Universities: their histories and responsibilities

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Higher education developed in rather different ways in the West and in China and those divergent traditions can throw light on the different roles and functions that Universities and Academies can or should serve. The aim of my lecture is first to sketch out some of the historical data and then to see what we can learn, from them, that is relevant to the modern world, to the problems of Universities today and to the question of how they should develop and what needs to be done.

Some of the lessons take the form of warnings - of what happens when Universities are insufficiently self-critical, or when they do not stand up for themselves and resist pressures from outside, including from government. But at least some of the morals are positive ones, from which we can draw strength. One of the Chinese lessons is to value the past, though that should not be to the neglect of the present and the future. One of the Greek ones is to value education in and for itself - as opposed to valuing it for the qualifications for a career that it may provide. Meanwhile, thirdly, we may reflect that whatever may have been the case in the past, we are now all in it together. No country, however powerful, exists in isolation, as September 11, 2001 brought home to the USA in the most tragic way. In the current situation of increasing globalisation, the Universities provide one of the very best opportunities for international cooperation.

In the West I would endorse the conventional view (cf Rashdall 1936) that traces the origins of our Universities to the great late medieval schools of Paris, Bologna, Oxford and so on. In some cases they go back to the eleventh century CE. What was distinctive about those Universities was that they awarded degrees. Bachelors of Arts and Masters of Arts thereby acquired legally recognised qualifications. More importantly, the higher degrees awarded in law, medicine, theology, were key qualifications for those aspiring to top careers in those fields - which thereby became, for the first time, fully professional in the modern sense.

One function of the Medieval Universities was, then, to secure and control the future membership of those professions. But another was to provide a basic education in the so-called liberal arts, the trivium (grammar, rhetoric, logic) and the quadrivium (arithmetic, geometry,
astronomy, music). Scholars might be no more than twelve or thirteen years old when they entered, and if not themselves the sons of the wealthy, they needed to have rich patrons. The founding of Colleges where students lived and received additional tuition was a secondary and later - though not much later - development. Some of the Parisian Colleges go back to the twelfth century (Schwinges 1992, p 214).

Those Medieval Universities owed a fair amount both to earlier, less formally organised, patterns of education, and to much earlier schools, especially the great philosophical schools at Athens. The best known are Plato's Academy, Aristotle's Lyceum, the Stoa founded by Zeno of Citium, and Epicurus' Garden, all four founded in the fourth or early third centuries BCE, although there were many other minor schools as well. If we are to understand the origins of higher education in the West, we have to go back to those Greek institutions, and we must be aware that they were, in certain respects, very different from Medieval Universities, let alone from the Universities we are familiar with today.

The first fundamental point is that those ancient Western philosophical schools awarded no degrees. Those who attended them did so not in order, eventually, to obtain some legally recognised qualification that would give access to a profession. They did so because they prized what they were taught. I do not want to deny that there were elements of careerism, and even of snobbery, in this. In Cicero's day in the first century BCE, it was the done thing for young Romans of good family to go to Athens for their education and he duly did. Moreover you could, in the process, learn not just about philosophy, but also rhetoric, and that could be very useful in a career in politics and in law. So it was not all learning for learning's sake, then - even though it was very largely that, certainly to a degree that would have surprised medieval students, let alone modern ones.

But there were no degrees, there were no examinations, and no set curricula either. There were no formal ways, in other words, in which young students could impress their teachers or their own contemporaries, other than by their understanding of what they were taught and by their participation in the joint exploration of the subjects under investigation. That understanding and participation were usually mediated through the spoken word. Ancient Greek students did not write essays to be corrected by their teachers: and there was no equivalent, in Greco-Roman antiquity, to the written examinations that came to be fundamental to the recruitment to official positions in ancient China. With no set curricula, ancient Greek students stayed as long as they liked - that is, as long as they continued to prize the experience. Thus Aristotle who arrived in Plato's Academy as a seventeen-year-old, stayed for twenty years.

To an extent that would have amazed the Chinese, Greek philosophical schools were
locked in debate with one another, and indeed, with the exception of the Epicureans, there was plenty of debate within the schools, as rival teachers competed in their interpretation of what the school should stand for - and what the founder himself did. Scholars sometimes talk of heretical members of such a school as the Stoics, but it is important to emphasise that, in a pagan context, what heresy meant was very different from what it came to mean once Christian faiths were in competition with one another. *Hairesis* originally meant 'sect', or more literally still 'choice' (von Staden 1982). There was no enforcement of an orthodox interpretation of Platonism, Aristotelianism, Stoicism and the rest. There was no orthodoxy in the first place.

Those ancient Western institutions were, then, very different from their later counterparts in several fundamental ways. They were private, not State, foundations, receiving little or no state support, not at least until, under the Roman empire, the headships of the main philosophical schools at Athens came to be endowed(1).

This comparative independence from the state carried both advantages and disadvantages. Among the former, one stands out, namely the freedom to decide what to investigate and how to investigate it. True, some of the fruits of that freedom of thought may strike us as fanciful or extravagant. Some Greek philosophers were prepared to deny that change occurs. Others developed positions of extreme scepticism, not just that nothing can be known, but that there are no reliable grounds even for true belief. At the same time they could and did challenge pagan religious beliefs - for instance in gods in human form. They questioned the rights and wrongs of different political constitutions. Not many social and moral conventions or customs escaped their scrutiny, and all this radical questioning only occasionally got them into trouble, as it did Socrates - and even then there was no Church to prosecute him: it was left to private individuals to do so, in part for motivations of personal malice of course.

Some of the theoretical extravagance we notice may be associated with the competitiveness that existed between individuals and groups. To make a name, as a philosopher, or even as a doctor, you had to draw attention to yourself, often developing outlandish hypotheses or paradoxical arguments. At the same time, your contemporaries were your judge. It was their impression of you that counted. As a teacher, the education you offered had to justify itself in its own terms, as worthwhile for its own sake. If it did not do so, your pupils would vote with their feet and disappear. They were not even kept in the classroom on the basis of the argument that they would get no degree if they left. So everything depended on acceptance of learning and research as valuable in themselves. We even find philosophers, perhaps not surprisingly, claiming that they - learning and research, especially in philosophy - were essential to happiness, that you could not be fulfilled if you neglected philosophy. That
claim aside, the fundamental point remains: the education on offer had to be seen, by teachers and pupils alike, to be valuable in itself, for if not, there was no incentive to engage in it at all.

It is time now to introduce some of the main features of Chinese higher education. First a note of caution is needed. In many of the standard textbooks you will read about the so-called Ji Xia 'Academy', set up in the third century BCE by the Dukes of Qi. But the term Academy is a misnomer here (2). The model we should use to understand this institution is rather that of the other courts of the Warring States period, where ambitious and powerful rulers and ministers collected 'guests', ke, around them, often in large numbers. They were often a very mixed bag, including entertainers and even hired assassins. The Ji Xia group had a fair number of intellectuals (such as the philosopher Xunzi) but they were there primarily to redound to the glory of the Dukes of Qi and to advise them - not to give lectures. The analogy would be not to Plato's Academy but to his ill-fated visit to the court of Dionysius II, tyrant of Sicily, in the hope of persuading him to become a philosopher-king.

Two other Chinese institutions are, however, of cardinal importance. What operates much more like Greek schools, even if certainly not in all, were the Chinese lineages, jia - that word can simply mean 'family'. One of their main functions was to preserve and hand on the teaching of a master. But we should note, first, that this is text-based learning: the pupils memorised the text and were only expected to start interpreting it once they had it by heart. Moreover secondly, the premium was on transmission and preservation, not on criticism. True, there are divergent interpretations, both of the Mohist writings and of the classical Confucian ones, within their respective traditions, but those debates were not a fundamental part of the raison d'être of the schools themselves. However, those Chinese jia did share one important feature with Greek schools, namely the value attached to learning, indeed the value attached to the canons in and for themselves (3).

But the next institution I must mention is a very different phenomenon. This was the rise in China of institutions of higher education sponsored by the State and serving the purpose of training personnel to run the increasingly important state civil service. That was responsible for overseeing every aspect of government, even, one might say, of life itself. The most remarkable such institutions was the state Astronomical Bureau, charged with regulating the calendar and with observing and interpreting celestial phenomena of all kinds - an institution that lasted for some 2000 years all the way down to the last imperial dynasty, the Qing.

But from the outset there are five characteristics of the Chinese state institutions of learning that are crucial to our understanding of their role. (I) These were official, state, foundations - and in that very different from the Greek philosophical schools, though it is true not unlike the Alexandrian Museum. (II) The principal Chinese Academy taught a carefully
selected group of texts. From 136 BCE the five Classics became the core curriculum - in that respect the Academy took over from the earlier informal lineages or jia (4). (III) One of the main functions was, as noted, to produce suitably qualified graduates for civil service appointment: in that sense the Academy was oriented towards jobs and the expectation of the graduates was that they would take up official careers. (IV) Entry came to be controlled. Students certainly always had to meet certain informal requirements, to be of good character and family to start with, and from 600 CE they entered by way of what became an increasingly rigorous examination system. This allowed some upward social mobility. Sons of not so well-to-do families got into the Academies, often graduating from provincial ones to the imperial Academy in the capital. But the point should not be exaggerated. There was no way in which children from the very lowest echelons of society could compete for entry. Finally (V) graduates passed out on completion of further examinations. The examination system we are nowadays so used to was a Chinese invention.

The success of the principal imperial Academy can be judged from its exponential growth. There were, it is estimated, some 100 graduates in 124 BCE, but 250 years later our sources talk of some 30000. While the main focus of the instruction it offered was on the mastery of the Classics, technical questions on, for example, mathematical and astronomical topics also came to be included in the examinations set(5). Nevertheless there remained a considerable emphasis on producing 'gentlemen', junzi who knew how to behave, who were learned in the classics, and who appreciated the interdependence of those two attainments. We should not be too surprised at that. In European Universities too, those presented for degrees have to be vouched for as being of good character as well as for having passed their examinations.

So the history of higher education in China and the West underlines certain obvious but fundamental points. The involvement of state authorities is, I said, a mixed blessing. Without sustained state support, the Greek philosophical schools were extremely vulnerable, and many went through periods of decline before they all finally disappeared. Yet they had much more room for manoeuvre than their Chinese counterparts, and also than their medieval Western successors when they were controlled by guilds. The Chinese state institutions provided reliable support but this was at the price of setting the agenda. That certainly had adverse results, for instance on the work done within the Astronomical Bureau, where, despite the excellence of the record in observational astronomy, the theoretical agenda stagnated over long periods.

The problem that remains with us today is that if you enjoy state subsidies, you are likely to have to forfeit some of your freedom to determine your own curriculum and research programme, to innovate indeed to criticise the state authorities themselves. When it is they that
provide the finance, it takes an enlightened government to see that it is in their own long-term interests to foster critical institutions of higher education, both in the humanities and the sciences. Yet politicians who have themselves been the beneficiaries of higher education should see the point of supporting such institutions. If the Universities are to provide leadership in research in all departments of learning, then they must be critical of what passes as received wisdom across the board. It is true, however, that Universities both in China and the West have sometimes placed much more emphasis on conservation and preservation than on innovation.

In China, Confucianism and neo-confucianism had, at times, a stranglehold on education, though there were periods when it was rather Buddhism that was the dominant ideology. In the West too the problem has been a recurrent one, at least ever since the Christian Roman emperor Justinian banned the teaching of pagan philosophy in the sixth century. The rediscovery of Aristotle in the twelfth and thirteenth centuries was accompanied by a wave of innovation, but the reaction to that on the part of the Church was one of panic, with repeated proscriptions of Aristotle's ideas during the thirteenth century even though by the end of it his writings came to constitute a large part of the Arts curriculum at the University of Paris.

If that is testimony to the independence and open-mindedness of some Medieval Western Universities, those are not the only tendencies that began to be developed. Aristotle himself came to have, not just an honoured place, but an iron grip, on university curricula - so that by three or four centuries later, the chief efforts of the innovators had to be to criticise the very Aristotelianism that had been hailed as such a mine of wisdom in the thirteenth century.

We can find similar conservative tendencies at work in the control of curricula not just in the Arts course and philosophy, but even in medicine. Here too the rediscovery, in the West, of Hippocrates and Galen was eventually followed by their coming to attain something approaching unchallengeable status. Moreover even after Galen, especially, had been challenged and challenged successfully by the work of such anatomists as Vesalius in the sixteenth century, his treatises continued to be used as the main vehicle of instruction in the medical schools. In order to gain their degrees, Doctors of Medicine at the University of Oxford were required to expound passages from Galen throughout the seventeenth and eighteenth centuries. Even when the so-called New Statutes were introduced there in 1833 the degree of Bachelor of Medicine still entailed a compulsory examination in two out of four ancient authors (Hippocrates, Aretaeus, Galen and Celsus). Those in charge of the medical curricula were evidently insistent that their successors should be as learned in the ancient texts as they were themselves, even when the strictly scientific content of those writings had long ago been superseded at least in such areas as anatomy and physiology. That surely speaks
eloquently to the problem that teachers may be far keener to turn out pupils like themselves, than to encourage those pupils to branch out and innovate.

Much more could be said about the varying fortunes and influence of the European Universities from the late Middle Ages and on through the Renaissance and the so-called scientific revolution. But now let me jump right down to the present day. From many points of view, the post-scientific, post-industrial, revolution world we now all inhabit is totally different from anything our predecessors faced - wherever in the world they lived. The explosion of scientific knowledge and of technology have been amazing, the one fuelled by the ambition to apply it, in the other, to increasing material welfare. It has often been said that there are more scientists alive today than in the whole of past history put together. As for those employed in the technological industries directed to applying their work, they outnumber the scientists in turn by far, not that the distinction between pure research and applied is a hard and fast one.

The adaptation of ancient Universities to provide the higher education appropriate to this new world has been at best piecemeal and defensive. Some of the problems relate to the failures of the Universities themselves to reflect critically on their place in modern society, but some stem from pressures from forces in society itself. Let me say something about how I see each, concentrating on Western Universities in the first Instance (6). Internally many Universities have been slow to meet the particular challenges of the explosion of knowledge, both in the sciences and outside them. It is true that the courses on offer have increased very considerably. It used to be the case, in Cambridge for instance, until the mid nineteenth century, that the only subjects you could take the B.A. degree in were mathematics and classics - and indeed every graduate was expected to be competent in both (Searby 1997, p 205). Now the choice is very great, and that is all to the good. Yet I detect two negative factors. First the new courses tend overwhelmingly to be vocational. Secondly they tend to be increasingly specialised. No one can deny that the degree of complexity of many, even most, disciplines requires specialisation. Yet that can and often does mean the increasing isolation of faculties and departments from one another, and sometimes the loss of a vision of the broader perspective of what higher education is for.

Faculties run the risk of becoming increasingly closed in on themselves, inordinately conscious of the competition that other Faculties and Departments pose. Each one tends to demand higher and higher specialised skills and technical knowledge -of their pupils and of the staff that they recruit to teach them. That is fine in itself, except that there is usually no countervailing central force to resist internal departmental pressures. Such central authorities as these are more concerned with the University's image vis-a-vis government. I shall be
coming back to that.

But it is pretty clear that some drastic restructuring in the shape of University courses is needed, to cope on the one hand with that ever-increasing specialisation of each discipline, and on the other with the general decline in the preparation for University work that can be provided at secondary school level. Faced with a similar situation in their secondary education, the American Universities went over, some time ago, to a very broad and, by British standards, superficial first degree course with a wide choice of subjects combinable in a great variety of ways. But that often leads to a sense of fragmentation: it is left to the students themselves to provide the connecting links between what they are taught - for the University teachers themselves do not make them. Worse still, the Universities sometimes offer the worst of both worlds, failing to provide the connections that should form the core of universal education, and abandoning much of the rigour of those more specialised disciplines.

The solution I favour depends in part on the specialists themselves changing their attitudes and being more prepared to be more generalist in their own teaching at undergraduate level. This is unpopular because it comes to be labelled amateur - though to be a good generalist does not imply being superficial, rather being good at making connections. Unfortunately generalists do not get much credit for being that from appointments committees. Yet our predecessors were generalists and if there was simply less to know, across the board from the Arts to the Sciences, that is no excuse for us not to try. We are, most of us, trained to be so good at our own particular speciality that we lose sight of the overview. Yet that is essential to higher education as I envisage it. So my first plea is that the Universities should once again take more seriously the ideal that they are places for the exploration and handing-on of universal knowledge, not fragments of it in specialist disciplines.

As for the curriculum we should aim for to fulfil those goals, I would insist first that while vocational courses have their raisons d’être to meet certain needs or for certain purposes, just as language learning does, they can never make more than a marginal contribution to the broader picture to which students should have access. That should be constituted by the four core disciplines of mathematics, the sciences, the social sciences and the humanities, where, in the last case, a genuinely ecumenical study of literature, of world history and of the diversity of cultures should, in my view, take pride of place. Ideally students should be introduced to some aspect of work at the frontier of knowledge, and to how that frontier was arrived at, in each of those four fields. For that to be done properly, the teaching would need to be rather different from present-day introductory courses in this sense, that the emphasis would be not on how to lead the student to the next stage in specialisation, but rather on getting them to understand how each discipline is constituted, the relations between them and how each
contributes to universal knowledge.

But the Western Universities' own failures at self-examination pale in significance when compared with the problems posed by pressures from outside. This is, no doubt, an endemic problem, but that is no excuse for us to ignore it or to be craven in our response. The chief difficulty stems from the insistence, in certain quarters, on treating higher education as if it were a commodity, and the Universities themselves as education factories. But how can you tell what it is worth for a student to learn about biochemistry, say, or astronomy, or even ancient philosophy - I mean for the students themselves, not from the point of view of the wages they may be able to earn thanks to their degrees? How much value has been added to them - and again I mean in themselves - by the time they leave the factory gates? Such questions are daft: but they are extremely widespread.

Let me give two examples. A few years ago it was made a condition of the renewal of part of Cambridge's finance from the government that - like other Universities - we introduce a system of appraisal, for University teachers, and that turned out to be generally based on the model of those used in commercial businesses. Well, we were all duly instructed in the techniques appropriate to sales managers (who, I note, unlike University teachers, are hardly ever appraised by their juniors). But not only was that quite inappropriate: it ignored the fact that appraisal is continuously going on already, in such contexts as the peer group evaluation of papers submitted for publication. Then my second example concerns the evaluation of success in graduate courses leading to the Ph.D. degree. Such is the current fetish for quantification that the UK government uses as its sole published criterion of the quality of graduate work the speed at which graduate students submit their dissertations. Heaven only knows there is incentive enough for them to do so in the norm of four years, since that is when their meagre grant runs out. If they fail to do so, that may well be because they have to supplement it with more paid work than is advisable, and certainly it usually needs supplementing, since it is currently well below one third of the non-manual average earnings in the U.K. But we must insist: the value of research cannot be quantified, though its quality can, of course, be assessed.

Financial accountability is, to be sure essential. Certainly cutting out waste and extravagance is both difficult and important, for vested interests treat what can be extravagant provision as the norm. History shows that the desire of University Professors to clone themselves is very great, and that may well not be in the interests of the development of their subject. Yet the Universities have not resisted vigorously enough the model of cost-benefit analysis that is currently imposed upon us.

Education is not a commodity. Rather it is a basic human value. The notion that primary
and secondary education should be compulsory is accepted worldwide. But there is a recurrent fear - at least in Europe - of too much education, that higher education is a luxury and has to be rationed. But we ought to insist, on the contrary, that while you can have bad education, mindless education, and any of that is already too much, true education is something you cannot have too much of, for it gives you the ability to fulfil yourself and is an ongoing process through life. What Universities can do is to provide the most intense experience of that process of learning that can be used as a model by those who have undergone it even after they have left University. That kind of higher education should be accessible to all, that is to anyone who has the desire, the motivation and the stamina to undertake it. As proper health care should be available to all, and second only to health care.

Of course I anticipate the criticism of excessive idealism. Of course the question is, how could universal higher education of that kind conceivably be afforded? But how can any country conceivably not afford to make the very best use of the potential of its young men and women? I have to say, in parenthesis, that many countries in the developing world seem more alert to this issue than Western ones. And what about the not so young? We may be emboldened, in our idealism, here by new styles of higher education introduced, despite the initial chorus of gloom and doom, specifically for those wishing to reenter education part-time at an older age. I am thinking first of the National Extension College, and of the Open University or University of the Air as it used to be called, both of which have been a huge success in Britain - and indeed in many other countries that have founded similar institutions.

I have left until last one final feature that should also give strength to the idealist, namely the internationalism of higher education. The scientists have - consciously or not - shown the way, for scientific knowledge is already truly international. But in some arts subjects as well there are signs of a similar breaking down of national barriers, even if this is slower and appreciably more difficult to achieve in some subjects (such as literature) than in others. But it is not just that what is there to be studied knows no national frontiers: those who do the studying have everything to gain from the widest possible international framework for their studies. I can speak from considerable personal experience of the benefits I have derived from the opportunities for international exchanges and visits that I have enjoyed; and I speak too as one who was, until recently, responsible for the most internationally-oriented Cambridge college, where half of our 500 or so graduate students come from some 65 different countries.

One of the most short-sighted moves Margaret Thatcher made - and it has still not been reversed - all in the name of cost-effectiveness - was to insist on a more than doubling of the University fees charged in the U.K. to overseas students. That was stupid even by the criteria that she applied - since one might have thought that the most extensive contacts with the future
leaders of other countries would more than repay any small subsidies involved. But I do not adopt her criteria. Rather the criteria I believe we should apply, in this context especially, are those that go back to the fundamentals of what a University education is for - and has always been for, ever since those pioneering days of the ancient philosophical schools at Athens and the philosophical jiao of ancient China. That is, to learn about the world we live in, both the natural world studied from cosmology to microbiology, and the world of human culture and society, about the diversities of our literatures, our philosophies, our art, our music, about our histories and where we have come from, and where, and who, we are today, and finally to practise self-criticism and to be a source of criticism of society, even though we depend on society to support us. Without that chance to learn, we are all impoverished. So much the more important then is the role of the Universities in providing leadership in that regard, and in creating an international framework for the pursuit of those fundamentals of higher education.

Notes
1 The main example of official state support in the Greco-Roman world, though not for philosophy, so much as rather for 'scientific' research, for literature and for philology, was the Museum at Alexandria, during the reign of the first three Ptolemies. Yet by Chinese standards, as we shall see, that did not amount to very much: nor did that support last for very long.
2 The evidence has recently been reevaluated by Sivin 1995.
3 Some scholars nowadays think that the cherishing of the past may have been in part a reaction to such anti-intellectual moves, made by the first Qin emperor, as the infamous episode of the burning of the books, ordered by his minister Li Si in 213 BCE. No doubt both that destruction and the persecution of intellectuals by autocratic emperors throughout the early days of the Han dynasty served to make scholars more conscious of the need to safeguard themselves and their traditions.
4 The five classics were the Odes, the Documents, the Rites, the Changes and the Spring and Autumn Annals. Nylan 2001 is an exemplary study of the diverse ways those texts were used and interpreted throughout Chinese history down to modern times.
5 The classic study of this problem is Elman 2000.
6 China had to open up new subjects for study very rapidly at the start of the twentieth century (in several cases under the influence of developments that had taken place earlier in Japan), and ever since there has been an obvious concentration on what is seen to contribute to State interests. Even so, a sense of the need to preserve and recover elements of the Chinese past continues to drive a good deal of educational policy and research, both in the PRC and in Taiwan. This is so to a far greater degree than generally exists in Britain, let alone in the
U.S.A., even if, in the process, mythopoeic tendencies - in the construction of an image of Chinese continuity - are sometimes much in evidence.

Bibliography
Elman, B. (2000) *A Cultural History of Civil Examinations in Late Imperial China* (Berkeley)

Glossary of Chinese terms
Ji Xia 稔下
Jia 家
Junzi 君子
Ke 客