Oh, the Humanities!

Australia's innovation system out of kilter

Stuart Cunningham

Federal research funding is increasingly pointed towards models of innovation derived from the sciences. And yet, argues Stuart Cunningham, this is an increasingly out-moded model of research discovery. The humanities and social sciences – the poor relations of innovation policy – have been pioneering new and sophisticated paths of research and collaboration between theorists and policy-makers. But no-one in government seems to be looking.

The idea of an innovation system is that there is something systematic about it. My worry about Australia's innovation system is that its most systematic feature is its exclusion of the humanities, creative arts and social sciences (HASS).

Too many of Australia's policy settings overlook the potential of the humanities, arts and social sciences to contribute to the national economy and well-being. The R&D tax concession specifically excludes research conducted within these areas. We need to change an out-dated view of innovation based on the smokestack industries of the last century. It would require the government to revise the way allowable research is defined in the *Income Tax Assessment Act* at Section 73B 2C(f).

In a recent response to an inquiry on this matter, the Commonwealth's position was explained. To qualify for the concession, R&D must be 'systematic, investigative and experimental'. The activity must involve 'an appreciable element of novelty', a 'high level of technical risk', and 'be carried on for the purpose of acquiring new knowledge (whether or not that knowledge will have a specific practical application) or creating new or improved materials, products, devices, processes or services'.

Apparently it is believed that, although 'the Government is aware that some work undertaken in the humanities, arts and social sciences field can be vibrant', these criteria don't apply to them. The kicker is that 'there is a concern that if the criteria for activities eligible for the R&D tax concessions were broadened to include humanities, arts and social sciences, then there would be calls from many other sectors to similarly include their activities as being eligible and this would have serious cost implications for the concession'. So there – if we lower the portcullis for you types, who knows what might get in!

In our innovation system, as in most, the humanities, creative arts and the social sciences, at best, are thought of as a kind of 'handmaiden' to the powerhouses of science, engineering and technology, which in turn feed the growth businesses which deliver rising standards of living and consequential social benefits. At best, HASS might help us to understand the consequences of moving to a knowledge-based economy, but they could never lead such change or contribute as equal partners with their colleague sciences.

But the evidence suggests otherwise. Here are a few examples – some of them from precisely the kinds of 'impractical' areas governments seem to have given up on as sources of real-world innovation.

NRMA Motoring and Services teamed with humanities researchers Sarah Redshaw and Zoë Sofoulis at the University of Western Sydney to develop a program that aims to promote safer driving practices amongst young and inexperienced drivers by introducing an innovative cultural approach to driver education. It's called Transforming Drivers. Driver self-image

and resultant behaviour is strongly influenced by peer culture and a saturated media and advertising environment, and standard issue driver training has never taken these supervening factors into consideration.

The focus groups and workshops – many of which are conducted in western Sydney – afford young drivers an unprecedented opportunity to critically reflect upon, and possibly change, the values and practices of their own driving cultures. The RTA and the Blue Mountains City Council joined in, contracting the research group to develop a school-based workshop and education program at Year 11/12 level across NSW. Further spin-offs were in collaboration with the Professional Association of Road Safety Officers.

The Brisbane-based games company Auran Technologies hired John Banks, an English department PhD student, to help them deal with the new wave of user-led co-creation that the games industry has stimulated. Auran is an Australian pioneer in collaborating with game fans to develop their successful online game, Trainz. This involved at times sharing with fans the intellectual property generated by the intense co-creative process of making, marketing and keeping the game active in the marketplace.

As Auran's community liaison manager, Banks worked with various fan communities as they developed around the games products and assisted Auran to maintain market share while the industry has been undergoing global consolidation. Banks was able to put directly into business practice cultural studies' traditions of engagement with the 'active audience' and fan cultures.

Linguists and communication researchers, in partnership with physicians, information technologists, and psychologists collaborated on a new piece of text mining software, Leximancer. Leximancer has analysed and mapped texts as diverse as Edward Gibbon's *Decline and Fall of the Roman Empire* and the full report of the US 9/11 Commission.

The software is changing the exploitation of text and natural language assets in business, government, security, law enforcement, science research, and education. It is being used to monitor threats such as terrorist activities, and has been sold to the US Social Security Administration and an Australian government agency in the defence sector. Police are also using it to cluster burglary reports. It is the brainchild of Andrew Smith at the University of Queensland's Key Centre for Human Factors and Applied Cognitive Psychology.

These examples are the tip of a reasonably sized iceberg. The fact is that the humanities, both in their own right and in

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collaboration with other disciplines, both science-based and social-science based – contribute tangible benefits for business, government and industry which any innovation system needs to take into account.

But a key to unlocking the black box of innovation and R&D policy is to be able to demonstrate the degree to which science-technology-engineering-medicine (STEM) and the HASS sector are interdependent. The Council for Humanities, Arts and Social Sciences (CHASS) has undertaken a substantial study tracking the extent and dynamics of collaboration between the two sectors for the department of education. We in the HASS sector have taken the initiative in seeking to demonstrate that – contrary to the policy settings – the 'two cultures' really are working together, on the ground, to address real problems as they present themselves.

CHASS believes that there are a number of initiatives which might undergird a rapprochement of the two cultures in this country. In terms of research, when the National Research Priorities are reviewed, cross-sectoral collaboration should be embedded as a priority process that cuts across all the identified thematic priorities. A 'whole of knowledge' approach would then support 'whole of government' research priorities. The draft plans for the Research Quality Framework are flawed to the extent they marginalise cross-sectoral research. The Australian Research Council (ARC), the National Health and Medical Research Council and other funding bodies at national and state levels should include cross-sectoral collaboration in their objectives and priorities. There should be a more contemporary way to integrate HASS into the National Collaborative Research Infrastructure Scheme.

CHASS looks to more opportunities for students to think 'outside the box' of their own disciplines by giving undergraduates the opportunity to participate in cross-disciplinary courses without the fear that this will be less recognised in their career development. Ambitious coursework which spans both the sciences and the humanities-social sciences should be encouraged. This could take the form of the emerging 'Melbourne model', but it could also be of a very different nature, addressing cutting-edge industry skills needs such as environmental engineering or games and mobile content development within cross-faculty double or single degrees.

These changes could be facilitated at the sector-wide level by changing the disciplinary cluster weightings to encourage collaboration across the science/social-science divide in stra-

tegic areas of need, and/or at the institutional level by weighting load which crosses the same divide. In secondary schools, state governments might support a balance of disciplines in the final two years of the curriculum, rather than allowing or encouraging the sorts of specialisation that are more appropriate for upper level undergraduate coursework.

At a post graduate level, Masters and PhD students should be offered a semester program in collaborative research, similar to that currently offered in commercialisation. Such a semester would train researchers to be 'boundary spanners' and could include study of communication skills, team management and leadership, different research approaches and languages. Such training would build the vital capacity of research students to become facilitators or leaders who can bring the sectors together over time.

In advocating their place in the innovation system, the humanities, arts and social sciences can benefit from an alliance with the business sector, which consistently stresses that Australia needs at least as much focus on innovation broadly conceived as on the narrower concept of R&D. Most traditional science and innovation policy risks excluding where most everyday innovation is occurring in the economy. Those sectors of the economy engaged in providing services and administration of various types make up by far the bulk of the economy (75% by GDP, 81% by employment), with primary and manufacturing sector making up the remainder. This is where most business focus on innovation lies – in finding new solutions and new processes to business models and operational challenges rather than waiting for the serendipitous benefits of laboratory science to trickle down, or out, to the real world. This is also where the humanities, arts and social sciences may find perhaps unexpected but effective allies.

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