Beyond ‘Two Cultures’: ASSH Engagement with the Innovation and Impact Agenda

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ECHOS OF THE PAST...
Tunnel vision: the polarisation of knowledge

• C.P. Snow (1959) – ‘The Two Cultures…’
• Instrumental vs. intrinsic values
• Applied vs. foundational research
• Commercial vs. public value
• Towards a ‘Third Culture’…
We have many positive stories to tell and many exemplars of multi- and interdisciplinary collaboration between ASSH & STEM.

The great work of ACOLA and its reports.
Attacks on ASSH...

“It’s a cheap move, a populist move, and it smacks of a certain type of anti-intellectualism” DASSH President Prof Sue Dodds

“Research in the humanities and social sciences is just as important as science and technology. Humanities research enhances our understanding of, and provides new frameworks for the analysis of humanity, and its history, ideas, cultures, languages and social structures. It is also particularly important to developing interdisciplinary solutions to complex challenges such as climate change, resource management, health and welfare.”

(Prof Aidan Bryne, 2016, ‘Strong value in Humanities research’, Australian Research Council, 22 August 2016)

We want research with Australian taxpayers’ money to be about the better future for our country, not about funding some interesting thought bubble that some academic sitting away in a university somewhere has come up with and think they might be interested in looking at. (MP Jamie Briggs, 2013)
The Leiden Statement

Leiden Statement (Nov 2014) signatories, representing 158 research-intensive universities across the world, committed to:

- Stress the importance of these disciplines for national and global prosperity, and to ensure that as many people as possible benefit from research and education...
- "The social sciences and humanities are indispensable to understanding and addressing contemporary global challenges... The social sciences and humanities cultivate knowledge about human expression, behaviour, and social life that is essential to understanding the human context of these challenges and crafting viable solutions to them."
Focus on STEM is a global phenomenon

Interestingly, Kentucky Governor, Matt Bevin graduated from college in 1989 with a bachelor degree in Japanese and East Asian Studies...
Rise of STEM as a perceived panacea for an innovation economy

- Reductionist worldview of human capital
- Assumes a linear pathway to employment
- Presumes a predictable labour market
Australia’s future workforce?
June 2015

‘…40% of jobs in Australia have a high probability of being susceptible to computerisation and automation in the next 10 to 15 years.’
ASSH professions are far more RESILIENT to the threat of automation, computerisation or outsourcing

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**Australian jobs least at risk from computerisation and technology**

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Probability of being automated</th>
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</thead>
<tbody>
<tr>
<td>Medical practitioners</td>
<td>0.4%</td>
</tr>
<tr>
<td>Education, health and welfare managers</td>
<td>0.7%</td>
</tr>
<tr>
<td>Midwives and nurses</td>
<td>0.9%</td>
</tr>
<tr>
<td>Advertising, Public Relations and sales managers</td>
<td>1.5%</td>
</tr>
<tr>
<td>Database and systems administrators, and ICT Security Specialists</td>
<td>3.0%</td>
</tr>
<tr>
<td>Education professionals</td>
<td>3.3%</td>
</tr>
<tr>
<td>ICT managers</td>
<td>3.5%</td>
</tr>
<tr>
<td>Tertiary-level teachers</td>
<td>3.6%</td>
</tr>
<tr>
<td>School teachers</td>
<td>4.0%</td>
</tr>
<tr>
<td>Engineering professionals</td>
<td>4.2%</td>
</tr>
<tr>
<td>Legal professionals</td>
<td>6.5%</td>
</tr>
<tr>
<td>Social and welfare workers</td>
<td>6.8%</td>
</tr>
<tr>
<td>Accommodation and hospitality managers</td>
<td>7.2%</td>
</tr>
<tr>
<td>Construction, distribution and production managers</td>
<td>8.2%</td>
</tr>
<tr>
<td>Child carers</td>
<td>8.4%</td>
</tr>
<tr>
<td>ICT network and support professionals</td>
<td>9.7%</td>
</tr>
</tbody>
</table>

Derived from Oxford University study, PwC analysis

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Non-STEM disciplines

*Source: A Smart Move (PwC 2015)*
Future Jobs and Careers

Contrary to popular opinion…

• Australian Government projections for job growth to 2020 align with ASSH degrees, inclusive of the creative industries, business and law

Key capabilities required:

• Data analysis and synthesis: Deal quickly with complex and ambiguous knowledge, rather than accumulation of facts

• Cultural awareness, cross-cultural communication, and global networks are essential in a global market place

• Leadership, problem-solving and teamwork are critical

• Entrepreneurship and social innovation: It will no longer be enough to have a single skill or profession deployed in a single company, rather people will need to be able to assemble skills from many sources and rapidly put these together to solve problems in an agile and flexible manner

Occupation growth in non-STEM discipline areas

- Child Carers, Early Childhood Teachers
- Speech Pathologists
- Managers, Executives, Analysts
- Legal Professionals, Solicitors
- Photographers and Graphic Designers
- Authors and Editors
- Advertising and Marketing
- Policy Analysts
- Speech Pathology
- Education
- Social Work and Human Welfare
- Business and Human Resources
- Creative Industries
- Law
- Arts and Social Sciences
Australian Chief Scientist, Dr Alan Finkel, responding to the Grattan report, makes a valid point that also supports ASSH arguments…
• Following publication of Science, Technology, Engineering and Mathematics: Australia’s Future... we welcomed Mapping the Humanities, Arts and Social Sciences in Australia...

• But why two separate reports?

• The innovation system and knowledge economy needs a holistic approach

In the Foreword to ‘Mapping HASS’, Ian Chubb, as then Chief Scientist, stated:

“But it is not, and has never been, STEM alone. The humanities, arts and social science (HASS) disciplines provide vital knowledge and understanding of our world, its peoples and societies...

Scientists cannot implement workable solutions without the confidence and consent of the community. Indeed, it is unlikely the solutions could be workable without an understanding of the people who have to carry them through. It is the potential of STEM made real in the lives of Australians, with the insight HASS can provide.

By the same token, the HASS disciplines have much to gain from close engagement with the ideas and ways of thinking born of STEM.

... [W]e will need to organise, evaluate and cohere; aligning our efforts and our investment...”

DASSH submission to ‘Vision for a Science Nation’

“DASSH acknowledges that STEM research is valuable in tackling a number of the current global challenges and that policies to ensure long-term stable investment in funding to address these are needed. However, all of these challenges involve people, politics, values and regulatory structures, none of which will be delivered by science alone. Nor can the social sciences and humanities aspects of these challenges be “tacked on” after the science is done: for successful outcomes, the STEM and HASS elements need to be addressed in tandem. The best international research in areas such as global security demonstrates the benefits of disciplinary collaboration in tackling complex problems.”
Falling on deaf ears…

“Compelling and often devastating criticisms appear to have had little or no effect on policymaking. The arguments have not been answered; they have merely been ignored. Rather than blaming academics for not speaking out sufficiently strongly, the conclusion… is that those who make policy are just not listening.”

Stefan Collini (2012) *What Are Universities For?*
NISA adopts a narrow definition of innovation: “Innovation is about new and existing businesses creating new products, processes and business models.”

Science and Research Priorities:
1. Food
2. Soil & Water
3. Transport
4. Cyber-security
5. Energy
6. Resources
7. Advanced manufacturing
8. Environmental change
9. Health

CSIRO Megatrends: Resource scarcity | Biodiversity and climate change | Rapid economic growth & urbanisation in Asia and the developing world | Ageing | Digital revolution | Changing consumer expectations | Innovation
Tunnel vision keeps returning: The threat from proposed Higher Education reform

May 2016 report presents threats to ASSH:

• 20% funding reduction
• Review of cross-subsidisation
• Review of relative cost of discipline delivery
STEAM rising... A fresh approach is needed

An opportunity for ASSH to reposition and reset the conversation

“Innovation is not just based on research, science or technology, or even on entrepreneurial skills. Managerial and marketing skills, organisational, social, economic and administrative knowledge, and intellectual and creative capacity are also required to successfully translate new opportunities, ideas and discoveries into innovation.”

ACOLA (2016) Skills and Capabilities for Australian Enterprise Innovation
A new approach…

- Work with **industry** to gain the ear of government
  - Broaden the notion of innovation to encompass **social** innovation
- Renew calls to establish an **Office of the Chief Social Scientist**
  - A seat at the table: **Commonwealth Science Council** (replaced PMSEIC)
  - Senate Economics References Committee report on Australia’s Innovation System (Dec 2015) noted the importance of STEM and ASSH collaboration
- Call on funding schemes to prioritise **STEAM**
  - Research and Development (R&D) Tax Incentive
  - Fund Industry PhDs and Postdocs addressing key societal challenges
- **Nature** editorial (2015):
  - “If social, economic and/or cultural factors are not included in the framing of the questions, a great deal of creativity can be wasted... If you want science to deliver for society, through commerce, government or philanthropy, you need to support a capacity to understand that society that is as deep as your capacity to understand the science. And your policy statements need to show that you believe in that necessity.”
A new approach...

STEM + Arts + Humanities + Social Sciences = an MIT education
Government

Accelerating “What Works”

By Michele Jolin

There is an urgent need to expand the infrastructure for results-based policymaking at all levels of the US government.
Advocating for real innovation…

STEAM Rising: The real innovation and impact agenda
Thank you