist of thematically organised and interdisciplinary research groups, thus fitting well into the strategies of recent Norwegian science policies (Widerberg et al. 2005: 30). There is more space for interdisciplinarity at these institutes than in

research conducted at the universities. On the other hand, France is a good example of a country in which the research institutes follow a highly disciplinised structure. The National Committee of Scientific Research (CN, *Comité national de la recherché scientifique*), an integrated part of the CNRS, is divided into 40 disciplinary sections, one interdisciplinary section and five interdisciplinary commissions (Le Feuvre and Metso 2005: 25). The sections have the task of recruiting and assessing CNRS researchers in their disciplinary group. In the French system, there is relatively little space for interdisciplinary initiatives, either in the research institutes and the university sector, although the CNRS has been actively promoting more interdisciplinarity since the mid-1990s. The university sector is organised more strictly in disciplinary sections than the research institutes. In a similar way, disciplinary divisions play a central role in the organisation of the Hungarian research institutes. The departments and the scientific committees of the HAS are disciplinary (Jakab et al. 2005: 22). But in contrast to the French system, the Hungarian university sector provides more space for interdisciplinary experiments and co-operation across disciplinary borders than the research institutes.

In France, the disciplinary borders are partly reproduced through the division of labour between universities and research units. Some disciplines continue to exist only due to support from the CNRS (Le Feuvre and Metso 2005: 24). In other disciplines the role of the universities is central. Thus, the universities and the CNRS work in a complementary way.

In some of the *university-centred research model* countries the differences between the ‘old’ and the ‘new’ universities play a role in relation to disciplinarity and interdisciplinarity. In the UK, the ‘old’ universities gain a larger share of their total funding from research and are thus under pressure to be successful in the discipline-bound Research Assessment Exercise (RAE) (Griffin et al. 2005: 11). This means that there is more space for interdisciplinary experiments in the ‘new’ universities than in the ‘old’ (ibid: 22). Since the ‘new’ universities operate more in the area of education this space is, however, less open for research. In Sweden too the ‘old’ universities are more tightly bound to disciplinary divisions than the ‘new’ universities and university colleges. Holm and Liinason (2005: 21) regard the looser and more interdisciplinary structure of the ‘new’ higher education institutions as an effect of the Swedish governmental policy which has promoted interdisciplinarity during the last 20 years. However, as they note, even in the structures of the ‘new’ universities several barriers to interdisciplinarity exist.

In the centrally steered Spain the Ministry of Education is responsible for all major decisions on higher education including the curricula, funding of education and research, approval of disciplines and recruitment of staff (Carrera Suárez et al. 2005: 4, 6). In both education and research the disciplinary orientation is strong. Change in disciplinary structures and definitions need recognition from the state bodies.

In Germany, the tie between research and professorial chairs in departments encourages on the one hand a disciplinary research orientation, but on the other hand, individual orientations play a decisive role. There are also several interdisciplinary initiatives in national research funding and doctoral training.

In Finland, the space for interdisciplinarity is larger in PhD training and research than in basic university education. Interdisciplinarity has been set up as a goal in ministerial documents and statements by the Finnish Research Council, the Academy of Finland (Keskinen and Silius 2005: 40-1).

On the basis of these observations we suggest that the mode of steering by the state (centralised or de-centralised) forms an important factor in relation to the strength of disciplinary divisions. Centrally steered countries, such as France, Spain and Hungary, tend to be more discipline-bound than the countries with a de-centralised steering mode. However, the UK, which should be a perfect example of a de-centralised, market-oriented steering mode, has a very disciplinary-driven research assessment and funding instrument. Another crucial factor is thus the national science policy and its orientation towards interdisciplinarity and problem-solving, as can be seen in the examples of Norway, Sweden and to some extent of Finland. It is, however, clear that science policy statements are not always implemented in practice and there are several contradictory tendencies in research structures and funding systems.

3. Allocation of research funding in the Humanities and the Social Sciences

3.1 Structures for allocating funding

Research funding can be divided into state funding, private funding and international funding. In all eight countries state funding in its different forms is the main source of research funding for the Humanities and Social Sciences. State funding is on the one hand allocated as basic funding for universities and research units through the state budget. On the other hand, state funding consists of competition-based funding which is allocated through national research councils, public research bodies or ministerial decision making. In addition, regional modes of distributing research grants are of importance in some countries.

Recently several of the countries in question have introduced elements of competition and performance-based steering instruments to the *basic funding of universities*. The UK has been a leading figure in the EU in this trend and driven it to the utmost. In the UK, basic university funding is related to the number of students and to research activities. The research activities of each department are evaluated on a continuous basis. Research funding is awarded on the basis of grades received by the department (Griffin et al. 2005: 26). Financial constraints have also led Germany to undertake reforms in higher education which aim to promote performance and competition (Hüfner and Landfried 2003; Krebs et al 2005: 9-11). New steering instruments such as target agreements, ‘quality management’, accreditation and evaluation have been introduced. A similar development can be seen in Finland. Performance-based funding, management by results and increasing efficiency have become the key words of Finnish higher education policies (Keskinen and Silius 2005: 6-8). In most countries the new instruments mainly affect the conditions of university education, but even research conducted at universities is influenced by these changes. In

Hungary, basic research funding for departments is allocated according to the number of students taking courses in the departments, as well as depending on the academic recognition of the researchers (Jakab et al. 2005: 21).

Competition-based funding for research projects and programmes is allocated by one or several research councils in Hungary, Norway, Sweden, Finland, Germany, the UK, and by the CNRS in France. In Spain, the Ministry of Education controls research funding by co-ordination of four-year national plans. The national framework plans provide funding for research projects in certain thematic areas, outside of which obtaining funding is nearly impossible (Carrera Suárez et al. 2005: 20). In France, research programmes are funded by the Ministry of Research and public research bodies such as the CNRS (Le Feuvre and Metso 2005: 28-9). In Hungary too, the Ministry of Education is engaged in funding research projects (Jakab et al. 2005: 21). In addition it has established a scholarship for funding excellent performance in research. In Norway, Sweden and Finland 'Centres of Excellence' are funded by the national research councils. These will also be introduced at Nordic level.

In several countries, different *ministries* are engaged in funding specific research projects and research institutes.

Research funding by *regional councils and programmes* is important in Spain, France, Germany and unexpectedly in Sweden. This is above all a consequence of state organisation, keeping in mind that Germany is a federal state and Spain a state with autonomous regions. In France, decentralisation policies since the early 1980s have had an effect on the way research is funded, with the regions taking more active role since the mid-1990s. In Germany, the universities are organised and funded by the federal states (*Länder)* (Krebs et al 2005: 2). The regional ministeries also allocate research funding which university departments and centres can apply for (Siouti 2005). In Spain, the universities have a strong regional impact and they are expected to take into account regional needs in their activities. Regional governments announce research programmes resembling the four-year national plans (Carrera Suárez et al. 2005: 25). However, the criteria for awarding grants in these programmes do not favour the Humanities or Social Sciences, since they are more suited for evaluation of the natural sciences and technology. In France, the regional councils follow a four-year 'State-Region Development Plan' in which a research section is included (Le Feuvre and Metso 2005: 29). The research projects funded by the regional councils have a local focus and sometimes co-operate with local public research bodies and business. In France too, regional funding has mainly been allocated to Natural Sciences and Technology, whereas the Humanities and Social Sciences have faced difficulties in receiving this kind of funding. In Sweden, agencies, local authorities and county councils provided 14.7 per cent of the research resources for R & D at higher education institutions in 2003 (Holm and Liinason 2005: 23). This is a considerable amount, since for example the Swedish research councils only provided 10.9 per cent and research foundations 4.8 per cent of the total resources at the same time.

In all the analysed countries funding by different foundations is common. *Private funding* may not be as extensive as in the 'hard' sciences and areas of direct commercial applicability, but it does play an important role for the Humanities and

the Social Sciences. In Sweden, there is a big foundation of special importance for research in the Humanities and Social Sciences – the Bank of Sweden Tercentenary Foundation (Holm and Liinason 2005: 24). For the Humanities and Social Sciences this foundation is the second most important after the universities and university colleges in the provision of research funding. In Germany, the Volkswagen Foundation has made an extensive contribution by funding international and interdisciplinary research projects (Krebs et al 2005: 18). In Hungary private funding can come from non-profit foundations, representatives of trade and business or from influential international foundations, such as the Fulbright Foundation or the Soros Foundation (Jakab et al. 2005: 25). In Finland there are several foundations which support especially doctoral research with individual grants. Some of them also allocate funding for larger research projects. We suggest that private foundation grants may play a more important role for individual researchers especially in the Humanities than public funding agencies in cases where the public ones are more focused on large projects.

Recently the share of *EU-funded research* has been growing in the European countries. However, it still only accounts for a rather small part of the total research funding in these countries. For example in Sweden EU funding covered 3.1 per cent of R & D resources in higher education institutions in 2003 (Holm and Liinason 2005: 23). In Finland research funding by the EU provided 7 per cent of the external funding at the universities in 2000 (Hakala et al 2003, 44). Until recently, the major part of EU funding concerned Science and Technology. In the Humanities, EU funding has been quite marginal, but in the Social Sciences it has been more visible since the 4th Framework Programme for Research. Although the amount of EU funding for the Humanities and the Social Sciences is negligible on a national scale, it often plays a considerable role for individual departments and research institutes. It is, however, obvious that university basic funding is the crucial source for research in the Humanities in all eight countries.

When it comes to support for interdisciplinarity in regional, private or EU funded research, it seems that none are necessarily more open to this kind of experiment. For example regional funding in Spain awards grants using discipline-related categorisations such as Humanities; Economics, Law and Social Sciences; Biomedical Sciences; Technology and Computing; and Experimental Sciences and Mathematics (Carrera Suárez et al. 2005: 25). However, the active encouragement of interdisciplinary research by the Volkswagen Foundation in Germany can be considered as an example of an interest to transgress disciplinary boundaries. Since private funding sometimes tends to be more interested in funding applied research, thematic foci and problem-solving approaches may be valued more highly here.

3.2 The division of funding between the Humanities and the Social Sciences

A closer look at how research funding is divided between the Humanities and the Social Sciences shows that there are differences in the possibilities of obtaining competition-based funding. The Social Sciences have more channels for research funding than the Humanities. The Humanities are more dependent on grants by national research councils than the Social Sciences which have a larger variety of

potential providers of funding. Even within national research councils the Humanities are sometimes in an unfavourable position.

In Norway, the Social Sciences have more options to apply for research funding in the Norwegian Research Council. The Social Sciences received about 19 per cent of the Research Council's total budget for funding, whereas the Humanities were only granted 4 per cent (Widerberg et al. 2005: 28). There are more programmes which Social Science projects can apply for than there are for the Humanities. Most of the funding for the Humanities comes from the Division for Sciences which funds basic research. Only 11 per cent of the funding for the Humanities in 2003 came from the Division for Strategic Priorities, compared to 37 per cent of funding that was distributed by this division for Social Sciences (ibid.). The large research institute sector in Norway also mainly works in the Social Sciences (ibid: 29).

In Finland, the national research council, the Academy of Finland, is the most significant provider of funding for the Humanities. It covered over half of the external research funding of the Humanities in 2000 (Hakala et al 2003: 45). Other important providers for funding for the Humanities are non-profit foundations. For the Social Sciences the Academy of Finland is also a remarkable provider of financing. It has provided about 12 per cent of the total research funding (ibid: 46). Ministerial funding and EU-funding are also important for the Social Sciences. In the Finnish governmental research institutes the Social Sciences are well represented – mainly due to the large National Research and Development Centre for Wealth and Health (STAKES). The research institutes in the Humanities are few and very small (Keskinen and Silius 2005: 19-20).

In Germany, growing European funding has mainly opened up opportunities for the Social Sciences, whereas the Humanities have not been able to benefit from EU financing to the same extent. This will be further discussed in section 4.2.

The situation in Hungary, however, shows a somewhat different picture. The so-called national sciences (Hungarian language, history etc.) belonging to the Humanities are represented by two sections of the HAS (Hungarian Academy of Sciences), but the Social Sciences only by one section (Jakab et al. 2005: 23). The Humanities may have a better chance than the Social Sciences to receive funding from the national foundations (ibid: 25). On the other hand, the Social Sciences are supported by two national funding agencies (OTKA and OKTK), whereas the Humanities only by one (OTKA). The Social Sciences can also apply for grants from the private Soros Foundation.

4. Recent changes in research structures and funding

4.1 The future of the dual system?

In all three countries where the research institute sector plays a central role the issue of economic costs has been raised. In France and Norway there are signs of at least

partial restructuring of the system. In Hungary the research institutes continue to have a strong position, but the research system is considered costly.

In Norway, the public funded research institutes have faced stiffer competition regarding research funding. They receive basic funding from the Norwegian Research Council, ministries and various associations and organisations (Widerberg et al. 2005: 29). This funding covers the facilities and administration costs, but researchers need to apply for research project funding from the Norwegian Research Council. Previously, most research was conducted at the research institutes and universities were less engaged in research project applications. However, over the last few years the situation has changed. Now university teachers are also expected to organise and join research projects. This has led to tougher competition for Norwegian Research Council funding (Widerberg 2005). Universities have also recruited researchers from the research institutes who have a tradition of working in projects and conducting empirical research. In the hard competition, the position of the research institutes is less favourable, since their research is nearly twice as expensive as university research due to overhead costs (Widerberg et al. 2005: 29). The future of the research institutes is insecure. Some institutes may face noticeable reductions of their activities or possibly even close due to funding problems (ibid).

In France too, the universities have received increasing responsibility in conducting research. The CNRS is reducing the number of its specific research units and expanding the number of “mixed” units, as well as grouping small and medium-sized units into larger ones in the Humanities and Social Sciences (Le Feuvre and Metso 2005: 24). The total number of research units has decreased through mergers and some units have been closed down.

In Hungary the organisation of research activities in both research institutes and universities is costly. It is producing a large deficit which is becoming a burden for the budget of the institutes (Jakab et al. 2005: 25; Jakab 2005).

The dual system of research activities that has been typical for some countries seems to be confronting problems. The administrative costs for autonomous research institutions are often higher than for research at universities or research units associated with universities. Funding two, at least partly overlapping, research systems may not be very well-suited to the present political atmosphere of efficiency, performance and cost-reduction either.

4.2 New flows of funding and their implications

Changes are occurring in the flow of research funding. Three significant trends can be distinguished in the eight countries. The first is the increasing *internationalisation* of research funding and research activities. The second is the growing emphasis on *applied research* in science policy which has some effect on financial decisions. The third change, partly related to the previous, is the increase of *external research funding* at universities and a market-orientation of research – in scientific discussions referred to as ‘academic capitalism’.

The first trend is related to the internationalisation of research funding and new initiatives in the EU. The EU already allocates a considerable amount of funding through the Framework Programmes for research. Of great significance is also the ongoing development towards the European Research Area (ERA) which aims to construct an internal research market in the EU countries (Seppälä 2005: 10). It is argued that the innovative potential and competitiveness of European research will increase when the resources of R & D of the member countries are brought together. At the moment there are several so-called ERA-NET projects which are organised to develop networking and co-operation between research funders in the member countries. These projects engage in exchange of knowledge and skills on for example evaluation practices and management of research programmes (Ikonen 2005). The projects also focus on strategic activities that aim to produce transnational plans or systems of assessment for the future. One ERA-NET project co-ordinated by the Academy of Finland, NORFACE (New Opportunities for Research Funding Cooperation in Europe – A Strategy for Social Sciences), aims at developing forms of cooperation in Social Science research in the Nordic countries, Ireland and the UK which could be used as a model for European research programmes on a wider scale (www.norface.org). The Commission's proposal for the next Framework Programme (FP7) recognises both Humanities and Social Sciences as one of nine thematic areas, proposes joint European research programmes (both top-down initiatives), and suggests support to 'investigator-driven' research through a European research council (bottom-up initiative) (Commission of the European Communities 2005). We foresee major consequences of these new policies for the Humanities.

The internationalisation of funding also has effects at national level. In Germany the Europeanization of research funding has led to uneven opportunities to receive funding between the Humanities and Social Sciences (Apitzsch 2005). The share of the transnational European funding has increased. However, the priority areas of the EU Framework Programmes have mainly focused on socio-economic issues. There have clearly been fewer chances for researchers in the Humanities to apply for EU funding than for social scientists. An example of this can be seen at the University of Frankfurt where departments in the Humanities have noticeably less funding than the Department of Sociology (ibid). In Germany the role and the purpose of the Humanities has been questioned and debated since the 1990s. This has been referred to as the legitimation crisis of the Humanities (Krebs et al 2005: 42-3). In the stiffer competition for economic resources in the higher education sector and research funding, as well as growing expectations of the applicability of research, the position of the Humanities has become more uncertain.

In several countries, science policies have increasingly started to emphasise the importance of applied research and innovations with economic utility – Germany presenting one example of this. Economic growth has been linked to science and its practical applicability in the visions of a 'knowledge-based society', which guide the policies of the EU and most industrialised countries. The role of science in making technological innovations and solving social problems has become an argument often quoted in science policies. These policies have also had some effects on funding. An example of this is Sweden where the restructuring of the research funding system in 2001 led from approximately 10 smaller research councils to three larger research councils (Holm and Liinason 2005: 6). Of these, two (FAS and FORMAS) were established to fund both applied research and basic research. The third research

council (VR) is responsible for financing basic research. A similar structure with one research council section for basic research and two for both applied and basic research was introduced in Norway in 2003 (Widerberg et al. 2005: 26).

A trend related to this is the increasing external funding at universities in some countries. For example in Finland external financing at the universities has been rising since the 1990s (Keskinen and Silius 2005: 16; Välimaa 2001: 36). The total research funding of universities increased by 66 per cent during the period 1991-2000. However, the growth in state budget funding was only slight, whereas the increase in external funding was extensive. The share of external funding grew from a third to half of the total research funding (51 % in 2000) (Hakala et al 2003: 43). In Sweden too the share of external funding has been increasing at the cost of direct state funding. External funding grew from 49 per cent in 1994 to 55 per cent in 2002, whereas the share of governmental grants was reduced (Holm and Liinason 2005: 22). A central factor in this change was the establishment of seven research foundations which aimed at strengthening the connections between research and society, including co-operation with trade and industry. External funding means an increase in the share of competition-based funding at universities, but it must be remembered that a large amount of it is allocated to Business, Science and Technology. The Humanities and Social Sciences mainly benefit from increases in researcher-driven funding, often allocated through research council grants. An increase in external funding does not necessarily mean a lot of private funding for the Humanities and Social Sciences, although in other research areas this share can be high.

In sum, externally-funded research constitutes a growing part of the activities at universities. Universities are becoming more “research universities” (compared to educational institutions) than they used to be. The relationship between research and education which we discussed in section 2.2 is changing in the universities.

This trend also means a more market-oriented approach towards research activities. Research teams have to compete to a higher degree for funding and build contacts with different funding agencies and the private sector. They also have to ‘sell’ their ideas and market their skills to the heterogeneous funding sector. In scientific discussions this has been called ‘academic capitalism’ – a term used by Sheila Slaughter and Larry Leslie (1997) to refer to all kinds of actions universities and individual researchers use to obtain external funding. This includes activities in the commercial market such as developing licences and patents or establishing companies to profit from scientific results. In addition, the term refers to a market-like competition for research funding, although actual profit interests are absent (Hakala et al 2003: 14). The positive effects of ‘academic capitalism’ include better contacts between providers of funding and researchers/universities and a growing amount of total financing. On the other hand this kind of research usually utilises the resources of the departments more than it brings in (ibid: 15). Research agreements do not usually take into account all costs of activities, but make use of the infrastructure and administration of the department. Externally-funded research often focuses on applied research which can weaken the position of basic research at universities. However, a study conducted by a Finnish research group (ibid: 51-6) showed that an increase in external funding does not necessarily lead to an expansion of applied research at the cost of basic research. In a large survey addressed to the heads of departments in different disciplines nearly half of the respondents estimated that basic research had

increased at their department despite growing external funding. A small minority reported a decrease in basic funding. The respondents also reported a growth in funding for applied research, but the change was not very dramatic. These results are at least partly due to the fact that a large part of the external funding came from the Academy of Finland and other providers of funding who mainly support basic funding. A negative aspect of the extension of external funding is that applying for it takes a lot of time and energy at university departments. Among several others, the head of administration of the Technical University in Finland has recently expressed concern for the consequences of this trend (Liiten 2005). A health care report at the Technical University showed that a third of the professors were on the verge of a 'burn out'. At the Technical University the share of external funding is over 40 per cent of the total funding and in some departments even over 70 per cent. We suggest that 'academic capitalism' increases the richness of units with resources to bear or overcome the costs of competition. The implications might be that some units face considerable expansion while others languish.

5. Decision processes and evaluations in public research funding

5.1 Research councils in the Humanities and Social Sciences

Research councils are publicly funded but autonomous research bodies which allocate competition-based research funding. In addition they often support PhD training, research conferences, co-operation and networking between researchers both nationally and internationally, etc. The structure of the research councils varies from country to country. In three of the eight countries (Finland, Germany, and Sweden[3]), the Humanities and the Social Sciences are placed in the same research council or section of the research council. In another three countries (Hungary, Norway, and the UK[4]), the funding of Humanities is separate from the funding of Social Sciences. In February 2005 an embryonic national research council which will fund research projects across all scientific disciplines, the French National Research Agency (Groupement d' intérêt Public, Agence Nationale de la Recherche/ ANR) was launched (www.gip-anr.fr).

In Finland the national research council, the Academy of Finland, is divided into four sections. One of them, the Research Council for Culture and Society, includes both Humanities and Social Sciences (Keskinen and Silius 2005: 16-19). The Academy of Finland allocates funding mainly for basic research. In Germany too there is one national research council, the DFG (*Deutsche Forschungsgemeinschaft*), where the Humanities and the Social Sciences are in the same panel (Krebs et al 2005: 17). In Sweden and Norway there are national research councils or sections of research councils with different orientations. Some aim more at funding basic research, whereas others include funding for applied research. Thus, some research projects can

[3] See section 5.2. for France, which has one single section of the CNRS for both the Humanities and the Social Sciences.
[4] See section 5.2. for Spain, which has separate funding programmes for the Humanities and for the Social Sciences.

apply to several sources whilst others are restricted to one research council. In Sweden the research council responsible for funding basic research is called *Vetenskapsrådet* (VR, the Swedish Research Council) (Holm and Liinason 2005: 23). It has a section called the Scientific Council for the Humanities and the Social Sciences which funds research in the Humanities, the Social Sciences, Law and Theology. In addition, Sweden has two other research councils (ibid.). The Swedish Research Council for Working Life and Social Research (FAS) covers a large area of research activities including basic research and applied research. The relevant themes for this research council include for example labour market issues, public health, welfare, care and social relations. The Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning (FORMAS) also covers both basic research and applied research. Relevant themes for it are for example environment, agriculture, fishing, forest and forestry work and social planning.

Norway has one national research council, the Norwegian Research Council, which was organised into three divisions in 2003 (Widerberg et al. 2005: 26). The Division for Science is responsible for supporting basic research in all disciplines, but also for encouraging multi- and interdisciplinarity. The Division for Science is divided into five departments, one of which is for the Social Sciences and another for the Humanities. Thus, there are two separate departments for the Humanities and Social Sciences. They are however given the task to join their efforts in developing interdisciplinary research. The two departments also co-finance several programmes and centres (ibid: 27). The other two divisions of the Norwegian Research Council are the Division for Strategic Priorities and the Division for Innovation. The aim of the Division for Strategic Priorities is to identify and fund nationally strategic research. It uses large-scale programmes to promote this kind of research. A major part of the funding of this division has gone to Science and Technology, but some Social Science projects have also been funded (ibid: 27-8). The Division for Innovation co-operates with trade, industry and public agencies to encourage innovative research and the development of society.

In the UK there are three public research bodies which fund research in the Humanities and the Social Sciences (Griffin et al. 2005: 18). The ESRC (Economic and Social Research Council) covers the area of Social Sciences. The AHRC (Arts and Humanities Research Council) allocates funding to research in Arts and Humanities. The British Academy provides funding for research in the Humanities and Social Sciences when funding is not available from other research bodies. The structure of different research councils for the Humanities and the Social Sciences poses problems for interdisciplinary research. The two research councils have issued a joint statement to define the shared disciplines and to express support for common research areas (ibid: 19). However, despite the declared will for co-ordination between the two research councils, the system produces gaps and uncovered research areas. A research project has to address a subject panel in one of the research councils. For interdisciplinary research this may result in a rejection of the application if the proposal covers several disciplines belonging to different research councils (ibid: 21). In such cases the research project can apply for funding from the British Academy, but the grants awarded by the British Academy are on a much smaller scale than those of the two research councils. Thus, only some small projects can receive funding through this channel.

In Hungary, a public research body, the Hungarian Scientific Research Fund (OTKA), was established in 1986 to follow western models of competition-based research funding. From 1991 it has been an autonomous funding agency which decides on research project applications according to a peer review process. OTKA receives its funding from the state, domestic and foreign legal entities and through private donations (Jakab et al 2005: 23). The disciplinary division of OTKA follows that of the Hungarian Academy of Science (HAS) which means that there are two sections for the Humanities and one for the Social Sciences. However, in OTKA the disciplinary panels do not cover all the scientific sections of the HAS (for example cultural anthropology or theatre and film studies). In Hungary there is also a public research body, the National Priorities Social Science Research Fund (OKTK), for funding applied research in the Social Sciences (ibid: 24). It was established in 1992 after the socialist period. The aim of the OKTK is to support governmental work and increase its efficiency through research programmes addressing social problems.

5.2 The State directed decision-making processes

In contrast to the system of funding described in the previous section the state engages directly in the definition of research areas and themes in the centrally steered countries Spain and France. Even in Sweden there is a form of direct state involvement in research funding, although of minor importance.

In Spain the Ministry of Education coordinates four-year national plans for funding research. The plans usually take notice of EU directives and the priorities of its Framework Programmes. The present national plan is for the period 2004-7. It is divided into ‘National Programmes’ and ‘Strategic Actions’ which define thematic areas to be funded. In the thematic areas of the ‘National Programmes’ one is called ‘Humanities’ and another ‘Social, Economic and Legal Sciences’ (Carrera Suárez et al. 2005: 20-1). In these thematic areas a list of disciplines is presented and priority research themes are defined. The priority themes of the Humanities programme include for example applications of linguistics and language industries; cultural identities, multiculturalism and the effects of globalisation in culture; interpersonal, mass and institutional communication. The Social Science programme includes priority themes such as the internationalization of societies, economies and political and legal systems; institutions, development and sustainability; competitiveness and sustainability in business sectors and efficiency in public services. The thematic priorities favour applied and profit-rendering research in the Social Sciences and Humanities, as well as research which converges with political interests (ibid: 22). Still, some of the thematic areas are rather wide and provide possibilities for interdisciplinary research to receive funding.

In France the research body CNRS (*Centre national de la recherché scientifique*) allocates funding for research programmes besides organising research institutes and ‘mixed’ institutes with universities and other partners. Some of the research programmes are interdisciplinary. In the period 2000-4 the CNRS funded seven research programmes in thematic areas such as Social Issues in Life Sciences; Information, Communication and Knowledge; Environment; Nanosciences and Nanotechnology (Le Feuvre and Metso 2005: 28-9). The thematic areas are not favourable to the Humanities or Social Sciences, although some projects may receive

funding from them. The CNRS section "*Sciences humaines et sociales*" covers both the Humanities and Social Sciences. All national research programmes have to be approved by the Higher Council for Research and Technology (CRST). This is the main research policy consultative body in France. It evaluates annually the implemented research policy, approves the research and development budget and accepts the creation of new research institutes (ibid: 26).

In Sweden a research policy bill is delivered by the Minister of Education every three years (Holm 2005). It defines the guidelines of how to distribute public research funding during the next three years and allocates funding to specific fields (Alnebratt 2005). The latest research policy bill, 'Research for a Better Life' (March 2005), defines Medicine, Technology and Sustainable Development as research areas of special importance in addition to centres of excellence. A specific feature of the Swedish research bill is that all research funding bodies are requested to introduce or reinforce gender mainstreaming in their activities. In addition, the new bill proposes increased amounts of ear-marked funding to the research council for gender research excellence (*Genusperspektiv* 2005, 2-4; www.regeringen.se/forskning).

5.3 Disciplinary definitions in the research application system

When comparing the structural definitions of the research councils or programmes of national plans in countries where this information was available, both national specificities and commonalities appear.

A specific feature of the structure of the Finnish national research council, the Academy of Finland, is that it does not separate the Humanities and Social Sciences from each other. It has a section called the Research Council for Culture and Society which lists 14 fields of studies belonging to its area (Keskinen and Silius 2005: 17). This is equally true for Sweden, where the section called the Scientific Council for the Humanities and the Social Sciences covers the same areas.

From Hungary we have had access to the disciplinary division of the Hungarian Academy of Science (HAS). The national research council (OTKA) follows mainly the HAS model. A nationally specific trait of the HAS is that it has two sections for the Humanities (called Linguistics and Literary Scholarship and Philosophy and Historical Sciences), but only one for the Social Sciences (called Economics and Law) (Jakab et al. 2005: 28). This is due to the fact that the HAS was originally established to promote national culture and language (see also section 3.2. of this report).

A specificity of the UK definitions is a list of shared disciplines between the two research councils – one for the Humanities and one for Social Sciences. Although the two research councils have produced a definition of shared research areas, the system suffers from inadequate handling of interdisciplinary research applications (Griffin et al. 2005: 19-22).

In Spain too a list of interdisciplinary disciplines has been produced, but only in the Humanities programme of the four-year national plan (*Plan National de I+D+i 2004-*

2007) (Carrera Suárez et al. 2005: 22). The programme for the Social Sciences does not include a definition of interdisciplinary fields of research.

The commonalities are related to the disciplinary areas listed under Humanities or Social Sciences. Within the Humanities, Arts and Literary Studies, Music, Linguistics and Languages, Philosophy, History and Archaeology appear in the definitions of most of the countries. Within the Social Sciences, Sociology, Political Science, Economics, Law and Education are listed in most of the eight countries. Communication, Psychology and Anthropology are also often mentioned, but emerge at times in the Humanities and at times in Social Science definitions. There are also several disciplinary areas which are mentioned in the definitions of the funding bodies of only one or two countries.

An interesting issue is also the changes in disciplinary definitions. The Spanish system of periodic national plans is at least to some extent open to change between the periods. The National Plan for R & D of 2000-3 introduced a more specific list of disciplines and was therefore more restrictive than the plan of 2004-7 (Carrera Suarez et al 2005: 21). In the previous plan most areas in the Humanities and the Social Sciences were included in a category called 'The promotion of general knowledge' which was treated differently from the thematic areas defined by the national plan. However, in the other countries an alteration of the definitions does not seem to occur very often. Once established the definitions of the national research councils are relatively stable and only open to negotiation in periods of larger restructuring.

5.4 The evaluation processes of research applications

In many countries the disciplinary basis of the application and evaluation process of research funding poses problems for interdisciplinary research and initiatives. A few research agencies have paid attention to these hindrances and sought solutions to overcome them. However, since the funding structures are so intertwined with disciplinarity the problems are not easily solved. The efforts to introduce new interdisciplinary procedures have tended to be experiments of a temporary nature and their future is not known at the moment.

In Sweden the Swedish Research Council is divided into four sections called Scientific Councils[5]. The council is the decision-making body. Research applications are evaluated by peer review groups which grade the applications on a scale of 1-5 (Holm and Liinason 2005: 17-18). The main criteria used are the scientific quality of the research project and the applicant's skills. The council first decides on taking one third of the applications to closer scrutiny. The next step is to make the final decision on which applications of that group will be financed. The problems for interdisciplinary research projects are due to the disciplinary organisation of both the application form and the peer review groups (ibid: 24). When applying for funding, a research project has to be categorised into some discipline and the peer reviewers are appointed in that discipline. In Sweden interdisciplinary projects are seldom evaluated

[5] The evaluation process in the two other Swedish research councils – FAS and FORMAS – occurs in a rather similar way (Holm and Liinason 2005: 17).

by interdisciplinary peers. Some suggestions of how interdisciplinarity should be accounted for in the evaluation process have however been presented (ibid: 20).

In Finland, the decision-making processes of the national research council resemble the Swedish and Norwegian systems in several ways. The decision-making body is the Research Council for Culture and Society. In Finland too research applications have to be categorised according to a disciplinary list. Women's Studies or Gender Studies is not listed among these disciplines. Research applications are evaluated and ranked in a three-step process (Keskinen and Silius 2005: 17-18). The applications are evaluated by a peer review group or 2-3 individual reviewers who are selected among evaluators in the categorised disciplines. Attention is paid to the scientific quality of the research plan and the skills of the applicant. A grade scale of 1-5 is used. In the second phase preparatory groups in the Council decide on a preliminary list of projects to be funded. The preparatory groups include members from different disciplines, partly also across the Humanities and Social Sciences. In the third phase the Council makes the final decisions of projects to be funded. The Council consists of members representing different disciplines in both the Humanities and Social Sciences. Problems for interdisciplinary projects can occur in the review phase, since it is disciplinary. Although the preparatory group and the Council itself include members from different disciplines, this does not necessarily mean that their approach is interdisciplinary or favours interdisciplinary projects. The problems with disciplinary reviewers for interdisciplinary applications were addressed in an international evaluation report regarding the Academy of Finland and published in March 2004. As a result, the Academy of Finland experimented with interdisciplinary panels during the application round in 2004. However, the future of these panels has not yet been decided. They may be included as part of the review process, but they may also be treated as a temporary experiment.

In Hungary the evaluation process in the OTKA is conducted by disciplinary committees. Research groups are usually located in disciplinarily organised research units or university departments. The evaluations are based on the international recognition of the project and the skills of the applicant (Jakab et al. 2005: 23-4). The list of publications and success in the citation index are central in this evaluation.

As described previously in the section on research councils, the UK system includes similar problems regarding the disciplinary structure of the evaluation and decision-making processes. When a research project applies for funding it needs to state in which discipline it is applying. For example Women's Studies is not defined as a subject under which one can apply (Griffin et al. 2005: 22).This is similar to the Finnish case but different from the Swedish one. In addition, the British case differs from both Sweden and Finland in that applicants have to either choose between or address two separate research councils. As in other countries, the British peer review process is disciplinary.

In Spain the evaluation process regarding project applications is conducted by the National Agency for Evaluation and Prospective (ANEP, *Agencia Nacional de Evaluación y Prospectiva*). It includes two steps (Carrera Suárez et al. 2005: 22-3). In the first phase the applications are evaluated by two experts according to the skills of the applicant; the expected contributions and innovativeness of the project; and the feasibility of the proposal. After this a selection committee ranks the applications

according to the review phase and makes a prioritised list of projects to be funded. The review phase is disciplinary and the assessments produced during that phase are very influential. In the second phase when the committee makes its decisions it is, however, more important how the research projects cover the thematic fields and priorities defined in the national plan. There is also the problem of how to measure the skills of individual researchers and applicants. Especially in the Humanities instruments such as citation indexes are not suitable, since the field lacks generally accepted journal indexes (ibid: 23).The Spanish process and problems resemble very much the review process of the EU Framework Programme, as well as the ones applied in many top-down research programme processes.

It is evident that in all these countries the disciplinary application and peer review process cause problems for interdisciplinary projects.

5.5 Evaluation of research at university departments and research institutes

In the UK, the evaluation of research and researchers in university departments is directly connected to the research funding allocated by the government. In France, too, evaluations of research at universities and research units have direct implications for funding. In some of the other countries research conducted at universities is also evaluated, but the evaluations do not directly effect the funding of these institutions or have only minor effects.

In the UK all research-active staff in the universities are evaluated every four to six years through the Research Assessment Exercise (RAE) (Griffin et al. 2005: 26). Peer reviewers grade the departments and individual researchers along a scale of 1-5. Receiving top grades is not only prestigious for the departments and universities, but also a requirement for receiving research funding. The departments who only manage low grades have difficulty in finding funding and conducting research. The staff in these departments risk being categorised as ‘research-inactive’ which endangers their academic career and mobility. The peer review process of the RAE is strictly disciplinary and causes problems for interdisciplinary research (ibid: 27-8). Interdisciplinary work is not recognised in disciplinary panels. Thus, researchers with an interdisciplinary orientation need to keep up a disciplinary research record on top of their interdisciplinary research; otherwise their position in the academic world is seriously weakened.

In France, the research conducted by individual university teachers is evaluated by the National Council of Universities (CNU) which is responsible for the recruitment and promotion of academics, as well as for the qualification of scientific staff (Le Feuvre and Metso 2005: 20). The evaluation process is disciplinary and focuses on individuals. The quality of the research units, doctoral schools and programmes and other research activities at higher education institutions is evaluated by the University Scientific Mission (MSU) (ibid.). The evaluations also function as a national recognition of the research activities conducted at university departments. The MSU assessments directly affect the funding and development of research activities at universities. Research activities at research units are evaluated by the CN (National Committee of Scientific Research) in the CNRS and by the National Committee for Research Evaluation (CNER) (ibid: 26). The CN is responsible for the assessment of

individual researchers and its assessments are disciplinary-based. The CNER evaluates research organisations and programmes.

In Germany the evaluation of research conducted at universities is done at the federal state level. For example in Lower Saxony, the Scientific Commission Lower Saxony, *WKN*, has organised the evaluation of all university disciplines since 1999 (Krebs et al 2005: 10).

In Sweden, as in most countries, individual researchers are evaluated when they apply for academic positions. The evaluation is conducted by peers and follows disciplinary divisions. In addition, departments and educational programmes are evaluated by the National Agency for Higher Education (Holm and Liinason 2005: 19-20). The Agency also evaluates the need and capacity of an institution to establish a new research area.

Since most scientific positions in Finland are fixed-term (except tenured professors and lecturers), researchers are submitted to assessment periodically. These evaluations are disciplinary. The new pay system which is being implemented in 2005 also includes the evaluation of individual researchers. The salaries are in two parts – the first is related to the requirements and tasks of the job, the second to individual performance. Individual achievements are evaluated on the basis of degrees, publications, establishing of research networks, supervising etc. Universities and their departments are evaluated on a continual basis. The evaluation of education is conducted by the Finnish Higher Education Evaluation Council and the evaluation of research by the national research council, the Academy of Finland (Keskinen and Silius 2005: 8). These evaluations do not, however, have any direct influence on funding flows. They are meant to be an instrument in the development of the universities and their departments. In the long run the evaluations may also affect decisions regarding the restructuring and funding of departments. In addition, the yearly reported 'results' of each department include information on classes taken by students and completed degrees, as well as the number of publications and conferences attended by the researchers. These affect the funding of the departments directly. In some cases, the results determine whether the department can keep all its staff and the size of its activities, in other cases, results-based funding only covers a minor part of the total budget of the department.

6. Interdisciplinarity in research funding – a specific or a common trait?

6.1 Specific interdisciplinary research programmes or themes introduced by the funding bodies

In the eight European countries the national funding bodies have introduced at least some interdisciplinary research programmes or priority research themes in the Humanities and Social Sciences. For example in Germany, the German Research Foundation, *DFG*, has funded several interdisciplinary doctoral programmes and graduate courses. In addition, it supports long-term interdisciplinary research

programmes at the universities called Special Research Centres (*Sonderforschungsbereiche)* (Krebs et al 2005: 18). Funding may be allocated for up to 12 years. Four Centres for Human Sciences were established in the new federal states in 1996 to develop interdisciplinary research in the Humanities, especially in Cultural Studies (ibid: 17). The private Volkswagen Foundation too funds several interdisciplinary research projects. The funded projects have been interdisciplinary across the Humanities and the Social Sciences, as well as across the Humanities/Social Sciences and the Natural Sciences.

In Finland the national research council funds interdisciplinary thematic programmes for periods between three and five years. These have, in recent years, included programmes such as Marginalisation, Inequality and Ethnic Relations in Finland (SYREENI, 2000-2003), Russian and East European Studies (1995-2000), Russia in Flux (2004-2007), Social Capital and Networks of Trust (SOCA, 2004-2007) (www.aka.fi). For some research areas that are considered especially important and worth strengthening new programmes can be established later. This has been the case for Russian Studies for example. In Sweden and Norway big, more long-term, interdisciplinary research programmes have been carried out. Both countries have for example completed interdisciplinary research programmes on power relations in society, including gender relations.

Even in France where disciplinary divisions are characteristic of both the university sector and research units, there are interdisciplinary research projects funded by the Ministry of Research and the CNRS, and the new Doctoral Schools include interdisciplinary training (Le Feuvre and Metso 2005: 29, 51-2).

In several countries specific interdisciplinary programmes for gender research have been established. In Spain the Institute for Women's Affairs (*Instituto de la Mujer)* in the Ministry of Labour and Social Affairs has funded research projects on gender issues since 1996 (Carrera Suárez et al. 2005: 24). In 2004 a programme called 'Strategic action for the promotion of equal opportunities' was established and the earlier projects were transferred to it. The programme is organised around eight priority areas including equality in working life, women's quality of life and reconciliation of family and working life. Carrera Suárez et al. (2005) consider the strategic action to be one of the few examples of truly interdisciplinary programmes in Spain. Yet, as they point out, a specific gender programme has led to an absence of gender issues in the general national plan of research activities.

In Norway the Norwegian Research Council financed a gender research programme called 'Gender in change' in 1997-2001. It was followed by a new programme called 'Gender research: knowledge, boundaries, change' (2001-2007) (Widerberg et al 2005: 27). These large programmes have been co-ordinated by the Department for Social Sciences and the Department for the Humanities. This ongoing research programme defines three main thematic areas – knowledge (gender research and critique of science); (sexualised and gendered) borders and categories; and politics and social change.

In Sweden the national research councils and the Bank of Sweden Tercentenary Foundation have allocated specific funding for gender research since the end of the 1970s (Lykke et al 2004: 85). In Finland the national research council, the Academy

of Finland, has financed a programme called 'Power, violence and gender' (2000-2003). In addition, there have been specific Nordic gender programmes, such as the programme 'Gender and Violence' which has funded research projects and networking during 2000-2005. The Nordic programmes are funded by the joint Nordic Research Council.

In the evaluation of how such research programmes can promote interdisciplinarity it is essential to investigate whether they are an integral and continuous part of funding activities or temporary and short-lived experiments. Of the programmes described above at least the Norwegian and Spanish gender programmes have introduced continuity into the research field. The German Special Research Centres (*Sonderforschungsbereiche)* too represent interdisciplinary programmes that have a possibility to conduct research during a substantial period of time. We hypothesise that short programmes with no continuation may produce a reasonable amount of publications, but lead to no profound changes. It should also be noticed that the actual level of interdisciplinarity practiced in research programmes and projects is not necessarily equivalent to their declared interdisciplinarity.

6.2 Possibilities for interdisciplinarity in the general application process

Besides nationally introduced interdisciplinary programmes and priority themes interdisciplinarity can also be a bottom-up initiative, as in the case of researcher-initiated interdisciplinary projects or when individual researchers apply for grants with an interdisciplinary research plan. How much space is there for bottom-up initiatives with an interdisciplinary character in the analysed countries? And furthermore, where does interdisciplinarity have to be placed in order to have positive effects on funding decisions – at the level of national plans and programmes, in researcher group initiatives or in projects by individual researchers?

Norway is an example of a country in which interdisciplinary and thematic approaches are supported by the basic structure of the (public) research application process. This has been a consequence of the restructuring of the Norwegian Research Council in 2003 and of the Bologna process. Today most funding is channelled through thematic research programmes which are usually interdisciplinary – at least in the field of Humanities and Social Sciences (Widerberg et al 2005: 29). A decade or two ago funding decisions were based more on the applications individual research groups sent to the research council. The scientific quality of the project was decisive and competition occurred in disciplines (ibid: 28). The development towards large interdisciplinary programmes has meant less space for disciplinary struggles and a push towards interdisciplinarity in research project applications. It has also led to a situation where funding is distributed to large projects and research environments, whereas small projects or individual researchers need to apply for grants elsewhere (ibid.). Thus, the Norwegian development represents a model where thematic and interdisciplinary approaches have been made a common part of the application process. This has been achieved by changes at the level of research programmes and the policy of the national research council.

In France too, research funding is usually distributed to research units rather than to individual researchers (Le Feuvre and Metso 2005: 21). But on the whole, the French

system is structured on a very disciplinary basis and is unfavourable to bottom-up and to interdisciplinary initiatives. However, there are some top-down initiatives by the responsible ministries, such as interdisciplinary research programmes and research schools for PhD students.

A top-down model also exists in parallel to the bottom-up model in Finland. The national research council has found it effective to support interdisciplinarity through the implementation of interdisciplinary research programmes (Oksanen et al 2003; Keskinen and Silius 2005: 41). Less attention has been directed to the position and problems of interdisciplinary projects in the 'normal' application process, although the Academy of Finland has experimented with interdisciplinary panels (described in section 5.4 of this report).

In Sweden, however, the support of the Swedish Research Council for interdisciplinary projects is usually part of the ordinary research application process (Holm and Liinason 2005: 24). This could be regarded as openness to bottom-up interdisciplinary activities, but this view is contradicted by the fact that the evaluation process of the applications is disciplinary. This causes problems for interdisciplinary research projects. Specific measures to improve the position of interdisciplinary projects in the 'normal' application process are still missing.

The UK system shows how dependent bottom-up interdisciplinary initiatives are on the structures of the funding agencies. The division into two research councils – one for the Humanities and another for the Social Sciences – each with a disciplinary structure is very problematic for interdisciplinary research projects. In the British system it is easier for small projects or individual researchers to apply for funding for interdisciplinary projects, since they can address the third funding agency – the British Academy. The British Academy does not, however, distribute grants over £20 000 which implies support only for small-scale projects (Griffin et al 2005: 21).

In sum, most countries have established specific programmes of an interdisciplinary character or introduced interdisciplinary themes. A few of these also include long-term funding. Less has been done to tackle the problems of the 'normal' application and evaluation systems. It also seems clear that the research councils and their programmes are very influential in promoting or discouraging interdisciplinary research. Changes at this level can lead to considerable support for interdisciplinarity, as seen in the case of Norway. There is some space for bottom-up interdisciplinary initiatives in the analysed countries, but this space is considerably reduced by disciplinary structures and evaluation processes in the research councils.

7. Conclusions

In this report we have analysed the research structures in eight European countries and presented them in the form of three models – the *university-centred research model*, the *parallel research model* and the *separated research model*. In the first model, the university sector is the main forum for research activities, although some

separate research institutes exist. This applies to Finland, Germany, Sweden, the UK and Spain. The second model refers to a situation where both the university sector and the independent research institutes play a central role in research activities. These countries are Norway and France. The third model refers to a strict separation of research and education between autonomous research institutes and higher education institutions. Hungary represents this model, although it should be noticed that the Hungarian system has gone through changes after the socialist period and moved closer to the second model. In sum, three models occur in the eight countries:

Figure 2: Relationship between universities and research institutes in the 8 European countries

University-centred model	Finland, Germany, Spain, Sweden, and the UK
Parallel model	Norway and France
Separated research model	Hungary

We found, however, that the strength and mutability of a disciplinary system was not directly connected to these models. Instead we suggest that the division between centralised and de- or non-centralised steering modes of higher education and of science policies of the countries influences the adaptability of the systems to changing environments, among them to interdisciplinary challenges in the form of a new disciplinary organisation (see Figure 3 below). In addition we found that university traditions, such as the division between 'old' and 'new' universities, play important roles in which old universities on the one hand tend to be more disciplinarily rigid than new ones. On the other hand old universities may in practice enjoy a higher degree of autonomy than newer ones.

Figure 3: Relationship between university steering mode and disciplinary rigidity

Centralised steering of universities and research sector	Rigid disciplinary structure	*Hungary* *France* *Spain*
De-centralised steering of universities and research sector	Flexible disciplinary structure	*Finland* *Germany* *Norway* *Sweden* *UK*

Basic governmental funding to universities is still the main source for research in the Humanities and the Social Sciences. Although the countries differ somewhat on how much research university teachers are expected to conduct and although the practical opportunities vary among universities within the countries, we notice a clear

movement towards higher research intensity among university teachers. Recent trends in research funding also include increased competition-based funding, a growing internationalisation of funding, emphasis on applied research in science policies and to some extent in funding decisions, and an increase in external research funding at university level. Within research structures, the future of the dual system of research institutes and universities, existing in Hungary, France and Norway, may be in a state of flux, although the clearest signs of this are found only in Norway.

The main forms of allocating funding to the Humanities and Social Sciences are as stated above: basic funding from the state budget (sometimes including elements of competition), competition -based funding through national research councils or ministerial decision-making, other ministerial funding, EU funding, regional funding and private funding. When comparing the opportunities for obtaining research funding the position of the Social Sciences seems more advantageous. Social Science projects have usually more funding agencies and more research programmes from which to apply for grants. External research funding at universities is more often obtained by the Social Sciences than the Humanities. In sum, the changing research structures and policies in Europe are likely to have long-term effects on day-to-day research activities especially in the Humanities but also in the Social Sciences.

In several of the eight countries there were either multiple national research councils (UK) or different sections for the Humanities and Social Sciences (Norway, Hungary). In the state-directed systems, both Spain and France had structures which divided the Humanities and the Social Sciences. In Finland, Germany and Sweden the Humanities and the Social Sciences were in one panel or sub-council.

The disciplinary structures of the application and evaluation processes of the funding agencies in particular were considered as problems for interdisciplinary research projects. There are also problems related to the discipline-based assessment of research at university departments and the evaluation of individual researchers, which create problems for interdisciplinary initiatives.

Interdisciplinarity is promoted through specific programmes or priority themes of public funding bodies in all eight countries. The policy documents indicate that this will be an on-going trend. Some of these are long-term initiatives, whereas others are short and more temporary in character. In the Nordic countries (especially in Norway and Sweden but to some extent also in Finland) interdisciplinary research programmes are more prominent than in the other five countries. The remarkably long history of specific research programmes on gender issues of Norway and Sweden stand out as examples of best practice for promoting interdisciplinary initiatives.

Interdisciplinary programmes have received more attention from the funding bodies than have problems connected to the ‘normal’ funding process with which bottom-up interdisciplinary initiatives (research projects and individual researchers) struggle. The problems related to researcher-initiated projects need to be properly addressed by research funding bodies on a European level in order to promote interdisciplinarity in the Humanities and the Social Sciences. Alongside this, research assessment bodies in these different countries need to solve the very same problems. We find the disciplinary rigidity of France and Spain in especially urgent need of change.

Although many disciplinary barriers remain untouched, in this report we have also documented some movement of the disciplinary boundaries.

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