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RESEARCH ARTICLE

Developments in measuring the “creative” workforce

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This article outlines the contribution the ARC Centre of Excellence for Creative Industries and Innovation has made to the project to improve statistical parameters for defining the “creative” workforce. This is one approach which addresses the imprecision of official statistics in grasping the emergent nature of the creative industries. The article discusses the policy implications of the differences between emphasizing industry and occupation or workforce. It provides qualitative case studies that provide further perspectives on quantitative analysis of the creative workforce. It also outlines debates about the implications for the cultural disciplines of an evidence-based account of creative labour. The “creative trident” methodology is summarized: it is the total of creative occupations within the core creative industries (specialists), plus the creative occupations employed in other industries (embedded) plus the business and support occupations employed in creative industries who are often responsible for managing, accounting for and technically supporting creative activity (support). The method is applied to the arts workforce in Australia. An industry-facing spin-off from the centre’s mapping work, Creative Business Benchmark, is discussed. The implications of this approach to the creative workforce is raised and exemplified in case studies of design and of the health industry.

Keywords: creative workforce; creative industries; creative trident; precarious labour; creative labour; ARC Centre of Excellence for Creative Industries and Innovation

Introduction

A robust and burgeoning literature has developed recently around the notion of precarious labour – much of it focused on the specific condition of “creative labour” in the arts, cultural and creative industries (for example, Deuze, 2007; Gill & Pratt, 2008; McRobbie, 2002; Ross, 2009; Rossiter, 2007; Scholz, 2008; Terranova, 2004). This debate has largely been conducted in the mode of a wide-ranging ideology critique. Criticisms of the presumed overly celebratory accounts of the increased significance of creative labour in contemporary economies have focused on so-called neo-liberal concepts of human capital and of labour that inform such Panglossian endorsements of glamorous and attractive, but volatile and precarious, forms of work.

Indeed, in his panoramic overview of the state of play in media and cultural studies, Toby Miller (2010) characterizes the future of these disciplines as lying in just such a focus on labour. Characterizing the dominant paradigms as “misleadingly functionalist on its effects and political-economy side”, and “misleadingly conflictual on its active-audience side”, Miller argues that

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Work done on audience effects and political economy has neglected struggle, dissonance, and conflict in favour of a totalizing narrative in which the media dominate everyday life. Work done on active audiences has over-emphasized struggle, dissonance, and conflict, neglecting infrastructural analysis in favour of a totalizing narrative in which consumers dominate everyday life. (2010, p. 50)

Miller's third mode should "should synthesize and improve" the dominant paradigms by its analytical concentration on the status of labour. He reminds us in the most ringing of tones, "There would be no culture, no media, without labour. Labour is central to humanity" (p. 50).

It is not hard to see why this focus has developed. It goes to the heart of Marxism's theory of labour as surplus value. This analysis, based on increasing immiseration of the masses through decreasing returns to scale, and so powerful in the mid-nineteenth century when the industrial revolution was wreaking its greatest "creative destruction", has not largely been borne out. While later versions of Marxist analysis have theorized immiseration being pushed out, first to the imperial world's colonies, then more generally to the developing world, the labour force in the developed West have largely benefitted from the growth of the capitalist "pie". It is therefore essential for that theory that aggregate improvements in the conditions for labour be interrogated to reveal their hitherto hidden precarity.

Meanwhile, parallel to this debate – only rarely touching on it, but highly relevant for it – there has been a range of careful, incremental work done on improving statistical parameters for defining the "creative" workforce better. This work has proceeded over the 2000s as the problems of definition posed by the original Department of Culture, Media and Sport (DCMS, 1998) mapping of the creative industries have been addressed. Overall, this work can be regarded as having made a useful contribution to advancing debate in these fields because during this time there has emerged, if not a consensus (which is highly unlikely), then a broad pathway forwards on the statistical parameters and routines for generating whatever definition of the creative sector that policy makers, programme designers and researchers need.

I focus in this article on the contribution the ARC Centre of Excellence for Creative Industries and Innovation (CCI) has made to this ongoing, international, project – one approach that addresses the imprecision of official statistics in grasping the emergent nature of the creative industries and the creative workforce. It is one that has sought to explore the policy implications of the differences between emphasizing industry and occupation or workforce, has looked to provide qualitative case studies that provide further perspective on quantitative analysis of the creative workforce and also entered the debate about the implications for the cultural disciplines of an evidence-based account of creative labour.

Mapping and the "creative trident"

The perceived need to "map" the so-called creative industries arose from the imprecision of official statistics in grasping the emergent nature of the creative industries. These issues are part of the broader challenges of measuring effectively domains undergoing substantial change through the rapid convergence of the computer, communication, cultural and content industries. This "mega-trend" has been the subject of a significant academic and policy literature (eg., Owens, Pratt, & Taylor, 2006; Pratt, 2008; Roodhouse, 2001, 2006; UNESCO Institute for Statistics, 2009; Wyszomirski, 2008; and in Australia, Pattinson, 2003). New hybrid occupations and industry sectors emerge that do not comfortably fit into standard statistics classifications. The 10–15 year gap between updates of these classification schemes means there is almost no comprehensive, standardized employment or industry data available during the critical emergence period of many sectors. Measuring the production and purchasing of physical products is difficult enough but

measuring the number, “size” and value of the delivery of services is an order of magnitude more difficult. The challenges in seeking to measure the flow-on impact of, for instance, emergent digital creative industries services to other sectors of the economy are even greater.

This is a widely recognized problem that, in other instances of emergent or difficult-to-define sectors such as information and communications technologies, environment, unpaid household work or tourism, has resulted in the creation of satellite accounts.¹ Without such an initiative for the creative industries, many statistical authorities and agencies have endeavoured to improve our statistical understanding following the original Creative Industries Mapping Study by the UK Department of Culture, Media and Sport (DCMS, 1998; see, for overviews, Cunningham & Higgs, 2009; Higgs & Cunningham, 2008).

The work of the CCI has focused on the development and application in several jurisdictions of the “creative trident” methodology. The metaphor of the trident is used because it points to three parts of an employment quadrant composed of an occupation/industry matrix of two rows and two columns. This is the total of creative occupations within the core creative industries (specialists), plus the creative occupations employed in other industries (embedded) plus the business and support occupations employed in creative industries who are often responsible for managing, accounting for and technically supporting creative activity (support). Simply put, the number of people employed in the “creative economy” is the total of creative industries employment plus embedded employment (Figure 1). This can be summarized (Table 1).

The model is based on the recognition that the size and significance of creative industries cannot be accurately measured by using the industry activity codes alone. When counting only industry sectors, we estimate previous studies have underestimated the employment impact of some creative sectors by up to 40%, and the pre-2006 versions of some industry classification systems produce significant errors in sizing, possibly up to 25%.

This approach to the creative workforce shares similarities with, but is substantially different from high-profile, and highly criticized, work such as that of Richard Florida (2002; Florida & Tinagli, 2004). Florida promiscuously and implausibly corralled all white and no-collar workers into the orbit of the creative class even as he very helpfully highlighted the importance of those in creative occupations being studied in their own right, rather than focus narrowly on industries in which they work. Our approach is a much more constrained and carefully defined categorization of the creative workforce (defined as a group of occupational categories much narrower than in Florida) but much wider than traditional arts and culture: advertising and marketing; architecture, design and visual arts; film, TV and radio; music and performing arts; publishing; and software and digital content.

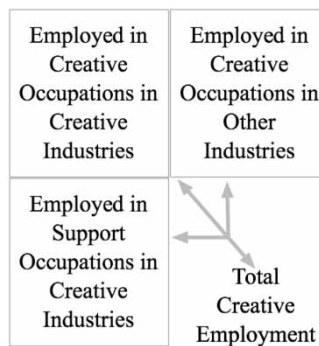


Figure 1. Figurative view of the Creative Trident. Source: Higgs and Cunningham (2008, p. 26).

Table 1. Tabular view of the Creative Trident.

	Employment in creative industries	Employment in other industries	Total
Employment in creative occupations	Specialist creatives	Embedded creatives	Total employment in creative occupations
Employment in other occupations	Support workers		
Total	Total employment in creative industries		Total creative workforce

Source: Adapted from Centre for International Economics (2009, p. 20).

Nevertheless, the trident approach can be customized for virtually any slice of the creative workforce: the arts, digital content, cultural industries or other segments (Higgs & Cunningham, 2008, p. 23ff.). By adopting a rigorous but methodologically disinterested approach to “which slice”, it goes some way to addressing the “tortuous and contorted definitional history” of the arts, cultural and creative industries (Roodhouse, 2001, p. 505) to which many scholars and policy officials have addressed themselves.²

This method has also produced a “financial creative trident” (see Higgs & Cunningham, 2008, p. 18ff.), which tracks personal incomes of the creative workforce based not on the turnover of organizations within the industry but on the gross amount received by labour as declared on a census form or through a labour force survey. A consistent finding from repeated applications of the financial creative trident is that creative workers have incomes above national averages, in some cases, considerably above – except for music and performing arts, which typically aggregate below national averages. Detailed data on “embedded” creatives have been generated, as well as extensive work on time series data based on groups of census data in national jurisdictions, which have been the basis for key claims about growth of the creative workforce.

The creative trident represents an advance on previous creative industries mapping approaches because it: avoids the tendency to overreach; disaggregates creative employment effectively and with resulting insight; allows for the decomposition of specialist and support employment within creative industries; and uses population-based data sources rather than surveys, whenever possible.

But this method is no silver bullet. It shares with all deployments of official census data sources the limitation that they only account for the respondent’s main source of income at a given time. This is a particular limitation for the creative workforce as a great deal occurs through “second” jobs, cash-in-hand, volunteer and amateur activities (but see Higgs, Cunningham, & Bakhshi, 2008, p. 65, for some estimates on the impact of second jobs on creative employment figures). That census data significantly underestimates the full amplitude of creative activity is an endemic problem. Additionally, as the Centre for International Economics (CIE) points out, the creative trident approach is limited to capturing employment because there are no reliable measures of output by occupation: “It is therefore not possible to estimate the contribution embedded creatives make to the output of the industries in which they are employed”. (These must be approached qualitatively, as we shall see in the case study on health, below.) But also, because it mixes the concepts of industries and occupations, “employment estimates are not really comparable to traditional industries. Estimating a creative trident across all industries would result in significant double counting” (CIE, 2009, p. 20). Moreover, a full suite of standard economic indicators for the creative industries must include contribution to gross domestic product (GDP) (or its sub-national constituent parts), productivity, gross value-added, and export data. As the CIE also points out, each of these core indicators requires more fine grained analysis

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than standard official statistics can provide. Much of this work is yet to be done, although, to prefigure the discussion of Benchmarker below, industry-relevant data can be generated from the ground up at a highly granular level.

The trident applied

The trident and the wider mapping programme have been put into broad use. The method was first applied to Australian census data up to the latest, 2006, census. Results included much bigger totals for creative workforce (5.4%) and significantly higher estimates of income (almost \$28 billion, 7% of earnings of the total workforce) than had been previously estimated based on standard classification categories. The method has been used to supplement major data-based and policy reports at a national level (Cultural Ministers Council, 2008; CIE, 2009).

The analysis also showed the strong growth in creative employment experienced between 1996 and 2001 (4.2% per annum as against 1.2% for the workforce as a whole) had slowed considerably between 2001 and 2006 (1.7%) below that of the workforce's growth rate (2.4%) (Table 2). Embedded employment was the only category of trident employment that maintained the pace growing at 4.3%, while within creative industries there was almost no growth during this period (0.5%).

At a national level the trident methodology has been applied to the employment datasets of the UK in collaboration with the National Endowment for Science, Technology and the Arts (NESTA) (Higgs et al., 2008), and New Zealand in collaboration with New Zealand Institute for Economic Research (for New Zealand Trade and Enterprise) (Andrews, Yeabsley, & Higgs, 2009) (Table 3).

Comparing the level of creative employment of Australia, New Zealand with that of the United Kingdom shows the two southern hemisphere nations have significantly lower proportions of total employment in the creative sector (both in creative industries and embedded employment) than the UK with 7% of its workforce in creative employment. While New Zealand's and Australia's creative shares in 2001 were similar (5.4% each), in the following 5 years New Zealand's share expanded (to 5.7%), whereas Australia's fell slightly (to 5.2%) – in both cases, through changes in creative industries' employment.

Unlike New Zealand, Australia and the UK have both experienced low or no growth in creative share of employment between 2001 and 2006. Analysis conducted by CCI for the New South Wales (NSW) and Queensland governments revealed regional differences in the relative growth

Table 2. Australian creative employment and growth rates 1996 to 2006.

Employment 1996 to 2006 using ANZSIC 93 and ASCO v2	Employment		Growth		Growth	
	1996	2001	1996–2001	2006	2001–06	1996–2006
Specialist	98,241	134,442	6.5%	136,888	0.4%	3.4%
Support	144,840	165,474	2.7%	170,068	0.5%	1.6%
Subtotal creative industries	243,081	299,916	4.3%	306,956	0.5%	2.4%
Embedded	110,798	135,662	4.1%	167,474	4.3%	4.2%
Subtotal creative occupations	209,039	270,104	5.3%	304,362	2.4%	3.8%
Creative employment	353,879	435,578	4.2%	474,430	1.7%	3.0%
Australian workforce	7,635,791	8,102,998	1.2%	9,104,187	2.4%	1.8%
Embedded share of creative employment	31.3%	31.1%		35.3%		
Creative employment share of Australian workforce	4.6%	5.4%		5.2%		

Source: Higgs et al. (2008, p. 89).

Table 3. Comparison of Australian, New Zealand (NZ) and United Kingdom (UK) creative share of workforce.

Country	Year	Specialist	Support	Subtotal creative industries	Embedded	Subtotal creative occupations	Creative employment
Australia	1996	1.3%	1.9%	3.2%	1.5%	2.7%	4.6%
	2001	1.7%	2.0%	3.7%	1.7%	3.3%	5.4%
	2006	1.5%	1.9%	3.4%	1.8%	3.3%	5.2%
NZ	2001	1.4%	2.3%	3.7%	1.7%	3.1%	5.4%
	2006	1.5%	2.5%	4.0%	1.8%	3.2%	5.7%
UK	1991	1.2%	1.3%	2.6%	2.2%	3.5%	4.8%
	2001	2.1%	2.6%	4.7%	2.4%	4.5%	7.1%
	2006	2.5%	2.1%	4.6%	2.5%	5.0%	7.0%

Source: Andrews et al. (2009, p. 8).

in Australian creative employment. NSW, which has traditionally accounted for some 40% of Australia’s creative employment, has seen its share fall to approximately 38% with Queensland increasing its share to over 15% (Nous Consulting Group, 2009a, 2009b). In raw employment terms, more creative jobs were established in Queensland between 2001 and 2006 (10,360) than in NSW (8935 new jobs) – a significant shift in regional relativities. Most creative employment is also concentrated in the capital cities of states – Sydney accounts for 84% of NSW, Melbourne 88%, with Brisbane’s share much lower at 62% because of the strong presence of creatives in immediately surrounding high growth areas – the Gold Coast, Sunshine Coast and Moreton Bay regions. Variations of the trident method have been applied at a more detailed local level, determining the level of creative employment in the Perth, the capital city of Western Australia in 2006, and the Vasse district of the south west Western Australia (Morris, Higgs, Lennon, & Kelleher, 2007) as well as the Northern Rivers of NSW and Moreton region of Queensland in 2009.

An arts trident

As noted earlier, this method is relatively agnostic of content; it can be applied to any slice of the workforce that policy makers, programme designers and researchers need. Just as the trident methodology was applied to a financial services definition to UK census data for our study with NESTA (Cunningham, Higgs, Freebody, & Anderson, 2010), it has been applied to a customized definition of the arts in collaboration with the Australia Council for the Arts. The selection of artist and arts-related occupations and industries is a slice that best fits the Australia Council’s art form board structure as closely as statistical classifications will allow. This definition, while mostly a sub-set of creative industries, also includes some activities, such as specialist arts education occupations and industries, which are excluded from CCI’s definition of the creative industries.

The occupation axis of the arts trident consisted of three categories: *artist occupations* within the art forms of literature, performing arts and visual arts; *arts-related occupations* within the art forms of cross arts, performing arts and visual arts – mostly design-related occupations and private arts teaching; and *other support occupations* within the arts industries. The industry axis holds the limited number of arts industry classification that are available – arts education; creative and performing arts activities; creative artists, musicians, writers and performers; other specialized design services; sound recording and music publishing; music publishing; music and other sound recording activities; performing arts operation; and finally performing arts venue operation.

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Table 4. Australian arts trident.

Occupation of employed	Industry of employment			Total
	Arts industries	Other creative industries (embedded)	Other industries (embedded)	
Artist occupations	11,550	1610	10,760	23,920
Arts-related occupations	22,320	11,440	27,310	61,070
Other occupations (support)	24,170			24,170
Total	58,040	13,050	38,070	109,160

Source: Cunningham et al. (2010, p. 6).

The arts trident analysis showed that, in 2006, there were 109,160 people employed in the arts, representing some 1.2% of Australian employment. Table 4 shows where this arts workforce was employed:

- almost 24,000 people were employed in artist occupations;
- just over 58,000 people were employed within arts industries;
- over 61,000 people were employed in arts-related occupations (these are made up mainly of private arts teaching and design occupations).

The data enable the exploration of a range of dimensions of arts employment. For example, one in five people employed in the arts industries were in an artist occupation. This means that for every artist employed in the arts industries, there were four people employed in other occupations: two in arts-related occupations and two in non-arts occupations. More people in artist and arts-related occupations were employed outside the arts industries (51,120) than were employed within the arts industries (33,870).

There was also an estimation of the mean annual income of those in the arts workforce: it is probably not surprising to many to learn that those in the arts are relatively poorly paid and losing further ground when compared to the total workforce. In real terms, while the arts mean personal annual incomes have increased between 1996 and 2006, the gap with the average of the workforce has also increased from a relative income gap of minus \$5200 in 1996 to a relative income gap of minus \$6400 in 2006. This provides supporting evidence for such initiatives as has been mooted by the Australian Minister for the Arts, to redress the imbalance between funding for individual artists relative to large arts organizations; to explore direct funding for “individuals whose creative activity pushes the boundaries to new knowledge and ways of doing things, analogous to the public funding provided to scientists and academics for their research”; and “to build stronger connections between individual artists and the well-supported, large arts organizations and companies” (Garrett, 2009, pp. 5, 8).

An industry spin-off: Benchmarker

An industry-facing spin-off from the CCI’s mapping work is Creative Business Benchmarker (<http://benchmarker.org.au/>), which has been developed in partnership with the Queensland Government’s Department of Employment, Economic Development and Innovation. The project was designed to gather richer, more frequent data about the size, location, growth, formation and survival characteristics of creative businesses enterprises. Census employment information provides the best method for analysing large aggregates of the creative workforce, but can tell us almost nothing about how many firms there are, how well they are doing, how they innovate and why some fail and others sustain their contribution to economic and employment growth. Such

strategic business information usually must be collected by survey methods that are fraught with problems – low response rates, lack of comparability between surveys of overlapping creative segments and so on, the burden they place on small and micro businesses which overwhelmingly make up the sector, and their results are rarely made available in usable form to the companies whose time and effort have been appropriated to complete the task. Benchmarker seeks to address these methodological hurdles.

The Creative Business Benchmarker methodology involves gathering confidential (and some non-confidential) business data from businesses every 12 months and in return providing them with automated Benchmark reports of their performance against their peers. The research team works with the creative industries unit of a state industry development department, as well as industry and professional bodies, to promote the service to industry; the participants in turn receive segment reports that place their company within their immediate sector along information axes including staffing, revenue, capacity for growth, export and so on.

The results of this work over a 3-year period have shown that the strategy works: businesses are motivated to provide detailed business information if there is a concrete benefit to them, and their confidentiality is guaranteed and the means of data gathering are straightforward. Two iterations of the method have been conducted with architecture businesses in Queensland, generating a participation rate of over 43% for employing firms and 21% when sole practitioners are included. The data collected has resulted in over 140 firms receiving personalized benchmarks reports and enabled, for the first time, reliable estimates can be made of the export activities, profitability and growth and capacity expectations of Queensland architecture.

Prior to Benchmarker, export figures for Queensland architects were bundled with related design industries including town planning, landscape design and drafting services. These figures placed export value at \$30 million. Since the inception of Benchmarker, these figures have been able to be disaggregated to reflect only architecture, which gives a much more accurate sample of our export earnings and market potential. In the latest Benchmarker survey, 2009 exports for Queensland architects has come in at \$38 million – an increase of more than \$8 million, even after extracting the income of related design figures.

Implications of CCI's approach to the creative workforce

The headline finding that there are more creatives working outside the creative industries than inside them (“embedded”) must also be placed alongside the degree to which creative work supplied by specialists is an input to the broader economy. This economy-wide view (the embedded creative workforce, as well as the dynamics of business-to-business activity between the creative industries and the rest of the economy), taken together with creative industries activity and output itself, are the components of what could be called the “creative economy”. Two data-based, but also qualitative, studies that have built on the CCI's mapping work illustrate some of implications for the different contributions that constitute the creative economy.

Design

Our design studies (see *Australia's Creative Economy Information Sheet*, 2008; Higgs, Cunningham, Hearn, Adkins, & Barnett, 2005) shows that design is the ultimate “ur-discipline” in the creative industries, being found embedded in a wider range of other industries than any other sector. Also, based on the 2006 Census, the size of the embedded workforce is much greater than the specialist workforce (55–45%), which is a greater disparity than the other segments of the creative industries. Whereas some design occupations such as architecture, landscape architecture and naval architecture are highly specialized – architects are primarily (85%) employed

within the field of architectural services – most other design occupations are highly dispersed across a wide number of industries. For example, designers and illustrators are employed across as many as 84 different industries before 90% of their total employment is accounted for. In total, designers and illustrators are employed across 129 industries.

This is completely consistent with broader notions of design as a fundamental input into most products and services in the “experience” economy. Sources such as the World Economic Forum’s Global Competitiveness Report and the UK Design Council have demonstrated that there is a distinct correlation between design-intensity in enterprise activity and product development, and broad economic competitiveness at the firm and national level. Additionally, design activity is notoriously underestimated in official national statistics and employed designers are so broadly embedded throughout industry sectors that their contributions are significantly undercounted.

The “input value” of design has spilled over even further, into cutting-edge research and educational practice in business studies. “Design thinking” is the idea that the mind-set, habitus or skill sets of designers are valuable inputs into contemporary business thinking. It is posed by Roberto Verganti (2009) as a third way between radical innovation pushed by technology or the incremental innovation pulled by the market: “Design-driven innovations do not come from the market: they create new markets. They don’t push new technologies they push new meanings”. George Cox (2005) positioned design as a bridge between the arts and engineering sciences (when design is thought of as a distinct sector) and a link between research and enterprise in the innovation chain (when design is thought of as method or mind-set).

But arguably the most practical, policy-relevant adaptation of the notion of the broad value of design across the economy is the idea, exemplified in New Zealand’s “Better by Design” programme, that the key strategy is to stimulate growth on the demand side (not at final consumption level but as a business-to-business input) rather than support capacity on the supply side. If design is so broadly and increasingly applicable in an “experience” economy, then work with companies in any field to identify how design can address business needs, which design firms supplying services or embedded designers can then seek to meet.

There is now some good evidence across 5 years of the Better by Design programme in New Zealand of the results of their ambitious goals of improving export performance through design as a crucial value-add to manufacturing, tourism and other export-facing industries.³ Better by Design was established in 2004 to increase New Zealand’s export earnings by assisting companies to grow in international markets and improve their financial performance by the strategic use of design. To achieve this, Better by Design offers a range of services to assist businesses integrate design into all aspects of their operations. The primary objective to drive this mission is “5 × 50 × 500 × 5”: “In the first 5 years, at least 50 existing businesses made internationally competitive through design leadership, generating an additional \$500m per year in export earnings, growing at 5 × targeted GDP to produce \$1.5b by year 10”. An audit conducted in 2008 found that the 50 highest performing companies are 3.5% ahead of reaching the targeted goal of an extra \$500m in export revenue in 5 years, and seeing exports grow at 4.5 times GDP.

With an integrated set of interventions on the demand side (in manufacturing and among services firms), companies using design inputs are displaying a higher level of understanding of customers and their need and desires, an increased awareness of the role of design in strategic and operational processes, and product and service changes, including improved look and feel particularly for products from engineering type organizations. There were observable improvements including more integrated product development, branding, increased investment in design and proportion of turnover from exports and overall turnover growth.

This programme has been adapted as “Ulysses: Transforming Business through Design” in Queensland.⁴ The key industry player in this initiative is not a design association but a leading manufacturing support unit, QMI Solutions (formerly Queensland Manufacturing Institute).

Creative work as an input to health

We have previously noted the creative trident approach is limited to capturing employment because there are no reliable measures of output by occupation. The methodological barriers to estimating the contribution embedded creatives make to the output of the industries in which they are employed has meant that CCI has pursued an exploratory case study examining the contribution that creative workforce plays in the health sector of the Australian economy (Pagan, Cunningham, & Higgs, 2008, 2009). This approach offers a rich vein of insight into the contours of the contemporary creative economy; it could be replicated for many other industry sectors.

Why healthcare? At over 9% of Australian GDP in 2006–07, and like all advanced societies with aging populations, it is a substantial and growing part of the economy. Health expenditure will intensify as the “baby boomer” cohort moves into the more fragile older age groups with their greater propensity for chronic conditions. This demographic change will also reduce the supply of doctors and nurses, and exacerbate shortages already being experienced, such as rural GPs and medical specialists in hospitals. These (and other) issues facing the healthcare system will demand innovative solutions as Australia seeks to maintain quality care while managing health’s fiscal burden.

There is also the increasing dichotomy between the high and increasing technical knowledge content and the very personal nature of healthcare goods and services. There has been longstanding historical involvement of visual and performing arts in healthcare, from art on hospital walls to professionally delivered art and music therapies and hospital radio stations. The creative–healthcare association may support creative skills in modern healthcare for purposes such as humanizing service delivery. Healthcare’s information complexity and information technology intensity is also a major factor. Software and other creative applications of software and IT skills manage this complexity and intensity. This study outlines some evidence that creative expertise and services are playing a role in addressing increasing service demands, human resource and information pressures, and innovation in healthcare.

Importantly, any qualitative case study seeking insight into the wide range of contributions the creative workforce make to health is able to examine both those employed in the healthcare sector and those providing products and services. The number of people working in embedded creative occupations within Australian healthcare in 2006 was found to be 3810, equivalent to 0.5% of all healthcare employees. This proportion is lower than the average creative component estimated for all the non-creative industries (approximately 2%). It is important to note, then, that this study does not base the significance of creative “inputs” to healthcare on the size of the contribution, but on its quality, range and diversity. Given the evidence for these qualitative dimensions, it is possible to suggest that the growth of such inputs (2.5 times the growth of the total health workforce, albeit from a low base) is evidence of the value of the contribution.

The case studies covered each segment of the creative workforce (architecture, design and visual arts, music and performing arts, film, radio and television, writing and publishing, advertising and marketing, and software) and were designed to capture contributions to some key functional areas of healthcare – the supply of medical skills, the provision of health goods and services, knowledge and information generation, management and services delivery and infrastructure development.

The case studies found that creatives are making a range of contributions to the development and delivery of healthcare goods and services, the initial training and ongoing professionalism of doctors and nurses and the effective functioning of healthcare buildings. Creative activities within healthcare services are also undertaken by medical professionals and patients. Key functions that creative activities address are innovation and service delivery in information management and

analysis and making complex information comprehensible or more useful, assisting communication and reducing psycho-social and distance-mediated barriers, and improving the efficiency and effectiveness of services.

The cases covered are given in Table 5. Details for most of these cases can be found in the full report *Getting Creative in Healthcare: The Contribution of Creative Activities to Australian Healthcare* (Pagan et al., 2008).

Table 5. Health case studies by creative workforce segment.

Main creative segment	Name of organization and main area of impact	Name of organization and main area of impact
Publishing and composition	Australasian Medical Publishing Company – supply of information on clinical research and clinical practices for GPs and clinicians	
Architecture, design and visual arts	Centre for Health Assets Australasia – guidelines for architectural briefs	Billard Leece Partnership (BLP) – architectural services to new Royal Children’s Hospital
Film, TV and radio	Gait Analysis Centre – video and other technologies in the treatment of children with cerebral palsy	MARVIN – development of animation techniques to distribute health information for remote indigenous communities
Music and performing arts	Music Conservatorium, Melbourne University – teaching, research and analysis of music therapy and training of therapists; Golden Stave Centre – delivery of Nordoff-Robbins type of music therapy and research	
Advertising and marketing	Cochlear – development and manufacture of cochlea implant devices, mostly for the profoundly deaf	
Software	Repatriation General Hospital – development and application of hospital software programs to reduce golden staph infections	Centre for Health Informatics – research into the healthcare system and the development of an Internet search tool
Software	HFI – Howard Florey Institute – programs and visualization techniques to detect early markers for age related brain diseases	CTEC – Clinical Training and Education Centre – tools in training new doctors and medical teams in some emergency procedures
Software (visualization)	True Life Anatomy – software for the accurate representation of joints and movement for planning orthopaedic surgery	Medic Vision – development and supply of haptics software and multimedia for training new doctors in some surgical techniques
Software (web and web services)	depressionNet – web development to support online information and therapy services for adults with mild to moderate depression	Inspire Foundation – web services for troubled youth to develop better life skills and encourage more social engagement
Software (telemedicine)	LEI – e-Medicine Centre at Lions Eye Institute – software tools supporting remote services for several eye diseases	
Multimedia	Underworld – CD ROM to educate young teens about female reproductive development and related issues, including STDs	

Source: Pagan et al. (2009, p. 20).

Policy implications

The policy implications of this emphasis on creative workforce have yet to be substantially developed. A focus on the creative workforce supports a shift in focus for policy from creative outputs (the creative industries as a specific sector) to creative occupations as inputs into the whole economy, and creative outputs as intermediate inputs into other sectors. This idea of creativity as an economic “enabler” arguably has parallels with the way information and communication technologies have been shown to be broad enablers of economic growth in the past.

This may facilitate a stronger focus on innovation systems that support the development of the creative economy. Our findings regarding the embedding of creative activities across the economy raise the possibility that cross-industry linkages (B2B) and personnel (rather than technology) “transfer” due to the contribution of embedded creative workers mean that the creative sector maybe significantly more involved in the innovation system of national and regional economies than has been recognized before. This may have important implications for innovation policy, which has traditionally been exclusively associated with the science- and technology-based industries.

But a clear implication is that a focus on economy-wide creative contributions dissipates a sectoral focus on the specific needs and dynamics of the arts or cultural sectors. For the critics of the idea (for example, Oakley, 2009; Oakley, Sperry, & Pratt, 2008; O’Connor, 2009), it threatens to suborn the integrity of the case for support for culture through an untoward economism and therefore a loss of focus on what constitutes cultural value, and a belief that what can be gained from linking arts, cultural and creative activities to innovation is more than offset by what would be lost from such sector-specific attention.

Notwithstanding the difficulties inherent in linking the creative economy to innovation policy, it may assist in engaging with many animating questions of our field – what are the genuine advances in the cultural and creative sectors (including aesthetic advances), how would we measure them, and what has been their broader societal benefit? These are indeed core questions of cultural value. Seeking to develop policy frameworks addressing these questions has been a key programme at both the CCI and NESTA over several years (see, for example, Bakhshi, McVittie, & Simmie, 2008; Miles & Green, 2008; Potts & Cunningham, 2008; Potts & Morrison, 2009).

One field that promises to hold prospects for some degree of consensus is education. The evidence that there are as many or more members of the creative workforce outside the creative/cultural industries as inside of them suggests a significantly upgraded focus on “creative careers”, and justifies a strong emphasis on arts in education as a base for skills, dispositions and knowledge that have increasingly direct relationship to career prospects. It is recognized the arts being considered for inclusion in Australia’s new national curriculum in a second round, along with geography, and after maths, English, history and science is one of the most significant developments in recent relevant Australian policy. There is strong evidence that the links between creative workforce and education are being consolidated in key jurisdictions. We have traced the growing convergence in policy thinking between them, showing the degree to which education is coming to play a bigger role in creative economy policies and programmes (Cunningham & Jaaniste, 2010).

In this study of influential public policy milestones in two major jurisdictions, the UK and Australia over a decade and a half, we argue that creativity in policy thinking has evolved along two major trajectories. One trajectory follows the broadening of a sector-based view of creativity. Most narrowly and traditionally, the “creative sector” has referred to the creative arts, and especially high arts. But its expansion, under the rubrics of cultural and then creative industries, has seen it come to include a broad range of domains involved in aesthetic, symbolic,

expressive production across the creative arts, design, media and communications. But there has been a further expansion of the notion of the creative sector, a movement from creative industries *qua* sector to an understanding of the creative economy, that is, as the general economy increasingly suffused with creative inputs.

The other policy trajectory follows the focusing and specification of generic creative attributes in the interests of policy applicability. There are approaches which attempt to mobilize the apprehension of such inherent human attributes for broad development purposes, and these typically are directed at education as a whole. But complementary approaches focus the mobilization of creativity in commercial applications and in social, household, community and public sector settings. These are often marshalled around a contemporary version of innovation policy.

Back to precarity – creative careers

The findings of the studies reviewed in this article are consistent with the broad understanding of the nature of work in the cultural, media and communication fields. As fields typical of much knowledge work today, they are characterized by the increasing occurrence of contract labour requiring high degrees of mobility, by multiple career pathways, by increasingly global opportunities and challenges, and by the diminution of the market organizer roles played by many large (often public sector) agencies in mentoring, apprenticeship and structured whole-of-career pathways for creative workers. In most cases, “learning-by-doing” apprenticeship opportunities, such as these organizations used to provide, have declined significantly.

Certainly the creative workforce is distinctive along some key axes. Across all people employed in the Australian creative industries at the 2006 Census, for example, 12% are sole-practitioners, compared to 7% overall for all other service industries. Sixty per cent of employment in the industry classification for creative artists, musicians, writers and performers is self-employment. There are four other creative industries sectors having self-employment rates twice the average: photography, craft jewellery, music (and other sound recording activities) and other specialized design services.⁵

This might support claims for distinctive precarity, but other findings complicate such a picture. Compared with other employment, particularly in the traditional professions, creative employment disproportionately occurs outside the creative industries themselves. In other words, creatively trained people are more likely to be working outside the specialist creative industry sectors than inside them, and this is the case in most countries, and has been the case for a long time. As we have seen, the degree of embeddedness is greatest in the many “design” occupations: 60% of the employment for design occupations in Australia occurs outside of specialist design industry sectors.

As we have seen in the Australian data, although there has been a slowing of growth between 2001 and 2006, when viewed over a longer time period, the creative industries have grown at a significantly faster pace than the aggregate economy. The Centre for International Economics (2009, p. 7) has updated CCI’s analysis of Australian Census data to show that, over the 11 years to 2007–08, the creative industries expanded at an average annual rate of 5.8%, compared to average GDP growth of 3.6% over that period. Growth is spread across a broad range of industry sectors (there are more creatives employed outside the creative industries than inside them), and creatives are well paid (all segments are above the national average except for music and performing arts). Outside these studies, it has also been established that creative workforce has a significantly higher level of formal qualification than the workforce as a whole.

If we can generalize at all from these data, it would be to conclude that the creative workforce shares a number of the characteristics of knowledge workers generally. Although it may be somewhat distinctive in the degree of “flexibility” seen in its labour market, creatives are also generally

remunerated well for their services (which significantly complicates the picture usually painted about creative workers based on the typicality of the independent artist), and have “options” and mobility due to their qualification levels and experience in project-based work. However, this, as we saw in the discussion of the arts trident, in no way obviates the need to address the endemic problems of artists’ incomes.

A more holistic picture of precarity in contemporary labour would balance these characteristics of the creative workforce against the problems faced by those working in sectors with declining demand for labour (agriculture), or faced with major re-structuring due to long-term challenges like climate change (mining), or face exploitation due to low qualification-and-wage structures (migrant labour, piece workers, low wage service sectors). It is arguable that these sectors of the workforce face a much more precarious future than do creatives. In addition, our studies suggest that embedded creatives do not generally exhibit the profiles attributed to creative labour by the precarity school of critical media and cultural studies. A great many creatives, we must assume, have managed precarity by working outside the creative industries.

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Notes

1. Satellite accounts, as defined by the Australian Bureau of Statistics, in discussing tourism, “allow an expansion of the national accounts for selected areas of interest while maintaining the concepts and structures of the core accounts. . . . However, while all the products that are produced and consumed in meeting tourism demand are embedded in the core accounts, they are not readily apparent because ‘tourism’ is not identified as an industry or product in international statistical standards” (Australian Bureau of Statistics, 2008).
2. The work of Owens et al. (2006) for *The Revised 2009 UNESCO Framework for Cultural Statistics* (UNESCO Institute for Statistics, 2009) stands out as significantly addressing these issues.
3. See www.betterbydesign.org.nz. The data on implementation was supplied by Judith Thompson, Director, Better by Design (New Zealand Trade and Enterprise), November 2008.
4. http://www.ulyssesdesign.com.au/Ulysses_Fact_Sheet.pdf
5. Analysis by ARC Centre of Excellence for Creative Industries and Innovation of custom table from the Australian Bureau of Statistics 2006 Census of Population and Housing, Industry of Employment (ANZSIC06) by INCP Individual Income (weekly) and EMPP Number of Employees, for Person Records, Employed, Owner/managers.

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