# The humanities, creative arts and the innovation agenda

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For debates about the place of the humanities, the values they espouse and the insights they instill – their use, in short - we I can go a long way back to Matthew Arnold, Thomas Carlyle and Cardinal Newman's idea of the university, but I am not going back that far. In fact, it seems only yesterday – but it was the early 1990s - that there was a big debate about the humanities and its role in contemporary higher education.

In part occasioned by the claims of 'cultural policy studies' and in part about the Dawkins reforms, this was a debate about first principles defences of the humanities against what were presented as historically- rather than philosophically-grounded, non-humanistic, accounts of the humanities (see Hunter et al 1991). Geoff Stokes offered an account of the history of the university in Australia that stressed its alignment with national priorities and planning. Bruce Smith talked about the way normative interventions in schooling were crucial to embedding the influence of the humanities academy. And Ian Hunter and John Frow exchanged Foucauldian and neo-Marxist analyses of the role of the humanities that gave rise to a memorable trading of titles in *Meanjin* in 1992 and 1993. Hunter opened with 'the humanities without humanism', to which Frow replied 'the humanities without humans'!

At the time also, Ken Ruthven brought together under the auspices of the Academy of the Humanities an overview of 'the new humanities' which stressed growth, dynamism, interdisciplinarity and post-humanism and saw publication as *Beyond the Disciplines: The new humanities* (Ruthven 1992).

This time, the debate is different.

This time the broad context is the relation of the humanities and creative arts to the innovation agenda and the knowledge economy. It is about the humanities *and the creative arts*, a crucial but little thought-through connection that is assuming centre stage for reasons that are the burden of this paper but also, and relatedly, because of the growth and integration of creative arts courses and staff into the university system over the last decade.

It's not, then, a debate about the humanities and creative arts as the *ding an sich* - the imponderable thing in itself. The current debate is empirical, it's evidence-based, and it's about a wider set of issues about the new knowledge economy that humanists and creatives are *joining*, not initiating amongst ourselves.

My discussion follows these lines:

- What's wrong with the standard innovation and R&D agendas in a knowledge-based economy?
- Why should the humanities and creative arts disciplines be in innovation and R&D agendas?
- How innovation and R&D policies are evolving that show a way ahead.

**A short genealogy of the knowledge-based economy, innovation and R&D agendas**

The new macro-focus on the knowledge-based economy and innovation policies has been around in some form or other for a long time, certainly since the information society discussions of the 1950s, with notional sub-divisions of the service or tertiary industry sector into quaternary and quinary sectors based on information management ($4^{th}$ sector) and knowledge generation ($5^{th}$ sector). But the shorter term influence is traceable to new growth theory in economics which has pointed to the limitations for wealth creation of only micro-economic efficiency gains and liberalisation strategies (Arthur 1997; Romer 1994, 1995).

Governments are now attempting to advance knowledge-based economy models, which imply a renewed interventionary role for the state after decades of neo-liberal small government, prioritisation of innovation and R&D-driven industries, intensive reskilling and education of the population, and a focus on universalising the benefits of connectivity through mass ICT literacy upgrades.

Every OECD economy, large or small, or even emerging economies (eg., Malaysia) can try to play this game, because a knowledge-based economy is not based on old-style comparative factor advantages, but on competitive advantage ie, what can be constructed out of integrated labour force, education, technology and investment strategies (eg., Japan, Singapore, Finland, etc).

**But the humanities, creative arts and social sciences as contributory disciplines - and the activities they typically support through education, training, and research such as the content (and, as sub-sector of them, the creative) industries - *don't as a rule figure* in R&D and innovation strategies**. When they do, it is as last minute concessions to dogged lobbying, and are usually damned with faint praise or condescended to with benign indifference.

There are several recent Australian examples: *Backing Australia's Ability* (2001), *Knowledge Nation* (2001), Queensland's Department of Information and the Information Economy (DIIE) R & D Strategy Paper (2002), and the process for Developing National Research Priorities during 2002 and 2003.

The Chief Scientist's report *The Chance to Change* refers to 'the rising importance of knowledge and creativity', but his applications of creativity are all in science-engineering-technology (SET). The Prime Minister's *Backing Australia's Ability*, in the words of then-Academy of the Humanities President Malcolm Gillies, is an 'old fashioned research=science document'.
*Knowledge Nation*

'Knowledge Nation' (ALP 2001) was the Labor Party's compendium of policy options for stimulating a knowledge-based economy and society leading into the federal election in November 2001. For *Knowledge Nation*, the creative industries are coterminous with the arts. The result of this conflation is that recommendations for advancing the creative industries are residual at best, being lumped in with some afterthought recompense for the university's humanities and social sciences rather than upfront in the document as the sector that will deliver the content essential for next generation information and communication sector growth. (ICT is seen as one of five key knowledge-based growth hotspots of the Australian economy into the future, along with biotechnology, environmental management, medical services, and education export).

While Knowledge Nation can claim against its political rivals that 'There was not one mention of the creative industries – the arts – in the Howard government's innovation statement', the patent limitations of complete equivalence of the arts and the creative industries has at this time escaped Australian Labor.

*DIIE's Queensland R & D Strategy Paper*

The DIIE paper (2002) is clearer and more explicit than *Knowledge Nation* about the relevance of creative industries to the broad R&D field. ICT infrastructure or the 'enabling technologies' for R&D include multimedia, broadcasting, 3D and games in the paper. And 'creative retail' like the arts and entertainment are also acknowledged as 'applications fields' for R & D. However, none of these areas, acknowledged as R&D or R&D-influenced sectors, has been targeted under an R&D label for state-level investment to this date. Indeed, the term creative industries is used only once in the entire document**.**

And yet the principles on which a state like Queensland wishes to build its R&D profile, such as opportunities to leverage private sector investment through strategic state involvements, and the value of leveraging existing infrastructure and traditional industries (such as the broadcasting infrastructure that exists today in Queensland), could both be centrally addressed by R&D in the creative industries in Queensland. The need to develop virtual clusters and bandwidth capacity would also be addressed in significant ways if the creative retail or consumer consumption end of demand for broadband in the broader business and consumer sectors as much as in the research community was engaged with by an R & D strategy.

Developing National Research Priorities

The process to develop a set of National Research priorities that were more inclusive than the original very narrow set of four new science priorities belatedly required by government to be applied in the ARC's programs in early 2001 (nanotechnology, photonics, genomics/phenomics, and complex systems) began with 'Developing National Research priorities: An issues paper' in May 2002. There is a sliver of a promise of integration between humanities and social sciences and science and technology in this paper, and the stated intention that there would be a second round of priority setting addressed to the humanities and social sciences. But the reason given for prioritising science and technology was simply that 75% of the country's outlays in R&D go to science and technology. Subsequently, a somewhat more

inclusive set of priorities was announced in December 2002 and a further process of augmentation sensitive to the human sciences was underway during 2003. I discuss these developments later in the chapter, as they take their place within the broader evolution of R&D policies.

**Why should the humanities and creative arts disciplines be in innovation/R&D agendas?**

Developing a more complex picture of the sources of innovation and wealth creation need to get beyond sloganeering, however much it's fun to answer one with another: Robin Batterham's 'our lives would be unimaginable without science' versus, say, 'without art, life on this planet would be unendurable' (Stephen Soderbergh on accepting his Oscar for directing *Traffic* in 2002).

Arguably one of the most succinct of this type of response is found is the review of the learned academies done for DEST in 2000: 'These disciplines [humanities and social sciences] provide the organisational, management, legal, accounting and marketing knowledge bases that are critical to successful innovation. They are the source of many of our insights into the human condition broadly, and to our understanding and managing the consequences of moving to a knowledge-based economy'.

I want to stress a more specific but still quite inclusive account that focuses, not on the way humanities, creative arts and social sciences analyse and manage the knowledge-based economy, but on their central role *in* it. **Creative production and cultural consumption are an integral part of the new economy, as are the disciplines that educate, train and research these activities.**

Worldwide, the creative industries sector has been among the fastest growing sectors of the global economy. Several analysts, including the OECD (1998); the UK government through its Creative Industries Task Force (CITF 2001); Jeremy Rifkin in *The Age of Access* (2000); and John Howkins in *The Creative Economy* (2001), point to the crucial role they play in the new economy, with growth rates better than twice those of advanced economies as a whole. Entertainment has displaced defence in the US as the driver of new technology take-up, and has overtaken defence and aerospace as the biggest sector of the Southern Californian economy (Rifkin 2000: 161).

Rather than being relegated to a residual or marginal status in new economy business practice, sociologists Lash and Urry (1994) and business analyst John Howkins (2001: Ch 4) claim that creative production has become a model for new economy business practice (outsourcing; the temporary company; the 'producer' model of project management; just-in-time teams, etc). Rifkin (2000: 163-4) claims that cultural production will ascend to the first tier of economic life, with information and services moving to the second tier, manufacturing to the third tier and agriculture to the fourth tier.

Most R&D priorities reflect a science and technology led agenda at the expense of new economy imperatives for R&D in the content industries, broadly defined. The broad content industries (or 'knowledge consumption services') sector derives from the applied social and creative disciplines (business, education, leisure and

entertainment, media and communications) and represents 25% of the US economy, whilst the new science sector (agricultural biotech, fiber, construction materials, energy and pharmaceuticals) for example, accounts for only 15% of the economy (Rifkin 2000: 52).

In fact all modern economies are consumption driven (60% of GDP in Australia and 62% of US GDP – see Hearn et al 1998) and the social technologies that manage consumption all derive from the social and creative disciplines.

In Australia, these industries or enterprises are valued at $25 billion a year – as much as the residential construction industry. And think how much we all place the construction industry at centre stage as an index of the nation's economic health! The creative industries are growing at a fast clip. In the high growth areas, like digital content and applications, they are growing at twice the overall rate of the overall economy. Many Australians are involved in the creative industries, ranging from hobbyists to full time employees and small businesspeople: 2.5 million say they work in these areas, and of those about 900,000 get paid for it.

We can no longer afford to understand the social and creative disciplines as commercially irrelevant, merely 'civilising' activities. Instead they must be recognised as one of the vanguards of the new economy. R&D strategies must work to catch the emerging wave of innovation needed to meet demand for content creation in entertainment, education and health information, and to build and exploit universal networked broadband architectures in strategic partnerships with industry.

Not only is R&D in the applied social and creative disciplines required for its own commercial potential, but also because such R&D must be hybridised with science and technology research to realise the commercial potential of the latter. Commercialisation depends on 'whole product value propositions' not just basic research.

The recent Australian Academy of the Humanities paper on *The Humanities and Australia's National Research Priorities* captures the relation to both creative production and cultural consumption well:

> The Humanities [and creative arts], especially the new Humanities like media, cultural and communications studies but also the more established fields like anthropology, are the only discipline cluster that specialises in training and research in the disciplines that underpin both creative production and cultural consumption in the modern economy. The Humanities have provided the training and research for generations of creative producers of multimedia, content generation and the digital media industries. They have explored the ethics and aesthetics of image manipulation, and provide the essential understanding that allows complex systems such as multi-platform multimedia to work for its various audiences and users.
>
> The Humanities, in short, assist Australia in understanding technology take-up in the media, new media, communications and creative industries. They help us understand the cultures of use in the media, creative and communications industries, such as the adoption of particular aspects of new technologies into new cultural formations, as in SMS messaging. And they

> lead the design and development of new media and cultural technologies, as well as the content they will carry. (AAH 2003, pp. 9-10)

The crucial point here that establishes the indivisibility of the humanities and creative arts is that the new economy requires both *R* and *D*, and that the contexts, meanings and effects of *cultural consumption*, in Rifkin's terms, could be as important for these purposes as *creative production*. Major international content growth areas, such as online education, interactive television, multi-platform entertainment, computer games, web design for business-to-consumer applications, or virtual tourism and heritage, need *research* that seeks to understand how complex systems involving entertainment, information, education, technological literacy, integrated marketing, lifestyle and aspirational psychographics and cultural capital interrelate.

They also need *development* through trialing and prototyping supported by test beds and infrastructure provision in R&D-style laboratories. They need these in the context of ever shortening innovation cycles and greater competition in rapidly expanding global markets.

**Evolving innovation and R&D policies**

Innovation and R&D policies are evolving. There is growing chorus worldwide that echoes – and provides the evidence base for - the arguments being made here. At the broadest level, there is now talk of 'third generation' innovation policy (Lengrand *et al* 2002 )**.** I would read these policy probes as differentiating amongst *innovation value chains, innovation systems* and *innovation ecologies*.

The 'first generation' of innovation policy – and this remains the dominant paradigm in most political/paymaster circles, if not cutting-edge scientific ones – is based on the idea of a linear process for the development of innovations. This process begins with basic knowledge breakthroughs courtesy of laboratory science and public funding of pure/basic research and moves through and successive stages – seeding, pre-commercial, testing, prototyping - till the new knowledge is built into commercial applications that diffuse through widespread consumer and business adoption. The prototypical industry sectors that are held to exhibit these characteristics are the biotech and ICT sectors.

Second generation policy recognises the complex, iterative and non-linear nature of innovation, with many feedback loops between the different stages of the process as outlined in the first generation model, and seeks to bolster the process by emphasising the importance of the systems and infrastructures that support innovation. These systems have focused typically on research structures and programs, education, taxation, IPR and competition policy, and they have been typically national in their focus, emanating as they do from national governments. Innovation policies worldwide are overwhelmingly a mix of first and second generation.

Third generation innovation thinking is based on ecological more than systems paradigms. The systems have to be brought into interaction with each other, and a deeper, longer term as well as wider view needs to be taken. Innovation depends on organisational, social, economic, marketing and other knowledge. There is an increasing recognition that articulating, say, the education system to innovation

doesn't necessarily address the root causes of a lack of innovativeness in that system as a whole. Each of the systems themselves need to be subject to innovation strategies, and brought into a greater relation to each other. Innovation needs to be more grass roots, at regional and sectoral levels as much as national.

(There is an interesting variation to this model which contemplates five generations of innovation, covering narrower but similar territory, albeit more closely associated with manufacturing than the services sectors. Rothwell (1994) distinguishes between:

*First generation:*

- Linear (technology push) model: simple sequential process. Emphasis on R&D. The market is merely a receptacle for the output of R&D.

*Second generation:*

- Market-pull: also a simple linear sequential process but with emphasis on marketing. The market is the source of ideas for directing R&D. R&D has a reactive role.

*Third generation:*

- Chain-link model: sequential but with feed back loops. Push or pull or push/pull combinations. R&D and marketing more in balance. Emphasis on integration at the R&D/marketing interface.

*Fourth generation:*

- Integrated model: Parallel development with integrated development teams. Strong input supplier and customer linkages. Emphasis on integration between R&D and manufacturing and marketing. Horizontal collaboration (joint ventures etc).

*Fifth generation:*

- Systems integration and networking model: Fully integrated parallel development. Use of expert systems and simulation modelling in R&D. Strong linkages with leading edge customers ('customer focus' at the forefront of strategy). Strategic integration with primary suppliers including co-development of new products and linked information and design systems. Horizontal linkages: joint ventures; collaborative research groupings; collaborative marketing arrangements, etc. Emphasis on corporate flexibility and speed of development (time-based strategy). Increased focus on quality and other non-price factors.)

To flesh this out a little, take an example from the SET heartland: to achieve the Prime Minister's goal of turning kids onto science and maths, rich, innovative, games-based products that are, yes, *entertaining*, will be needed. C P Snow's 'two cultures' – the gulf between science and humanities/arts - has to be bridged if the sentiments and strategies of *Backing Australia's Ability* and packages like it are to be realised. And while we're on education, consider the interrelationships, the ecology, between education, creative production and cultural consumption. Cluster theory, currently the dominant thinking on regional development strategies, emphasises the crucial role of educational institutions (northern Italy design, Silicon Valley, the Boston corridor), both to do R&D and, as Charles Leadbeater and Kate Oakley (1999) point out, to provide the consumption base that is 'cheap and experimental'. John Hartley (pers comm) argues that there's a symbiotic but indirect relationship between the development of creative industries (strictly understood) and the

education sector via the sharing of human capital. This is to come at the issue from the other side, as it were, to that of the formal 'changing systems' approach in which many state education systems, such as Singapore or the UK, are trying to produce 'creative citizens' on the Singapore.

Another example might be how to address what some might call the structural weaknesses in Australia's skill base and business infrastructure. These include the integration of entrepreneurialism into curricula, the fostering of collaborative networks, and an export orientation. These values cannot be administered, they must be fostered and they go to factors of deep culture that are not amenable to quick fix government programs. An export orientation might to a great degree depend on language and inter-cultural awareness. Entrepreneurialism may be best fostered outside formal schooling not inside it.

Innovation frameworks set the broad parameters within which R&D strategies are developed. Let's now turn to evidence that such strategies are also evolving and beginning to contemplate the role of creative content.

Canada, New Zealand, Australia and Taiwan are seeing evidence of creative industries being at least contemplated as an R&D sector and the principles for R&D intervention are interestingly to be compared with and are not mappable onto cultural and industry intervention principles. (I have addressed this issue elsewhere, see Cunningham 2002b, 2004). In Canada, there is some interesting work on stimulating Canada's broadband content industry through R&D strategies (Delvenia 2001). In New Zealand, the Foundation for Research, Science and Technology is promulgating explicit R&D policy for the creative industries, identified as a national 'Growth and Innovation Framework' priority along with biotech and ICT.

In Australia, the National Research Priorities (NRP) process requires the ARC, CSIRO, NHMRC, and the defence and nuclear science R&D organisations - all the major research facilities and infrastructure at a national level - to take account of these priorities and report as to their acquittal of them. One of them is 'Frontier technologies for building and transforming Australian industries'. In this priority area there are key statements such as 'research is needed to exploit the huge potential of the digital media industry', and a number of examples of content applications such as e-commerce, multimedia, content generation and imaging are mentioned for priority research and development. Considering that framework, it is arguable that the first Co-operative Research Centre for creative digital content and applications (the Australasian Centre for Interaction Design, with QUT Creative Industries as the lead site) won last year and is starting soon. It may be that changes to the NRP will see greater articulation to priorities amenable to humanities and creative arts.

In the context of a National Development Plan, Taiwan is linking a more 'humanistic and sustainable' approach to development to 'culturally creative industries', the goals of which are to nurture creative skills and promote the combination of culture with entrepreneurship to develop cultural industries. This necessitates setting up an organization to promote culturally creative industries, cultivating creative manpower for art and design, molding an environment conducive to the development of creative industries and developing creative design and culture-based industries. This will articulate to the more high-tech end of the creative industry spectrum, with major new

R&D investment in schools in such key areas as IC design and digital content and by encouraging cooperation among industry, academia and research institutions (http://www.roc-taiwan.or.kr/policy/20021021/2002102101.html).

The US R&D effort continues to be dominated by science-engineering-technology (SET) and particularly defense SET, but 'Beyond Productivity' is a good example of a probe from the National Academy searching for purchase for an investment strategy for the digital arts and design based on innovation (Mitchell *et al* 2002).

In Europe, while innovation and R&D policy, for the most part, remains focused on big science and technology, the exception is probably digital content creation which is beginning to slip in as part of 'technology,' both at an EU and member state level (see www.cordis.lu). This is not happening at this stage through processes of explicit policy reconsideration and there are very few high-level policy documents, either in R&D or on innovation more broadly, which explicitly mention R&D for the Creative Industries. While there is the usual range of industry development support for creative industries (soft loans, grants, development of networks), recognition of the more particular R&D claims of creative skills and services more broadly as intermediate input into a wider range of activities, while supported in rhetoric, is not yet showing up in policy.

The European Commission's influence over R&D in member states is driven to a large extent by direct funding of its research priorities under the various Framework programs. If the Commission is showing an interest in funding digital content research (which it is), it doesn't mean members states will adopt that policy, but that research will get funded in those countries and will lead to pressure on national research bodies to support similar activities.

The current research program is Framework Program 6 and it is organised into thematic areas. Most are still science and technology-focused but there are two areas - Information Society Technologies, and Citizens and Governance in a knowledge based society - which will directly support arts and humanities research. Information Society Technologies includes two categories of direct relevance: Cross media content for leisure and entertainment, and Technology enhanced learning and access to cultural heritage.

R&D is quite a live issue in the humanities and creative arts research community in the UK. On one hand, the Arts and Humanities Research Board is to be made into a full Research Council, with the same status as the others which deal with science and technology (and in the case of the ESRC, with social sciences). On the other hand, the same White Paper on Higher Education, which made this announcement early in 2003 makes almost no other mention of either the arts or the Creative Industries. Nor do most of the Department for Trade and Industry policy statements on the 'knowledge economy.'

The Secretary of State for Education in early 2003 has actually needed to defend himself in the press and elsewhere from the accusation that research monies just goes to big science, but there is certainly a feeling, that while support for the Creative Industries *either* as part of economic development/regeneration or as cultural policy

has increased substantially, none of the sectors are yet seen as R&D-based or significantly R&D-influenced.

As in other jurisdictions, there is a reluctance to open up R&D programs to creative content prototyping and production because it could open the floodgates. The politics of throwing creative content's hat into the ring with SET is regarded as moot given the propensity to be marginalized by larger more politically saleable claims.

**Concluding challenges**

I have rehearsed the challenges and changes facing traditional science-based innovation frameworks and R&D strategies. There is, of course, a reverse challenge – for us. We need to sharpen our understanding and use of the term R&D – it's not just anything we decide to dub R&D in an opportunistic move to add another public outlay pot to the already established ones of cultural and education subsidy. (I have addressed this elsewhere, Cunningham 2002b, 2004.)

A second and related challenge is to see to what extent we can achieve the kind of scale and co-ordination expected of the sciences in the national interest. Is it appropriate, or are we endemically – or as a matter of principle – to be considered small scale, fragmented, cottage industry researchers?

Third, we do not stand outside of our objects of study. My argument about the relevance to innovation of the content and creative industries – and the disciplines which study them – reminds us that we are part of what we study (eg., the education industry). This is a conceptual and political shift that presents a major challenge for us if we continue to think of the humanities and creative arts as constitutively oppositional and individual, and deserving of public subsidy *because* of our oppositionalism (the conscience of the nation) and exceptionalism (acquitted with individual brilliance and excellence).

Before we are recognized as contributing to the nation's innovation agenda, we can innovate through changing ourselves.

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