

**The Relationship between the Process of Professionalization
in Academe and Interdisciplinarity:
A Comparative Study of Eight European Countries**

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Introduction

Focus of report and methodology

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

In exploring this issue comparatively across eight European countries, the report draws predominantly on the eight country-specific reports on *Disciplinary Barriers between the Social Sciences and Humanities* completed in January 2005² which provide country-based analyses of the ways in which the social sciences and humanities sustain and police their ‘territories’ and the consequences of this for interdisciplinary research collaboration. These reports show that this is not just a matter of intra-disciplinary gate-keeping but derives from a complex nexus of structures that include disciplinary as well as political, research infrastructural, administrative, institutional, professional and other parameters, all for the most part set to maintain established disciplinary boundaries in academe.

Apart from the country-specific reports referred to above, the current report also draws on related research (e.g. Kuhn and Remøe 2005) carried out under the EU’s Framework 5, interviews and email communications, other secondary sources and databases to analyse the complex picture of the disciplining of academics across Europe. It suggests that the professionalization of academics at national level in most European countries operates so as to reinforce mono-disciplinization rather than so as to encourage interdisciplinarity; that the concept of interdisciplinarity is diversely understood and interpreted in the various European countries (see also Benavot 2005); and that transnational research such as that sponsored by the European Union offers one of the few contexts in which interdisciplinarity is required and rewarded as a professional practice.

¹ See www.hull.ac.uk/researchintegration for further details.

² See www.hull.ac.uk/researchintegration for full-text versions of these reports.

Academics, professionalization, and interdisciplinarity: Definitions

To facilitate the discussion of their professionalization we have, for the purposes of this report, defined academics as those staff who are employed by and work in publicly funded universities³ as teachers and researchers. We recognize that the professionalization of academics may encompass a wide variety of research and teaching trajectories depending on country-specific contexts as well as international ones. Here, however, we have refrained from including, for instance, professionals who work as researchers in NGOs or in private research organizations since these very diverse kinds of careers paths require analyses beyond the scope of this study and also often (though not invariably) fall outside the parameters of public funding⁴.

There is a vast literature on the issue of professionalization, covering a wide range of professions from medicine to law and nursing (see Silius 2002; Witz 1992). As Silius (2005b) writes:

Earlier research on professionalization has been limited because of its dominant Anglo-American context and male-centeredness. Many studies in the sociology of the professions started with a view of a profession typical for an Anglo-American context. In other contexts, however, the divide between the professions and other occupations is less clear-cut. The relationship between the professions, the state, the educational system and the market also varies across countries due to different societal contexts. Because of the importance of the context, some scholars today avoid the concept of professionalization (Benoit 1994, Freidson 2001, Evetts 2003). Feminist scholars have revealed the masculine construct of the very idea of profession (Crompton 1987, Silius 1992, Witz 1992, Davies 1996). Others have criticised the ideological implications of traditional theories of professions concerning gender, class and race, for example (Allen 1987). Feminist critiques have mainly focused on two aspects. First, theories of professions have neglected the implications of the former's masculine position. Second, these theories have not been applicable to women-dominated professions. Features, which have been considered important for professions such as status, rewards, autonomy, closure, strategies, and education, operate differently in women-dominated and men-dominated professions. Thus, the concept of profession and its derivations such as professionalization are multidimensional concepts with different meanings in different societies and contexts. (119-20)

Given such diversity, we have interpreted the professionalization of academics here to mean the ways in which people are

- a) acculturated both formally and informally into an academic discipline in order to teach and research in it as academics in universities, through processes that involve discipline selection, examination in disciplines, participation in disciplinary fora, discipline-based research, etc.;
- b) recognized and legitimated as professionals in a given discipline; and
- c) shape their professional academic lives to accommodate themselves to the working contexts in which they operate.

³ The one exception is the Hungarian partner in this project, the Central European University in Budapest, which is a privately funded charitable foundation.

⁴ It should, however, be noted that in some European countries such as Spain private (= privately funded) universities are an increasing part of the higher education system.

As Silius (2005b) highlights, there are major differences in the professionalization processes of academics across the various European countries, and these emerge in our research. Krebs et al (2005: 39) argue:

The development of a professional identity is created by professional research ethics which must be acquired during one's studies by learning exemplary discipline-specific methods, theories and knowledge. . . Furthermore such skills are connected with a specific trained disciplinary habitus which however remains mostly unreflected upon – and unanalysed.

We could add that there is a specific national habitus - to use Bourdieu's term (1979) - which operates in academic disciplines, particularly within the social sciences and humanities, which also remains mostly unreflected upon and unanalysed.⁵ These processes and *habiti* (if one can pluralize Bourdieu's term in this manner) for the most part, as we shall indicate, work to impede possibilities of interdisciplinary research.

We come then, to the definition of interdisciplinarity. Benavot et al (2005) indicate the level of unclarity and multiplicity of interpretation of the term 'interdisciplinarity' as it operates in European social science research. Griffin et al (2005: 50) make the following distinctions:

Multidisciplinarity refers to the parallel existence of discrete bodies of knowledge in proximity to each other. Interdisciplinarity refers to the integration of discrete bodies of knowledge with each other to create new knowledge syntheses, and transdisciplinarity refers to knowledge (production) beyond the confines of individual disciplines or groups of disciplines.

For the purposes of this report we view interdisciplinarity as the transformative integration of discrete bodies of knowledge to create new knowledges, methodologies, and concepts. We also recognize that this – given current academic and knowledge production structures – is an ambitious perspective, not – as this report will indicate – easily or readily realized in many European countries to date.

Report structure

This report is divided into six sections:

1. The impact of education on professionalization
2. The state and professionalization
3. Disciplinization and professionalization
4. Professionalization and interdisciplinarity
5. Research and professionalization
6. The impact of the Bologna process on academic professionalization.

In this division the report roughly follows the professional trajectory an academic undertakes in her professionalization, from school, through higher education, into academic careers, and (inter)national research activities. In the first section, 'The impact of education on professionalization', we examine the extent to which school

⁵ Benavot et al (2005: 118-19) argue that national *habitus* is more in evidence in the social sciences and the humanities than in the sciences since the former two in particular have formed part of the educationally-based nation-building efforts of European countries.

education pre-determines professional academic routes through, for example, possibilities of subject choice (broad- or narrowly-based education). We also discuss the impact of higher education on academic professionalization, detail the ways in which academic qualifications are used as indicators of professionalization, and briefly examine the influence of the state on the education and professionalization process.

This topic is much expanded in the second section where we analyse the degree of influence the various European member states exercise on academic professionalization and on academic employment through, for example, national registers and assessments of academics by discipline, and direct ministerial interventions in the employment process, or otherwise. The third section focuses on the ways in which the professionalization of academics goes hand in hand with particular forms of disciplinization through the disciplinary infrastructures (e.g. subject associations; academies; etc.) which govern the disciplines. The fourth section then examines the opportunities for interdisciplinarity in the disciplined context that determines the professional identities of most academics in Europe. We go on to analyse the role that research plays in the professionalization of academics and their career advancement, and finally we discuss the ways in which the Bologna process might impact on the academic professionalization process and the possibilities for interdisciplinary research.

One factor that makes a difference to the culture and processes in academia is the size of a country. As Table 1.1 shows the European countries discussed in this report range in size from Norway with a population of just 4.5 million to Germany with a population of 82.3 million (www.oecd.org/dataoecd).

Table 1.1 Population size in eight European countries (in thousands), 2005

Country size	Country			
Small	Norway: 4513	Finland: 5188	Sweden: 8896	Hungary: 10188
Medium	Spain: 40266			
Large	UK: 58837	France: 59703	Germany: 82350	

Source: www.oecd.org/dataoecd (accessed 23/3/2005).

Population size impacts on the size of the academic community within a given country; for instance, although the percentage of the population that attend higher education may be similar, the actual numbers involved may be very different. In the small countries the population of academics in a particular discipline will be correspondingly small and most academics will know each other well. In larger countries such as Germany, France, and Spain the scale of academia makes such a close community less likely. This then impacts on professionalization processes including career development, networking, and expectations of professional mobility.

Another factor which impacts on the culture and processes of academe is the willingness or otherwise of academics and other actors within academia and within the separate disciplines to embrace change. For example in Spain:

while there have been political calls for autonomy (especially from strongly nationalist regions) there is also a marked resistance, especially from the older,

still predominant generation, to changes which genuinely grant universities autonomy over the structure of studies, the types of degrees, the entrance requirements or curriculum contents. As academic staff are civil servants and (in universities only) retire at the age of 70, the system is quite self-perpetuating and change tends to come slowly (Carrera Suárez et al 2005: 3).

Yet in Norway, changes to the whole higher education system have already been implemented following the Quality Reform of 2003 (*Kvalitetsreformen*) in accordance with the Bologna Agreement and interdisciplinary programmes of study and ways of working incorporated into the system, albeit to a limited extent (see Widerberg et al 2005: 4). Size, then, matters though not invariably in the same way.

1. The impact of education on professionalization and (inter)disciplinarity

This first section of the report focuses on the impact of education on professionalization and interdisciplinarity. It therefore addresses the following four areas:

- The impact of *school* education on academic professionalization and interdisciplinarity
- The impact of *higher* education on academic professionalization and interdisciplinarity
- Qualification levels as indicators of professionalization
- The influence of the state on education and professionalization

Its aim is to elucidate the extent to which academic professionalization, disciplinization, and possibilities for interdisciplinary research are determined and structured by the way in which school education, and higher education are organized and operate, the qualifications one has to obtain in order to become an academic, and the extent and ways in which the state regulates that process.

1.1 The impact of school education on academic professionalization and on interdisciplinarity

In all but one of the eight European countries in this project compulsory school education focuses on the teaching of individual ‘traditional’ disciplines, with little emphasis on interdisciplinarity. The exception is Norway where interdisciplinary projects are mandatory in upper secondary schools (Widerberg et al 2005: 11). Direct interdisciplinary education is thus rare at school level. However, schools also lay the grounds for the ability to engage in interdisciplinary research later in life through the range of subjects they offer to pupils. That range ‘disciplines’ school pupils in distinctive ways. For example, if a narrow range of subjects is taught then the opportunity for interdisciplinary working later becomes less likely as there may be little knowledge of methods and theories outside a narrow range of subjects. Conversely, if a wider range of subjects is taught at compulsory schooling level, pupils will have been exposed to a correspondingly wider range of methods and theories, thus allowing more potential for interdisciplinary work at a higher level. However, as will be shown

throughout this report the relation between education systems, discipline areas and academic professionalization is complex and the exposure to a wider subject base at compulsory schooling level does not necessarily allow for an easier path to becoming an interdisciplinary academic.

Within most European countries, pupils have a broad-based general education before entrance into higher education, which usually includes the compulsory study of a range of subjects such as languages, sciences, social sciences and humanities disciplines. In Hungary ‘the comprehensive, secondary school final examination at the age of 18 (*érettség*) includes history, Hungarian language and literature, mathematics, one foreign language and a subject selected by the student’ (Jakab et al 2005: 40). In Spain, where - at higher secondary education level (*Bachillerato*) - individual choice involves specialisation in either the Arts, Natural Sciences and Medical Sciences, Humanities and Social sciences, or Technology (the four areas laid down by the Ministry of Education), compulsory subjects still include philosophy, history, Spanish language and literature, the co-official language in the relevant regions, one foreign language, and physical education for all pupils (Carrera Suárez et al 2005: 6). The UK is the only exception to this rule of a minimum requirement of certain compulsory subjects from different disciplinary domains. Here early specialisation is the norm; pupils make initial subject choices at age 12 or 13. These choices lead to the General Certificate of Secondary Education (GCSE) examinations taken at age 16. Each subject or discipline is studied in its own right and examined as an individual entity (Griffin et al 2005: 7). At the subsequent A level (upper secondary school, age 16-18) pupils narrow their subject range further, again through individual choice but of only between 3-5 subjects. These may be as diverse as Psychology, Physical Education, Business Studies and Media Studies, or as ‘disciplined’ as an individual taking 3 science subjects only (e.g. Biology, Physics, Chemistry). Pupils, then, decide individually which subjects to take; there is no national curriculum, no obligatory element to take a range of subjects, or any particular subject, once compulsory schooling finishes (age 16). The subjects taken become relevant to applications made to university but only for those going to university straight after finishing school. For example, if a pupil chooses not to study geography at GCSE level (age 14 – 16), s/he cannot take it at A level (age 16 -18) and may be unlikely to get a place at university at age 18 to study geography. However, this does not apply to subjects that are not in fact part of the school curriculum, and many universities these days allow *ab initio* entry into subjects that are part of the school curriculum. Conversely in Germany ‘the Abitur^[6] enables students to study any subject at university so that the qualification for studying at university is totally independent of the school programmes and subjects at school’ (Krebs et al 2005: 35). And ‘in the Finnish education system the subjects chosen at upper secondary school do not determine or exclude choices for university courses in the humanities and social sciences’ (Keskinen and Silius 2005a: 6).

Where students enter university some time after leaving school (in the UK such students are classed as ‘mature students’), both the UK and Norway have well established alternative routes into higher education, and these are less dependent on, or independent of, choices made within the school system (Wright et al 2003). This is also the case in Finland where ‘within the humanities and the social sciences everyone who

⁶ The *Abitur* in Germany is the equivalent to A levels in the UK or the *Baccalaureate* in France. Successful completion enables pupils to enter university.

is eligible for higher education can take part in the entrance exam and if successful enough start studying. It is not required that one has studied those subjects at school' (Keskinen and Silius 2005a: 6). This also follows the discourse of the Sorbonne Declaration (1998) that 'students should be able to enter the academic world at anytime in their professional life and from diverse backgrounds', so school choices should not prevent the returning learner from entering higher education and/or there should be other recognised and accessible routes for those not wishing to enter university directly after school in all signatory countries.

As previously indicated, only in Norway is interdisciplinarity explicitly incorporated into the school curriculum. There, 'it has been mandatory [since 1994] for all upper secondary school pupils to do at least one interdisciplinary project a year...and it is a stated aim to stimulate interdisciplinarity and new working methods' (Widerberg et al 2005: 11). This emphasis on working in interdisciplinary ways, Widerberg et al point out, does have problems, such as the teachers remaining focused on their own disciplinary subject whilst working on these interdisciplinary projects, the time taken by the interdisciplinary projects rather than a focus on the final examinations, and practical issues such as lack of facilities for working in small groups. However, they stress that 'pupils in Norway today are used to cooperating and working in groups, as well as to thinking across disciplines. These skills which are acquired in school can be seen as a fruitful foundation for interdisciplinary work at higher levels of education.' (Widerberg et al 2005: 11). In the other European countries interdisciplinarity is not considered a stated aim in the same way as in Norway, and even though some initiatives may be happening within various schools and colleges, the emphasis is on disciplines being taught at school stage.

Across all the countries secondary school pupils are taught by school teachers trained within the higher education system and with teaching qualifications which are usually discipline based. Indeed in the UK it can be difficult to gain admission to a secondary school teaching programme (Postgraduate Certificate of Education) if one does not already have a national curriculum discipline qualification at degree level. Interdisciplinary degrees are not considered unless they have a high proportion of a specific curriculum subject included, or unless the applicant has other relevant qualifications. It is perhaps worth noting that those wishing to become school teachers in all countries are given a much more structured professional training at present than those entering academe.

Overall then, school education in all European countries with the exception of the UK encompasses a wide range of subjects, providing pupils with disciplinary knowledge in a number of knowledge domains including languages, the sciences, the social sciences, and humanities. This familiarity with different knowledge domains lays the foundations for the possibility of later interdisciplinary work. At the same time, interdisciplinarity is explicitly incorporated into only one country's school curriculum, that of Norway.

Whatever the range of compulsory school subjects there is at best a very limited correlation between the subjects taken at school and those an applicant is obliged to choose at university. In most countries, in line with the Sorbonne Declaration (1998), it is possible to study subjects at university not previously taken at school. Schooling in terms of subjects taken thus does not determine professional routes through setting the agenda for the disciplines one can study at university.

1.2 The influence of higher education on academic professionalization and interdisciplinarity

In this section we discuss academic professionalization both in terms of subject knowledge and in terms of teaching skills acquired during one's university education. We start by focusing on undergraduate education and the opportunities it affords for interdisciplinary work, then examine the same issue in terms of postgraduate education, and end by discussing the acquisition of teaching skills.

Across the European countries it is possible to distinguish, broadly, between two types of disciplinization of students at the beginning of their university education: a broad-based or a narrowly based one. Students will either begin their studies with a general course (as is the case in Finland) or be disciplined into a particular subject from the start as is the case in Spain where, for example, 'disciplinization is very strong in the academic world from its early stages. The habit is still that of thinking of one subject (history, language, economy) which students choose and on which they concentrate during their university studies' (Carerra Suárez et al 2005: 33). In France, too, 'disciplinary specialisation starts very early on... Students carry this early disciplinary identity through all their academic years and once they enter post-graduate level PhD training programs, they are generally very poorly equipped for interdisciplinary approaches or methods.' (Le Feuvre and Metso 2005: 46) The other end of the spectrum is Norway where Widerberg et al (2005) report background conditions of a lack of a long disciplinary history, lack of a feudal hierarchy, close connections between politics and science, few people with higher education, and scarce financial resources (Widerberg et al 2005: 5).

These have contributed to the discipline not being the focus for students entering higher education.

These conditions seem to have favoured a grassroots-oriented development of the sciences, in particular in the social sciences and the humanities. A problem-oriented empiricism (in contrast to positivistic empiricism) has guaranteed an un-dogmatic gaze where the topic and not the discipline is the starting point (Widerberg et al 2005: 6).

It is thus predominantly in Finland and Norway that students begin their studies with a broad-based curriculum. Everywhere else a disciplinary focus is established at the point of entry into higher education.

Disciplinary focus does not, however, mean subject content focus and different conditions prevail across the European countries regarding the normativity of the university curriculum content across higher education institutions (HEIs). In the past 'The French system aimed at providing all students with a Baccalaureate and offering the same quality of teaching in all the regions of France with the central approval of national curricula' (Le Feuvre and Metso 2005). This meant that students would get the same education in any of the French universities, in effect a higher education national curriculum. In Britain similar moves are underfoot through the establishment, under the auspices of the Quality Assurance Agency (QAA), of so-called benchmarking statements (which define the curriculum content by discipline in terms of minimum learning outcomes). However, these are at present broadly articulated, thus allowing significant interpretation at local level.

In most universities in most European countries students apply to undertake a course or programme within a particular discipline. The systems for this across the countries are very different, with some students applying to a particular course and others applying to a department or faculty for a common first year and then specializing after that. In France, as previously mentioned, disciplinary specialisation starts early on. This means that even though there is a discourse of having a more general university education at the beginning of a programme, what tends to happen is that the programme will be in one main discipline, 'except if students have decided to take one of the rare interdisciplinary degrees – like Sports Studies (STAPS) or Education Studies' (Le Feuvre and Metso 2005: 46).

In Sweden 'one objective of the 1993 reform was to give students a greater opportunity to choose courses and to combine them into degrees' (Holm and Liinason 2005: 4) thus providing students with more opportunity for multidisciplinary courses.

In the UK it is quite usual to study for a joint/major-minor/or combined studies degree. These are usually multi- rather than interdisciplinary, operating on the basis of an aggregational model with no integrated curriculum content but involving two or more disciplines. These disciplines are, however, usually within the same knowledge domain (eg within the humanities or within the social sciences) although they can, theoretically, also cross knowledge domain boundaries. However, these crossings of boundaries are more likely to be within and between the humanities and social sciences rather than across to the 'hard' sciences, for example. There is also a growing trend for undergraduate students to be allowed to take a small percentage of their overall degree programme as 'free electives'. These are choices of modules from any discipline. They do not have to be related to the main subject and can be freely chosen by the student. This is an attempt to widen the horizons of the students beyond their main discipline of study. Problems arise when there are prerequisite requirements for these modules, but the main barrier to this initiative has been the higher education funding structure. Money follows students and therefore departments are reluctant to encourage students to study in other departments and so lose that element of funding. Moreover, in Spain, for instance, where 10% of a programme can be freely chosen, 'the lack of a real inter- or even multi-disciplinary culture means that most choose modules in their own subject or closely related themes' (Carrera Suárez et al 2005: 33). Overall, then, there is little opportunity for interdisciplinary study at undergraduate level.

In Norway, interdisciplinary degree programmes at undergraduate and postgraduate level are available but closer examination reveals 'that they are multidisciplinary rather than interdisciplinary'. Furthermore, the authors question whether this 'is ... how they have become legitimate' in that '*their affiliation with and integration into particular disciplines has "allowed" them to become legitimised within academe*' (Widerberg et al 2005: 49, emphasis added). In a similar vein, Keskinen and Silius (2005a: 57) suggest for Finland that, although there is a lack of structural support for interdisciplinarity, with registration and research panels organised along disciplinary lines, there are no measures in place to prevent interdisciplinary initiatives:

The system is relatively open to initiatives in organizing research, conferences and workshops on a smaller scale. In terms of methodologies, content and interest, some representatives of disciplines in both social sciences and humanities tend to question the boundaries and attempt to outline new

objectives and approaches. *The successfulness of transgressing the boundaries in practice often depends on individual effort.* Interdisciplinary teaching, publishing or research may be organized around academic personalities rather than being the result of centralized policies (emphasis added).

The Norwegian and Finnish examples are interesting as they indicate how the institutionalisation of interdisciplinary study and research is introduced by stealth, in that those already-established in academe may harness interdisciplinary work as a substantive mode of inquiry. Structural barriers do not prevent interdisciplinary initiatives but we witness the emergence of the 'double-shift' analogy, with academics organizing interdisciplinary ways of teaching and working alongside their work within already established subject areas.

Although France has a very rigid and disciplinary higher education structure and tightly controlled recruitment system, the introduction in 2001 of the Bologna process has instigated some changes:

There are some signs that the attempts to promote more interdisciplinarity and a more 'problem-solving' approach to research activities may be filtering down to the undergraduate levels of the HE system ... The Ministry of Education no longer requires universities to conform to a single, national model of course content, within existing disciplinary boundaries. Universities are now free to offer multi- / pluri- / trans- / inter-disciplinary courses to their students. Prior to the accreditation of these new degree programmes, *they must show that these courses respond to a 'need' and that there is a market for them* (either in terms of potential student numbers and/or in terms of job opportunities for graduates). (Le Feuvre and Metso 2005: 58; emphases added)

The evidence here establishes a link between more general transformations taking place and the call for 'useful' knowledge production, as outlined in section 4.1, with the promotion of policies supporting problem-solving research, alongside vocational and market-led responses being introduced as a framework for new degree programmes.

At postgraduate level there is more chance of interdisciplinary work; this is discussed further in section 4.2 of this report. In some of the European countries a student applying for a PhD has to register the PhD in a national discipline-based register before embarking on the PhD programme (Table 1.3). This is the case in France, Hungary and Spain, and obviously limits the possibility of working in an interdisciplinary way.

Table 1.2 Discipline-based PhD registration requirements in national registers (by country), 2005

Registration in discipline required	Registration in discipline not required
France	Finland
Hungary	Germany
Spain	Norway
	Sweden
	UK

Table 1.2 shows that the discipline-based registration of PhDs in national registers is associated with the southern and eastern European countries rather than with the north western ones. This declarative act, or performative act as Judith Butler (1997) would describe it, following on from the previous study of the discipline at undergraduate level, then sets a pattern by which one becomes what one declares oneself to be through a process of mutual reinforcement whereby the registration in a particular discipline

determines the subsequent possibility to research and gain employment in that discipline, thus limiting – if not eliminating - one’s possibilities to move across or between disciplines. Thus in France ‘access to tenured positions . . . [requires] registration on the list of “qualified” academics recognized by the disciplinary based National Council of Universities (CNU)’ (Le Feuvre and Metso 2005: 42). Such performative institutionalized and bureaucratically underwritten identification of academics with disciplines is not common in Germany, the Scandinavian countries or in the UK where – especially in the latter two cases - the relation between state bureaucracies and education is of a different order. Consequently there is in these countries greater flexibility, especially in the social sciences and humanities, regarding opportunities for movement between and across disciplines. One implication is that opportunities for interdisciplinary work are less restricted through such registration in the latter countries. In the UK PhD students apply directly to the department of the university in which they wish to study. The supervisor will be in that department but it is possible to have a second supervisor in a different department. This enables the possibility of inter- or multi- disciplinary work. It is also possible to embark on an interdisciplinary PhD in the UK. However, concerns about subsequent employment – which is likely to be in a ‘traditional’ discipline – and issues around the demands of servicing different disciplinary cultures prevent many students from considering interdisciplinary work⁷. This fact is augmented by the effects of early and sometimes very narrow specialization which means that students may lack knowledge of a range of disciplines (Griffin et al 2005: 7-8). In Germany postgraduate students can request that their supervision is undertaken by academics from different disciplines (Krebs et al 2005: 36). Theoretically, therefore, strict disciplinary boundaries are not observed. Likewise, in Spain, PhD programmes are much more flexible and innovative, especially if contrasted with undergraduate degrees, and offer some scope for interdisciplinary study. However, Carrera Suárez et al (2005) point to their instability 'as they are approved on a one-off basis. Many PhD programmes . . . are still very close to the original disciplines of degrees, since they are closely linked to the Departments which are discipline based in composition' (11). In Hungary, too, the second supervisor can be from a different department but the teaching opportunities for a PhD student are most likely to be in the home department, closing down the opportunity for an interdisciplinary expansion of intellectual horizons. Where opportunities for interdisciplinary study seem to exist, they are more likely to be a potential rather than an actualised opportunity, as in reality it would seem that student life remains structured along disciplinary lines, with students preferring or being guided within a particular discipline.

One aspect of the process of the professionalization of academics is the acquisition of pedagogic qualifications to teach in higher education. Such qualifications have become an increasing requirement since the 1990s in the north west European countries. A recent report by Davidson (2004), for example, indicates that newly appointed academic staff in the UK are required to gain a teaching qualification within their induction period. These courses are becoming standard practice mainly due to the quality assurance culture that permeates UK academe. Davidson argues that instead of being generic HE teaching qualifications that just tick the quality control boxes of a managerial audit and are used uncritically to accept academic discipline culture, such

⁷ As Widerberg et al remind us the disciplines are much more important if one wants to stay within academe (2005: 55) than if one wants to work outside universities.

courses should be interdisciplinary and encourage new academics to make sense of their discipline boundaries, whilst acknowledging that they are ‘in fact flexible, culturally determined, interdependent and relative to time’ (302). He suggests that new staff should ‘look over the hedges surrounding their own disciplines, into the fields of neighbouring disciplines’ and evaluate discipline boundaries critically (Davidson 2004: 305).

In the Swedish system of higher education all PhD students have to take a teaching qualification. This is a generic qualification and gains the student 3.75 ECTS credits (Liinason 2005) so that when they apply for academic jobs they already have the qualification. In France there is no clear HE teaching qualification process. PhD students may have done some teaching whilst working for their PhD. However, this teaching is never assessed. Any teaching undertaken is within the registered discipline. Teachers can use innovative techniques or interdisciplinary methods should they choose to do so. However, this is neither a requirement nor monitored, so it is impossible to judge how interdisciplinary or innovative new tutors are (Metso 2005).

In Finland the post of assistant requires an MA qualification and assistants are expected to teach whilst reading for their PhD. This is similar to the role of the Graduate Teaching Assistant (GTA) in the UK. For the next rung of the professional ladder in Finland, a senior assistant, one has normally finished one’s PhD and is required to have good teaching skills. These can be proved in two ways: the experience of teaching is one, taking courses in pedagogical skills and education which increasingly occurs is the other. Both are given attention at the recruitment stage. In Hungary there is the possibility of taking teaching credits but this is not a requirement, as other elective courses can be taken (Jakab 2005). In Germany the system is very much ‘learning by doing’ (Siouti 2005). In many countries, then, academics will gain their first posts in academe with no teaching qualification other than the experience gained on the way through the higher education system.

Other European countries are not currently moving in the same direction as the UK in requiring a teaching qualification for new members of staff coming into the profession as lecturers, and even less following Davidson’s advice to make these qualifications interdisciplinary, enabling new academics to examine disciplinary boundaries critically. This suggests the low level of professional priority and expertise attached to teaching in higher education (even though it constitutes a significant part of many university academics’ professional life). It also indicates by implication that research – the capacity for which has to be proven in all countries, minimally through the completion of a PhD thesis (see section 5.1 of this report) – is much more significant in academic professional cultures than teaching.

1.3 Academic qualification levels as indicators of professionalization

This section deals with the use of academic qualification levels as indicators of academic professionalization across Europe. In 2005 across the European countries academic qualifications are being streamlined as part of the Bologna Process into a three-stage successive cycle of Bachelor (year 3), Masters (year 5), and PhD (year 8). Although doctoral level study has yet to be discussed within the Bologna Agreement, the EU has voted to include the doctoral level as the third cycle of the Bologna Process

(Sanders 2004). Across the countries the academic qualification level required to move into and move up within academe varies. In the Nordic countries and the UK, the PhD is the highest level of qualification required to become an academic whereas in the central and southern European countries a *habilitation* (in effect a second PhD) and/or national examinations are required in addition to the PhD – usually to become a full professor (see also section 3.3). The most significant difference regarding the academic qualification requirements for the professionalization of academics in Europe is thus between those countries that require a *habilitation* and those that do not.

Table 1.3 Highest level of academic qualification required for permanent employment in academe in eight European countries, 2005

Qualification required	Country			
PhD only	Finland*	Norway	Sweden	UK*
Habilitation	France (also Agrégation ⁸)	Germany** (but now also Junior professor with no habilitation, much contested – see Krebs et al 2005: 37)	Hungary*,**	
Habilitation and National Exams	Spain (although some positions do not now require national exams – see Carrera Suárez et al 2005: 4)	Italy		

* denotes countries where it is possible to hold junior academic positions without a PhD, or where a PhD is not an absolute requirement.

** denotes country in which the continuation of the Habilitation system is under review.

As more freedom of movement for academic staff is a stated aim of the Bologna Agreement, in some countries requiring a *habilitation* such as Hungary and Germany, there is now a debate ‘whether the obligatory *habilitation* should be cancelled, since the Bologna Agreement obliges its signatories to set requirements for academic positions that may be met by any citizen of the European Union’ (Jakab et al 2005: 42).

Entry into academe prior to full professor status usually requires a PhD across the European countries, and undertaking a PhD is therefore commonly the first step in the process of the professionalization of academics.⁹ The professional status of PhD candidates varies across the European countries: they may be classified as students

⁸ The *Agrégation* is one of the most prestigious qualifications in the French Higher Education system, qualifying people to apply for permanent positions within higher education institutions without having to complete a doctorate (Le Feuvre and Metso 2005: 15).

⁹ However, not all those who undertake PhDs then enter academe. Significant numbers move into the public sector, private companies, and other employment arenas once they have completed a PhD.

only, may have dual status as students and employees simultaneously, or be employees outright. In the UK, for instance, PhD candidates are students, although students may be employed in various capacities such as Graduate Teaching Assistants (GTA) or as research assistants who are paid a stipend. In other European countries the PhD candidate is a member of the academic staff outrightly, and so in effect has already made the transition from student to academic. Thus in Norway, all doctoral candidates are employees: 'besides a higher income and more security, employee status yields social benefits such as pension rights, unemployment support, maternity and sick leave, and democratic rights in the university'. (Sanders 2004) In Spain doctoral candidates are currently treated as students but they should soon have access to employee benefits (Sanders 2004). In Germany PhD students may have a dual status, as can be the case in the UK, being students and acting as employees at the same time, and, of course, 'according to a report published by the HRK *Hochschulrektorenkonferenz*, young graduates prefer employment for a limited period to fellowships, e.g., because employment as opposed to grants confer benefits such as social security (see: www.hrk.de)' (Krebs et al 2005: 36). In France there are possibilities for on-the-job training of PhD students, for example during their final year as temporary teaching and research assistants (one year, renewable only once). These positions are allocated to the departments by the Ministry (on the basis of student numbers).

Where PhD candidates also work as research assistants, this may facilitate more multi- or interdisciplinarity if the PhD student's thesis and their employment-related research work are either in different areas or require multi- or interdisciplinary approaches. Being exposed as a researcher (PhD student, employee) to different methods and subjects will increase the chances of minimally greater exposure to diverse knowledge domains.

Overall, the academic professionalization process in terms of qualifications obtained is, for the most part, one of disciplinization within a specific subject. Some north west European countries such as Norway and the UK provide opportunities for interdisciplinary work at postgraduate level but the need for employment, structurally driven in terms of disciplines, leads cautious emerging academics to a mono-disciplinary career path.

1.4 The state, education and (inter)disciplinarity

The state has an involvement in all the education systems under investigation within this report. This involvement ranges from the state being directly involved in academic appointments as in France and academics being civil servants as in France, Germany and Spain, to there being very little direct involvement in the higher education process beyond the funding mechanisms such as in the UK. Other areas in which the state and its intermediaries can have influence are on curriculum direction and development, discipline registration, student numbers within particular disciplines, state examinations as well as determining who is responsible for the rules and regulations for running higher education institutions. In the southern and eastern European countries the state is directly responsible for curriculum setting and decisions about disciplines. However, there has been increasing deregulation in countries such as Hungary, Spain, and France since the 1990s. For example in Spain state influence has lessened and some academics

no longer have to go through the traditional national examination process to reach the position of professor (see Carrera Suárez et al 2005: 2-6).

In Finland there is increasing autonomy (Keskinen and Silius 2005a: 6) but the universities cannot for instance start providing a particular discipline or degree subject as a major without agreement from the ministry. In the UK, however, that decision lies with the individual universities and in 2005 there is concern over major disciplines closing down. The University of Hull, for example, announced the closure of its mathematics department in 2005 and it is not alone in this. Newcastle University announced it would stop taking in physics students from 2005 and Exeter University that it was to close its chemistry department (Fazackerley and Hill 2004). The same article reports the then Education Secretary Charles Clarke as having ‘asked funding council chiefs to devise a plan to safeguard nationally important subjects, but ruled out government intervention to save departments facing closure’. The Science Minister, Lord Sainsbury, said that ‘There is a very strong view, which I hold, that universities are autonomous’, and Sir Alan Wilson, director-general for higher education at the Department for Education and Skills, stated that ‘It would not be possible – nor would it be right – for the Government to intervene in any closure’ (Fazackerley and Hill 2004).

In many other EU countries this situation would certainly be a matter for government intervention. In France for example, there is a ‘strong level of centralization and direct state control’ (Le Feuvre and Metso 2005: 4) and ‘Higher education has long been seen as a legitimate arena of public intervention in France, and universities were expected to conform to a series of nationally defined norms and rules with regard to the content of their courses, the organization of examinations, their administrative status and so on’ (Musselin 2001: 24, cited in Le Feuvre and Metso 2005: 4). With regards to employment, ‘a series of national rules and regulations were elaborated for the career patterns of all academic staff’ (Le Feuvre and Metso 2005: 6). Similarly, ‘The Federal Republic of Germany belongs to those western European countries which are traditionally accustomed to a strong governmental role regarding higher education’ (Teichler 1991: 29, in Krebs et al 2005: 4).

Jakab et al (2005: 6) acknowledge that in Hungary ‘the state has increased the autonomy of Higher Education Institutes (HEIs)’ and ‘the relationship between the state and education has become more decentralised’ but point out that ‘in spite of this process of decentralisation, the introduction of the concept of quality assurance in academia also opened a certain space for the indirect regulatory power of the state’ (Jakab et al 2005: 6).¹⁰ In Hungary, one of these bodies, the Higher Education and Research Committee (HERC) is concerned with the process of program accreditation. As part of their involvement in this process ‘on the basis of labour market forecasts and the number of applicants within disciplines it offers suggestions regarding the number of state-funded places in the various disciplines in higher education’ (Jakab et al 2005: 7). This ability to ‘suggest’ numbers obviously has an effect on the number of places funded by the state which in turn affects the disciplines taught at university. Interestingly, it seems that the more direct the influence the state exerts on education,

¹⁰ For a further discussion of the impact of the ‘quality culture’ see section 6 of this report.

the more discipline-centred that education is. France and Spain but also Hungary are the key examples here.

According to Holm and Liinason (2005), 'historically, universities and colleges in Sweden have been governed by the State. Professors were employed by the state and until the 1960s, the Government decided on every single department's number of porters and secretaries ... Today, the internal organisation of institutions of higher education is decided by the institutions themselves on the basis of central guidelines' (3). But, as for the most part in all other European countries,

By 2004, the Government was in charge of the following: the law of higher education; the establishment of new university colleges; the framing of principles for the assignment of resources; the distribution of annual subventions to universities, university colleges, public authorities and research council; the planning conditions for the next two years; . . . the decision on whether a university college has the right to be called a university, or not (Holm and Liinason 2005: 5).

So even though there has been decentralisation there is still significant governmental influence on the higher education sector.

Through its funding mechanisms the state continues to exert control over academic disciplines. There is little evidence that this control is used to foster interdisciplinarity or to encourage radical educational reform. Norway apart, none of the other European countries in this project appear to have undertaken state-driven efforts to reform the curriculum either in terms of structure or content so as to facilitate interdisciplinarity. Rather, in most other instances the state functions to maintain disciplinarity as the basic educational building block of academe.

Section 2 The State and Professionalization

The EU's call for greater mobility (see section 6.1 of this report) amongst academic staff is difficult to realize given the overall degree of variation of higher education across Europe. As Musselin (2005) states: 'Even if convergences are to be observed among the orientations adopted by higher education policies in European countries, they still are characterized by strong national features. One of the most striking national patterns of each system is its academic labour market, salaries, status, recruitment procedures, workloads, career patterns, promotion rules, being very different from one country to another' (135). With regard to interdisciplinarity, the way in which some countries professionalize their members through a national system of registration by discipline, for example, prevents interdisciplinary programmes and research from developing despite it being seen as a progressive move by the EU.

2.1 The influence of the state on professionalization

Within Europe the influence of the state on the academic professionalization process differs greatly, from the situation in France with a high degree of influence (Le Feuvre and Metso 2005: 6) to the UK where there is often no such standardization within universities themselves, let alone across the country. In between those two extremes are Finland where although ‘faculties and departments form the most important level of decision-making in recruitment ... the process is regulated at the national level through established criteria for each position’ (Keskinen and Silius 2005a: 8), and Germany where ‘with only a few exceptions, the universities in Germany are state institutions’ (Krebs et al 2005: 4) and ‘generally speaking, since the 1960s and 1970s the influence of government on universities in Western Germany has grown’ (Krebs et al 2005: 5). Despite this, there are some moves towards more autonomy for universities and where ‘until recently, universities that wanted to appoint a professor drew up a ranked list of three candidates which they presented to the relevant ministry for final decision ... there are plans to give the *Präsidium* (steering committee of the university) the right to appoint professors, rather than the ministry making the final decision’ (Krebs et al 2005: 5).

In Hungary, the political changes following 1989 have obviously affected the education system but

from 1988, the changes in educational structures took place faster than the transformation of political institutions. The right of appointments was given back to the universities, and the influence of party politics almost entirely disappeared. . .

Since the early 1990s the relationship between the state and education has become more decentralised, and responsibility is now divided among several actors. (Jakab et al 2005: 4, 6)

In Spain there continues to be extensive state regulation: ‘positions must be nominated by universities according to recognised *áreas de conocimiento* which are fixed. Each lecturer must choose one of these knowledge areas to compete for positions and generally will stay within it all her academic life’ (Carrera Suárez et al 2005: 33). Professional recognition in Spain comes mainly through professorships in public universities or the CSIC¹¹, which are discipline-bound, and are obtained through competitive public exams. ‘These are judged by an examining board of seven professors chosen nationally among those who have in their turn obtained their professorship in that same *áreas de conocimiento*’ (Carrera Suárez et al 2005: 33).

In Sweden, although universities appoint professors without any intervention from the Government, the Government has established criteria for each position. Thus the Government does not have direct involvement in the recruitment process but does set up the ‘job specification’ of the position to which the university wishes to appoint. The ‘Tham Initiative’ which was designed to promote female researchers in academe was also a Governmental directive (see Holm and Liinason 2005: 25). Here governmental intervention in the form of ring-fenced funding benefited women (in that they were targeted by the initiative) and gender studies (in that it gave the subject area further recognition) which might not have happened if the universities had been fully autonomous and able to decide where to place funding.

¹¹ *Consejo Superior de Investigaciones Científicas* (CSIC, Higher Council for Scientific Research).

2.2 The state, disciplinization, and professionalization

As indicated above, direct state intervention in academic professionalization processes is frequently associated with mono-disciplinization, working – with the exception of the Nordic countries – to cement rather than to open up individual disciplines.

This section will consider how close the relationship is between the state, disciplinization and professionalization in the various European countries. Table 2.1 shows whether academics have to register in a particular discipline with the state to apply for jobs within academia.

Table 2.1 Discipline-based national registration requirement for academics by European country, 2005

National registration in a discipline required	National registration in a discipline <i>not</i> required
France	Finland
Spain	Germany
	Hungary (no longer - in transition)
	Norway
	Sweden
	UK

In the UK,

staff do not have to register, as is the case in Spain, with a professional body or ministerial agency in order to gain a post. Furthermore, and this is a distinct advantage in terms of the promotion of interdisciplinarity, pedigree within a particular discipline (i.e. whether or not you gained your degree/s in that discipline etc) is of much less importance than demonstrating that your research profile and record fits the requirements a department is looking for. Thus a woman who did her PhD on women's films may be employed in Women's Studies, or in Media Studies, or in Film Studies, or in a Cultural Studies department – if they happen to need someone who is an expert on women's films (Griffin et al 2005: 46).

In Hungary,

appointments are in a certain department in a specific discipline. But once an appointment is obtained, and as long as a person has the appropriate qualifications, s/he can also teach in different programs and disciplines. Sometimes this is related to scholars' decisions to re-focus their interests for personal reasons, but it is particularly the case with reorientation towards new disciplines (Jakab et al 2005: 42).

In Spain,

Professions in Spain are very closely determined by degrees obtained, and although this has recently been seen as an obstacle to employment and to innovation and development, the tradition still holds; it is perpetuated by professional bodies and, in some areas, by categories applied to the recruitment

of civil servants. Employers have not until now considered a degree a value in itself regardless of discipline, although some international companies have started to do so recently (Carrera Suárez et al 2005: 34).

As these examples show registration in a discipline will usually have a detrimental effect on interdisciplinarity as it will prevent or seriously limit movement between disciplines or cross-disciplinary working. It also affects career progression as more rigid systems keep academics firmly placed within a specific discipline with little chance of diversification.

2.3 The role of the state in the academic employment process

Having to register within a given discipline on a national register then is one way in which the state is involved in the academic employment process. Such involvement may also, as previously indicated, extend to the actual appointment process of academics.

In Finland universities now employ professors and other academic staff. Previously these responsibilities had been with the state: for a full professor it used to be the Ministry of Education and the President (Keskinen and Silius 2005a: 8).

In Hungary ‘Academic appointments are also [now] within the competence of the HEIs, and the requirements for each position have to be laid down in their bylaws’ (Jakab et al 2005: 6). In Norway, ‘Parliament can propose new university positions and award money for their implementation through the state budget. Usually, though, the decisions regarding positions – how many, what level and their specialisms – are left to the departments and faculties to decide’ (Widerberg et al 2005: 42). In Germany in 2005 ministries of education still confirm (or not) candidates selected by universities whereas in the UK no such ministerial involvement exists.

We can therefore summarize the involvement of the state in the various countries in relation to the academic employment process and whether this involvement is increasing or decreasing in the current climate as follows (Tables 2.2 and 2.3):

Table 2.2 Degree of state involvement in the employment process of academics, 2005

Degree of involvement	Countries				
High	France	Norway	Spain		
Medium	Hungary	Sweden	Germany	Finland	
Low	UK				

Table 2.3 Change of degree of influence of the state in the academic employment process since the 1990s

Degree of involvement	Countries				
Increased	UK				
Stayed the same	Norway	France	Germany		
Decreased	Finland	Hungary	Spain	Sweden	

Overall then, there appears to be a levelling of state involvement in the academic employment process and other higher education processes across the European countries, with state involvement tending to diminish in countries where that involvement had been high and increasing in countries where that involvement had been low. This is a move towards greater coherence of the systems across the European Higher Education Area.

2.4 Divergence between regulation and practice in the professionalization process

‘The establishment and legitimation of professional identities in humanities and social sciences in Germany is achieved through the formal steps of access to academe but also through informal and “not visible” processes’ (Krebs et al 2005: 34). All partners in this project commented on the fact that whilst it is possible to describe the formal processes which are supposed to govern academic employment, there are also significant informal processes and practices which inform academic employment and which determine what happens at the point of employment. In the UK, for instance, all academic appointments involve requests for references which are supposed, unlike the evaluations sought in Finland, to *advocate* rather than critically evaluate an applicant. One way, which is not made clear anywhere, in which these references are used is to gauge how well connected a candidate is in his or her discipline. If an applicant has a reference from a well-known scholar in a given discipline, this counts for more than if they have a reference from a junior lecturer. Moreover, since within disciplines and even at senior level, there are all sorts of hierarchies and ideological differences involved, references from certain senior scholars carry more weight than from others. Choosing one’s referees appropriately is thus critical to the appointment process but also difficult for many who are not necessarily connected to the best-known scholars in the field.

Similarly, in Germany other kinds of informal processes prevail. Thus whilst academic posts are advertised in newspapers such as *Die Zeit*, potential incumbents are often already informally decided upon in advance and there is a long tradition of approaching potential candidates informally to invite them to apply. For the outsider this is not evident.

On a different level, there are many evaluation processes in the Nordic countries – for instance in the appointment of professorships – which involve peers making judgments about colleagues and, since the academic communities are small, and there is significant research collaboration not least through the offices of the Nordic Council for Research, there is a tendency for a relatively small group of academics who know each other fairly or even very well to evaluate each other in a context which is meant to be critical rather than advocational. The issues arising from this situation are largely not discussed and unacknowledged.

In all these processes networking in a variety of formats is important to academic advancement. Such networking gives the individual informal access to others in the field and, simultaneously, enables the individual to make him- or herself known to

others in the field. Networking involves participation in all manner of predominantly discipline-based activities from research seminars to conferences, and including active membership in disciplinary networks of various kinds such as subject associations, (inter-)national working groups, etc. The importance of membership of professional associations beyond the informal level varies according to subject and country, and will be discussed further in section 5.4 of this report. However, as Widerberg et al (2005) report, in Norway ‘they are arenas for debates within and about the disciplines, for establishing networks and for strengthening and building disciplinary identities’ (Widerberg et al 2005: 43). It is within these networks that many relationships develop which are important informal bases for the professionalization process. Whether it be the suggestion that Professor X is approached for a particular post, that lecturer Y is contacted to work on a multi-national research project, or that person Z is emailed and told of a post that is coming up in a particular department, this is more likely to happen within already developed relationships. Keskinen and Silius thus write that

For the most part ... in the Finnish system the establishment and legitimation of professional identities is achieved through informal and rather invisible processes, where gate-keepers play a crucial role. Chairs act as gate-keepers (2005a: 33).

Such gate-keepers exist in most European countries. They are often the full professors whose roles encompass not only university-specific activities but often nation-wide and indeed international disciplinary activities which means that they can gate-keep on many different levels. But since such practices often contravene the laws of the land on equality of opportunity for instance, such gate-keeping activities, whilst well-known within the academic communities themselves, remain unarticulated except at (semi-)private level.

Several partner countries in this study such as Germany and Hungary indicated the importance of the PhD supervisor as a gate-keeper in academe. Krebs et al (2005: 36) quote Beaufäys (2003: 198) as stating unequivocally about Germany that ‘The supervisor is decisive for the career of the new generation of academics’. That importance is related to the ways in which supervisors may – and in some countries are expected to – use their own disciplinary and professional networks to further their students’ careers.

In addition, emerging academics wishing to insert themselves into a discipline have to learn not only how to produce scientific arguments *per se* but also how to reproduce discipline-specific scientific arguments (Keskinen and Silius 2005a: 33). These discourses are part of the ‘hidden curriculum’. They involve using narratives that are common within a certain disciplinary frame. If these narratives are not used, emerging academics on temporary contracts looking for permanent employment may find themselves excluded in certain ways from developments within their discipline, for example by not being invited to take part in seminars or conferences. The ‘wrong’ narrative can act as a barrier for progression within academe, for instance when it is used at application and interview stage.

One key issue in the context of professionalization and interdisciplinarity is that the informal processes which impact on academic professionalization are well entrenched and established at the level of individual, ‘traditional’ disciplines, but do not exist in the same way in interdisciplinary contexts since these usually lack the disciplinary infrastructure necessary for such purposes. Thus whilst there are many conferences and

networks that enable one to engage in interdisciplinary knowledge debates, when it comes to academic employment such networks have limited value. If then, an emerging academic wants to work in an interdisciplinary context, s/he is usually required to do so either alongside keeping up all the informal networking in a 'traditional' discipline, or to attempt to 'service' two disciplines informally which is very difficult and labour-intensive. As Kuhn and Weidemann (2005) therefore note: 'While disciplines are important entities at national levels, disciplinary restrictions (e.g. with respect to the choice of research topics, literature considered, etc.) are more easily overcome under conditions of transnational research. As several researchers point out, in many instances disciplines effectively execute power over (national) academic careers. Publishing in the "right" journals, knowing (and quoting!) the "right" people who also sit in important academic boards can be of crucial importance when applying for chairs, funds and positions.' (78)

3. Disciplinization and professionalization

This section will consider how the informal processes of disciplinization intertwine with formal ones to impact on academic identities. We shall discuss the criteria that inform procedures for the institutionalization of a newly emerging subject and explore how the disciplinary status of a subject area is gained and maintained, using Women's/Gender Studies as an example. The professionalization of both the individual and the discipline will be discussed within this section. This is subject to a series of external forces, which impact on the individual academic and on academic subject areas.¹² Four topics will be addressed:

- The culture of disciplinization
- Disciplinary identity and professionalization
- Professional associations and networks
- Women's/Gender Studies, disciplinization and professionalization

3.1 The culture of disciplinization and the environment in which it operates

The country-specific reports (see www.hull.ac.uk/researchintegration) from each of the eight European countries involved in this project outline the academic qualifications necessary for a career within higher education and research, discussed in section 1 of this report. They also highlight the 'hidden' or 'invisible' procedures that are in play within academe, shaping and informing the way students become acculturated into a particular discipline, that is, how they become 'disciplined' (see section 2.5 in this report). The following discussion will assess the impact of these informal processes of disciplinization on future academic careers alongside an examination of the infrastructure of higher education systems.

¹² Thanks to Harriet Silius for her comments on this definition.

Several different actors are in play within the informal processes as evidenced by the National Reports. An example of this is at Doctoral level, where supervision can be key to a future in academe. As Krebs et al attest: ‘Traditionally, the doctoral thesis results in a long intensive tie to the academic mentor, which is decisive for the integration of the mentor’s candidate into the academic community’ (Krebs et al 2005: 36). Such integration includes membership of professional associations, participation in conferences etc., further outlined in section 3.3, highlighting the importance attached to such inclusion for academic career trajectories. It is an integration that operates predominantly at disciplinary level in all European countries except Norway.

In Hungary, for example, political reform and the introduction of new structures in higher education¹³ have not resulted in loosening the discipline-based grip. From 2005, undergraduate students will select their field of study and participate in a common core of subjects during their first year. This will provide ‘a basic disciplinary foundation for all the sub-disciplines or degree programs that follow’ (Jakab et al 2005: 40). These mandatory courses will accord students some choices from other disciplines, as a small percentage of credits can be taken as free electives. This provides a grounding for understanding the work of other disciplines but not a pathway from, for example, the humanities to the social sciences.¹⁴ As the authors assert, pre-requisites for attendance on elective courses go some way towards limiting a student’s participation outside her chosen discipline so that, even when the opportunity for study which crosses disciplinary boundaries arises, students are either reluctant to take the chance or prevented from doing so.

This disciplinization marks the ‘tribal’ nature of academic disciplines, complete with their own disciplinary territories (Becher 1989). It is summarised thus by Huber (1990: 242):

[Becher] shows that academic ‘tribes’, like others, have their traditions and taboos, their territories and boundaries, their fields of competition and their pecking orders within and between them, their tacit knowledge and hidden assumptions, and their specific patterns of communication, publication, division of labour, hierarchies and careers.

In their discussion of Finland, Keskinen and Silius (2005a: 36) outline the omnipresence of the ‘tribal’ informal processes that establish and maintain professional identities. These include the need for students to learn

the habits and goals of their tribe [as] in Finland the establishment and legitimation of a professional identity is not so much connected to membership in certain associations or other formal positions, but more to informal and invisible processes through which students and junior researchers learn the norms, social rules and disciplinary discourses of the field. During this process the novice has to convince the senior members of the academic tribe of her/his competence and talents ... *It is also obvious that these processes of inclusion and exclusion to a large extent reproduce disciplinary boundaries* (emphasis added).

¹³ See Jakab et al (2005) for a full discussion of the educational reforms in Hungary at www.hull.ac.uk/researchintegration.

¹⁴ Thanks to Eniko Jakab for clarification of these points.

Similar processes of inclusion and exclusion are referred to by Krebs et al (2005). They outline the 'different social worlds' of the disciplines, each with their inherent beliefs regarding knowledge production and programme content so that 'the conditions are not the same in the different subjects ... there are also different prerequisites that can be put down to "subject-specific cultures"' (Krebs et al 2005: 39).

Students, of course, are not completely malleable, but show a predilection for a particular course of study for a variety of reasons, not all academic. Although their degree choices may be based on their earlier educational achievements these are coupled with individual preferences, which are inevitably informed and influenced by personal values and beliefs.

Overall what can be stated is that once higher education students become embedded within their chosen discipline, usually at undergraduate level, the environment in which they study creates various barriers to infiltration from those who do not belong, whilst simultaneously preventing its own members' entry into other areas. This is indicative of the model of acculturation outlined here, where students are bound to one discipline rather than venturing into unknown territory and where, because of fixed degree structures, they are not encouraged or able to do so. As many of the processes of disciplinization are informal and invisible they remain, as Keskinen and Silius (2005a: 57) state, 'rather difficult to question and challenge'. Thus the interdependency of the formal and the informal serves to perpetuate disciplinary discourses and behaviours. These habits are taken forward as the student qualifies and progresses through academe with the ultimate effect of strengthening the barriers between the disciplines.

3.2 The manifestation of disciplinary identity in professional life

As well as the informal processes, 'the establishment of professional identity is based on fulfilling formal criteria in the form of completed degrees' (Keskinen and Silius 2005a: 32), which is common across the eight European countries represented here. Each academic position comes with its own specific requirements regarding, for example, the kind of degree/s required. These legitimating processes form the basis for academic progression, as discussed in section 2 of this report. Disciplinary identity, therefore, manifests itself or is performed as academics begin to forge a place for themselves within their own subject areas.

Comparisons across the European countries indicate that varying degrees of disciplinization occur throughout the academic life course. For example, once an individual has acquired the necessary qualifications for academic recruitment, opportunities for movement between disciplines is easier in some countries than it is in others. Recruitment within UK higher education, for example, is closely governed by an academic's research rather than by disciplinary background, and movement across some disciplines is, therefore, more easily accomplished.¹⁵ This may indicate that the

¹⁵ During a seminar series held in the Sociology and Anthropology Department of the University of Hull, UK, in 2005, a recently appointed member of staff (who graduated in anthropology) told the participants that, even though she was teaching the same modules this year as last, her job title had changed from 'temporary lecturer in *anthropology*' to that of 'temporary lecturer in *sociology*'.

foundations for interdisciplinary ways of working are possibly laid. Not having to register with a professional body or ministry is, as Griffin et al state (2005: 46), ‘a distinct advantage in terms of the promotion of interdisciplinarity, [since] pedigree within a particular discipline (i.e. whether or not you gained your degree/s in that discipline etc) is of much less importance than demonstrating that your research profile and record fits the requirements [of] a department’.

Conversely, academics in Spain and France are not accorded much leeway as regards movement between disciplines: once qualified they are normally required to remain within their particular discipline throughout their academic careers. In Spain, for example, movement out of the *áreas de conocimiento* (knowledge areas) is very tightly monitored by the Ministry of Education. As Carrera Suárez et al (2005: 32) state: ‘each lecturer must choose one [area] ... and generally will stay within it all her academic life’. The higher education system in France imposes rigid disciplinary structures and the borders of the disciplines are tightly controlled by the National Council of Universities (CNU), which is responsible for all decision-making around academic recruitment.

Overall then, opportunities for movement between academic disciplines varies across the European countries as Table 3.2 indicates.

Table 3.1 Opportunities for academic movement between disciplines in Europe, 2005

High	Medium	Low
UK Norway Sweden	Hungary Finland	Spain France Germany

It should be noted that in Spain and France, and also in Hungary, Germany and Finland, tenured academics are also civil servants. Here there is much more state involvement; for example, in some of these countries a system of national registration structured along disciplinary lines exists. This tightly controlled relationship between the state and education, as previously indicated, engenders a static and disciplined system, with a solidification of academic positioning and lack of mobility that also diminishes the need for evaluation processes. The more autonomous higher education systems such as the UK, Norway and Sweden may exercise more freedom regarding the disciplinary location of their academics but also operate within systems of greater accountability and have more entrenched audit cultures. Thus it is apparent that each system has its own infrastructural barriers to interdisciplinarity.

The external forces at work in some systems of higher education, for example the Research Assessment Exercise and Teaching Quality Assessment exercises in the UK, which are mostly conducted on a disciplinary basis, affect the infrastructure of higher education institutions as those institutions make changes to their working practices and struggle to survive in a market-led environment. These changes can have a profound effect on academic career structures and identities. On the whole they lead to greater disciplinization rather than to the opening up of disciplines. This is a function of the fact that accountability exercises are frequently conducted along disciplinary lines and therefore force academics to position themselves along those lines.

3.3 Professional associations and disciplinization

There are wide variations regarding the importance accorded to membership of professional associations for academic recruitment and progression, as Table 3.2 below indicates. In every European country there are associations that impose very strict membership rules alongside those that are much more flexible. Often there is more than one association for a discipline and it is usual for membership to be open to those who graduate from that discipline. In France, for example, where very rigid criteria are applied by some disciplinary associations such as in Economics; English; History; Law; Political Science; Psychology; Sociology and Spanish, but

there are also associations without any specific membership selection criteria, apart from interest in the subject area. These include the National Feminist Studies Association ... and the French Society of Social sciences History ... *Associations linked to interdisciplinary fields ... have more flexible criteria* and they accept members from outside the academic world, including undergraduate students (Le Feuvre and Metso 2005: 45-6; emphasis added).

Where membership of professional associations is not a pre-requisite for gaining an academic post it remains an important way of networking with one's peers, whilst also strengthening disciplinary identities, that is, embedding oneself within a particular discipline and making the 'right' contacts. In Norway, for example, none of the professional associations have any power regarding the higher education system or the labour market and no prestige or privilege is attached to membership. Widerberg et al (2005: 43) describe these associations as '*strengthening and building disciplinary identities*' (emphasis added). In the Finnish system, for the most part 'positions in disciplinary subject associations or other formal positions are not very important in the establishment and legitimation of professional identities' (Keskinen and Silius 2005a: 57).

Professional associations are important for new researchers to establish themselves in the academic community, as in Germany, where membership of the German Sociological Association (DGS) is perceived as enabling new graduates to further their academic status even though membership is not essential for recruitment purposes. As Krebs et al (2005: 38) state, membership is useful for young researchers and doctoral students as they have the opportunity to 'present themselves and establish informal networks'. Although the majority of associations are disciplinary, some provide a space for those working in interdisciplinary fields and 'some sections [of the DGS] are composed in an interdisciplinary way, for example, the section on biographical research and the section on women's and gender studies' (Krebs et al, 2005: 38) thus allowing for academic flexibility and engendering dialogue across disciplinary boundaries.

Associations where membership is by peer nomination are disciplinary in character and are the most influential for one's formal career progression, particularly at the highest levels. In some European countries such posts are only accessible via membership of a particular professional association. For example, the highest research position in Hungarian academe, the *kutatò professzor* (scientific researcher), requires the title of Doctor of Sciences administered by the Hungarian Academy of Sciences (HAS). One has, therefore, to be a member of this organisation before one can be considered for

such a position. Those who are invited to become members of HAS are nominated from the different *disciplinary* sections of the organization, one of the repercussions of non-membership being that one cannot supervise PhD students (Jakab et al 2005). Membership of such an influential organisation is, therefore, critical for academic credibility and advancement and also for passing on disciplinary knowledge and guidance to young researchers, thus perpetually reinforcing disciplinary boundaries.

For the most part, membership of a disciplinary association serves as a means of receiving information and making contacts. However, across Europe older, more traditional and firmly established disciplines are able to exert more influence on the state. Professional associations can play a major role in the status of a discipline, as in the Spanish *Colegios Profesionales* or *Colegios Oficiales*, where those with the most power can lobby for governmental and ministerial recognition:

These *colegios* are very powerful lobbies in areas such as Medicine, Engineering, Architecture, less in the social sciences ... and very weak in the humanities, where they barely survive, since membership is not required for practising a profession and they lack the lobbying power of engineers or architects. (Carrera Suárez et al 2005: 35)

Based on these observations it is possible to represent the importance of membership of professional associations for academic careers schematically as follows:

Table 3.2 Importance of membership of professional associations for academic advancement in eight European countries, 2005

High	Low
France	Germany
Hungary	Norway
Spain	Sweden
	UK
	Finland

What emerges overall is that the more prestigious professional associations are disciplinary in structure. They are also more selective and exclusionary. There is, further, an associated connection between the state and the discipline, where older, more traditional disciplines, via their more established disciplinary bodies, are able to exert more pressure on governments, so that those associations enjoying ministerial backing impose the strictest membership criteria. Although varying membership rules apply to the different professional associations, it is apparent that those with more prestige and influence on academic trajectories are those that remain disciplinary in nature.

From an academic's perspective, identifying with a discipline can be seen as advantageous, particularly for academics new to the field, as security around one's knowledge base is reinforced by involvement in professional associations. Whatever the importance attached to their membership there remain unspoken elements at play, which impact on professional identities and it is clear that, with very few exceptions, disciplinary boundaries are strengthened and disciplinary identities reinforced by professional associations. This is found to be particularly so at higher levels of academe, where the power to influence what happens in higher education is much

greater. This strengthening of disciplinary boundaries and professionalization of the disciplined self undermines opportunities for interdisciplinary work.

3.4 Women's/Gender Studies, disciplinization and professionalization

In the face of the power and persistence of the conventional 'older' disciplines, the question has to be asked how new disciplines, particularly if they are interdisciplinary, emerge and how involvement in such disciplines impacts on academic careers. In the context of this study we chose to focus on Women's/Gender Studies as an example of such a discipline, being relatively new and multi-/interdisciplinary in character (see Griffin 2005). Krebs et al (2005: 29) say of the term 'disciplinarity' that 'on the one hand it enables research and teaching by creating free spaces and continuity in the development of knowledge ... On the other hand it determines and regulates the production of knowledge'. This definition is useful for the following discussion on the disciplinization of Women's/Gender Studies. The way in which 'successful disciplinization' is measured by the various European partners varied, ranging from the establishment of Women's/Gender Studies as a discipline with all the rights and privileges of other disciplines, to the integration of Women's/Gender Studies perspectives in other disciplines, i.e. the mainstreaming of Women's/Gender Studies. In the context of this report, the success of the disciplinization process is explored more generally in terms of the subject's *acceptance* in mainstream higher education systems. Irrespective of the degree of such acceptance, the participants from all the European countries in this project had disciplinary bases outside of Women's/Gender Studies (see Table 3.3), and Women's/Gender Studies was an addition to their disciplinary mainstay (although 4 partners – from Finland, Hungary, Norway and the UK - are directly employed in Women's/Gender Studies units/departments, the first three on a temporary and only the last one on a permanent basis). They therefore have first-hand knowledge and experiences regarding the procedures necessary in order to claim academic recognition for a discipline in each of the eight European countries represented here.

Table 3.3 Disciplinary backgrounds of the nine European project partners

Finland	Sociology
France	Sociology
Germany	Sociology
Germany	Art History
Hungary	Literature
Norway	Sociology
Spain	Literature
Sweden	Practical Philosophy
UK	Cultural Studies; Literature

One of the most prominent factors throughout the report narratives is that those employed in Women's Studies work a 'double-shift', as the subject 'lives' in discipline-based structures which make the pursuit of interdisciplinarity difficult since there are few institutional spaces in which academics from different disciplines can meet to work in an interdisciplinary way. This means that such interdisciplinary work usually occurs *in addition to* individual academics' discipline-based work. As administrative structures operate along disciplinary lines, an interdisciplinary subject such as

Women's/Gender Studies falls outside such structures and therefore faces difficulties regarding its integration into mainstream academe.

This is further illustrated by the following extract regarding Spain, where Women's Studies has endured much internal and external resistance over time in its quest for academic recognition:

At the turn of the [21st] century ... Women's Studies had reached a successful degree of institutionalization and visibility in certain areas: most universities have a seminar, research group or centre dedicated to Women's Studies, funding for research has been maintained ... and a number of the experts have reached tenure and even professorships (*albeit through other disciplines*). However ... the success is ambiguous: at a personal level, it constitutes a double labour which *involves being successful in a traditional discipline besides gender*; at an institutional level *Women's Studies is unrecognised as [a knowledge area] and [there is no] undergraduate degree, the most influential versions of disciplinization*. Thus, the field of study is still located in the margins of academic curricula and its development depends on the personal interest of individual lecturers and students; its findings, knowledge and methodologies are rarely subsumed by traditional disciplines (Carrera Suárez et al 2005: 30-1; emphases added).

As the Spanish authors assert, Women's/Gender Studies academics are usually employed within other disciplines and are therefore servicing the needs of that discipline. Another example of the marginalization occurs in the UK's Research Assessment Exercise in which Women's Studies has been subsumed under the Sociology panel in each round, and even that only after considerable lobbying (Griffin and Hanmer 2002: 31-2). Research done in the area is hidden beneath the more dominant and traditionally more recognised discipline of Sociology, thus masking the work undertaken by feminist scholars and ignoring the multi-/interdisciplinarity of Women's/Gender Studies. Success in terms of professional recognition and achievement, then, is derived from accomplishments in areas other than Women's/Gender Studies, and it remains the case that despite much feminist work across all European countries, Women's/Gender Studies is not recognized as a discipline in its own right in most European countries (Table 3.4; see also Griffin 2005):

Table 3.4 Recognition of Women's/Gender Studies as a discipline in its own right in eight European countries, 2005

Recognised	Not recognised
UK Sweden Finland Germany Norway	Spain Hungary France

As Table 3.4 shows, there are some successes regarding the recognition and awarding of disciplinary status to Women's/Gender Studies. Perhaps the most successful in terms of its disciplinization is Sweden, which has enjoyed a long-established presence of the subject as a discipline in its own right offered at BA, MA and PhD levels. The Swedish authors report that

From the beginning of the 1970s, *under- and postgraduate students initiated Women's Studies as a subject in its own right. The government responded to this initiative in 1975, by funding some courses in undergraduate Women's Studies ...* In 1978, an organisation in collaboration with Women's Studies within the academy, began to develop, firstly in Lund and soon afterwards in Umeå, Stockholm, Uppsala, Göteborg, Örebro and Linköping ... *The associations applied for and were granted funding from the National Board of Universities and Colleges ...* It became possible to organize fora/centres for female researchers and Women's Studies at the universities. The *state-funded fora/centres* became a significant feature of the Swedish Gender Studies organisation, and one of the major thrusting forces in the institutionalization of the subject (Holm and Liinason 2005: 25; emphases added).

This extract indicates what needs to be in place to promote the acceptance of a subject area into academe (see also Griffin 2005: 44-7): interested students and academics dedicated to the establishment of the discipline coupled with institutional, governmental and ministerial support. As the reports from the other European countries highlight, not all can claim the latter, that is, support at an institutional, ministerial or governmental level. For example, when outlining the 'diverse interests that underlie the success or failure of disciplinization' the Spanish report reveals interesting insights into the process in their comparison with East Asia Studies, which gained disciplinary status via promotion from the Spanish Government in 2003¹⁶ and Women's Studies, which is not yet recognised as a 'knowledge area' nor as a degree subject at BA level despite its strong research base (Carrera Suárez et al 2005: 26).

The disciplinization of Women's/Gender Studies in Europe is an on-going process. As it currently stands, academics working in the field often service both Women's/Gender Studies and another discipline, and academic advancement is in the main dependent on performance in that other discipline. The nascent and uncertain status of Women's/Gender Studies also means that there are few jobs in the field (Silius 2005a: 111-40) and the effect of all this on professional identity is profound as scholars in the field have to decide whether to shoulder a double burden or work from within a 'traditional' discipline. The paucity of professorships in the subject compounds this situation, resulting in the undermining of the professional status of Women's/Gender Studies scholars and of the subject area itself.

In sum, university structures and accountability exercises as currently configured operate along conventional disciplinary lines and allow little room for interdisciplinary innovation. Where it does occur, it is usually as a result of state support, and tends to involve academics working double shifts in both a traditional and the new discipline.

¹⁶ See Carrera Suárez et al (2005) for a full discussion of the successful disciplinization of East Asia Studies (www.hull.ac.uk/researchintegration).

4. Professionalization and interdisciplinarity¹⁷

As previously outlined (section 3.1), an individual's initial incorporation into a particular discipline can have a profound effect on their future academic career path regarding the employment choices their disciplinary identity allows them to make and the professionalization processes they undergo. It is therefore necessary to explore how the current call for interdisciplinary research practices is being interpreted and responded to by academe, and to gauge the impact of this response on the disciplined and professionalized individual. This will be done by addressing the following three issues:

- The definition of interdisciplinarity in the higher education systems of eight European countries
- Opportunities for interdisciplinary work
- Academic recruitment, interdisciplinarity and professionalization

4.1 Definitions and experiences of interdisciplinarity within the higher education systems of eight European countries

Whilst academics from the humanities and social sciences in all eight European countries under consideration here are responding to the call for more interdisciplinarity, emanating not least from the EU, it is not clear how interdisciplinarity is defined by each of the actors involved in its promotion, nor how, by whom and where interdisciplinary work is (to be) carried out. Consequently, interdisciplinarity emerges from the findings of the country-specific reports in various and conflicting ways. The term is often used in conjunction with 'multi-' and 'trans-' disciplinarity (see the introduction to this report).

Within the country-specific reports there is consensus on what constitutes a discipline. For example, 'what in many cases gives a discipline its hallmark is the methodology. This often separates one discipline from the other, and also – in a historic sense – the methods in use have often helped constitute a discipline as a discipline' (Widerberg et al 2005: 52). If we consider that 'in the UK as in many other European countries disciplinarity is understood ... to refer to coherent bodies of knowledge, methods, methodologies, communities of scholars with attendant infrastructures, and differentiation from other coherent bodies of knowledge regarded as dissimilar' (Griffin et al 2005: 50), we can safely state that defining what a discipline is highlights some differences but not many difficulties for the European countries.

As previously stated, however, defining interdisciplinarity proves more problematic and academics, funding organizations and governmental and ministerial decision-makers each have their own ideas of what it entails and how it can be achieved¹⁸. Bengtt Hansson (1999) distinguishes between multi- and interdisciplinarity using the terms 'cooperation' and 'cross-fertilization' respectively, and stating that 'cooperation' (multi-

¹⁷ For a discussion of the impact of interdisciplinarity on professionalization under the Bologna Process, see section 6 of this report.

¹⁸ See the Swedish comparative report on *Interdisciplinarity* (Holm and Liinason 2005b: www.hull.ac.uk/researchintegration).

disciplinarity) is aimed at 'immediate problem-solving', further explaining that aiming at collaborative work involves much more than managerial decision-making as participants need 'to understand the role of their own discipline in the collective effort and choose the tools – conceptual schemes, theories or methods – that properly fit the situation at hand' (Hansson 1999: 341).

This description fits the models of research claiming interdisciplinary labels presented in the country-specific reports. For example, Widerberg et al (2005) reveal that in Norwegian research institutes 'researchers often work in teams comprised of people from different disciplines'. They also include a quote from an interviewee stating that 'even the most interdisciplinary researcher has some kind of disciplinary identity – for example on the basis of method – which leads him or her to think that one's own discipline has the best approach' (Widerberg et al 2005: 44). This highlights the difficulties identified by Hansson.

'Cross-fertilisation' (interdisciplinarity), according to Hansson, is a more uncertain undertaking and raises a major problem in 'that ultimate results may be hard to attribute correctly to particular research programs or funding organizations. Those that reap eventually may not be the same ones who sowed' (Hansson 1999: 342). Similarly, Marilyn Strathern comments *à propos* of interdisciplinarity: 'criteria for judgment do not exist ... different models of ownership across disciplines ... cut across any easy ideas about collaboration being imagined as some effortless flow of knowledge' (2005: 83-6).

What is interesting here is the paradox created by the call for interdisciplinary forms of knowledge production and the structure of external procedures such as research assessment exercises. The impact of involvement in interdisciplinary work on academic identities and reputations dependent upon research evaluation and assessment conducted along disciplinary lines raises the question of how the integration of disciplines can be measured, and who will be given credit for it in current systems of assessment? As Strathern (2005: 85) suggests: 'inclusion can be observed. I am not so sure about integration. Where and in what would such integration appear?' This dilemma is noted for Germany by Krebs et al (2005) where researchers

need either to declare their research project in the context of the discipline or the [research] centre. Considering the fact that the evaluation of one's post in the discipline is important and that scientists may be more committed to their discipline, it can be presumed that they tend to opt for the discipline. At the very least they experience a serious conflict of interests (Krebs et al 2005: 49).

The trans-national manifestation of calls for greater interdisciplinarity can be linked to transformations in knowledge production occurring across Europe and European higher education systems (Scott 2003). Gibbons et al (1994) suggest that these changes are emerging alongside more traditional modes of knowledge production, in what they term a 'disciplinary matrix [of] Mode 1 [and] Mode 2'. The former is 'generated within a disciplinary, primarily cognitive, context' whereas 'Mode 2 knowledge is created in broader, transdisciplinary social and economic contexts'. They explain that the use of the two modes clarifies

the similarities and differences between the attributes of each and help us understand and explain trends that can be observed in all modern societies. The emergence of Mode 2, we believe, is profound and calls into question the

adequacy of familiar knowledge producing institutions, whether universities, government research establishments, or corporate laboratories (Gibbons et al 1994: 1).

The premise that disciplinary knowledges are no longer 'adequate' alongside a questioning of the 'usefulness' of traditional knowledge are suggested by Gibbons and his colleagues as reasons for the transformations taking place in European higher education, making the issue of *what education is for* a fundamental question. For example, research funded by the European Union has as an underlying criterion the production of 'useful' knowledge, which can deal with the problems Europe faces, the outcome of such contextualised research being solutions to the problems identified by funding bodies (Benavot et al 2005: 120). This is echoed in the French response to the call for interdisciplinary research:

Despite the rigidity of the disciplinary-based HE recruitment and promotion process, there are signs that the French government has been eager to promote more interdisciplinarity in research over the past 5-10 years. A number of inter-/trans-disciplinary research programmes have been set up by the Ministry of Research and by most important national public research bodies (Le Feuvre and Metso 2005: 58).

One could argue that the issue of interdisciplinarity highlights national dilemmas regarding Mode 1 and Mode 2 knowledge production in academe (see Greco et al 2005), and within that not least the relative status accorded to applied compared to basic research. At the level of educational policy, there is a need at national and international levels to decide how to integrate Mode 1 and Mode 2 knowledge production in order to enable a more effective and rewarded integration of Mode 2 knowledge production into academics' professionalization.

Overall, the findings of the country-specific reports indicate that no clear distinction is made between inter- and multi-disciplinarity. Often 'interdisciplinarity' emerges as a defining criterion of a research project but after scrutiny, the work is found to be of a 'multi-disciplinary' nature. This is also supported by Benavot et al's (2005) findings. What can be gleaned from this is that interdisciplinary ways of working are not yet fully realised for students, nor qualified and practicing academics, across higher education systems represented here and summarised by Widerberg et al (2005) as follows:

interdisciplinarity can be a response to very different questions or issues, which also affect its implications ... scarce economic and academic resources ... young academic traditions, local and labour market adjustments, internationalisation and theoretical paradigms are all 'factors' that have favoured interdisciplinary thinking and organization in research and higher education in Norway. But whether it has implied only *multidisciplinarity* ... cooperation between different disciplines only administratively tied together – or actual *interdisciplinarity* where elements from different disciplines are integrated in the actual research process ... is another matter (48).

4.2 Opportunities for interdisciplinary work, and their impact on academic trajectories

The opportunity for a qualified academic to engage in interdisciplinary work varies widely in the European countries, although it has to be noted that these, for the most part, are 'potential' rather than 'actual' possibilities.

As mentioned previously, academic destiny in the UK is not determined by discipline but by research expertise and specialism, meaning that the opportunities for movement, both across disciplines and across higher education institutions, is far greater than in some other European countries and 'such flexibility has made the establishment of new disciplines and of interdisciplinarity at least theoretically possible' (Griffin et al, 2005: 46). Due to topic-based specialization, it is often the case that academics from one discipline have more in common with those from another than with members of their own (Becher 1989; Platt and Hopper, 1997; Becher and Trowler 2001). Academic 'freedom', therefore, allows for the possibility of cross-disciplinary dialogue and consideration of others' methods and methodologies (although with no guarantee of these being acted upon in situations other than collaborative research projects).

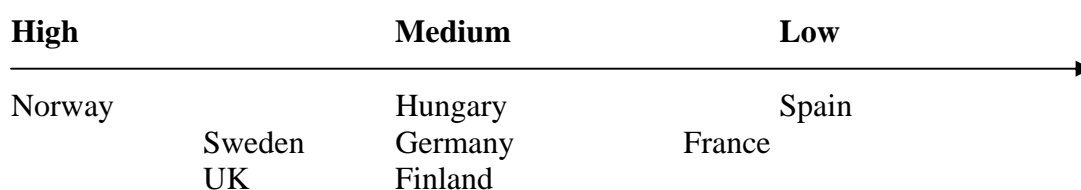
In contrast to this, disciplinary national bodies assess and evaluate all academic staff and act as 'gate-keepers'. In French academe, for example, procedures for selection are disciplinary in nature. Therefore, unlike the recruitment process in the UK, a candidate's profile is determined by her disciplinary field. A qualification from the National Council of Universities (CNU) is essential for attaining an academic post, which means that

A student with an interdisciplinary profile in his or her PhD thus runs the risk of never being 'qualified' by any CNU section, since each one of them could proclaim that the student was closer to the academic requirements of another section than its own ... As a result, the student would never get the 'qualification' necessary to apply for an academic post ... and in any case, there would not be many academic posts created with an interdisciplinary profile for him/her to apply to (Le Feuvre and Metso 2005: 58).

Similar barriers exist in Spain where knowledge areas are 'key to granting posts, organizing the teaching of subjects and the curricula, and evaluating research. Their rigidity makes multidisciplinary individuals officially impossible, and is one of the main obstacles to interdisciplinarity in general' (Carrera Suárez et al 2005: 33).

Overall then, there are significant discrepancies regarding opportunities for interdisciplinary work in the various European countries which might be represented schematically as follows (Figure 4.1):

Figure 4.1 Potential for interdisciplinary work across eight European countries, 2005



It would seem that some of the transformations envisaged by the Bologna Agreement will take some time to alleviate the rigidity of the French and other recruitment systems. Structural limitations surface where institutions continue to be run on rigid disciplinary lines so that straying into other territory has a potentially damaging effect on career trajectories and reputations. Academics faced with these kinds of barriers are likely to be wary of taking such risks.

In 1994 Gibbons et al commented: ‘it might happen that all those involved [in interdisciplinary work] will return to their original discipline while others will be recruited to take the process further’ (30). As the country-specific reports testify, on the whole, in 2005 this is the situation. Whether the current opportunity is taken up and transformed into interdisciplinary ways of working rather than multidisciplinary work, is not yet clear and requires longer-term investigation.

4.3 Academic recruitment, interdisciplinarity and professional identity

To conclude this section it is necessary to consider the effect of involvement in interdisciplinary research on the professional careers of academics and to ask about the extent to which an ‘interdisciplinary’ identity impacts on academic progression and career trajectories.

The previous discussions indicate that, possibly with the exception of the UK and of Norway, emerging academics need to identify strongly with a particular, ‘traditional’ discipline in order to achieve integration into their academic community. Once established in their careers, academics have greater opportunities for interdisciplinary work, although this often has to be conducted alongside work in a ‘traditional’ discipline, thus resulting in a double shift to service both arenas. The implication here is that interdisciplinary work, whilst possible, is conducted in addition to recognized mono-disciplinary work. Even at senior level, however, it is more difficult in some countries than in others to conduct interdisciplinary work.

Public examinations for professorships in Spanish academe, for example, are disciplinary in character. Applicants are judged on their teaching and research backgrounds, with the final decision weighed heavily by the latter. As Carrera Suárez et al (2005) state: ‘interdisciplinarity is usually a clear disadvantage in these exams, as all non-disciplinary work is excluded or seen only as minor’ (33-4). Although, as outlined previously, interdisciplinarity is promoted within European higher education policy, the Spanish system is clinging steadfastly to rigid disciplinary structures, which are strengthened by a recruitment and promotion system relying only on work that falls within established ‘knowledge areas’.

The promotion of interdisciplinarity in higher education across Europe is not accompanied by the implementation of any supporting structures. Instead it is assumed that interdisciplinarity can be accomplished without extra funding and within existing higher education systems. Overall, the infrastructural barriers which militate against the pursuit of interdisciplinary study and research in any form other than through collaborative team-working, are disregarded. Thus the discipline-based structures of European higher education remain intact, as outlined by Krebs et al: ‘Higher education policy proclaims interdisciplinarity; its different forms of institutionalisation are only occasionally supported by the state with additional money.’ (2005: 54) Overall then, we might characterize the impact of engagement with interdisciplinary work on academic status and identity as follows (Table 4.4) :

Table 4.4 The impact of engagement with interdisciplinary work in eight European countries on academic status and identity, 2005

Positive	Neutral	Negative
Norway Sweden	Finland Germany UK Hungary	Spain France*

*This is particularly the case in terms of career progression though not in terms of getting research funding, for example.

It is also possible that involvement in interdisciplinary work may have no impact whatsoever on professional identity. As it currently stands it would seem that those who are said to be engaging in multi-/inter-disciplinary ways of working are either well established academics who are able to take ‘time out’ to collaborate with others and offer their services, with no effect on their disciplinary identity, or they are doing so alongside their discipline-based work, so enduring the double shift. This is not without personal cost, even though it may be cost-neutral in professional terms. Perhaps then we are witnessing a dialogue between subject areas allowing for transgression across disciplinary boundaries on a temporary or part-time basis rather than full border-crossing and integration.

On a positive note, this ‘non-discipline-threatening’ approach to interdisciplinary research could be construed as more acceptable to those reluctant to engage with the current debate on interdisciplinary ways of working and is, perhaps, a tentative step towards interdisciplinarity and the evolution of interdisciplinary academic identities. As interdisciplinarity has become a European governmental and ministerial focus for the development of new forms of knowledge creation, the pressure to institutionalise interdisciplinary activities may become more overt and we may witness an acceleration of its implementation. How this will occur, however, remains unresolved. Academics in the higher education institutions in the eight European countries represented here now have the dual and contradictory pressure of a call for interdisciplinarity on the one hand versus the disciplined infrastructures of the systems in which they are working, on the other.

5. Research and professionalization

5.1 Research and professional routes (teaching/research)

Research is key to all junior academic and researcher professional routes in all European countries since in all European countries research in the form of a PhD thesis is the prerequisite for an academic and/or researcher career (see Table 1.3), with the size of the country playing a role in determining how that basic research training is delivered. The rule is that the smaller a country, the more likely it is that the research training for PhD students is conducted in national PhD schools as opposed to individual universities. This is the case in the Netherlands, for example, but also to some extent in the Nordic countries whilst it is not the case in France, Germany, Spain or the UK. Historically, Hungary has been an exception to this rule since it was the Hungarian Academy of Science (HAS) which between 1949 and 1993 delivered PhD training, separated out entirely from the universities which could not award PhDs. Post-1989 there have been predictable changes in this centralized training structure, and 1999 saw the setting up of doctoral schools in Hungary.

The professional options within academe and within research, that is the public sector of education and research, that are open to PhD students on completion of their doctorate vary from country to country, and depend on the historical relationship between teaching and research in that country. In all European countries university academics now have the *dual role* of conducting research and teaching. This includes France, Germany, the UK, Spain, Hungary, Norway, Sweden and Finland. However, it is also (increasingly)¹⁹ possible for PhDs to embark on research careers conducted entirely apart from the university and without any teaching. In countries such as France and Hungary, this possibility is historically conditioned by a complex and incomplete bifurcation of research and teaching involving a centralized research body – the *Centre nationale de la recherche scientifique* (CNRS) in the case of France and the Hungarian Academy of Science (HAS) in the case of Hungary – which finances research and appoints researchers either to its own research institutes (CNRS) or to itself (HAS). However, the majority of European countries expect university academics to conduct both research and teaching, and overall, especially post-1989, there appears to be a greater convergence of the dual roles of research and teaching as well as a greater degree of diversification of sites in which research is conducted (the number of research consultancies that have arisen in response to the EC's research agendas, and on which it would be useful to conduct research, is in itself a remarkable example of this).

In many European countries research also remains one of the criteria for professional promotion. In countries such as France, Germany, Spain and Hungary this takes the form of the requirement for a *Habilitation*, a second major piece of research following on from the doctorate and published, as the prerequisite for becoming a full professor (Table 1.3). This is not required in all countries. Norway, Finland, Sweden and the UK, for instance, do not operate a *Habilitation* system as part of their academic promotional

¹⁹ We use 'increasingly' here to signal the fact that there are more and more research bodies, both private and public, which appoint staff to conduct research only. These include long-term and short-term entities, NGOs, consultancies, etc.

structure. It is also more common in the southern countries such as France, Spain and Italy that the process of becoming a full professor is linked to a public examination for which one either needs to be nominated (Italy) or can self-nominate (Spain, France, Hungary). The implication here is that the more centrally controlled an education system as a whole is, the more likely it is to involve centrally controlled processes in professional academic progression processes. Germany, which (still) operates an *Habilitation*-system, as a federal state hovers between federal and central control, and this contributes to the fact that, like in Finland, the UK, Norway and Sweden, no public exam attaches to the process of becoming a full professor, though a *Habilitation* is still preferred, indeed required.

In countries that do not require a *Habilitation* as part of their promotional structures, research is nonetheless the key criterion for advancing in both academic and in research careers. In the UK, for example, professorships (the word 'full' is not in use here since there are no other types of professorship such as 'associate' ones, for example) are not normally²⁰ awarded unless one has published at least two, and usually more, books, and one could argue that there is thus some similarity between the *Habilitation* system and the means by which academics are promoted in countries that do not have that system. The expectation, particularly in southern and eastern European countries, is that academic promotion is a discipline-based process (whether regulated by the state or not) and that it involves the assessment of discipline-based research.

Such research is also assessed in another context, that of research auditing. Across Europe there are very marked differences regarding that auditing (Table 5.1), with German academics, at the one end of the spectrum, being unaudited once they achieve professor status, whilst British academics are the objects of the public Research Assessment Exercise (RAE) with heavily specified, discipline-based criteria according to which every individual academic's research output is judged. In some other countries such as Finland, Sweden and Norway there may be university-internal auditing processes (eg annual assessments by the head of department) but these are not public.

Table 5.1 Research auditing of individual researcher in academe post achieving full professor status

Country	No public auditing	Some public auditing	Regular public auditing
Germany	✓		
France		✓	
Sweden	✓		
Norway	✓		
Hungary	✓		

²⁰ However, up until the early 1980s it was possible to get permanent university positions without PhDs so that a significant number of academics, including professors, who are in their 50s and older now, do not have PhDs; and post-1992 universities have (had) a tendency to give full professorships also to staff who have had major administrative roles such as being head of department rather than purely on the basis of research.

Finland	✓		
Spain			✓
UK			✓

Such differences in research audit culture clearly impact on research since absence of audit enables greater flexibility in the kind of research conducted and thus potentially allows for more opportunities for interdisciplinary research whilst audit cultures that make research a requirement rather than a matter of choice, both reinforce the importance of research for academics' professionalization, and also for the most part reinforce disciplinization. Where the conduct of research is viewed as part of a publicly accountable professional practice, that conduct is the object of greater disciplinization than where this is not the case.

These issues clearly feed into the question of employment. In all European countries university education is predominantly public. In some, such as Germany, Hungary, Spain, Finland and France, tenured academics are civil servants whose employment in academe guarantees a job for life, and sometimes significant associated benefits in terms of pensions, for example. In these countries, but particularly in Spain and France, it is also common for academics to stay in the university in which they studied, to climb the professional ladder there and retire from there. There is thus great diversity in terms of staff's national professional mobility between the more southern and the more northern countries, with academics in southern countries and that includes France here, being more likely to stay in one institution during their career than to move universities, as is more common in the north-western countries of Europe. The need for mobility or otherwise to further one's career has clear implications for research activity since job moves usually involve evaluations which function in a similar manner to audits in terms of highlighting academics' professional activities, including of course research, as a criterion for selection. There is thus more pressure on academics to conduct research in countries with high degrees of professional mobility among academics in the social sciences and humanities such as Norway, Finland, Sweden, the UK, and to some extent Germany, than in countries with no or very low degrees of mobility such as Spain, Hungary, or France. This is certainly the case for the UK, Finland, Sweden, Norway and Germany where appointments to advertised positions at senior level, that is professorships, depend to a very large extent on the research output of the applicants.

The issue of the relationship between academic advancement and interdisciplinarity has already been addressed in section 4 of this report. It is important to note that one crucial factor in the promotion of interdisciplinarity in research across Europe has been the European Union itself. Under its auspices the European Commission has created a series of research programmes that call for interdisciplinarity as one criterion to respond to the research questions posed, both directly and indirectly. Some of the instruments, or ways of conducting research, which the EU seeks to promote, such as Integrated Projects and Networks of Excellence, both of which require extensive interdisciplinary networking for participation, have powerful effects on (national) research formations, particularly in the humanities where research has tended to be more individualistic rather than collaborative. Where collaboration occurs across disciplines, it facilitates interdisciplinarity.

The EU's drive towards greater interdisciplinarity has coincided with the rise in pressure on academics to attract external funding, and a rise in accountability in higher education across Europe. Both factors mean that more academics are seeking funding from the EU, and that in turn means that academics are driven to work more collaboratively and interdisciplinarily because only thus will they qualify for EU funding (Kuhn and Remøe 2005). These tendencies, which one might describe as generating an internationalization effect on research within Europe, in turn are structuring new forms of research.

5.2 The structure of research funding

Keskinen and Silius (2005b) report on the structure of research funding. For the purposes of this report the key issue is the way in which research funding impacts on the professionalization of academics and their opportunities for conducting interdisciplinary research. The first point to make is that in the different European countries, different degrees of requirement exist across the diverse disciplines regarding the expectation that academics will seek external public research funding (Table 5.2):

Table 5.2 Level of requirement on academics to generate external income by country, 2005

High	Medium	Low
UK	Norway Sweden Finland France	Spain Germany Hungary

Table 5.2 suggests that overall across Europe the requirement to produce external income in the social sciences and humanities is medium to low, with no penalties attached in almost all cases to a failure to generate external income. This picture has to be modified through a consideration of disciplinary differences since it is more common in the social sciences to conduct externally funded research (whether required, or audited, or not) than it is in the humanities where such requirements, even in a country such as the UK which regularly audits the external income generation of its academics through the Research Assessment Exercise, for the most part do not exist. One could argue that the absence of such a requirement reinforces the individual-based, quasi-private nature of much of humanities research, for instance. This in itself retards possibilities for interdisciplinarity.

Secondly, the different European countries, influenced both by size of country/population and by history, have very different public research funding regimes and structures (see Keskinen and Silius 2005b), with at least three discernibly different structures. Some have one major public funding body such as a single research council which funds all research right across the disciplinary spectrum (this is the case in the smaller Nordic countries) whilst others have multiple research councils, usually organized by discipline. Additionally, those countries which have a tradition of separating research and teaching (Hungary, France, Spain) operate a dual-funding structure where an academy or research council funds research conducted directly under its own auspices, often its own organizations, and in addition the ministry of education or an equivalent body funds research in universities (Table 5.3):

Table 5.3 Research councils in Europe, 2005.

Country	Type of Research Council
Finland	1 major research funding council plus 1 agency, divided along ‘hard’ and ‘soft’ sciences lines: Academy of Finland National Technology Agency (Tekes)
France	Complex funding system: Research councils with own employees: e.g. Centre national de la recherche scientifique (CNRS) ministerial research funding through various programs
Germany	1 major research council: Deutsche Forschungsgemeinschaft
Hungary	Dual-system funding: Hungarian Academy of Science (HAS) with its own employees ministerial research funding through Hungarian Scientific Research Fund (OKTA) for Humanities, and OKTK (Social sciences)
Norway	1 research council: Research Council of Norway
Spain	Dual-funding system: Consejo Superior de Investigaciones Científicas (CSIC) with own employees ministerial research funding through Agencia Nacional de Evaluación y Prospectiva (ANEP)
Sweden	1 major research funding council (plus 3 smaller ones): Swedish Research Council
UK	8 research councils, organized by disciplines: Arts and Humanities Research Council (AHRC) Biotechnology and Biological Sciences Research Council (BBSRC) Council for the Central Laboratory of the Research Councils (CCLRC) Economic and Social Research Council (ESCR) Engineering and Physical Sciences Research Council (EPSRC) Medical Research Council (MRC) Natural Environment Council (NERC) Particle Physics and Astronomy Research Council (PPARC)

Only in Norway is research funding by the major national body, the Research Council of Norway, not organized first and foremost around disciplines – here the tree-structure put in place in 2003 has at its top three divisions: Science, Strategic Priorities, and Innovations. ‘Science’ focuses on basic research; ‘Strategic Priorities’ focuses on national strategic research needs, and ‘Innovation’ relates significantly to trade and industry. However, even these divisions have departments with a discipline-based structure. Humanities research tends to be conducted under the auspices of ‘Science’ and social sciences research under the auspices of ‘Strategic Priorities’ (Widerberg et al 2005: 2-67).

Similarly the Academy of Finland, the main funding body for humanities and social sciences research in Finland is sub-organized into four sections or Research Councils of Culture and Society; Biosciences and Environment; Natural Sciences and Engineering; and Health respectively. Research proposals are dealt with on a disciplinary basis (Keskinen and Silius 2005a: 17), as is very common across Europe. The effect is to

privilege discipline-based research except – at least on the surface – in cases where research councils create specific interdisciplinary research programmes.

Interdisciplinary research programmes have been inaugurated by a number of research councils across Europe such as Norway, Finland, France, Germany and the UK, partly through national policies, and possibly also under the umbrella of ERA-Net, an initiative by the European Union to network research councils in the European Research Area. Explicit interdisciplinary initiatives are most apparent in the northern and western European countries such as Norway, Finland, and the UK, and less in evidence in the south and east such as Spain and Hungary. However, such processes are not without their problems. Keskinen and Silius (2005a: 18) report that an international evaluation of the Academy of Finland in March 2004 found that interdisciplinary projects were disadvantaged in evaluation processes and did not fare as well as discipline-based ones, not least because interdisciplinary projects required more evaluators (3) than discipline-based ones (2), thus creating a greater statistical tendency to evaluate towards the mean.

Overall then, research funding is constructed along disciplinary boundaries which becomes more apparent the closer one gets to the micro-level of research funding, that of individual projects. Structurally then, the disciplinary imperative rules research funding. Only specific interdisciplinary research programmes aim to encourage interdisciplinary research.

From a professionalization perspective, it is clear that the generation of research funding in the social sciences and humanities is not an absolute necessity, with consequences for one's career, in most European countries. Since disciplinarity prevails at the funding allocation level, and encouragement towards interdisciplinarity depends on specific research programmes, the incentive to conduct funded interdisciplinary research is very limited. The combination of low research-income-generation requirement, particularly in the humanities, and low numbers of interdisciplinary research programmes militates against the conduct of interdisciplinary research.

5.3 The role of learned societies in professionalization

Within most European countries, we find both hierarchies of learned societies, and learned societies with diverse functions. In terms of hierarchy, there are learned societies that go back to the 17th, 18, and 19th centuries, and frequently the older the society, the more eminent it is. Thus France has the Académie Française, Hungary the Hungarian Academy of Science, Britain its various Royal Societies and the British Academy. Whilst in general it is a great honour to belong to these societies, and indeed, this honour, often by election from existent members, is normally bestowed only on a very small number of scholars, the influence of these learned societies on the average academic's career is very limited indeed, not least because ultimately so few people are elected as members and this within a contemporary world of knowledge expansion, mass higher education, and rising numbers of academics in response to that massification of higher education.

In terms of function, learned societies come in three different guises:

- a) as research funding bodies only,

- b) as funding bodies as well as membership organizations that bestow the honour of membership electively,
- c) as membership bodies only.

Where learned societies function as funding bodies or as funding and membership bodies as is the case in Finland and the UK, their role in the professionalization of academics is particularly important in terms of the extent to which an academic is able to secure research funding from them since, with the exception of the Hungarian Academy of Science, only very small numbers of academics are usually members. The Hungarian Academy of Science is the only academy within the European countries that participated in this project, which employs academics and researchers directly. Hungary is also the only country where membership of the Academy plays an important role in the professionalization of academics, for instance in their ability to supervise PhD students (Jakab et al 2005: 19-23).

Where learned societies function as membership bodies only they tend to have a very limited direct impact on academics' professionalization in most of the European countries, not least because they frequently only admit a limited number of members (scarcity here reinforcing the honour dimension): 'Academies in Spain', for instance, are 'more a question of honorary privileges than of producing research or intervening in the academic world, as they are often quite separate from it' (Carrera Suárez et al 2005: 34). Thus membership of learned societies may in some countries such as in Hungary (the Hungarian Academy of Sciences) or in Finland (the Academy of Finland) represent the apex of an academic's career but since membership is so frequently restricted to a small group of academics, and is in some countries such as the UK and Spain, for life (i.e. new members can only be introduced when someone has died), that membership has on the one hand the function of bestowing great honour on its holders but on the other is irrelevant to the majority of working academics. This is especially the case for the academies at the top of the academy tree such as the Real Academia de la Lengua in Spain for instance, or the Académie Française, the Academy of Finland (which has only 12 members), or the Royal Society in the UK.

As stated above, Finnish professional institutions are not for the most part selective and membership is granted on a flexible basis. However, there are three prestigious institutions where the similarities to the French system are apparent, as membership is selective and based on academic merit, contacts and being proposed by others who are already members: the Academy of Finland; the Finnish Society of Sciences and Letters; and the Finnish Academy of Science and Letters. All are highly selective of their members with the Academy of Finland bestowing the honorary title of Academician, the most prestigious position of a scientific career. Only twelve such Academicians are in office at any one time. In 2005 there are eleven men and one woman. As Keskinen and Silius note, the aim of these associations is to promote 'scientific research and serve as a uniting bond for well-established researchers' (2005a: 32-3).

Beneath those national, frequently non-disciplinary bodies sit a variety of other learned societies and professional associations, often organized in terms of knowledge fields which in some countries such as Spain have selective membership based on disciplinary identities as manifested through having degrees in the relevant discipline and which may or may not be by invitation only. These organisations tend to 'discipline' their members by virtue of being discipline-based (see section 3.3 of this report) and, on the whole, do not promote interdisciplinarity. Their role is to enhance

and sometimes regulate the professional culture within a given discipline and it is from these functions that they derive their importance.

5.4 Integration into research cultures and professionalization

There is a significant body of literature that deals with the process of the professionalization and integration of aspirant academics into the research cultures of individual disciplines, both historically and at present. Daston (1998), for instance, provides a historical analysis of the Berliner Akademie der Wissenschaften, the Paris Académie des Sciences, and the Royal Society (London) in terms of their stances towards specialization and professionalization in the sciences²¹, arguing that their differing positions on these matters which meant that ‘by the end of the eighteenth century the Paris Académie des Sciences was both specialized and professionalized, the Royal Society of London was neither specialized nor professionalized, and the Berliner Akademie der Wissenschaften was professionalized but not specialized’ (70), had lasting impacts on the specificities of academic disciplines. Pierre Bourdieu’s (1984) classic *Homo academicus* blazed the trail for a vast literature - of which Clark (1987) and Becher (1989) are but two other well known examples – which sought to explain disciplinary distinctiveness not merely in epistemological terms but also from wider social and cultural perspectives, arguing that particular disciplines attract people from certain social backgrounds, with identifiable, discipline-specific cultural practices and preferences in their private lives, that nurture specific attitudes to political and social issues and construct disciplinary communities with shared traits that go way beyond their knowledge bases. All suggest that diverse academic disciplines thus attract and generate different kinds of ‘capital’ – economic, social, cultural, symbolic etc. Clark (1987) described academics from different disciplines as inhabiting different ‘small worlds’. Becher (1989) used the anthropological notion of ‘tribes’ to describe the ways in which disciplines are organized and distinguish themselves from other disciplines. More recently, Ylijoki (2000) has used the expression ‘moral order’ to describe the ‘virtues’ and ‘vices’ into which students in different disciplines are initiated as part of the process of socializing them into a discipline and building discipline loyalty.

Common to all of this literature is the notion of the specificity of the discipline, no matter what the discipline is, and the sense that the professionalization of academics and their integration into a research culture is a process involving both the acquisition of certain kinds of knowledge and method/ologie/s particular to a given discipline and, equally importantly, the acquisition of what one might describe – using Bourdieu’s term – as a disciplinary *habitus*, a way of presenting oneself that identifies one as the member of a particular discipline. Both knowledge acquisition and the more general habitus acquisition involve formal and informal aspects and processes, some of which are made explicit and some of which are implicit and have to be acquired through observation and imitation. As Fiona Cownie (2004), for instance, demonstrates, academics teaching and researching in the discipline of law, have a particular dress code which they consider appropriate for their discipline. That code is not made explicit but academics ‘understand’ (that is know from ‘observation’ and experience) what is required or assumed to be good practice. In Britain today, for example, it is evident that

²¹ ‘Sciences’ is here used in the broad sense of *Wissenschaft*, not to mean ‘hard sciences’ or ‘natural sciences’ as is often assumed in the Anglophone world.

the higher up the professional hierarchy one progresses (ie with the acquisition of professorships) and especially the more managerial the role becomes (ie if one is Dean of a Faculty, or Pro-Vice-Chancellor), the more likely it is that one dresses 'smartly', meaning suits both for women and men. In a meeting in 2005 the male Deputy Vice-Chancellor of one British university, discussing the different perspectives of academics and the Chancellorate on a particular issue, for example, began by saying, 'You have to remember that I was a pullover for twenty years before I became a suit. . .', thus distinguishing between his mode of dress as a researcher/academic and his mode of dress as an academic manager. Michel Foucault (1971) describes all such aspects of disciplinary habitus with the phrase '*être dans le vrai*' to articulate both the formal and the informal aspects which signify 'belonging' to a discipline, and argues that '*être dans le vrai*' becomes the means by which one signals one's integration into a discipline and its research culture/s, and by which others in the same discipline confirm that belonging.

All partner countries in the project stressed the importance of informal networks, hidden curricula (Ahola 2000), and connections as essential to the process of young academics' integration into the academy and into research cultures. Keskinen and Silius (2005a: 35) write of these processes that they are 'like a hidden curriculum which is not easily spelled out'. However, we would argue that these processes constitute forms of academic and 'tribal' gate-keeping and are not spelled out – rather than cannot easily be spelled out – because they depend on criteria of exclusion and inclusion (such as whom you know in a given discipline) which – sometimes directly – contravene the legal frameworks of employment and professional conduct and further, because they add to the notion of a meritocratic system based on supposedly objectively assessable individual academic merit (such as degree results, publications) the dimension of 'club-ability' or social competence, for example, which is not – officially at least – meant to be part of how individual academics are assessed. Part of the assessment of emerging academics in their integration into research cultures and disciplines thus becomes their ability to deal effectively with the hidden curriculum that dominates their disciplinary and research domain (for example in terms of unacknowledged hierarchies of universities). This automatically privileges those who can navigate that curriculum effectively, often of course people who come from families where there is a previous academic background, against those who are among the first generation of people to study from within given families, and thus accounts for the often commented-upon bias towards members of the middle classes among academic professionals (e.g. Halsey 2000; Bourdieu 1979).

There is some difference across the various European countries regarding the operations of informal networks and processes associated not least with the size of the academic community in a given country. The smaller such a community the more likely it is that its members know each other well with all the positive and negative connotations that this has. Such situations do not exist in the same way in some (larger) European member states such as the UK where – as a consequence, not least, of the size of the academic community – greater mobility exists. In general one can argue that the smaller an academic community the fewer the opportunities for entering that community and the more attuned, both formally and informally, one needs to be to that community and its rules and practices. There is, however, no necessary relation between size of community and opportunities for interdisciplinary work. This becomes evident in a comparison between Norway and Hungary on the one hand, and the UK

and Spain on the other. The former both have small academic communities but education reform in Norway in 2003 introduced into the system much greater degrees of inter- or multi-disciplinarity than previously possible (Widerberg et al 2005) and emerging researchers are likely to be exposed to inter- or multi-disciplinary research/academic contexts through the research area in a given institution to which they are affiliated. In Hungary, by contrast, disciplinization remains at the core of the professionalization process, especially in its early stages (Jakab et al 2005). The UK and Spain are EU member states with much larger academic communities than Norway and Hungary. However, as is the case with the latter two countries, in their comparison too we see much greater disciplinary flexibility in the UK (Griffin et al 2005) than in Spain (Carrera Suárez et al 2005). The size of an academic community thus interrelates with other academic structures to determine the degree of opportunities for interdisciplinarity that exist in the professionalization of emerging academics. These include disciplinary predilections towards different modes of research as discussed in the next section of this report.

5.5 Modes of researching: Individual research and collaboration

The question of individual versus collaborative research is important in our context because modes of research impact on the kind of research conducted and the possibilities for multi- or interdisciplinarity entailed therein. Conducting research in groups allows for collaboration between people (potentially from different disciplines) with a familiarity with a range of research environments and cultures, whilst the individual researcher will always be able to refer back *only* to her specific experiences. There is thus a close link between collaborative research and the possibilities of multi- or interdisciplinary research (Benavot et al 2005).

European research policy for the most part²² envisages collaborative research involving at least 3 partners from different European countries. As such it espouses a research model more commonly used in the hard sciences and the social sciences than in the humanities where the typical image of the researcher remains that of the lone scholar working in isolation. The EU's concern is that 'Research should address ways in which the generation and transmission of new knowledge could promote the integration of *social sciences and humanities* in Europe At present, these research fields are strongly marked by their national emergence contexts; there are major limits and barriers to their integration within a European perspective.' (Framework 6, *Workprogramme Priority 7: 5*) These limits include, not least, the different attitudes towards research as an individual or a collaborative effort within these disciplinary domains. The UK's Arts and Humanities Research Council (AHRC), for instance, has many funding schemes that are specifically and exclusively aimed at individual researchers applying as individuals. A similar situation pertains in Hungary even though it is not individuals who apply for research funding but research groups (Jakab et al 2005: 23). The EU's research agenda thus calls for a radical shift in research culture, indeed in research training, especially in the humanities where histories of collaborative research are much more limited in all European countries than they are for the social sciences.

²² One exception are those Marie Curie actions (fellowships; chairs) which are aimed at increasing individual researcher mobility.

Where research is conducted by an individual alone, that individual's interdisciplinary disposition – a function of their own history, specific national research and academic context – will determine the interdisciplinarity of their work. This means that individual researchers' work in countries such as Hungary, Spain and France is less likely to be interdisciplinary than in countries such as the UK and Norway, simply because the structural incentives to be interdisciplinary – as indicated in other sections of this report - are significantly reduced in the former countries compared to the latter.

Opportunities for interdisciplinary work increase in collaborative contexts even though the interpretation of what interdisciplinarity means in such collaborations varies. As Benavot et al (2005) demonstrate, interdisciplinarity in EU-funded collaborative research projects can mean simply bringing together researchers from different disciplines, or the mixing (joint application) of methodological tools and concepts from different disciplines, or the transformative integration of tools and concepts from different disciplines to generate new knowledge, or a mixture of some or all of these. Within national contexts across Europe collaborative research (at transdisciplinary level) is fostered to varying degrees, and more or less informally. In general, it is more common in countries with smaller academic communities such as the Scandinavian countries, the Benelux countries and the new member states to have national PhD schools, for example, and to work in terms of research clusters, with the effect that even if these entities (PhD schools, research clusters) are organized by discipline, emerging researchers in these countries will be more familiar with others working in their fields and may thus have better pre-conditions for collaborative research than young researchers working in large academic communities which do not have national research schools or research clusters on specific topics located in just one university or a (small group of) research institute(s).

Interdisciplinarity (in collaborative research) is claimed²³ by diverse research organizations and by researchers at three different levels:

- a) the level of the discipline,
- b) the level of families of disciplines (Benavot's title 'Interdisciplinarity in EU-funded Social Science Projects' is an example of this), and
- c) the level of collaboration across (different) disciplines.

EU-funded research enables interdisciplinary research at all levels, including level c), that is in terms of collaborations across disciplines. Such research, as this report suggests, cuts across many of the national disciplinary structures in European countries which make interdisciplinary research difficult, allowing researchers to operate in ways that often cannot be achieved within their national research frameworks (Benavot 2005: 128). These opportunities can readily be taken by researchers who have (relative) research autonomy but are more problematic where researchers have to fulfil specific research imperatives as is the case in the UK where researchers are publicly accountable for their research in disciplinary terms, making the pursuit of multi- and/or interdisciplinary research problematic since it does not fit into the national frame of research assessment²⁴ (Griffin et al 2005: 54-5).

²³ Kuhn and Remøe (2005) found that the majority of EU-funded research projects they looked at – all of which claimed interdisciplinarity – were in fact multi-disciplinary, meaning that they brought together researchers from different disciplines.

²⁴ The RAE panels claim that they pay attention to interdisciplinarity and try to do interdisciplinary research justice.

Overall, it is more likely that researchers are acculturated into the conduct of collaborative research in the social sciences than in the humanities. Such acculturation most commonly takes place when young researchers become research assistants to established researchers or following on from their PhD. Up until and including the PhD, research is usually across all social sciences and humanities disciplines an *individual exercise*, resulting in a thesis written and submitted by a single person. This means that collaborative research mostly occurs at postdoctoral level, and is proactively fostered, as indicated before, more commonly in the social sciences than in the humanities. As national research agendas have aligned themselves more closely with European research agendas, collaboration has gained greater *kudos* in research contexts, and the numbers of research grants available for collaboration has increased. However, the evaluation of research still tends to be conducted predominantly at the individual researcher level, and, even where it occurs at group level, it assumes hierarchies within collaborations rather than a democratic structure of equal participation. This means, in terms of research publications, for instance, that the first-named author is the most significant. This in turn diminishes the professional value of collaborative work since individuals cannot claim full credit. There remains, therefore, a contradiction in research policy terms between EU research agendas which focus almost exclusively on collaborative research, and national research agendas which often privilege individual researchers, not least in terms of assessment. The result is that individual researchers have to integrate and balance these competing demands in their working practices.

6. The impact of the Bologna process on the academic professionalization process

The Bologna Process – named after the Bologna Declaration signed in 1999 by 29 European ministers of education – is, as Widerberg et al (2005) put it, the commitment by 40 countries to reform their higher education systems in order to create structural convergence at the European level. It is said to be the most important and wide-ranging reform of higher education in Europe since the immediate aftermath of 1968. The ultimate aim of the Process is to establish a European Higher Education Area by 2010 in which academic staff and students can move with ease and have quick and fair recognition of their qualifications²⁵.

Since the Bologna Process is at varying stages of implementation in the diverse European countries and is, in any event, a post-1999 process, it is too early to indicate its impact on the professionalization process of academics. It is, however, possible to outline some of the issues that might derive from that process, in particular in relation to

- Staff mobility

²⁵ www.enic-naric.net.

- Interdisciplinarity
- (Labour) market orientation of degrees
- Diversification of professional academic career paths

6.1 Professionalization and academic staff mobility

The establishment of comparable degree systems across Europe along the 3-5-8 model²⁶ is intended, *inter alia*, to increase mobility which should, at least theoretically, increase staff mobility. However, previous research (Juhasz et al 2005) has shown that staff mobility is affected by issues such as family commitments, divergence in pension and benefit systems, the civil servant status or otherwise of academics, etc, which are to some extent independent of the opportunities offered by the education system as such. The mobility of European academic staff across European countries is at present relatively limited, and may remain so unless such staff become familiar with other European countries as part of their own training and professionalization process²⁷, and attendant benefit and pension structures are harmonized more effectively.

6.2 Interdisciplinarity and professionalization

As is clear from the country-specific reports produced as part of this project, the implementation of the Bologna Process has resulted in a great degree of diversity among the various signatories including in the matter of interdisciplinarity. Whilst all partners indicate that it is too early to detail how the Bologna Process will impact on interdisciplinarity, a continuum emerges in the comparison of the various European countries from those such as Norway which have utilized the Bologna Process to reinforce possibilities of interdisciplinarity to those such as Spain that have either tightened the disciplinary grip through producing lists of disciplines that constitute the basis for university degrees or that have created an increased disciplinization effect through the streamlining, either at ministerial or at degree accreditation level, of degree programmes.

Such increased disciplinization is reinforced not least through the newly emerging degree and discipline accreditation structures in all European countries which tend to operate by discipline, thus reinforcing discipline bases rather than broadening them. One impact of this process may be the re-disciplinization of staff in countries which have previously had greater openness towards interdisciplinarity. This can be observed in the UK which is seeing the demise of explicitly interdisciplinary subjects such as Women's Studies and Cultural Studies which have been unable to become, or have

²⁶ The 3-5-8 model refers to the degree structure which implies the completion of a first or Bachelor degree after 3 years, a second or Masters degree after a further 2 years (making the total university training to that point 5 years long), and a doctoral degree after a further 3 years (making the total time taken to complete university training 8 years).

²⁷ It is worth noting here that the European Union has begun to expand significant resources into enhancing mobility among academic staff through the Marie Curie schemes which enable staff mobility on a competitive basis from the beginning of individuals' academic careers to retirement.

only been partially recognized as, disciplines in their own right as part of the accreditation processes that have been set up since the 1990s. In countries such as France and Spain which have operated strongly centralized, disciplined academic systems, the potential or actual self-determination or autonomy of institutions in creating degree programmes, appointing staff, etc. has been of much greater importance in the Bologna Process than questions of professionalization or interdisciplinarity as such but it is clear in those countries too that the Bologna Process is on the whole more likely to be interpreted as reinforcing disciplinarity than encouraging interdisciplinarity. In so far as interdisciplinarity or multidisciplinaryity exists in those countries, it is dependent on student-led choices to take more than one subject, for example, but there are significant pressures on students to stay within one disciplinary area. One consequence of this is that academics of the future, currently being trained under the newly emerging, post-Bologna structures, may be more discipline-bound and thus less likely to engage in research cutting across disciplinary boundaries than previous generations have been. This would be highly regrettable, given the needs for intellectual flexibility in the knowledge-based society.

6.3 The (labour) market orientation of the higher education system under the Bologna process and disciplinization

As with all other aspects of the Bologna Process, its demand for the greater labour market orientation of higher education, a novelty in countries such as Spain, Hungary, and Germany, but already well entrenched in the UK, is interpreted differently in the diverse European countries, emerging in more or less explicit ways in their documentation. According to Carrera Suárez et al (2005), although the National Agency for the Evaluation of Quality and Accreditation (ANECA) explicitly mentions that ‘the undergraduate level degrees must be clearly labour-market oriented, in a way that these degrees cannot be interpreted, exclusively, as an intermediate step on the way to a postgraduate degree’ (*III Convocatoria de ayudas para el diseño de planes de estudio y títulos de grado*, p. 14), the document *On the Length of Undergraduate Studies*, produced by the working group of the CRUE on the European System for Higher Education, states that ‘the undergraduate level is being designed in many European countries as a transit to a postgraduate degree, and not as a degree relevant for the European labour market. ... The structure 3+2 is the most accepted across Europe. ... At present two versions coexist: 3-year degrees with academic objectives and 4-year degrees (3+1) with a professional orientation’ (1-3), which means that real access to the labour market is achieved after a minimum of 4 years of study. This document it also states that ‘We disregard, as out of the question, that a 3-year degree could be considered from now on in Spain as a professionalizing degree par excellence, substituting the *licenciado* or *ingeniero* degree. It is simply not possible’ (p. 4). (Carrera Suárez et al 2005: 40)

Spain is clearly resisting the labour market orientation encouraged by the Bologna Process. In Germany, on the other hand, the same demand has led to the legally enshrined establishment of degrees that explicitly identify their professional orientation:

The *Akkreditierungsrat* defines the Bachelor as follows: ‘According to § 19 Abs. 2 HRG, a Bachelor degree course is a first course of university study which leads to a first professional degree. Such courses must be structured in such a way as to qualify students in the application of the academic and/or

scientific methods of the subject in question and must, through the delivery of a specialist systematology, provide students with the specific subject-based foundation for a future profession. In its capacity as a first professional degree, the Bachelor is generally awarded across all kinds of higher education institution.’²⁸ (Krebs et al 2005: 51)

Other countries such as Hungary and Finland continue to grapple with the meaning of that labour market orientation and how it might be implemented. France and the UK have begun to distinguish between ‘professional’ and ‘research’ Masters degrees, for example. One thing is clear: if labour market orientation becomes the order of the day, especially at undergraduate level, we shall be moving to a more explicitly planned higher education economy in which, just as is the case in the UK (see Griffin et al 2005: 23-4), subjects that fail to attract students and cannot demonstrate their labour market potential explicitly may either vanish from the education scene as dinosaurs of previous knowledge regimes, or may need to adapt radically to ensure their viability and survival. This could lead to a situation of increasing need or demand for Continuing Professional Development (CPD) for educators in higher education to update them on labour market developments. CPD has already begun to play an increasingly important role in UK teacher training and other professional contexts and might expand into higher education in the medium term.

There may also be an additional impact in the creation of academics’ need to engage more explicitly with the labour market outside of academe in order to understand more clearly the demands of those changing markets. In the UK there is an increasing trend for regional and central government initiatives to support joint activities between industry/business and the education sector. The same is evident in the European Union which offers specific grants for those activities. All of this may imply radical changes for academics in the social sciences and the humanities in years to come in which ‘knowledge for knowledge’s sake’ may be replaced by ‘knowledge for employment’s sake’.

6.4 The diversification of academic career paths

All partner countries in this project report the establishment of quality assurance and accreditation agencies shortly before or as part of the implementation of the Bologna Process:

Table 6.1 Quality Assurance and Accreditation Agencies in eight European countries

Country	Acronym	Accreditation/Quality Assurance Agency
Finland		Finnish Higher Education Evaluation Council
France	CNU CNE	National Council of Universities National Committee of Evaluation
Germany		Akkreditierungsrat (1998)
Hungary	HAC	Hungarian Accreditation Committee (1993)
Norway	NOKUT	Norwegian Agency for Quality Assurance in Education
Spain	ANECA	National Agency for the Evaluation of Quality and Accreditation
Sweden	HSV	National Agency for Higher Education
UK	QAA	Quality Assurance Agency

²⁸ www.accreditation-council.de/frame-of-reference.htm, (1), 14.12.2004.

Since this was not specifically asked for, few of the project's country-specific reports (Jan. 2005; www.hull.ac.uk/researchintegration) comment on the composition of these bodies though all highlight their power in determining degree programmes etc. It is evident that these agencies are staffed by academics though it is not clear at which point in their professionalization process these academics have entered the agencies, or whether they are full-time or part-time, and/or permanently appointed or temporarily seconded. Some countries such as Germany, France and the UK operate quality assurance and accreditation of degrees through at least a partial peer review system which means that academic staff are seconded to quality assurance institutions for a period of time to undertake quality assurance tasks.

One of the overall impacts of the agencies set up as part of the Bologna Process is the diversification of academic career paths, especially in the context of peer review which is becoming more widespread and encompasses more areas of academic work than it did before the 1990s. Increasingly academics, especially as they become more senior, are required or encouraged to undertake evaluation work, both in the context of research and in the context of education. This in itself has a professionalization effect in that it generates – through ‘doing’ – new competences and new knowledges within the academic sector. At the same time it moves academics away from what many regard as the core of their profession, that is teaching and research, into related managerial and auditing functions which have become increasingly part of academic culture. This may lead – indeed is already leading in the UK – to greater diversification of professional expertise in the academy but also to greater contractual diversification among academics, with some working to contracts that emphasize teaching whilst others concentrate on research and yet others on management and auditing. Such divisions of labour are already well established in many European countries but may become more pronounced over the next few years as the Bologna process begins to bite more firmly.

7. Conclusions

1. Interdisciplinarity is diversely understood and not easily measured. Much work that is claimed to be interdisciplinary is, in fact, multi-disciplinary in nature, that is brings together people/concepts/methodologies from diverse disciplines but does not progress this to an integrated, transformative use of the knowledge produced.
2. European school education tends to be broad-based in terms of range of subjects offered but, except in the case of Norway, does not encourage interdisciplinarity. At the same time school education does not pre-determine subjects taken during higher education. Broad-based education is more likely to lay foundations for subsequent interdisciplinary research than narrowly based education.

3. Higher education in Europe is characterized by a north-west vs south-east divide regarding the disciplinization of students: at undergraduate level there is, in general, little opportunity for interdisciplinary work except in the Nordic countries, and where possibilities of studying beyond a specific discipline exist, these tend to lead to multi-disciplinary rather than interdisciplinary courses. Early disciplinization is common in the southern and eastern European countries, and less common in the northern and western ones.
4. There is a close correlation between the degree of influence the state exerts on higher education and the degree of mono-disciplinization of students. In general, the higher the degree of state intervention (and this is more common in the southern and eastern European countries than in the northern and western ones), the greater the degree of early specialization into a single discipline.
5. In the past greater degrees of state intervention in education were observable in the southern and eastern European countries than in the northern and western ones. The impact of the Bologna Agreement has been to loosen state intervention where it has been high, and to increase it where it has been low, with an overall effect of a levelling of that intervention across the European member states.
6. The intervention of the state in education in general functions to reinforce disciplinaryity rather than to loosen it.
7. Disciplines are ruled by formalized and informal conventions which are reinforced by discipline-related infrastructures such as subject associations, learned societies and professional associations. These all tend to reinforce disciplinary territories and boundaries.
8. Well-established disciplines with well-established disciplinary infrastructures tend to have equally well-established formal and informal processes for acculturating emerging academics into the disciplines.
9. Interdisciplinary fields, and newly emerging disciplines such as Women's/Gender Studies or Cultural Studies tend to have less well established associated infrastructures to reinforce their disciplinization and integration into higher education.
10. Higher institutional structures, administrative and funding processes are usually structured around disciplines and function to reinforce disciplines.
11. Academics working in new, emerging and/or interdisciplinary subjects usually have to do so whilst also working in a traditional, established discipline, thus having to work a double shift.
12. Emerging academics in all European countries need a strong discipline affiliation in order to secure employment in academe and in order to establish themselves as scholars.

13. Interdisciplinary research is therefore most likely to be carried out by more senior academics with an established reputation and academic profile able to invest in work which is unlikely to enhance their professional status at national level.
14. Interdisciplinary research is not rewarded in most national research and academic career progression contexts in Europe, and can be detrimental because it is discounted.
15. Research funding structures at national level are, for the most part, organized around academic disciplines.
16. Many European countries, especially the northern and western ones, now promote interdisciplinary research through ring-fenced funding (specific programmes) for collaborative, interdisciplinary research.
17. Collaborative research is more likely to lead to interdisciplinary projects. Research collaboration is more common in the social sciences than in the humanities. In the latter the image of the lone scholar still prevails.
18. Virtually all audit and assessment processes in academe at national level are carried out by discipline, thus creating significant problems for interdisciplinary research which always falls outside the parameters of such processes.
19. Neither higher education institutions nor national research support structures tend to support interdisciplinarity at national level.
20. Interdisciplinarity is more likely to be fostered at transnational level such as in the EU's Framework programme.
21. The various European member states have, on the whole, used the Bologna process to reinforce traditional disciplines and disciplinarity.

Overall, the, academic professionalization is a relatively conservative process which in general is very anti-interdisciplinarity. However, one of the values of interdisciplinarity is that it challenges existing structures. One of the project partners therefore described interdisciplinarity as 'the Trojan horse' in academe in one project meeting (Budapest, February 2005). As Benavot (2005: 146-7) puts it:

Disciplines represent the cornerstones of academic life and research. . . They define the boundaries of scientific discourse and set forth criteria to evaluate the status and stature of knowledge produced by their members. . . Interdisciplinarity. . . problematizes the position and authority of the professor as the ultimate expert, and erodes a discipline's authority. . . This threat becomes bureaucratic, since the disciplines are the basic building blocks of the institution.

As European higher education institutions look set to reinvent themselves as part of the Bologna process, and even as many of them use that process to re-disciplinize academe, it is important to think of interdisciplinarity and the opening up of academic boundaries as an opportunities for re-thinking knowledge production.

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