

A Field of Uncertainty: postgraduate studies in the Federal Republic of Germany

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Introduction

From a German viewpoint this issue of the *European Journal of Education* is most timely. For higher education in the Federal Republic is apparently at a stage of development at which an amalgam of latent problems raise the question as to whether and how a system of postgraduate studies should or could be designed systematically. And at the same time, postgraduate studies seem to be looked upon from various angles, as if this part of the system were hiding something like a miraculous key to the solution of problems in other parts. Indeed, for a whole range of matters, including the promotion of research, the diversification of the higher education system, the alleviation of academic labour market problems, the training of future university teachers and researchers, and the formation of an elite, postgraduate studies seem to be regarded as of considerable relevance. It is felt that the time is now ripe for at least an attempted overview and for comparisons with other countries.

However, before going any further, it is as well to make sure that we know what we are talking about when we speak of postgraduate education or studies in the Federal Republic. For "postgraduate" or its German adaptations (*postgraduiert* or *postgradual*) are foreign words in the German language, suggesting perhaps that what they designate may itself be foreign to German higher education.

At first sight, this appears to be so. University courses traditionally lead to a degree called *Staatsexamen* (state exam) in the case of the traditional professions (medicine, law, teaching), and *Diplom* (diploma) or *Magister* (M.A., M.Sc., M.Theol. etc.) in all other cases. It is in fact *the* degree, awarded after a period of studies which, though officially planned to last eight to eleven semesters (depending on the discipline), in fact takes longer in almost all courses, the length of study on average being 12 semesters (see Table II below). There is no other university degree (like the B.A.) prior to the above qualifications and no other one beyond them except the doctorate (and, beyond that, the *Habilitation*). Yet, as will be described in further detail below, this doctorate (and the *Habilitation*) are obtained not by going through any further course programme or formal training, but by working on a piece of individual research, with the result that the term "postgraduate education" is misleading. On the other hand, (medical) doctors, lawyers/judges, theologians and teachers *do* have to go through a second stage of formalized practical training after their degree (and in the three latter cases to pass a second state exam). However, this occurs in appropriate institutions other than universities and therefore cannot be named "postgraduate education" either.

Nevertheless, something nearer to postgraduate education in the international sense

of the word can be discerned if our terms of reference are extended beyond the university. The *Fachhochschulen* (polytechnics) award a degree (normally after three years of studies with which students, besides becoming qualified for certain vocational jobs, are also entitled to register with a university or technical university (which most of them have not been able to do previously). If they decide to take advantage of this entitlement—and quite a few do—what follows then is in a sense postgraduate education, since it is subsequent to the first degree. However, the courses actually taken by the former *Fachhochschulen* students are naturally not conceived as such in that they are just the normal undergraduate courses also taken by students arriving directly from the *Gymnasium*. Similarly, within certain types of *Hochschulen*, and especially the *Musikhochschulen* (colleges of music) and *Pädagogische* or *Erziehungswissenschaftliche Hochschulen* (teacher training colleges, which still exist in some *Länder* though integrated into universities in the others), students pass their first *Staatsexamen* (usually after three years), but may continue their studies up to a second degree, a *Magister* or *Diplom*, commonly regarded as of higher status and as offering better job opportunities. To date, however, these courses have also been assumed to be the more or less natural continuation of studies before the first degree, rather than separate postgraduate courses.

Yet all this does not mean that there is no more to be said about postgraduate education in the Federal Republic of Germany. Indeed, considerable current attention is focused on the different institutional forms and curricular patterns which might in some way be classified under this heading with a view perhaps to creating a more formally defined postgraduate sector. And if student ambitions following the first degree are perhaps much less clear than the distinctions made by administrators and statisticians suggest, three main categories of studies subsequent to this qualification may nonetheless be identified:

- (i) the *Zweitstudium* (second course of study);
- (ii) the *Weiterführendes Studium* or *Aufbaustudium* (continuing course of study);
- (iii) the *Promotions-* or *Doktorandenstudium* (doctoral studies).

While the statistical figures for these categories are given in Table I below, their clarity and precise meaning call for closer description and discussion.

A Second Course of Study

There is nothing new in German universities allowing students with a (first) degree to continue their studies on a second course sometimes unrelated to their previous work. Naturally, such students are subject to any restricted access or *numerus clausus* in the chosen field so that, unless they benefit from a special quota, they have to compete for places with students arriving directly from secondary school. In a way, those who change their subject after the degree may be compared with the 25% or so of all students who switch to a different field before it, i.e. in their very first years of study (Wissenschaftsrat, 1986, p. 22; Griesbach *et al.*, 1983, pp. 233 *et seq.*).

A student may opt for a *Zweitstudium* for one or more reasons. He or she (more males than females take this decision, as indicated in Table I) may gradually become strongly motivated for another subject perhaps already studied in passing, as in the case of (say) the law student who develops a passionate interest in literature. Alternatively, students may wish to combine the first subject with a second one because the combination is, by its very nature, particularly well-matched (e.g. sociology or education with psychology) or promising professionally (e.g. medicine and law). Yet

TABLE I. German students with a first degree, studying at universities and schools of art/music, by type of subject in selected years (winter semester) from 1973 to 1983.

	Of which					Of which							
	Total (Absolute values)	as a percentage of all students				Total (Absolute values)	as a percentage of all students						
		Zweit- studium	Aufbau- studium	Doctoral studies	Others		Zweit- studium	Aufbau- studium	Doctoral studies	Others			
Humanities, sport													
1973	16,004	26.7	9.1	9.2	3.8	4.2	4.2	1157	14.2	4.5	4.3	2.2	3.1
1977	21,989	25.1	9.7	7.6	4.8	2.9	8.4	1112	8.4	2.0	1.9	2.3	2.2
1981	29,165	22.1	9.8	5.0	4.6	2.7	8.3	1502	8.3	2.5	2.4	1.9	1.5
1982	30,637	20.7	9.4	4.2	4.1	3.0	8.5	1627	8.5	2.5	2.8	1.9	1.3
1983	32,553	19.8	9.5	3.2	3.9	2.9	8.4	1673	8.4	2.7	2.6	1.8	1.2
Economic and social sciences													
1973	12,204	11.4	4.9	3.1	1.5	2.0	14.7	1821	14.7	7.9	4.5	0.7	1.6
1977	17,585	12.3	5.8	3.5	2.0	1.1	18.8	2975	18.8	9.1	4.6	1.2	2.0
1981	23,169	12.6	5.9	2.4	2.5	1.7	15.2	3897	15.2	8.2	3.9	2.0	1.0
1982	23,685	12.0	5.6	2.4	2.3	1.7	15.3	4274	15.3	8.2	3.8	2.2	1.1
1983	24,791	11.7	5.7	2.0	2.1	1.8	15.7	4636	15.7	8.7	3.5	2.2	1.2
Mathematics/Natural sciences													
1973	7406	11.9	2.9	3.0	3.4	2.6	8.6	18,679	8.6	3.3	3.9	0.0	1.4
1977	10,135	12.4	3.4	2.3	4.5	2.2	10.0	22,455	10.0	3.9	4.8	0.1	1.2
1981	13,465	12.1	3.7	1.8	4.7	2.0	10.9	22,428	10.9	4.8	3.8	0.1	2.3
1982	14,534	11.7	3.5	1.6	4.4	2.2	11.0	21,209	11.0	4.8	3.6	0.1	2.5
1983	15,860	11.4	3.7	1.3	4.2	2.2	11.9	21,110	11.9	5.3	3.8	0.1	2.8

Continued overleaf

TABLE I.—*continued.*

	Of which					Total (Absolute values)	Of which												
	as a percentage of all students						as a percentage of all students												
	Zweit- studium	Aufbau- studium	Doctoral studies	Others			Zweit- studium	Aufbau- studium	Doctoral studies	Others									
Engineering																			
1973	8165	14.8	8.8	3.9	0.5	1.6	0.5	0.5	1.6	67,902	12.0	4.8	4.0	1.2	2.0				
1977	7967	11.5	5.5	4.2	0.7	1.2	0.7	0.7	1.2	90,023	12.9	5.4	4.1	1.8	1.5				
1981	7207	8.3	3.7	3.1	1.1	0.6	1.1	1.1	0.6	106,763	12.6	5.5	3.0	2.2	1.9				
1982	7694	8.1	3.5	2.9	1.0	0.7	1.0	1.0	0.7	109,215	12.2	5.3	2.7	2.2	2.0				
1983	7517	7.1	3.3	2.4	0.8	0.6	0.8	0.8	0.6	113,886	12.1	5.5	2.4	2.2	2.0				
										All programmes*									
Medicine																			
1973	2117	5.1	2.9	0.8	0.4	1.0	0.4	0.4	1.0	50,399	13.5	5.7	4.2	1.5	2.2				
1977	5388	9.3	6.3	1.1	0.6	1.3	0.6	0.6	1.3	63,172	14.4	6.3	4.2	2.1	1.7				
1981	5333	6.8	4.0	0.6	1.0	1.3	1.0	1.0	1.3	68,500	13.5	6.0	3.0	2.6	1.8				
1982	4945	6.0	3.3	0.5	1.1	1.1	1.1	1.1	1.1	68,830	13.0	5.7	2.8	2.5	2.0				
1983	4958	5.8	2.9	0.3	1.3	1.2	1.3	1.3	1.2	70,350	12.6	5.7	2.4	2.5	2.0				
										<i>Men</i>									
										<i>Women</i>									
Veterinary medicine																			
1973	276	10.1	1.1	1.2	2.8	5.1	2.8	2.8	5.1	17,503	9.0	3.2	3.7	0.6	1.5				
1977	388	10.9	7.8	0.4	0.8	1.9	0.8	0.8	1.9	26,851	10.4	4.0	3.9	1.1	1.0				
1981	597	11.6	3.1	0.3	7.9	0.3	7.9	7.9	0.3	38,263	11.3	4.8	2.9	1.7	1.9				
1982	610	11.0	2.2	0.3	7.6	0.9	7.6	7.6	0.9	40,385	11.1	4.8	2.7	1.7	1.9				
1983	788	13.7	2.1	0.4	9.5	1.7	9.5	9.5	1.7	43,536	11.4	5.2	2.4	1.8	2.0				

*Including small numbers of students in subjects not classified here.
Source: BMBW (1985) pp. 144-145.

another possible reason for a change may be that the former course of studies does not lead to employment while the second field of interest envisaged may do so; moreover, the *Fachhochschule* graduate in engineering, social work or librarianship may wish to get the university degree in his field, too, since this often carries greater status and better remuneration.

As one might expect, the relative weight of each of these motives has not yet been assessed given the enormity of the task in the light of the vast range of personal dispositions and individual backgrounds involved. On the basis of intensive interviews and personality tests, Brackhane and Brunner (1981) have postulated two types of *Zweitstudenten*. First, 'difficult' ones who, perhaps after a relatively unsettled childhood or adolescence and several possibly acute crises during their early studies, finally turn to a second course where they often succeed in finding their identity and fulfilment in work of interest to them: secondly, the 'straightforward' ones, who have grown up well integrated socially and personally, developed a clear set of career goals and/or subject interests and, in view of this, may often start a second course of studies while still enrolled in the first. Such a dichotomy is probably a considerable oversimplification but at least it hints at the biographical dimension involved.

Although students are allowed to take up a second course of study, they are by no means *encouraged* to do so. Politicians and administrators thinking in economic terms have expressed concern at the growing difference between the number of semesters spent by students on their final subject and the number spent in higher education altogether—an indication as to how many have changed subjects at least once before or after the degree (see Table II). Because *Zweitstudenten* clearly draw on public funds a second time round for the general expenses per place of study which they have already enjoyed once (without paying fees), they are at least left to fend for themselves as far as their living expenses are concerned. Public grants, or more precisely loans, are awarded students after the first degree only if the second one specifically qualifies them for professional activity. In 1984, no more than about 3400 were in this position (BMBW, 1985, p. 202). As such students (usually aged at least 25) in general no longer wish to rely exclusively on their parents (or partners) for financial support, some two-thirds or more have somehow to earn their living and to study at the same time (Arbeitsgruppe Aufbaustudium, 1986; Schnitzer *et al.* 1983, pp. 133 *et seq.*).

Neither do universities particularly cater for these students who benefit from no special courses or specifically designed or modified curricula since, in principle, they are required to embark on their newly chosen subjects from the beginning along with the first-year intake. It is only through *ad hoc* rulings and individual bargaining that positive assessment during the first course of study may sometimes be acknowledged as exempting such students from this or that requirement.

Continuing Courses of Study

In some contrast to the foregoing, both universities and other higher education institutions in the Federal Republic have quite recently started to offer formal courses to graduates wishing to broaden or extend the knowledge they have already gained. For reasons to be discussed below, an attempt has been made to tailor an increasing number of such courses to the needs of foreign as well as German students. The most recent documentation from the Westdeutsche Rektorenkonferenz (WRK, 1986) lists some 380 offers of this kind from its near 200 member institutions; and, in reality, there are likely to be even more.

Problems of Definition and Classification

Impressive as this total may appear at first sight, it becomes less so on closer inspection. The terms used in the WRK list have to date sometimes been so imprecise or inconsistent that it is difficult to decide which programmes should be included, let alone the sub-category to which they belong or, indeed, whether they deserve the name "programme" at all. This, of course, is no fault of the documentation but, rather a reflection of a linguistic state of affairs in which terms like *Aufbau-*, *Ergänzungs-*, *Erweiterungs-*, *Zusatz-* or *Weiterbildendes* and *Kontaktstudium* are used differently by the different *Länder* or even individual institutions. So far neither federal law nor national planning committees have succeeded in enforcing at least a consistent terminology. In the most recent (1985) supplement to the *Hochschulrahmengesetz* (federal 'frame' law for higher education) and its commentary a distinction is made between:

- (i) a *Zusatzstudium* (additional course of study) to achieve further academic qualifications;
- (ii) an *Ergänzungsstudium* (complementary course of study) to achieve further professional qualifications;
- (iii) an *Aufbaustudium* (connecting course of study) to deepen the studies pursued up to then.

In its most recent recommendation, the *Wissenschaftsrat* (a national planning committee of experts set up jointly by the federal and state governments, with membership drawn from the universities, research and administration) has focussed upon what it calls *Spezialstudien* (special studies) without bothering much about the rest (*Zusatzberechtigungen*, *vertiefende Weiterbildung*, or *Erwerb eng umschriebener Spezialqualifikationen*). Among the *Spezialstudien* it distinguishes between:

- (i) *fächerübergreifende Spezialisierung* ('trans-disciplinary' specialization) for the study of problems of a broadly interdisciplinary nature;
- (ii) *berufsorientierte Bereichsspezialisierung* (specialization for certain professional fields) to 'build bridges' between purely subject-oriented courses already studied and occupational sectors;
- (iii) *berufsorientierte Teilfachspezialisierung* (specialization in a certain sub-branch of one's subject not sufficiently covered in the general course studied) in order to be able to meet the highly specific demands of professional practice (*Wissenschaftsrat*, 1986, pp. 61 *et seq.*).

It is obvious that such distinctions are drawn partly on the basis of structure and content, partly on that of the function and aims of the programmes concerned. Indeed no one dimension seems adequate to cover all the variations. In order to be able to analyse the material more closely, I shall therefore use a combination of the categories identified.

Types of Programmes

Under the *first* heading of *fachübergreifende Spezialisierung* one may subsume programmes bearing titles like "African studies", "studies in labour" (or *Arbeitswissenschaft*), "the Third World", "European integration", "gerontology", "criminology", "ecology" or "environmental studies" and so forth (there are about 15 such headings in the WRK list). While these titles clearly indicate problem areas which require an

interdisciplinary approach and are therefore potentially attractive to graduates from a variety of subject areas, they do not point directly to any well-defined professional activity or career.

This particular shortcoming is, however, remedied in programmes classified under the *second* heading, whose titles hint at the *Berufsbereiche* (professional fields) for which students enrolled may become specifically qualified. They include 'post-school' jobs in education (especially adult education) which tend to appeal most to former trainee teachers; positions in business or administration (via courses in economics offered, for example, to law and engineering graduates); opportunities in publishing or journalism (perhaps best suited to humanities and social sciences students); and therapeutical work (for those who have studied subjects like psychology or music). There are some 60 courses of this kind classified in all.

In contrast to these programmes which require students to move on to a subject area *different* from that previously studied, the programmes of the *third* type offer specialization in a fairly narrowly circumscribed field (or *Teilfach*) within the initial discipline—specialization which is also likely to open the way to specific professional opportunities. Examples of possible content in this third group include work for engineers on problems or techniques related to garbage clearance or recycling, welding, or safety and medical matters; the study, by lawyers, of legal issues regarding sport, mining, and international economics; and courses focusing on the conditions in which students' knowledge may have to be applied, as in the case of agriculture, forestry and medicine in tropical areas, or architecture, regional or urban planning, and education in developing countries. No less than 55 such programmes may be grouped under this third heading.

Neither a very precise field of study nor a specific professional opportunity or career are indicated in a *fourth* group of about 65 programmes which are best labelled *Aufbaustudien* (connecting courses of study). Their titles simply present in conventional terms (mathematics, psychology, romance language and literature, etc.) the discipline in which students may deepen their knowledge. Some of these programmes lead to a degree and, in particular, the master's level qualification and can therefore also be regarded as equivalent to *Zweitstudien* (see above); others do not.

Courses known as *Ergänzungs- oder Erweiterungsstudien* make up a supplementary *fifth* category of provision giving students who have completed programmes comprising separate subjects an opportunity to add just one more to the overall combination—usually without upgrading. Trainee teachers are among those who may take advantage of this formula with some 55 listed programmes (including seven for the teaching of immigrant children), although in the absence of any very strict or complex regulations the real total may well be much higher. Similarly, musicians may turn to another instrument or type of music (with almost 80 programmes forming the biggest part of this group), while foreign language courses (e.g. for economists or lawyers) may be subsumed here too.

Moreover, almost all the functions mentioned and subjects covered could also be associated with the *Wissenschaftliche Weiterbildung* (programmes of further education). However, unlike the programmes discussed above, these are meant for students who have left university at least five years earlier, so that they cannot really be classified under postgraduate education: not unless, that is, they bring together and serve both student populations simultaneously, an educationally interesting experiment already performed in fact by a few of the programmes mentioned. In general though, universities have been slow to develop or publicize such ventures, with only about 40

listed by the WRK. Here again, one suspects, many more may well have gone unreported.

On the other hand, this overview may perhaps be suggesting the existence of more "programmes" than there actually are. Certainly, the form, structure and organization of courses vary greatly, with some leading to an official state-certified qualification (master's or diploma), as in the case of *Ergänzungs-* and *Erweiterungs-* and some of the *Aufbaustudien*, while the requirements are formally fixed in terms of areas to be studied and lectures to be attended. Yet the courses themselves may in fact be identical to those offered undergraduates in the same field.

In other cases, on the contrary, there may be a special programme and course structure devised exclusively or primarily for the benefit of enrolled postgraduate students who, as they progress together through each stage, may look more like a secondary school class than a university or college group. Yet the final informal certificate awarded testifies to little more than that the holder has completed a given piece of work: its value on the academic labour market remains uncertain though it could become stronger and, indeed, firmly consolidated as time goes by.

Between these two extremes lie a variety of miscellaneous course packages. They include a set of compulsory and/or specially designed courses combined with optional ones chosen from those offered to undergraduates; or just a straight set of different options; or, yet again, more research-oriented supervised project work. However, judging from the descriptions in the WRK lists, it seems rare at this stage for German universities to adopt methods of relatively individualized learning. And although they might well have attempted for such purposes to borrow elements from the classical English university tutorial system or the U.S. learning contract model, they have apparently not done so hitherto.

To date, indeed, perhaps the most appropriate image characterizing the miscellany of provision described above is that of a wild meadow where this or that plant may grow, each quite different from the next in size, structure and colour, rather than that of a fenced and systematically cultivated garden. While personally, to pursue the metaphor, I feel that in the landscape of German higher education, characterized as it is by excessive bureaucratic regulation and standardization, such wild meadows may (as in the ecology of the real world) be just what is needed, it should come as little surprise that, in the Federal Republic, this kind of situation invariably provokes systematic attempts to 'put things in order'.

Controversial Interests and Viewpoints

The motives and forces involved in this process border on the contradictory. Let us consider, first of all, the *students*. While the percentage of *all* those with a first degree (i.e. doctoral students included) in the German student population has remained relatively stable at about 12%, this has meant nevertheless a substantial increase in absolute numbers (well over 110,000 in 1983 as shown in Table I). Secondly, although the length of time spent on studies in the subject for the final degree has risen only slowly to an average 12 semesters (still one-and-a-half times the average length of studies officially envisaged), the time spent by university graduates within higher education altogether has increased considerably more and came to 14 semesters (seven years) or over in 1983 (Table II). Both these figures, together with the relatively advanced age (28) of university graduates on leaving, are upsetting politicians, administrators and economists alike (Wissenschaftsrat 1986, pp. 17 *et seq.*). Indeed it

is reasonable to assume, as does a forthcoming study by *Hochschulinformationssystem*, that it is precisely this group of *Zweit-* and *Aufbaustudenten* who are primarily responsible for the high average; according to the findings, the 1984 graduates who left with at least a second degree had stayed at university approximately 18 semesters.

But why do students themselves sacrifice such precious years, submitting to this rather hard way of life divided between study and the makeshift job by which most of them have to earn their living? (It will be recalled that for *Weiterführende Studien*, public grants are not given unless a course is vocationally "necessary"). Given the increase in both enrolment and the length of the study period in recent years, it would be difficult to argue that the problems of the academic labour market are not mainly responsible. Hence, the assumption (already referred to) regarding the motivation of *Zweitstudenten* may apply generally to students in *Weiterführende Studien* too. The statements of both groups in a survey done elsewhere (publication forthcoming) can be summarized as follows: approximately three-quarters state that it is interest in the discipline, special subject or problem area which motivated them; more than a third say that they hope to enhance their employment or career prospects, and indeed almost a fifth admit that they wish to defer the period of unemployment possibly facing them. Moreover, the cross-disciplinary distribution of numbers and motives is consistent with these assumptions and findings, in that the humanities take a higher proportion of the postgraduates than of the undergraduates, and so do the social sciences (sociology, education and psychology). It is these fields in which interest in a subject may be relatively marked and fueled by a wish for *Bildung* (personal growth) but in which, also, the threat of unemployment is most likely, and the decision to leave the university therefore liable to be postponed. It is thus not surprising that they are especially liable to constitute a sort of 'parking area' for those wishing to pursue their studies—many of them from other disciplines—and this tendency is reinforced still further by fairly loose admission procedures and course structures. In fact, "interest in the subject" is most often stated as the determining motive by students in these fields, while "hope of enhancing prospects on the academic labour market" quite reasonably scores higher in law, economics, engineering and natural sciences.

In political discussions about these postgraduate students the very terms used bear a negative connotation, suggesting that students may be willing to (mis)use the university just as a comfortable waiting-room, 'lingering around' instead of facing the realities of life outside or staying on longer simply for career reasons (with the implication that this is not desirable). It should therefore be stressed from the outset that, besides being quite rational reactions to the undeniable changes on the academic labour market with consequences perhaps more socially desirable and less costly than unemployment, the motives advanced by students, far from being inconsistent, are wholly compatible. In terms of content, it may be perfectly sensible for a student to continue his (her) studies, or to supplement them in some way; or be very appropriate, from the research point of view, if he (she) embarks upon interdisciplinary project work while simultaneously aiming to cope with employment problems. However, precisely because motives and functions are so interwoven, students feel unable to support attempts to regulate and 'institutionalize' further studies in such a way that the choice of subjects is narrowed and the transitory 'waiting-room' aspect eliminated; and, indeed, their unions are opposed to any move of this kind.

No less interesting is the question as to what motives induce *institutions* or *departments* to provide more of these programmes, many of whose titles hint at a rewarding involvement in interdisciplinary research of considerable social relevance or

TABLE II. Average number of years devoted to study by German students at the time exams are passed, by type of exam and subject area.

Field of study	Diploma (university and similar qualifications (e.g. Magister))		State exam (except teachers)		Primary		Secondary I		Secondary II		Diploma (Polytechnics, etc.)						
	Abs.	Subj.	Abs.	Subj.	Abs.	HE	Abs.	HE	Abs.	HE	Abs.	HE					
	Subj.	Abs.	Subj.	Abs.	Subj.	HE	Subj.	Abs.	Subj.	HE	Subj.	Abs.	Subj.				
Humanities	7.3	6.9	5.8	—	—	4.7	4.3	3.9	6.4	5.4	4.8	7.0	6.4	5.8	4.5	4.3	3.5
Economics and social sciences	6.4	6.2	5.5	6.6	6.3	5.8	5.0	4.7	4.2	7.2	6.0	4.8	7.0	6.4	5.7	3.8	3.5
Mathematics/natural sciences	7.0	6.8	6.4	5.8	5.5	4.7	4.8	4.6	4.1	6.2	5.3	4.6	6.8	6.3	5.8	4.7	4.3
Engineering	6.8	6.6	6.1	—	—	—	—	—	—	7.1	5.7	4.1	—	—	—	4.6	4.6
Medicine	—	—	—	8.0	7.9	6.6	—	—	—	—	—	—	—	—	—	—	—
Veterinary medicine	—	—	—	6.7	6.5	5.6	—	—	—	—	—	—	—	—	—	—	—
Agriculture, forestry, nutrition	5.8	5.8	5.3	—	—	—	4.8	4.7	4.4	5.5	4.7	4.3	7.0	7.5	7.0	4.2	4.1
Fine arts, music	6.9	6.5	5.7	—	—	—	4.8	4.7	4.1	6.1	4.8	4.0	6.8	6.3	5.4	5.2	5.1

Key: Abs. = time between first enrolment and exam passed; HE = years spent studying in higher education; Subj. = years spent studying the subject in which exam is passed.

Source: BMBW (1985) pp. 188-189.

practical usefulness. For despite this apparent asset, it would be over-optimistic to assume that a sharpened consciousness of urgent social problems or of the deficiencies of their undergraduate courses are the *only* incentives encouraging establishments to develop 'postgraduate' programmes still further. They may be equally prompted to do so as part of a strategy to cope with the particular kind of staffing problem liable to threaten them in a few years from now if enrolment levels fall sharply. At present, projections suggest a drop of some 30% in the currently high level by the mid-1990s and, should this occur, many institutions may be faced with severe staff reductions, or even closure. The reason for this lies not in their budgetary dependence on fees from students most of whom do not pay any, but in the fact that an institution's staffing levels and funding from the state *are* significantly dependent on its student numbers. It is therefore in an institution's best interest to find out how to attract students either immediately following their first degree (by means of postgraduate studies) or after they have spent some years in professional activity (by means of further education). It is also important for it to tackle politically urgent problem areas (like ecology) or to court politically 'relevant' target groups (for example, foreign students for postgraduate studies or managers for further education) who may contribute appreciably to any deliberate strategy to improve its status. While such intentions are not often publicly admitted, it is perhaps significant that, in the above-mentioned WRK lists, it is a selection of teacher colleges and polytechnics with an apparently uncertain future, as well as some recently founded universities of arguably weak and peripheral status which seem especially keen to promote such programmes.

From the foregoing, it may be concluded that several institutions deliberately exploit postgraduate study programmes (whether consciously or otherwise), in order to consolidate an individual reputation thereby contributing to differentiation in the German higher education system. At the same time, it happens that this is one of the starting points of the *political* discussion about postgraduate studies. It was with the wave of 'neo-conservatism', which found its political expression in the take-over of the federal government by a conservative/liberal coalition in 1982-83, that ideas as to how to bring about more market competition and differentiation in higher education were first really circulated. The main hallmarks of such differentiation, like individual criteria and recruitment procedures for selection of students and staff, or individual study programmes and different modes of funding for each institution, might be clear enough (Block, 1984). The problem was how to achieve it in a society in which everybody with the *Abitur* had a constitutional right (subject to limited *numerus clausus* restrictions) to go to the university of their choice; in which provincially-controlled study programmes were subject to the general demand (again based on the federal constitution) for uniformity and comparability across the whole republic; and in which, finally, financing (and particularly the financing of salaries) was also bound to follow certain common standards.

Significantly enough, however, these latter difficulties seem to apply far less to what happens after the first degree following which studies may be regarded as interesting yet largely dispensable. It is therefore unsurprising that this area has suddenly been discovered as one in which differentiation might succeed. For example, in 1983 the Wissenschaftsrat stressed, in its recommendations for psychology, that departments should be authorized and encouraged to establish special publicised postgraduate course programmes in those fields in which their research was centered while the Berlin Senator for science and research (Kewenig, 1983) stressed that admittance to this stage of studies should be not only highly selective but the exclusive

responsibility of the institution concerned, in accordance with its own independently established criteria and procedures.

In view of the criticism that German higher education is not selective enough—a criticism not really justified from a comparative standpoint (Teichler, 1985)—the aim of introducing more selectivity is the second focal point of the political discussion. Formation of an elite, widely regarded as an essential task, yet one neglected by German universities, has been central to neo-conservative statements and recommendations in recent years as indicated in BMBW (1984). Moreover, since the constitution and whole structure of German society make it difficult to conceive of ‘private’ universities on a large scale or to ‘reserve’ public educational institutions or degree courses exclusively for a selected clientele, the ‘soft’ area of postgraduate studies has seemed to provide a testing ground for rigorous admission procedures, exacting learner requirements and much of the best in the way of both teaching and student ability, as exemplified by the idea of *Sonderlehrbereiche* (Markl, 1983; Block, 1984). A certain impetus is given to these recommendations by the fact that the ideas they embody correspond to the (perhaps not openly expressed) views of professors who, beset by bureaucratic uniformity and the demands of “mass education”, long for an opportunity to shed the weaker students and to prove their own worth to themselves.

A closely associated third component in the policy debate is the question of the length of studies and the time spent by students in the university, as already inferred. It should be recalled that all earlier attempts to reduce it have been unsuccessful. Perhaps the most striking example has been the failure to implement the Wissenschaftsrat recommendations (in principle dating back to the mid-1960s) which proposed the introduction of a majority of three-year university courses instead of the usual four- or five-year ones. Neither was there any strict observance by federal or state legislation of the stipulation in the 1976 Hochschulrahmengesetz that students exceeding the regular (average) time of studies without having passed an exam should leave university, an inconsequential provision finally eliminated from the Law in 1980. And in the meantime, the official study programme timetable has borne little resemblance to that actually observed in practice by professors and students. While any comprehensive explanation of these anomalies is beyond the scope of the present article, it has become apparent that the introduction of postgraduate programmes might be a fairly natural way of attempting to correct them. If specialist applied knowledge, preparation for complex professional tasks, interdisciplinary project work or more specialized work within a single discipline can be transferred to the postgraduate state, *then* undergraduate programmes can usefully concentrate on teaching the basic concepts and methods of different subjects, hopefully within a four-year time limit. This line of thought was prominent in discussion in about 1983, and also featured in the Wissenschaftsrat’s 1986 recommendations which go so far as to state that the concept of “unity of research and teaching”, a traditional claim of the German university, has now to be dropped from undergraduate education and reserved for postgraduate work alone.

Clearly, a mechanism already well-known in systems theory is at work here, namely the transfer of problems unsolved in one part of the system to another, possibly new one. The need for project work, interdisciplinary and socially relevant studies, shorter courses, greater inter-institutional competitiveness and differentiation, and more elitist training, have all been regarded by either progressive or neo-conservative opinion as urgent study reform issues which might benefit from attention within a special postgraduate stage following the inability of undergraduate studies to resolve

them satisfactorily. Here, however, two possible dangers need to be borne in mind. The first is that any attempt to reform undergraduate studies may be dropped altogether leaving them vulnerable to poor teaching for weak students; the second is that the hopes pinned on an overhauled postgraduate sector may be disappointed, either because they are partly contradictory, or because they run into other types of difficulty.

Doctoral Studies

Largely similar issues like traditional structures, present problems, and reform aims shape the discussion about doctoral studies. However, the situation in this area may be even more complicated, as those working for doctorates are not necessarily formally enrolled students and may also be employed full- or part-time as university research or teaching assistants. Thus quite fundamental questions of academic staff structure as well as of working conditions for junior staff are also involved.

Quantitative Data

To start with statistics again, it is not clear, first, how many enrolled postgraduate students are in fact aiming for a doctorate. According to the figures in Table I (based on enrolment office data), the proportion would appear to stand at less than a quarter of *all* postgraduate students (including those with a degree from polytechnics etc.); the percentage will be much higher among *those* postgraduates who have obtained their degree from a university. Secondly, it is not easy to determine what proportion of *junior* (assistant) university staff without doctorates are working for them. In a case-study of one university (Bochum) only 20% of the non-professorial staff held a doctorate while 90% of the remainder were still hoping to obtain one (Gurack, 1985). Extrapolating this to federal level gives a figure of some 50,000 people or more who, in addition to their full- or part-time academic job, are working on a dissertation.

TABLE III. Doctoral degrees awarded both German and foreign students, 1960-83*

	<i>Thousands</i>											
Year	1960	1965	1970	1975	1976	1977	1978	1979	1980	1981	1982	1983
Number	6.2	7.7	11.3	11.4	11.6	11.4	11.8	11.9	12.2	12.3	13.0	13.7

*Includes medical qualifications

Source: BMBW (1985) p. 164.

What is clear, however, is the total of those who actually obtained a doctorate, as shown in Table III. On the assumption of the Wissenschaftsrat (1980, 1986) that the average time of preparation for a doctoral thesis and exam would be three years these figures imply first a drop and then a levelling out in the proportion of doctorates to first university degrees three years earlier (Table IV).

But, since recent research in a five-university study (Holtkamp *et al.*, 1986) has clearly demonstrated that the average interval between first university degree and

TABLE IV. Doctoral degrees awarded as a percentage of first university degrees awarded three years earlier*

Year	1974	1975	1976	1977	1978	1979	1980	1981	1982
Per cent	13.9	13.3	12.5	12.0	9.04	8.35	8.26	7.45	8.64

*German students only except in medicine.

Source: WISSENSCHAFTSRAT (1980, p. 95) for years up to 1977; then author's own calculations from Tables 11 and 12 in: STATISTISCHES BUNDESAMT (Ed.) (1984) *Bildung und Kultur*, Fachserie 11, R.4.2 Prüfungen an Hochschulen 1982 (Wiesbaden).

doctorate is, in fact, about five years and varies greatly between disciplines, quite a different picture can be drawn (see Table V).

Lastly the statistics also undoubtedly point to the conspicuous emergence in this sector of barriers to the academic career of women, who are so obviously underrepresented among the higher ranks of academic staff. While women from all subject categories had, according to 1982 figures, reached 40% of the student population, 40% of graduates and close to 40% also of enrolled postgraduate students, they account for only 21% of doctorates and a mere 7% of the *Habilitationen* (Holtkamp *et al.*, 1986, p. 252). One of the main blocking mechanisms here seems to be their relatively slim chances of being appointed as research assistants (see below).

Selection, Financing and Supervision of Candidates

"Doctoral candidates" may in what follows stand for both the main groups of people working for a doctorate: those employed as assistants and those enrolled as postgraduate students (or working part-time) outside universities.

The process through which they are usually *recruited* looks much less like selection based on publicly stated controlled criteria and methods, than interaction between self-selection by the students (who may or may not judge their own abilities correctly) and a sort of adoption by individual professors (who besides their personal impressions may or may not take the grades into account). Most candidates wish to act as supervisor, or *Doktorvater* (the gender is significant!), within the very university department where they have been working with their teacher, often for years (only some 16% of employed doctoral candidates change institution after the first university degree). This type of recruitment is certainly predominant for postgraduate *students* as, (for enrolment to doctoral studies alone), universities have hitherto not generally required more than possession of a university degree, with students obliged to support themselves financially (see below). However, this applies equally to the relatively little advertised research project assistantships financed out of funds raised personally by professors, and even to positions supported by the university budget (i.e. the taxpayer) which at higher levels can only be filled in accordance with a formal procedure, following (nation-wide) advertising. In the belief that such latter formalities—which also govern selection to U.S. doctoral programmes—make for much fairer, more widely-based recruitment, Neidhardt and Wittenberg (1979) criticized the German practice as leading, on the contrary, to cliques and provincialism, a criticism which is one of the starting points for the 1986 Wissenschaftsrat recommendations.

How candidates are *financed* is a crucial point (as in fact it means much more than

TABLE V. Doctoral degrees awarded German students in 1983, as a percentage of first university degrees awarded in the same year, then three and five years earlier, and with respect to the specific length of doctoral studies per subject.

Subject	1983	1980	1978	On basis of duration of doctoral studies in the individual subjects [†]
Law	8.5%	8.6%	11.8%	11.8% (5.0 years)
	494:5.801	494:5.724	494:4.188	494:4.188
Economics	7.7%	8.2%	7.0%	7.0% (5.3 years)
	496:6.448	496:6.032	496:7.046	496:7.046
German lang- uage and literature	3.8%	4.4%	3.7%	3.7% (5.3 years)
	185:4.863	185:4.168	185:5.041	185:5.041
Political and social sciences	16.0%	16.9%	18.2%	21.4% (6.0 years)
	258:1.611	258:1.531	258:1.418	258:1.205
Mathematics	18.8%	19.1%	18.8%	18.8% (4.7 years)
	215:1.144	215:1.128	215:1.141	215:1.141
Chemistry	58.4%	82.7%	76.2%	76.2% (5.3 years)
	1.026:1.757	1.026:1.240	1.026:1.346	1.026:1.346
Biology	35.8%	54.7%	62.3%	62.3% (4.6 years)
	491:1.370	491:897	491:788	491:788
Mechanical engineering	18.4%	26.1%	26.7%	30.5% (6.1 years)
	529:2.873	529:2.025	529:1.979	529:1.733
Electrical engineering	9.9%	11.8%	13.2%	13.8% (6.7 years)
	199:2.013	199:1.680	199:1.511	199:1.443

*Diploma, *Magister* and State (teacher) exam considered as first degrees

†Bracketed figures indicate average length of time spent between first and doctoral degree for each subject

Source: HOLTkamp *et al.* (1986).

just money). The times when a socio-democratic liberal government attempted to implement a grants scheme supposed to cover graduates' main needs (the 1971 *Graduiertenförderungsgesetz*), have long since passed, though these former initiatives

are described in Czock and Wildt (1985) and Kikartz (1979). Nowadays, state grants, supposed to reach 2000 a year, and grants by public foundations for highly gifted students (known as *Hochbegabtenförderungswerke*) are fulfilling only a secondary function—of the candidates finishing their dissertation in 1983/1984, 9% named such grants as their main source of income (Holtkamp *et al.* 1986, pp. 78 *et seq.*). With the rest having to turn to their parents or family or, as in most cases, to take a job, 60% of the 1983–84 candidates (almost half of them full-time) said they had been financed mainly through work with their institution or professor. However, the number of such positions and therefore the relative chances of applicants getting one vary considerably with respect to both subject area and sex. In the natural sciences, and especially engineering, an average 75% of the 1983/1984 candidates could rely upon this source of income, but less than 40% of those studying German literature and political science (Holtkamp *et al.*, 1986, pp. 93 *et seq.*): and only 44% of the women (as against 62% of the men) benefited from remunerated assistantships. This apparent inequality of opportunities is one of the premises underlying the recommendations made by the steering committee of the five-university study (Holtkamp *et al.*, 1986).

There are also quite a number of problems associated with these assistantships. They may include a feeling of excessive personal dependence on the supervisor, the danger of exploitation through involvement in unskilled or excessive work, short contractual time limits, little involvement in decision-making and few social security benefits (Holtkamp *et al.*, 1986; Czock & Wildt, 1985). Nevertheless, both the candidates (whether financed in this way or not) and almost all of the experts interviewed by Holtkamp *et al.* (1986, pp. 175 *et seq.*) spoke in favour of this scheme.

The main reasons for this lay in the field of *supervision*. At this point it should be stressed that German universities, with few exceptions to date, do not offer doctoral *programmes* incorporating a minimum systematic institutional effort to qualify candidates further. It is entirely a matter of the individual master/apprentice relation between the candidate and 'his' supervisor whether he gets training and advice in his work and, if so, how much. Moreover, I am personally unaware of any equivalent in German literature to English language publications like those by Elton & Pope (1986), Moses (1986), Rudd (1985) and many others, on how to evaluate and at least improve the process of supervision. Whether the master apprentice model is effective seems simply to depend upon whether there exists a 'workshop' where others meet regularly and work, too, in which the 'apprentice' may become fully and daily integrated. For this, organized research like that in engineering and the natural sciences with its bigger projects and research groups is apparently a necessary, though insufficient condition.

Without any such framework or institutional obligations, candidates are forced into taking the initiative themselves as regards periodic visits to their supervisor and thus invariably find themselves in an isolation barely compensated for by an occasional *Doktorandenkolloquium*, assuming this long-standing but problem-prone formula is retained. In any event, the data from the 1983/1984 candidates reveal that those who were employed were much more likely to adjust to these less formal arrangements, meeting and talking with their supervisor (three times more often than the others), maintaining contacts with colleagues and students, taking part in congresses, and publishing (Holtkamp *et al.*, 1986, pp. 50 *et seq.*; Czock & Wildt, 1985). Particularly conspicuous in the humanities and social sciences, this greater ease of adaptation on the part of those who are also employed raises not so much the question as to whether doctoral studies themselves have to be improved but that of the organization of research wherever this suffers from a lack of co-ordination or team work.

Functions and Assessment

In any assessment of the state of doctoral studies, it has to be borne in mind that, besides providing academic staff for the universities, this part of the system also serves other purposes. In some instances, it bestows an advanced level of qualification generally needed for professional activity outside the university: moreover, the figures for chemistry and biology in Table V indicate that here the doctorate is no longer very selective and, indeed, obtained almost as a matter of course (as in medicine). In other fields, the doctorate is at least an opening to certain careers, while the candidates in almost all subjects account for a major part of national research capacity. It should be added that, under present economic conditions, doctoral as well as other postgraduate studies may frequently be used as a 'stand by' or transitory stage until a job has been found.

It is, no doubt, the forces of the external academic labour market, rather than the requirements of 'self reproduction' on the part of academic disciplines, which are mainly responsible for shaping the present scene, as Dahllöf (1986) assumes for Sweden. The proportion of doctoral students has sunk to what is widely regarded as an irritating level in those subjects associated with teacher training. In these, the most able graduates tend to grasp the first vacant position offered to them at a school instead of risking unemployment later with a doctorate. The drop-out of doctoral students, although little investigated to date, is estimated as especially high in law or economics in which postgraduates, in the course of their further studies, discover attractive jobs with greater security or higher salaries than university assistantships. On the other hand, natural scientists and engineers, who are rightly confident in the exchange value of a doctorate within and outside university, persevere with their doctoral work for several years—with the motives for doing so distributed across the faculties as described above for other postgraduate students (Holtkamp, *et al.* 1986, pp. 43 *et seq.*) The extent to which chances on the labour market outside universities and research institutions are indeed influenced by a doctorate has not yet been methodically assessed. While in some fields, like chemistry, the qualification is almost indispensable, in others it is apparently little short of a hindrance (suggesting over-specialization, an excessively theoretical approach to problems and recruitment beyond a suitable age), so that all reference to it is sometimes omitted by those seeking jobs (Holtkamp, *et al.* pp. 76 *et seq.*; Czock & Wildt, 1985; Gurack, 1985).

Thus once again, the scene is characterized by contradictory demands. Candidates are presumably interested in keeping open both options (a non-academic or continued academic career), and therefore in obtaining and demonstrating that they have the qualifications not only for a university-type field of specialization but also for organization, co-ordination, design and evaluation of advanced research. And while having to remain financially secure during this period, they will not want to be prevented from grasping the chance of a good job should the opportunity arise. Finally, they will want integration through employment, if possible for all, and at least better supervision and instruction, although in the form of co-operatives rather than of formal training courses or even general doctoral programmes, recommended by Czock & Wildt (1985, pp. 79 *et seq.*, pp. 87 *et seq.*).

The professors, meanwhile, are likely to be most interested in increasing their own 'supply' and in using the work potential of doctoral candidates for research in an efficient and concentrated way, if possible without adding to their burden of intensive supervision. This indeed seems to be primarily what the Wissenschaftsrat (1986) is

aiming at with its recommendation that the most able doctoral candidates from each field should attend *Graduiertenkollegs* (graduate colleges) which might be established at certain prestigious institutions, nationally accredited and generously funded through a joint state/federal procedure. Prominent here again are the ideas of higher selectivity, of stronger institutional differentiation and individual competition, and of concentration of the best, the elite, into a select group. The proposal that there should also be 'supra-local' courses for *Graduiertenkurse* (doctoral candidates) to improve their general, and especially their methodological qualifications, and to make the teaching of such qualifications more effective and efficient is seen as no more than secondary to the foregoing recommendation.

As has already been pointed out, the whole organization of research is certainly very much a major current issue. It is the focus of the five-university project steering committee recommendation (Holtkamp *et al.*, 1986, pp. 211 *et seq.*) aiming at changes at each institution by suggesting that the co-operative structures of research in which doctoral candidates work may be improved, that co-operative structures of some kind should be introduced where they are still inadequate (as in the humanities and to some extent the social sciences), and that there should be a financing scheme (assistantships and grants) to provide for a stable situation over the five years or so of doctoral work. However, such recommendations are naturally challenging much more than the others the readiness of academics to learn personally and to be constructively self-critical.

As a postscript, I should like it to be noted that the lack of any extended reference to the *Habilitation* in this paper has been deliberate. There are three reasons for this. The first is that this third stage in which one becomes qualified for a professorship by preparing another voluminous thesis and undergoing a further hearing in the presence of adjudicating faculty members is not a formal 'education' or 'course' of any kind, but a venture only successfully completed following an average eight years of individual research performed along with other (mostly academic) duties. Secondly, the *Habilitation* seems a peculiarly German institution with perhaps no real counterparts elsewhere. Indeed, in some respects, one might be forgiven for regarding the qualification as obsolete, for its value as a contribution to research is often questionable, while its negative effects on the individual career can, on occasions, be disastrous. Finally, despite its identity as a distinct stage of higher studies, I have felt it to be shaped by the same problems and contradictory demands as those affecting doctoral work to a sufficient extent for exclusion of any separate consideration of it here to be justified.

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