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The Modern University and Research: Traditions and Trajectories

Appendix to the report *Universities and Research*
from the KVA Research Policy Committee

Content

The Early Nineteenth Century Renaissance of Universities	4
The Rise of the Modern Research University	7
The Transition to Mass Higher Education Systems.	20
The Three Transformations in Perspective	30
Three Trajectories and the Core of Academe.	34

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The university is, together with the Church, the most time-honoured of all present-day macro-institutions. Yet arguably it is also the most innovative. It is the source of our ever-growing technical mastery of nature and of the meaning we attribute to that mastery. Bits and pieces of university-based knowledge constantly trickle into the daily discourse of society and also into public debate. Research findings contribute, if sometimes with lags and in unanticipated ways, to the formation of new basic concepts that help human beings to interpret and articulate experiences and to make sense of them.

In the course of the past two centuries universities have undergone three critical periods of transition. The first of these is the period at the end of the eighteenth and the beginning of the nineteenth centuries that marked a crisis for universities in Europe but also saw a rebirth of the idea of the university. Secondly, the remarkable period of growth of the modern research-orientated university in the late nineteenth century will be taken up. Thirdly, there is the current period of reappraisal in the wake of experiences of a rapid expansion of university systems and also rapidly growing demands on universities from government, industry, the educational system and the public at large.

The Early Nineteenth Century Renaissance of Universities

The early nineteenth century is undeniably a period of profound institutional restructuring in the university world across Europe. As pointed out by Sheldon Rothblatt and Lawrence Stone, this is a period when the old universities of “Oxford and Cambridge began slowly to put part of their house in order.”¹ In the German context, the creation of the new university in Berlin in 1810 as a direct result of an effort at major national reform in the wake of Prussian defeat and occupation in the encounter with Napoleonic France, has been the object of an endless stream of studies throughout the nineteenth and twentieth centuries.² It is, however, clear that in the latter part of the nineteenth century the University of Berlin, from its creation closely associated with the names of Wilhelm and Alexander von Humboldt, came to serve as a model for university reformers from the United States in the west to Japan in the east. It is equally clear that links existed between the late nineteenth-century achievements of German universities and the institutional developments in the period around the preceding turn of the century.

The partial resurgence of Oxford and Cambridge in the English context occurred at the same time as the university was questioned and even for some time abolished in the French setting. Universities also faced a crisis in the German states. Over forty universities existed in the latter half of the eighteenth century, a number larger than in any other part of Europe. Roughly half of them had to discontinue their activities in the period of the revolutionary and Napoleonic wars.³ The close ties, which existed bet-

1 Lawrence Stone, “Social Control and Intellectual Excellence: Oxbridge and Edinburgh 1560-1983” in Nicholas Phillipson (ed) *Universities, Society, and the Future*. Edinburgh, 1983), 1-30; the quotation is to be found on p. 22. See also Sheldon Rothblatt, “Failure in Early Nineteenth-Century Oxford and Cambridge,” in *History of Education*, 11 (1982), 1-21.

2 Joseph Ben-David, *The Scientist's Role in Society: A Comparative Study* (Englewood Cliffs, New Jersey, 1971), and *Centers of Learning: Britain, France, Germany, United States* (New York, 1977); Walter P. Metzger, “Academic Freedom and Scientific Freedom,” in *Daedalus*, 107 (1978), 93-114; Perkin, “The Historical Perspective”, in Burton Clark (ed) *Perspectives on Higher Education: Eight Disciplinary Perspectives*. Berkeley, 1984, 17-55; Fritz Ringer, *The Decline of the German Mandarins*. Cambridge, Mass., 1969; *The German Mandarins Reconsidered*. University of California, Berkeley: Center for Studies in Higher Education, Occasional Papers, No 20, 1981; “Differences and Cross-National Similarities among Mandarins”, in *Comparative Studies in Society and History*, 28 (1986), 145-64.

3 A comprehensive analysis of this development is given in e.g. Thomas Ellwein, *Die deutsche Universität: vom Mittelalter bis zur Gegenwart* (Königstein, 1985).

ween universities and government in the German principalities made institutional restructuring in Germany and in France alike all but inevitable in a period of major political turbulence and realignment.⁴ The outcome of the restructuring process was, however, open-ended. Alternatives existed, and at least two broad institutional paths of development were possible. One of these was being pursued in the French setting. Universities were superseded as the primary vehicles for technical, administrative, and educational training by special institutions known as *grandes écoles*. Some of these institutions had been founded during the *ancien régime*; but in the revolutionary situation, survival of the new regime and the urgent need for talent proved to be a strong incentive for the creation of more *écoles*. Most notable perhaps was the *École Polytechnique*, founded in 1793 and orientated, among other missions, to the supply of competent artillery officers for the army. This foundation was followed by the establishment of the *École Normale Supérieure*, a school which has subsequently played a crucial role as a republican training ground for teachers and for an intellectual elite.⁵ In other European countries corresponding objectives were met in different ways, and academies of sciences were often one of the chosen instruments.

In the German context, the crisis of universities made some reformers inclined to follow the French example and there were even some who argued that universities should be abolished. As late as 1806 a member of the Prussian government, von Massow, made similar suggestions. However, in the important, if brief, period of deep-seated reforms in Prussia in the wake of military defeat and foreign occupation, a group of reformers in scheme for the rejuvenation and reform of the university. It was to be a centre for learning and teaching with wide but also clearly circumscribed limits of autonomy and self-government.

The reformers were a coalition of reform-minded aristocrats, such as Hardenberg, Humboldt, Stein, and Scharnhorst, and idealist philosophers

4 Implications of State-university relationships for the social position of academics are discussed by Charles E. McClelland in *State, Society, and University in Germany, 1700-1914* (Cambridge, 1980), Marc Raeff *The Well-Ordered Police State: Social and Institutional Change Through Law in the Germanies and Russia, 1600-1800* (New Haven, 1983), Peter Hanns Reill (ed), *The German Enlightenment and the Rise of Historicism* (Berkeley, CA, 1975), Laurence Dickey, *Hegel: Religion, Economics, and the Politics of Spirit, 1770-1807* (Cambridge, 1987) but also Catherine B. A. Behrens, *Society, Government and the Enlightenment: The Experiences of Eighteenth-century France and Prussia* (London, 1985).

5 For an overview of French developments in the late eighteenth and early nineteenth centuries see Johan Heilbron, *The Rise of Social Theory* (Cambridge, 1995).

of a more or less pronounced pro-revolutionary bent - in the 1790s Fichte, Hegel, and Kant belonged to this category. In the particular historical setting of the first two decades of the nineteenth century, the coalition proved strong enough to overcome resistance to reform. A century and a half later, the towering German historian Friedrich Meinecke would in his old age and after the disaster of the Nazi era describe the late eighteenth and early nineteenth century as the “Golden Goethe Age” bestowed upon the German people as if by a miracle.⁶ The chief protagonist of this Golden era, Goethe, had however himself deep misgivings about the university in Berlin. Even Wilhelm von Humboldt, whose name more than any other is closely associated with the establishment of the university, would only express a conditional approval of the plan to establish a university in a residential capital. Furthermore, Humboldt was successful in his endeavour to some extent by virtue of the fact that the Prussian government had left Berlin and was administering the country from East Prussia.

In a curious way this situation is somewhat reminiscent of Scottish intellectual life a hundred years earlier when the highest aristocracy had left Edinburgh for London after political power had moved South and the Scottish Parliament had been abolished. It was in this situation that an alliance was gradually formed between the “rump establishment” left behind in Edinburgh and reformist intellectual circles on terms very different from those in other parts of Europe. Intellectuals joined clubs and societies and other sociable environments on a much more equal footing with the notables than almost anywhere else.⁷

When the first plans for a new university in Berlin were being drawn up, Wilhelm von Humboldt had been abroad for years, first in France and Spain and then as the Prussian ambassador to Rome. Fichte - subsequently the first elected Rector of the new university - and Schleiermacher had been advertising the need to establish a new institution for years, and Humboldt's

6 In Friedrich Meinecke, *Die deutsche Katastrophe* (1946) – in English as *The German Catastrophe* (Boston, 1963).

7 This process has been described in riveting detail by Nicholas Phillipson in several works, e.g. “Culture and Society in the 18th Century Province: The Case of Edinburgh and the Scottish Enlightenment”, in L. Stone (ed), *The University in Society, Europe, Scotland, and the United States from the 16th to the 20th Century* (Princeton, 1974), II, 407-48; “For a comparison of Enlightenment developments in Scotland and Prussia, see R. Wuthnow (ed), *Communities of Discourse: Ideology and Social Structure in the Reformation, the Enlightenment, and European Socialism* (Cambridge, MA, 1989), 228-264.

predecessor in the Ministry, von Beyeme, claimed that he had been solidly behind the idea of a new foundation for just as long. The fact, however, is that von Humboldt himself was always in a somewhat precarious position vis-à-vis the Prussian government. In 1809 Stein was no longer a member of the Cabinet in which Hardenberg remained the only real reformer. Together with a small group of sympathetic spirits in the Ministry, Humboldt was able to devise an effective plan for the creation of a new university within a few months in the spring and summer of 1809. With great sensitivity and diplomatic skill, he was also able to get Royal approval despite deep suspicion on the part of some circles at court.

However, Humboldt's direct involvement in the establishment of the new university was over in less than a year's time, after which he resumed diplomatic service, increasingly pessimistic about the possibilities of safeguarding the interests of Enlightenment and national emancipation. The fact that conservative circles were able to prevent his appointment as Cabinet minister, even when he was by far the most experienced Prussian diplomat and had served as his country's representative at the Congress of Vienna, is an indication of the fragile nature of his position.

Humboldt's own thinking may have been inspired by a type of philosophy which rejected narrow-minded specialisation. Yet the university he helped establish turned out to become an ideal home for highly specialized scientific activities which paid little or no attention to idealist philosophy or to what seem to be an increasingly unrealistic dream that philosophy could transcend the distinction between the natural and cultural sciences and encompass them all within one conceptual system.

The Rise of the Modern Research University

There is a perennial debate about the real significance of the resurrection of the university in the Humboldtian guise for later developments of scientific activities. It has sometimes been argued that it was "despite rather than because of the Humboldtian ideal [that] the German university became the embodiment of the specialized research-oriented ideal and the model for the progressive system of higher education in other advanced societies."⁸

8 Perkin, "The Historical Perspective", 34ff.

Similarly, time and again, it has been pointed out that the connection between the philosophical idealism and radicalism of the generation of thinkers, who inspired Humboldt and other aristocratic reformers in early-nineteenth century Germany, and the scientific pre-eminence and productivity of late nineteenth-century German universities is, at best, a tenuous one.⁹

The conceptions of scholarship and scientific work which became the predominant ones in cognitive terms around the 1840s and in institutional terms in the following decades were different from those of earlier periods. Thus the major long-term impact of the Humboldtian reforms may not have been the preservation of a particular conception of the appropriate ordering of knowledge but the resurrection, or rather better, the creation of an autonomous institutional setting for intellectual activities which later came to be coterminous with the modern research-orientated university.

Within this setting, Humboldtian philosophical idealism functioned as an accepted idiom of academic self-understanding, especially in late nineteenth-century Germany. But the type of disciplinary organisation of science and scholarship which gained prominence in the course of the nineteenth century was certainly not the unified conception of knowledge inspiring the original university reforms at the beginning of the century. This does not mean that philosophical idealism was unimportant but that it came to serve institutional rather than cognitive purposes. In Fritz Ringer's hard-nosed prose, it was "a tactically sound defence of the autonomy of science, which certainly aided the emergence of the modern research university in nineteenth-century Germany."¹⁰

Needless to say, generations of "German mandarins" may have tacitly endorsed an analogous stance but would certainly have chosen a different terminological guise. The elderly Meinecke did so in 1946 in *The German Catastrophe* when he tried to explain how the golden "Goethe-age" came to be followed by the power-driven "Bismarck-age" and the total demise of civilisation in the "Hitler-age." When speaking of the nineteenth century, he outlined a historical landscape of slow, then almost imperceptible, but in the end irreversible and disastrous decline:

9 Ben-David, "The Scientist's Role", 117ff.

10 Ringer, "Mandarins Reconsidered", 21.

About the middle of the nineteenth century and later it was the high aim of German culture to preserve from this pressure and from its coarsening and deteriorating effect the sacred heritage of the Goethe period – an almost miraculous gift bestowed upon the German people – and at the same time to support strongly what seemed vital and fruitful in the demands of the new masses. There was to be a synthesis of intellect and force, of the intellect-building and the state-building factors, and therewith of culture, state and nation. In this synthesis, however, there was a slight preponderance on the side of the new ideas of power and nationalism. Such was the painstaking purpose of a group of intellectual leaders in Germany who are customarily known as the 'classical liberals' and who at the end of the fifties found their organ in the *Preussische Jahrbücher*.¹¹

To someone like Meinecke, with Johann Gustav Droysen as his teacher, the intellectual landscape of increasing specialisation, the material landscape of increasing industrialisation and urbanisation, and the political landscape of the shaping of new powerful nation-states of late nineteenth-century Europe could not be anything but a threat. The best that could be hoped for - and a hope that soon proved to be vain - was a "silver-age," an uneasy synthesis of intellectual growth and - in the words of Meinecke - "the Prussian state with its monarchistic-militaristic structure" and "the higher bourgeois class which was partly oriented towards capitalistic acquisition, partly towards its interests in *Bildung*." Yet it was precisely in this industrialising, modernising, State-reforming world of the late nineteenth century that the modern research university took shape.

The general features of this process of increasing scientific specialisation and professionalization were pervasive and largely independent of a specific national or institutional context. However, it would be a mistake to disregard the different national and institutional in this transformation of the role of research in universities.

In this process of reform and reconstitution of intellectual institutions, the German universities, and in particular that of Berlin, served as models for university reformers. In many parts of Europe, the rise of the research-orientated University was largely coterminous with the reform, if not the formation, of modern nation-states. Universities came to be seen as key insti-

11 Meinecke, *The German Catastrophe*, 9. For Meinecke see also H. Stuart Hughes' modern classic, *Consciousness and Society: the Reconstruction of European Social Thought, 1890-1930* (New York, 1958), 229-248.

tutions for knowledge production but also for the strengthening a sense of national and cultural identity.

There is, in this period of European history, an unresolved tension between a general development towards scientific specialisation and internationalisation and increasing demands that universities contribute to the strengthening of national institutions. A growing awareness, also in institutional terms, of the international nature of science and of universities as institutions went hand in hand with a strong sense of national pride. A good case in point is provided by the leading German university historian at the turn of the century, Friedrich Paulsen. The way he chose to articulate such a sense of pride precisely in connection with an international event, namely in his contribution to the German volume presented at the 1893 university exhibition in Chicago, is typical of the tone of the time:

France has just started to forge its separate faculties into real universities; and England seeks to reconstitute university education from its fragmentation into the different Colleges. Up until now some of the most distinguished American universities have perhaps been the most successful in terms of implementing the German unity of scientific research and scientifically based education.¹²

This German self-consciousness was mirrored in the efforts of university reformers in other countries. Even in the case of France, a country with very different traditions from Germany for the organisation of research and higher education, it has been noted that “university reform during the Third Republic was an exceedingly complex process”. However,

If there was a single continuing thread in this complex story, it was the struggle to expand the social role of higher studies in France, with German universities serving as a model. Indeed, for much of the nineteenth century, German universities and academics enjoyed incomparably greater status than did their French counterparts.¹³

The role of German universities as exemplary institutions was extremely important in the American debate as well. One effect of this influence was a growing emphasis on new settings for research and graduate training. Such

12 Friedrich Paulsen, “Wesen und geschichtliche Entwicklung der deutschen Universitäten” in W. Lexis (Hrsg), *Die deutschen Universitäten. Für die Universitätsausstellung in Chicago 1893* (Berlin, 1893), 10 (my translation); Paulsen, *Die deutschen Universitäten und das Universitätsstudium* (Berlin, 1902).

13 G. Weisz, *The Emergence of Modern Universities in France, 1863-1914* (Princeton, 1983), 369.

institutional innovations were sometimes grafted onto colleges and universities mainly devoted to the provision of a liberal education or to professional training in the older professions of law or medicine or - as in the land grant colleges - to providing qualifications in agriculture, mining, and engineering. Sometimes, however, entirely new institutions were created where the research-orientation came to play a guiding role for the institution as a whole. Johns Hopkins, established in 1876, was the first American institution of this type. It was, in the words of Abraham Flexner, a leading American university reformer of the early twentieth century and former student at Johns Hopkins less than ten years after its creation, “the nearest thing to a university and practically nothing else that America has yet possessed [...]”. Instruction proceeded, as in Germany, through lectures to larger groups and seminars in which the professor and a limited number of students pursued intensively advanced studies and research, methods now in common use in all American graduate schools.”¹⁴

When Flexner, in the late 1920s, looked back upon the rise of the research-orientated university in the United States, he saw the diffusion of a German model of research and graduate training as a key element, “the most meritorious part of the American university.” However, it was an element he perceived to be far from firmly instituted and still “in imminent danger of being overwhelmed” by “overcrowding, vagaries especially in the fields of education and sociology, and incomprehensible institutes” within a higher education system which “catered thoughtlessly and excessively to fleeting, transient, and immediate demands” and gave “degree courses that belong in technical and vocational schools, not in a university - not even in a sound secondary school.”¹⁵

It is easy to see, with the benefit of hindsight, that Flexner grossly underestimated the achievements of the American research universities.¹⁶ Some would argue that he was – in the words of Clark Kerr – “too respectful of the German university [,] did not realize how many functions can be combined

¹⁴ A. Flexner, *Universities: American, German, English* (Oxford, 1930); Second edition with an introduction, “Remembering Flexner”, by Clark Kerr, 1968. The quotation is from p. 73 of the second edition. (Flexner’s book was published in German translation in 1932).

¹⁵ *Ibid.*

¹⁶ A comprehensive overview of the history of American research universities in the early part of this century is given in Geiger, *To Advance Knowledge: The Growth of American Research Universities, 1900-1940* (New York, 1986).

within a single university [and] did not understand that quantity and quality can be combined.”¹⁷ It was exactly the kinds of combinations and permutations of different institutional traditions and models which Flexner deplored that came into being in the United States. Thus far from a Wilhelminian-style imperial research university transposed to “Stateless” America, only some parts of the German research-orientated university influenced reformers. The result was that graduate training and research, along with liberal education and professional education, all came to characterise American higher education institutions, either in the form of single-campus institutions or multi-campus federations.

Much the same type of reconstitution and restructuring occurred in other countries. Thus, no matter how appealing the German model of a research-orientated university may have been to French reformers, it is obvious that their innovations were, at best, only half successful:

The reform movement’s most conspicuous failure, of course, was its inability to create universities that broke completely with the existing system of professional faculties. The reasons are clear enough. If everyone had something to gain from a nominal change to institutions called universities, the administration’s desire to create only a few large and unified educational centers conflicted with many vested interests. Local elites and academics [...] were threatened with a reduction in status and privileges [...] The powerful *grandes écoles*, of course, had even more to lose.¹⁸

The process of institutional transformation was a highly complex one in Britain as well. The modern research-orientated university emerged in Britain in the same period in the late nineteenth century as it did elsewhere. This development, however, had as its backdrop a complex threefold development. First of all, in the mid nineteenth century, there had been a renewed emphasis on the importance of a liberal education free from narrow considerations of utility and vocational interests. John Henry Newman was the most articulate proponent of this notion of a liberal education as “gentleman’s knowledge”, but it was an ideal which exerted a powerful influence on British intellectual life generally. John Stuart Mill’s well-known statement in 1867 that “universities are not intended to teach the knowledge required to fit men for some special mode of gaining their livelihood. Their object is [...] to

17 Kerr, “Remembering Flexner”, xvii ff.

18 Weisz, *Emergence*, 374.

make [...] capable and cultivated human beings,” is just one of many expressions of this widespread view of the proper role of a university.¹⁹

However, it is important to see that this view was in many ways but a forceful articulation of an age-old set of opinions about the primary task of the colleges of the old British universities, namely to form the characters and minds of their often very young students rather than to, say, expand the domains of knowledge beyond their present boundaries. It is equally important to realize that many of the proponents of liberal education may have advocated a form of detachment from the values of modern industrial life and civilisation and repudiated ideals of professional training. However, the character formation provided came to be intimately linked to the formation of the political and administrative elite not only of Britain but of the British Empire.

Furthermore some of the key university representatives of the Victorian era were themselves intensely preoccupied with continental European developments. Thus one of the towering intellectual figures of the mid-Victorian era, Matthew Arnold, poet, critic and Oxford professor (1857-1867), and the son of another Oxford professor and educationist, Thomas Arnold, famous headmaster of Rugby, famously and provocatively stated that “The French university has no liberty, and the English have no science; the German universities have both.”

These words appear in the longest book ever published by Arnold, namely *Schools and Universities on the Continent*, originally written as a report to the Schools Inquiry Commission of 1865-1866, as a factual account of secondary and higher education in France, Italy, the German states, in particularly Prussia, and in Switzerland.²⁰ It reflects to a considerable extent the cultural pessimism that Sheldon Rothblatt so elegantly highlighted in one chapter of *The Revolution of the Dons*, where he juxtaposed the writings and the positions of the two contemporaries John Stuart Mill, with Mill’s appreciation and acceptance of diversity, and Matthew Arnold, with Arnold’s critique of what he perceived to be signs of cultural decay in England.

19 Cited in Rothblatt, *The Revolution of the Dons: Cambridge and Society in Victorian England* (Cambridge, 1981, first published in 1968 London and New York), 248.

20 In *The Complete Works of Matthew Arnold, IV, Schools and Universities on the Continent*, edited by R.H. Super (Ann Arbor, Michigan, 1964).

Despite such attitudes there is in the latter half of the nineteenth century, as argued and shown by Sheldon Rothblatt and Reba Soffer, an ever closer tie between elite higher education on the one hand and the growing political and administrative demands of the British polity on the other:

In the last quarter of the nineteenth century, the college teacher transformed Oxford and Cambridge into domestic communities capable of molding their members to a degree never attained before by the earlier universities, by the home or by the church. The universities largely succeeded in creating a homogeneous governing class because they organized liberal education, in all its social, intellectual and moral aspects, within the college [...] After the eighteen-fifties, the universities set out to be places of intensive training for the eventual governance of the outside world. But they also remained privileged retreats into personal and peer satisfactions which guarded them against the conflicting imperatives characteristic of ordinary life.²¹

Many scholars have highlighted the persistence of these educational ideals and their continuing deep-seated influence on British social and political life. Don Price's well-found phrase, "Specializing for Breadth," captures the duality of elite liberal education.²² These university developments were paralleled by changes in the public schools where from the 1850s onwards a strong emphasis on physical education and sports not only served to effectively discipline unruly adolescents but to form the character of members of the military corps and a civil service which was to serve as an imperial ruling class.

A second feature of the British development occurring in the second half of the nineteenth century was a renewed emphasis even in the old universities of Oxford and Cambridge on the role of universities in preparing students for a professional career. This process - which entailed a deep-seated restructuring of the universities, what Rothblatt has identified as "the revolution of the dons" - involved the professionalization of science and scholarship. One consequence of this development at Cambridge was that new schools for medicine and engineering were established.²³ Another one was not only the intellectual but also material manifestations of a new scientific

21 Reba Soffer, "The Modern University and National Values, 1850-1930," in *Historical Research*, 60 (1987), 169ff.

22 Don K. Price, "A Yank at Oxford: Specializing for Breadth," in *The American Scholar*, (Spring 1986), 195-207.

23 See Rothblatt, *The Revolution of the Dons*, for a detailed study of this process.

professionalism. Museums, lecture halls, and most importantly perhaps, new laboratories became an integral and important part of university life.²⁴ This is what Paulsen noted when he spoke about the re-emergence of the university as a real entity in England. However, he failed to see that these developments did not mean that the colleges were being superseded. Rather it meant that the collegiate and the university parts of Oxford and Cambridge were complementary and that liberal education was but one of many types of educational practises. It was a practise, furthermore, which was not so much fitted to professional requirements as constituting a specific form of training for the members of the future national elite, a form based on the duality of detachment and elite integration.

A third development refers to the whole new set of institutions of higher education that emerged in Britain in the latter part of the nineteenth century. These institutions became known - but only after the turn of the century - as 'civic universities' to highlight their role as manifestations of the civic pride of the different towns and cities in which they were located. Scholars often contrast these institutions to Oxford and Cambridge and describe them in terms of their commitment to the promotion of more professional, not to say vocational, types of higher education.²⁵ Sometimes, however, it is rather their distance from utilitarian aims that scholars emphasise in order to stress their connections to traditions of education associated with

24 A suggestive analysis of the changing physical shape and architecture of English universities in the late nineteenth century is given by Sophie Forgan, "The Architecture of Science and the Idea of a University," in *Studies in History and Philosophy of Science*, 20 (December 1989), 405-434. Interestingly enough, even though British higher education institutions are usually said to be less influenced by German models than American ones, the influence was certainly apparent in laboratories, both in their construction and in the teaching carried out therein. "German was the often quoted *raison d'être* of scientific activity. With regard to general teaching at a university level, British scientists carefully studied the large German laboratories [...] Germany seems to have been regarded as the fount of all knowledge as far as labs were concerned. Even Kelvin, who loyally promoted the antiquity of Scottish labs, was obliged to pay homage to Liebig." (Forgan, 422 and note 38 on the same page).

25 For fascinating accounts of the evolution of a fields of knowledge in terms of its actual teaching in British universities in the late nineteenth century, see Keith Tribe, "Political Economy to Economics via Commerce: The Evolution of British Academic Economics 1860-1920," in P. Wagner, B. Wittrock, and R. Whitley (eds), *Discourses on Society: The Shaping of the Social Science Disciplines* (Dordrecht, 1991), 273-302. See also Reba N. Soffer's careful research on the teaching of history in English universities in the late nineteenth and early twentieth century presented in several articles and summarized in her monograph *Discipline and Power: The University and the Making of an English Elite, 1870-1930* (Stanford, 1994). For a study of the evolution of the social sciences in Britain in this period see also her *Ethics and Society: The Revolution in the Social Sciences 1870-1914* (Berkeley, 1978). A modern classic in the sociology of academic careers is A.H. Halsey and M.A. Trow, *The British Academics* (London, 1971).

the prestigious traditional university – connections in which their proud provincial supporters took pride. Sophie Forgan has convincingly argued that in practise these institutions encompassed a range of different educational traditions and ideals, involving liberal education, professional education, and research. Furthermore, as already indicated, the very term ‘civic university’ is a slight misnomer:

Most institutions were heavily dependent on patronage and their ability to tap local resources, which was not always easy ... Few town councils initially considered such an institution would be an ornament to the town, a view no doubt reinforced by the shabby premises many institutions started off in - Leeds in converted shops; Liverpool in a lunatic asylum; and Durham-Newcastle in the attics and cellars of the Coal Chambers [...] In short, such costly enterprises, doubtful of success, should not be regarded as ornaments of civic culture in their *early* years.²⁶

Historically, the emergence of a range of new institutions in conjunction with reforms in the old English universities led to a situation where several traditional missions of the English universities, including their emphasis on a liberal education, were retained and even strengthened but nevertheless - in Rothblatt’s words - it became “apparent that character formation and the ideal of a liberal education could only be one of several functions of a university in national education.”²⁷ This was equally true of Cambridge and Oxford and of the new ‘civic’ universities. In all types of institutions, old and new, there was also a clear recognition that professional training and professional scientific activities in disciplined form were integral parts of a modern university.

This confluence of different missions was not only a matter of educational ideals and practices. It also had an influence on the physical shape of a university - whether ideally conceived as a scholarly temple, a detached semi-monastic setting, or as secularised institutions that, in accordance with the industrial machine-age that served as the ultimate backdrop for their very support, not to say existence, represented factory-like large-scale teaching machines.

At the turn of the century all ideals met and confronted each other, resulting in universities which both architecturally and institutionally

²⁶ Forgan, “Architecture of Science,” 411.

²⁷ Rothblatt, *The Revolution of the Dons*, 250.

encompassed and reconstituted a variety of different educational traditions and values. This shaping of the modern research-orientated university cannot be captured in terms of a simple response to a secular process of industrialisation and differentiation. Such an account could not account for the vastly different patterns of institutionalisation which emerged in different national settings. Nor can this process be reduced to a question of mere national styles or educational ideals and cultures. It can only be described as a process in which individuals actively strove to realise, resurrect, or assert educational programmes and visions of higher education, but always against the background of a whole set of well-entrenched institutional legacies and social practices. Some of them could be resuscitated, but others had become hopelessly outmoded.

In this process of constitution and restructuring, German universities may have served as exemplars for university reformers all over the world. In Germany itself, however, scholars such as Max Weber were fully conscious of the fact that at precisely the moment when the Berlin university was most admired and cherished, not least by American scholars and reformer, an alternative model of a modern research-orientated university was already present, namely the modern American enterprise-like university. Conversely, the German university itself was facing a deep dilemma.

This dilemma might perhaps be expressed as the realisation of the inevitability of ever-increasing specialisation in both cognitive and institutional terms. This had concomitant tendencies toward an enterprise-like organisation, or - to use Weber's expression, a "state-capitalist enterprise." On the other hand there was also a sense that the Humboldtian university was truly different from purely professional schools or research laboratories. It held, in the final instance, the promise of being a community of teachers and students. Humboldt had once expressed this by emphasising that in contrast to the situation in a specialised or vocational school, the university teacher's role was not to transmit ready-made pieces of knowledge but to share with students a quest for knowledge and to join with them in serving science. The university should also approximate the vision of a community which would be "the summit where all that concerns the moral culture of the nation comes together." Paulsen regarded "the German university" as being exactly that, deriving its ultimate strength from the fact that it was able to attract "the leading spirits" (*die führenden Geister*) and that these intellectually

distinguished scholars maintained direct communication with young students. To Weber, however, the assertion of the desirability of such a relationship was no guarantee of its possibility in an age of growing specialism and bureaucracy. Weber, much like his contemporary Meinecke and much like leading scholars in later generations such as Habermas, was caught on the horns of this dilemma. Finally all he could do was to highlight the problem rather than to provide a solution.

As already mentioned, the University of Berlin came to occupy an outstanding position in the late nineteenth- and early twentieth-centuries, attested also by the number of Nobel prizes awarded to scholars from that institution during the first four decades of the century. However, the universities in Germany were not just intellectually important. They also played a significant role in the process leading to the expansion of the State's administrative capacities in the late nineteenth and early twentieth centuries. Even in less centralised America, the State grew stronger and more interested in its higher education institutions. In the late nineteenth century, the American Federal State underwent a major transformation from - to use Stephen Skowronek's terms - a State of courts and parties to a State which, no matter how unwillingly and hesitantly, had undergone major reforms and increases in both its public administrative capacities and its armed forces. It too had a growing capacity to intervene, often enough inadvertently and reactively, in the promotion and governance of the economy of the nation.²⁸

In the case of Germany, it has been convincingly and repeatedly argued that the pre-eminence of German researchers in the fields of the natural and technical sciences was an important prerequisite for Germany's rise to an internationally leading role in a number of branches of industry.²⁹ Similarly, it is clear that German legal scholarship and training, notably in the tradition of legal positivism, supplied the central bureaucracy of the newly united

28 S. Skowronek, *Building a New American State: The Expansion of National Administrative Capacities, 1877-1920* (New York, 1982).

29 These developments had, as already mentioned, an effect on institution building in other countries as well. It has been observed that the Japanese development towards "techno-nationalism" in the late nineteenth century was dependent on close interaction between national research institutes, governmental agencies, and emerging private industrial enterprises. In this process the Prussian *Chemisch-Technische Versuchsanstalt* served as one important model - see Miwao Matsumoto's review of Chikatoshi Kamatani's work (in Japanese), "The Road to Techno-Nationalism: Japanese Modernization and National Research Institutes from the Meiji Era, (Tokyo, 1988)," in *Historia Scientiarum: International Journal of the History of Science Society of Japan*, 38 (1989) 75-80.

nation with instruments for effectively regulating and administering the new *Reich*.³⁰ German universities were also able to breed that vast group of prominent policy intellectuals who constituted the backbone of the *Bildungsbürgertum*, the German Mandarins, to use Ringer's term. Charles McClelland, among others, has documented the rapid growth of scientific institutions in Wilhelminian Germany. During the period between the Franco-Prussian War and World War I, between 150 and 200 new research institutes were formed as part of direct State action. Many of them were models for reformers in other countries. Furthermore, there was a sharp increase in the number of students enrolled in universities. This number more than doubled between 1870 and 1900 and nearly doubled once again between the turn of the century and the outbreak of World War I in 1914 when the figures exceeded 60,000.³¹

However, around the turn of the century the corresponding figures for the United States were more than six times larger and increasing at least at the same rate as in Germany. As in Germany, and Britain, America's emergence as a great international power was in some respects connected to the restructuring of its universities. The modern research-orientated universities, both private and public, took shape, and their leadership came to resemble what might be termed large-scale educational entrepreneurs. American academic leaders were attracted to the management styles of business firms, and ties between industrial and academic elites were made on a scale previously unknown. Older traditions of liberal and medical and legal education – often with roots in the ancient universities of England and Scotland – survived to mix with research seminars and laboratories of German inspiration. But German influence notwithstanding, the end result both in institutional and cognitive terms was a far cry from what existed in Central Europe. Even the disciplinary organisation of scholarship, which was in large measure a legacy of the German university, was developed to a degree of specialisation far exceeding that in Germany itself.

30 For an overview see P. Wagner, *Sozialwissenschaften und Staat. Frankreich, Italien, Deutschland, 1870-1980* (Frankfurt am Main, 1990).

31 See McClelland, *State, Society, and University*. See also his "Professionalization and Higher Education in Germany," in K.H. Jarausch (ed) *The Transformation of Higher Learning 1860-1930* (Chicago, 1983). This volume represents a systematic effort to describe the transformation of higher education in four countries, namely England, Germany, Russia, and the United States.

One possibility was not open to German-trained American academics. Obviously they could not hope to acquire the high status of a civil servant in a strongly State-centred society. In Germany the professors were not members of a legal “free” profession but had, and still retain, the sector of public civil servants, *Beamten*, with all the rights and obligations entailed by that status. A similar situation obtained in some other European countries, including Sweden and Norway, where professors were customarily appointed by ‘the King’, i.e. the Cabinet. American scholars, unable to emulate the status of their German professors, instead sought their prestige through voluntary professional associations divided along clearly-defined disciplinary lines. Correspondingly articulate divisions did not fully materialise in the European context until after the Second World War.

To recapitulate, the ‘idea’ of a university was resurrected at the turn of the nineteenth century despite the competition of other kinds of institutions, professional schools on the one hand and academies and even literary salons on the other. Regarded by rivals as antiquated and obsolete, the university came to be the home of modern research and in so many ways became an axial institution of the modern world. Internally, however, deep-seated tensions in the conception of universities also existed, as well as a widening gulf between their actual operation and the generally acknowledged models of such institutions as they had developed in Germany. The newly emerging practises of the American institutions were, although largely unrecognised by their practitioners at the time, destined to overtake the German universities as leading international institutions already in the early twentieth century.

The Transition to Mass Higher Education Systems

Universities played a crucial role in the process of strengthening the industrial and technological capabilities of new nation-states, of providing them with competent administrative and technical personnel, and in serving as the loci for cultural discourses which helped make the world of modernity, of industrialism and urbanism intelligible and meaningful. These different aspects of the modern university have been captured in such notions as liberal education and *allgemeine Bildung*, of professional education, and

of research. Despite a difference of emphasis between different university representatives from different countries, there was for a long time remarkable agreement on the proper role of a university across national boundaries. Somehow, a Cambridge historian of Methodist upbringing such as Herbert Butterfield, a German scholar of a classical national-liberal persuasion such as Meinecke, or for that matter, Weber, or a Swedish Social Democrat like Myrdal all seemed to cherish cultural values concerning the university and its appropriate functioning which were not only compatible but largely identical.³² They all saw the ultimate rationale for a university as constituted by

32 As already mentioned *The German Catastrophe* represents an effort by a major representative of the classical tradition of German high culture to come to terms with the disastrous events of the recent past. The dilemmas inherent in translating such interpretations into institutional realities in the immediate post-war period is vividly illustrated by the choices and commitments made by different representatives of the world of classical learning (the German Mandarins, to use Ringer's phrase). In the early post-war history of higher learning in Berlin Meinecke at the age of 86 considered it his obligation, despite ill health, to accept the nomination to the post of *Rektor* of the new Free University of Berlin. Another "mandarin," the classicist Johannes Stroux, served as *Rektor* of the resurrected Berlin University, renamed Humboldt-Universität. Even under harsh Soviet and communist pressure, he tried to preserve some of the basic features of free intellectual life.

The dilemmas were perhaps most clearly illustrated in the person of Eduard Spranger, the renowned pedagogue and philosopher. Spranger had been a student of Wilhelm Dilthey and represented the very core of German philosophical idealism. During the war he had – like Stroux and Werner Heisenberg – been a member of the so-called Wednesday society, a circle of sixteen distinguished intellectuals, civil servants, and members of the military, several of whom had links to the groups behind the attempt on Hitler's life on July 20, 1944. Spranger was imprisoned and subjected to harsh interrogation by the Gestapo in the aftermath of those events, but he was eventually released. Remaining in Berlin, he resumed almost immediately after the fall of the Nazi regime a key role in the efforts to resurrect the University, which he wanted to be a collegial institution with a heavy emphasis on teaching. As the first but provisional *Rektor* of the about-to-be-opened Berlin University, he worked energetically to solve both intellectual and institutional tasks, including assembling a de-Nazified faculty. He soon found himself in the middle of disagreements by the occupying powers over cold war policies, where a main question was whether the Berlin University should be under four-nation control or under that of the Soviet-dominated central education authority in the Soviet sector and zone. Spranger was never able to establish real rapport with the key higher education official in the American zone, Edward Hartshorne, a former student of Meinecke's and later professor of sociology at Harvard. Apparently he was able to satisfy none of the contending parties, and the Soviets removed him from office in October 1945. A fascinating account appears in J. F. Tent, *The Free University of Berlin: A Political History* (Bloomington, Indiana, 1988).

The development of German universities in the post-second-world-war era has been extensively analysed in recent years. For two exemplary studies on developments in West and East Germany respectively, see C. DeFrance, *Les allies occidentaux et les universités allemandes, 1945-1949* (Paris, 2000) and R. Jessen, *Akademische Elite und kommunistische Diktatur. Die ostdeutsche Hochschullehrerschaft in der Ulbricht-Ära* (Göttingen, 1999).

its forms of free and unconstrained inquiry and collegial communication and interaction.³³

Such international agreement on the purpose of a university lasted long after 1945. Thus on the eve of the harshest political controversy in Sweden for decades to come, that over a “free” or a “planned” economy in the late 1940s, Myrdal - then a member of the Cabinet as well as a professor at what was still the private Stockholm university college - passionately pleaded not only for increased resources to the universities but also for the protection of their autonomy and academic freedom:

Research and higher education are the sources of national culture [...] The newly aroused interest in some quarters for the practical application of science must not be allowed to conceal the fact that science itself like all the rest of our culture depends on the existence at our universities and colleges of free research activities, conducted with an interest in the search for truth and unaffected by immediate utilitarian interests. We must step forward to protect basic research [...] We must also guard and support the humanities. They nurture the deeper cultural values that are the soul of national culture. I for one, hope and believe that the socialist labour movement, which is now taking over the decisive political power in society, will feel its identity with the ideals of humanity and will see to it that our research will not have a short-term utilitarian orientation.³⁴

It is difficult to imagine that this passionate plea for university autonomy was written by someone who had rather limited interest in preserving autonomy for other spheres of social activity. It is even more difficult to imagine that Myrdal was the major policy intellectual of a political party which two decades after it had given up any serious idea of far-reaching plans for regulating the economy nevertheless introduced one of the most comprehensive policies for the restructuring of a higher education system undertaken in Europe. This was, furthermore, a restructuring which had as its guiding principle exactly the type of short-term utilitarian ambitions which Myrdal had cautioned against and the advocates of which would probably have reacted with incomprehension to the suggestion that universities should contribute to “deeper cultural values that are the soul of national culture”.

33 H. Butterfield, *The Universities and Education Today. The Lindsay Memorial Lectures* (London, 1962), 3ff; Paulsen, “Wesen, und geschichtliche Entwicklung der deutschen Universitäten” and *Die deutschen Universitäten und das Universitätsstudium*; Jürgen Habermas, “The Idea of a University – Learning Processes,” in *New German Critique* 41 (1987), 3-22.

34 G. Myrdal, *Universitetsreform* (Stockholm, 1945), 28-30 (my translation).

The Second World War had demonstrated the immense direct applicability of research findings. Thereby, as noted by several scholars, signs emerged which heralded if not the end then at least a threat to the long period of academically self-organised knowledge production which had been ushered in by the creation of the *École Polytechnique* in France and the Berlin university in Germany.³⁵ Initially, however, representatives of academia proved highly successful in accommodating the new research. The United States was the undisputed leading country in this development. Far from being threatened by the new developments, American research universities were greatly strengthened by public support. One major reason for this relatively smooth accommodation was the fact that increasing resources were channelled through a system of grants which was entirely compatible with the basic operating mode of the university research system.³⁶ This system was based on peer-review, and the newly-founded “research council,” the National Science Foundation, served as an important supporting and coordinating body at the Federal level. Thus the professional ethos of academic science was strengthened rather than undermined, and in the post-World-War-II era the American university system emerged as the undisputed model for university reformers across the world. In Germany the *Kaiser-Wilhelm-Gesellschaft* - resurrected after 1945 as the *Max-Planck-Gesellschaft* - had played a somewhat analogous if quite different role earlier in the century as a collection of highly prestigious research institutes connected to but independent of universities.

Thus the growing role of research did not spell the end of academic science but rather its efflorescence. Science as *the endless frontier* held the promise of on-going expansion. Science as a source of wealth and power helped underpin the prestige and position of the research universities. Gradually, this was also reflected in a re-definition of public policies for research and development everywhere in the modern world. The Organisation for

35 Jerome R. Ravetz, *Scientific Knowledge and its Social Problems* (Oxford, 1971 and Harmondsworth, 1973), 37ff. I am indebted to Peter Weingart for calling to my attention that this issue had been raised already in this book. See also P. Weingart “The End of Academia? The Social Reorganization of Knowledge Production” in A.O. Battaglini and F.R. Monaco (eds), *The University within the Research System: An International Comparison* (Baden-Baden, 1991), 31-44. A recent overview of the theme of academic research is G.R. Neave, K. Blücker and T. Nybom (eds) *The European Research University: An Historical Parenthesis? Essays in Honor of Professor Dr.Dr.h.c.mult. Stig Strömholm, former Vice Chancellor of Uppsala University* (New York, 2006).

36 Argued by Don K. Price, “Endless Frontier or Bureaucratic Morass?” *Daedalus* 107 (1978), 75-92.

Economic Co-operation and Development (OECD), which had its origins in the countries which had been the donors and recipients of the Marshal Plan of the immediate post-war period, was established in Paris in 1960 and served as an important forum for discussions on the crucial relation of research to economic growth and innovation.

In the 1960s and 1970s, higher education itself became a key concern for policy-makers in all Western countries. In overall enrollment, government expenditure, the number of institutions, and staff size, the higher education systems of Western Europe and North America at least doubled and often tripled or quadrupled within a period of less than a decade and a half.³⁷ In short, growth was phenomenal, but it was also historically different. Policy-makers and scholars alike have tried to grasp the significance of the transformation. Martin Trow called it a “sea change” from elite to mass higher education eventually leading to universal higher education.³⁸

Essentially what observers saw was an increasing diversification within higher education as a whole. “Higher education” became a comprehensive term embracing all kinds of different establishments, each fulfilling important societal functions in a mutually-dependent universe of institutions. Colleges of further education co-existed with institutes for advanced graduate training and research; vocational schools sat side-by-side with well-endowed institutions still in the business of elite education. In a growing number of institutions, many of what were once rival forms of education were comprehended within the same institution.

This process of increasing diversity, of the emergence of the modern multiversity, to use Clark Kerr’s fortuitous neologism, was much more of an

37 An excellent overview of this development is given in Clark Kerr, *The Great Transformation in Higher Education 1960-1980* (Albany, NY, 1991).

38 Martin Trow has analysed these features of modern higher education with unusual observational sensitivity and conceptual imagination in a series of articles: “Reflections on the Transition from Mass to Universal Higher Education,” in *Daedalus*, 99 (1970); “The Expansion and Transformation of Higher Education,” in *International Review of Education* (February 1972); *Problems in the Transition from Elite to Mass Higher Education* (University of California, Berkeley, Institute of International Studies Reprint 444, 1974); “The Public and Private Lives of Higher Education,” in *Daedalus*, 104 (1975), 115-127; “Elite Higher Education: An Endangered Species?,” in *Minerva*, 14 (1976), 355-376. See also D. Riesman, J. Gusfield, and Z. Gamson, *Academic Values and Mass Education: The Early Years of Oakland and Monteith* (Garden City, New Jersey, 1970); and the account of efforts to re-create the small scale and intimacy of a traditional college environment in a modern multiversity at the University of California, Santa Cruz, as described by Riesman and Gerald Grant in a chapter in their volume *The Perpetual Dream: Reform and Experiment in the American College* (Chicago, 1978).

American than a European phenomenon. One reason for this was that American higher education had always been characterised by the confluence of different educational practises. The early colonial colleges followed the curricular lead of Oxford and Cambridge, but Scottish influences followed. Lay control (borrowed from the English law of charities) and presidential leadership in particular were distinctly American features, replacing the guild-like governance of Oxbridge, although at one point in its history the University of Edinburgh had “lay” leadership when it was virtually governed by the town council.

In the late nineteenth century, the land-grant colleges and universities had added a strongly practical dimension of training and service to society to the more familiar traditions, but so had the new ideals of research and research training. At the same time, another component was added to this system, namely the graduate school and the idea that higher education was the natural home of science and scientists. Inspired, as already mentioned, by the example of German universities, research and institutional specialisation nevertheless took different shape in the American setting. Instead of the German single-professorial chair system, for example, multi-professorial departments were created.

It is impossible to exaggerate the significance of the partly inadvertent and unplanned confluence of different educational ideas and tradition. Ralf Dahrendorf has eloquently reminded late twentieth-century reformers and politicians of “the fact that with the mountains of literature and lakes of commission reports in recent decades nothing of comparable significance has been produced.” Yet, as Dahrendorf also stresses,

the effect of this change was by no means immediate. For several decades yet, continental European – and again, especially German – universities (and technical universities) remained places of innovation as well as superior education. But when the great expansion of higher education began, the American hybrid turned out to be uniquely appropriate.³⁹

But a different note had already been sounded. To many of the late nineteenth and early twentieth century American reformers, the intermingling of quite diverse educational traditions and ideals was an imperfection,

³⁹ Ralf Dahrendorf, *Education for a European Britain* (the Edward Boyle Memorial Lecture, June 5, 1991).

a regrettable deformation which prevented the proper ideals of higher learning from permeating the institutions of the New World. Thus in 1930 it had still been possible for a leading American university reformer such as Flexner to write that “neither Columbia, nor Harvard, nor Johns Hopkins, nor Chicago, nor Wisconsin is really a university, for none of these possesses unity of purpose or homogeneity of constitution.” In this respect they were, in his view, not up to the high standards of a real university of the neo-Humboldtian model of late nineteenth-century Berlin. They were not “organisms” but “administrative aggregations,” full of “trivial courses, trivial chairs, trivial publications, ridiculous research,” catering to “fleeting, transient and immediate demands” and the purported needs of “make-believe professions.” Not even the oldest university, Harvard, could operate as a real university unless it transformed its business school into an independent Boston School of Business that could function like a *Handelshochschule* and cater to professional and utilitarian ends without any risk to the pursuit of pure knowledge and truth at the university itself.

In the United States of the 1940s and 1950s such an attitude appeared hopelessly backward. The massive utilisation of research in the war effort constituted a forceful practical rejoinder to Flexner. Vannevar Bush, who had played a prominent role during the war as Director of the Office of Scientific Research and Development (OSRD) and afterwards became President of the Massachusetts Institute of Technology (MIT), coined the new suggestive formula, *Science – the Endless Frontier*, the name of an OSRD report. In these years the foundation was being laid for a new type of science policy which would respect the value of the autonomy of science while also recognising its practical potential. A major recommendation of the OSRD report which bore fruit was the creation of the National Science Foundation in 1950. Later came the National Institutes of Health. All of these developments had implications for the social sciences, and their changing foci were highlighted by titles such as the “behavioral sciences” and the “policy sciences.”

On a theoretical level, the echoes of German idealist philosophy resonating through Flexner’s rhetoric had never been very compatible with the pervasive pragmatism dominating the American intellectual scene throughout most of the nineteenth and twentieth centuries. In the 1940s, however, the self-understanding of American university representatives was bolstered by

the emergence of functionalism as the dominant theoretical framework in social science. It was ideally suited to provide a comprehensive and credible justification for the very diversity and pluralism which characterised American educational practices; these were but the logical responses of higher education to the very diversity and plurality of American society and the educational needs and demands of a society much less troubled by ‘class’ than those in Europe.

Functionalism gave American university representatives a self-understanding which seemed to make perfect sense of the realities of their institutional situation. Furthermore, the two towering functionalist sociologists of the times, Talcott Parsons and Robert Merton, both wrote extensively about science and higher education, as did some of their foremost students: Martin Trow, Neil Smelser, and James Coleman.

If functionalism was a help to American academics in acquiring the self-identity which the German professoriate had found in their civil service standing, so were the professional associations in which disciplinary identities were articulated in a language different from the vocabulary characteristic of much early twentieth-century academic rhetoric in Europe.

However, if the secular trends indicating expansion and diversification presented few fundamental problems to the self-understanding of American academics and policy-makers, the situation in Europe was the opposite. Far from diversity being the normal operating practises of higher education systems, most European countries had for decades embraced a belief in the necessity of holding to high and uniform standards of quality. To Europeans, *diversity* meant variations in educational standards and differential funding for different educational missions. Both possibilities were regarded as unsatisfactory, whether we speak of Britain and France, Sweden and Germany. Thus the University of London, the first new university in England since Medieval times, had in the course of the nineteenth century come to function as a kind of benchmark for academic examinations not only throughout England but throughout the British Empire. This helped secure a “gold standard” for examinations in English-type institutions. In a country like Sweden, a major ambition of the new private institutions in Stockholm and Gothenburg in the late nineteenth century was to prove that they could live up to the standards set by the older universities of Uppsala and Lund. The general European inclination to avoid diversity (except marginally) was

further strengthened in the course of the twentieth century by the large-scale higher education reforms undertaken in the 1960s and 1970s. As a result European governments tended to seek to increase their central overview and coordination of entire higher education systems.⁴⁰

The dilemmas inherent in policies aiming at diversity had been less apparent in the late nineteenth- and early twentieth-centuries than in the period of mass higher education from the 1960s onwards. In the 1800s practically all higher education in Europe was an elite education both in form and numbers. The fact that in some countries such as Sweden, there had always been a substantial share of “peasant students” (*bondestudenter*) who did not have the means to study at the same intense pace as other students did not do much to change the elite nature of higher education. Until well after the Second World War, only a tiny fraction of an age cohort went on to higher education in European countries.

From the 1960s onwards, higher education student expansion created a dilemma for European academics and policy-makers. A traditional elitist higher education system could not easily accommodate the growing number of students. Early efforts to trim the system by various means could do little to change this fact, especially since interventionist-minded states were placing more and more demands upon the higher education sector. Higher education was viewed as a key arena for policy intervention both in principle and because higher education could be used to promote specific social and political objectives.

Thus higher education was directly and indirectly used to help stimulate economic growth, not least by being geared to policy-perceived labour market needs. It was also used to support general governmental social aims such

40 I discussed some of these problems in an early essay on “Excellence of Analysis to Diversity of Advocacy: The Multiple Role of the Leverhulme Study into the Future of Higher Education,” in *Higher Education*, 13 (1984), 121-138. In the European context, probably no scholar has raised these issues more persistently than Torsten Husén. See his *Universiteten och forskningen* (Stockholm, first published 1975, second edition 1986). For the British context, see Dahrendorf, *Education*, but also T. Becher (ed), *British Higher Education* (London, 1987). Additional studies are Tribe, “The Accumulation of Cultural Capital: The Funding of UK Higher Education in the Twentieth Century,” in *Higher Education Quarterly* 44 (1990), 21-34; and Peter Scott, “All change or no change at all?”, in *The Times Higher Education Supplement*, (August 9, 1991), 12.

Flexner’s 1912 Report for Carnegie contains what may still be regarded as a sensitive and sensible discussion of diversity and uniformity in university education. His position may be summarised by saying that diversity requires a certain minimum degree of uniformity. He was, of course, thinking particularly of medical education.

as the promotion of increased social equality. How were these ambitious objectives to be achieved? Across member countries of the OCED, the two basic traditional parameters of higher education - *governance arrangements* and *curricula* - were being redesigned. Often enough, central political planning and incentives were combined with changes in the composition of governing bodies within higher education institutions so as to bring about the desired changes in performance and curricular activities.

Although the general trend of changes was fairly uniform across countries, some nations went further than others in the comprehensiveness of change. In Sweden relatively thorough-going changes were undertaken in this period. In a sequence of reforms, an earlier professorial system was replaced by new governance arrangements and a redesign of undergraduate education into study programs explicitly orientated towards sectors of the labour market, and in the wake traditional teaching disciplines were relegated to the status of “single courses.”⁴¹

Today we witness increasing efforts in research policies across Europe at creating centres of excellence and at building up strength in areas of strategic importance to long-term technological and economic development. The words “strategic research” and “targeted basic research” have become fashionable. Recent changes in public policies for research as well as for higher education have little to do with longings for an idyllic past. Rather they reflect the changing position of knowledge in the most advanced production processes. That this has been manifested in so-called “mega-buck-deals” concluded between large companies and selected university environments but also in the growing bulge of “science parks” and “silicon valleys” surrounding university centres not only in Europe and North America but also in East Asia and India.⁴² The Prussian king, Friedrich Wilhelm III, who gave

41 There is a vast literature on these developments in the Swedish context. A perceptive view from the outside, especially on undergraduate education, is provided by Peter Scott, *Higher Education in Sweden – A Look from the Outside* (Stockholm: UHÄ (National Board of Universities and Colleges, 1991), in a report commissioned by a Swedish government committee on higher education.

42 Early overviews from slightly different perspectives of some of these developments can be found in M. Gibbons and B. Wittrock (eds) *Science as a Commodity: Threats to the Open Community of Scholars* (London, 1985); M. Gibbons, C. Limoges, H. Nowotny, S. Schwartzman, P. Scott and M. Trow, *The New Production of Knowledge: The Dynamics of Science and Research in Contemporary Societies* (London, 1994), and H. Nowotny, P. Scott and M. Gibbons *Re-Thinking Science: Knowledge and the Public in an Age of Uncertainty* (Cambridge, 2001). For a critical view of the ideas of a new production of knowledge, see P. Weingart, “From ‘finalization’ to ‘Mode 2’: Old wine in new bottles?”, in *Social Science Information*, 36 (4) (1997), 591-613.

his name to the new university of Berlin, once declared that this university creation would mean that the country could regain in intellectual excellence what it had lost in military power. Today the resuscitated interest in universities and higher education is rather directed at regaining economic and technological opportunities in global context so as to compensate for the obsolescence of older types of production technologies and industries. Today few people are inclined to depict the university as a tarnished ornament of dubious value, a relic inherited from a foregone age unlikely to be of much immediate use to the world of action and practice. On the contrary, universities are more or less universally heralded as key assets for economic and technological development but also in efforts to strengthen the vitality of cities and regions.

Similarly, however, nobody with experience of higher education institutions in contemporary Europe and North America can avoid being confronted with descriptions and reports highlighting the anonymous and vaguely bureaucratic nature of the modern university, the distance between rhetorical statements invoking the notion of a community of scholars, of teachers and students on the one hand, and the absence of a living sense of intellectual and institutional cohesion on the other. In the final section this dilemma will be briefly taken up again.

The Three Transformations in Perspective

The modern research-oriented university emerged in the latter part of the nineteenth century in what has here been termed the second of the three major transformations in the relationship between universities and societal institutions in the period since the French revolution. This, however, as has been repeatedly argued above, was only possible because of the deep-seated transformation which occurred first at the turn of the nineteenth century. The transformation of the university, normally associated with the Humboldt brothers and with the creation of the new university at Berlin, was coterminous with the emergence of a new type of epistemic regime, that of academic science.

This entailed a break with previous genres of academic and intellectual interaction. It also entailed new social identities for scientific practitioners,

separating amateurs from “serious” scholars and scientists. The new, more closely regulated intellectual activities had as their institutional backdrop redesigned universities of the nineteenth century.

However, the institutional events manifested in the resurrection of the idea of a self-governing university along the lines proposed by Wilhelm von Humboldt, was an institutional renovation, grounded in a philosophical conception that in many ways was at odds with the process of ever-increasing disciplinary specialisation. In the late nineteenth century, during what has here been termed the second transformation, tensions surfaced, but they tended to be glossed over in rhetoric and everyday life. In the course of the twentieth century a functionalist explanation of the evolution of different fields of knowledge and of social developments reinforced the view that modernisation was an inevitable process requiring both specialist intellectual activity and the application of knowledge on a vast scale.

Nevertheless during the course of the nineteenth century the university emerged as an axial institution or mediating ground of society’s many strivings. Even if universities of course had long served society, the self-identity of the university became ever more strongly associated with science and its applications and research and research training came to be seen to constitute “the core sector of the university” and “the hall-mark of the university: that which differentiated it from other institutions offering post-secondary education and training.”⁴³

The foundation in Germany after the turn from the nineteenth to the twentieth century of the Kaiser-Wilhelm-Gesellschaft (KWG) as a collection of advanced research institutes foreshadowed what would ultimately be referred to as a “strategic research” policy. In his speech on the occasion of the centennial of the Friedrich-Wilhelms-University, the Kaiser legitimated the creation of non-university research institutes by making them an integral part of the old Humboldtian conception:

Humboldt’s great plan for science demands besides the [Berlin] Academy of Sciences and the [Berlin] University independent research institutes as integral parts of the overall organism of science. The creation of such institutes in Prussia has

43 T. Parsons and G. Platt, with the collaboration of N. J. Smelser, *The American University* (Cambridge, MA, 1973), 103ff; and Stuart S. Blume, “After the Darkest Hour ... Integrity and Engagement in the Development of University Research,” in B. Wittrock and A. Elzinga (eds), *The University Research System: The Public Policies of the Home of Scientists* (Stockholm, 1985), 140.

not kept pace with the development of the universities and this lack, specifically in our natural science equipment, becomes ever more tangible as a consequence of the gigantic expansion of the sciences. We need institutions that transcend the framework of the universities and colleges and that can serve research unimpeded by educational tasks but in close relation to Academy and University.⁴⁴

These remarks notwithstanding, it was evident that even at the peak of its intellectual power and prestige, the research-orientated university faced the dilemma of combining advanced and highly specialised research with the model of teaching and personality formation which to the early nineteenth century humanists was seen as the ultimate rationale of an institution of higher learning. In the course of the twentieth century university representatives persistently came to back to the question how the idea of the university as an open community of peers, of scholars freely sharing with one another their thoughts and findings could be reconciled, if at all, with the realities of modern higher education institutions. Some commentators today speak of the university as losing its essence or “soul.” Peter Scott, former editor-in-chief of the *Times Higher Education Supplement*, has highlighted the dilemma by speaking of the modern university as constituting not so much a scholarly community as “a shared bureaucratic environment.”⁴⁵ It may well be asked whether after two centuries anything at all remains of the idea of the university.

Burton Clark, the distinguished scholar of higher education argues that modern universities have in-built tensions, but they also have coherence. He has introduced the powerful metaphor of the “master matrix” which consists of two different but connected dimensions. Within the matrix, the scholarly disciplines represent professional identity and commitment; and the institution itself is represented by “enterprise.”⁴⁶

44 From the *Berliner Local-Anzeiger* (11 October 1910, Evening edition, S. 1), my translation, quoted in the original on p. 357 in A. Vogt, “Berliner Wissenschaft im Abgesang des Wilhelminischen Reiches, 1900-1914,” in H. Laitko et al (Hrsg) *Wissenschaft in Berlin: von den Anfängen bis zum Neubeginn nach 1945* (Berlin, 1987), 306-395. As already indicated, it was indeed the case that Humboldt discussed the relationship between the University, the Academy, and their respective role vis-à-vis different scientific institutions. On the other hand, Humboldt’s brief sketch cannot in any real sense be said to have entailed the necessity of establishing an institution such as the KWG.

45 P. Scott, *The Crisis of the University* (London, 1984), 68.

46 B.R. Clark (ed), *The Higher Education System: Academic Organization in Cross-National Perspective* (Berkeley, 1983) still stands out as a landmark of higher education scholarship, as do Clark’s research programmes at Yale and the University of California at Los Angeles.

To early nineteenth-century thinkers in Germany and England like Humboldt and Coleridge, to take but two examples, the idea of a university highlighted those features which were not co-incidental and accidental but essential, permanent, and independent of specific circumstances. Clearly, this type of essentialism clashed with empiricism as an epistemology and with utilitarianism as a political philosophy. It is only too obvious today, with the benefit of almost two centuries of hindsight, that reducing all the functions and activities of universities to a single essential idea so remarkably clear and self-evident that it could not be resisted is unimaginable.⁴⁷

However, it should be equally obvious that “ideas” about universities are not quixotic, for they do in fact exist, and moreover they are functional. Each and every effort to shape or reform a university or an institution of higher learning does by necessity rely on some idea of its form or mission. Modern universities are in fact very much part of the age of modernity and the traditions and values which have helped shape the modern world since the French Revolution and the Enlightenment. All reforms and changes since then have indicated the pervasive influence of “ideas” about what a university ought to be in relation to other educational and social institutions, and the academic communities who make universities and associated institutions their homes have implicitly or explicitly attempted to relate their working lives to some sort of notion of the “universal” in the university.

Interestingly enough, the archetypal functionalist analysis of the largest and in many ways most successful university system in the world, namely that of the United States, in *The American University* (1973) by Talcott Parsons and Gerald Platt, with the collaboration of Neil Smelser, is characterised by a keen awareness of the difficulties of the modern university. For these authors, the university is central to the educational, industrial, and democratic revolutions which, they argue, have shaped the modern world. It is “the culminating focus of the educational revolution.” However, its “core cognitive

47 A fascinating overview of the way in which the notion that an idea of a university can exist and how it developed in the Anglo-Saxon world from the early nineteenth century onwards, with some comparative observations on developments elsewhere, is given in S. Rothblatt, *The Idea of the Idea of a University and Its Antithesis*, in *Conversazione* (LaTrobe University, Bundoora: Seminar on Sociology of Culture, 1989). Sheldon Rothblatt's *The modern university and its discontents: The fate of Newman's legacies in Britain and America* (Cambridge, 1997) is a monumental work on intellectual and institutional histories of higher education in Britain and the United States in the nineteenth and twentieth centuries and their relationship to articulations of an idea of the university.

interests” are in danger of being radically subverted by other interests. It is an institution living under threat.

Thus even in this late stage of functionalist theorising, a somewhat complacent belief in a systematically and functionally safeguarded evolution of systemic differentiation and adaptation has been replaced by anxiety, a concern over whether the axial institution of modernity can survive an overload of increasingly large and contradictory external demands.⁴⁸

Three Trajectories and the Core of Academe

In institutional terms university systems have in recent years responded to this increase of demands put on them along three different trajectories.

Firstly, the American university system has continued to be characterized by a high degree of differentiation and diversity. At the same time, not only private universities but also major state universities, with the nine campuses of the University of California as a preeminent example, have been able to draw on private resources to an unprecedented extent. The persistent preoccupation with questions of ranking is but another side of the great diversity in terms of resources and quality within this system.

The basic institutional features, which came to characterize major American universities already in the late nineteenth and early twentieth century and which have been examined at more length earlier in the text, are however still crucial for the leading American universities, namely the combination of strong university Presidencies and a prominent role played by leading scientists and scholars in the governance of universities.

Secondly, although a concern for rankings and assessments is an important feature in Europe, and increasingly also in Asia and other parts of the world, to an extent that would have been unthinkable just one or two decades ago, European university systems were, with few exceptions unsuccessful in their efforts, particularly during the 1960's, 70's, and 80's, to create a structured diversity of their higher education systems that would have made them more comparable to the North American one. The limited success of

⁴⁸ For a recent overview of the role of science in decision-making processes see S. Maasen and P. Weingart (eds) *Democratization of Expertise? Exploring Novel Forms of Scientific Advice in Political Decision-Making* (Dordrecht, 2005).

European universities to withstand processes of academic drift on the part of other educational institutions has, with some notable exceptions, been paralleled by an inability to withstand what might perhaps be termed “professorial drift” within institutions, i.e. a tendency to erode privileged positions in terms of access to resources and positions of decision-making for categories of professors appointed at a senior level and after highly competitive selection procedures. Given these tendencies increases of funding across the board directly to faculties and universities have come to appear as increasingly unrealistic. As a result across a range of European countries, the State has searched for means to support university research on a basis that allows for a more careful and effective selection of the proper targets of support schemes.

Normally such schemes involve a combination of large-scale exercises of assessment and evaluation and of selective funding of centres or networks of excellence. One of the most ambitious endeavours of this kind is the so-called excellence initiative in Germany. This initiative involves calls to universities for proposals to establish graduate schools and centres of excellence but also, for universities successful on these two first levels, support for so-called institutional strategies aimed at strengthening the institution as a whole (often in the forms of the establishment of a university-based institute for advanced study – as opposed to the traditional role of such institutes to serve as a national resource for the university system as a whole).

There are three basic problems with this “European” approach to strengthening universities and research quality, namely the following ones: Firstly, the transaction costs involved in large-scale assessment and review processes are considerable. Secondly, the translation of the results of such exercises cannot avoid processes of policy negotiation and a questioning of the legitimacy of the recommendations of review panels.

Thirdly, and most seriously perhaps, reviews and assessments of existing research strengths do not easily translate into proposals for the establishment of priorities for the future. Truly original contributions will not be easily envisaged beforehand through consensus in a committee. There may be a risk that too much emphasis on what is currently considered areas of excellence may divert attention from the need to nourish environments where original ideas that eventually give rise to new centres and networks of excellen-

ce may be conceived in the first place and from support for genuinely original individuals.

A *third trajectory* is one which has existed been articulated since the beginning of the twentieth century, namely the existence of institutions outside of the regular university but in close contact with it for the support of exceptionally promising research. The preeminent institution of this type was, as already mentioned, created on the occasion of the centennial of the Berlin university in 1910, namely the then Kaiser-Wilhelm-Gesellschaft (KWG), today Max-Planck-Gesellschaft (MPG), an institution which came to stimulate and be followed by the creation of analogous institutions in other countries.

Even if the system of Max Planck institutes is sometimes seen as a divergence from the Humboldtian ideal of the unity of research and teaching within a university setting, it may be noted, as mentioned above, that at the time of the establishment of this system, it was described as a key step towards the fulfilment of the vision of Wilhelm von Humboldt. Be that as it may, the basic so-called Harnack-principle, often invoked as the as the ultimate rationale for the institutes of the Max-Planck-Gesellschaft, is perhaps one that corresponds better to the ideals of Humboldt than currently predominant practices in most European universities. In its essence, the idea is that the allocation of the resources of the KWG/MPG should be based on the research interests of the most excellent individual researchers. This also means that not only the achievements but the existence of Max Planck Institutes are regularly subject to reviews and reconsiderations. It may be added that in recent years several measures have been taken to overcome problems of linking research at Max Planck Institutes to research and graduate training in universities. One important and successful measure of this type has been the establishment of so-called Max Planck international research schools.

It should be noted that several European countries have, without seriously considering the establishment of an extensive system along the lines of the MPG, taken steps to insert into the university systems forms of support along the lines of the Harnack principle. The whole tendency towards the establishment of centres of excellence can perhaps be described as a movement in this direction and the same is true of the efforts of many research councils, including the European Research Council, to provide ample

resources to excellent individual scholars both at an early and an advanced stage of their careers.

In the perspective of the current situation of Swedish universities, there is a need to preserve and to strengthen a core of outstanding and free research within the universities. Such a core is vital for the future standing of Swedish universities in an increasingly competitive international academic landscape. The combined effects of academic and professorial drift and of demands for matching funding from national and European research agencies are such that one is reminded of the statement made some years ago by the distinguished British historian Harold Perkin, namely that universities have never before had larger resources at their disposal, as many students enrolled, or as much public attention paid to them. But also never before have they “been in so much danger of losing the *sine qua non* of their existence, the freedom to pursue their primary function of conserving, advancing, and disseminating independent knowledge.”

External support along the lines of the Linnaeus support scheme is of course extremely helpful. However the long-term vitality of research universities depends on the existence of a core of leading academic scientists and scholars who pursue research entirely of their own choosing in doing so preserve and strengthen the normative ethos of what constitutes a university and what distinguishes it from a government agency or a private company.

There are a series of feasible and relatively simple steps, which could be taken, to help achieve this objective and help safeguard the pre-eminence of Swedish universities for the future. One significant consideration is that scientific and scholarly advances have historically often been the unforeseen result of the coming together of high competence in different fields. In a vibrant academic system there must exist free meeting places that serve this function and provide breeding grounds for new ideas at the initial sensitive stage before they can be turned into research programmes of centres or networks of excellence.

This is one of the reasons why many European countries now seek to complement regular departments and faculties with institutes for advanced study that serve as such free meeting places and breeding grounds for new ideas. The Vice-President of the European Research Council, Helga Nowotny, has eloquently described how, contrary for instance to the framework programmes of the European Community, such institutes combine a strict

control of inputs with complete freedom in terms of outputs; i.e. a Fellow at such an institute is only admitted after an extensive selection procedure but can then for the period in residence, normally of one year, pursue whatever research activities (s)he prefers.

However, clearly there is also a need for measures that strengthen the core of the regular university system and its research. A simple but crucially important way to help achieve this would be to create a system of “Academy Professorships”. Such Academy Professorships would be permanent positions with a duty for the holders to be engaged in both research and teaching. These professors would also, as is self-evident in leading American research universities, have at their disposal free resources for research directly attached to their positions. Only the most preeminent scholars and scientists should be recruited to these positions. To ensure a sufficient pool of highly qualified candidates for these positions they should be broadly defined.

There are four essential choices that have to be made in the establishment of such a system, namely the following ones:

- *Firstly*, the number of such professorships is an important consideration.
- *Secondly*, there are at least four principally different ways in which the holders of such positions could be appointed, namely:
 - through a regular process within a given university itself
 - through a process involving research councils
 - through a process analogous to those used for the selection of Academy Researchers (by some of the academies) or Pro Futura researchers (RJ, STINT, SCAS)
 - through some new scheme analogous to the search processes for leading positions in American universities or in the MPG
- *Thirdly*, even if it is clear that permanent research resources should be attached to these professorships, a decision should be made whether the relative amount of such resources should be subject to regular reviews or not. Generally, it would seem well-advised that some process of review be instituted but that reviews should occur regularly but relatively infrequently.
- *Fourthly*, holders of Academy Professorships should not only be distinguished individual scholars. Jointly they should function in a way analogous to

that of leading professors in the foremost American universities, namely as a group which embodies core norms and standards of excellence in research but also a sense of commitment to the institution as a whole. Ideally they should interact closely enough among themselves to help articulate an idea of what a research university might be in the contemporary world. As a minimum they should have some forum for intellectual and social interaction. A decision would also have to be made whether or not it would be desirable to let such a forum also have authority to safeguard the resources and the role of Academy Professorships within the university system so that these resources are not being diluted once they reach the regular departmental level.



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