ians, or patrons, from which they could draw to alleviate a temporary monetary crisis. The stereotyped contents of student letters, which repeatedly emphasize the lack of money (Haskins 1929 pp. 7–14), give a misleading impression of the living standards of the average student. For the genuinely poor student there were a variety of ways by which universities sought to deal with the problem. The old established universities evolved a series of haphazard ad hoc measures to improve the lot of poor scholars, while the later universities were more prone to adopt a more systematic approach from the start (Cobban 1988 pp. 305–10).

See also: Universities: Since 1900; Universities: 1500–1900

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A. B. Cobban

Universities: 1500–1900

1. Tradition and Change

For the late twentieth-century observer, accustomed to complex, rapidly changing higher education systems, with large, professionally managed institutions, offering a great variety of study programs, the old universities prior to twentieth-century expansion may seem very backward: small institutions, virtually unchanged since their founding in the Middle Ages, and offering a few courses of traditional learning through family-like relations between 10 or 20 teachers and a few hundred students at best. Some well-conserved ancient university towns (Oxford or Cambridge, Salamanca or Bologna, Prague or Cracow, as well as Harvard or Williamsburg in the New World) and the reminiscence of the classical mid-nineteenth-century university determine to a great extent the late twentieth-century image of past university life. They suggest immutability, emphasize the complacency of the old universities, and show their ambiguous relationship with science.
The modern impression of universities prior to the twentieth century is of institutions predominantly devoted to theology, the humanities, law, and other social sciences. Despite university professors like Galilei at Padua, Bernoulli at Basel, or Newton at Cambridge, many important scientists accomplished their major works independent of the university: Copernicus and Kepler, Descartes and Huygens, as well as Tycho Brahe, who rejected the rectorship of Copenhagen University since professors were in his opinion only "shadow chasers engaged in ideal formalities and empty processions of words." The nineteenth-century university had reconciled itself with science and made fundamental research one of its chief aims, but the Humboldtian conception of the university as an autonomous community of masters and students in pursuit of learning for its own sake emphasizes the worldly character of the old university, as opposed to the busy and businesslike institutions of the late twentieth century.

There may be some truth in every aspect of this picture, but the impression as a whole is utterly false. It privileges the institutional view and considers scientific evolution in idealistic terms. Many of our contemporaries still imagine the early modern scientist as a lonely genius, finding inspiration from solitary thought, or even, as in the Newton myth, by pure accident. In actual fact, all scholars, whether or not appointed at a university, developed their theories within a scientific community, assessed by at least three interactive poles: the institutions for higher education; the informal Respublica Literaria or Republic of the Letters, with its learned journals and correspondence; and the formal learned academies, of which the Royal Society in London (1662), the Académie Royale des Sciences in Paris (1666), and the Akademie der Wissenschaften in Berlin (1700) are the most outstanding examples.

Above all, such an antiquated vision neglects the university's social and cultural functions in societies that have been subject to vital changes throughout the four centuries concerned: Reformation and Counter-Reformation; the rise of the territorial states and of bureaucratic centralism; absolutism and despotism; conservatism and liberalism; Enlightenment and Revolution. Industrialization and secularization have in turn benefited from academic learning and university-trained professionals while at the same time changing the university's tasks, the perception of its functions, and its self-consciousness. The only recurrent element of continuity was the university's sense of autonomy as a prerequisite for true science, that is, independent learning, teaching, and training. In fact, except for its name and basic educational function, the late nineteenth-century university has very little in common with its medieval predecessor. The foundations of twentieth-century developments in higher education, including the mass university, were laid in the preceding centuries.

It is impossible to account for the university's change and resistance to change in the late twentieth century, without understanding the principal trends of what went before.

2. Definitions

The most important feature of the period 1500 to 1900 is the increasing diversification in higher education and therefore the definition of a university (see Jarausch 1983). This article will be mainly concerned with university models and institutional changes. Evolutions will be outlined inasmuch as they concern Europe or at least to the extent that they were started there but the diverging American evolution of the later nineteenth century remains outside its scope. First of all the minimal requirements of a university in this period need to be examined. Universities may be defined as those institutions of higher education which regarded themselves as part of the traditional university system and had been recognized or legitimized as such by the supreme authority in the region through its granting of the right to award degrees.

The first part of this definition involves the self-consciousness of the institutions. Being in charge of education at the highest level, the university had to manifest the ambition to fulfill this mission properly. The second element is graduation. In the period under review, the essential task of the university might not always have been research, and not even teaching, but it was in any case the certification of knowledge through the power to award degrees, that is, the symbolic recognition that individual intellectual achievement was in accordance with the common standards in operation at that particular time and place. This very monopoly made universities scarce. By 1800 there were approximately 190 full universities in Europe and about 30 in the Americas. In fact, some universities were merely examining bodies. This was the case with the university structure of Oxford (as opposed to the collegiate, tutorial organization), with London University after the 1858 charter, or Dublin since 1879 as well as the faculty schools of nineteenth-century France. Prior to the revolutionary period, single universities all over Europe had fulfilled that purely examining or certifying function for national and foreign students: Cracow for Poland; Orléans and Bourges with their "German" nations for all of Northern Europe; Caen and Reims; Avignon and Orange; Bologna and Padua; Harderwijk and Duisburg; and Gandia in the kingdom of Valencia. Thus, certification and teaching or training appear as separate functions of the university. While particular teaching tasks could be and indeed were taken over by nonuniversity institutions, the university always conserved the exclusive right to graduate, even though as early as the sixteenth and seventeenth centuries complementary professional qualifications could be admis-
sion requirements by prospective employers such as the church or state or professional corporations of physicians or lawyers.

Moreover, the definition assumes acknowledgment of the university's mission by the de facto regional authority. For a long time, the pope and the emperor considered themselves the only founding authorities of the universities, regardless of actual corporate, royal, or municipal initiative. In the early modern period, the regale (sovereign right) of university founding became not only a de facto prerogative of each sovereign authority, but was even used by rebels or dissenters against the explicit design of their legal ruler. Thus, Leiden University was founded in 1575 with an apocryphal charter of its Spanish sovereign Philip II. In fact, virtually all the Calvinist institutions for higher learning were somewhat hindered by a lack of formal recognition, especially in Switzerland, where Calvin's Geneva academy was unable to obtain formal graduation rights and Germany (Herborn, Bremen, etc.), but even in France, where a dozen university-level Huguenot teaching academies existed before the Revo-
cation decree of 1685.

The gradual secularization of the public administrations during the eighteenth century, the educational policy of enlightened despotism, the rationalization of the national university networks after the revolution of 1789, and their centralization under Napoleonic rule changed the terms of state recognition and the relations between the university and the state. Whereas state control of the public sector increased and public financing in many countries superseded private funding, liberalism permitted in several European countries the creation of municipal or private, sometimes state-accredited universities, especially in the second half of the nineteenth century: in Belgium the Free, that is, the free-thinking, University of Brussels and the restored Catholic University of Louvain (1834); in the United Kingdom, the civic universities of the new industrial towns; in Ireland, John Henry Newman's Catholic university at Dublin (1854); in France, the five Catholic universities after the 1875 Act; and in the Netherlands, a Free, that is neo-Calvinist, university at Amsterdam (1880).

3. Models

From the angle of the universities' statutory organization, the traditional distinction is, at the beginning of the sixteenth century, between the Bolognese model in which the students formed the university and recruited the teachers, and the Parisian model, in which the university was made up of masters and students but dominated by the masters, the students being only members (suppositi) of the university. A Bolognese model university was a mere agglomeration of coordinate students' associations, regional "nations," as at Bologna, or faculties as at Montpellier. Students' autonomy had been favored by the fact that many medieval students, even in medicine and law, were clerics. However, during the early modern period the Church lost much of its hold on the university, whereas state influence grew. In the new post-Reformation universities, attempts at student control were vigorously combatted and students' associations were marginalized or at any rate kept far from real power. Power was exercised by the masters sitting as a senate and presided over by the rector or a dean, or by the ruler's representatives. The new universities were founded and controlled by public authorities, who acted through a new variety of the Parisian model, that of the professorial institution.

As a matter of fact, three varieties of the Parisian model may be distinguished. The oldest is the collegiate or tutorial university of the Oxford type, in which teaching is decentralized, and numerous communities comprising masters and students care for both education and living. Despite the existence of faculties, this kind of university is more conducive to generalist knowledge. The second, opposing variety is the professorial university which provides centralized teaching and tends to train specialists according to the grouping of disciplines in faculties. During three centuries, first Leiden (founded 1575), then Göttingen (1733), were its most outstanding examples. The third and intermediate model combines the advantages of central organization and the collegiate system, adding to them the benefit of small size, which made for more effective control of students and teaching at little cost. This is the college university, centralized in a single block of buildings of semimonastic architecture. These compact little universities answered to the new principle of regionalism and to the numerical and geographical contraction of student enrollments from the seventeenth to the early nineteenth centuries. Their strong internal hierarchy made them the favorite among those specialized teaching corporations such as the religious orders of the Jesuits, Blackfriars, Benedictines, and so on. Besides, it was the ideal university model for rulers who wanted to control higher education, either for political or religious reasons. In various forms, as a college, a seminary, or a teaching academy, we find such colleges all over Europe, but particularly on its peripheral regions, in Spain, Scotland, Germany, Italy, and on the eastern border regions (e.g., at Cluj, Tarnawa, Zagreb, or Zamosć).

In spite of its small size, the college university inaugurates the modern university since it forms a single unit of management and adopts the framework of a professional training college but nevertheless emphasizes the unity of science. It may be recognized in the centralized, streamlined teaching units fostered by the university reforms of the Enlightenment.
in Italy (beginning with that of Victor Amadeus II in Piedmont in 1729), Spain (by the Count of Aranda from 1769), Poland (by the National Educational Committee in 1773), or Austria (by Van Swieten, between 1774–77), but also in eighteenth-century American colleges and in the "red-brick" universities of nineteenth-century Britain. Although eighteenth- and nineteenth-century debates insisted upon the need for regrouping universities into larger units as a warrant for quality and for the unavoidable differentiation of teaching, the early modern model of a unified and centralized university with a clear hierarchical structure remained the ideal, indeed the most manageable solution for all the modern governments. This is certainly one of the main reasons for the success of the classical professorial university of nineteenth-century Germany, as opposed to the scattered structure of the "generalist" Oxbridge universities and the "specialist" faculties of France.

4. Institutional Changes

This statutory evolution is accompanied by three important interconnected changes at the general institutional level: the permanent separation of the new secondary and the old higher education institutions; the growing number of alternatives to university teaching; and the rise of corporate scientific research conducted outside the universities. The creation of an intermediate sector of schooling between the elementary which taught the three Rs: reading, writing, and arithmetic, and the university level goes back to the end of the Middle Ages. Ever since the later Middle Ages there had been grammar schools all over Europe where elements of the trivium (grammar, dialectic, and rhetoric) were taught to children between 8 and 18. But many universities themselves, especially north of the Alps, consisted mainly of huge faculties of arts offering undergraduate courses of a grammar-school level. Students in the higher faculties (i.e., the quadriivial section of the arts faculty where music, arithmetic, geometry, and astronomy were taught—the embryo of what afterwards would be called the exact sciences—and the faculties of medicine, canon and civil law, and theology) accounted for only a minority of the whole student body, except perhaps in Italy, Southern France, Spain, and Portugal where law prevailed.

In the later Middle Ages, important didactic problems were created by the multiplication of the demand for trivial education which resulted in mass attendance of grammar schools with several hundreds of pupils in a single classroom, in particular in the highly urbanized regions of Europe, the Netherlands, Italy, parts of France, and Germany. The solution to these problems, applied for the first time by headmaster Joan Cele in early fifteenth-century Zwolle, involved an institutional change: the grammar school was divided into eight classes with a didactic progression. Henceforth, teaching matters were not offered to all pupils at the same time, regardless of their level of achievement, but were related to the intellectual advancement of the students and corresponded roughly to age groups. In the highest classes of these reformed grammar schools a university-level course of philosophy was taught that achieved a high enough standard for the transition to the universities. Headmaster Jean Standonck introduced this system, fostered by the humanists, in the Collège Montaigu at Paris—notorious for Erasmus's criticism of its abusive austerity.

During the sixteenth and seventeenth centuries it spread from Paris all over Europe under the name of modus parisiiensis. It may be recognized both in the ratio studiorum of the Jesuit colleges (1586), strongly influenced by the Parisian education of the order's founding fathers, and in the educational models of the Protestant university reformers. It was, for example, introduced by Johann Sturm at the new Strasbourg gymnasiurn, a combined grammar school and university college (1538), and by Claude Baduel at Nîmes (1540). Their common inspirator, Philip Melanchthon, the Praeceptor Germaniae, made the gymnasiurn model and the system of university chairs the characteristic features of his university reform, which would affect virtually all the Lutheran institutions for higher education in the German Empire, Scandinavia, and the Baltic. In this conception, the grammar school with its ascending class structure was completed by a semiuniversity superstructure, where elements of philosophy, and sometimes matters from the higher faculties were taught from professorial chairs, that is, not in a curricular progression, but by coordinated teaching. The chairs system, less rigid than the classic faculty structure, permitted quick curricular innovation. Moreover, as professors were responsible for single disciplines, teaching and scholarship were better connected. It is this chairs system that permitted the Dutch and German universities and gymnasia academica (i.e., the semiuniversity superstructures of the grammar schools) to play such a decisive role in the development of science and its reception by university teaching throughout the early modern period. Once introduced in Scotland, the chairs system could make the Scottish universities the advance guard of the European Enlightenment, especially in medicine and the social sciences; and from Scotland it conquered North America.

The new grammar schools were either incorporated into the university, as was the case with the Jesuit and some Protestant institutions, or, as happened in particular outside the university towns, they remained autonomous. In the latter case they could answer to a very large extent the demand for undergraduate education raised by the growing municipal and provincial bureaucracies. As a result, the universities lost an important part of their traditional student clientele: at the arts faculty of Paris
university, for instance, the number of students enrolled decreased from about 2,200 to less than 300 between 1470 and 1620. At the same time, however, the university could reinforce its scholarly image. Scholarship and professionalism replaced undergraduate mass education of a generalist type. Henceforth, the new universities in the northern half of Europe and also their Spanish counterparts, as well as the colleges and universities in the two Americas, were essentially institutions for professional training of priests or ministers, judges, lawyers, and physicians. With teaching standardized and student numbers reduced, professors could find enough time to excel in individual learning. It is not surprising that appointment procedures regarded increasingly the scholarly, not the didactic qualifications of the candidates.

The rise of university scholarship—and indeed of the very notions of scholarship and science in the modern sense—almost independently of teaching, but in close connection with learned societies and the international scholarly networks, is one of the major developments of the early modern period. It accounts for one of the most striking paradoxes of the pre-industrial universities, where the evolution of student enrollments could be quite different from that of learning, and tiny institutions could be centers of excellence while mass universities stagnated. Besides, students and teachers were not forcibly attracted by the same fields of knowledge. From one century to another, major paradigmatic shifts can be detected in the students’ choices of generalist disciplines, which would permit them to master the relations between knowledge and society at large. Whereas the arts curriculum was the fifteenth-century generalist’s choice, theology predominated in the sixteenth, and law in the seventeenth; for an eighteenth-century student with intellectual ambitions medicine was compulsory, followed by the natural sciences, with a return of either the humanities or law in the nineteenth century.

5. Alternatives

So the first change appears closely connected to the other ones. The distinction between secondary and higher education introduced an institutional differentiation. It reduced the universalist scope of the old universities, since portions of teaching and learning could be attached to other, competing institutions or even become autonomous. Undergraduate teaching in philosophy and theology was provided by the numerous gymnasia academica or illustrious schools of Germany and the Netherlands, where law and medicine were sometimes added, by the schools of the Jesuits and other teaching orders in Southern and Central Europe (the collèges de plein exercice, as they were called in France, and the theological seminaries) and by the English dissenting academies for the training of non-Anglican ministers and intellectuals. In the latter case, religious dissent motivated the search for an alternative to university teaching. But there were other reasons. Considerations of social status, for instance, motivated the creation of exclusive training schools for noblemen, the future leaders of the European nations: in Germany (Ritterakademien); in France (académies d’équitation and écoles militaires); and in Italy (seminaria nobilium). In Spain the six colegios mayores of Salamanca, Valladolid and Alcalá, originally colleges for poor students, became the refuge of the educated nobility and were transformed into training colleges for the elite of civil servants (the letrados).

However, the university’s creed could itself play a role in its shortcomings. Roman law was taught at Oxford and Cambridge, but nonuniversity teaching institutions for the training of lawyers and other professionals in common law were created at the very heart of judicial practice: the Inns of Court at London and Dublin. Thus professional training could remain in the hands of the professionals themselves. The same applied to medical training. In many parts of Europe in the sixteenth and seventeenth centuries local corporations of university-trained physicians obtained the exclusive right to examine candidates for admission to medical practice and sometimes even to grant medical degrees—as in Venice, where the university was merely a medical examining body. After examination, candidates could be obliged to take some graduate training and a college of physicians could itself be responsible for professional education, in particular when it was identical to the local faculty of medicine. In that case, all the admitted physicians, called doctor regens, were professors and had to teach in turns. Such forms of professional control of both training and admission prelude the transformation of the old professions during the nineteenth and twentieth centuries. The process of professionalization took place mainly outside the university: the growth of the consumer market and changes in professional status and hierarchy were its decisive factors.

The university’s conception of science was responsible for still more deficiencies. During the early modern period, engineering was rarely regarded as a fashionable science by the universities. Only theoretical aspects such as mathematics, as included in the old quadrivium, were taught at university level. The Aristotelian distinction between intellectual and manual skills is to blame for the decision not to include technology, applied science, or manual training—such as that of surgeons, architects, farmers, or bookkeepers—in the university curriculum. After some teaching of technology in the sixteenth and seventeenth centuries, in particular at some Dutch (Leiden) and Italian universities, a binary system developed all over Europe. Technology and training for manual skills were confined to specialized schools.

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at a nonuniversity level: schools for surgery (Paris 1698, Berlin 1724, etc.); artillery (Douai 1679, Dresden 1716, Woolwich 1741, Mannheim 1754, Porto 1779); veterinary medicine (Lyons 1762, Vienna 1767, Turin 1769, Dresden 1774); military engineering (Moscow 1712, Vienna 1717, Mezières 1749); mining (Selmecbanya 1735/62, Königsberg 1757, Freiburg 1765, St. Petersburg 1773, Clausthal 1775, Paris 1783); civil engineering (Paris 1775), and so on. However, when in the eighteenth century under the combined influence of the scientific revolution, public demand, and the revaluation of the manual skills by the Enlightenment, the ambitions of engineers, surgeons, and administrators grew, a process of institutional upgrading was started, that according to the specific situation of each country resulted sooner or later in the incorporation of engineering into the university system. Nevertheless, the nonuniversity share of higher education was by 1870 still some 30 percent in England, 23 percent in Germany, and 48 percent in the United States (Jarausch 1983 p. 20).

The French case shows how universities could fail victim to their own policy. The Paris corporation of surgeons achieved faculty status for its school in 1743, but candidates were at the same time obliged to take the master’s degree. When in 1793 the French Revolution closed down the whole ossified university system, only specialized professional schools were maintained: the School for Health was in fact the continuation of the Paris surgical faculty and not that of medicine (Gelfand 1980). From that very moment, the French university system was engaged on a double track: before the re-establishment of the French universities by Louis Liard in 1896, and with the exception of medicine, the faculties remained examining bodies, providing some public lectures, but were not meant to organize formal curricula. Full professional training, however, was provided by the university-level (but formally nonuniversity) grandes écoles, the most famous of which were the public École Polytechnique (1795) and the privately founded École Centrale des Arts et Manufactures (1829), both at Paris. Moreover, matriculation at the faculties was free but did not lead in itself to any tangible function, whereas admission to the grandes écoles depended on the result of a competitive examination and normally guaranteed a job at the end. In order to fill the gap in higher technical education, the polytechnic solution was adopted in all European countries (Prague 1806, Vienna 1815, Karlsruhe 1825, Warsaw 1826, Copenhagen 1829, Porto 1837, Zürich 1855, Budapest 1856, Delft 1864, etc.), either by copying the Parisian curriculum with its strong theoretical background, or by emphasizing the applied sciences.

Commercial teaching had to wait still longer for its upgrading to university level, not so much because the university itself was unwilling, but because a wide gap had grown in the past between the academic and the nonacademic elite, the university-trained and the propertied middle classes—the Bildungsbürgerum, and the Besitzbürgerum. The very first commercial schools of a higher level were founded by the merchants themselves in commercial cities like Hamburg (1768) and Barcelona (1769). It is only during the nineteenth century, and in most countries not before its second half, that commercial teaching including economics expanded and was organized at a superior level. Even then, it often remained in private hands and without academic ambitions until, at the very end of the nineteenth century, state control, budgetary reasons and the desire to achieve university status brought a change of mentality.

6. Learning, Training, and Qualification

Thus, new narrowly defined institutions with a limited educational scope were substituted for the rather amorphous medieval universities, many of which had embraced all kinds of teaching and learning, and people of all ages and conditions. Early modern universities of the “higher,” reformed type recruited mainly among the 16 to 25 age group and in the higher social classes or at least among the intellectual professions. In relation to the population, student numbers were small. In none of the European countries did more than 2 percent (and in exceptional cases up to 3 percent) of the relevant male age cohort attend the universities during the sixteenth- and seventeenth-century expansion. This was barely 1 percent at the end of the eighteenth and throughout the nineteenth centuries. Increased enrollments were hardly more than a consequence of population growth in the nineteenth century, until in the last quarter the expansion of higher education made a fresh, yet timid start, and conditions of enrollment changed since women were admitted.

From the beginning of the sixteenth century, and with the possible exception of the southern limits of Christianity, students were not clerics any more, but laymen, and they intended to remain so. Therefore, the scope of the early modern universities was not so much to promote the true knowledge of Christian faith, as to educate people to particular tasks in society: the service of the Church; the administration of the state; the defense of law and order; and the preservation of health. Quite significantly, the new Calvinist universities called themselves Seminarium Ecclesiae ae Reipublicae, that is, training-schools for the Church and the state. This is not to say that they became mere professional schools. On the contrary, after an initial move of Church and state towards the universities, the tradition of critical autonomy of the latter, and their preference for learning prior to training made the ecclesiastical and the public authorities distrustful. Before long, professional examinations had to compete with university degrees.
In fact, two stages can be identified. During the sixteenth century, both the state and the church compelled their highest officials to undergo a university education. In 1495 and 1555 the German Emperor urged the councillors of the Imperial Chamber of Justice to take a degree in law. He was followed by the King of France who followed suit for the judicial officers and judges of the realm in 1498 and 1546, while the Council of Trent required all the prelates of the Roman Catholic Church to hold a degree in theology or canon law.

In the second phase, however, university training alone appeared inadequate for the purposes of either the Church or the state. In a 1563 decree the same Council of Trent pressed for the establishment of clerical seminaries in order to provide candidates to the priesthood with an appropriate training, either as an alternative or as a complement to university education. The Lutheran and Calvinist Churches admitted ministers only after a thorough examination by representatives of the Church, regardless of the quality of the university education and the civil effect of its degrees. Yet in England, Church control was soon delegated again to the universities, thanks to the symbiosis between Church, state, and the universities, reinforced by the expulsion of the dissenters from the latter. Dissenters then founded their own training colleges or went abroad, just as the Irish and British Catholics, the Protestants from France, Poland and Transylvania, or the converted Jews from the Iberian Peninsula did in large numbers.

State authorities followed the Churches’ example. One after another, the rulers of early modern Europe tried to gain control over professional qualifications, the civic spirit, and the religious or political orthodoxy of their servants, by limiting access to higher public functions to those who had accomplished their curriculum or taken their degrees within the country itself, while the eighteenth-century reforms often required students to attend state-controlled institutions. This occurred in Poland in 1534; followed by Portugal in 1538; Spain in 1559; Brandenburg in 1564; the Southern Netherlands in 1570; France in 1603; Sweden in 1655; Prussia in 1723; Piedmont in 1729; Austria in 1774; and so on, until finally Russia as late as 1798. Before long, however, university training showed its shortcomings in the administration of modern nations and modern justice. University education, learning and training, and professional practice had a strained relationship. Having become distrustful, the public authorities defined precise prerequisites for the admission of civil servants and developed complementary training. The most famous, but not altogether typical case is that of Prussia, where in 1693 all judicial officers qualifying for admission, and afterwards members of other learned professions, were bound to a preliminary examination, soon supplemented by a compulsory period of practical training. Special university courses were developed for the civil service (the Camera-wissenschaften or administrative sciences). Finally, matriculation at the universities was restricted from 1708 and the school-leaving examination of the gymnasion, the Abitur, was made a compulsory test for university matriculation as early as 1788.

Such regulations presume a major change in the conception of public service, and in the function of university education: henceforth neither social origin (ascription) nor protection should qualify for admission to public functions, but individual achievement, intelligence, and training. Social reproduction according to birth is replaced by social mobility according to merit. Gradually, the university’s sociocultural function is transformed, along with its structure: from a limited corporation, the main function of which was the preservation of knowledge and its transfer from one generation to another within the same social class, it should now develop—although other factors prevent it from effectively doing so until far into the nineteenth century—into an open body of learning that aims at the promotion of individual achievement regardless of social ascription. Humboldt’s idea of Bildung, realized in the new university at Berlin (1810), was the idealists’ expression of this meritocratic concept. It legitimized the professional ideology of poor students, obliged to satisfy themselves with philology and the transfer of Kultur instead of achieving a lucrative medical or legal career (La Vopa 1988). However, Humboldt rejected university examination for professional practice. Therefore, professional training remained a separate track, subject to corporate control by either the state or the new professions, until at the very end of the period and during the twentieth century, a new symbiosis emerges between university learning, state control, and professional organization.

7. Individual Achievement and the Academic Labor Market

Thus, the third stage of this evolution brings us into the nineteenth century. It involves two new notions: that of individual merit and that of the scarcity of public spending, which demands a limitation of the number of public functions. The two notions combined generate the idea of a concours—realized for the first time in 1766 through the concours d’agrégation of the Paris faculty of arts for the recruitment of 60 grammar school teachers. The concours is a competitive examination which tries to use individual excellence as a selection criterion on a tight labor market. It links professional qualification, based on individual performance, to admission rules determined by a previously fixed number of functions. In countries where as early as the eighteenth century, state intervention was strong (e.g., the Italian states,
the Iberian countries, and in particular, France), the concours formula could be extensively used as an instrument for the regulation of the academic labor market. During the French Revolution, for example, competitive selection was introduced at the new grandes écoles (professional schools), both at the beginning of the course and at its end, as a selection criterion for restricted admission to specific forms of higher education.

As a matter of fact, complaints about an excess of educated men and appeals for a better equation between university enrollments and the number of functions available, could be heard from public servants, cameralists, and government officials since the seventeenth century. The obvious fear of an undermining of public authority by unemployed, alienated intellectuals with a sharp tongue and a trained pen (the "academic proletariat," as they were called in the nineteenth century) was not quite unreal, as the English, French, and 1848 Revolutions have shown (Curtis 1962). However, the restricted admission policy of enlightened or conservative rulers was rather dictated by the desire to maintain social hierarchy and to protect its top level against social climbers than by labor market analyses.

It has been argued that university enrollments normally develop along cycles, comparable to the famous business cycles. Cyclical changes in enrollments would correspond to a succession of expansion and contraction phases of the academic labor market (Titze 1990). This may certainly be true for the nineteenth century when university education was more and more transformed from learning into training, and the university function of reproducing the intellectual classes was substituted by that of producing individual professionals. Yet one should be very cautious when applying market considerations to preindustrial societies: social status and immaterial profits were often as important as job opportunities, and few university graduates were confined to specific careers or professional profiles. The balance between supply and demand of graduates depended much more on the society's self-image as a stable, hierarchical community with a naturally restricted, unproductive elite. An excessive inflow of intellectuals from the lower classes was considered a menace for the social equilibrium rather than a labor market problem.

8. Conclusion

During the period 1500 to 1900, the university system underwent some major changes both at the institutional level and as far as its relation to the society at large is concerned. In the age of confessionalism (sixteenth and seventeenth centuries) the expanding universities were so profoundly influenced by the ideals of humanist reform (sapiens et eloquens pietas), the growing demands of the Churches, and the rise of bureaucracy that Lawrence Stone could speak of an "educational revolution" (Stone 1964). From the second half of the seventeenth century things changed. In conjunction with the needs of the professions, the state, and the scientific development itself, a more rationalist, secular view of science emerged that finally changed the very conception of scholarship. In some countries, such as Germany, the Netherlands, and Scotland, the universities were able to incorporate the new science into the universities; in others, France and England, science remained on the parallel track of specialized schools and learned academies. Enrollments entered a contraction phase and everywhere teaching was increasingly taken over by rival institutions. From the second half of the eighteenth century, specialized technical schools for professional training rose in large numbers as an alternative to the university. The reforms of the Enlightenment era achieved the constitution of this binary system.

However, the revolutionary crisis beginning in the 1780s and culminating in 1848 revived the university's self-consciousness. For the first time, teachers and students were actively involved in politics and discovered their social role as intellectuals. Wilhelm von Humboldt's idea of the university as the institutional unity of all the sciences, as opposed to the specialized college principle, restored to the university its scholarly identity that had faded away during the early modern era. Since then, teaching and research are not goals in themselves, but instruments to reach a higher target: science. Thanks to rapid methodological advances in the humanities and the natural sciences, to the changing social function of study and research in the industrial era, and to the process of professionalization, the nineteenth-century universities again became outstanding centers of science with an international audience. The whole system of higher education entered a phase of expansion. Marked by a double differentiation, both institutional and disciplinary, it achieved the classical form of the university in the modern constitutional state. At the close of the nineteenth century, the university was about to become itself a major industry in Western society.

See also: Universities: Since 1900; Universities: 1100–1500

Bibliography


Universities: Since 1900

1. Universities before the First World War

1.1 The Situation in 1900

The main universities of the world at the beginning of the twentieth century bore the imprint of the idea of the university as it had been promulgated by German thinkers about a century earlier and as it had been embodied in German universities of the nineteenth century. The German universities were at the height of their greatness in their intellectual achievement and in their reputation in Germany and the world. Oxford and Cambridge were by then fully awakened from the torpor of several centuries. All over the continent of Europe, universities were in bloom. France finally reached the point where it had real universities as legally recognized corporate academic entities, which replaced local unconnected...