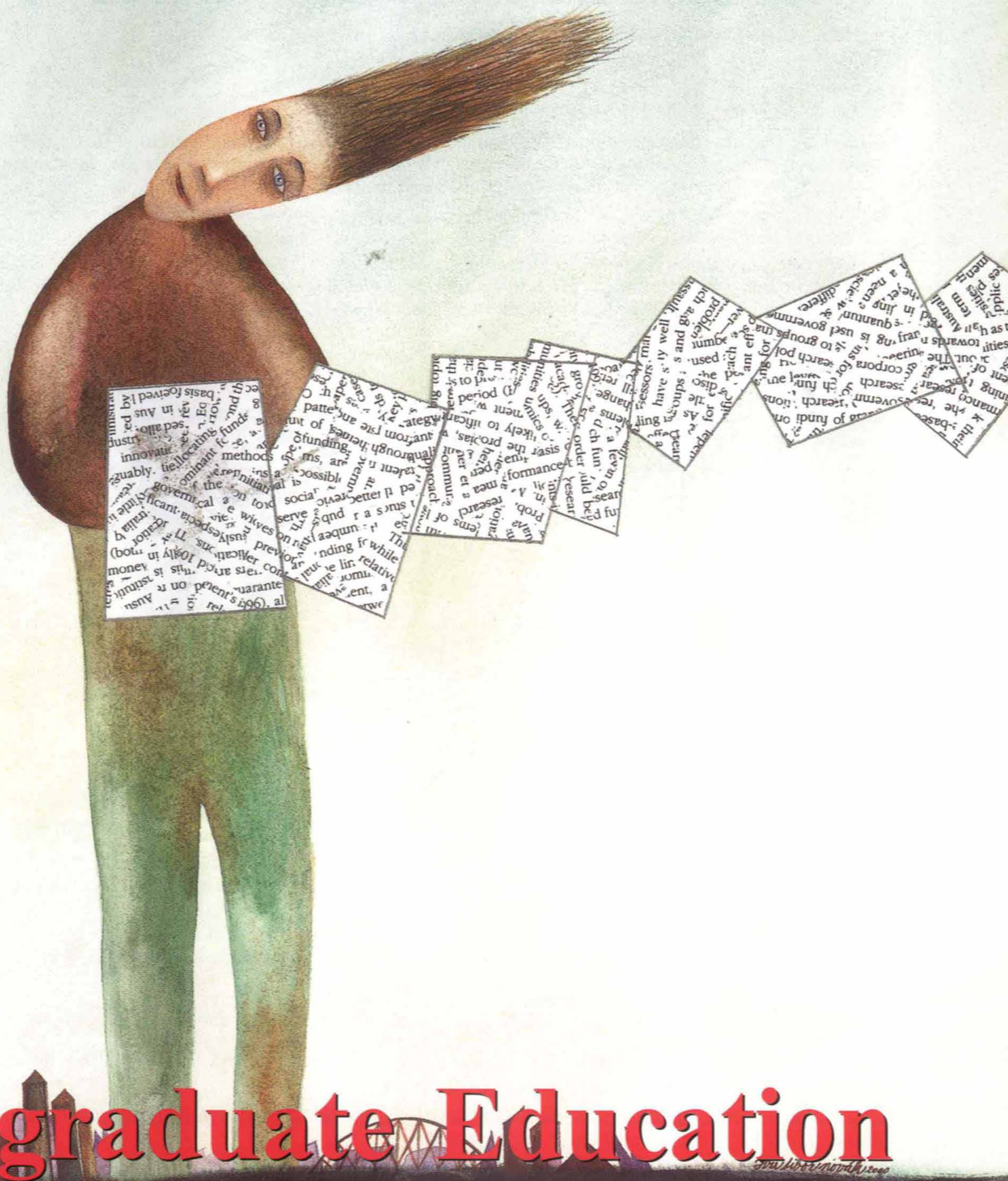


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Commentaries

'Research training' and the conceptual barbarism of the White Paper's postgraduate research agenda

BRADLEY SMITH

Council of Australian Postgraduate Associations



Dr Kemp's Green and White Papers on research and research training assert that universities must improve postgraduate 'research training', because the current system produces poor completion rates, narrow research programs, high attrition and poorly prepared graduates for employment (DETYA, 1999a; 1999b).

The lack of evidence and reliance on 'dirty' data to substantiate the claim of "unacceptable wastage" has been heavily challenged elsewhere (eg. CAPA, 1999; Lawson, 1999; DDOGS, 1999).

My focus here is the poverty of the White Paper's 'research training' framework, in particular the disaggregation of research and training and privileging of students as consumers over students as knowledge producers. This critique is supported by quantification of the new funding formulas and the dangerous distortions it may engender in postgraduate research.

The White Paper articulates 'research training' in terms of increased coursework and acquisition of skills that make students more entrepreneurial and responsive to industry needs and improved supervision to achieve this outcome.

Higher Degree Research (HDR) students do want to develop a range of skills, some of which may well be captured by concepts of training, but these must be placed in a broad integrative framework that captures the richness and multiplicity of postgraduate research experiences. The application of a narrow framework that echoes the instrumentalism of VET sector 'competencies', goes against the current trend toward more open and flexible graduate research education (Pearson and Ford, 1997). While this trend is distributed unevenly within universities, it does reflect growing awareness of the more diversified backgrounds, aspirations, disciplinary interests and research

spaces of the cohort.

For these reasons CAPA has consistently refused to use 'research training' preferring 'research education'. Professor Max Brennan, former Chair of the ARC, was alive to the significance of such distinctions:

I prefer to describe the activity (of research training) as 'research education and training'; 'research training' connotes too narrow a view. The exercise is, or should be, much more than the mere acquisition of technical skills; or, indeed, of knowledge confined within the boundaries of the thesis topic. It should take the student outside those boundaries into adjacent areas so that the thesis subject is seen in the wider context of the disciplines in which it is embedded and beyond that to even wider horizons... Research training (reverting to the abbreviated description) is at the heart of higher education research. (Brennan, 1992)

The rejection of the term 'research training' in favour of 'research education' is not an exercise in semantics but a rejection of the technologies (in the Foucauldian sense), pre-suppositions and beliefs that underpin its usage and define its applicability¹.

The White Paper disaggregates research from training². It states, for example, that "students should be able to make choices about ... what research they do, while training" (p. 6) as if research is some sort of optional extra while the real business of training takes place. This thinking is a form of barbarism because it ignores the significance of the process of learning, research and reflection that produces a thesis and reduces output to a mere exercise to demonstrate certain skills. Thus DETYA staff, and indeed some university administrators, have said without irony that concern about reducing the time limits from five to four years for doctorates and three to two years for Masters is misplaced, because it is "only research training".

What is lost in the demand that universities be more responsive to research students and offer greater 'choice', is recognition that HDR students produce about 60% of university's research and therefore are central to Australia's research effort (DDOGS, 1997). This output is ignored because the White Paper's neo-liberal market framework privileges students as consumers over students as producers.

In terms of policy this means that the core impediments to knowledge production can be overlooked. Thus infrastructure support, the scandalous position of libraries, the time constraints on supervisors in an environment of increasing workload remain unaddressed. In terms of knowledge production, this market framework cannot make a place for the fundamental significance of creativity and originality in research. Granted these are problematic qualities but they are considered core characteristics of an HDR program's contribution to knowledge. This generative dimension goes right to the heart of students' aspirations and goes to the heart of the formative/transformational character of research for researchers and cultures (Clark, 1998; Marginson, 1998). Knowledge generation distinguishes universities from all other post-compulsory providers, yet it is precisely this dimension where the poverty of the 'research training' framework is at its most stark.

The higher education and research communities must accept some responsibility for this state of affairs. The White Paper did not invent 'research training'. The AVCC and ARC use it in their publications. It has common currency in the academic literature and within faculties, where it remains embedded in conservative Master/Apprentice supervisory practices. No doubt such organisations and many academics will agree with Brennan, that 'research training' is simply an abbreviated description, and one with rather different meanings to that of the White Paper. Maybe so, however usage within the sector remains characterised by a lack of critical reflection (Pearson, 1999). Even something as obvious as the inversion of the usual hierarchy of education and training for HDR is rarely commented upon (irrespective of whether such hierarchical thinking is defended or critiqued). This lack of reflection is part of an unease and/or resistance to theorising supervision and postgraduate pedagogy (Lee & Green, 1995; Kiley and Mullins, 2000) and may have significant bearing on how robust, or otherwise, research education will be as the new funding mechanisms take hold.

In the new framework, two competitive funding schemes - the Institutional Grants Scheme (IGS) and the Research Training Scheme (RTS) - combined with reduced student load and reduced time frames for higher degrees, are the prime instruments to eradicate the putative wastage in postgraduate research.

The IGS will combine the current Research Quantum (\$223m) and ARC small grants (\$31m). Institutions will receive proportional allocations based on a funding formula of research income (60%), HDR load (30%) and

publications (10%). HDR load will be calculated on a discipline weighted basis for HECS-exempt domestic students.³

Using 1999 data (DETYA, 2000), HDR load will translate to each student being worth \$2,011 p/a in the low band and \$4,726 p/a in the high band.

The RTS pool will be approximately \$486m and completions, including International and fee-paying domestic students, will constitute 50% of the funding formula. (Research income, 40%, and publications, 10%, make up the balance) Using the most recent published completions data, 1998 (DETYA, 2000), weighting Doctorates at 2:1, and weighting completions for low and high cost bands at a ratio of 2:4.7, completions will constitute 82% of the total funding for HDR students.⁴

Table One: Indicative Value of HDR students to Institutions From 2001⁵

Higher Research Degrees by RFM band	IGS (load)	RTS (completions)	Total Income per completed degree	Average funding per annum	Completions as % of total income per degree
Masters (2.0)	4,022	\$18,341	\$22,363	\$11,181.50	82%
Masters (4.7)	9,452	\$43,101	\$52,553	\$26,276.50	82%
Doctorates (2.0)	8,044	\$36,682	\$44,726	\$11,181.50	82%
Doctorates (4.7)	18,904	\$86,202	\$105,106	\$26,276.50	82%

For a 2 year Masters and 4 year Doctorate then, students are worth the following to universities;

That is, completions will be the driver in the new framework.

So will these mechanisms enhance research training, student choice and make universities more responsive? There is no doubt that there are likely to be shifts in emphasis that will benefit students.

- The very heavy emphasis on completions will focus attention on what services and support will be made available to attract and retain students.
- The new framework will prompt more widespread reflection on distributed models of supervision as other staff provide specialist advice on IP, ethics, thesis writing and so forth, leaving the co-ordinating supervisor to focus on the task of pushing students through more structured programs.
- Reducing time frames is a constraint on students but is also a constraint on supervisors and departmental support, thus resourcing, accreditation and workload models will require close scrutiny.

It is important to note however that these shifts are already occurring albeit distributed unevenly between faculties and disciplines. Thus the benefits are of degree rather than of a fundamental nature; it is not clear that the same can be said for the costs of the new framework.

No funding regime is neutral and it is hard to defend the lack of transparency in the current system but the consequences of the emphasis on completions particularly in a

zero-sum funding environment, are likely to generate a number of dangerous distortions.

- Students from groups with a history of slower completions, including Indigenous students or some women are likely to be considered even more of an unacceptable risk by universities, thus there is an element of social engineering about the proposals.
- Significant (and insidious) shifts are likely to occur within disciplines as faculties and departments have a financial incentive to support easily defined, highly focused postgraduate research projects at the expense of modes of research requiring extensive field work, intricate time consuming laboratory experiments or those tackling somewhat intractable theoretical problems. In terms of 'research training', the logic of the emphasis on completions is to penalise intellectual ambition and reward less risky, perhaps more trivial projects. It is an instrumental logic that does not sit well with the current emphasis on nurturing innovation and a culture that underpins innovation.
- The new funding mechanisms will lead to volatility of funding as institutions will not know until each November or December the redistribution of the IGS and RTS for the coming year. In addition it is inevitable that institutions, particularly smaller institutions, will have bubbles and quieter periods of completions. Such volatility will create an unstable basis for institutional planning, which does not sit well with putative intentions to enhance the quality of research education.
- While there may be legitimate reasons for a change of institution during candidature - primarily a supervisor accepting a position at a different institution - the emphasis on completions as the financial driver of HDR education creates an incentive for institutions to attempt to poach candidates in their final year of study, again undermining stability of the research environment.

The White Paper makes completions and costs per completion the prime quality consideration. It expects more courses and training to make graduates 'industry friendly' in a shorter degree. Something has to give and that must be the research component and the quality of the degree. The White Paper does not and can not address this consequence because the narrow market construction of its concept of 'research training' makes no place for knowledge generation. What is required are richer concepts of research education that give greater weight to students as producers of knowledge. It is not acceptable for the sector to simply say that 'our' understanding of research training is different to that of the government. If we uncritically accept the new framework of 'research training', then we are complicit in undermining knowl-

edge production and generation; we are complicit in barbarism.

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Endnotes

- 1 The head of DETYA's research branch has acknowledged the distinction and has informally signalled intent to change nomenclature. The real issue is whether this translates into meaningful policy shifts.
- 2 This artificial cleavage is formalised in the "new" ARC who lose responsibility of APAs to DETYA.
- 3 Research students are weighted at either 2.0 or 4.7 in the Relative Funding Model (RFM).
- 4 The Green Paper implied no weighting for doctorates and the White Paper was silent on the matter however subsequently DETYA have confirmed that doctorates will be weighted 2:1 relative to Masters. The White Paper did not weight completions by the RFM but subsequent DETYA advice indicates that they will (DETYA 2000b).
- 5 These figures are only indicative because in practice load and completions will be averaged over 2 years, moreover DETYA have yet to confirm exact quantum of funding for the RTS. A more precise value would also take into account students' share of publications (approx. 35%).

Universitas21 - From handloom to chatroom

SIMON BOOTH

University of Melbourne Postgraduate Association



Inevitability is a powerful argument, particularly when an organisation or community is being mobilised for fundamental change. It is used with a monotonous regularity around the idea of globalisation: globalisation is here whether we like it or not – it's a new paradigm for a new millennium – swim with the tide or be pulled under. These senti-

ments serve the rhetorical purpose of pre-empting debate over the appropriate use of the new technology which underpins and enables globalisation. In university communities the rhetoric of inevitability frames the institutional debate on universities' response to globalisation.

Professor Alan Gilbert, Vice-Chancellor of the University of Melbourne and founder of *Universitas21* suffers a serious case of the inevitabilities. 'The very idea of a university seems fragile,' he says. 'The 900-year-old monopoly that traditional universities have exercised in the provision and certification of higher education is under irresistible pressure. It will not survive, and its passing will represent the greatest single revolution that has faced universities in 900 years.' (Gilbert, 2000b) This is a bold statement; Professor Gilbert is a bold man.

It is certainly the case that the technology which enables globalisation does entail change: in the provision of education and, of course, more broadly. However, the shape and nature of that change is subject to discretion. We choose how to employ technology and for what ends. While new technologies frame the parameters of the debate, they do not necessitate any one outcome. It is from this perspective that the transnational education venture *Universitas21* (*U21*) needs to be examined.

U21 is a network of eighteen universities including three from Australia – Melbourne, New South Wales, and Queensland. It is also a company incorporated in London whose core business is "the provision of a pre-eminent brand for educational services supported by a strong quality assurance framework." (*Universitas21* website, 2000) In effect, this means badging and accrediting award programs developed and offered online by multinational corporations. As its own publicity material states, "*Universitas21* is in a position to leverage the reputation, resources and experience of its members on behalf of corporate

partners." University standards and reputations are the province of Academic Boards or their equivalent. These Boards consist of established and reputable academics that make collective decisions and are collectively accountable for the quality, and integrity, of university teaching, learning and research. When *U21* states it is leveraging the reputation, resources and experience of its members on behalf of corporate partners it is entailing the commodification and sale of the processes of Academic Boards.

This is not new at the University of Melbourne. Melbourne University Private Ltd (MUPL) currently operates through an arrangement where the University of Melbourne Academic Board certifies MUPL courses, providing quality assurance and links to the University of Melbourne's "brand". In turn the University draws revenue from the company. *U21*, should it manage to strike a deal with a major corporate partner, will go several steps further down the path laid by MUPL.

In any arrangement made by *U21* there will be very little control exercised by member institutions. They will be asked to attach their own reputation for academic excellence to a process of quality assurance and accreditation which will be managed at arms length from the individual institutions which provide *U21* with academic legitimacy. While we are yet to see the final form of this process, it is hard to see how this cannot but stand in contrast to the collegiate processes of institutional Academic Boards – processes which are at the heart of the idea of the University.

Perhaps this is why Professor Gilbert has labelled the idea of the University as "fragile". He explains this with an arcane historical allusion to the industrialisation of the textile industry around 200 years ago. 'Remember the handloom weavers,' he warns:

Remember the handloom weavers! As their world collapsed, they could think of little else to do but to try, against all hope, to resist change, and defy the tide of history. Yet they were living in the midst of an era of boundless optimism and opportunity. For those who made the adaptation to the new realities of steam-driven factory production, textiles became a more remunerative industry than ever before. (Gilbert, 2000a)

From this statement two key ideas can be drawn. The first is that dynamic new technology in a sector demands change. This is certainly pertinent to higher education today. The second idea is that nostalgia is not an appropriate response in the face of new technology. Again, a solid point. Yet on whose terms was the new reality created and how did the tide of history determine it to be so?

New technology will allow for new pedagogy, new modes of research, and new alliances. It does require institutions to adapt. However the evocation of early 19th century English textiles mills does not fill those committed to a collegiate university with confidence.

The inevitability which Professor Gilbert presents is one premised on an idea that universities must adapt on others' terms. At the risk of over stretching a metaphor, I would argue that the handloom weavers learnt a salutary lesson when their work was co-opted by the Captains of Industry; that lesson being change on your own terms, not someone else's.

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Feature: Postgraduate Education

Marketisation and the new quality agenda: postgraduate coursework at the crossroads

BRADLEY SMITH AND MARK FRANKLAND

Council of Australian Postgraduate Associations

Introduction

Deregulation and competitive market conditions are held by the Minister, Dr Kemp, and some vice-chancellors and commentators, as the only viable policy for addressing the acute resourcing difficulties of Australian universities. The core of the deregulationist argument in respect of students is that higher education confers a significant private benefit. Thus, students should 'invest' in their access to future wealth.¹

The consequences of marketisation on postgraduate coursework are a salutary reminder of the limitations of deregulation. The 'market' emerged as the primary organisational principle in postgraduate coursework education between 1989 and 1994 under the ALP. Intensified marketisation under the Coalition in the form of the cutting of the bulk of funded places has served to further reduce equity of access and to further undermine the efficacy of both internal quality control measures and the normative setting of educational standards.

In this environment, external quality control measures such as the Australian Universities Quality Agency (AQUA) and the *National Protocol for: The Recognition of Universities, The Accreditation of Courses Offered by Non-University Providers, and the Operations of Overseas Higher Education Providers in Australia* (The National Protocol), are required if students' consumer rights are to be protected. However, even if the latter is achieved, and this is by no means certain, it will do nothing to address equity of access and other national interest considerations.

Deregulation: background

In the 1988 Federal Budget the Hawke Labor Government introduced the Higher Education Contribution Scheme (HECS) for domestic higher education students and permitted universities to charge fees for some domestic postgraduate students. These deregulatory measures were introduced to help fund the expansion and 'reform' of higher education under the rubric of the 'clever country' (Dawkins 1988).

Initially postgraduate fees could only be charged to people already in employment seeking formal award courses for professional upgrading. At this time, they could not be charged to continuing students. In 1991, 1993 and 1994 the rules were progressively relaxed so that by 1994 fee-paying was largely deregulated.² There were no maximum or minimum fees, institutions were able to charge fees on courses within funded load and the 20% cap on fee-paying postgraduates within total funded load was removed. The two remaining constraints were:

- fees could not be charged for initial entry vocational qualifications in teaching and nursing and
- funding equivalent of one discounted minimum differential HECS fee was withheld from operating grant for each fee-paying postgraduate within load, if postgraduate load target was not met.³

This essentially describes the current situation although from 2000 institutions are not able to enrol fee-paying postgraduates within the quantum of fully funded places.

This is expected to maximise the number of postgraduate places available to HECS-liable students at the coursework level and will discontinue the cross subsidy for fee-paying places (DETYA, 1999, p. 96).

Coalition cuts to funded places for postgraduate coursework

The ALP initially argued that postgraduate fees were primarily a mechanism to help fund expansion of higher education but increasingly the rationale has been framed in terms of deregulation and 'marketisation' (Woolf and Quarmby, 1999). This emphasis was entrenched after the 1996 Federal Budget when the Coalition announced a series of budget cuts to higher education for the triennium 1997 – 1999. Undergraduate funded load was increased however total funded load was reduced. The cuts were explicitly targeted at postgraduate coursework students, as universities were expected to make 'any necessary

- funded places offered on a HECS basis were removed; and
- institutions attempted to market more fee-paying courses to compensate for cuts to operating grant and unfunded wage increases.

However at the same time, the pool of part government funded, part fee-paying places became severely diluted because of the significant cuts in government funding. The net result of this has been increased attempts to supply more postgraduate coursework programs at a time when effective demand from domestic students has diminished due to decreased HECS places and decreased government funding.

Consequences: Declining domestic numbers

The total number of enrolled postgraduate coursework students has grown each year from 55,242 in 1989 to 102,299 in 1999. This (85%) is significantly higher than undergraduate growth (45%) in the same period. Table 2 shows a total increase in postgraduate coursework EFTSU of 5,011 between 1996 and 1999. This growth, however, masks a bifurcation between international and domestic load with international students increasing by 8,031 EFTSU but domestic students declining by 3,020 EFTSU.⁵ Indeed the domestic load in

1999 was only 500 EFTSU higher than in 1994. Similarly, domestic postgraduate coursework commencements peaked in 1996 and declined by 8% between 1996 and 1999 (DETYA, 2000). As table 3 shows, the increase of about 10,000 EFTSU in fee-paying students has not compensated for the actual decline of 13,000 HECS-liable places.

Consequences: Differential growth and decline between discipline groups

The decline in domestic student load is unevenly distributed through discipline groups. Only two of the eleven disciplinary groups (as defined by DETYA) have experienced growth, the other nine have declined. Combined, these two groups – mathematics and computing science; and administration, business, economics and law – constituted over 50% of domestic load in 1999, up from 38% in 1996. When international students are included, the two groups show significant growth. Engineering and health sciences show a modest increase but the decline in load of the other seven discipline groups remains (See Table 4).

Table 1. Domestic Postgraduate Coursework Fee-paying and Funded Places 1996 - 2000 (EFTSU)

	1996	1997	1998	1999	2000
PG C-work Funded	41,315	36,727	22,286	17,572	16,400
PG C-work Fee-paying	12,365	14,908	20,366	23,869	27,027
Total	53,680	51,635	42,652	41,441	43,427

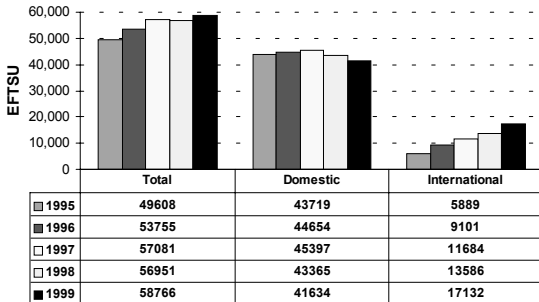
(Source: 1998 to 2000 figures are DETYA data corresponding to Figure V4, page 109 of the *Higher Education Report for the 2000 to 2002 Triennium*. Figures for 1997 are based on data supplied by DETYA on projected load reductions, the *Higher Education Funding Report for the 97-99 Triennium and Selected Higher Education Student Statistics 1997*. Figures for 1996 are based on data supplied by DETYA on projected load reductions, the *Higher Education Funding Report for the 96-98 Triennium and Selected Higher Education Student Statistics 1996*.)

adjustments at the non-research postgraduate level' (Vanstone, 1996).

As Table 1 shows, the cuts to notional load have been precipitous with imputed funded places cut by 25,000 EFTSU between 1996 – 2000. This is numerically equivalent to a large Australian university being shut down. The cut to notional load does not correspond with actual decline in HECS load (refer Table 3). This is explained by a combination of factors including; DETYA's methodology for calculating reductions in postgraduate places;⁴ and universities being permitted to count fee-paying places within funded load (thus the figures in tables 1 and 3 are coming off different bases).

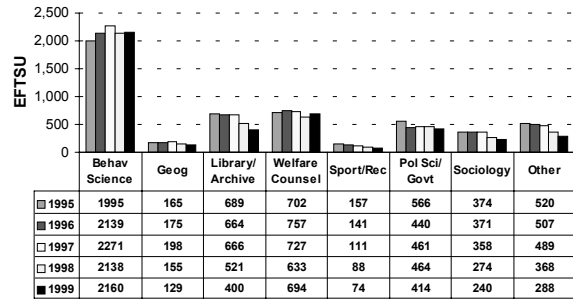
Prior to the massive cuts to postgraduate coursework initiated by Minister Vanstone, the inclusion of fee-paying places within funded load had the effect of reducing the number of HECS-liable places available but underpinned significant growth in places which attracted up-front fees but were still substantially subsidised by the Commonwealth. After the cuts, nearly all postgraduate coursework programs became solely fee-paying because:

Table 2: Actual Postgraduate Coursework Load (EFTSU): Total, Domestic, and International 1995-99



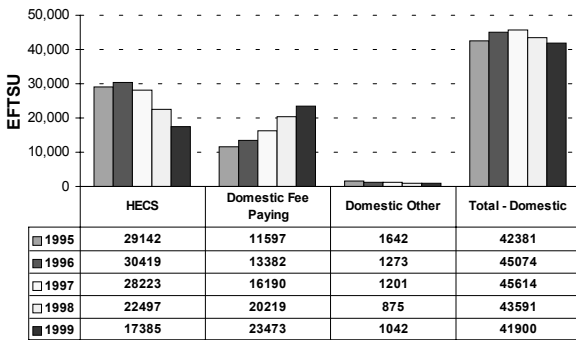
Source: DETYA Selected Higher Education Student Statistics, 1999

Table 5: Domestic Postgraduate Coursework Load (EFTSU): Social Studies Disciplines, 1995-99



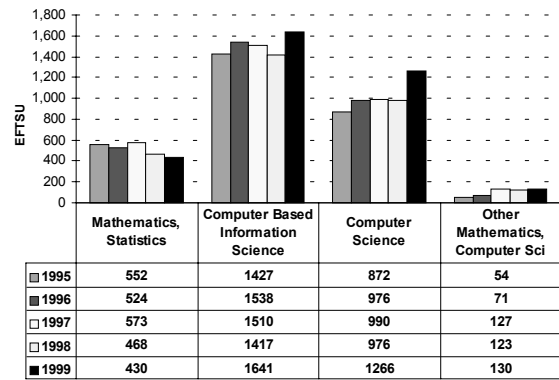
Source: DETYA

Table 3: Domestic Postgraduate Coursework Load by Payment Category 1995-99 (EFTSU)



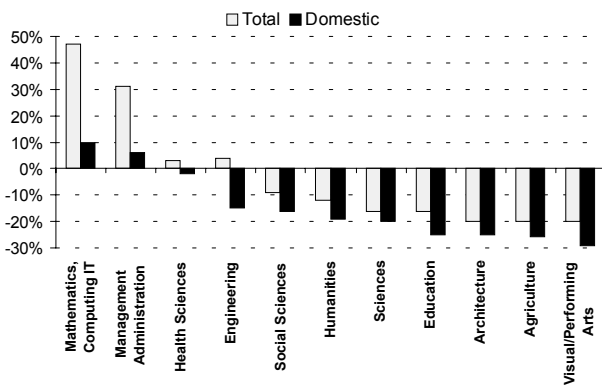
Source: DETYA

Table 6: Domestic Postgraduate Coursework Load (EFTSU): Mathematics, Computer Science Disciplines 1995-99



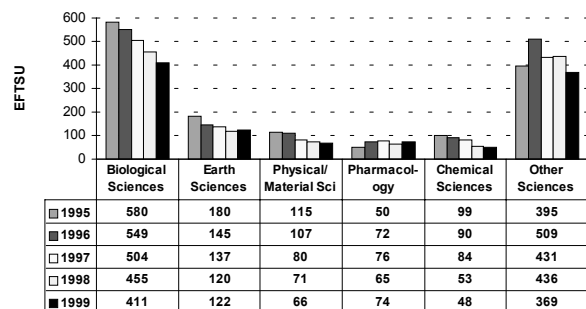
Source: DETYA

Table 4: Percentage Change in Total and Domestic Postgraduate Coursework Load by Broad Discipline Groups, 1996-99



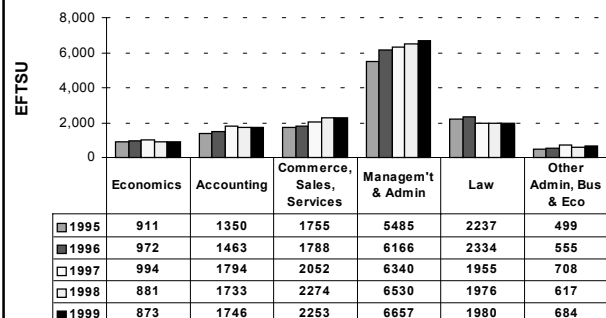
Source: DETYA

Table 7: Domestic Postgraduate Coursework Load (EFTSU): Science Disciplines 1995-99



Source: DETYA

Table 8: Domestic Postgraduate Coursework Load (EFTSU): Economics, Administration, Law Disciplines 1995-99



Source: DETYA

NB: Justice and Legal Studies counted separately after 1997 but placed in law for consistency in this chart.

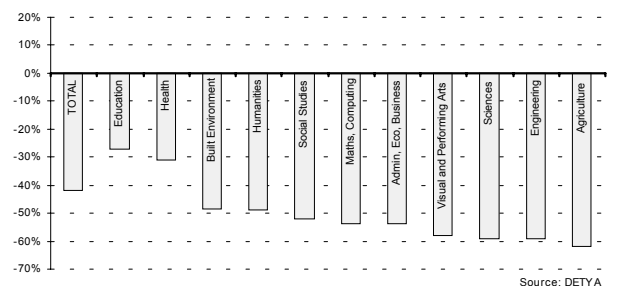
The decline in numbers is also differentiated within disciplinary groups (refer Tables 5, 6, 7 and 8). A number of disciplines including political science and government, welfare counselling, behavioural science, pharmacology and law are proving to be reasonably robust, whereas biological and chemical sciences, library and archive studies, maths and statistics and sociology have experienced quite marked declines.

Use of HECS places

The cuts to funded places for postgraduates were uneven across the sector and while some universities retained a reasonable number of funded places, others did not. Accordingly there has been some variation in the capacity of universities to provide HECS places. A number have set aside a pool of HECS places as 'equity scholarships' for students with demonstrated need (eg, Sydney, Queensland, James Cook and Deakin). Others have used HECS-places as a bonus for academic organisational units which attract fee-paying students (eg UWA).

It might be expected that some universities would use HECS-liable places to ensure the viability of programs with limited market potential. There is some evidence of this. Sydney University, for instance, allocates HECS places for its Graduate Certificate and Graduate Diploma in Sustainable Agriculture. At a system-wide level, however, there is a correlation between declining HECS places and declining numbers in disciplinary groups with the greatest percent reduction of HECS places (61.5%) being Agriculture. (Refer Table 9. NB: The significantly lower decline in HECS places for Education and Health Sciences are because HECS-liable places are reserved for initial entry qualifications in education and nursing.)

Table 9: Percentage change in Domestic HECS-liable places by Discipline Group 1996-99



Source: DETYA

These trends raise fundamental system-wide questions about:

- the breadth and depth of skills;
- knowledge transfer; and
- the efficacy of the marketisation of education.

For example, does Australia benefit from declining numbers of people with postgraduate skills in science and agriculture?

Consequences: Equity

Deregulation and marketisation have highly detrimental equity consequences. The barrier of up-front fees has meant that Indigenous peoples, isolated and rural students and students from low socio-economic backgrounds are significantly under-represented at postgraduate level.⁶ Moreover the only body, apart from postgraduate student associations, that monitored the equity consequences of fee-paying in postgraduate education – the Higher Education Council – has not operated for over two years and was formally wound up this year when NBEET was abolished.

This social engineering is exacerbated by rising 'credentialism' that sees an increasing number of vocations requiring postgraduate qualifications for initial vocational entry and/or progress beyond initial entry (eg. psychology, librarianship, midwifery). If students cannot afford fees or access commercial loans, they cannot get a job in such fields. Thus, many of the most able can no longer enter or progress in an increasing range of fields.⁷

Consequences: Quality

There are considerable difficulties with gaining adequate information to assess the impact of marketisation on quality of programs, not least of all, the problem of what we might even mean by quality. As our interest is in very broad system-wide trends, we will assume that entry standards, time frames, resources and level of subjects in

courses are crude but relevant measures of the quality of programs.

To highlight some dimensions of the quality issues it is well to consider the disciplinary group of Agriculture and Renewable Resource. Between 1996 and 1999 domestic EFTSU declined by 25% and HECS places declined 61.5% from 330 in 1996 to 127 in 1999. In 2000, there are only 43 HECS places. However, there are over 200 agriculture courses available; a significant increase from the 122 advertised as being on offer in 1996.⁸ Given declining student numbers, this would seem to be 'student choice' gone mad.

This proliferation of courses needs to be considered in the context of nested programs with three exit awards - Graduate Certificate, Graduate Diploma and Masters. Moreover, this growth is inflated by the trend away from generic titles to specialised niche degrees (in name if not entirely in content). Sydney University, for instance, offers a Master of Agriculture with eleven named specialisations including agricultural economics and turf management. In 1999, there were eight students in the whole program.

Following discussion with every university offering agriculture and renewable resources programs it is clear that student numbers are in serious decline, except for courses feeding into the wine industry and a number closely associated with major agribusiness concerns.⁹ Significant proportions of courses have less than five students; a number of universities reporting courses with just one student.

In the absence of sufficient numbers of fee-paying students, postgraduate courses are only sustainable if departments use undergraduate subjects for part of, or the entire, course. This is a controversial practice. Some academics argue they 'mark harder' and some also set additional work for postgraduate students in undergraduate subjects. Even so, it is difficult to believe that discussions in a subject with twenty students comprising eighteen 2nd year and two 4th year students will not be conducted at the lower level. We contend that excessive use of undergraduate material is, by definition, 'dumbing down' of postgraduate education and potentially misleading to students seeking to enrol in 'postgraduate' programs.¹⁰ The legal validity of such practices awaits testing in the Australian Competition and Consumer Commission and in relevant State and Territory tribunals.

The position of agriculture highlights one of the fundamental flaws of the deregulatory agenda. Private gain from higher education is highly differentiated between vocations. The differential (and relatively declining) returns on graduate qualifications in a mass education environment means that with the exception of some high demand prestigious degrees, universities cannot charge high fees. While it is plausible that an MBA or IT graduate will receive a significant return on their investment, there is little or no private benefit for teachers, social workers, nurses and

people employed in some scientific, agricultural and technical areas. Yet the higher level skills and insights that good postgraduate programs confer are of considerable public benefit in terms of better teachers, nurses and agriculturalists.

The reliance on market returns on private investment in education has important resource implications. The majority of courses, particularly in economically crucial but numerically declining areas such as agriculture and the natural sciences, have fees set just above the HECS rate. That is, universities are effectively only receiving a marginal funding rate. Thus while fee-paying domestic students are helping cash flow in many academic units there are insufficient 'profits' for significant investment in course quality.

The funding crisis and competitive market pressures have forced universities into other 'dumbing down' practices to increase throughput. These include reducing subject load, lowering entry standards and shortening time frames. Academics and students on university accreditation committees will be very familiar with course duration reductions justified thus:

The committee noted the pressure on the Faculty to offer a Master by coursework that would be competitive in length with other universities while maintaining quality assurance. (University of Tasmania, 2000)

Analysis of these practices is problematic. Institutions publish inconsistent information about time frames, entry standards, recognition of prior learning (RPL) policies and fees policies. Moreover, Australian universities are self-accrediting institutions which determine curriculum, teaching methods and assessment. Thus while there are normalising expectations attached to characteristics, entry standards, disciplinary and vocational traditions and lengths of degrees, all of these areas have exhibited increased variance corresponding to increases in the level of marketisation.

'Other postgraduate' courses, notably the Graduate Diploma, have been most affected by declining numbers, however in our view, the degree most affected by reduction of standards is the Masters by coursework. System-wide evidence for this can be inferred by comparing the duration and characteristics of degrees as identified by the NBEET's Higher Education Council (HEC) in 1989 and current AQF descriptors.

Shifting sands: NBEET (1989) – AQF (1998)

In 1989 a working party of NBEET's Higher Education Council made recommendations seeking to arrive at national consistency of nomenclature and length of post-secondary qualifications based on standard practices. The NBEET recommendations for the Masters reflect funding models and standard practice to a much greater extent

than the Australian Council of Tertiary Awards (ACTA) guidelines. However, for reasons that remain unexplained, their recommendations for postgraduate qualifications, notably the Masters, were not accepted in the subsequent NBEET (1990) report and higher degree national standards continued to reflect the short duration of previous guidelines.

Duration of degrees

The Australian Qualifications Framework (AQF) supersedes guidelines for the various Australian post-compulsory academic awards contained in its predecessors the Register of Australian Tertiary Education (RATE) and the Australian Council on Tertiary Awards (ACTA).

However, the guidelines for the Masters and Doctorate awards have, for many years, failed to reflect actual funding periods and normal course duration. Thus, ACTA (1989) and AQF (1998) give the 'normal' duration of doctorates as three years when actual average completion times and funding periods significantly exceed this. Similarly, the Masters by Research was and is currently funded for three years, not one year as in AQF (1998).

The one-year research Masters appears in the ACTA 1986 guidelines. ACTA guidelines were designed to ensure that qualifications in the former Colleges of Advanced Education (CAEs) were comparable with universities. The ACTA 1986 guidelines for Masters degree by thesis state:

Because each candidature is individual and specific, the Council would not wish to be unduly specific about the duration of study. The Council considers that two (2) years might be a normal time for completion of a master's degree by thesis but would accept that the minimum time for completion could be one calendar year from the date of registration. The degree would be awarded in this time only if there were exceptional circumstances relating to the candidate's academic and/or professional background. (ACTA, 1986)

This is clearly a *minimum* rather than a typical or average duration. It also appears to show that the shift in national guidelines for research Masters, mediated by the NBEET work on course length in 1989–1990, is a shift from a *minimum* (ACTA) to an *implied nominal* duration. The NBEET final report (1990, p. 13) recommends 'a research master at one calendar year ... following a four-year first degree'. This NBEET position is simply replicated in the subsequent RATE and AQF guidelines, neither of which carried out their own specific research on course length.¹¹

The history of course duration in national guidelines for the Masters by coursework appears to follow a similar pattern with the added complication of coursework Masters taking in a one-year preparatory phase in most versions of the standards. Thus, in effect both coursework and the research Masters appear to coalesce around the one-year duration post four-year honours or equivalent. It is argued here that for most of the time of the operation of

these national standards the duration for both the coursework and the research masters has been understated in the national standards. However, with the advent of full marketisation the standards for postgraduate coursework have come to represent more like a maximum for many course designers¹². Thus, the difference between NBEET (1989) and the current AQF descriptors can be seen as a defacto measure of changes in average practice.

Characteristics of the Masters

There are significant differences between the NBEET (1989) and AQF descriptors (refer to Table 10):

- The Masters Degree, like the Doctorate, is a Higher Degree. NBEET requires honours or equivalent for entry as does the AQF for Masters by research (Conventionally students require a distinction or 2A to progress to HDR). However, the AQF allows entry from a pass bachelor into a Masters by coursework. This was primarily to allow for Masters preparatory programs and credit for Graduate Diplomas. However, the lack of a clear honours equivalent guideline has led to confusion in course design and articulation.
- Higher degrees are supposed to be conducted at a higher level than Graduate Diplomas. NBEET describe then current practice of a 4+1.5 or 4+2 year model for the Masters. The AQF describe a 3+2 year model for Masters by Coursework, however this is more accurately described as 3+1+1. By allowing entry at a lower level for Masters by coursework, the AQF implicitly allows study at a lower level to form part of the higher degree, a practice that NBEET did not accept.
- The NBEET descriptors are careful to make no distinction between mode of attainment (research or coursework) as they recognise the Masters as a particular level of degree. The AQF however, allows different entry standards and typical completion times between coursework and research degrees.¹³

The contention here is that the differences between the NBEET (1989) discussion document and AQF descriptors throw light on the 'dumbing down' of the Masters by coursework degree. Its status *as a higher degree* has been diminished and time frames reduced by 0.5 - 1 year (EFT) in the decade since the introduction of full-fees (in practice, the reduction is often greater, see endnote 14).

The comparison also highlights the inconsistencies that confront students and employers in practice. For example, Monash University advertise a 2 year full time equivalent (FTE) Masters of Business, 1 year (FTE) Masters of Business (International Business) and a 6 month (FTE) Masters of Marketing.¹⁴ Analysis of postgraduate guides suggests that programs of this short duration at the higher degree level have become the norm across the sector where they are embedded in a nested structure which gives full or

Table 10: Masters Degree - NBEET (1989) and AQF (1998) descriptors

	Award	Normal Entry Standards	Maximum Funding Period/Typical duration (EFT)
'89	Masters Degree (In same or allied field)	Satisfactory completion of an honours degree or an acceptable 8 semester higher degree program, together with a demonstrated potential in study and/or professional practice.	3 semesters (Coursework) 1.5 Calender years (research)
	Masters Degree (in different field from first degree) (eg. MBA, MEd following a BA or BSc)	Satisfactory completion of an honours degree or an acceptable 8 semester higher degree program, together with a demonstrated potential in study and/or professional practice.	4 semesters (Coursework) 2 Calender years (Research)
'98	Masters Degree (AQF 1998)	Candidates typically hold an honours Bachelor degree, a qualifying year of study or equivalent and are expected to demonstrate potential to undertake work at this level. In some circumstances relevant prior work can be recognized, particularly where high-level performance in graduate studies or relevant professional practice has been undertaken. The Masters degree by coursework is normally entered into after a period of employment and has a professional orientation, allowing entry from a pass Bachelor Degree	2 years (Coursework)1 year (research)

(Source: Higher Education Council (1989) *Course Length and Nomenclature: A Discussion Paper*, National Board of Employment, Education and Training, p. 5, Australian Qualifications Framework (1998), *Implementation Handbook*, 2nd Edition, Carlton: AQFAB, pp. 55-6)

significant credit in the Masters for study in lower level postgraduate programs. Given such variation in duration for the same qualification what exactly do students think they are ‘buying’? What do employers think they are getting when they employ someone with a Masters?

The AQF Advisory Board is currently reviewing its guidelines for the degree and all postgraduate awards. They may well update and clarify the Masters guidelines and the entry paths to the Masters. However, in an increasingly global market for higher education will even excellent AQF guidelines be enough to ensure the integrity of the awards Australian students are studying for?

A new regulatory regime?

In the new global higher education environment, market forces rather than government funding models and pedagogic norms are the guiding force in the establishment of course; length, quality, entry level and content. Increased external regulation is then required if the currency of course awards are to retain their value. This is currently

evident in the Australian market for postgraduate courses. Here students have already been recast as consumers and are expected to pay large up-front fees if they want to study. Yet, there is little to assure them that the most basic descriptor of what they are purchasing – the title of the course award – has integrity. Recent developments such as the National Protocol and the AUQA may address this problem, but only if significant steps are taken to assure regulatory consistency.

The Ministerial Council for Employment, Education, Training and Youth Affairs (MCEETYA) produced the National Protocol to deal with¹⁵:

- Criteria and processes for recognition of Australian Universities;
- Operation of overseas higher education institutions in Australia;
- Accreditation of higher education courses to be offered by non-self accrediting institutions;

- Delivery arrangements for higher education institutions involving other organisations;
- Endorsement of courses for overseas students. (National Protocol for Higher Education Approval Process, 1.7).

The Protocol refers to the AQF where it states that:

- an institution [university] which meets agreed national criteria, and is authorised under legislation, will be listed on the AQF register of bodies which are authorised to issue qualifications (2.23);
- the awards covered by higher education legislation and processes should be those defined as higher education in the AQF (4.9); and
- the course design and content should satisfy the requirements set in the Australian Qualifications Framework for the award level (4.22).

However, the States, Territories and the Commonwealth are currently free to ignore the AQF. This means that neither the AQF nor the Protocol, as they now stand, can provide a fully effective national standard for the measurement of the adequacy of educational awards in universities and Vocational Education and Training (VET). Thus, the Commonwealth admitted the Norfolk Island based Greenwich University to the status of university without it being entered onto the 'register of AQF bodies that are authorised to issue qualifications'.¹⁶ To do so now would contravene the intent of the protocol but not the law. This loophole needs to be removed to prevent the possibility of a jurisdiction deliberately exploiting lowering of recognition standards.

The States and Territories also commonly ignore the AQF. These jurisdictions have the legal power to grant self-accrediting status to universities or to directly accredit courses. The AQF has proved to be no guarantee of consistency between the States and Territories and the example of the Masters is yet again pertinent. For example, the AQF was amended to accommodate the issuance of postgraduate qualifications by VET providers. Yet, the States and Territories are divided on the validity of this practice. Some States will accredit VET postgraduate courses (eg. SA, Vic and NSW) while others will not (eg. Qld). In 1999, when VET provision of Graduate Certificates and Graduate Diplomas was included in the AQF the AQF Advisory Board stated that they have:

always preferred to include emerging programs under the current generic titles rather than moving to a separate qualifications for each sector where there are equivalent outcomes. (Campus Review, 2000, p. 7)

However, in what sense do VET and higher education provide 'equivalent outcomes' at the postgraduate level? Not only does the AQF now encompass VET qualifications all the way to postgraduate level, some jurisdictions have allowed the introduction of VET degrees when a VET

diploma of similar standard and duration is currently included in the AQF (eg. ACT). VET studies are beginning to make up significant portions of the Masters degree under some nested program arrangements in multi-sectorial institutions. The VET Masters is then not far away. These developments make a mockery of the nexus between research and teaching which is supposed to underpin university learning and in particular higher degrees.

Furthermore, as we have already indicated considerable variation exists between the standards applied to the Masters degrees by universities. At the very least, this raises a question about the regime of compliance to AQF standards by self-accrediting institutions. The States and Territories have been willing to allow self-accrediting institutions to be 'innovative' in course length and description, for example, the establishment of micro length Masters. Recently, the private arm of the University of Melbourne established a full fee-paying *Juris Doctor*, a course with no postgraduate component what so ever.

Variation between jurisdictions and between self-accrediting providers may well encourage Australian and international providers with the laxest standards to seek accreditation in the jurisdiction most likely to accredit them. In a competitive market, this process will undermine jurisdictions and institutions that seek to set standards, at a higher level. This is particularly so where the sphere of the provider's operations extend beyond the borders of a State or Territory jurisdiction. Universities and other higher education providers now operate extensively in national and international education markets via distance delivery and a variety of other arrangements.

This problem is acknowledged to a limited extent in the Protocol, which states at 4.4 that:

The awards protected under the relevant legislation differ from jurisdiction to jurisdiction, and there is no common position on what awards should be protected... Some award levels including diploma, graduate certificate and graduate diploma may be accredited under both higher education and vocational education legislation. This lack of uniformity in award titles protected, and agreement on what constitutes higher education, causes some difficulties in cross-jurisdictional accreditation processes. (National Protocol for higher education Approval Process, 4.4)

The establishment of the Australian Universities Quality Agency (AUQA), announced by Minister Kemp in December 1999, perhaps offers more hope to those who wish to see some basis of objective measurement and maintenance of standards applied nationally (and internationally) to the issuing of higher education qualifications in Australia.

As described in its Constitution, the AUQA is a company jointly owned by the States, Territories and Commonwealth. The objectives of AUQA are:

1. to arrange and manage a system of periodic audits of quality assurance arrangements relating to the activities of Australian Universities, other Self Accrediting Institutions and State and Territory higher education accreditation bodies;
2. to monitor, review, analyse and provide public reports on quality assurance arrangements in self accrediting institutions on processes and producers of State and Territory accreditation authorities, and on the impact of those processes on the quality of programs;
3. to report on the criteria for the accreditation of new universities and non-university higher education courses as a result of information obtained during the audit of institutions and State and Territory accreditation processes; and
4. to report on the relative standards of the Australian higher education system and its quality assurance processes, including their international standing, as a result of information obtained during the audit process. (*Constitution*, Australian Universities Quality Agency, 1.5)

If the AUQA observes the Protocol, this leaves the AQF the role of setting the standards for Australia's higher education academic awards. However, the AQFAB can not enforce national standards on the States and Territories. In effect, this leaves the accrediting bodies to set essential benchmarks by which they are then to be assessed by the AUQA. This vicious circle must be addressed if the quality of postgraduate coursework and Australian education awards in general, are to be assured. Therefore if the AUQA is to meet its objectives, particularly 3 and 4, the agency will need to have access to a process whereby States, Territories and institutions must comply with a nationally agreed qualifications framework and these standards must be set according to objective criteria.

In the end this will depend upon the will of the States and Territories to set up a process where they agree to abide by standards established by an external body which is jointly controlled by the jurisdictions. This would simply require giving the AQF and the AUQA sufficient legislative underpinning and funding. Such a structure need not be more expensive than the current multiplicity of State, Territory, Commonwealth and national co-ordinating bodies and should be more efficient and effective in its operations. The Commonwealth as the main Government funding agency of university education and the player with the greatest ability to influence VET and other education policy on a national basis could have considerable influence on this process as might a determined collective of States and Territories.

Conclusion

Our broad overview of some consequences of marketisation in postgraduate education is a salutary lesson about

further marketisation and deregulation of higher education. Key issues such as how Australia benefits from declining numbers of students in general and declining numbers in strategic areas such as biological sciences and agriculture in particular must be addressed. Marketisation allows access only to those who can pay high up-front fees and creates strong 'dumbing down' incentives. There is also evidence that the quality of programs has been diminished in the past decade. In our view, postgraduate coursework is at a crossroads. Recent joint Commonwealth, State and Territory initiatives do not go far enough. They will not be successful unless the AQF and its relations with accreditation bodies ensure commonly agreed and legislated standards across all jurisdictions. Unless there are significant efforts to address all of these issues the prospect for the quality of postgraduate education and the breadth and depth of knowledge and skills in this country, is bleak.

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Endnotes

1 See, for example, West 1998; Kemp 2000; Norton 2000.

2 The instability of the changes to fee-paying between 1989 - 1994 were exacerbated by a high turnover of Education Ministers (Dawkins, Baldwin, Beazley and Crean) and were criticised by the AVCC 1997; Heagney and Stead 1994; and West 1998. In addition, as Woolf and Quarmby (1999, p. 26) point out, the guidelines are set by the Minister and are not a 'disallowable instrument'. ie. changes to guidelines are not required to be tabled in parliament thus are not able to be disallowed by either House.

3 There is no corresponding 'reward' for over-enrolments as per the undergraduate marginal funding scheme introduced in 1998.

4 DETYA used an averaged RFM to calculate notional load reductions.

5 The EFTSU in tables 3 - 9 do not correspond to individual students or courses. These tables were compiled from data supplied by DETYA to CAPA giving discipline by level of course by HECS status. Thus, a student doing a Graduate Diploma in agricultural economics may do three agriculture subjects, three economics subjects, one statistics subject and one administration subject. In the data, this student would show as 0.375 EFTSU in Agriculture, 0.375 EFTSU in Economics and so forth. Thus while the data is internally consistent and valuable in showing trends, they do not capture the increasingly cross-disciplinary nature of higher education.

6 The serious flaws in the current equity framework and the detrimental consequences of up-front fee-paying for targeted equity groups have been well covered elsewhere (eg HEC, 1996, 1998; Anderson et al, 1997, 2000; Woolf and Quamby, 1999).

7 An additional barrier is that the ATO will only accept education expenses for study directly related to assessable income. Thus, students studying in different fields with a view to changing their vocation are discriminated against. As most people will now have 4 - 5 occupations in their working life, this tax law is out of step with the increasing mobility and flexibility of the labour force.

8 Based on Ashenden and Milligan (1995, 1999), plus searches of individual university's websites.

9 While outside our concerns here, this raises a significant problem whereby the 'market' is creating a bifurcation between courses geared at agribusiness and the declining viability of courses that offer different approaches.

10 In its 10th report, the HEC (1996), foreshadowed a detailed examination of substitution of undergraduate for postgraduate programs, but did not proceed with this.

11 Information on the early ACTA guidelines and its precursors was kindly provided by Judith Forsyth of AQFAB and has been paraphrased in this section.

12 Which, unlike the final recommendations of the NBEET (1990) process, represent a normative indicator.

13 These time frames bear little correlation to current practices in research degrees but are more reflective of norms in the case of coursework. This suggests that in recent times, market pressures and the ballooning development of new programs in discipline areas with little or no history of postgraduate education may have led course designers to have greater recourse to the letter of the AQF guidelines in the case of the Masters by coursework.

14 The diminution of the Masters as a Higher Degree is well illustrated by Monash's Master of Marketing. This degree is advertised as a one semester (0.5 year) program in *The Good Universities Guide: Postgraduate and Career Upgrade 2000* (Ashenden and Milligan 1999, p. 183) and the *AVCC Postgraduate Directory* (AVCC & GCCA, 1999; p. 119). In the *AVCC Postgraduate Directory* the pre-requisite for this course is stated as "an honours degree (at credit average or better) in the discipline or the Graduate Diploma in Marketing or an equivalent qualification" (p. 119). This information is contradicted by Monash who state that "the Masters of Marketing comprises 12 subjects and ... requires 1.5 years of full time study post an undergraduate degree for its completion, rather than 6 months". (Russe 1 2000)

According to Monash's 2000 handbook, students who have satisfactorily completed the Graduate Diploma in Marketing can get credit of up to six subjects in the Masters. This conflates a 4th year equivalent with up to half of the Masters course. This is a significant gloss, as up to half of this higher degree course is not conducted at a higher degree level. Furthermore, it is not clear whether entry into the Masters via the Graduate Diploma is at a level of "an honours (at credit average or better).

15 The draft protocol was agreed in April 2000. However, as of November 2000, no State or Territory has prepared legislation to give effect to the protocols.

We want to emphasise that incorporating study at a lower level into the Masters is a practice by no means confined to Monash, nor does it breach AQF guidelines. All universities have 'nested' programs by which Graduate Certificates and Graduate Diplomas articulate (with credit) into Masters programs. Indeed Monash has stricter guidelines than most universities by not permitting credit from Graduate Diplomas to exceed more than 50% of the Masters. Other institutions with a similar course structure are effectively offering 6 months (EFT) Masters programs if they accept full credit for the Graduate Diploma.

16 Norfolk Island is an Australian external territory and thus comes under Commonwealth jurisdiction.

Research grants: problems and options

BRIAN MARTIN

University of Wollongong

Introduction

Researchers often complain about research grant schemes, but usually within a narrow frame of reference. Looking more broadly, problems with grant schemes can be classified as bias, waste, discouragement and orientation to interests. There are various ways to allocate research funds, including administrative decision, peer review, performance-based allocation, equality and community-based bids. Each has different sorts of problems and serves different interests. By looking at diverse systems for allocating research funds, some of the assumptions underlying usual discussions become more apparent. Recent changes in Australian government policy on higher education research are examined using the framework provided here.

Any research grants scheme is likely to generate a great deal of informal complaint. Not surprisingly, dissatisfaction is most common among unsuccessful applicants, with complaints about bias and wasted effort. Administrators worry about making the system work efficiently. Reformers seek methods of making better decisions, for example by changing selection criteria and peer review systems, and ensuring accountability.

However, most of the discussions about grant schemes deal only with minor changes within the same basic structure. Yet the structure of a scheme is often the primary determinant of the sorts of problems that it generates. This article aims to provide a broader perspective on this issue. I start by outlining several key types of problems with grant schemes and then lay out several types of methods for decision making. With this foundation, it is straightforward to note the sorts of problems most commonly or likely to be associated with decision-making systems. Finally, recent changes in Australian government policy on higher education research are assessed using the broad framework offered here. (Some of the sources cited below deal with peer review for journals, but their assessments are likely to apply to peer review for grants as well.)

Problems

What constitutes a problem with a grant scheme, of course, depends on the observer. Hence the focus needs to be on perceived problems, acknowledging that widespread perception of a problem may be a problem in itself, whatever the 'facts'. Here, several different types of problem are outlined.

1. Bias

Among applicants, especially unsuccessful ones, allegations of bias are commonplace. They include the following.

- Success-breeds-success bias: successful applicants are likely to become entrenched, using their grants to produce the outputs necessary to attract further funds, while others never have the chance to get started.
- Insider bias: decisions are made by cliques of insiders, who think highly of, and award most grants to, themselves and a small group of favourites.
- Dominant group bias: there is discrimination against groups such as women, ethnic minorities and lower-status institutions (Peters and Ceci, 1982; Wenneras and Wold, 1997).
- Conventional approach bias: grants are much more likely to support tried-and-true approaches, while challenging, innovative or unorthodox proposals are seldom funded (Armstrong, 1996, 1997; Epstein, 1990; Horrobin 1990, 1996).
- Personal bias: administrators or referees obstruct researchers or projects that they do not like (Horrobin, 1974).

To these possibilities can be added 'random bias' due to incompetence of administrators or referees.

2. Waste

Any grant scheme requires administrative overheads to assess applications. In addition, applicants may spend a large amount of time preparing applications. Even in an efficiently run operation, the cost associated with running the scheme and preparing applications can be a significant proportion of the money awarded in grants, especially if the grants are small and the success rate is low. In addition, not all grant schemes are run efficiently, aggravating the problem of waste.

3. Discouragement

Most of the attention in grant schemes is on those who are successful, but there can be significant effects on those who are unsuccessful. They can be disheartened by rejections or become resentful. This provides fertile soil for beliefs that decisions are biased, which help to alleviate the stigma of failure. Any competitive system creates this

problem, whether it is grading in schools or promotion systems at work. There is considerable evidence that competition reduces intrinsic motivation (Kohn, 1993). Even for more successful applicants, the goal of winning a grant may become more significant than doing the research.

4. Orientation to interests

The possibility of getting a grant provides an incentive to do research that pleases those dispensing the money. Grants provided by a corporation or government department for research in particular fields—telecommunications or pesticides—obviously orient researchers to particular problems. This is not necessarily a problem in itself, but can be seen to be one in the wider context of social priorities. In short, research is oriented to those who have money to dispense. Social problems which no one has a vested interest in solving receive few resources (Arditti et al., 1980; Dickson, 1984; Martin, 1979).

Many government grant schemes are oriented not to problems but to acquisition of knowledge. Grants go to applicants who best make the case that they are pushing back the frontiers in astronomy or brain structure. Even in these cases, it can be argued that there is an indirect orientation to outside interests. For example, problems in numerical analysis or oceanography may be influenced by military priorities; problems in organic chemistry or electrical engineering may be influenced by corporate priorities. This influence can occur through paradigms, potential applications of pure research, or job prospects.

Finally, researchers have a vested interest in their own careers, including positions and status. In as much as top researchers are influential in making decisions about grants, it is likely that the system of research—based on full-time professional specialists—will be perpetuated. This may be at the expense of other priorities, such as pressing social problems. The familiar example of researchers recommending further research is symptomatic of the problem that the grant system is oriented to the interests of researchers at the expense of others.

Methods

Researchers are so familiar with peer review—not least through refereed journals—that it may seem that there is no sensible alternative. But actually there are various possibilities. The following are five possibilities, chosen because they have the potential to deal effectively with one or more of the problems noted above. They are presented as ideal types. In practice, actual allocation of research funds typically combines elements of several of these methods.

Method A: administrative decision

In this ideal system, all decisions about research priorities and funding are made by top administrators, who may or may not be researchers themselves. In making their decisions, the administrators take advice from a range of groups: political and economic leaders, researchers, lobbyists and so forth. The approach is typical of research in large bureaucracies, especially government (in particular the military) and corporations. The justification for this approach is service to national, public or shareholder interest, which are often taken as synonymous. The research system emphasises co-operation and teamwork, the exemplar being the Manhattan project for producing the first nuclear weapons.

The patterns of research in the world today reflect high-level administrative decisions. This applies not just to most government and corporate research but also to much university research, since administrators make most of the decisions to decide the distribution of funds between different fields, provide research infrastructure, and to set up specific research centres and programs. For example, the framework for deciding the allocation of research funding between telecommunications engineering and musicology within a university is normally decided by managers, rather than by peer comparisons, equal distribution or public opinion poll. There is, of course, no objective method to decide such an allocation.

Researchers and other pressure groups do have some influence on such administrative decisions. For example, researchers and consumer groups have some influence on the research agendas of electricity authorities and electronics firms. Although administrative decision is widely used, it has received relatively little critical attention compared to peer review; there are only a few researchers who enthusiastically advocate it (McCutchen, 1977).

Method B: peer review

In this model, decisions about research priorities and funding are made by peers, namely professional researchers knowledgeable in relevant areas, in a competitive merit-based system. The justification for peer review is that peers are best able to judge the merit of research and that high-quality research is best able to advance knowledge and serve the public interest.

Peer review can be implemented in various ways. Applications can be sent to anonymous referees who rate them. Alternatively, applications might all be judged by a small panel without any outside comment. As long as the panel members are knowledgeable in the field, this is still judgement by peers, though more open to accusations of bias. Some key elements in peer review systems are:

- independence or otherwise of referees;
- anonymity of referees versus open peer review;

- criteria for decision making;
- method of decision making.

There is a large literature on peer review, and much discussion (Armstrong, 1997; Campanario, 1995; Chubin and Hackett, 1990; Daniel, 1993; Peters and Ceci, 1982; Wessely, 1998). However, for the purposes here, the various options in peer review systems are secondary to the main point that ranking of competing applications is primarily based on judgements by peers.

After administrative decision, peer review plays a significant role in setting research priorities and making funding decisions. This operates in grants schemes and in decisions at the research project level within universities and, to a lesser extent, in some government and corporate research units. As noted above, administrative decisions play a central role in setting the framework for many peer-review decisions.

Method C: performance-based funding

This method funds researchers according to the outputs that they have produced, such as publications and patents (Forsdyke, 1993; Roy, 1984). By defining the desired sorts of performance and defining the rewards, performance-based funding can be implemented without formal grant applications at all. For example, each paper in a specified journal (perhaps weighted by the journal's impact factor) could result in a defined payment to the authors. The research quantum allocated to Australian universities relies on a formula including weights for publications, research degree completions and funds received. This is similar to Roy's (1984) proposal for allocation of funds to groups of researchers based on group productivity. Obviously, peer judgements influence funding via the outputs, but performance-based funding differs from typical peer review systems in being based strictly on outputs rather than grant applications. One justification for performance-based allocation is to avoid direct biases based on reputation, gender or research findings.

Offering prizes for discoveries can be considered to be another type of performance-based funding. Nobel prize winners receive not only money but fame which often can be translated into further resources.

Method D: equality

In this approach, every researcher gets either an equal amount of funding or an equal chance at funding. Some minimum requirements can be put on who is eligible, such as all staff at a university or in a research group. Among those who are eligible, available funding can be divided up in any of several ways:

- Each year, available funds are equally divided between researchers.

- Researchers take turns receiving significant grants.
- Grants are awarded using a lottery.

A considerable proportion of research funds are currently allocated using this method, at least nominally. If university staff are expected to devote one third of their time to research, then one third of the budget for salaries could be said to be allocated using the method of rough equality (though since salaries are different, the nominal allocation is not equal). For some humanities research, for example, time and access to good libraries are the most crucial elements, and additional research funding is less significant. On the other hand, in many technical fields, salaries are only the beginning of what is required to undertake research.

Method E: community-based allocation

In this model, research priorities and funding are decided by a range of community groups, such as groups of workers, parents or neighbours. The key feature is that users at the grassroots would make the decisions, rather than administrators or researchers. Currently this approach is used for only a limited amount of research, and therefore it is worthwhile spelling out briefly how it might work.

One procedure is to have a panel selected randomly from volunteers from user groups. The panel would hear submissions from researchers and other interested groups and then make decisions about research priorities and funding.

Another possible, and rather different, procedure is for user groups to prepare submissions for research to be carried out by particular researchers. The researchers, who would be expected to do a certain amount of research selected from the user-group applications, would choose which projects they preferred to undertake. This is analogous to the way university departments are expected to provide a certain amount of teaching selected from areas that students want to study. The justification for community-based allocation is to serve human needs.

So-called "science shops"—perhaps better described as knowledge shops—are the closest thing to community-based allocation. They take questions from community groups, trade unions, small businesses and other organisations without significant resources for research, help to turn these questions into researchable topics, and seek to find university students or staff to carry out relevant projects (Farkas, 1999; Zaal and Leydesdorff, 1987).

Assessment

Table 1. Each method of allocation is matched against each major type of problem

Problem	Bias	Waste	Discouragement	Orientation to interests
<i>Administrative decision</i>	Potential bias in favour of insiders, dominant groups	Preparation of proposals; decision system overheads	Poorly supported researchers may become demoralised	Incentive to serve interests of administrators
<i>Peer review</i>	Potential bias in favour of insiders, dominant groups, successful researchers	Preparation of applications; grant scheme overheads	Unsuccessful applicants may become demoralised	Incentive to serve interests of granting body or peers
<i>Performance-based funding</i>	Potential bias in favour of successful and/or superficial researchers	Grant scheme overheads (especially collection of performance data)	Low output performers (including those with high quality) may become demoralised	Incentive to serve interests associated with output measures
<i>Equal allocation</i>	Bias against those excluded from the equal allocation	Money spent on those who are unproductive	High performers may resent allocations to those who are unproductive	Incentive for researchers to serve their own interests
<i>Community-based allocation</i>	Potential bias in favour of insiders, preferred groups	Effort spent by community groups in finding researchers	Researchers who are not sought after may feel unworthy	Incentive to serve community interests

Although no allocation system is free of bias, waste, discouragement or orientation to interest groups, the expression of these problems can be quite different with different systems. For example, community-based allocation provides incentives to do research serving quite different interests than administrative decision. The choice of an allocation system both reflects and shapes an ongoing connection between researchers and interest groups.

Most of the complaints commonly voiced about grant schemes—such as bias in favour of insiders or against innovators—concern more-or-less inevitable features of competitive systems of allocation. The usual focus on the problems with peer review and biases in grant schemes draws attention away from both the realities of how research priorities are set and the possibilities for greater community participation in setting research agendas.

Broad research priorities are set primarily by administrative decision. Concentrating on problems with peer review systems diverts attention from this reality. Indeed, peer review does not even provide the means for making many of the central decisions affecting research, such as decisions to set up institutions or departments or to

provide greater infrastructure or funding for certain faculties. This is because peer review mainly concerns judgements within disciplines (peer groups). The key research decisions, by contrast, concern judgements between disciplines.

Concentrating on problems with grants schemes as they currently exist also diverts attention from the possibility of greater participation by community groups and individuals in setting priorities for research. There are many ways in which such participation could be increased, such as by community representatives on institutional boards or advisory panels for research groups, as well as being given a say over potential research projects (Bammer et al., 1986). But most such proposals are well and truly off the agenda. The main contenders for influence are interest groups (especially government and large corporations) and researchers (especially elite researchers).

Essentially, the perennial complaints about grants schemes reflect the dependent but privileged position of most researchers. They benefit from the allocation of substantial social resources to their salaries and research projects. They are reluctant to question the dominant institutions that control their funding, or the framework in which it occurs. Few of them believe that groups in the community—at least those with little money—should have any direct say in research priorities. That would be threatening to their prerogatives and status, built up through peer systems.

The Australian research system

Recently, the Australian government has made major policy changes affecting funding for higher education research (DETYA, 1999). Although the changes are significant so far as Australian research policy goes, they are relatively minor within the wider context outlined in this article.

Administrative decision remains the dominant method for setting research priorities and allocating funding for much Australian research, including most corporate research, both in-house and sponsored, as well as much in-house government research. Within the university sector, administrative decision is commonly used to decide on major infrastructure projects and the relative staffing and funding of different departments. Often these decisions are mediated through formulas, themselves agreed to

through administrative processes. None of this is greatly affected by the government's policy changes.

Academic staff are expected to do research and typically are allocated a nominal proportion of their working week to do so. This proportion can vary enormously, from full-time for research-only positions to virtually zero for staff overloaded with teaching or administration. Despite the large inequalities in available research time, nevertheless it is more equally distributed than research grants. It is certainly the element of research support that most closely fits the principle of equal allocation. In addition, full-time research students, who carry out a substantial proportion of research done in universities, typically spend most of their time engaged in research, even more closely following the principle of equal allocation. The government's policy changes do not explicitly address time available for research, though there may be changes in time allocation as an indirect effect.

Community-based allocation has never been a basis for research funding in Australia. Australian science shop initiatives have received little institutional support (Bammer et al., 1992). There would be a few cases where community groups, without research funds to disperse, approach academics or students in order to get relevant projects carried out. The government's research policy is entirely geared towards research oriented to groups that can pay, especially large corporations and government itself. The white paper makes no mention of community input into research priorities.

Peer review is the method used by the Australian Research Council (ARC) and the National Health and Medical Research Council (NHMRC) to decide allocation of research grants. However, peer review operates only within an overall framework—such as the relative allocations to engineering and humanities—that is decided administratively. The white paper signals a change to peer review procedures and their administration. Two ARC innovations will be the appointment of program managers to oversee the peer review system and the use of external reviewers to rank grant applications, superseding the former process of relying entirely on different independent external assessors for each application. These changes may well have significant effects at the level of individuals and groups applying for grants, but at a more general level they can be seen to be a minor modification within the peer review method of allocation.

Performance-based funding is used in Australia for determining the 'institutional grants', a component of research funding for universities that is allocated on a competitive basis. (This role for performance-based funding is unusual in an international context.) The white paper reports a change in the method of calculating this funding: it is now to be 60% based on success in obtaining research income, 30% on research student numbers and 10% on research output measured through publications.

This is a change in percentages from previously, especially in putting more emphasis on research student numbers. However, performance-based funding is not used at the level of grant applications, so the effect of the policy changes on individual researchers, which will be mediated through administrative decision-making systems within universities, probably will be limited.

Thus, the government's initiatives on research funding, while significant in relation to previous patterns, are relatively minor within the wider context of possible methods of allocating funds. Administrative decision remains a dominant force, augmented by peer review and institution-level performance-based allocation. Equality as a method of allocation appears to have a gradually declining role, while community-based allocation remains totally marginal.

As for the problems associated with grant schemes, little is likely to change. Problems of bias, waste and discouragement will remain. More significantly, pressures to orient research to dominant interests, especially corporations and government, are increasing. Grant schemes requiring alliances between university researchers and 'outside partners'—typically corporations or governments—have been increasingly important in recent years. This increases the role of administrative decision, exercised by the outside partner, and puts pressure on academics to link their research to groups that have money and resources. Outside groups without money are left out of the picture.

What does this picture imply in terms of recommendations for change? The answer depends crucially on one's goals. If the goal is to serve the interests of large corporations and governments—which are commonly legitimated by equating them with the 'national interest'—then further expansion of grants requiring alliances with 'industry' would be called for. If the goal is to promote innovation (both technological and social) then, arguably, tied money and peer review serve as deterrents and a much better strategy is to provide ample guaranteed funding for a substantial period (Horrobin 1996), along the lines of the equality model. If the goal is to help solve problems raised by those without money and power—such as poor people, communities under environmental assault and people with disabilities—then a move toward community-based allocation is the way to go.

How to move in any given direction is a big topic, beyond the scope of this paper. The key point here is that the design of grant systems involves a set of social choices that have wide-reaching effects, yet most discussion about grants takes place within a narrow set of assumptions, without mention of dramatically different allocation principles and associated consequences.

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Maximising the benefits from intellectual property in universities: awareness of our rights and obligations

ANN L MONOTTI
Monash University

Introduction

In its report *Maximising the Benefits: Joint ARC/HEC Advice on Intellectual Property*, (NBEET 1995) the Australian Research Council recommended that all universities should have an intellectual property policy in place by November 1996. These policies

should have as one of their aims the maximisation to Australia of the benefits arising from research. This can be done through considering intellectual property development, management and exploitation issues in the wider commercialisation context. (NBEET 1995, p11)

This aim requires policy development to nurture promising academic endeavour from theory into useful commercial products that return profits to their creators, sponsors and the university. All universities have adopted this recommendation and have policies and procedures in place that aim to identify and protect intellectual property with commercial potential.

In the same report, the Australian Research Council and the Higher Education Council:

resolved to encourage institutions to promote and develop academic staff development programs on intellectual property protection, management and exploitation in the wider context of business planning.' (NBEET, 1995, p23)

In this article, I explore one aspect of this process, namely the extent to which a sample of academic staff at Monash University are familiar with general intellectual property concepts and the provisions of their intellectual property statute. To do this, I draw on results of a written survey that I administered at Monash University in late 1997. While the conclusions from that survey are valid only for the 372 staff who responded, they are likely to alert both Monash, and indeed all universities, to a level of ignorance in this area within their academic communities that requires some attention.

University intellectual property

All creative products have potential for some form of protection under one or more intellectual property regimes that each comprise a separate set of rights. Most academic creativity will result in subject matter that has automatic protection under the *Copyright Act 1968* (Cth) as a literary, dramatic, musical or artistic work.¹ Some examples include books, chapters in books, plays, departmental working and discussion papers, journal articles, surveys, reports, conference publications, teaching materials, computer software, multimedia, databases, paintings, photographs and drawings, and musical compositions and arrangements. A separate set of provisions provides automatic protection for material such as sound recordings² (including CDs, tapes or cassettes), cinematograph films³ (including videos), television and sound broadcasts⁴ and published editions of works⁵. Limited protection is available also to performers⁶.

Academic creativity may also result in patentable inventions and confidential information. A registered patent can be granted in respect of any new and inventive product or process that has commercial utility⁷. This may be, for example, a new drug, computer program, industrial process or widget. The crucial pre-condition to patenting is absence of prior publication of the invention; a requirement that can sit uncomfortably with academic needs to be the first to publish a scientific breakthrough. However, patents do not prevent publication. On the contrary, the essence of patent protection is the public disclosure of the invention in return for the grant of limited monopoly rights. However, while the information remains secret and out of the public domain, it has protection under the equitable doctrine of breach of confidence that is available to restrain its unauthorised use or disclosure.

Other intellectual property rights may be important in specific areas of activity. A registered trade mark provides monopoly protection for signs that are used or intended

to be used to distinguish goods and services dealt with in the course of trade⁸. Trade marks are significant in promoting the university brand, and may be valuable in marketing a patented product or process that results from commercialised university research. Registered design protection is available to protect the “shape, configuration, pattern or ornamentation applicable to an article”.⁹ The *Circuit Layouts Act* 1989 (Cth) provides for automatic protection of original circuit layouts, commonly known as semiconductor chips. Finally, monopoly protection is available also for new plant varieties under the *Plant Breeder’s Rights Act* 1994 (Cth).

Monash survey

In November 1997, I administered a survey on intellectual property issues at Monash University. This was sent to randomly selected members of academic staff¹⁰ across all faculties in all campuses¹¹ of Monash University. In total, I sent 704 members of academic staff surveys.¹² I received 372 completed surveys, yielding a response rate of 53%.

Respondent group

The respondents are representative of the Monash University community that was sampled, both in relation to their level of appointment and to their faculty distribution. In the sample group, 364 (51.7%) were from humanities¹³ based faculties and 340 (48.3%) from science¹⁴ based faculties. These overall proportions were closely maintained among respondents:¹⁵ humanities (177 or 47.6%); sciences (189 or 50.8%). (Table 1) The only group that is under-represented is that of Assistant Lecturers.

The original sampling took no account of the gender or age of the respondents. Respondents were approximately two thirds male (244) and one third female (124). The distribution across faculties and levels of appointments shows that women were clustered at levels of senior lecturer and below, whereas males were more evenly distributed. My assumption is that this disparity represents that fewer numbers of women are employed at these levels instead of any lack of interest in the subject.

Awareness of the concept of intellectual property

The bulk of research material that respondents create is copyright subject matter. The same is true for materials they create, present or distribute for teaching a subject.¹⁶ However, respondents also create a substantial amount of material that is within the scope of other forms of intellectual property rights. Accordingly, it is critical that those staff and others are aware of their rights and

Table 1: Level of appointment, discipline and gender of survey sample and respondents

Level of Appointment	Faculty	Respondents				Original Sample	
		Frequency~		Percent	Frequency	Percent	
			M*	F#			
Professor	Total	44			11.8	72	10.23
	Humanities	21	18	3	5.65	42	5.97
	Sciences	23	20	2	6.18	30	4.26
Associate Professor	Total	45			12.1	97	13.78
	Humanities	21	18	3	5.65	43	6.11
	Sciences	24	19	4	6.45	54	7.67
Reader	Total	13			3.5	Not separated in original sample	
	Humanities	2	2		0.54		
	Sciences	11	10	1	2.96		
Senior lecturer	Total	104			28	199	28.26
	Humanities	39	26	13	10.48	85	12.07
	Sciences	62	52	10	16.67	114	16.19
Lecturer	Total	127			34.1	246	34.95
	Humanities	76	31	45	20.43	145	20.60
	Sciences	49	29	20	13.17	101	14.35
Assistant lecturer	Total	33			8.9	90	12.78
	Humanities	17	4	13	4.57	49	6.96
	Sciences	16	9	7	4.30	41	5.82
Missing		6			1.6		
TOTAL		372	238	121	100.0	704	100.0

M* Male F# Female ~ Some respondents did not identify their gender and/or discipline

obligations in relation to the subject matter they create. Important issues are ownership and distribution of rights, as well as infringement of another’s rights. This latter issue has particular significance in relation to the production of teaching materials in the form of compilations, multimedia products, computer programs, and videos, as well as loading materials on the internet. However, while infringement, statutory licences and concepts of fair dealing in respect of the copyright of others are important issues for universities and their staff, they are not discussed in this article. The survey data is concerned with ownership and rights in the materials that staff create. The following discussion is concerned with the implications that staff awareness of intellectual property rights in these materials have for both staff and university administrators.

Levels of awareness

The survey was conducted three years after commencement of the University Statute and Regulations.¹⁷ I asked various questions to determine the levels of awareness that staff had of intellectual property in general, and of the university’s intellectual property statute.

The term ‘intellectual property’ was familiar to 98% of respondents, but the levels of awareness varied among the independent categories comprised in this term. Respondents displayed widespread familiarity with the names of patents for inventions (93.8%) and copyright (92.2%), as well as designs (78%) and trade marks (74.5%). There is less familiarity with the terms confidential information (53.4%), circuit layouts (42.6%) and plant breeder’s rights (38.9%). The questionnaire did not identify the extent of

the respondents' knowledge of each of these forms of intellectual property.

Reduced awareness of some forms of intellectual property does not alone suggest an ineffective education program. It is probably necessary to educate only those who need to know. All academic staff (and students) must know about copyright because almost all create copyright subject matter. Rights such as plant breeder's rights, circuit layouts and design rights are highly specialised and general awareness of these rights is unnecessary. However, knowledge of patents has broader significance beyond traditional fields of science and technology as the concept of patentable subject matter expands into fields such as business methods.¹⁸ The aim must be to target the groups that may create and use the specific type of intellectual property. This education could commence at the undergraduate and postgraduate student levels with the inclusion of intellectual property tuition that is tailored to particular needs of students in different disciplines.

Effective operation of policies requires some knowledge of intellectual property rights. A number of consequences can flow from ignorance. One is the failure to recognise that research results contain a patentable invention. This may arise through complete ignorance or through failure to appreciate that some creations have overlapping forms of intellectual property protection. For example, a computer program may have immediate protection as a copyright work and as secret information until disclosed, but may also be a patentable invention. This ignorance may result in a course of exploitation that is later regretted. For example, seeking immediate publication and reliance upon copyright may result in premature publication of details that destroys patentability. This in turn may reduce the incentive for sponsors to invest in any potential commercial application of the research.

Ignorance about intellectual property rights can also result in a failure to recognise the circumstances in which they arise. Some circumstances, such as collaborative research involving students, visiting scholars and academic staff require a specific agreement to avoid ownership disputes. The ideal management involves negotiation of intellectual property issues before research commences with the decision reduced to a written contract. However, all parties must understand intellectual property rights for them to recognise the need for the agreement and to effectively negotiate its terms. There is a danger that ignorance can damage otherwise valuable research collaborations. Incorrect assumptions about rights in all research results can result in misunderstandings, acrimony and an inability to determine what is "fair" to all parties. Knowledge, on the contrary, can defuse potential disputes and create a more co-operative and productive atmosphere.

Sources of knowledge or awareness

How do academic staff learn about intellectual property? I asked respondents to select from an express list all sources that had raised and/or increased their awareness of any of the listed classes of intellectual property. The aim was to ascertain the most effective forms of dissemination of this information, not the level of their knowledge.

The university was listed by 71.8% of all respondents. The significant proportion of respondents who omitted the university as a source of information suggests the need for Monash University to explore additional means to reach all its staff. The next most common sources were the media,¹⁹ a colleague²⁰ and a research sponsor.²¹ All other possible sources were less significant in providing an educative role.²²

Attitudes to university policies on intellectual property

Awareness of the university intellectual property statute

Despite the wide awareness of the term 'intellectual property', only two thirds of respondents (67.5%) knew of the university intellectual property statute. The others were either not aware or were uncertain whether one exists. Awareness was noticeably greater among respondents in science based faculties.

Those who were aware of the statute were asked to identify their source of knowledge and their broad level of understanding of its effect. In terms of source, respondents were asked to mark all means listed²³ and to identify any others. University print publications

Table 2: Awareness of intellectual property statute

Level	Humanities		Science		Total
	Respondents	Aware	Respondents	Aware	
Professor	21	10 (48%)	22	19 (86%)	44
Associate professor	21	12 (57%)	23	16 (70%)	45
Reader	2	1 (50%)	10	8 (80%)	13
Senior Lecturer	39	28 (72%)	62	44 (71%)	104
Lecturer	76	45 (60%)	49	41 (84%)	127
Assistant Lecturer	17	10 (59%)	16	11 (69%)	33
TOTAL	176	106 (60%)	182	139 (76%)	

(37%) were the single most effective source. The statute itself was nominated by 16% overall (14%: humanities; 19%: science). This result is disturbing if it represents the proportion of respondents who have actually read or seen the statute. At the time of the survey, most staff should have possessed a small loose-leaf folder that included the intellectual property statute and regulations. The percentage may be higher if any respondents

were confused with terminology and noted this latter publication as a source under “print publication” but not under “statute”.

Some changes to dissemination have occurred since the survey. The statute and regulations are now loaded on the university web site. However, it is likely that only a specific reason will motivate an academic to read this. All new members of staff have a copy of the statute appended to their conditions of employment. While this should increase awareness among this group of the existence of the Statute, it does not guarantee that they will read the Statute and understand its provisions. One reason for this apparent apathy may be a lack of appreciation that this material has immediate relevance to them. It is obvious that some other more direct method must supplement such publications.

Word of mouth is effective (16.1% nominate a colleague as the source), but accuracy is always a problem with reliance upon this source. In addition, workshops (13.4%) and internet publications (10.2%) reached a clear minority of respondents. The NTEU was nominated by a small percentage (5.6%), but was more effective in increasing general awareness of intellectual property (11.8%). This reflects the activity of the Union during the negotiation stages rather than after the statute was enacted.

Awareness of obligations to report the creation of certain intellectual property

The statute contains obligations to report certain intellectual property to the Intellectual Property Officer.²⁴ Only patent worthy inventions must be reported.²⁵ Other intellectual property must be reported to the Intellectual Property Committee if required. As a patent cannot be obtained if the invention has been published, an originator must not disclose or use the invention in a way that would prejudice protection of the intellectual property.²⁶

The Statute’s objectives are enhanced if inventors abstain from publication until such time as the Intellectual Property Committee, in consultation with the inventors, can make decisions about protection, publication and commercialisation. On occasion, an academic who is aware of intellectual property rights may still want the freedom to place his or her inventions in the public domain. Stanford University has an express provision in its *Inventions, Patents and Licensing Policy* that endorses this academic right. In other universities there is an implied recognition of this right despite the presence of an express reporting requirement. In reality, unless the university follows some practice of regular technology audit to identify potential patentable inventions, and is prepared to “punish” premature disclosure of inventions, it must rely upon the inventor to voluntarily disclose details. In any event, successful commercialisation will not occur without the full co-operation and enthusiasm of the inventor.

Such inventors who want to seek a patent therefore require knowledge of the reporting procedures in order to access the services offered for intellectual property protection and commercialisation advice. Only 21.7% of respondents were aware of reporting obligations²⁷ and a further 25.7% were aware but couldn’t recall any detail. These respondents were spread fairly evenly across both humanities and science based faculties. Although this result is disappointing, most of the respondents who report creation of potential patentable inventions are aware to some extent of reporting requirements.²⁸

Familiarity with allocation of rights in intellectual property under the statute

Monash University asserts its statutory rights to own all intellectual property that its employees create in the course of their employment,²⁹ with the exception of “copyright work the subject matter of which is primarily concerned with scholarship, research, artistic expression, creativity, or academic debate”. Course material is among a list of specific exceptions to this scholarly subject matter.³⁰ The University also indicates its intention to own intellectual property ‘in respect of the creation of which the University has contributed other University owned intellectual property or has made a specific contribution of funding other than salary payable pursuant to a contract of employment, resources, facilities or apparatus.’³¹ To the extent to which this intellectual property is created outside the duties of employment, the validity of a claim to ownership depends upon the existence of an enforceable agreement. (Monotti, 1997 at pp445-465)

Having established the vesting of ownership, the Statute then provides for the non-owner to enjoy certain rights in the intellectual property. For example, the Statute provides for the grant of a licence by the copyright owner to the non-owner to perform certain acts in relation to copyright subject matter. There are also rights for authorship of a published work to be acknowledged in the publication. If there is adaptation or modification, the originator must be consulted as to whether authorship is to be acknowledged and the form of that acknowledgment.³²

Originators also enjoy rights in other university owned intellectual property.³³ Inventors are entitled to a share of patent revenue. In addition, the University assumes an obligation to ensure that the originator is acknowledged. As well as providing an originator with express rights in university owned property, there are also obligations. An originator must not act inconsistently with the university’s rights in intellectual property. There is a prohibition against application for any form of protection of the intellectual property and engagement in its commercial exploitation.

Rights and obligations in intellectual property are therefore significant for both originators and the university. I

Table 3: Familiarity with distribution of rights

Level of appointment	Humanities	Sciences
Professors	4:21 (19%)	13:22 (59%)
Associate professors	6:21 (29%)	7:23 (30%)
Readers	0	4:11 (36%)
Senior lecturers	14:39 (36%)	17:62 (27%)
Lecturers	26:76 (34%)	20:49 (41%)
Assistant lecturers	6:17 (35%)	7:16 (44%)
Total	56:174 (32%)	68:183 (37%)

sought to identify the respondents' familiarity with the statutory allocation of rights in their intellectual creations. About a third of respondents say they have this familiarity (34.1%)³⁴ but it is impossible to assess how accurately this perception matches the actual distribution of rights in the statute. Half of this number (17.8%)³⁵ admitted a lack of familiarity, even though they were aware of the existence of the Statute. The remaining respondents were either neutral or had no opinion. The extent of familiarity is much greater among professors in the science based faculties (59%) and least among professors in the humanities based faculties (19%).

Lack of awareness must affect the efficient operation of the statute by limiting the ability of all parties to pursue rights and to comply with obligations. Other factors may also have an effect, such as rejection by academics of its fundamental principles for allocation of rights, (Monotti, 1999, p451) but these are outside the scope of this present article. In particular, it is therefore critical to increase awareness of the allocation of ownership and individual rights. An originator who does not realise that the university owns certain intellectual property rights in course materials, for example, and incorrectly believes he or she owns the rights, risks infringement of copyright and breach of contract through unauthorised action. This may have particularly adverse consequences when the breach involves an assignment of web based and other digital courseware to a commercial competitor.

This knowledge will also alleviate but not necessarily remove any insecurity that creators feel about who owns the intellectual property they generate. It may not convince them that the correct balance requires university ownership in some cases, but it does remove misconceptions of the consequences of university ownership. Not surprisingly, a majority of survey respondents, particularly those in the humanities, expressed the view that they should own copyright in both research products and teaching materials. The view was strongly held for works in a traditional form – literary, artistic and musical – and diminished in intensity for the other less traditional classes

of works. In addition, there was almost unanimous confirmation that the right to publish was paramount to them. (Monotti, 1999) It is not surprising that academics would express these views in relation to research products. It is the essence of academic freedom for an academic to choose the subject matter of research, the intellectual approach and directions as well as the conclusions. Necessarily, the academic must have power to decide if, when and where to publish. It would be inconsistent with the fundamental principles of academic freedom to vest these rights in someone other than the author.

Moreover, this is consistent with the established practice in Australia, (Monotti, 1994; Ricketson, 1993) the United Kingdom (Cornish, 1992) and United States (CAAUP, 1999), to treat the academic author as owner of copyright in an undefined class of “scholarly” works that are created independently and at the academic’s own initiative. The University respects these views and vests ownership of a considerable amount, but not all, of this copyright material in the author.

The expressed strong desire to own teaching materials clashes with the university claim to ownership. The survey did not ask why this was so important. However, some conjecture is possible, based upon their identification of important rights. (Monotti, 1999, pp442-3) These included such things as the need to take materials to another place of employment, the desire to control publication, acknowledgment of their creative role and the right to personal financial rewards from commercial exploitation. Another possible reason is based upon anecdotal evidence that some academics believe that their ownership of course materials is crucial to assist their on-going employment. This issue was insignificant when delivery of courses was by traditional means and when access to lecture notes and other materials was difficult in practice. However, in an environment that imposes pressures to produce lectures and other course materials for some form of flexible delivery, they become available to the university for delivery either by their creator or by another member of staff.

The fear of job insecurity provides one explanation for the strong desire to own intellectual property in course materials. Another is the tendency to see teaching and research materials as inter-related. An immediate conflict between the interests of a university, its students and the staff is evident when staff strongly argue for absolute ownership of course materials that are in a readily useable form. This makes it critical for staff to understand the differences between “ownership” of a bundle of rights and distribution of those rights among the university and the creators. Failure to understand this can be destructive to any negotiation or settlement procedures that eventuate.

In many contexts, it is desirable to negotiate a specific agreement that governs the creation of intellectual property but this is easily overlooked when parties have

insufficient knowledge of intellectual property rights. Collaborative research that involves different classes of creator provides an example. The general principle that applies in both copyright and patent law is that ownership vests in the originator, unless the work or invention is created in the course of performing employment duties. Therefore, in the absence of any prior agreement that governs a collaborative research project, students will own their intellectual property rights and staff (or their employer)³⁶ will own their intellectual property rights. Joint works³⁷ of a student and staff member will be co-owned equally. This may or may not represent the outcome that informed parties would negotiate in advance. For instance, an important concern is whether co-ownership of copyright works such as questionnaires, computer programs, reports and articles, is desirable. One principle of co-ownership of copyright is that no co-owner can exercise the rights of copyright owner without the consent of the others.³⁸ This principle can provide important safeguards but can also result in a co-owner being able to veto publication.³⁹

Other important rights concern creators' entitlement to share in any profits that arise from successful commercialisation of intellectual property. A substantial percentage of respondents (62.1%) noted the receipt of personal financial rewards from successful commercialisation as an important right. (Monotti, 1999 pp441-443) In a sense this is surprising if we adopt a view of academics as creating knowledge for knowledge's sake. However, it is consistent with one rationale of intellectual property protection that monetary rewards are necessary to provide an incentive to create. Knowledge of the circumstances in which this entitlement arises as well as its extent may motivate an inventor to think about identifying and pursuing its commercial potential. It may also encourage a co-operative relationship between the inventors and the university if the inventors believe they are being treated fairly.

Perceptions of procedures to educate staff about intellectual property

The University, through the Solicitors' Office, pursued a number of intensive efforts to educate staff and to disseminate the terms of the 1994 Statute and Regulations. An initial intensive burst of activity included workshops at the different campuses and talks in various faculties and departments. There was production of a variety of written materials, including a folder containing the intellectual property explanatory memorandum, statute and regulations that was issued to all academic staff. One initiative in early 1998 was to load all documents on the university website for easy accessibility to those in search of this information. However, the allocation of limited resources for this specific task of continuing education means that there has been relatively little follow up by way of an organised and recurrent process.

The procedures that a university actually adopts and performs are one thing; the perceptions that staff have of these procedures are another. Effectively educating almost 2000 staff spread across five campuses about unfamiliar subject matter is a formidable task. I therefore sought the respondents' views of the effectiveness of these procedures and asked them to comment on the following statement:

My university has effective procedures to inform staff of the statute and of the intellectual property issues that relate to their research and teaching.

Only 15.3%⁴⁰ considered that the procedures were effective. 29.7% disagreed with the proposition that they were effective.⁴¹ 17.4% expressed neutrality with the proposition.⁴² A staggering thirteen of twentytwo professors in science based faculties (59%) disagreed with the proposition, eight of these strongly. A further nine of twentyone associate professors (43%) in humanities expressed similar feelings.⁴³

Concluding comments: suggestions for increasing awareness

In its advice given in 1995, (NBEET) the Higher Education Council stressed the importance for universities to establish programs to educate staff and students about intellectual property. The results of the Monash survey show a moderate degree of awareness among respondents but demonstrate the need for continuing and improved methods of education. The university needs to know why 59% of respondent professors in science based faculties indicated that the university did not have effective procedures to inform staff of the intellectual property statute and of intellectual property issues that relate to their research and teaching. What are the inadequacies in the current procedures and what measures can remove them? The data from the Monash Survey does not provide the answers but indicates a need to look for new approaches to education in this area.

It is likely that other universities are in a similar position with their own academic staff. If a university believes that a policy on intellectual property is important, then it seems wise to devote sufficient administrative resources to ensure its efficient operation. As all policies contain a number of important provisions, including rights distribution, licences and reporting obligations, academic awareness is crucial. There are general approaches to improving awareness that are likely to apply to all universities. The first is to define the objectives of awareness raising programs. The second is to identify the procedures for achievement.

Objectives

There are a number of objectives that these programs may seek to achieve. While some will be relevant to all staff,

others will be of interest only to specialist groups. The main objectives are:

1. To convey the fundamentals of the various forms of intellectual property, the scope of their rights and the methods for their protection. For example, all academic staff should know what protection is available for their intellectual creations, to whom they can turn for advice and assistance and the risks they face if they publish before consulting an expert.
2. To convey to academics the information that the university believes is necessary for effective operation of its policy. This includes:
 - Details of the principles for vesting ownership of different types of intellectual creations in either the university or the creator. The actual vesting in specific circumstances may be difficult to determine because this will depend upon the description of employment duties as well as the presence of any implied terms in the employment contract. (Monotti, 1994)
 - Details of the rights that the non-owner of each form of intellectual property retains.
 - Details of any obligations that are imposed on the creators and the university.
 - The policy for sharing profits that arise from a successful commercialisation of intellectual property that the university owns.
 - Alerting the creators to the practical consequences of these provisions and providing advice and assistance where necessary. For example, Monash University vests copyright in any scholarly works in the creator but retains a non-exclusive, royalty free and irrevocable licence to reproduce, publish, perform, broadcast, disseminate and otherwise use the work for the university's teaching and research purposes. Such a licence, if enforceable, binds any successor in title to the owner of copyright, such as a publisher.⁴⁴ It is important that staff not only know of the existence of this licence but also that they must notify any publishers of its existence when they are negotiating terms of publication. Furthermore, as a publisher has copyright in the published edition which is infringed by making a reproduction of the edition,⁴⁵ the university should request and assist the academic to at least attempt to reserve an appropriate licence to the university in the published edition. In this way, universities may be able to avoid paying for copies of material that their staff author.
3. To convey information and guidance to enable staff to identify intellectual property rights which have commercial potential in ways other than publication.

4. To discuss the more specialist issues that arise in research that involves both university researchers and industry collaborators.

Procedures to achieve increased awareness

The wide distribution of responses to the Monash survey regarding sources of information and knowledge demonstrates the value of a program that adopts more than one method. The active methods used at Monash include seminars and print and internet publications. While seminars educate those who attend, they traditionally reach limited numbers. Furthermore, regular seminars at different venues use significant resources because they are labour intensive and rely upon expert presenters. Print and internet publications are an essential resource due to their permanence, accuracy and ready accessibility. However, the data suggests that few read them.

Therefore, despite efforts to disseminate information in these traditional forms they are unlikely to reach all academic staff. A university must find improved, as well as additional and more immediate and direct, methods for increasing knowledge. Academics face an overload of information and time constraints. Hence, they are likely to be selective in what they read and absorb and in their attendance at seminars. Unless intellectual property issues are of immediate relevance to them, they are likely to throw seminar notices in the bin, to file information after scant attention to unfamiliar notions or without reading it at all.

One means of improving attendance at seminars is to devolve responsibility to faculties and departments. The tendency to have one university-wide seminar that covers a variety of issues uses less resources but is less effective than focussed sessions that deal with specific and relevant issues for academic staff from a particular discipline. Annual seminars could be organised in each faculty or department by the Associate Deans (Research & Teaching) to meet its specific needs. The content would be relevant and the physical proximity to staff would minimise loss of time in attendance. There could be a faculty or departmental expectation that all staff would attend these seminars, and where appropriate special programs could address specific problems, such as collaborative research involving students, visitors and industrial sponsors.

In addition to such a procedure, effective operation of intellectual property policies requires the issues to be constantly in the minds of the creators. The internet provides an ideal means for reaching staff who see no immediate relevance to them or have no time to read publications or attend seminars. It provides a simple means of supplementing the current educational methods in many areas with short and snappy email bulletins. The main issues of which staff should be aware could be broken into small digestible pieces which would form the basis of a regular program of bulletins on intellectual

property. Messages could be sent to all members of academic staff periodically, to remind them of the existence of the intellectual property statute, with perhaps a brief summary of the main provisions. Short, catchy and continuous bulletins are likely to start staff thinking about intellectual property and the importance this has in the university for all parties. A certain amount of repetition is necessary to allow unfamiliar concepts time to settle and to keep the main issues in their minds. Messages could be topical to encourage staff to read them and perhaps highlight different issues in successive mailings. Hyperlinks could direct them to the appropriate sections of the statute and the regulations. Counters could be placed on these pages to identify the extent to which the sites are visited and, if possible, the source of those visits. In this way, particular faculties and departments could be targeted for individual seminars where necessary.

There is a word of warning here. If staff are suddenly sent bulletins about intellectual property, alerting them to reporting requirements, ownership issues, licences that the university holds in the works and so on they may view this with suspicion - 'big brother' trying to take away their property. Any continuing program to educate staff and notify them of their obligations and rights must assume the risk of misunderstandings and a potentially suspicious recipient. Hence, it seems wise to focus upon reinforcing the University's continuing respect for academic ownership of scholarly publications and their freedom to publish when and where they choose. It should highlight how the University policy protects and supports those rights that academics view as important; such things as moral rights of attribution, shares of profits from commercialisation for either personal use or further research purposes, and ability to take materials to new employment.

After these fundamental principles are buttressed, necessarily, the focus must be upon rights as opposed to ownership; upon co-operation for a common good as opposed to segmentation and self interest. The ease with which the intention behind email bulletins may be misread or misinterpreted does require care and restraint. Ideally, all staff would first attend an annual seminar that is faculty or department based. The basic structure of rights and obligations could be explained, so that subsequent bulletins would reinforce and consolidate already familiar messages.

The ARC/HEC Report highlighted the need for improved awareness of intellectual property issues by academic staff in the higher education sector. This and other reports stress the significance of awareness where there is collaboration between researchers from industry and the higher education sector. In addition, increased awareness is equally important for internal relations within the institution. For intellectual property awareness for both purposes to increase in a diverse and geographically scattered environment, a university must commit sufficient resources

to this exercise. This requires a person who has the specific duty and the time to design, co-ordinate, supervise and review an ongoing and varied awareness raising program that may contain some of the above suggestions.

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- Thomas, John, (1999), "The Patenting of the Liberal Professions" *Boston College Law Review*, XL(5), pp1139-1185.

Endnotes

- 1 Copyright Act 1968 (Cth) s32.
- 2 Copyright Act 1968 (Cth) ss85, 89, 93 & 97.
- 3 Copyright Act 1968 (Cth) ss86, 90, 94 & 98.
- 4 Copyright Act 1968 (Cth) ss87, 91, 95 & 99.
- 5 Copyright Act 1968 (Cth) ss88, 92, 96 & 100.
- 6 Copyright Act 1968 (Cth) Part XIA – Performers' Protection.
- 7 *Patents Act* 1990 (Cth), s18.
- 8 *Trade Marks Act* 1995 (Cth) s17.
- 9 *Designs Act* 1906 (Cth)
- 10 From an original sample of 1500 records which was selected from the 31 March 1997 DEETYA file, 704 records of academics with FTE of .5 or greater and currently employed at Monash University were selected.
- 11 Clayton; Gippsland; Parkville; Peninsula; Caulfield; Berwick.
- 12 A second copy of the questionnaire was sent three weeks after the original mailing.
- 13 Arts; BusEco; Education; Law
- 14 Computing & IT; Engineering; Medicine; Pharmacy; Science
- 15 6 respondents (1.6%) did not disclose their faculty.
- 16 See Appendix
- 17 The final draft legislation was approved by Council on 27th June 1994 and by the Governor-in-Council on 19th July 1994. The intellectual property regulations were promulgated on 21st July 1994.

18 State Street Bank & Trust Co v Signature Fin. Group, Inc. 149 F.3d 1368 (Fed. Cir. 1998). For a discussion of the extension of patents into the “liberal profession” see: Thomas, John, (1999), “The Patenting of the Liberal Professions”, *Boston College Law Review*, XL(5) pp1139-1185.

19 47.2%

20 33.0%

21 21.7%

22 Another institution (17.7%); NTEU (11.8%); Other - the study and practise of law; publishers and literary agents; professional associations; working in industry; friends or family in the legal profession; working with software (16.4%).

23 My university; another institution; the NTEU; the media; a government agency; a research funding source; Australian Vice-Chancellors’ Committee; a colleague; other.

24 Statute 11.2 - Intellectual Property, s3.

25 Regulation 6.

26 Statute 11.2 - Intellectual Property, s2.10.

27 ‘Are you aware of any obligations under the statute to report intellectual property that you create to the University?’

28 Humanities based: 9:10; Science based: 19:23

29 Statute 11.2 - Intellectual Property, s2.1.1. For a discussion of these issues see: Monotti, Ann, (1994), “Ownership of Copyright in Traditional Literary Works within Universities”, *Federal Law Review*, 22(2), pp340-374.

30 Statute 11.2 - Intellectual Property, s 2.5 & Regulations 2.1.1

31 Statute 11.2 - Intellectual Property, s2.1.2. The validity of a claim like this is dependent upon the existence of an enforceable agreement with the originator. Monotti, Ann, (1997), “Who Owns my Research and Teaching Materials?, My University or Me?” *Sydney Law Review*, 19(4), pp425-471.

32 Statute 11.2 - Intellectual Property, s 2.14.

33 For a discussion of allocation of rights in universities, see: Monotti, Ann, (1999), “Allocating the Rights in Intellectual property in Australian Universities: An Overview of Current Practices”, *Federal Law Review*, 27(3), pp421-470.

34 Humanities: 56:177 (32%); science 68:189 (36%).

35 Humanities: 29:177 (16%); science 35:189 (19%).

36 There is considerable debate about which academic works come within the duties of employment, and the existence of an implied term that academics own their creative scholarly works. For discussion of these issues see: Monotti, Ann, (1994), “Ownership of Copyright in Traditional Literary Works within Universities”, *Federal Law Review*, 22(2), pp340-374; Cornish, William R., (1992), “Rights in University Inventions: The Herchel Smith Lecture for 1991”, *European Intellectual Property Review*, 1 pp13-19.

37 In the case of copyright works of joint authorship, the authors collaborate to produce a work in which their contributions cannot be separated. *Copyright Act* 1968, s10(1)

38 *Cescinsky v George Routledge & Sons* [1916] 2 KB 325 at 330; *Powell v Head* [1879] 12 Ch D 686.

39 A different principle applies in relation to patented inventions.

40 Humanities based: 25:177 (14%); sciences: 30:189 (16%).

41 Humanities based: 39:177 (22%); sciences: 69:189 (36%).

42 Humanities based: 32:177 (18%); sciences: 32:189 (17%).

43 Not effective: professor: hum 3:21 - 14%; science 13:22 - 59%; Assoc professor: hum 9:21 - 43%; science 8:23 - 35%; sen lecturer: science 20:62 - 32%; lecturer: science 18:49 - 37%.

44 Copyright Act 1968 (Cth) s197(3).

45 Copyright Act 1968 (Cth), s88.

Appendix

Question: In which of the following forms do you produce your research results?		
Form of research	Science & Technology	Humanities
Literary works	130	152
Patentable inventions	27	11
Confidential information	23	20
New plant varieties	1	0
Circuit layouts	1	2
Computer programs	25	21
Multimedia	12	12
Other digital	15	12
Videos or films	10	8
Sound recordings	7	4
Musical arrangements	0	2
Artistic works	7	1

Question: In which of the following material forms do you create, present or distribute materials for teaching a subject?			
Print eg notes, overhead slides	95.4%	Video or film	31.6%
Sound recordings	17.7%	Musical compositions	2.4%
Computer presentations	46.4%	Computer programs (not multi media)	15.8%
Multimedia works	10.5%	Other works in digital form - eg internet	22%
Artistic works - eg paintings and sculpture	2.7%		

Exercising our duty of care as researchers for those we diagnose to be 'at risk'

GARY D BOUMA

Monash University

BENEDICT J CANNY

Monash University

In the course of collecting information about humans researchers may discover something of consequence for an individual's well being. Should this intended or unintended consequence of research occur, what is the researcher's duty of care and how should it be exercised? Does the researcher have the responsibility to inform the person, or to provide some form of care? The ethics of the situation are quite clear. The researcher has, with their consent, intervened in participants' lives by collecting information about them. If that information has any bearing on the health, life chances, or other aspects of the well being of a participant, what responsibility does the researcher have to inform, or act on behalf of the participant?

It is already common practice for Human Research Ethics Committees to require researchers to whom interviewees report various forms of abuse to report this situation to authorities and to inform potential participants in research that this will be done. What, if any, duty of care does a researcher have for someone whose responses to a survey instrument indicate deep depression, very low self-esteem, or high levels of aggression? Does a researcher have some responsibility for a respondent who indicates in the response, to even one item, an intention to commit suicide? Shochet & O'Gorman (1995, p. 183) conclude that 'The codes of conduct of the Australian Psychological Society and the American Psychological Association imply that researchers of adolescent depression and suicidal behaviour must plan to intervene to assess risk where a participant indicates an intention to commit suicide'.

The issue of researchers' responsibility to participants in research addressed in this paper has been raised by the use of procedures or tests on groups of people in order to discover the distribution of some variables and their correlations with others. A psychologist, for example, may wish to study the association between depression and self-esteem, or the impact of a particular intervention on propensity to suicide, or the correlation of levels of aggression with academic achievement (*e.g.* Martin, 1996). The use of tests or procedures in these ways can be seen to constitute a 'de facto screening' of a population for

particular tendencies, diseases, conditions or traits. Do researchers who conduct this sort of research have a duty of care to provide feedback to individuals who participate in their research, or those responsible for them, should someone be discovered to be 'at risk'?

Whether researchers have such a duty of care, and how to exercise it if they do, has exercised the collective mind of the Monash University Standing Committee on Ethics in Research on Humans (SCERH) for several years. SCERH has fifty members who serve on two identical committees and review over 600 research protocols yearly. The following policies were discussed in the context of reviewing research protocols, including interviews with researchers and in annual retreats involving researchers and representatives from school systems. The issue emerged when considering Psychology and Education projects in which, for example, depression scales were given to children in schools as part of research into various correlates of depression. Until recently such data were collected in an anonymous way such that it was impossible to associate any score with a particular student. Only group data were of interest for analysis and reporting. SCERH argued, however, that it was possible to associate scores with individual students if records were kept and in so doing to provide potentially helpful information about those few students who may have scores that indicate that they may be seriously depressed. It was argued that if such information were available about individual students, the researcher had a duty of care to provide someone with this information, as it might be just what was needed **in the context of other information** to intervene to help a student who was 'at risk'. This argument is in keeping with recent opinions expressed in the Psychological literature (Shochet & O'Gorman, 1995). The policy of referring the information to someone else in a position to evaluate and act in the situation is also consistent with the long standing SCERH policy that researchers are not to become therapeutically involved with research subjects, as that blurs the distinction between the roles of researcher and therapist.

In consultation with researchers engaging in this kind of research and with school authorities SCERH developed a

protocol to guide researchers who conduct research on children in schools. This focus was selected because of the volume of such research before the committee, the fact that children are a vulnerable population, and the community's elevated level of concern about children due to the current high rate of youth suicide. Once developed, the logic in this protocol can be extended to other proposed research raising similar issues of the duty of care of the researcher for individuals about whom, in the course of research, some information relevant to their well being is discovered.

The aim of the protocol was to identify research in which an arrangement to report those identified 'at risk' needed to be put in place. Other forms of feedback from research are usually made through reports of general findings made available to participants following the research. However, where there was the possibility of identifying an individual who might be particularly vulnerable to some form of risk, earlier action might be required. In this way the focus shifted from general wellbeing to concern for identifiable risk. It is quite a different matter to report that a group of participants displayed a range of results on a measure of study practices, to being able to say that Tom or Sally has a particularly worrying depression score, or has indicated suicidal intent. One form of reporting back can wait till the research is complete. Letting someone know that a person is at risk of suicide cannot ethically wait that long.

Individuals the researcher identified to be 'at risk' would be reported to someone, usually the principal of the school involved in the research. So that participants could give fully informed consent this procedure would be noted in the plain language explanatory statement provided to all potential participants and those responsible for them. In the school context, principals were selected as the appropriate persons to receive the feedback about individuals identified to be 'at risk', as they have a duty of care for their students and have access to other information about their students that could help in determining the implication of the additional information supplied by the researcher. Principals were deemed to be in the best position to weigh all the information and to decide what, if any, further action was required.

The trial protocol

Following is the draft protocol that guided our deliberations, and practice for a year, in the area of research involving 'de facto screening'. The Protocol was distributed to Psychology and Education researchers at Monash and to the State, Catholic and private school systems in which their research was usually conducted.

A summary of the draft procedure is on the next page.

Our experience with this protocol

More than ten projects were conducted during the trial of this protocol and well over fifty in the several years this procedure has been in place. These projects all involved the administration of psychological tests in the school setting. Topics included explorations of anxiety, depression, self-image, eating disorders and risk taking. The initial resistance of some researchers has been overcome as they have accepted that they have responsibilities to those who participate in their research and as the procedure has been shown to work with minimum interference in the research process. In our experience, some principals were pleased to receive information about students who had scores on tests that indicated that they might need further attention; some principals were not. In one study in which parents received the information, 3 students were identified as having a sufficiently high depression score to warrant reporting. Two sets of parents were not at all surprised, one student was already in counselling and the other parents indicated that they would take some action. Thus, there is some evidence that the feedback about those identified as 'at risk' was welcomed, useful and provided information consistent with the judgements of others.

It was also, however, reported that, as a result of the demands placed upon principals by these procedures, researchers were experiencing significantly increased difficulties in gaining access to schools for research. Thus the possibility of finding out something which might be of use to a very small number of individuals, most of whom had already been identified as 'at risk' by other means, needs to be weighed against the possibility that doing the research in this way would decrease the ability to learn important things about student populations in general. This fear had been discussed by Shochet and O'Gorman (1995, pp. 185-6) as a possibility. We are now in a position to consider the impact of use of a procedure based on their recommendations.

The experiences of the year's trial and subsequent implementation of these procedures as routine has raised critical issues which have helped to clarify our thinking and practice in guiding researchers about their duty of care for research participants identified as 'at risk'. These issues include: Is the test or procedure diagnostic? Is the researcher competent to interpret the results diagnostically? Is there a duty of care associated with non-diagnostic but indicative tests and procedures? And, what procedures are appropriate for informing potential participants beforehand and providing feedback on those found to be 'at risk'? These issues emerged in discussions of the kinds of information about individuals likely to be usefully passed on at this level. While we would agree with Shochet and O'Gorman (1995, pp. 184-5) that a response to a single item on suicide might be sufficient to warrant an intervention, that example did not help in the general discussion

Standing Committee on Ethics in Research on Humans

Research on Children in Schools

Preamble

The Standing Committee on Ethics in Research on Humans receives and considers a number of projects generated by researchers who intend to conduct research on children in schools.

Monash University offers a wide range of courses in which research on children could be an essential component of a degree program. Also there is a significant body of research conducted by staff involving children as subjects in studies.

SCERH appreciates that many research projects generated by staff, and/or students are benign, in that the study design does not incorporate intrusive techniques or employ instruments likely to cause physical pain or emotional distress to the participants.

However SCERH realises that there are areas of research that do have the objective of measuring the behavioural characteristics of children via a variety of instruments such as anxiety or depression scales. Moreover, the use of these and other measurement instruments on populations of school children often constitutes a *de facto* screening activity that in the course of research may reveal information about children who are 'at risk'. SCERH is concerned to ensure that the chief investigators of such projects acknowledge the sensitivity of these tests when they are developing research proposals intended for use in a non-clinical setting, eg a school.

This draft policy document is intended as a working paper. Responses are welcome. The Committee wishes to promote good research at Monash. All feedback will contribute to the merit of the policy in its final form.

In considering this draft policy, SCERH is concerned to ensure that appropriate action is taken to protect children involved in approved university research and to establish procedures which make it unnecessary for the researcher to adopt the roles of diagnostician or therapist.

In adopting these measures, SCERH will require researchers to produce a protocol incorporating the measures outlined below when submitting research proposals to any school authority in Victoria e.g., the DOE and the Catholic Education Office

The guidelines are intended for adoption where the research is located in Victorian schools. The

guidelines are based on a definition of children as being 'young people under 18 years of age in educational settings'. Where research is proposed to operate in a location other than Victoria, SCERH anticipates that the research protocol will reflect the procedures outlined in these guidelines. Where regional or overseas practice may differ from those stated in these guidelines, the researchers will provide details on the requirements of the educational authority in that region.

A summary of the draft procedure is below:

Guidelines - Research on Schoolchildren

1. SCERH may 'flag' certain projects for noting when approving the project. The 'flag' will indicate that specific arrangements are to be included in the research plan as outlined below:

- (a) Where the study data may yield indications or symptoms suggesting that certain individuals could be 'at risk', through anxiety or depression, the researchers will examine the test results as soon as possible after the completion of the survey. Where psychological tests are involved the chief investigator will take responsibility for calculating and interpreting those test results.
- (b) The chief investigator will then note any survey results requiring follow-up action and report such information to the Principal of the school. These procedures shall be outlined in the written explanatory statement supplied to parents/carers and children, before the study commences. This information will also be included in the written approval arrangements adopted by each school involved in the study.
- (c) The Principal of the school will take responsibility for any subsequent action, eg further testing of the child, and/or, advice to the parents or custodians of the child.

The initial letter from the researchers to the Principal of each school invited to participate in the project will refer to necessity for a plan covering these issues to be articulated prior to the commencement of the study.

Compliance with these guidelines must be evident in the application submitted to SCERH.

of the researcher's duty of care when using diagnostic instruments on groups of people.

Diagnostic tests and procedures

First, is the instrument, or test, or procedure diagnostic? Some instruments and procedures are diagnostic and the information sought is itself the diagnosis of certain conditions in individuals. These instruments and procedures can include blood, urine and tissue tests as well as some psychological and physiological tests. When diagnostic instruments or procedures like these are used, researchers must consider their duty of care to individuals discovered to have certain conditions. In many cases this is already built into the study design, but this is not always the case. How this duty of care is to be exercised will have to be determined in each case and is not usefully subject to fixed rules or policies. Researchers will be guided in deciding what to do in each case by ethics committees. SCERH now requires that a form of the protocol outlined above will be used in which potential subjects are notified of the fact that should their scores indicate that they are 'at risk' they, or someone in an appropriate position of care for them, will be notified of the result.

SCERH then debated whether researchers using a diagnostic test or procedure for non-diagnostic purposes had a duty to present the results to a diagnostician who could interpret them, in the event that the researchers did not possess the competence to interpret the test or procedure themselves. In the case of student research, the supervisor is deemed to be the person primarily responsible at all levels. Hence, in the case of student research, either the student or the supervisor would have had to be competent to interpret the results, or they would have had to find someone who was. The *National Statement on Ethical Conduct in Research Involving Humans* charges Human Research Ethics Committees (HRECs) with the responsibility of ensuring that 'Research must be conducted or supervised by persons or teams with experience, qualifications and competence appropriate to the research' (Para 1.15, p13). On this basis we argued that tests or procedures which have a particular diagnostic potential should only be used by, or under the supervision of, researchers who have the appropriate competence. Until recently, in the State of Victoria the use of a number of diagnostic psychological tests was restricted to registered psychologists. The question of the competence of researchers seldom arose when the law proscribed their use by others. The recent liberalisation of laws controlling the use of these tests forces HRECs to be vigilant in ensuring that the research team has the necessary competence to use them for research and to carry out their duty of care to research subjects when using diagnostic tests and procedures.

SCERH next considered how extensive should be the analysis of potentially diagnostic information obtained in the course of research data gathering, and therefore, what

diagnostic expertise was essential to enable the exercise of appropriate duty of care. For example, does a psychologist who is not a registered psychologist have a duty of care to involve a registered psychologist in the data analysis in order to discover those individual cases about which potentially useful information about wellbeing had been found in the course of data collection? Consider the analogy of the physiologist collecting blood samples for the assessment of haemoglobin concentration. While, in this instance, the researchers have a duty of care to inform the subject of any abnormalities in the haemoglobin concentration, which are the direct findings of the research and easily interpretable, there is no obligation to screen the blood sample for every known haematological disease. Likewise, it would not be a researcher's responsibility to present tape-recorded interviews to a psychiatrist who might be able to detect pathology in the conversations. It appears that the researcher's duty of care to the subjects of their research pertains only to the information that is central to the purpose of the research. Thus, if the research question is simply, 'What is the effect of the level of depression on a child's performance at school?', it is not strictly appropriate to screen the children for other learning difficulties. In order to protect those who participate in research and to avoid the problems associated with inappropriate intervention, HRECs must ensure that when diagnostic tests and procedures are used in research, they are specific to the research questions asked.

Thus, the answer to the question of securing the services of a diagnostician with additional and specific expertise was clearly, no. To do so would blur the roles of researcher and therapist involving the researcher in activities well beyond the scope of the research. In considering issues of researcher's duty of care HRECs are concerned with the intended and unintended consequences of research, but not in promoting active seeking of additional information beyond the scope of the research however possible it might be to do so and regardless of potential immediate benefit from doing that something extra.

Non-diagnostic tests and procedures

While the researcher's duty of care when using diagnostic tests and procedures is clear, SCERH raised the issue of the researcher's duty of care in research involving instruments which were not diagnostic but which could be seen to be indicative of traits, states, conditions or tendencies which, if extreme, would cause concern about respondents. What is the researcher's duty of care when using such measures? In our debates some argued that unless the instrument/procedure was in and of itself diagnostic and the researcher competent to interpret the results diagnostically, feedback at the individual level was not useful and the possibility of harm outweighed the slight possibility of benefit. The argument was that such measures as anxiety scales, self-esteem scales, indicators of eating disorders

and the like may not provide the kind of information about individuals that would enable a precise diagnosis of a clinical condition. The increased uncertainty of diagnosis and the less reliable nature of the information made the wisdom of intervening less clear than for diagnostic tests and procedures. There was also the concern that single scores on most depression inventories were described by some psychologists as highly unreliable sources of information about individuals when administered as research instruments in group settings, rather than clinically. Some clinical psychologists argued that, unless a battery of tests including quite a variety of scales were used by a person competent to interpret them diagnostically, such measures would not produce results about individuals which would be usefully passed on routinely to parents or principals.

While the above arguments are important and need to be taken into account when assessing the level of the researcher's duty of care, they do not remove that duty of care. It is simply inconsistent to argue that a test which is diagnostic, or indicative in one context tells the researcher nothing useful about the respondent in another context. If a scale measures depression, self-esteem, bulimia or aggression it either measures these things or it has very limited construct validity, or reliability. Given this possibility, some duty of care remains in the use of such instruments. While some of these tests and procedures are not diagnostic, or may be of diminished diagnostic use, given the way in which they have been administered, extreme scores on them may raise concern about the respondent. Similarly, the argument that a test or procedure administered to a group provides results which are interpretable only at the group level and not the individual level is false. Most of the studies reviewed were designed to compare the associations between individual level variables such as depression and achievement. While some research is designed to compare these associations in different groups — control vs experimental, various contexts, types of school, variations in background — the data making up the associations are measured at the individual level and must be valid at that level for the research to be valid. Insofar as the data are valid at the individual level, the researcher had a duty of care to those discovered to be at risk.

Problems with providing feedback

Our discussions of the researcher's duty of care also considered the problems associated with providing feedback to the subjects of research, or to those who care for them. Providing feedback about individuals was not seen as a neutral action, but one that posed the possibility of both positive and negative consequences. Passing on incorrect, or misleading information about individuals to themselves, principals or parents would result in a 'false alarm', the possibility of negative labelling and increased stress or discomfort. The issues raised by potential mis-

diagnoses may be seen as a parallel of the issues raised by genetic screening of individuals for particular diseases or traits prior to the onset of symptoms, for example Huntington's Chorea or Alzheimer's Disease (Glass *et al.*, 1996 and 1997).

In addition to the damage caused by 'false alarms', requiring that researchers set-up arrangements to provide feedback to principals about students discovered to be 'at risk' has increased the difficulties researchers have in gaining the permission of schools to do research. While some principals have welcomed the feedback, others have reacted quite negatively denying access to their students. In this case, pursuing the potential good of the very few may impede the greater good of the many by placing obstacles in the way of valuable research.

Given concerns about the potential negative consequences of providing feedback about individuals, SCERH decided to require that only the results of diagnostic tests and procedures would be routinely required to be passed on to those who were discovered to be 'at risk', or to those in positions of care for them. The passing on of such information has to be handled with great care and the procedures for doing so need to be elaborated beforehand, approved by SCERH and described in the Plain Language Explanatory Statement inviting participation in the research.

Current policy

The conclusions SCERH reached following discussions with educators, psychologists, lay representatives from the community and others along with in-put from schools is presented for each of the three types of test and procedure.

Research involving the collection of information about individuals that was diagnostic, or as clear cut as a positive response to the question 'do you intend to kill yourself' definitely triggered the researcher's duty of care. The use of such tests and procedures implies the necessity to inform potential subjects of the possibility of diagnosis and the way the results would be handled. In particular, the researcher must outline to whom and how results, which indicate that the subject of the research is 'at risk', will be communicated.

When clearly non-diagnostic, or non-indicative instruments and procedures are used, data should be collected in ways that would not allow an individual's score to be identified. Such data should be collected anonymously. When data are collected this way, the Plain Language Explanatory Statement should make it very clear that individual scores will not be identifiable or made available for any purpose. In this way those consenting to the research will know in advance that no potentially interesting data about them or those for whom they give consent will be available at any time.

Research using tests and procedures which are neither clearly diagnostic nor clearly non-diagnostic requires

Careful judgement weighing concerns for the individual against such issues as the validity of the test results, and the problems associated with providing feedback noted above. The researcher's duty of care in the use of these tests and procedures is for the rare extreme case, the person whose score is so outstanding as to be alarming. In order to deal with the duty of care consequent on the use of non-diagnostic but indicative tests and procedures, prior to collecting data, researchers should set out a decision rule such as, respondents who score over the 95th percentile, or more than so many standard deviations from the mean, or norm, will have this information reported to themselves, their physician, or in the case of children in schools, to the principal who will be able to determine what if any action is required given what else may be known about the student. The researcher using instruments such as these will be careful to describe the result as indicative rather than diagnostic.

In order to raise awareness of these issues and to provide information to SCERH which would help the assessment of research involving diagnostic measures the following questions are included in that section of the SCERH Application Form dealing with Collection of Data - Materials and Procedures.

Are any of the measures, or procedures you propose using diagnostic or indicative of any medical or clinical condition, or other situation of concern (e.g. anaemia, bulimia, anorexia, depression, anxiety, suicidal tendencies, aggressive behaviours, etc)?

Yes ___ No ___

IF SO, WHAT CONDITION(S) OR SITUATIONS? _____

Please describe the criteria you will use to assess when participants in your research have results indicating that they or others are 'at risk'.

How will you deal with your duty of care to the participants in your research identified as 'at risk'?

Have you acquired the necessary competence to administer, score and interpret the proposed measures and procedures, with the type of participants involved in this research?

Yes ___ No ___

Will you indicate the notification procedure proposed above to potential subjects in your explanatory statement?

Yes ___ No ___

If you answered NO, please explain why.

Conclusion

SCERH considers that researchers who in the course of their research discover information about subjects of the research which might have a bearing on their wellbeing have a duty of care. That duty of care may require active feedback to the individual concerned, or to someone responsible for the individual if the information is of a diagnostic nature and has been collected by someone professionally able to interpret it diagnostically. Providing feedback about individuals on the basis of less adequate information may be necessary should participants' scores be so extreme as to cause concern. By including a section in its Ethics Application form, SCERH aims to identify those research projects in which a duty of care does exist and to enable researchers to propose how they plan to exercise that care, and leaves the onus of indicating whether or not a test or procedure is diagnostic on the researchers. This is seen as vastly more workable than trying to impose rules and regulations in this area. Most committees on ethics in human research have found little use for restrictive regulations and rules. Developing an ethical awareness in researchers offers the prospect of far better long term results and the likelihood of more creative solutions to the demands of human ethics in research.

Note: The authors wish to thank Dr Eleonora Gullone, Associate Professor Peter Gronn and Dr Gordon Walker for their very helpful comments on earlier drafts of this paper. We are also indebted to other members of the Monash University Standing Committee on Ethics in Research on Humans for their wisdom and often feisty contributions to the development of the policies outlined in this paper.

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Reviews

Helping us to finish

Doing Postgraduate Research in Australia

Kate Stevens and Christine Asmar

Melbourne University Press

117 + xviii pp.

Price \$21.95

TOM CLARK

*University of Melbourne
Postgraduate Association*

This review is an insider's take on an outside perspective, a postgraduate research student's reading of the reflections of authors who have completed higher degrees by research at Australian universities. Its starting point is a kind of envy: the book authors are where this book reviewer wants to be, because they have *finished*.

Finished is a quasi religious term for postgraduate research students. We pronounce it in awed tones, lingering over the *sb*, like Liberal and National Party parliamentarians discussing *the bush*. Within its cultural context, each term connotes quaint hats and a day of reckoning.

The Stevens and Asmar book is intended to help us get there, get *finished*, and prosper as students and researchers on the way. It has been filled with 'advice, tips and anecdotes' to those ends. It makes approachable and often extremely helpful reading for one on the inside trying to find a way through.

Student researchers can do with navigation aids, so one imagines the book will find buyers. It joins a literary field that is occupied primarily by student association 'survival guides' and university handbooks. The former tend to focus on student empowerment; the latter tend to emphasise the regulated obligations on students, staff, and occasionally institutions. By contrast, this is a book by and about people who have come through the process. Its basic premise is the value of a precedent. We did it by a combination of the following tricks; perhaps you want to try them.

Those 'tricks' are numerous and varied. Each chapter addresses a stage of the research higher degree process, from applying to enrol, through project design, supervisory relationships, project management, networking, writing up, submitting, and beyond. The material is more practical

than theoretical, but always informed by the overriding ethos of the book.

It seems the approachability is a function of the authors' sympathy to the postgraduate research experience. Having been among us – recently, too – Stevens and Asmar are vividly aware of the people who enrol in research higher degrees and why we do it. There is an evident understanding of the vagaries of the experience:

When you have temporary writer's block, plan your title. An interesting first half, followed by a colon, and a more explanatory second half, is standard format. (When Christine hopefully showed her thesis title to one of her supervisors, he looked at it in silence and then said: 'Well, I like the colon'.)

The approach, then, is essentially laudable. Its drawback may be that one needs to read the whole book, or at least whole chapters of the book, before really getting a sense of how to implement the advice of the authors. And yet that is probably a strength as well: the book is an exercise in explaining more than informing; if we want dot points, there is up-to-date, campus-specific advice available from postgraduate student associations.

There is a weakness in the book, however, and that is a lack of attention to certain organisational features of the postgraduate research scene. Asmar and Stevens do not seem to understand fully the place of postgraduate student associations. They confusingly suggest that the NTEU is a trade union for students. (The NTEU is an industrial union for university staff, many of who may also be postgraduate students, but not for students as such.) They have largely overlooked the frontline role of the associations as supporters of and advocates for individual students facing difficulties. They also overlook a wealth of policy and educational material produced by the associations to help students avoid many of the pitfalls that Stevens and Asmar have identified.

The greatest virtue of the student associations is their political function. Stevens and Asmar are sympathetic to the situation of student researchers, but their book assiduously skirts the politics which have created and continue to determine that situation. Those are complex politics, admittedly, and far from the primary focus of the book. However, it is not plausible to address the vagaries of the contemporary Australian postgraduate research experience without conveying some measure of political analysis. Political analysis is definitely a survival skill for the student researcher. It is of vital assistance as we seek our ways through the maze, both as individuals and as a cohort.

On a statistical point, the authors make the extraordinary suggestion that 70% of PhD students do not complete their degrees. Even DETYA does not pretend the dropout rate is that bad! The true figure for Australia is less than 25%, according to the Council of Deans and Directors of Graduate Studies.

Although they detract from the overall usefulness of the book, the errors can and ought to be rectified in future editions. I hope there will be future editions, because it is a helpful and friendly book, written to help people who too often find themselves wanting friends.

International postgraduate supervision: An issue of increasing concern

Supervising Postgraduates from Non-English Speaking Background
Edited by Yoni Ryan and Ortrun Zuber-Skerritt
The Society for Research into Higher Education & Open University Press,
Buckingham, 193pp, Price: \$65.95

QINGLIN CHEN
Deakin University
Postgraduate Association

It has been widely recognised that international postgraduates contribute not only to Australia's economy (close to 30 per cent of 100,00 plus international students in the tertiary sector contributing about one fifth of \$3.2 billion plus), but also, more importantly, to the research profile of Australian institutions and the overall research effort. However, as Australian government funding for higher education continues to drop, more attention has been paid by Australian universities to the economic outcome and the number of international students, rather than the quality of education and the experiences of international students. One area of concern is supervision of international postgraduate students. Dissatisfaction, complaints and grievances among international postgraduates have been reported on various occasions. Various issues concerning international postgraduates have been raised in several international postgraduate conferences of the Council of Australian Postgraduate Associations (CAPA) and have been studied by some individual researchers.

A recent joint venture between Australian and British academics has resulted in the publication of the first book dealing specifically with international postgraduate supervision issues. The book *Supervising Postgraduates from Non-English Speaking Backgrounds* is published by Open University Press. It is co-edited by Yoni Ryan, a senior lecturer in the Teaching and Learning Support Services Unit at Queensland University of Technology and Ortrun Zuber-Skerritt, adjunct professor both in the Faculty of Education at Griffith University and in the Institute for Workplace Research, Learning and Development at Southern Cross University. The contributors to the book, including 20 plus academics from 9 British and Australian universities and a consultant in cross-cultural education and counselling, were experienced in either supervising or supporting postgraduates from Non-English Speaking Background (NESB).

The 193-page book consists of four parts in addition to an introduction. The first part of the book, through some case studies and personal stories, illustrates the difficulties faced by students from NESB and supervisors in unfamiliar research contexts, such as in America, Britain and Australia. These cases and stories show how attitudes, behaviours, approaches, pedagogical and cultural expectations could affect student experiences and the student/supervisor relationship.

The second part introduces the psychological and educational difficulties experienced by students and supervisors in the British context and examines the legal and ethical dimensions in enrolling NESB fee-paying students, drawing on Australian, UK and US precedents.

The third part proposes the establishment of some principles for effective supervision in relation to NESB students. These principles are differentiated between the social sciences and sciences. The authors believe that effective supervision includes the understanding of difference in academic styles, cultures and religions and provision of research programs in academic writing and research skills.

The fourth section discusses in detail some particular strategies, believed to be successful with NESB research students, which institutions and supervisors could adopt. These strategies include assistance with IT, designing of a reading program to assist NESB students in adjusting to a different paradigm, nurturing critical thinking, and 'a graphic strategy to clarify thinking in a Western discourse through concept mapping'.

The book raises a number of important issues regarding the supervision of postgraduates from NESB. How different are NESB postgraduates from local postgraduates? Should NESB postgraduates be dealt with differently? Research indicates that many of the difficulties encountered by NESB postgraduates are also shared by the English Speaking Background (ESB) postgraduates such as lack of quality advice from supervisors, because many supervisors are not well informed about the procedural

and practical aspects of candidature, inadequate access to supervisors' time and delays in receiving comments on drafts. But NESB postgraduates, though not 'inherently' different from the others, certainly experience more difficulties than their ESB counterparts in some areas such as conforming to the Western academic convention or intellectual tradition simply because of their previous educational background. The academic convention involves at least two aspects as far as supervision is concerned: one is the learning and writing styles and the other is the role of supervisors.

As Western universities continue to internationalise their activities and curricula they must pay attention to the applicability of course content to the non-Western context of its students. The question is asked, should supervisors adapt their approaches and methods to accommodate the needs of internationalisation in order to make the learning and supervisory process mutually beneficial?

Another important issue raised by the book is the ethical and legal implication of supervision. If institutions fail to deliver the courses they market or fail to provide what is promised, if supervisors fail to provide the kind of support necessary for students' successful completion of courses, could students sue the institution? Stacy points to 'educational negligence', 'educational contract', 'misrepresentation of the educational facts', 'estoppel' and 'vicarious liability' as potential areas for a lawsuit by students. The argument is that institutions have the obligation to provide a satisfactory product if they want to treat students as customers. An argument is also formulated that, the higher the fees, the higher the standard should be in relation to the conduct and completion of postgraduate degrees.

The quality of supervisors is another issue raised by the book. The quality of a supervisor involves both qualifications and commitment. Students' inadequate access to supervisors' time and delay in receiving feedback on drafts showed that supervisors lack commitment to their students or at least students are not on their priority list. This issue relates to the whole university environment in which supervisors work. The continuing decline in government funding to higher education has left academics feeling constantly threatened and insecure about their jobs. Many academics feel that they are no longer respected. As one academic staff member put it: 'As academics, we are no longer the university's most valued assets. We are its cost base'.

Overall, the book has pioneered the literature in the area of international postgraduate supervision and has elicited many issues that could hardly be covered by a single review. This book, as it stands, addresses mainly NESB research student issues. However, in Australia, there is a much larger percentage of postgraduates, local or international, who are doing coursework programs. The coursework international postgraduate issues were the topic of a CAPA conference in 1998 which addressed some issues affecting them. It can be assumed that many issues

covered by the book could also be confronted by coursework international postgraduates, but the issues pertinent to international coursework postgraduates equally deserve attention, since their issues affect an even larger number of postgraduates from NESB.

The term NESB chosen by the book is very broad. Students from NESB can be both international and local students. They may face similar problems and difficulties, but the impact of these problems and difficulties on the two groups can be very different because of different support environments and visa regulations. For example, delays in completion time as a result of ineffective supervision would generate more complex problems for NESB international postgraduates than for local NESB students, because of the visa constraints and the extra costs for both tuition and living for international postgraduates.

Nevertheless, the increasing attention paid to the issues of international postgraduate students as a whole, as testified by the publication of the book, is very encouraging. It demonstrates the issues go beyond the mere economic benefits of having these students. It points to the benefit of international postgraduate education as it contributes to Australia in its endeavour to build a knowledge-based economy.

Contributors

Simon Booth is the President of the University of Melbourne Postgraduate Association and a masters student in Australian history. He is also the elected postgraduate member of the Council of the University of Melbourne. (s.booth@pgrad.unimelb.edu.au)

Gary D Bouma is Professor of Sociology, Associate Dean of Arts (Research) and Chair of the Standing Committee on Ethics in Research on Humans at Monash University. His research in the sociology of religion has focussed on the emergence and operation of religiously plural societies and the management of religious diversity. (gary.bouma@arts.monash.edu.au)

Benedict J Canny is a Senior Lecturer in the Department of Physiology and Associate Chair of The Standing Committee on Ethics in Research on Humans at Monash. His research focuses on the control of the secretion of hormones from the pituitary and adrenal glands. (Ben.Canny@med.monash.edu.au)

Tom Clark is the Academic Development Manager at the University of Melbourne Postgraduate Association and a postgraduate student at the University of Sydney, studying English Language and Early English Literature. He is also immediate past president of the Council of Australian Postgraduate Associations. (t.clark@umpa.unimelb.edu.au)

Mark Frankland is the Council of Australian Postgraduate Associations research officer and has recently graduated with a PhD in Media Studies from LaTrobe University. (research@capa.edu.au)

Brian Martin is an associate professor in the Faculty of Science, Technology and Society at the University of Wollongong. His recent research has focussed on power in science, social defence and information in a free society. (brian_martin@uow.edu.au)

Ann Monotti is a Senior Lecturer in the Faculty of Law at Monash University. She held an ARC Large Grant to explore awareness of intellectual property amongst university staff. (Ann.Monotti@law.monash.edu.au)

Qinglin Chen is International Project Officer for the Deakin University Postgraduate Association. He is also a PhD candidate in the Faculty of Arts at Deakin University, Melbourne Campus. (qc@deakin.edu.au)

Bradley Smith is the President of the Council of Australian Postgraduate Associations and a PhD candidate in the Philosophy of Science at Swinburne University of Technology. (brsmith@swin.edu.au)