The Impact of the Social Sciences
Comparing the UK and Australia

Patrick Dunleavy
Structure of my talk

1. Characterizing the social sciences, what they are, how they work
2. Impact of the social sciences in the UK
3. Social sciences in Australia, and their impact
4. Social sciences and STEM sciences in a services economy, and in the anthropocene era
1. Characterizing the social sciences
Which subjects form part of the social sciences?

**CAD disciplines - Creative arts and design**
- Music, Drama
- History of Art
- History, Philosophy, Literature studies, Modern Languages

**Humanities**
- Law, Cultural studies, International and comparative studies, Library studies and informatics, Linguistics
- Archaeology, Architecture

**Crossover with Humanities**

**Crossover with STEM**
- Geography, Health studies
- Psychology, Information Systems, some parts of Mathematics/statistics

**STEM disciplines – sciences, technology, engineering, & mathematics**

**Social sciences**
Around 32,000 academic research staff work across social science disciplines in the UK.
WHY THE SOCIAL SCIENCES ARE SCIENTIFIC 1

• Their intellectual spine is provided by formally set out theories, normally developing logically consistent ‘models’, often utilizing mathematical notation, but always with distinct rules and logics of theory development.

• They focus a great deal on systematically collecting data and information, using well-worked out and rigorously tested methods, with most branches making significant use of quantitative data.

• All social sciences look for ‘laws’ of social development, for patterns of association and causation that make sense theoretically and can be evaluated by careful empirical investigation.
They share or seek to emulate STEM science standards of effective scholarship, stressing:

– using carefully checked data,
– analysing data rigorously,
– replication of information,
– critical assessment of evidence
– critical engagement with theories and models, and
– a conditional acceptance of ‘knowledge’ only to the extent that it survives falsification and evidence testing.
THE MEDIATION OF ACADEMIC WORK

Source: Dunleavy and Tinkler (2014).
THE MEDIATION OF ACADEMIC WORK

Source: Dunleavy and Tinkler (2014).
2. UK social science and impact
Research core

Research staff 32k

Research £851m

People value  Economic value

Source: LSE Public Policy Group, Cambridge Econometrics, and HESA, 2010-11
All spending: £2.7bn
Research: £851m
Research staff: 32k

People value:
35k academics
Research staff: 32k

Economic value:
All spending: £2.7bn
Research: £851m

Source: LSE Public Policy Group, Cambridge Econometrics, and HESA, 2010-11
625k students
Indirect & induced value £4.8bn
All spending £2.7bn
Research £851m

People value

35k academics
Research staff 32k

Economic value

Indirect & induced value £4.8bn
All spending £2.7bn
Research £851m

Source: LSE Public Policy Group, Cambridge Econometrics, and HESA, 2010-11
External mediators
410k
625k students
Value of mediation work by external organizations
£24.6bn
Indirect & induced value
£4.8bn
All spending
£2.7bn
Research
£851m

Source: LSE Public Policy Group, Cambridge Econometrics, and HESA, 2010-11
Can academics both publish and be impactful?

Better focusing and social media effects
The myth: “90% of papers published in academic journals are never cited . . .”

In fact, uncited papers published in academic journals:

<table>
<thead>
<tr>
<th>Discipline</th>
<th>% not cited</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medicine</td>
<td>12</td>
</tr>
<tr>
<td>Other STEM sciences</td>
<td>27</td>
</tr>
<tr>
<td>Social sciences</td>
<td>32</td>
</tr>
<tr>
<td>Humanities</td>
<td>82</td>
</tr>
</tbody>
</table>

Source: LSE Impact blog

Yet still: ‘The average social science paper is cited only once a year’. Ann-Will Harzing
IN ALL DISCIPLINES NON-ELITE JOURNALS ARE ATTRACTING MORE GOOGLE SCHOLAR CITATIONS

ACADEMICS USING SOCIAL MEDIA,

Response base:
3,000 scientists and engineers

Response base:
446 social scientists and humanities scholars

Source: Nature 2014
3. Australian social science and impact

http://bit.ly/1xtQmtu

ERA rankings of departments by discipline groups – depts above or at world level in 2012

- STEM sciences
- Social sciences
- Humanities

Above world standard
At world standard
The output profiles of Australian social science disciplines
% of Australian officials seeing information from various sources as important

Source: Head, Ferguson et al, 2004
How Australian public officials see the impacts of university research information on policy-related decision-making.

There is not enough time in the day or week to read relevant research studies.

There is little opportunity to build relationships with researchers outside...

I lack sufficient decision-making power to ensure policy is based on research.

My department has no formal processes to translate academic research into policy.

The use of research evidence is a low priority of my unit.

Staff are not encouraged to use research evidence.

Source: Head et al, 2014
4. The social sciences and the STEM sciences, in a services economy and the ‘Anthropocene’ era
Distinguishing ‘natural/physical’ sciences from ‘human’ sciences

Traditional polarities

- Physical sciences
- Natural sciences
- ‘Normal’ science

Simon’s split

- Natural science
- ‘Artificial’ sciences

Giving way now to just

- STEM sciences
- Social sciences
An alternative framework

Human dominated systems

Human influenced systems

Natural systems

In the anthropocene era, most systems affecting humanity are HDS or HIS
human-dominated systems
- the endless city

One foot on the concrete shore,
One foot in the human sea.
Jackson Browne
Human-dominated systems
Human-influenced systems
human-influenced eco systems
human-influenced eco systems
Human-influenced Systems (e.g. climate change, other STEM sciences)

Human-dominated systems (e.g. cities, markets, IT, engineering and medicine)

Social sciences
natural systems
Natural Systems (e.g. astrophysics, pure maths)

Human-dominated systems (e.g. cities, markets, IT, engineering and medicine)

Human-influenced Systems (e.g. climate change, other STEM sciences)

Social sciences
Research funding flows towards the social sciences and other discipline groups in the UK

**STEM** - £3,500 bn (85%)
- 67,000 research staff
- 50,000 research students

**Social sciences** - £539m (12%)
- 30,000 res staff
- 27,000 res students

**Humanities** - £82m (2%)
- 15,000 res staff
- 13,000 res students

**CAD** - £32m
- 6,000 staff
- 4,000 students

**Human-dominated systems** (e.g. cities, markets, IT, engineering and medicine)

**Human-influenced Systems** (e.g. climate change, other STEM sciences)

**Natural Systems** (e.g. astrophysics, pure maths)
CONTRASTS BETWEEN STEM SCIENCES AND SOCIAL SCIENCES

• STEM sciences’ success since 1850s was based on *High Consensus, Rapid Advance* model
• Social sciences previously seen as *Low Consensus, + so stalled/ slow /inconclusive advances only*
• Social science now moving towards:
  - *Moderate Consensus, Rapid Advance*
Why the social sciences are now advancing

• New digital scholarship makes research ‘Bigger, Better, Shorter, Faster, Free’
• ‘Big data’ changes research opportunities
  - access to administrative data and online business and government systems
• The digital era in civil society transforms what can be data
  – massive textual digitization, across all areas of social life. Both open the way for
• New methods inflows, often from STEM sciences
  – maths/physics-based analysis
  – software engineering and modelling with algorithms /coding
  – systematic review and the digital cumulation of knowledge
  – improved methods for handling qualitative evidence (e.g. QCA)
• Pooling of methods and evidence criteria between STEM and social sciences (and some digital humanities)
Cross disciplinary endeavours have been stifled in an isolated academia

<table>
<thead>
<tr>
<th>Research is undertaken in:</th>
<th>Two or more disciplines</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Single academic silo</strong></td>
<td><strong>Topic-linked</strong></td>
</tr>
<tr>
<td><strong>Multi-disciplinary research</strong></td>
<td><strong>Joined up research</strong></td>
</tr>
<tr>
<td><strong>Inter-disciplinary research</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Solely academic research, within universities**
- Disciplinary research and remote consultancy
- Multi-disciplinary research
- Inter-disciplinary research
Cross disciplinary endeavours grow with impacts - engagement *reforms* academia

<table>
<thead>
<tr>
<th>Research is undertaken in:</th>
<th>Single academic silo</th>
<th>Two or more disciplines</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Topic-linked</td>
<td>Joined up research</td>
</tr>
<tr>
<td><strong>Solely academic research, within universities</strong></td>
<td>Disciplinary research &amp; some consultancy</td>
<td>Multi-disciplinary research</td>
</tr>
<tr>
<td><strong>Research undertaken both in universities and outside organizations</strong></td>
<td>Applied research and broader consultancy</td>
<td>Bureaucratically co-ordinated, team research</td>
</tr>
</tbody>
</table>
THANKS FOR LISTENING -- AND FURTHER RESOURCES

blogs.lse.ac.uk/impactofsocialsciences/

Twitter: @Write4Research