

Mobilising the university as a frontier for design-led social innovation.

Tara Andrews

University of Western Sydney, Australia

The University is a significant nexus for the development of design for social innovation and sustainability in Australia for the achievement of systemic discontinuity with lasting impact. This argument is presented as a theoretical framework for a doctoral design research project which seeks out design briefs from within the University of Western Sydney, susceptible to the application and adaptation of the most promising sustainable design models, theories and tools. This paper argues that by bringing design for social innovation and sustainability to the Australian university, a novel mechanism for systemic discontinuity is fomented.

Introduction

Factor Ten ambitions require a radical break with current systems of production and consumption: as is widely agreed, industrialised nations need to reduce their consumption to just 10% of what it currently is. Manzini and Jégou (2003) describe such a change as a 'systemic discontinuity: a form of change where, on completion, the system in question (in our case the complex socio-technical system on which industrial societies are based) will be different, structurally different from what we have known' (p. 37). A range of promising cases suggest that strategic design can agitate for such a change, for example, by: presenting alternate, desirable and more sustainable visions of the future to work towards; identifying, studying and enlarging sustainable solutions non-designers have already implemented; and shifting its attention from product innovation to social innovation. These approaches aim to significantly reduce human impacts while at the same time enhance well-being and living contexts.

Broadly speaking, the university is a site of rich experimental potential for the development of such cases of design-led systemic discontinuity. Its campus and community can be seen as a 'microcosm of the larger community' (Cortese, 2003, p. 19), opening its potential as a 'lab' for design for sustainability research (Penin & Vezzoli, 2004). Universities have significant width and depth in disciplinary knowledge to draw on as well as structural mechanisms in place to be the drivers of innovation. Because they are anchored in place and are regionally significant (economically, structurally and/or socially), successful cases arising from within them have the potential for diffuse local impact. It is clear that the contemporary university has the will and a great deal of capacity to help engender radical and sustainable change, but this potential needs to be gathered by and actioned at the level of the *project*. It is argued in this paper that this is where strategic design can be most valuable.

The purpose of this exploration is to orient a three year doctoral design research project that seeks to make a contribution to the growing international body of design research work aimed at developing sustainable solutions. The project involves seeking out opportunities for design-led systemic change within an Australian university, applying lessons learnt and ideas from elsewhere, to envision and implement up to two design for sustainability case studies. For inspiration and exemplars of practice, the project looks to Redirective Practice (Fry, 2009), Design for Social Innovation and Sustainability (DESI), and the design research work being done at the Victorian EcoInnovation Lab (VEIL).

To explain why the university is a significant nexus for the development of design for social innovation and sustainability in Australia, I will draw on literature from the fields of: social innovation; sustain-

Sustainability in Design: NOW!

ability in higher education; then design for sustainability. I will highlight common themes across the fields to argue that the project of sustainability could be substantially furthered by forging stronger links between them.

University + Social Innovation

Design for Social Innovation and Sustainability (DESIS) is an initiative established by Ezio Manzini that is drawing together international design schools to build a global network. The project aims to find, document and grow existing instances of social innovation for sustainability on the premise that design has much to learn about sustainability and better ways of living from the myriad examples of creative communities already implementing radical changes in their everyday lives (Manzini, et al., 2010). Design in this project learns from these instances and lends its unique skills to making what is promising but marginal mainstream, via amplification or via technological support (working out how existing or emerging technologies can help sustain them). In recent discussions aimed at establishing a DESIS node in Australia, collaboration between design schools and an already well-established network of social innovators is emerging as a means to move the focus of design from product to social innovation. In this section, the links between the university and social innovation will be explored in some detail. What these links suggest is that the regionally-engaged and innovative university might provide a powerful platform for the development of social innovation in a new partnership with design.

Social Innovation

A social innovation is a new idea, whether it be a product, service or model, that provides ‘a novel solution to a social problem that is more effective, efficient, sustainable, or just than existing solutions and for which the value created accrues primarily to society as a whole rather than private individuals’ (Phills, Deiglmeier & Miller cited in Murray, Caulier-Grace & Mulgan 2010, p. 10).

For his strategies on how to develop social innovation, Geoff Mulgan, director of the Young Foundation, draws heavily on theories and models that have worked for business and technology innovation (2006). For instance he refers to ‘Social Silicon Valleys’ as the ‘future places and institutions that will mobilise resources and energies to tackle social problems in ways that are comparable to the investments in technology...’ (Mulgan, 2006, p. 5). Social innovators are proactive people with the ability to link ‘together people, ideas, money and power’ (Mulgan, 2006, p. 5). The goals are people- not profit-driven and the process is socially-oriented and participatory, in recognition of society’s existing ‘ubiquitous intelligence’ and problem-solving capacity (Mulgan, 2006, p. 7). Social innovation is about mobilising collective and creative intelligence to address large complex problems. It takes inspiration from the energy and potential of broader trends such as: the rise in services; ‘consumer co-creation’; the open-source movement; and mobile information technologies (Mulgan, 2006, p. 7).

The process of social innovation that Mulgan outlines is not dissimilar to research and development for commercial products and services and familiar no doubt to designers. First an unmet need is identified and empathetically investigated. Then the innovators draw on their ‘wide peripheral vision’ to tie it to possibilities—appropriate technologies, similar solutions from elsewhere, or emerging knowledge (Mulgan, 2006, p. 22). These possibilities are narrowed, refined, tested and developed in an iterative and collaborative design process prior to a more refined pilot and roll out.

Mulgan suggests that universities could be important to the development of social innovations similarly to how they have been used to drive business or technological innovation. Such a role for universities has not yet been examined but research *into* social innovation and social entrepreneurship is well underway at various universities in the United States and the United Kingdom (Mulgan, 2006, p. 44).

The Third Role for Universities

The literature coming from higher education suggests that there is significant potential alignment of university and social innovation agendas and strategies. In the last couple of decades universities have had to become more socially relevant, assuming a ‘Third Role’ beyond their traditional fields of research and education. By assuming this role, universities have been posited as enablers or leaders in regional innovation and social learning. In Gunasekara’s (2004b) review of university engagement literature two distinct approaches are identified. The first emphasises the university’s role in directly driving economic development through innovation strategies for knowledge capitalisation or ‘academic entrepreneurship’. This

proposal sees an overlap in the roles of industry, government and universities in collaborative ventures such as innovation clusters (science parks), business incubators, and firm formation.

The second takes a broader approach to development with an emphasis on ‘systemic capacity-building’ (Gunasekara, 2006a, p. 730). This university engagement literature focuses on making knowledge more community-relevant and reflects a more diffuse approach to social and economic development that is based, for example, on higher rates of university participation and retention (which flows through to regional economic development) and community service in teaching and research (Gunasekara, 2004a).

So far, universities’ success in driving or enabling regional innovation using either approach seems isolated and hard to quantify (Gunasekara, 2006b). However, because of ongoing internal and external pressures to be regionally engaged—for instance, to deliver real world problem-based learning experiences, to support regional economic systems, or to find commercial research funding sources—universities now have well-established mechanisms structured-in for commercialising research and for community service. This suggests that Mulgan’s optimism in the role universities could play in developing social innovation is well-placed.

Besides having a social agenda and experience in innovation processes, the university may also be the place to grow entrepreneurialism in individuals to become ‘social innovators’. This ingredient is often overlooked in discussions about regional innovation, but Garlick (2005) suggests it is integral. He suggests that a region’s innovation potential is less about science parks or innovation hubs and more to do with developing the capacity for creative innovation in individuals: ‘Enterprising’ people in the regional development context we define as those that understand the way markets operate, can access finance, can see an opportunity, are prepared to take risks, and can mobilise resources to good effect’ (p. 20). Developing this human capital is integral to widespread innovation and social learning and corresponds with Mulgan’s emphasis on the social innovator’s professional attributes.

There is already a well developed university engagement platform around which social innovation could be furthered. The engaged university model, developed to help fulfil higher education’s Third Role, conceptualises the university as a kind of ‘living laboratory’, receptive to its communities’ problems which it works on via teaching and research (Fullan & Scott, 2009; Garlick, 1998). In many universities today, this platform comprises specific mechanisms for engaged learning and research such as: funding programs for research partnerships; student placement programs; and support for learning designs structured around real-world problems as presented by industry or community actors. The platform provides a learning process at three levels: a community or industry partner accesses applicable knowledge from university staff or students; the university gauges the relevance of its learning and teaching agendas; and students and staff learn by doing, usually working collaboratively.

These mechanisms for linking the university to its region clearly have the potential to be mobilised to help develop social innovation. The university is becoming well placed as a driver of innovation; has a commitment to meeting social needs; and has developed a model for engagement that integrates research and teaching agendas. To further the DESIS project, therefore, it may be worthwhile for design schools to leverage the momentum and resources within their local universities. For instance, DESIS-oriented projects led by design schools could draw on research expertise from other university disciplines to add rigour and improve the chances of success for these projects.

University + Sustainability

Whilst the idea of the university as a nexus for social innovation is yet to be elaborated with exemplars, the idea of the university as a nexus for sustainability is much more solid. Literature around sustainability in higher education shows that the field has already established a strong agenda and program for change and has a considerable and growing pool of cases to learn from.

The challenge posed by climate change and sustainability demands a radical shift in thinking and ways of working which is why, according to Cortese (2003), education has an enormous role to play in the social learning required. Universities particularly bear a profound responsibility to develop sustainability literacy because they ‘educate most of the people who develop and manage society’s institutions’ (Association of University Leaders for a Sustainable Future, 1990) and thus have wide-reaching societal influence. How universities address sustainability is significant also because of the size of their operations, their connection to their communities and as places where young people may be introduced to sustainable behaviours and contexts that will influence later lifestyle choices.

Sustainability in Design: NOW!

Very little is actually known about what a climate changed future holds and what a transition to sustainable modes of being will involve (Fry, 2009). The community, including industry, will be looking to university graduates for direction and know-how. The most significant challenge to higher education is that this knowledge is not out there—it has to be developed from within the educational institution. This is a path-finding challenge for universities as much as it is for its graduates (involving perhaps the creation of entirely new professions: ‘For the graduate [this] means making a career path rather than following one that is already available to pursue’ (Fry, 2009, p. 175).

Particular graduate attributes common to all disciplines have been identified in higher education sustainability literature as needing urgent development. Graduates will have to be able to work creatively and collaboratively to tackle complex and novel social, environmental and technical problems; and *act* strategically and with strong precaution. It is widely accepted in the literature that high impact educational practices—including engaged, multi-disciplinary, problem-based learning designs—should be pursued to this end (Association for the Advancement of Sustainability in Higher Education, 2010b; Cortese, 2003).

To produce climate-change ready and sustainability-literate graduates, the university itself must reflect these attributes and create the appropriate contexts for learning: ‘In a sense, universities need to practice this on themselves in order to learn how to teach it’ (Fullan & Scott, 2009, p. 50). There have been a plethora of sustainability projects over recent decades that work toward this agenda, especially those focussing on greening university campuses and those leveraging community or industry-linkages to model real world problems (Association for the Advancement of Sustainability in Higher Education, 2010a; Barlett & Chase, 2004).

There is a long way to go, however, for universities to be in a leading position to tackle climate change and sustainability. A key barrier to be overcome is the dominance of disciplinary thinking, structures and funding models that discourage more ambitious trans-disciplinary approaches (Cortese, 2003, p. 16). Secondly, Fullan and Scott suggest that universities are inherently ‘change averse’ because of their tendency to be ‘hyperrational, prone to talk, dominated by research and individualistic...’ (2009, p. 25). The knowledge that universities generate and value tends to be analytic—they are not good at working out how to *act* or at learning from *doing* (Fullan & Scott, 2009, p. 27). Thirdly, universities also face a challenge in countering overriding patterns of thought that support un-sustainability. There is a great deal more informal education from advertising, for instance, in support of consumerism and a growth economy that needs to be overcome or un-learned (Cortese, 2003, p. 18).

University + Sustainability + Design

The fields of design research & design for sustainability show that design has a great deal to offer to overcome these barriers. Here it is argued that if partnered strategically with design, the university could achieve its ambition to become a model for sustainability, a leader in social learning, and a mechanism for systemic discontinuity.

Ontological design theory shows that design *designs agency* (Willis, 2006), so design energy can be directed to extending the agency of ideas and practices that have the ability to sustain. In the context of a university, design can gather and mobilise relevant and sustaining knowledge from other professional disciplines. Banerjee (2008) and Fry (2009) have shown how design can work as a meta-discipline to this end. Banerjee recognises in design’s core set of communication skills, the ability to share design methods so that non-designers can engage with and also learn design processes (2008, p. 196). Design therefore provides the means for discrete university disciplines to combine forces in order to extend their agency.

Design can also help shift the emphasis in how knowledge is created within universities from analysis to strategic action. According to Cross (2001) and Findeli (2008), design converts analysis to programs for action through synthetic, generative and abductive thinking at the level of the project. Design research is carried out all the way through a design process which is oriented by a design brief. Each design project draws upon analytical research informed by the scientific method (using either data derived through it or through direct application in analysing design problems or solutions). By producing a solution which is an action that changes a situation (be it a product, a service or program for action), design in a sense completes the research process (Glanville, 1999). And each design project generates new knowledge in action—the design process is a process of learning by *doing* (Downton, 2003). This, plus the opening up

of the design process to non-designers suggests how design can assist in the development of sustainability as a social learning process⁰.

Design is also a means to counter and unlearn patterns of thought. For instance, design can disclose and bring attention to underlying and unsustainable patterns of thought or behaviours that go largely unnoticed. Examples include projects informed by critical design that force a break in habits (Maze, 2008); and EcoVisualisations, which draw attention to largely hidden energy consumption (Holmes, 2007). Generating and publicly disseminating alternate and sustainable future scenarios is also a means to cause a conceptual break from the unsustainable status quo and has received a lot of attention in design for sustainability literature (Fry, 2009; Manzini & Jégou, 2003; Ryan, 2008). Ryan argues that design used in this way can open up for challenge and debate the ‘landscape of expectations’ that is currently dominated by a picture of the future presented by corporations as a continuation of high rates of resource consumption (2008, p. 1794).

These design traits can provide the university with the means to move beyond the currently limited success of sustainability initiatives pursued by its individual disciplines (that, like design, have focussed on working out how to make their areas of practice less environmentally impacting). A design-led trans-disciplinary approach could allow the university to achieve its broader ambition for leading for systemic innovation. Equally, design for sustainability gains from this proposal what it currently lacks: a partner—with a declared mission for sustainability leadership, resources (funding and expertise) and a physical and social context (the campus and university community)—with whom to trial and learn from new ideas.

Why, despite decades of research and practice, design for sustainability has not been able to significantly slow down consumption, is perhaps because of the limits imposed by its traditional partner, industry. Design as we know it grew in a partnership with industry formed in the United States in the 1930s. In the midst of economic depression it was assumed that if design partnered with industry to drive economic recovery via consumerism, living standards would rise and wealth could be equitably generated. Industry’s pursuit of profit was thus well-aligned to design’s pursuit of social betterment (Andrews, 2009). Despite the error of this, which can only be seen in hindsight, design has been very slow to disengage itself from industry as its partner.

It can be inferred from their agendas that social innovation and universities have declared themselves as willing partners for design for sustainability. Similarly to how industry in the early twentieth century was in need of design (for instance, to make products of industry desirable, for technological transfer and for modernisation of processes and image), universities and social innovators need design to provide mechanisms for action and the means to increase the number, visibility and viability of sustainable solutions. Combining what the three fields offer means that action for sustainability can be pursued without putting profit first. Although initiatives will need to be economically viable, they can be firstly pursued under (what Fry (2009) refers to as) the directive of Sustainment, and necessarily ‘cut loose from [the] developmental capital logic of perpetual growth’ (Fry, 2009, p. 185). What social innovation has demonstrated and what design can learn from in order to wean itself off its reliance on industry, is how to implement and sustain solutions that respond to social need rather than the drive for profit at any (social or environmental) cost. Universities, too, sit far enough outside ‘real-world’ capital logic (which hitherto has been cause for criticism of its purely academic pursuits) to work under the directive of the Sustainment. If it pursues the prime agendas of learning, sustainability and social development, yet has the capacity for entrepreneurialism and business innovation, the university partnered with design may prove to be a powerful incubator for sustainable solutions and business models for an alternate economy.

Next Steps

Rather than attempt to redesign the university, this specific research project works on the premise that institutional change can happen from within, and on a small scale (Meadows, 1999). A university has been selected within which to work which has sustainability written into its mission and an exemplary engagement platform (Garlick, 1998; Gunasekara, 2004b) that embeds it in a region that itself is in need of change strategies. The University of Western Sydney’s engagement mission is to ‘contribute to the educational, cultural, social and economic development of the regional, national and international com-

⁰ Interestingly the DESIS project capitalises on two of these design capacities. By making alternative ways of living visible, design feeds into an alternate and more sustainable picture of what is normal. It also builds agency as it selects promising practices and makes them more robust and viable.

Sustainability in Design: NOW!

munities it serves' (University of Western Sydney 2001 cited in (Gunasekara, 2004b, p. 204). The region of Western Sydney faces a number of significant challenges. For instance, in coming decades, the region will struggle to generate enough jobs for continuing population growth and industries relying heavily on road freight transport, goods and materials will need to be innovative in their response to climate change mitigation strategies such as any proposed price on carbon in order to survive (Urban Research Centre, 2008, p. 5).

Detailed design briefs for up to two projects will be developed in the next stage of the project before identifying participants, running pilots and documenting the projects as case studies in subsequent stages. It is likely at this preliminary stage of the research that at least one brief will address transport practices because the university community, like its region, is heavily car-dependent.

The aim of the research is to work out what it takes to design and implement sustainable solutions in Australia. It seeks to contribute to the design for sustainability field and will do so by revealing mechanisms that increase design's agency for change within what has been conceived in this paper as a new avenue for design experimentation. It is expected that these mechanisms will be revealed as the hypothesis is explored through practice: that the university is a rich site for elaboration of design for social innovation and sustainability.

References

- Andrews, T. (2009). Design & consume to Utopia. *Design Philosophy Papers*(2).
- Association for the Advancement of Sustainability in Higher Education. (2010a). Campus Sustainability Case Study Database. Retrieved 3.3.10, from <http://www.aashe.org/resources/case-studies>
- Association for the Advancement of Sustainability in Higher Education. (2010b). Sustainability Curriculum in Higher Education: A Call to Action. Retrieved from [http://aashe.org/files/A_Call_to_Action_final\(2\).pdf](http://aashe.org/files/A_Call_to_Action_final(2).pdf)
- Association of University Leaders for a Sustainable Future. (1990). Report and Declaration of The Presidents Conference. Retrieved from http://www.ulsf.org/programs_talloires_report.html
- Banerjee, B. (2008). *Designer as Agent of Change. A Vision for Catalyzing Rapid Change*. Paper presented at the Changing the Change. Retrieved from <http://www.allemandi.com/cp/ctc/list.php>
- Barlett, P., & Chase, G. (Eds.). (2004). *Sustainability on Campus: Stories and Strategies for Change*. Cambridge: MIT Press.
- Cortese, A. (2003). The Critical Role of Higher Education in Creating a Sustainable Future. *Planning for Education*, 31, 15-22.
- Cross, N. (2001). Designerly Ways of Knowing: Design Discipline versus Design Science. *Design Issues*, 17(3), 49-55.
- Downton, P. (2003). *Design Research*. Melbourne: RMIT University Press.
- Findeli, A. (2008). Sustainable Design: A Critique of the Current Tripolar Model *The Design Journal*, 11(3), 301-322.
- Fry, T. (2009). *Design Futuring: Sustainability, Ethics and New Practice*. Sydney: UNSW Press.
- Fullan, M., & Scott, G. (2009). *Turnaround Leadership for Higher Education*. San Francisco: Jossey-Bass.
- Garlick, S. (1998). 'Creative Associations in Special Places': Enhancing the Partnership Role of Universities in Building Competitive Regional Economies.
- Garlick, S. (2005). Regional Growth, Enterprising Human Capital and Community Engagement. *Engaging Communities*. Retrieved from <http://www.engagingcommunities2005.org/abstracts/Garlick-Steve-final.pdf>
- Glanville, R. (1999). Researching Design and Designing Research. *Design Issues*, 15(2), 80-91.
- Gunasekara, C. (2004a). The Third Role of Australian Universities in Human Capital Formation. *Journal of Higher Education Policy and Management*, 26(3), 329-343.
- Gunasekara, C. (2004b). Universities and Communities: A Case Study of Change in the Management of a University. *Prometheus*, 22(2), 201-211.
- Gunasekara, C. (2006a). Reframing the Role of Universities in the Development of Regional Innovation Systems. *Journal of Technology Transfer*, 31, 101-113.

- Gunasekara, C. (2006b). Universities and associative regional governance: Australian evidence in non-core metropolitan regions. *Regional Studies*, 40(7), 727 — 741.
- Holmes, T. (2007). *Eco-visualization: Combining Art and Technology to Reduce Energy Consumption*. . Paper presented at the C&C'07. Retrieved from http://tiffanyholmes.com/wp-content/uploads/tiffanyholmes_docs/cc-79-holmes_2007.pdf
- Manzini, E., & Jégou, F. (2003). *Sustainable Everyday: Scenarios of Urban Life*. Milan: Edizione Ambiente.
- Manzini, E., Penin, L., Gong, M., Cipolla, C., M'Rithaa, M., & Mendoza, A. (2010). The DESIS Network: Design and Social Innovation for Sustainability. *The Journal of Design Strategies: Change Design*, 4(1), 14-21.
- Maze, R. (2008). *Criticality Meets Sustainability: Constructing critical practices in design research for sustainability*. Paper presented at the Changing the Change.
- Meadows, D. (1999). Leverage Points: Places to Intervene in a System. Retrieved from http://www.sustainer.org/pubs/Leverage_Points.pdf
- Mulgan, G. (2006). Social Innovation: what it is, why it matters, how it can be accelerated. *The Young Foundation*. Retrieved from <http://www.youngfoundation.org/publications/reports/social-innovation-what-it-why-it-matters-how-it-can-be-accelerated-march-2007>
- Penin, L., & Vezzoli, C. (2004). *Campus: 'lab' and 'window' for sustainable design research and education*. Paper presented at the The DECOS educational network experience, in proceedings EMSU2004, Environmental Management for Sustainable Education.
- Ryan, C. (2008). *The Melbourne 2032 Project: Design-visions as a mechanism for (sustainable) paradigm change*. Paper presented at the Changing the Change, Torino.
- Urban Research Centre. (2008). *North-West and West-Central Sydney Employment Strategies*. Sydney: University of Western Sydney.
- Willis, A. (2006). Ontological Designing. *Design Philosophy Papers*(2).