Re-shaping higher education

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Introduction

Contrary to the impression sometimes given in the media, Australia is not an educationally apathetic or complacent country. In the last ten years there have been analytic and critical studies of State school systems and of higher education unrivalled in number and range internationally. Most of the public interest which has resulted has concentrated on schools; here I explore some of the pressures and policies which are likely to re-shape the higher education sector.

Attainment of more equal opportunities through equalising access to the national system of tertiary education is a major goal of the Federal Government; a policy which will inevitably require increased enrolments, more institutions and increased spending on tertiary education. Apart from the difficulties for the Government in finding the necessary funding, better access will entail reconsideration of the relationships within the tertiary sector, the rationale of the binary system of the universities and CAEs and the planning mechanisms at federal level. If it is to be a national system the relationships between courses, levels and institutions will need to be rethought, as should the relationship between tertiary institutions and society. Pressures within institutions to reconsider career opportunities and tenure, to institute affirmative action and to seek industrial awards are also sure to reshape tertiary education in other unforeseeable ways.

My thinking about these matters is conditioned by four considerations, the announced educational objectives of the Government, the absence of a sound justification for the present structure of tertiary education, acceptance of the view that Australia must link its future increasingly to technological development, and the validity of Koestler's comment[1] that:

the most striking indication of the pathology of our species is the contrast between its unique technological achievements and its equally unique incompetence in the conduct of its social affairs. We can control the motions of satellites orbiting distant planets but cannot control the situation in Northern Ireland. Man can leave earth and land on the moon, but cannot cross from East to West Berlin. Prometheus reaches out for the stars with an insane grin on his face and a totem pole in his hand.

My intention therefore is to try to chart an outline of the tertiary education terrain of the 1990s, starting with the most immediate and obvious question, that of student enrolments which, of course, largely determines access.

Access — numbers

The conclusions of the most recent studies[2,3] of access to tertiary education in Australia are that a smaller proportion of our population gains access to higher education than equivalent OECD countries and, particularly, high technology countries like Japan and U.S.A.; that a higher proportion of private school students gain access than public school students; that the social composition of the group favours children of middle and high income parents; that there has been remarkably little change in the social composition of students over twenty years; that private school students are disproportionately highly represented in the restricted entry faculties of medicine, law and dentistry; and that, proportionately, metropolitan students are better represented in tertiary education than country students. The main change in student composition is the last decade has been the increasing proportion of girls in all fields of study other than engineering.

The Commonwealth Tertiary Education Commission (CTEC), through Guidelines announced on 28th July 1983 by the Federal Government, has been instructed to:

bring forward recommendations proposing ways of achieving rapid, substantial and sustained reductions in the mismatch between the composition of society and the social composition of tertiary institutions, individual faculties and the tertiary sector as a whole. Recommendations should pay attention to the present nature of requirements for entry, especially the use of exam-based credentials and possible alternatives to them, the provision of bridging, remedial or introductory courses and the provision of facilities such as counselling services, support groups and transport arrangements to meet the special needs of disadvantaged groups.

The Government's desire for remedial action even prior to such a report from CTEC led it to provide a special supplementary $10 million grant for 1984 to:

increase the participation of Australians from disadvantaged groups, including Aboriginals, migrants, low income groups, women and the handicapped (especially those who live in outer metropolitan areas where there are large populations with relatively little access to higher education).

Table 1
Projections of the Population of Australia
Selected age groups, 1981 to 2001
('000)

Year	Age(years)				
	15 to 16	17 to 19	20 to 24	25 to 39	All ages
1981	494.7	791.3	1291.0	3397.5	14845.7
1982	497.5	777.0	1323.9	3487.3	15065.5
1983	505.3	765.2	1344.7	3583.6	15287.7
1984	523.8	757.1	1355.0	3671.6	15514.9
1985	539.0	765.2	1350.4	3757.4	15744.2
1986	558.8	785.6	1338.2	3839.1	15983.2
1987	574.5	806.4	1326.5	3882.4	16230.3
1988	560.4	839.1	1322.4	3936.9	16482.9
1989	539.0	857.5	1332.9	3996.8	16737.8
1990	523.3	860.8	1357.1	4039.6	16995.2
1991	511.0	838.2	1398.0	4080.6	17255.0
1992	503.9	810.2	1435.5	4124.7	17517.3
1993	501.4	789.3	1455.0	4170.4	17718.6
1994	501.8	775.8	1453.0	4229.7	18047.2
1995	504.5	768.0	1441.8	4284.8	18314.0
1996	512.4	767.1	1408.0	4354.6	18581.8
1997	522.4	769.1	1374.2	4417.2	18850.4
1998	529.8	778.6	1352.0	4457.7	19119.5
1999	640.6	790.1	1340.0	4481.2	19388.8
2000	558.3	804.3	1336.0	4495.6	19657.9
2001	579.6	818.8	1344.0	4496.7	19926.9

Source: Prepared by the ABS based on assumptions selected by the Department of Finance, including net migration at 100,000 per year to 1984 and then at 0.6 per cent of population thereafter. Prepared August 1981. (*Learning and Earning*, Vol. 2, p.47.)

From a perspective in which the tertiary education sector felt that its resources were being eroded constantly and pressures on quality had increased significantly between 1975 and 1983, the tertiary education sector is now being challenged afresh to at least redistribute its resources, and, by implication, to expand and provide better access.

To see what is involved in a policy of improved access it is necessary to review national population projections. Table 1 sets out a national population forecast for Australia in key age groups to the year 2001.

It will be seen that there is continued growth in older age groups at least until the late 1990s, but that the 17-24 age groups will increase in size only marginally until about 1992 and then begin to contract. Enrolments in universities and colleges of advanced education continued to grow between 1977 and 1982 from approximately 301,000 to approximately 339,000, an overall increase of some 12½ per cent, but during that period entrants under 20 years decreased by 3.9 per cent;[4] increases in enrolments of older people masked the following trend for younger people.

Arithmetic on the population trends, combined with calculations based on conservative secondary participation rates and assumptions about the rates of transfer of secondary students to tertiary institutions, reveals a greatly increased likely future demand for tertiary education, which will be difficult to meet.

It can confidently be assumed that a constant proportion of people in the population 23 years and older will want to enrol in universities and CAEs. The proportion of students over 23 years in higher education has been increasing rapidly (to 42.4 per cent for universities by 1978[5]) and may well increase further, but assuming that the proportion of such students to total population over 23 years is merely stationary as the size of this age group increases during the remainder of the decade, the demand for additional places for older students would be of the order of 30,000 places. I recognise that not every one will accord high priority to places for older students, but my analysis is not so much concerned with that attitude as the level of the demand. Indeed, as the older groups will increase in size they will become more important politically which may mean demand figures based on a constant proportion will be an under-estimate.

Second, turning to the under 23 years group, demand figures can be derived from analysis of recent secondary retention rates and of rates of transition to tertiary education. There has been a marked change in retention rates in secondary schools in 1983 indicating that more students and their parents may be regarding completion of Year 12 as the appropriate goal for them.

Table 2
Estimated Government School Retention Rates 1981-83
Australia (August census)

State	Years 9-10		Years 10-11		Years 11-12		Proportion of Total Cohort		
	81/2	82/3	81/2	82/3	81/2	82/3	81/2	82/3	83/4[4]
NSW	89.6	91.4	44.0	50.9	81.3	86.0	30.6	32.8	39.2
Vic[1]	92.6	94.5	75.8	81.3	39.7	44.7	27.1	31.2	33.6
Qld	96.9	98.0	49.1	56.9	78.1	85.4	35.3	40.0	47.0
SA[2]	na	na	80.2	83.6	38.6	44.0	na	na	na
WA[3]	97.2	97.6	45.0	49.0	70.0	73.4	29.0	31.7	36.4
Tas	89.2	90.6	32.2	38.1	68.1	79.8	19.3	22.8	27.1
NT	85.9	91.3	78.9	83.3	34.3	33.3	22.9	82.6	23.8
ACT	96.0	99.0	86.0	93.0	92.0	96.0	73.0	75.9	85.7

Source: State Education Departments
1. Combined high and technical (February) figures.
2. Figures included by J. Giles in a paper August 1983.
3. Excludes additional students in a one year Year 11 Course.
4. Estimates assuming no further increases in Year 11-12 retention in 1984.

The retention rate in 1983 in Years 11 and 12 has jumped so markedly that all states have had to hire additional secondary teachers. Official figures are not yet available but the estimated government school figures set out in Table 2 show increases of over 5 per cent between Years 10-11 and up to 5 per cent between Years 11-12 in 1982-83 indicating that the overall proportion of each age cohort completing Year 12 may have increased as much as 4 per cent from the 1982 figure of 35.2 per cent,[6] which will be the most significant increase ever in one year.

The increased retention in Year 11 in 1983 will generate an even bigger increase in the overall survival rate through to Year 12 in 1984 and subsequent years. On the conservative assumption of only modest further increases, that is, assuming a settling down of the overall retention (survival) rate in the 43-44 per cent range the numbers graduating from Year 12 and seeking entry to tertiary institutions will dramatically increase in the next few years.

In 1981 some 42 per cent of leavers aged 17 years transferred directly to tertiary education.[7] If that percentage rate of transfer was maintained on the higher projected numbers of leavers from Year 12, the number of places in higher education in the next triennium (1985-87) to cater for such direct transition students would need to be increased by approximately 21,000. If the direct transition rate of 1974 (approximately 54 per cent) was regained either immediately or over the period to 1990, the increase in places needed by 1990 would have to be in the range 50-90,000 students. Overall the best estimate is that about 70,000 additional places would be needed by then, with the rate falling away somewhat during the 1990s as the size of the 17-21 years age group contracts somewhat.

Re-establishment of the higher rate of transition on 1981-2 retention rates to Year 12 would clearly not raise problems of the acceptability of the students for tertiary entry because the higher rate in 1974-5 occurred when there was much the same retention rate. If the higher transition rate was based on higher retention rates there might be more questioning of the suitability of the students but they would still comprise only 23 per cent of the age group.

The figures given above indicate the orders of magnitude of the additional demand possibilities. In summary, they add up to the fact that if the government's policy were to be based on no more than the following conservative assumptions

- a secondary Year 12 retention of 44% by 1987
- reestablishment of the transfer rate of school leavers into tertiary at the earlier level of 54% (from the current 42 per cent)
- places for a constant (current) proportion of the population over 23 years

then universities and CAEs would need to be provided with the capacity to increase overall enrolments by approximately 100,000 or 30 per cent by 1990. The Labor Government's electoral platform for higher education envisaged 25,000 additional places by 1990. That number will be insufficient to allow attainment of its other higher education

Table 3
Leavers from School, Year 12 and apparent retention rates, actual 1975-1981 and estimated 1982 to 1987

	Number of School Leavers Year 12	Apparent retention rate Final Year		
	000's	Males	Females	Persons
1974-75	77.6	34.6	33.6	34.1
1975-76	82.0	34.6	35.3	34.9
1976-77	86.3	34.0	36.6	35.3
1977-78	88.4	33.1	37.3	35.1
1978-79	90.5	32.4	37.2	34.7
1979-80	90.4	31.9	37.3	34.5
1980-81	89.0	32.0	37.8	34.8
1981-82	88.3	na	na	35.2
1982-83	96.0	na	na	39.2
1983-84	104.1	na	na	43.0
1984-85	108.0	na	na	44.0
1985-86	111.0	na	na	44.0
1986-87	113.5	na	na	44.0

Source: Commonwealth Department of Education Statistical Monograph No. 1. *School Leavers* and Statistical Monograph No. 3. Apparent Grade Retention and Age Participation Rates for data to 1981-82; projections for later years are based on revised estimated retention rates.

policies, making higher education more not less rationed, and therefore difficult to make more accessible.

But the really significant conclusion bears repeating. Even if it achieved such an expansion of enrolments Australia would still be taking direct from school into its universities and CAEs less than a quarter of each age group, a proportion still well below that of other technologically advanced countries.

Access — social composition

The increases in retention rates in secondary schools have given impetus to reconsideration of secondary curriculum offerings and credentialling arrangements. In general, in Victoria and New South Wales at least, changes in the examination arrangements are likely to maintain the Higher School Certificate but to have the effect of making the marking systems more open, more intelligible and therefore more challengeable. As a consequence, and because of the focus on the social composition of entering groups of students, tertiary institutions may be challenged to find more varied criteria for enrolment. At present they justify using an aggregate mark because it does predict success rates fairly well, and because it is a defensible criterion for admission to restricted quota faculties. Tertiary institutions are, however, increasingly under pressure in relation to the socially atypical nature of their students. Now the Federal Government is also pressing the desirability of a broader social mix.

How could such changes be successfully introduced? Quotas on medicine and law and similar professions are unlikely to be abolished; increases in numbers admitted to those faculties are unlikely. The desirability of restricted numbers of students in professional faculties is supported by the leaders of the professions as well as government manpower planners. In the light of these continuing pressures it is fairly clear that without very firm guidelines linked to funding, a move which institutions and probably the community will resist, the Government will have difficulty in widening the social strata from which students are drawn, particularly in relation to the high status professions. If such requirements were to be introduced, there would be need for them to come as part of expansion in the number of places rather than as a consequence of displacement of other well qualified students, if community acceptance were to be achieved.

What are the chances of increasing the participation rates of disadvantaged groups? At the undergraduate level time is fairly quickly overcoming some problems. The participation rate for girls is increasing quickly at the undergraduate level in most faculties other than in engineering, and migrant participation rates are increasing quickly. Research suggests[8] that migrant aspirations and success rates are rather higher than for other Australians, but not uniformly so, Southern European migrant children being less successful than Northern European. There is, however, little or no evidence suggesting any change in the historic bias favouring the higher socio-economic groups. The special support arrangements which will rectify this bias have yet to be devised. Only in countries where there is virtually open entry to tertiary education has the intergenerational mobility characteristic of a reasonably meritocratic society been achieved.

Genuinely affirmative action of the kind which given preference for enrolment on the basis of the particular origin of students seems unlikely except for Aboriginals. The success rate of Aboriginals is so abysmally low that tentative steps, of the kind taken by James Cook University of North Queensland at Townsville and other universities, to give special assistance prior to entry and special support during the programme may be the model for other such moves to widen Aboriginal access. As Aboriginals constitute approximately one per cent of the total population, special affirmative action would not necessarily be restrictive of the chances of access of other students or excessively costly; undoubtedly special provisions are necessary if the gross under-representation of past years is to be rectified.

Other attempts to broaden the social composition of the student body may partly depend on changed thinking about student allowances. Publicity has focussed on the Tertiary Education Allowance Scheme (TEAS) and on the way in which the value of it has been eroded by the failure to increase the allowance progressively at the same rate as inflation or to lift adequately the threshold of family income for the means test. More broadly, however, there is a striking correlation between the diminishing participation in higher education in the years 1977-1981 and the abolition of approximately 50,000 teacher education scholarships formerly allocated by State Departments of Education separately from TEAS. Teaching in Australia, by and large, has traditionally been one means of acquiring a tertiary education for the children of blue collar workers. In the past, teaching scholarships provided a means of access to tertiary education more important than other sources of partial financial assistance for students from low income families, perhaps because the scholarships allowed students to live independently of parents who could not afford to supplement the income of their children once they had left school. The TEAS scheme does not appear to have replaced adequately the Teaching Scholarships as a means of widening the social strata. Indeed, currently, the relative unavailability of TEAS may be hindering attempts to widen the social strata from which students are drawn.

If the Federal Government could meet the demand which would be generated if up to a quarter of the age cohort were to be admitted directly into tertiary education there would be need for another eight or ten universities and CAEs of around ten to fifteen thousand students. It might be claimed that the alternative of enlarging existing institutions would be cheaper and better. In Victoria the late developing universities like Deakin and La Trobe could certainly take many more students, but on educational grounds could we seriously contemplate increasing the enrolments of Sydney, New South Wales, Melbourne and Monash Universities to 25,000-30,000 students? Traditional thinking, on the narrow definitions of efficiency espoused by some educational planners, could initially suggest such a strategy, but evidence that the least privileged tertiary students, in terms of their geographical, socio-economic and school origin, are more prone to alienation and lack of success in large institutions should lead to second thoughts.

On present evidence, additional medium sized institutions with supportive student arrangements would be most helpful to a more socially comprehensive (and successful) tertiary student body. Moreover, given the strength of the tradition in Australia favouring the enrolment of students at institutions close to home, i.e. within convenient daily travelling distance, it would be desirable to initiate or expand institutions in the western and southern suburbs of cities such as Brisbane, Melbourne and Sydney, suburbs like Footscray or Sunshine in Victoria.

So far the Australian public has been conditioned to the view that tertiary education is for a small privileged elite. It has not taken the view that tertiary education is a national necessity for a substantial proportion of the population. Part of the myth to which the population has been conditioned is that only a few are given the talent to be able to profit from tertiary education and that extension of it to a larger number would necessarily involve unacceptable lowering of standards. Moves to expand access involve overcoming such unfounded conservative views and increasing acceptance of the view that it is nationally necessary that a higher proportion of the population can and should be given opportunities to develop their personal talents to tertiary levels — that education is a developmental process with potential for success for a significant proportion of the population, not merely a winnowing process to discover the few born to rule.

Achievement of such attitudinal changes may require a broad-based community education programme led by Federal and State Ministers of Education. Regaining and maintaining former rates of access will require a positive policy, considerable amounts of money, changes in community attitudes and changes in tertiary structures.

Tertiary education structures — the binary concept

The guidelines the Government has given CTEC for 1984 direct it to:

examine the current relationship between the three tertiary sectors and provide advice on any duplication of effort and resources.

This is a difficult if not impossible task for the present Commission.

The present CTEC was created as recently as 1977 when the previously separate Universities Commission, the Advanced Education Commission and the relatively new Technical and Further Education Commission were brought together in the form of three councils of similar name within an umbrella body, the Tertiary Education Commission, which was intended to co-ordinate the activities of the three councils. The Act setting up the Commission requires each Council to report separately and the Commission to publish an additional overview. In consequence there is a huge volume of reporting and difficulty in producing internally consistent views. Most importantly the structure enshrines separation of planning for the three sectors and does not prevent competition for scarce resources.

Vice-Chancellors like the separate Councils structure, whereas the Principals of Colleges of Advanced Education would prefer to be linked with the universities, separate from technical and further education sector (which is different from the other two in being primarily funded by the states and merely topped up by CTEC). The structural separation of the sectors is sustained by the presence in each State of some form of higher education authority to co-ordinate advanced education planning within the state, a body which is separate from the state authority which controls TAFE. These state higher education bodies have persisted despite severe contraction of their responsibilities following the spate of amalgamations of colleges of advanced education in the last three years. Efforts to ensure the survival of these increasingly redundant bodies will dictate state level anxiety to preserve the separateness of the sectors within higher education.

Why were colleges of advanced education established as separate institutions? The Martin Committee[9] reported in 1964 on the need for new universities, for the development of institutes of colleges and for boards of teacher education to be responsible for Teachers' Colleges, which at that time were run by State Departments of Education. Most of the colleges were to be developed out of existing institutes of technology or technical colleges, although some were specialist schools of physiotherapy, conservatoria of music or agricultural colleges.

Two years later the Wark Report[10] stated that:

Colleges would not be limited to technical subjects but would offer courses and opportunities for study of the liberal arts and provide breadth in education for all students attending them. (Para. 1.5).

The subsequent history of their development has been one of rapid increases in enrolment, from a little over half the enrolments of universities in 1970 to a total enrolment of 172,000 in 1982, some 6,000 in excess of university enrolments.[11] Over this period there has been great effort applied to define them as somehow not inferior but rather different from universities. The Wark Committee said the colleges would have a greater interest in the application than in the development of knowledge, that there would be a diversity of entry standards with the emphasis being on standards of achievement rather than entry, and, that they would concentrate on teaching rather than research. Sir Robert Menzies saw the development as resulting in

a broad comprehensive system of tertiary education with an emphasis different from but complementary to tertiary education provided by the universities.[12]

The Fifth Report of the Universities Commission in May 1972 referred to the concern of universities to be differentiated from colleges of advanced education. Sure of the role of Universities, the Commission acknowledged that there were certain common characteristics, that by the nature of the work they were engaged in there was bound to be overlap and that confusion would arise only if the colleges were to become more like universities. It asserted that the Commission did not:

regard the Australian arrangement as constituting a binary system of tertiary education, rather it believes that the proper way of viewing it is a continuum of educational opportunities. (para. 3.6).

By the time the Tertiary Education Commission came to give evidence in 1979 to the Joint Committee of Public Accounts the tone had hardened to a very careful multiple point analysis of the differences between Universities and Colleges of Advanced Education. Since the system had been in place for fifteen years at the time and the views were based upon a body which itself reflected the structural separation (the Councils of the Tertiary Education Commission)

it is not surprising that the distinction was carefully articulated, especially as separatist views have the strong backing of the universities.

In retrospect it can be seen that the Martin Committee did not effectively examine the question of whether a binary system would in fact be a desirable development for Australia. The Report gives the impression that the separate lines of development of tertiary institutions were proposed because existing institutes of technology and single purpose institutions were regarded as being starved of funds, in need of a major infusion of resources, in need of a new name and as being already demonstrably different from universities. It may be that the cost of converting all of the colleges into universities was unthinkably large. The more likely explanation is that the prejudices of university people, of practical 'men of achievement', and of politicians, as well as those resulting from the prevailing view of the nature of the educational process, coalesced in the creation of a binary structure, creating an ambiguity which has never been satisfactorily resolved. Seemingly we cannot make up our national mind whether colleges are simply second rank institutions or equal but different. Nevertheless, they clearly have second class status.

The creation of this separate stream has been a major national educational blunder from which Australia is still suffering. This is not a derogatory comment about CAEs which have certainly provided increased access to tertiary education and, moreover, have been marginally more successful than universities in broadening the social origins of those enrolled. The best colleges have been eminently successful in achieving high standards and turning out first rate people. The wide coverage of courses in the larger colleges makes some of them difficult to distinguish from universities; the Ryal Melbourne Institute of Technology and the Western Australian Institute of Technology, are already bigger and stronger than some universities. It is not the colleges or their standards that are the problem but the concept and the national policy.

The division and the continued justification of it fly in the face of national need and commonsense, putting technology and applied studies in an inferior position to other studies. It also flies in the face of amalgamations of universities and colleges.

The national problem is that a binary system by its presence and rhetoric is a continuing denigration of applied knowledge. Apart from those, like engineering, law and medicine, which are accorded 'learned professions' status and offered in universities, other technologies are given less status and less resources. Consequently, technological research is not funded as readily or as frequently as 'pure' research, despite the fact that the research effort required to create working technology from initial research is frequently much greater. The development of Sarich's orbital engine has taken years. Our brilliant scientists are deservedly acclaimed while the nation is being outstripped technologically by others late on the scene. Australian private business investment in Research Development is about a quarter or less of countries of equivalent size.[13]

There is a two-way sadness about the binary system. It inhibits university staff from full scale involvement with the surrounding society and puts an unreasonable premium on 'pure' theory. It supports the pretence that the problems of advancing technology are not also theoretical problems of the utmost importance. Peel the onion skin of any difficult, technological problem and there will be a need for new theoretical research.

It is necessary to acknowledge that universities do in fact undertake the bulk of the technological research done in tertiary institutions. It is also true that there are new avenues of government funding for technological research. Neither of these points denies the schizophrenia of having colleges specifically for applied studies while denied a research role, whereas universities are defined as having a fundamental research role and reward staff principally for such efforts.

The most important need is to abandon what is in practice an artificial distinction and accept that theory and practice are inter-related to such an extent that it matters little how one enters that cycle, provided the quality of scholarship advances knowledge. Nationally it matters that we officially value only part of the chain of knowledge creation, limiting the status and support given to the remainder.

I have dwelt upon the binary distinction, both because of its flawed nature and because it is necessary to erode it before considering the next steps in the evolution of the national tertiary system. We need to base further development of the system on different principles, in particular on accessibility and reasonable conservation of scarce resources. This is not an argument for making all colleges into universities, as will be seen from later comments in this paper; I am arguing for a system based on levels of study and levels of resources rather than types of study.

In passing, the implications for national planning of tertiary education should be noted. The edges of present distinctions and structures of the bureaucracy would have to at least be blurred. Preferably CTEC would be reconstituted on new lines, emphasising its co-ordinated planning role.

Tertiary structures — an alternative possibility

Earlier, in the discussion on access, the need for new institutions in underprovided parts of capital cities was noted. A further stage in the evolution of the national tertiary system would attempt to provide a path for students, whether from the country or the city, to go as far as they are willing to persevere and to be able to move freely from one institution to the next with full credit for previous study.

Professor Birt, the Vice-Chancellor of the University of New South Wales, in an address to the Rotary Club of Sydney in May 1983[14], suggested a three-level system of tertiary education, the first of which would be vocational college, an enlarged version of the present TAFE sector, taking over some part of the work now done by CAEs. Second, there would be the need for arts and science colleges to offer a general education in the humanities, the social sciences, and the natural sciences. Birt saw that these would meet two needs, provision of courses for the personal enrichment of mature age students and second, bridging courses for those wishing to enter the universities. The first would be the most rapidly growing sector of tertiary education. Third, Birt saw the need for universities to provide intensive courses in the basic humanities, social sciences and sciences for those who wish to move into learned professions and vacations and for the conduct of basic research. Universities would emphasise postgraduate training and research with the university system being 'a social instrument designed to extend mankind's knowledge of the world and human beings through fundamental research to ensure the continued availability of scholars of the hgihest calibre and to provide education in the learned professions and vocations in close contact with research activities'. The 'technical scientist' and the 'cultured arts graduate' would be educated elsewhere.

While a three tier system would be a desirable approach, the proposal in its present form perpetuates the distinction between study of the arts and sciences and vocational preparation; the two would be conducted separately in different institutions. The distinction is unnecessary because the arts and science are vocational in the sense that many graduates go into teaching or the public service; I argue that it is also inappropriate as a way of dividing knowledge.

A different framework, also of three tiers, might be based on the following premises:

(1) Community Colleges

Reconsideration of the upper secondary school provisions suggests the need for comprehensive colleges, offering both general education and vocational orientation in several major strands of study, although still with a general education intent. The cost of provision of such separate colleges of a type similar to those that exist in the A.C.T. and Tasmania, and the need for widespread provision of education past Year 12, suggests that such colleges could well offer up to two more years of general education in the arts and sciences, with these latter years organised and credited as tertiary studies for subsequent transfer to tertiary colleges.

(2) Tertiary Colleges

It is desirable to combine undergraduate vocational and arts and sciences study in one institution. Each would be exclusively concerned with sub-degree and first degree studies. Vocational preparation at the subprofessional level would be pursued in 2, 3 and 4 year courses. Arts and sciences degree programmes would be four years and would take in students from community colleges at the third year. Students would go on from first degrees to universities for shorter more intensive preparation for professional occupations. Tertiary colleges would be the most rapidly growing area of tertiary education, taking in existing colleges of education plus additional colleges in underprovided areas. They would not offer any advanced degrees.

(3) Universities

Universities ought to be well enough provided with resources in order to provide the graduate training and research opportunities which Australia needs in the basic sciences, in the learned professions and in the technologies and to make this function and research their primary roles.

One implication of a three tier system of this type would be the necessity for re-organisation of education in the learned professions, basing entry on better preparation in arts and sciences in the tertiary colleges and hence shortening the period of intensive professional education. The effect of such a move would probably be to widen access to such professions, especially to those from non-metropolitan areas and to those with a proven record of success in tertiary education. Another implication is that the structure encourages the growth of two year initial qualifications followed by further stages at appropriate career points, so that the cost of a four year degree structure is not necessarily unbearably high.

Other equally important implications would be realisation of the goal of initial access to tertiary education close to the home of intending students and the linking of status to levels rather than types of education.

The structure sketched briefly in the foregoing paragraphs would involve not only more closely co-ordinated planning at the federal level but also a reorganisation of the provision for general education and TAFE at the State level. The States might well become entirely responsible for community colleges, the Federal Government might share responsibility for tertiary colleges on an agreed basis, and the universities might continue to be an entirely national responsibility. I am not blind to the difficulties of reorganising current structures and bureaucratic territories. Nor am I sanguine of immediate moves to implement a fully articulated three tier scheme. It is desirable however that we define better principles for the evolution of our tertiary institutions.

Irrespective of whether this or a similar three tier system finds favour as the planning principle, the present binary concept has already been so far breached in practice as to be no longer useful other than to create status barriers and problems of development.

Undergraduate education

There are implications for undergraduate education in the pattern suggested in the foregoing paragraphs. If it is correct, as is generally claimed by counsellors and student advisers, that the first entry of students into the tertiary level is an uncertain one, prior to the settling of personal interests, particularly for those who are first generation tertiary students, provision will need to be made for them to explore those interests — another reason for a wide spread of community and tertiary colleges — but also throwing up the need for a coherent system of cross-registration of courses and collaboration between institutions in in the use of resources.

Most of all, however, student needs suggest review of the coherence of general education in the humanities and sciences. Interestingly, although analysis of the rigour and coherence of first degrees ought to be of major interest, there is little public debate on this aspect of tertiary education in Australia. We seem to take it for granted that our systems of internal assessment in universities and accreditation of individual CAE courses are sufficient to meet the need. Yet it would be easy to make justifiable criticisms of course patterns. Commentators could easily point, or example, to the under provision for environmental and legal studies in engineering courses. Equally there would be many who would question whether the gaining of a degree in arts or science testifies adequately to either breadth of understanding or depth of knowledge. Clarke Kerr, the noted American commentator on university affairs, once remarked that if one wanted to know how many courses there were in any university, it could be simply found out by asking for the total staff numbers — the implication being that courses proliferate primarily to meet the needs of staff. The present smorgasbord approach, which characterises the arts and sciences offerings in many tertiary institutions allows accumulation of units or points to a pre-set total without necessarily any review of whether the persons graduating have acquired an integrated and broad understanding of the world.

Internationally, questions about the nature and extent of general university education are increasing. In the United Kingdom the recent Leverhulme Report[15] has criticised the specialisation of the U.K. first degree and made the radical suggestion that first degrees ought to be less specialised and confined to two years. Even accepting that the English system is probably more specialised than the Australian undergraduate programme, the Leverhulme proposition would strike Australians as radical. Harvard, at the urging of Dean Roskovsky, some years ago introduced a core curriculum requiring undergraduate students to pursue studies in several specified areas. In addition, the Harvard core curriculum requires competency in computing and common statistical concepts, two areas which are not counted for credit but in which competency must be demonstrated before graduation.

While American students enter college with more varied preparation than Australian students, the concept of the undergraduate degree requiring established competency in the range of skills and knowledge needed by an educated person is one which must be of increas-

ing interest to Australian tertiary educators.

The concept of a core curriculum for the first two years of tertiary education, a curriculum with common objectives (but different content and approaches) undertaken by all students and designed to further the concept of a liberal education, is one which ought to attract our attention. It is a concept which would become increasingly worthy of intensive effort if community colleges and tertiary colleges were to evolve. Presently CTEC, for reasons which are not entirely clear, has restricted the development of liberal arts in colleges of advanced education. In a three tier system of tertiary opportunities there would be need for much wider opportunities in the arts and sciences. For several educational reasons, as well as for the maintenance of an overall level of quality, intensive reconsideration of curriculum offerings should be undertaken.

Tertiary institutions: research and the community

Meanwhile tertiary institutions are being challenged to rethink their responsibilities to the community. The shake-out in Britain which led to substantially reduced grants to several universities, such as Salford and Aston, has led to a marked reconsideration of the attitudes in those universities. A number are moving very vigorously to involve industry in the development of research programmes and in setting up research institutes, companies and foundations to foster new research developments. The new companies have generally undertaken the translation of theory into working technology. Necessity has been the mother of this invention in the U.K.; even Oxford and Cambridge are now spinning off technology-related companies.

On the other side of the Atlantic, notably in universities like Harvard and Stanford, there has long been a tradition of close relationships between universities, industry and government in research. The Route 128 developments in Boston and the Silicon Valley developments around Stanford are the outcome of a half century of growing collaboration between industry and academe.

Here in Australia universities have exhibited some of the same schizophrenia about undertaking applied research which seemed to characterize institutions in Britain before the shake-out. Universities would like industry to give them money without expecting any resulting obligations (they do, but universities feel it is nothing like enough). Most university staff have been reluctant to enter into relationships with industry, however fundamental the research questions, for fear of being compromised. They have been more than willing to take non-tied grants from the Australian Research Grants Scheme, but less willing to seek the increasingly large amounts of money available through more directed government schemes. Indeed, there is a tendency to deplore the increasing flow of funds through those sources.

There is need for governments and industry to have an investment perspective about research and to be patient about the time needed to get results. On the other hand, unproductive people lacking the talent or energy for successful research too often excuse themselves by claiming that they must continue to engage in pure research which will not produce visible outcomes for an indefinite (long) period. If there was not this fundamentally flawed division in Australian higher education the development of close relationships between industry, government and higher education on a broad scale would emerge much more naturally as they have in North America.

It will be interesting to see whether the major turn around which has taken place in British universities and which was so evident at the recent Association of Commonwealth Universities Congress in Birmingham will equally quickly affect Australia. If Australian tertiary institutions take up this challenge, we will see a rapid blurring of the lines between the institutions and the community, the emergence of institutes, and of private and public companies, in which institutions, industry and even government are joint venturers, to research and develop new knowledge and new applications of knowledge. We will see wider acceptance of academic entrepreneurship and perhaps more instances of individual academics making money out of inventions. We may even see institutions benefitting from the patents derived from staff research.

If the momentum increases, it may be that the initiation of particular development of a tertiary institution, in a locality which is in need of a special boost, will become the norm. In other words, if there is a sufficiently close relationship, tertiary institutions could become the monasteries of knowledge-based regional renewal. We do not know much about the possibilities of tertiary institutions playing that role in Australia and it will be fascinating to see whether such a role does emerge and further shape tertiary development.

Career structures

Finally, of my several strands of influence which will help re-shape tertiary education in the coming decade, I turn to three points relating to academic staff.

The tightening up of funds in recent years has cut down the number of young entrants to academic careers at a time when the senior positions are still blocked by those who have some years to serve. One consequence has been the creation by the Federal Government of post-doctoral fellowships, to be awarded for the first time in 1984, as a means of increasing the pool of people who will have experience and be available to take vacancies when they do emerge in a few years time. Another is increasing debate about tenure. The Senate's Report on Tenure suggests that tenure is still a 'good thing' in universities but suggests that universities should have a proportion of non-tenured posts to allow staffing flexibility. My own university has maintained a significant proportion of limited term posts which seems essential in a small university in which the pattern of growth is rather unpredictable.

An important point, however, is the way in which the debate is focussing attention on the excellent quality of many young people who aspire to but cannot get academic jobs or can only get limited term ones, people who are better than a small but significant group of tenured staff who neither toil nor spin. There are a few in every university; I know that my colleagues would dearly love to find ways of helping such people to become more productive or to find other pursuits. The presence of such people in all institutions makes the Senate Report proposals for regular reviews of teaching pregnant with significance. Reviews, if properly instituted and carried through by academic peers, may thus become a key means of internal renewal and development. Alternatively, they may simply be rejected as bureaucratic threats to academic freedom. Nevertheless, since public funds from the Federal Government are entirely supporting tertiary institutions, the Federal Government is in an excellent position to eventually push hard to secure either internal staff reviews or some form of unwelcome external accountability.

Similarly, arising from the debate about tenure, there have been suggestions that staff should be appointed to tenured positions at lecturer or senior lecturer levels and only appointed as associate professors or professors for specified terms. If this were the approach adopted a person might have tenure as a senior lecturer, and be appointed as a professor for up to, say, seven years, with further terms being possible while the person continues to give academic leadership. On the other hand, the higher appointment would be relinquished if that person's contribution diminished markedly over the years. Such proposals are likely to encounter the organised strength of academic staff, whose co-operation will be a necessary ingredient of any negotiations, yet younger staff and institutions have much to gain by considering such novel proposals.

Meanwhile, academic staff associations are moving on the industrial front. A recent declaration by the High Court has meant that education can now be declared an industry and the Federation of University Staff Associations (FAUSA) can seek to register as the body representing academic staff which would entitle it to seek an award under the Conciliation and Arbitration Act. In any case, it will have to do this to protect its interests (and those of its members) because rival organisations have already moved to seek jurisdiction over some university staff. The Australian Professional Engineers Association has lodged a claim for certain university staff to be covered by its awards.

The federal move is paralleled by a move by staff at the University of Newcastle to seek an agreement on conditions for academic staff. Early rather broad ambit claims apparently have been withdrawn in favour of very modest claims now agreed to by the University of Newcastle. Staff Associations have, however, embarked upon this thorny path without really being sure that it does not lead over the precipice. There are some very delicate traditions of university life which confer upon staff a measure of personal freedom virtually without parallel in any other occupation. This richness of opportunity to direct one's own activities, and the freedom from intellectual and social duress, is directly related to the way in which university employment has grown through a system of conventions rather than written rights and treaties.

An application for a federal award relating to conditions of work would have vast repercussions on the tertiary education system in Australia, particularly on the character of universities. It is impossible to say whether this is likely to happen, but should the leadership of staff associations succumb to any other than long range strategic considerations, there would be consequences of great importance.

The autonomy of universities is fragile enough as a consequence of total dependence upon Federal funding. It would be susceptible to marked and speedy erosion through industrial activity. Putting it squarely, if FAUSA seeks a federal award involving additional costs which the Federal Government would have to pay for through increased grants to universities, the Federal Government would undoubtedly want to intervene, first to resist the claim and second to ensure that future claims are settled between it and the union, with the universities sitting helplessly by.

The third avenue of development in relation to staff careers emerges with the pressure for affirmative action to improve the proportion of minority staff and particularly, women, serving in tertiary institutions. State anti-discrimination legislation will soon be accompanied by federal anti-discrimination legislation. In New South Wales the universities and colleges of advanced education are apparently to be scheduled under the Act, that is to say they will be required to produce a management plan to achieve more equal representation of women in the staffing of the institutions.

What this will mean for academic staff is not clear. The proportion of women staff in tertiary institutions is far below 50 per cent and clustered at the junior end of the academic ladder. As far as I am aware, however, there is uniform support in tertiary institutions for the principle of promotion by academic merit.

What then can be done to improve the balance of the sexes in academic staffing. Steps can readily be taken to improve the consciousness of members of selection and promotion committees to ensure that, as far as possible, there is no covert discrimination. More representative selection committees will assist in this process, but such structural developments may be dependent upon more democratisation of the processes by which people come to serve on such committees, not necessarily a welcome development in universities. Similarly, opportunities for women who have had their careers interrupted by family responsibilities, may only be created by such changes as comparisons of the 'rate' of career achievements, increased opportunities for participation in conferences and in the life of the university, again not necessarily welcome changes.

If all of these minor measures could be undertaken, there would still remain the hardest nut to crack, that is, that there are relatively fewer women applicants in every field for appointment or promotion. Very special efforts would need to be made to overcome this imbalance before there could be any expectation of improving staffing imbalances.

These pressures on staffing and institutional autonomy and towards more equal opportunities make it safe to predict that in ten years time the present profile of staffing and staff conditions in tertiary institutions will be markedly different from that which exists today. What is less certain is the direction of such changes and the overall effect on the tertiary institutions.

Conclusion

The Federal Government clearly wants to see a tertiary education system which is more accessible to a broader range of students representative of the social groups in Australia. It has set itself this task out of concern for the nation and for the provision of full opportunities for individuals.

In order to realise these objectives, it is necessary for the community to consider the way in which institutions are to be developed, their relationship to each other and the way in which the courses are provided. As a first step it will be necessary to tackle the historic mistake that was made in splitting Australia's tertiary system into two streams. Rearrangement of the structure, and greater articulation between levels, with greater opportunity for carriage of credit between institutions are all part of the moves necessary to bring about a more cohesive tertiary system. Moreover, any moves will necessarily involve close collaboration between the Federal and State Governments to minimise disadvantage for groups not presently well served by tertiary opportunities. Along with these structural changes will need to go attitudinal changes in the relationships between tertiary institutions and their communities, to increase the link with industry and the community and to increase the accountability.

While these moves are developing there will be equivalent internal developments within existing tertiary institutions which must be the start for future developments. The internal developments will primarily affect the conditions and career paths of academics in ways which at present cannot be foreseen.

It can be safely predicted, however, that the present moves being made by the Federal Government to open up tertiary education will ensure that the shape of the tertiary education system by 1990 will be markedly different from the one which exists in 1983.

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Tertiary fees and the social mix

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The current imbroglio over whether students should be charged for their tertiary tuition illustrates nicely how little recourse there frequently is to evidence in a debate on public policy, and how such evidence as is adduced gets used selectively to legitimise positions representing ideology or political interest. My purpose in writing this paper is to review the evidence concerning the effect of financial assistance on the social mix of the undergraduate population. Consideration of equity, however, is not the only perspective bearing on the question of charging students for their tuition and it is of interest first to discuss briefly the range of positions and arguments.

One is public economy — if students pay for some of their tuition costs then the government is saved that much in expenditure. The sums being quoted are not inconsiderable — of the order of $200m. It is not clear whether this allows for the costs of the administration of fee collection and of the cost of some sort of upgraded grants system for the needy. If newspaper reports are correct it would seem that it is the intention of advocates from within government for fee income to be accompanied by a corresponding reduction of allocation to higher education, which is contrary to the expectation of most of the academics who have written on the question of fees. Thus, to be realistic, discussion of the merits of reintroducing tuition charges should be in the context of present levels of income.

A second position, taken by a number of conservative economists, is that 'fee for service' improves the efficiency and cost effectiveness of institutions by making them more responsive to market forces[1]. Those adopting this position frequently bracket the reintroduction of tuition fees with proposals for reduction of academic tenure and decreased government regulation. Those courses and those teachers in demand would flourish in the academic market-place, others would go to the wall. I have not been able to find any evidence which bears on these proposals, not even crude anecdotal accounts of efficiency before and after the abolition of tuition fees in 1974, or comparisons of the University of Western Australia (which for many years was free) with others in the fee charging era. The argument appears not to be so much for greater efficiency in universities as they are now structured but rather a preference for a different sort of university moulded by market-induced competitive pressures.

A third argument concerns efficiency of students. It is asserted that 'fee for service' causes students to value their tuition more than when it is free and consequently to work harder in order to be successful. As with assertions concerning institutional efficiency this assertion is based more on dogma than on evidence. Although there have been plenty of opportunities in Australia and elsewhere to compare student behaviour with and without fees no researchers appear to have thought the question worth investigating. One of the difficulties with the assumption that students would work harder when they pay the cost is that as often as not it is not the student but the parent who foots the bill.

Fourthly, institutional autonomy is sometimes invoked by the protagonists of fees, the idea being that when all income comes from one pocket the provider is in a better position to call the tune than when there are several pockets. Certainly if universities generated all of their income from fees they would be in a strong position to stand up to attempts at government intervention in their internal affairs. Complete financial independence is, of course, quite unrealistic; indeed even a return to the pre-1974 arrangement is unlikely where funds came from State and Commonwealth Governments, and, to a small extent, from fees. It may be plausible to think that the depredations of the Razor Gang on higher education, or the sabbatical leave inquiry, or the matter of student union fees, would not have been initiated by the Fraser Government if they had not been the sole providers of university income. Multiplicity of income sources does not however constitute an inherent barrier to government intervention; it may simply make it a bit more difficult to arrange if the other providers also have leverage. In any event the existence of fees at the level likely to be charged does not even constitute nuisance value to a government determined to intervene. Under present circumstances the reintroduction of fees would make no difference should the Federal Government, now the single institutional provider, wish to change things within universities or colleges. Nor is there any requirement that the Government be consistent in its intentions — witness the proposal floated by the Ministry of Finance to re-introduce fees, and the guidelines to CTEC indicating that the government expects universities to democratise participation in higher education.

A fifth position, usually taken by the anti-fee side, asserts that tuition fees and other costs associated with being a student are a deterrent to enrolment by students from poor backgrounds. One focus from this position concerns individual equality — that it is unfair that poor people are deterred from participating in a publicly funded good. Another focus is social interest — that society is being deprived of the public benefits which the bright poor would have contributed had they been able to graduate and practise their professions.

Table 1
Fathers' occupations of full-time higher education students, 1974 (percentages)

Occupational category	University N = 1513	CAE N = 521	Uni ed. N = 328	CAE ed. N = 881	Males 45-54 (1971 Census)
Professional/technical	32.6	26.1	24.5	24.3	7.5
Administrative	19.9	18.2	15.4	12.8	12.4
Clerical	4.9	5.2	6.9	5.0	6.8
Sales	5.4	5.4	5.1	5.4	5.6
Farming/mining	7.2	9.3	8.5	13.7	10.9
Communication/transport	3.8	5.2	7.5	7.2	7.6
Tradesmen/labourers	13.7	18.0	21.3	21.0	39.9
Service, sport and recreation	3.0	1.9	3.1	3.1	4.3
Armed forces	0.6	0.8	0.0	0.2	0.6
Not in workforce and/or no information	9.0	10.0	7.7	7.3	4.4

Source: Beighton and Gallagher, 1976.

There is plenty of statistical evidence which is consistent with the hypothesis that costs associated with higher education deter the poor. A typical table shows that students with fathers whose occupations are professional or administrative are over-represented by a factor of about four when compared with the relevant workforce statistic, and that students whose fathers are manual workers are under-represented by a factor of about three[2]. (See Table 1.) At the extremes the differences in participation are very large indeed, for example children of doctors or lawyers have about one in two chances of enrolling, those of unskilled labourers about one in fifty.

The response of some egalitarians to the observation that all groups do not participate equally is to campaign for a more balanced social mix thus achieving a form of social justice. Such an analysis, of course, overlooks the individual. Even if all social groups are equally represented, inequality will remain because all individuals do not participate. A working class lad who fails to make it may be mollified when told that the competition was fair and that he had equal chances with members of all other groups; he still loses out on a share of public resources. So do those children of the rich who are not admitted.

While the data are not in dispute there is no agreement about why such disproportions exist. The most common explanations for relative underparticipation by representatives of lower socio-economic groups are:

1. that low social class is associated with low intelligence and thus equal participation from all groups is not to be expected

2. that participation by the poor is limited by regional geography because there are fewer institutions of higher education in poorer localities

3. that students from the lower classes simply have other priorities and choose not to proceed to higher education

4. that financial circumstances are a barrier to participation.

There is some evidence concerning the connection of family circumstances with each of these conditions. With respect to social class and IQ, while there is still an unresolved dispute concerning the genetic and environmental contributions to intellectual ability, even the most rabid biological determinist does not claim that inherited intelligence could account for anything like the differences in participation which are observed between the different social groups. The geographical hypothesis gains support simply from glancing at a map. There are fewer institutions of higher education in the poorer 'western' suburbs and in non-metropolitan localities, thus making it difficult for residents to participate.

The motivational hypothesis is largely unexplored in any sophisticated manner. Surveys of 14-year-olds in school indicate that many more aspire to higher education than can be accommodated, and that there are links between class and preference. Furthermore, the attrition which occurs during years of secondary school is class-linked and by Year 12 the social mix is not too different from first year in higher education. What is unresolved is whether the children from lower classes, fewer of whom expressed a preference for higher education, were in fact expressing a preference or simply responding in a realistic fashion to perceived obstacles. There is evidence that those who do make it to Year 12 are influenced in their decisions by the costs associated with higher education. David Beswick and his colleagues, in an evaluation of the Tertiary Education Assistance Scheme, examined transition from Year 12 from a social psychological perspective[3]. They found that the availability of financial support for tertiary study was an important consideration in the decisions made by females and by students who deferred their enrolment. And in a review of research findings concerning participation in education generally Julie Smith concluded that "... certain groups of students sharing particular attributes (rural, female or low family socio-economic background) are particularly susceptible ... (to) these financial or economic factors and are likely to be the students 'tipped out' by an unfavourable balance of financial and economic incentives. These students can be characterised as the 'marginal' groups"[4].

A sixth position in the fees debate also concerns equality, not of chances to participate but of benefit from higher education. According to this argument not only is there a transfer of public funds from the average taxpayer to the better off, but inequality is further extended since higher education confers a substantial 'private benefit' (income, salary, life style, etc.) on beneficiaries who belong, on average, to wealthy families. An egalitarian response to this observed inequality is to make the beneficiary pay for that part of tuition which corresponds to a private benefit, either through fees or later through loans or the tax system.

What is the evidence concerning the social composition of the student population before and after the abolition of tuition fees in 1974? Two of the main published sources are a national survey of newly enrolling full-time students three years after fee abolition,[5] and a review of research on student origins during the thirty years following World War II[6]. The general conclusion reached is that the social mix does not appear to have altered significantly over a period of twenty or thirty years, and that there appears to have been no change following the introduction of TEAS and the abolition of fees in 1974. Both the survey and the review warned against reaching causal conclusions from the observations of no change and discussed various alternative explanations as well as the 'no effect' hypothesis. It is to an examination of these explanations and of the most recently available evidence that I now wish to turn. First, however, it is worth noting that representatives of both the former federal government, which was predisposed to fees, and the present government, which is formally opposed to fees, have cited data showing no social