
The Spectre of a Functional University Sector*

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The increasing emphasis on vocational and professional programmes in universities is likely to lead to academic impoverishment through the marginalisation, or extinction, of many traditional fields of study, notably in the humanities. In such a context, it is vital that universities assert their continuing commitment to the advancement of all fields of knowledge.

INTRODUCTION

The theme of the author's brief contribution to the 4th *Global Congress on Engineering Education* is the need in the current climate to reiterate strongly and persuasively the importance of maintaining – indeed promoting – the widest possible array of programmes in universities. To some this may seem otiose, but it surely is not, and the stimulus for this topic is despair at the increasingly functional or utilitarian path along which universities are currently being driven, notably, but certainly not exclusively, by governments.

In Australia currently, and it should be emphasised at the outset that these remarks refer largely to the Australian experience, both sides of the political spectrum appear to agree that higher education is essentially functional in nature, that is, directly related to the needs of the economy and employment, and to disagree only on the limits to their niggardliness in funding it. In such an environment, where the spectre of an under-resourced and almost entirely functional university sector looms, a strong plea to awake from apathy and arrest the transformation of universities into job-oriented training factories seems timely and appropriate.

CHALLENGES TO HIGHER EDUCATION

In the modern world, where universities no longer sit as isolated centres of learning on the periphery of

society, but occupy a position at its very centre and hence are subjected to constant public scrutiny, and where there is relentless pressure for a more utilitarian approach, higher education is confronted with a two-fold challenge: on the one hand, to preserve areas, particularly in humanities, that are increasingly characterised as *irrelevant* or *useless* or, to utilise the descriptor of a recent British Prime Minister in respect of history, *luxurious*; and on the other hand, to maintain investment in basic science as the indispensable prerequisite for applied science. As C.E.M. Joad opined long ago, before the grip of economic rationalism was so tight, *There was never an age in which useless knowledge was more important than in our own* [1].

This twin challenge is of far greater significance and immediacy than that of (say) seeking new ways of rendering teaching more palatable for the recipients (and, in the process, doubtless diminishing their capacity to engage in learning). It also outweighs that of demonstrating quality of operation, a currently popular obsession of governments all over the world, and one that has had unfortunate ramifications for institutions in terms of the generation of mountains of paper codifying processes and practices, enormous waste of resources, and the demoralisation of staff as they are deflected from teaching and research to bureaucratic tasks.

What makes the challenge the more pressing is the reflection of just how far higher education (certainly in the British and hence the Australian tradition) has progressed over the course of the 20th Century - from the stultifyingly narrow *irrelevance* of the 19th Century, characterised by its advocates as *pure education*, to a wonderful diversity, where, until

*An expanded and revised version of the invited Occasional Address, which was presented at the 4th *Global Congress on Engineering Education*, held in Bangkok, Thailand, between 5 and 9 July 2004.

recently at any rate, almost all fields of human interest and endeavour were encompassed and suitably enriched. But now, in a harshly functional environment, higher education is poised on the brink of a regression to stultifying narrowness, this time cast in terms of usefulness to the economy and the workforce, and likely to involve many casualties in the name of *relevance*.

As many will be fully aware, the shackles of the narrow programmes of the 19th Century, which admittedly were entirely suitable for the leisured elite that then attended universities, were effectively broken by such luminaries as *Darwin's bulldog*, the great scientist, Thomas Huxley. The most eloquent exposition of his views is perhaps to be found in his speech entitled *Science and Culture*, which was delivered in 1880 at the inauguration of Mason College (later to become Birmingham University) [2]. In this, he adumbrates a vision for higher education encompassing a strong presence in the physical sciences, which, at that time, were grossly neglected in universities, much greater diversity of study in the humanities, and the introduction of sociology.

The enormity of the task of breaking the stranglehold of the past and bringing in such innovations is easily underestimated, but, in the course of the 20th Century, Huxley's vision was gradually realised, indeed, almost certainly exceeded, as in its later decades, many professional and vocational fields, such as accountancy and nursing, were introduced. Such developments are surely matters for approbation and they certainly do not deserve the excoriation and contempt that have been excited in the minds of many *purists*, for whom anything even remotely related to employment is *ex ipso facto* unworthy of pursuit at a university.

CONCERNS REGARDING FUNCTIONAL UNIVERSITY EDUCATION

Nonetheless, the introduction of vocational and professional programmes has brought dangers. For example, in some instances, the potential is available for the professions themselves effectively to dictate the university syllabus and, more worryingly, to stigmatise certain university courses as inappropriate. Perhaps more troubling, because of its capacity to have longer term effects, is the consideration that the obvious capacity of such programmes to facilitate employment makes them more than usually attractive to students, who, for the most part nowadays, view education in terms of preparation for the workplace, and the effect in both the government mind and, increasingly, in student perception is to undermine, or

at least marginalise, many traditional areas that appear to offer no obvious career paths.

Such a process is beginning to permeate even the school sector, to judge from a very recent report from Hong Kong (July 2004), where school leaving results in terms of *A levels* reveal that of some 36,000 candidates, well over 22,000 sat for physics and chemistry and more than 9,000 took economics, whilst a derisory 19 sat for music and a mere 135 for English literature [3]. This phenomenon of a lurch towards fields of obvious practicality is making it increasingly difficult for universities to remain as the focal points for the broad spectrum of intellectual endeavour that they had become in the course of the 20th Century.

The burgeoning transformation of university education towards a functional model has, if anything, been exacerbated by the reaction of sundry influential groups from the humanities and social sciences who, rather than argue persuasively for the intrinsic and lasting worth of their fields, have sought refuge in the practices of yesteryear, the realities of which they forget or distort, and have blindly opposed every innovation as involving banal tendencies and as lacking the time-honoured attribute of *pure education*. They have also used as their models a series of improbable luminaries from the past, such as John Henry Newman, whose work, *The Idea of a University*, was penned in the 1850s – and should best be left there [4].

By the same token, however, there are nowadays only too many commentators, educational pundits, captains of industry, politicians and (doubtless) some inmates of universities who conceive of modern higher education exclusively in terms of training for the workforce. Strikingly, and recently, the Australian Minister for Education was publicly reported as asserting, with support from the founder of a successful supermarket chain, that *Employers are sick and tired of graduates who cannot function in the workplace ... University funding should be linked to ensuring students ... are ready to go to work*. In the same report, the aforementioned supermarket chief adds: *I'd have to say, in my experience a lot of the very best people have very poor education*, presumably insinuating that they did not waste their time at universities [5]. The underlying presumptions here, to the effect that higher education is the servant of the workforce and that universities should attribute greater regard to the expectations of employers than to the considered desiderata of their academic disciplines, are pervasive in government, industry and media comment.

Nor is this just an Australian idiosyncrasy, as is nicely evidenced by the explicit strategic aim set out

by the Higher Education Funding Council (HEFC) in the United Kingdom to the effect that the objective of higher education is as follows:

... to provide and support productive interaction between universities and industry and commerce in order to encourage the transfer of knowledge and expertise and enhance the relevance of programs of teaching and research to the needs of employers and the economy [6].

Such affirmations, as general comments on the purpose of higher education and the role of universities, as opposed to specific claims in respect of explicitly professional or vocational programmes, surely point to a dramatic change in the concept of a university, and one that can only bring impoverishment to higher education and hence to society at large.

FACTORS STIMULATING THE TRANSFORMATION OF HIGHER EDUCATION

A Golden Age of the Humanities?

Before considering some extraneous factors that are giving stimulus to this transformation, a word is in order about the inappropriateness of harking back to the programmes and practices of a supposedly *golden age* in defence of the humanities. For, in reality, there was no such *golden age*; it is simply a mirage or a delusion. Thus, before the changes stimulated by Huxley and his coterie, leading institutions such as Oxford – which the author selects as his *alma mater* and which is not being criticised but rather used as an example – thrived on a highly restricted set of subjects of supposedly pre-eminent cultural significance. The University was also firmly enough in the grip of religion to inhibit genuine freedom of expression, as the poet Shelley found to his cost when he penned a pamphlet entitled *The Necessity of Atheism* and was expelled for his pains [7].

A pre-eminent place was reserved for Classics, the study of Greek and Latin literature. Indeed, in the mid-19th Century, there were in Oxford more scholars knowledgeable about obscure Greek and Latin texts, whose accidental preservation has only too often elevated their content from drivel to spurious significance, than there were exponents of the rest of the fields put together – in 1870, more than 140 Classical scholars, in contrast to a mere four scientists. Even as late as the 1960s, when the author was a student, Classics remained impressively

strong (and the author must confess to being a product thereof) and some 60% of all students studied humanities.

Other striking and, in present day terms, reprehensible features of the supposed *golden age* were blatant nepotism over appointments, contempt for research, which was characterised by one illustrious contemporary as *an excuse for idleness*, lecture programmes that had no direct relevance to the syllabus but reflected rather the predilections of the lecturers (still largely the case in the 1960s, in Classics at any rate) and utter contempt for physical sciences, especially applied science.

In this last regard, the extraordinary notion that science is an unworthy candidate for university scholarship permeates the works that backward looking *traditionalists* tend to revere as holy writ. Indeed, almost incredibly, as late as 1949, Michael Oakeshott could still peddle an extreme version of this antipathy in his work, *The Voice of Liberal Learning* [8]. Quite incredibly, a contemporary group, styling themselves *The Boston, Melbourne, Oxford Conversazione on Culture and Society* have adapted the following passage from Oakeshott to serve as a kind of manifesto:

... a university will have ceased to exist when its learning has degenerated into what is called research, when its teaching has become mere instruction ... and when those who come to be taught come, not in search of their intellectual fortune ... but desire only a qualification for earning a living or a certificate to let them in on the exploitation of the world [8].

These comments come in the context of a characterisation of a genuine university as a kind of club for refined conversation; hence, of course, the title of the group, whose apostles are perhaps unaware of the rather unflattering connotation of a *conversazione*, as depicted in the works of Anthony Trollope. This general notion can, of course, be traced back to Newman according to whom the university is *... in essence a place for the communication and circulation of thought by means of personal intercourse* [4]. Seeking to divine the relevance of this to modern times, it may be doubted that the surfeit of e-mail traffic, which currently afflicts universities, would qualify as suitably elevated conversation.

Newman's contemporary, Pusey, was even more forthright and asserted quite clearly that it was no part of the role of a university to advance science or make discoveries [9]. Generally speaking, there was a strong

disposition to apply to universities the dictum of Matthew Arnold in relation to criticism that their proper role was *to learn and disseminate the best that is known and thought in the world* [10]. Such lofty attitudes were perhaps intelligible in an era when universities were few in number, located on the very periphery of society, and the preserve of a leisured elite, for whom a university was not so much an intellectual voyage of discovery as a social experience. But, in the modern context, where universities are at the very centre of society and contribute so broadly to all aspects of society, it defies comprehension that anyone should see virtue in a return to such a past.

En passant sundry other doubts about the wonders of a *golden age* obtrude. The peremptory expulsion of the poet Shelley from Oxford for blasphemy is simply one striking instance of the religious imperative, which clearly precluded freedom of speech, as currently understood. The latter day apostles of Newman usually fail to mention the deeply religious aspects of his *Idea of a University* [4]. Again, the exploits of Oscar Wilde (and others) at Oxford throw an interesting light on the selfish indifference of staff towards their students and, for that matter, the insouciance of students towards staff. In Cambridge, a little earlier, the poet William Wordsworth implied that the College fellows in his day were less diligent than their esteemed predecessors who, according to him, ... *led in abstemiousness a studious life* and, in what must rate as one of the more bizarre characterisations of university scholars, ... *over the ponderous books they hung like caterpillars eating out their way* [11].

The historian, Edward Gibbon, in a memorable passage, implied that drunkenness was rife, an observation that the likes of Richard Porson could hardly have disputed [12]. All in all, it is hard to avoid the impression that university life in the *golden age* was very much a club for the benefit of College Fellows and socially acceptable students. If the works of C.P. Snow (later Lord Snow) are anything to go by, little had changed in this regard by the middle of the 20th Century. For the College Fellows in his novels (dating from the 1950s) do little else but engage in drinking, feasting and the pursuit of intrigues, and there is little, if any, hint of the distracting presence of students to deflect staff from these important social, collegial and conspiratorial activities.

Diversification versus Industry Focus

But enough of the practices of the past, which, surely self-evidently, belong in the past and should not be

promoted as appropriate examples for the present. To return to the present day, it needs to be affirmed that the process of diversification, which has brought relatively recently the introduction of many vocational and professional areas, is laudable. It is also inevitable as the result of sundry extraneous factors. But, as suggested here, it could become unhealthy for the sector as a whole in its potential to bring about the marginalisation, or even extinction, of many traditional areas.

Three significant and linked factors may be adduced as leading to an unhealthy predominance of vocational and professional fields of study (or, perhaps more accurately, training). Firstly, an effect of the advent of much broader participation and of the encouragement of recruitment from various disadvantaged groups has been to bring to universities many more students whose objective is to undertake training and gain recognised skills for a job and for whom notions of a *liberal education* are incomprehensible. This situation has been exacerbated in Australia by the need for universities to engage heavily in the export of higher education services (predominantly by the recruitment of fee-paying, international students) in order to compensate for declining government support; for the bulk of such recruits flock to vocational, professional and applied areas.

Secondly, the enormous expansion of university education in recent times has necessitated government support and this too has not always pleased traditionalists, who advertently or otherwise tend to view higher education as the preserve of the wealthy. Hence (in 1955), the bitter comments of Somerset Maugham,

I am told that today rather more than 60% of the men [sic] who go to universities go on a government grant. This is a new class that has entered upon the scene ... They are scum [13].

As one of the *scum*, I should like to think that modern traditionalists have at least resiled from this patrician myopia. However, there can be no doubt that the provision of public support for students has endowed governments with a rationale for intervention in university operations, which comes close to effective control; it is noteworthy, but hardly surprising, that governments have displayed no disposition to relinquish their hold on the university sector even when, as now in Australia, they contribute well under 50% of institutional funding. Indeed, if anything, control has become tighter, political imperatives frequently outweigh academic considerations, qualitative judgements are made on the basis of

process rather than evaluation of academic content, and declining public investment is matched by increased public scrutiny.

Thirdly, and arising from a growing confluence of attitude on the part of students and governments, the belief is now widespread that university education is nothing more or less than training for the workforce. As student numbers grow and as students contribute more and more to the cost of their education, it is surely inevitable that these increasingly employment-oriented aspirations will entrench this attitude, with grave consequences – already being realised in many countries – for areas of declining student interest (notably languages).

In the case of government and much of industry, this view is already prevalent and was nicely exemplified quite recently by a leader from the Australian Chamber of Commerce, who reportedly, if somewhat ungrammatically, opined that *the challenge for higher education is how to better connect the academic learning with the workforce* [5].

As will be obvious from the foregoing, the author holds the desire to reduce higher education to the status of servant to industry to represent a challenge only in the sense that universities should resist it strenuously as a general principle. As a universal proposition, it represents a stunning academic retrogression that defies a century or more of progress towards a university sector that caters for the discovery, promotion and application of knowledge in *all* fields of human endeavour. This is emphatically not to deny that, in the current environment, reflecting the new role of universities in society, a substantial portion of university programmes must be professional or vocational; simply to argue for a sensible portion to be reserved for other fields of less obvious practicality.

Science Education

In the case of science, there is a strong need to reiterate the (hitherto obvious) truth that applied science depends on a vigorous and adequately supported regime of pure or basic science. As Thomas Huxley so lucidly explained more than a century ago:

I often wish that this phrase applied science had never been invented. For it suggests that there is a sort of scientific knowledge of direct practical use, which can be studied apart from another sort of scientific knowledge, which is of no practical utility, and which is termed pure science. But there is no more complete fallacy than this. What

people call applied science is nothing but the application of pure science to particular classes of problems. It consists of deductions from those general principles ... which constitute pure science. No one can safely make those deductions until he has a firm grasp of the principles [2].

These sentiments remain as valuable now as then and, in Australia at any rate, it is to be hoped that research-funding agencies, which so often declare priorities in fields where application or commercialisation seems feasible, do understand this.

CONCLUSION

In conclusion, this is surely a moment for all members of academia to unite in support of a properly diversified university sector. Some years ago C.P. Snow expressed his deep disappointment at what he regarded as the emergence of two cultures. Writing in 1959 in *The Two Cultures*, he asserted the following:

I believe that the intellectual life of the whole of western society is increasingly being split into two polar groups ... literary intellectuals at one pole ... at the other scientists, and as the most representative, the physical scientists. Between the two a gulf of mutual incomprehension [14].

Later in the same tract, he states:

... traditionally highly educated people ... have been expressing their incredulity at the illiteracy of scientists. Once or twice I have been provoked and asked the company how many of them could describe the Second Law of Thermodynamics. The response was cold; it was also negative [14].

Paradoxically, the gulf between these two cultures has diminished considerably (albeit almost certainly not to the extent that the *literati* have any greater familiarity with the Laws of Thermodynamics) and the prospect looms of both making common cause against the threat from a new culture, which embraces the applied, the professional and the vocational and which attracts support, much of it uncritical, because of its practical utility.

The triumph of this new functional culture in universities would surely bring irreparable impoverishment to higher education and to society at large. It might even be the deadly midwife of the dystopia so

lucidly outlined by Thomas Huxley's famous literary descendant, Aldous Huxley, in his novel, *Brave New World* [15].

So the author's thesis is that the real challenge before us all is not that of securing the already inevitable (and desirable) entrenchment of employment oriented fields in universities, but that of preventing the marginalisation of traditional fields of scholarship and of preserving the role of universities as focal points for the advancement of all fields of knowledge, irrespective of their seeming relevance. This is a mighty task that will be best attempted, and hopefully accomplished, if there is no *gulf of incomprehension* between the cultures of the day.

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BIOGRAPHY



Professor Michael J. Osborne became the Vice-Chancellor and President of La Trobe University early in 1990. Prior to taking up this position, he was Pro-Vice-Chancellor and Vice-President of the Academic Board at the University of Melbourne, where he served as Professor of Classical

Studies and Head of the Department of Classical and Near Eastern Studies. Prof. Osborne has a Bachelor of Arts (first class) and Master of Arts from the University of Oxford, and a Doctorate of Philosophy and Letters (summa cum laude) from the University of Leuven in Belgium.

He is a scholar and researcher of world repute in the fields of Greek history and epigraphy and has brought an added emphasis to La Trobe University's established reputation as a centre of research excellence. He understands Modern Greek, French, Italian and German, as well as Latin and Ancient Greek.

Prof. Osborne is a Laureate of the Belgian Royal Academy of Sciences, Letters and Fine Arts; a Fellow of the Australian Academy of Humanities; a Corresponding Member of the Academy of Athens; an Honorary Fellow of the Hungarian Academy of Engineering; and a Fellow of the Australian Institute of Management. He has been a Member of the Institute for Advanced Study at Princeton, USA, and is an Honorary Professor of Yunnan University, Kunming Medical University; Yunnan Normal University; Yunnan Agricultural University; Sichuan University and Harbin Medical University (all in the Peoples Republic of China). In 2001, he was awarded an Honorary Doctorate of Letters by the National and Kapodistrian University of Athens, and in 2003, was made a Professor of Peking University.

He is Chair of the Board of the National Centre for Hellenic Studies and Research, which is located on the metropolitan campus of the University.

In 1998, the Government of Greece presented him with the Aristotle Award for services to Hellenic Studies. In 2000, he was awarded an Honorary Distinction by the Republic of Cyprus for his contribution to Hellenic Culture and Civilisation, and was a recipient of the Centenary Medal (Australia) in 2003.

Prof. Osborne has published widely in international journals dealing with archaeology and ancient history. His *Naturalisation in Athens*, published in four volumes by the Belgian Royal Academy, deals with

the problems of integrating foreigners into the State in antiquity and is regarded as the definitive work of scholarship in its field.

In 1994, his magisterial study of the inhabitants of ancient Athens, *A Lexicon of Greek Personal Names Volume II Attica*, was launched at the British Academy - marking the culmination of 20 years of research effort. Formally launching the book, Sir Keith Thomas, the then President of the British Academy, said the work was one of the most significant contributions to classical scholarship produced under the aegis of the Academy. He has subsequently published many other important scientific works.

Over the last quinquennium, Prof. Osborne has played an important role in the internationalisation of higher education. He has led or had a leading role in missions to China (PRC), Cambodia, Indonesia, South Africa, Germany, Hungary, the Czech and Slovak Republics, South America, Japan and Taiwan. He has also pioneered initiatives in Mongolia and recently finalised an Agreement with Peking University to undertake developments jointly in the Xinjiang Autonomous Region of China. In the last few years, he has delivered plenary addresses on internationali-

sation, globalisation and the future of universities in São Paulo (Brazil), Bogotá (Colombia) Athens (Greece), Budapest (Hungary), Barcelona and Santiago de Compostela (Spain), Tokyo, Seoul, Ulaanbataar (Mongolia) and in China in Guangzhou, Shanghai, Harbin, Nanjing and Chengdu.

He has pioneered and is now President of the International Network of Universities (INU), which is designed to provide a global mobility programme for students of the participating universities. He recently served as Chair of the University Mobility Program in the Asia Pacific (UMAP), as well as being Chair of the International Committee of the Australian Vice-Chancellors' Committee.

He is also the Australian representative of the Global University Network for Innovation: Asia Pacific (GUNI-AP), a scheme established by UNESCO and based at the Zhejiang University in China, and of the University Mobility in the Indian Ocean Region (UMIOR) scheme.

Other positions include membership of the Cela Foundation (Spain), the Board of Directors of the Business/Higher Education Round Table, and the Board of the Global Academy of the International Ski Federation (Switzerland).

4th Global Congress on Engineering Education: Congress Proceedings

edited by Zenon J. Pudlowski

This volume of Congress Proceedings comprises papers submitted to the *4th Global Congress on Engineering Education*, which was held at Menam Riverside Hotel, Bangkok, Thailand, between 5 and 9 July 2004, with King Mongkut's University of Technology Thonburi (KMUTT), Bangkok, as the principal co-sponsor and co-organiser. The chief objective of this Congress was to bring together educators, professional organisations and industry leaders from around the world so as to continue discussions tackling important and contemporary issues, problems and challenges in engineering and technology education.

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