MOVING BOUNDARIES: TRANSFORMATIONS OF THE INTERFACE BETWEEN ACADEMIC INSTITUTIONS AND THEIR ENVIRONMENTS*

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The transformation of the interface between academic institutions and their environment can be depicted in terms of moving boundaries: the academic-commercial, managerial and university work. These movements represent fundamental transformations of universities, in structure, referent external objectives, meaning and work. It is of great importance to realise that whilst these changes may appear from close up to be unique to changes within the Australian scene, they are not. Instead, the movement of the three boundaries is set within shifts that are currently going on within global society. Representing as they do, deep penetration of commercial market parameters into the very premises of acadaemia, these changes represent the impact of postmodernism on contemporary academic work.

Keywords: Academic institutions, commercialisation, competition, Cooperative Research Centres, science, universities.

THE FIRST BOUNDARY: COMMERCIALISATION

Perhaps one of the dominant memories for academics who lived through the university scene of the late 1980s and early 1990s is the sudden impingement on their normal academic work of demands for commercial or money-making relevance. This was a time when universities started building commercial arms to their university activities - indeed, as of about 1992, twice as many commercial arms as there were universities. These commercial arms were located in a variety of ways inside campus life, some integrated directly into faculty structures, others established as entirely separate organisations and buildings. In many cases, academics who chose to work towards the commercial objectives of the university were able to obtain higher salaries and more flexible working conditions - even if this may have meant giving up tenure. Characteristically, universities sought to import forms of organisation and values that mirrored what they understood to be the commercial marketplace in order to succeed in turning the university's knowledge base into commercial gain. In a number of cases, internal conflicts of some moment

* A paper presented at the Conference, *Science Policy and the Case for Realignment between the University's Own Values and the Society's Real Needs*, Deakin University Sciences in Society Centre, Geelong, 1995.

erupted across campuses as academics saw the encroachment of commercial values and interests on their traditional values and sources of funding. In most cases, the commercial fruit are yet to be harvested.

This experience is not isolated to Australia. Similar stories can be told from the United Kingdom, United States, Europe, and even China and across Asia generally. Globally, there is pressure to directly turn public sector knowledge resources to commercial use.

Some believe the pendulum has swung too far. As in Australia there have been pockets of strong resistance from those connected with the academic community across the world. In the UK, for example, Shirley Williams, former Labour Party MP and Secretary for Education and Science stated in 1991,

> those who want to harness the universities to commercial objectives may destroy the very qualities they admire in them - intellectual excellence, free enquiry, scientific imagination.[1]

Strident voices could be heard across campuses in the early 1990s that supported Shirley Williams' concern about the erosion of university strength by marketplace values, expressed in the attribution of commercialisation to "creating academic slums', "rolling out the corporate carpet", and so on. Bernie Neville of Latrobe University observed,

> Educational institutions now take their wares into the market place and hawk them to whoever will buy. Debates about what is worth teaching have been replaced by debates about what will sell.[2]

Australian universities have certainly started to focus a distinctly commercial eye on the marketplace in new academic course offerings. Griffith University, early this year (1995) proudly announced, for example, a Bachelors Degree in Golf - an admittedly multidisciplinary program that bridges in a new way C.P. Snow's Two Cultures of science and social science/humanities, but is also offered in the sunshine state with a rather clear eye on the Asian student marketplace.

There are some who, on the other hand, believe the pendulum has not swung far enough. Pragmatists, and central policy makers - in, for example, Treasury, Finance, the Department of the Prime Minister and Cabinet, and the Department of Employment, Education and Training, often appear to see universities through the filters of economic rationalism, and observe that the institutions have yet to deliver the promised commercial fruit they expect of such a large financial investment. Except for one or two examples, commercial arms of universities are still largely unsuccessful; their main business is derived not from marketing science and technological (S&T) research, but from selling teaching/training packages and social science surveys.

Perhaps however the fervour of the debate has dissipated. In 1995, there is some sense that the wind has passed and commercial pressures are a taken-for-granted aspect of contemporary academic life. However, with this passing of turbulence into history, there are many who do not appreciate the full significance of the change in the nature of academic work that has transpired.

It is not that the late 1980s brought commercialism onto the campus for the first

time. There has been an interaction between universities and the commercial marketplace probably for the entire life of universities as institutions. Perhaps some at this Conference might remember the stir that Harry Messel's entrepreneurial zeal created during the 1960s from within the University of Sydney. What is different is that prior to the late 1980s acadaemia and the commercial marketplace engaged with each other across separate autonomous domains. Indeed, one of the sources of conflict I recollect for Harry Messel in the 1960s was the fact that his commercial life had intruded on campus values: he was given a large and elaborately carved desk the presence of which intruded on the standard status symbols of rank that were engraved into institutional reward systems.

Perhaps in a rather similar way, academics in the early 1990s were also responding to a new penetration of marketplace values into the cultures that have been traditionally associated with the constitution of knowledge. In our own work at the Centre for Research Policy we have found evidence of this kind of cultural change quite generally across public sector research. In CSIRO for example, from a survey we did of four divisions and several hundred scientists, there was a general perception that the new young scientist that the organisation now needed should be different to the old - much more the entrepreneurial team person, able to link commercial with excellent research capability. Within universities, we have also found a new breed of young academic emerging within some of the Cooperative Research Centres (CRCs), excellent researchers, but interested in spanning the academic-industrial divide, quite pragmatic about the need to place a lower priority on publication in favour of being involved in creating industrial patents, applications and wealth.

In other words what has happened that is new is that now the marketplace is sitting inside the processes that forge the global constitution of society's knowledge, rather than standing alongside and drawing from society's knowledge capital.

The first boundary of universities that has moved is therefore the academic-commercial boundary.

THE SECOND BOUNDARY: MANAGEMENT

From our experience in the Centre for Research Policy running workshops across Australian universities it appears that most academics feel the strain of commercialisation pressures primarily as one more piece of evidence of the general increased strain on the pressure of work. Academics generally are conscious of being in tougher times, working longer hours, being called on to perform - across all domains, in gaining grants, publishing, teaching longer hours, and so on. Many wish for a return to a remembered halcyon past. In general however, the impression one gets inside many universities is one of confusion about precisely what is happening to academic work.

PRESSURE TO COMPETE

In fact what they are experiencing is systematic transformation of the management of universities that has been occurring over the last decade. The pressure to commercialise is but one face of a general pattern of pressure to corporatise, and to

prove the usefulness of what those in a position to exercise economic rationalist policies see as the academic luxury to enquire and teach.

The pressure to put the academic system to work in the marketplace has been building up through the 1980s, but received a serious boost with the amalgamations and re-classifications that were associated with the formation of the Unified National System (UNS) - where all colleges of advanced education and universities were made universities, and there were a series of shifts in the research funding structure towards greater individualistic competitiveness. What has been occurring over the last decade is therefore a general increase in the pressure to compete.

The movement towards greater competitiveness is to be expected during the 1980s and 1990s as an apparently continuous and rational response to Australia's increasingly disadvantaged position in the world economy. Economic restructuring exposed the economy to the harsh winds of economic rationalism and global economic competition. The government concluded that within this context too much investment in research was being taken from the public purse - when reflected against the OECD average. Indeed, Australia was following a reverse trend to all other OECD countries except Japan, in moving through the early 1980s towards more undirected funding of academic research rather than less. Institutions were awarded the bulk of research funding and then these funds were allocated internally, rather than by national competition.

The policy response by Minister Dawkins in 1987-1988 that created the UNS and also the Australian Research Council sought therefore to reverse the trend and at the same time ensure tertiary education was of more even quality and accessibility. Introducing the UNS, which combined 24 universities and 47 colleges of advanced education into an amalgamated pool of 34 (later 38) universities, was therefore an attempt to stimulate unity and relevance across the vast geographic separateness of Australia. But it also injected a large pool of new academics into the research funds marketplace. Previously colleges did not have specific expectations of research as a criterion for promotion and careers.

The associated changes in funding structure then heightened the impact of this increased competition. Instead of research support funds being distributed via the Operating Grants to institutions as was previously the case, they were now distributed competitively. To power this system the proportion of Operating Grants funds allocated for research support to previous universities was clawed back and distributed to all new universities along with some new money and additional support to assist former colleges to catch up. The catch was that the basis for the new distribution was the level of competitiveness of the institution as measured by how much money the individual members of staff received from commonwealth competitive research funding schemes. The most prominent of these schemes was the newly created Australian Research Council, created out of the ashes of the previous and much lower funded Australian Research Grants Committee. Consequently, the previous universities lost all of their research infrastructure funding and received only some of it back depending on how competitive they were. In the case of the large and well established research universities, little was lost; in the case of some of the newer universities loss was greater even though $130 million of new

money was added to the system over the 1988-1991 period.

The academic research system had therefore not only effectively doubled in size. It had also introduced a mechanism of considerably greater competition. Steerage was then added. Universities were required by government to produce Research Management Plans, the idea being that these would form the framework for government-institution agreement in the context of which research funding within the institution would be allocated. In fact it is likely that these Plans were never seriously used as a means of control by government, and are now being phased out. But they had a subtle but profound impact. The universities responded, but given the time lines and demands of overall institutional planning could only do so through a corporate response. The system effectively strengthened the hand of the corporatising powers within, and weakened the autonomy of grass-roots institutional decision-making.

But perhaps the most significant impact of all on competitiveness was symbolic. Because the institution as a whole was now rewarded according to how successful individual researchers were on the Australian Research Council (ARC) funding market, the institutions - particularly the new universities - started to pay considerable attention to encouraging their staff to obtain ARC grants (or other grants that were also counted). Obtaining ARC funding therefore quickly became inscribed either formally or informally into the criteria for promotion and academic success. Change towards greater competitiveness no longer had to be enforced from outside; the drivers were now the individual academic actors. It could be said that this was a stroke of sheer genius in promoting the colonisation of institutions by competitive research funding assumptions.

Following close behind, the institutions then realised the need to upgrade their ability as corporate entities to reach out and get hold of this competitive money. Research offices were created in most campuses along with the post of Pro Vice-Chancellor (Research). It was their business specifically to upgrade the institution's capture rate for research grants. A proportion of infrastructure funding was diverted to support these offices, that is turning support for the established research activities into an investment in obtaining future funding. In many cases these research offices then started to charge a levy of 10 to 15 percent on all new grants that successful academics obtained - providing further support for corporatised change within the institution's internal research system.

Within this new framework for competition, new players were disadvantaged as they did not have the established facilities, reputations and networks to shore up success in the grants race. In the new universities, most of the research, we found, was being done by *new* people, rather than previous college employees who had newly converted to research. These new people tended to be young graduates from traditional universities. The consequence was the production of an interesting secondary impact of the new structures of competition. Success in obtaining ARC (or other external) funding tended now to be built into career assessments - even more strongly in the new universities as they had to compete harder; with younger staff in new facilities these staff had less success than their counterparts in traditional universities in attracting ARC or other Commonwealth grant finance. As a consequence these new staff started to establish funding links into their local communi-

ties, conducting applied research on contract. What then followed was, as it were, a shadow system of applied research. The new researchers maintained both the discipline and linkages they had established during their PhD days in the traditional universities, but were engaged in application of this research. Sometimes the projects funded edged close to the bizarre, as the new faculty sought to continue basic research in a provincial applied contract. We came across, for example, one research group in a provincial university in a small country town conducting research applying parallel processing computerisation to the conveyance line of a dogfood producer. The reason was simply that the only equipment they could access to continue their quite fundamental work on parallel processing was the conveyer belt - carried late at night into the college and up to the first floor laboratory. Nevertheless, the shadow system impact is important. Inadvertently, the competitiveness criteria introduced into the Australian university research funding system are creating a networked applied research capability across the national system.

Linked to this impact was the development of new research territories. Previous colleges that had now converted into universities frequently staked out new research territory, capitalising on their previous strengths. Consequently research groups started to form after the 1987-1988 shake-out around industrial or vocational areas, such as nursing, management and law.

Consequently, products of the transformation of the Australian university research system towards greater competition were not totally intentional. Certainly the system became more tuned to competition. It also however developed more corporatised structures of management and moved against grass-roots involvement of academics in central decision making. These structures are paying more attention to the abstract criteria of funding and performance indicators however (as this is what is being measured and ensures institutional survival and growth) rather than substantive research excellence as such. There was a proliferation of new research domains, although also the development of shadow networks of application around central traditional university discipline bases. The result has therefore been a broader, more diverse, more private advantage oriented, more corporatised academic system - framing the new academic-commercial boundaries.

Again however, there is a wider context.

Each of these changes reflects a shift in institutional control, and along with this, a shift in institutional culture. Derek Robinson of the Australian Academy of Science, commented in 1991 on the 'new managerialism' arising, which he saw as,

> an artificial accountancy reform which leaves little room for rational planning of long term scientific projects and, as the control of research passes from scientists to managers, its aims are changed from long term productivity to short term activity.[3]

Furthermore, research assumes value in a managerialist context by virtue of its abstract meaning - as source of funding or symbol of prestige, rather than its substantive disciplinary meaning. It follows that management can easily slip into management of 'best practice', a single unified commodity - research. One administrator we interviewed, expressed his university's goals this way:

> Our task is to homogenise the expectations of the different faculties, schools and individuals into a generally shared view about teaching and research: we need to

bring disparate philosophies, ideas and expectations together into a unified set of directions and objectives.

A direct consequence is then that research of all forms and communication modes becomes an easy target for abstract indicators that sweep across them all with little attention to basic differences. This is precisely what is now happening with the Australian Research Council's promotion of journal based quantitative and impact publication indicators that are now progressively being introduced by the Department of Education as output indicators of research which are then taken into account in the funding formulae for universities.

What these moves represent is the entrance into academic cloisters of not only pressure towards application and relevance, but also a culture that supports such a market orientation, an enterprise culture.

Again this observations move us back onto the global stage. For what we now see happening in the Australian university scene is not a 'moment' in a unique Australian history, but a prism of a world-wide historical trend in the management of public enterprise organisation.

Enterprise culture, the organisational form we see colonising contemporary Australian universities, is derived from the Conservative political philosophies of Margaret Thatcher's Britain during the 1970s and 1980s. It is the managerialist culture which constrains public institutions to re-organise as if they are responding to markets and market conditions of competition. [4]

Structurally, enterprise culture involves de-differentiation of previously distinct modes or organisation. It involves more 'corporate ' management structures, flexible employment contracts, new forms of financial control, strategic planning and so on. As we have observed around us over the last 10 years, as this organisational form has been imported into Australia's public sector and thence universities, Vice-Chancellors are no longer academic leaders, but chief executive officers.

Culturally, enterprise culture is associated with the emergence of meanings that replace specific user meanings (eg: student) with references to the value of the generalised 'consumer' of a generalised 'service'. Action of the organisation orients towards specific market niches, talk is of product differentiation, value is placed on individual and collective enterprise, initiative, energy, independence, boldness, self-reliance, willingness to take risks, accept responsibility for one's actions, and so on. All this is very familiar to the observer of Australian universities moving into the 1990s.

In other words what we see in 'new managerialism' of Australian universities is but one face of a global organisation trend that implants market values within the culture of public organisation, shifting the boundary of management deeply into the values of the institution itself.

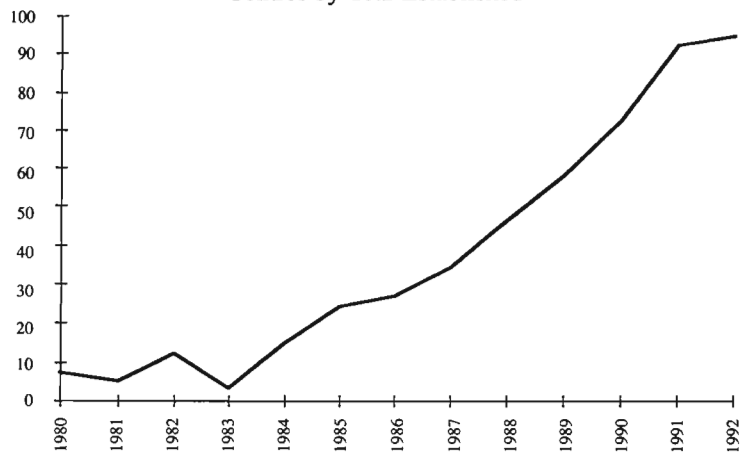
THE THIRD BOUNDARY: A NEW ORDER OF SCIENCE

Meanwhile, there has been a shift in the very nature of the constitution of knowledge, the work of universities.

At the time of Minister Dawkins' initiatives to amalgamate and unify the Australian academic world there was a flurry of activity to concentrate research strengths and profile specific institutional capabilities. Both before and after the UNS was introduced these moves were often a claiming of academic territory within a turbulent external world in order to strengthen the group's or institution's ability to compete. The result was a significant boost in the number of research centres throughout Australian universities.

When we looked at this phenomenon more closely however we found that this activity was not new, but fitted into a longer term trend that had started with the government's initial introduction of the Special Research Centres program in 1982. As Figure 1 shows, from there to the 1990s there was a steady growth in numbers of centres to the point where our survey in 1992 identified *888* research centres across acadaemia - most, according to staffing and funding criteria, quite real, not just paper organisations designed to attract funding. What we saw in 1987-1988 was therefore not just a tactical response.

Figure 1:
Centres by Year Established



Source: Stephen Hill and Tim Turpin, 'The formation of research centres in the Australian university system', *Science and Technology Policy*, 6 (5) (1993), 7-13.

What was more, the pace of the trend at that time was picking up. Fifty-six percent of the centres we surveyed had been established in the last 4 years. From our own estimates, perhaps 50 percent or more of academic research work is now done in association with some form of centre, and much of this is multidisciplinary. In other words a new organisational feature of universities is emerging, cutting right across the traditional vertical teaching-oriented discipline groupings that characterise the university we are used to.

Again we looked further - inside the research practices of universities, through a series of mapping exercises of academic work[5]. We found not just organisational changes going on, but a more significant change in the way that research is performed and communicated. On checking, we found this level of change was happening world-wide. Most basically, traditional ideas of discipline-based academic work published in journals no longer describes what happens at the leading edge any more. Globally, the leading edge of research is increasingly set in the context of industrial application. It is often hard to identify any clear dividing line between basic and applied research any more [6], whilst research is increasingly characterised by multidisciplinary teams where the ability to organise knowledge from the variety of disciplinary 'shelves', and link it with application requirements, is critical. The driving dynamic is therefore is the ability to capture a 'multi-type complexity', that is involving not only formal technical knowledge across disciplines, but also social, managerial, and a variety of forms of tacit knowledge. Transfer of knowledge or of ideas is therefore fundamentally about the movement of people and personal communications, no matter how powerful and apparently useful highly sophisticated and comprehensive computer data bases may appear to be.[7]

Consequently, disciplines do not appear to drive leading edge research any more. Indeed, in the Australian context there is an extraordinarily rich cross-disciplinary texture to publication patterns already. As Paul Bourke and Linda Butler demonstrate, 65 percent of physics and earth sciences research, 77 percent of information science and 56 percent of mathematics work (as classified by academic organisational unit) is published in other fields. Furthermore, as Table 1 shows from our own survey of all academic publications for 1991 from Australian universities, the number of other fields in which specific disciplinary knowledge can be found is at times quite extraordinary. Psychology is spread across 49 other disciplinary fields, clinical sciences across 43 and biological sciences across 38 fields.

Table 1:

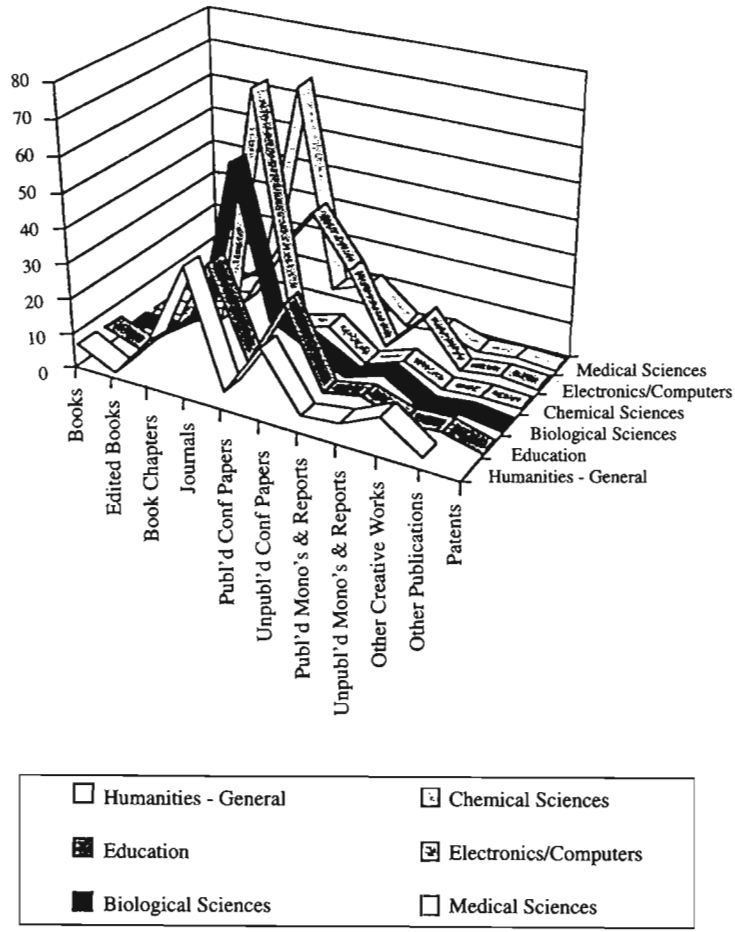
Multidisciplinarity in Publications from Australian Universities, 1991

Academic Unit Field	Number of Journals Articles	Number of Fields in which Published
Psychology	363	49
Education	969	49
Political Science	633	44
Clinical Science	3,161	43
History	305	35
Economics	411	30
Genetics/Biotech	267	23
Organic Chemistry	126	8
Inorganic Chemistry	170	5

Source: National Board of Employment, Education and Training, *Quantitative Indicators of Academic Research, Commissioned Report No. 27,* A Report of the Board prepared by the Centre for Research Policy, Australian Government Publishing Service, Canberra, April, 1994.

Figure 2:

Relative Distribution of Publications between Different Types within Selected Profile Academic Organisation Unit (AOU) Groups



Furthermore, communication patterns vary considerably across different fields as Figure 2 shows. Journal publication is only part of the story. In newly emerging fields (nursing, education, management, for example) more informal means of communication tend to dominate, such as circulation of papers, conference presentations, more 'informal' journals, electronic mail and so on. In areas close to the front end of new science and technological change (such as in computer science

and engineering) conferences tend to provide the main means of communication, along with informal reports, such as on technical issues and designs. Electronics networks and journals are growing in influence, in particular in computer and electronics areas as well as in some areas of physics: indeed in one computer research area we tapped, when asked how long the turnaround time was now for information published electronically through the network, the answer was *10 minutes!* Journal publication simply is too slow; and besides, leading edge researchers tend not to have the luxury of time to browse any more; they need targeted information quickly: people with knowledge are the best source.

At the leading edge of academic work we therefore find personal networks and direct personal relationships are of great importance - even though they may extend across institutional and national boundaries. Indeed, the importance of networks emerges in the work of Stevens and Narin[8] on citation of scientific journals. In what the authors term a "citation time anomaly", papers preferentially cite their own country's papers first, and only over time catch up on the wider international (cosmopolitan) literature. Evidence is consistent for the United Kingdom, Germany and the United States and demonstrates even further the significance of informal networks, in this case, in filtering initial access to formal codified knowledge.

We have found precisely the same dynamic also applies with knowledge transfers between academic research and industry, that is, tacit knowledge is as important as formal technical knowledge, so webs of relationships and prior joint activities set the context for any successful commercial transfers.[9]

The Third Boundary - of university work, has therefore moved radically, along with both the First, Commercialisation and Second, Managerial Boundaries. These movements represent fundamental transformation of universities, in structure, referent external objectives, meaning and work. However, it is of great importance to realise that whilst these changes may appear from close up to be unique to changes within the Australian scene, they are not. Instead, the movement of the three boundaries is set within shifts that are currently going on within global society. Representing as they do, deep penetration of commercial market parameters into the very premises of acadaemia, these changes represent the impact of postmodernism on contemporary academic work.

CROSSING THE MOVING BOUNDARIES

With this observation we are confronted by a profound organisational contradiction that universities have to deal with. For emerging university structures are directly antithetical to performance in the 'New Order of Science'.

As they are currently developing, university structures and funding flows are fundamentally teaching and discipline based, yet research crosses these boundaries. Hierarchical structures of accountability and decision impose quantitative and external 'indicators' on the varied 'tacit' and 'immediacy' meanings and imperatives of research, thus constricting the richness and flexibility of this research. Commercial structures often are erected in such a way as arms of the institutions as to get in the way of substantive networks and university-industry relations. The com-

petitive private advantage orientation that has developed as universities compete increasingly for research funds and students directly intrudes on 'public good' of the university system as a whole within the national innovation system - leading, for example, to confusion in industry about how to articulate with warring institutions, and to a lack of national support for areas of research. In other words within universities organisational moves are pushing towards rigidifying boundaries at a time when boundary openness is a necessary condition for building networks and personal transfers of tacit knowledge.

The paradox is that universities, the seat of knowledge, are now moving towards what is characteristically the form of modernist organisation out of their pre-modern classical form, that is towards privatisation, corporatisation, hierarchical control and so on. Yet, modern business organisations that utilise new knowledge, are fast-moving and competitive, are taking on a post-modernist form. That is, contemporary business organisations are increasingly relying on loose open networks and strategic alliances, on flat horizontally integrated structures, and the fast-moving capture of social and technical capabilities through team organisation.

As a consequence, universities remain torn and divided - between academic rituals and myths of their pre-modern form and market imperatives that are guiding their current form. They therefore appear schizoprenic and helplessly divided. The struggle within is indeed between cultures, but not as C.P. Snow suggested some 30 years ago, between science and humanities cultures - this, itself being a product of modernist enterprise where faith in science ruled. Instead, the cultural struggle that is revealed now is more between organisational forms and managers who seek to own and gain economic benefit from investments in science, and working practitioners of science.

In this context, science, as the traditional pursuit of knowledge, could become a cultural relic, an activity engaged in by elders, but of little relevance (read economic relevance), wheeled out in mummified form for display as Jeremy Bentham is to a Cambridge dinner. Equally, science, as it moves outside the certainties (though restrictions) of cultural hegemony that academic disciplines and institutional structures represent, becomes subject to the vagaries of the market and the commercialisation of academic pursuits. These opposing challenges to the security of academic research work are significant.

Already however there are signs of change - but at the level of the actors themselves. From our own work particularly in Cooperative Research Centres and CSIRO, we are finding a new scientific actor emerging, a new species, a scientific bricoleur, able to rely on scientific discourses, but also to improvise from what lies about in their surrounding knowledge environment. These actors are making meaning of what is at their disposal, making science, but at the same time, in small moving groups, also re-making the organisation of science. The institutions have to catch up.

The challenge for academic institutions is how to build organisations that are 'postmodern', that is, able to capitalise on and nurture the personal and network dynamics of leading edge new knowledge constitution. Some starting parameters would include, moving towards openness and flexibility, the ability to move peo-

ple easily across boundaries, both in teaching and curricula development, and in research. That is, the institutions need to pay attention to providing substantive network support. Furthermore, the organisations also need to focus the valence of the organisation in the right direction, that is, towards where the action is - at the small group researcher level - rather than towards higher management corporatised administrative accountability. Furthermore, the knowledge that is needed not only of academic researchers, but also of their graduating student charges is both technical and social knowledge. Addressing the institutional ability of universities to provide this knowledge does imply re-crossing the C. P. Snow cultural divide between social/humanities and scientific knowledge - in curricula, and in institutional organisation of research.

Cooperative Research Centre organisations are ones to watch. They represent not one but many organisational forms when one looks more closely. But all of them are in different ways seeking to dissolve and reform institutional boundaries. From our own work on not only CRCs, but also other forms interaction across university-industry boundaries, what we find that matters is less the possible cultural differences each side of the divide, and more the nature of the boundaries themselves. The boundary region and interactions represent an 'inter-tidal' zone between two different ecological domains. Crossing this inter-tidal zone means having a basis for sharing, that is 'shadow knowledge' of what lies across the other side. We find that paying attention to clarifying and negotiating expectations at the boundaries is probably the most important predictor of success in opening up organisations to a successful postmodernist form.

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