# I2S News

## March/April 2017, #35

Australian National University

## WELCOME

Welcome to the March/April I2S News which provides updates on resources added to the Integration and Implementation Sciences website (http://i2s.anu.edu.au), as well as a list of blog posts published on the Integration and Implementation Insights (I2Insights) blog (http://i2insights.org).

The I2Insights blog had a record number of views and viewers in March and is going from strength to strength. Nevertheless, we don't think we're even close to our potential. Starting in April we're switching from publishing two contributions per week to one. We going against blog wisdom, which is that the more you publish the better – because we're not sure if that's true for an academic audience. We want to see if having longer to read each blog post before the next one appears will increase readership, and also encourage viewers to read more widely.

We would also welcome your help in advertising the blog:
- This month please make one colleague aware of the blog – encourage them to submit a post or a comment and to follow the blog
- If you are not already following the blog, please do so
- Comment on other people's contributions – we're starting to generate some terrific discussions
- If you are on Twitter, please retweet messages about the blog. If you are not coming across them in your Twitter stream, check out @GabrieleBammer to see what's new.

Gabriele Bammer and Peter Deane

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## FEATURED TOOL

**Systems thinking archetypes**

Systems archetypes are recurring generic systems structures found in many kinds of organisations, under many circumstances, and at many levels and scales. They are distinctive combinations of reinforcing and balancing processes. These system archetypes teach how to diagnose recurring problems and to design effective interventions. Eight common archetypes are:
- fixes that fail
- shifting the burden
- limits to success
- drifting goals
- growth and underinvestment
- success to the successful
- escalation
- tragedy of the commons.

Five guides provide descriptions of these archetypes and work through them in detail. For the tragedy of the commons archetype, for example, this involves diagnosing the commons, identifying the incentives that need to be managed and relevant timeframes, and analysing issues that may interfere in successful action.

Systems archetypes can be applied as lenses, structural pattern templates, dynamic theories and tools for predicting behaviour.

- **References**:
    1. Kim, D. H. and Anderson V. (1998). *System archetypes basics: From story to structure*. Online: https://thesystemsthinker.com/systems-archetype-basics-from-story-to-structure/
    2. Kim, D. H. (1992). *Systems archetypes I: Diagnosing systemic issues and designing interventions*. Online: https://thesystemsthinker.com/systems-archetypes-i-diagnosing-systemic-issues-and-designing-interventions/
    3. Kim, D. H. (1994). *Systems archetypes II: Using systems archetypes to take effective action*. Online: https://thesystemsthinker.com/systems-archetypes-ii-using-systems-archetypes-to-take-effective-action/
    4. Kim, D. H. (2000). *Systems archetypes III: Understanding patterns of behaviour and delay*. Online: https://thesystemsthinker.com/systems-archetypes-iii-understanding-patterns-of-behavior-and-delay/
    5. Kim, D. H. and Lannon, C. P. (1997). *Applying systems archetypes*. Online: https://thesystemsthinker.com/applying-systems-archetypes/

These guides can be found on The Systems Thinker website at: https://thesystemsthinker.com/category/how-to-guides/.

**Additional tools can be found at:** http://i2s.anu.edu.au/resources/tools

## FEATURED VIDEO

**Policy maker use of evidence**

"For policy to bring positive change to people, it needs to be informed by the best available evidence and local knowledge. Producing robust evidence is just part of the policy change; we need to look at where that evidence is – or isn't – being used by governments, and why. And while we have seen increasing interest in evidence-informed policy-making, relatively little attention has been paid to the political and organisational challenges of embedding a culture of evidence within government departments. What are the politics of how research-based evidence is used in policy-making: what factors influence decision-makers? What systems help or hinder research use? And how can the development community support robust evidence-informed policy-making?"

The keynote speaker, Rizal Sukma, Indonesian Ambassador to the UK, raised a number of issues including:

- the difference in policy making between totalitarian and democratic states, such as the increased difficulties in a democracy which requires greater public consultation and policy debate
- important characteristics of the evidence, such as who provides it, its quality and whether the providers are independent
- the disconnect between policy makers and researchers, including balancing normative and realist considerations
- political calculations, especially effects of a policy on the image of a government keeping in mind the next election, the power of vested interests and balancing long- and short-term considerations
- what determines which evidence is used, such as its 'safety' in terms of achieving outcomes, the evidence provider's willingness to forego taking credit for the policy, no conflict of interest in procuring the evidence, and personal connection between the policy maker and the researcher.

These issues were embellished and debated by the following three panellists:

- Ian Goldman, Head of Evaluation and Research, South African Department of Planning, Monitoring and Evaluation (via video link)
- Justin Parkhurst, Associate Professor in Global Health Policy, London School of Economics
- Penny Hawkins, Former Head of Evaluation, UK Department for International Development

and the chair:

- Louise Shaxson, Research Fellow, Research and Policy in Development Programme, Overseas Development Institute.

The session "What drives the use of evidence within government?" was recorded at the Overseas Development Institute in the UK in December 2016. A second video recorded the question and answer session with the audience.

The videos are also available on: https://www.odi.org/events/4433-what-drives-use-evidence-within-government.

1. Panel on "What drives the use of evidence within government?" with Rizal Sukma, Ian Golman, Justin Parkhurst and Penny Hawkins and chaired by Louise Shaxson.
   - Online: https://youtu.be/5Wu_bXjmY0M?list=PL8sELjFjXUp_X3iHOXz0MYAcsUISSw-Ak
2. Question and answer session for "What drives the use of evidence within government?"
   - Online: https://youtu.be/gbIyRnMqMBE?list=PL8sELjFjXUp_X3iHOXz0MYAcsUISSw-Ak

## LATEST I2INSIGHTS BLOG POSTS

The I2Insights blog has recently featured posts on:

1. **Scoping: Lessons from environmental impact assessment** *by Peter Mulvihill* — https://i2insights.org/2017/04/04/scoping-lessons/

2. **Knowledge mapping technologies** *by Jack Park* — https://i2insights.org/2017/03/30/knowledge-mapping-technologies/

3. **The path perspective on modelling projects** *by Tuomas Lahtinen, Joseph Guillaume and Raimo Hämäläinen* — https://i2insights.org/2017/03/28/path-dependence-in-modelling/

4. **Three theories to help overcome change resistance in service design implementation** *by Ricardo Martins* — https://i2insights.org/2017/03/23/overcoming-change-resistance/

5. **Successful implementation demands a great liaison person: Nine tips on making it work** *by Abby Haynes on behalf of CIPHER (Centre for Informing Policy in Health with Evidence from Research)* — https://i2insights.org/2017/03/21/implementation-liaison-person

6. **Team science glossary** *by Sawsan Khuri and Stefan Wuchty* — https://i2insights.org/2017/03/16/team-science-glossary/

7. **Transkillery! What skills are needed to be a boundary crosser?** *by Dena Fam, Tanzi Smith and Dana Cordell* — https://i2insights.org/2017/03/14/transdisciplinary-skills/

8. **Ten lessons from a transdisciplinary PhD program in sustainability development** *by Marianne Penker* — https://i2insights.org/2017/03/09/transdisciplinary-phd-program-lessons/

9. **Complexity and agent-based modelling** *by Richard Taylor and John Forrester* — https://i2insights.org/2017/03/07/complexity-and-agent-based-modelling/

10. **Making sense of wicked problems** *by Bethany Laursen* — https://i2insights.org/2017/03/02/making-sense-of-wicked-problems/

11. **Values, confidence, and time: What researchers should consider when engaging with civil society organisations** *by William Allen*

https://i2insights.org/2017/02/28/engaging-with-civil-society-organisations/

12. **Argument-based tools to account for uncertainty in policy analysis and decision support** *by Sven Ove Hansson and Gertrude Hirsch Hadorn*

https://i2insights.org/2017/02/23/argument-based-tools/

13. **Overturning the design of outcome measures** *by Diana Rose*

https://i2insights.org/2017/02/21/user-design-of-outcome-measures/

14. **Designing for impact in transdisciplinary research** *by Cynthia Mitchell, Dena Fam and Dana Cordell*

https://i2insights.org/2017/02/16/impact-in-transdisciplinarity

## FEATURED JOURNAL AND JOURNAL NEWS

### Environmental Impact Assessment Review

*Environmental Impact Assessment Review (EIA Review)* serves "a global audience of practitioners, policy-makers, regulators, academics and others with an interest in the field of impact assessment (IA) and management. Impact assessment is defined by the *International Association for Impact Assessment* (www.iaia.org) as the process of identifying the future consequences of a current or proposed action. For *EIA Review*, the field of IA can be related to as the assessment of impacts on or of the environment (including, for example, EIA and SEA [Strategic Environmental Assessment]), social (SIA), health (HIA), risk (RIA), human rights, equity, language, technology, products, *etc*. With current or proposed actions, the EIA Review audience assesses how best to evaluate the impacts of policies, projects, processes and products, and how best to make decisions and undertake management activities."

From an I2S perspective the value of this journal is two-fold. First it publishes accounts of new methods useful for research integration and implementation, including on scoping, stakeholder engagement and boundary work. Second it provides case studies of the application of existing methods to complex environmental problems.

- Website: https://www.journals.elsevier.com/environmental-impact-assessment-review/

### GAIA column on 'Toolkits for Transdisciplinarity'

The journal GAIA has recently published:
Bammer, G. (2017). Toolkits for transdisciplinarity - Toolkit #7: (Dynamic) systems thinking. *GAIA*, **26**, 1: 7. Online: https://doi.org/10.14512/gaia.26.1.3

### Human Ecology Review back issues available in open-access online

All back issues of *Human Ecology Review* (HER) are now available open-access online in a fully searchable catalogue within JSTOR's newly launched *Sustainability Collection*:
http://www.jstor.org/journal/humaecolrevi

**Additional journals can be found at:** http://i2s.anu.edu.au/resources/journals

**Action Research Network of the Americas**

"The *Action Research Network of the Americas* (ARNA) unites college and university students and faculty conducting practitioner inquiry into teaching and learning with fellow action researchers in public schools, private schools, community settings and workplaces throughout the Americas. ARNA members are committed to taking action locally, regionally, nationally, and internationally to promote action research that is conducted with a commitment to honesty, integrity, inclusiveness, multi-vocality, engagement, and achievement within sustainable democratic societies."

ARNA holds regular conferences and provides a set of online resources and networking opportunities via their website. Their website also functions as a wiki, so members can more easily join in with knowledge dissemination. ARNA has a Twitter and Facebook presence, as well as a YouTube channel. It was founded in 2012.

- **Websites**:
    - Main website: http://arnawebsite.org/
    - Networked members website: http://www.arnaconnect.org/

**Additional professional associations and networks can be found at:**
http://i2s.anu.edu.au/resources/associations_networks

**22nd International Congress on Modelling and Simulation (MODSIM2017): Managing cumulative risks through model-based processes**

"In addition to the traditional modelling and simulation papers in diverse areas, papers will explore the conference theme from a wide spectrum of disciplinary perspectives organised in different streams. Papers can take a number of approaches including quantitative modelling as well as qualitative, procedural and stakeholder techniques. As well as innovative approaches using novel modelling objectives, [there is a focus on] modelling techniques and practices that explicitly consider societal and political risk.

Special themes of the conference will include pragmatic policy evaluation, scenario modelling of uncertain futures under climate change, resource constraints, colliding 'catastrophes' and limited budgets".

MODSIM 2017 includes the 25th National Conference of the Australian Society for Operations Research (ASOR), and the Defence Operations Research Symposium (DORS 2017).

Expressions of interest close on the 28 April 2017.

The conference will be held in Hobart, Australia from December 3-8, 2017.

- For further details see:
  - http://www.mssanz.org.au/modsim2017/index.html

## 4th Biennial Society for Implementation Research Collaboration (SIRC 2017): Implementation mechanisms: What makes implementation work and why?

"The Society for Implementation Research Collaboration (SIRC) biennial conferences are dedicated to facilitating communication and collaboration between implementation research teams, researchers, and community providers". The goal of the SIRC 4th Biennial Conference is to "provide a platform for examining the mechanisms that underlie implementation efforts. Implementation mechanisms reflect the processes that are responsible for change and their study is critically important to understanding the heterogeneity and context dependence of implementation strategy impacts". Conference topics include:

- "How and why do specific implementation strategies improve implementation outcomes? How do you implement simply, seamlessly, and easily?
- Of the over 60 implementation frameworks, what is the most parsimonious framework, model, or theory that can be used to guide a practical implementation project?
- ...which of the [many] implementation strategies are needed to promote which implementation outcomes (*ie.*, adoption, implementation, fidelity, sustainment)? What are the most cost-effective implementation strategies?
- How do we tailor implementation strategies to different contexts? Does tailoring result in better outcomes?
- When an implementation intervention fails, why did it fail and what can be learned from that?"

The conference will be held at the University of Washington, Seattle, Washington, United States of America, from September 8-9, 2017.

- For further details see:
  - https://societyforimplementationresearchcollaboration.org/4th-biennial-society-for-implementation-research-collaboration/

## Other Upcoming Conferences

Conferences which have not been listed in previous newsletters are marked [NEW].

## Interdisciplinarity, Transdisciplinarity and Action Research Methods
- 12-16 June 2017, Action Research Network of the Americas (ARNA) 5th Annual Conference and 1st Global Assembly for Knowledge Democracy, Cartagena de Indias, Columbia (http://www.arna2017.unal.edu.co/1/)
- 11-15 September 2017, International Transdisciplinarity Conference 2017: Transdisciplinary Research and Teaching - Intercultural Endeavours, Luneburg, Germany (http://www.transdisciplinarity.ch/en/td-net/Konferenzen/ITD-2017.html)
- 19-21 October 2017, 39th Association for Interdisciplinary Studies (AIS) Conference, Baltimore, Maryland, United States of America (http://wwwp.oakland.edu/ais/conferences/annualconference/)
- [NEW] 20-22 October 2017, Collaborative Action Research Network (CARN) Conference: Reflecting on Action Research in an unequal world: An alternative perspective towards democracy, Rethymno, Greece (https://carnreth2017.wixsite.com/carn)

- 3-7 June <u>2018</u>, The Academy of Transdisciplinary Learning and Advanced Studies (ATLAS): Being Transdisciplinary, Cluj-Napoca, Romania (http://www.atlas-conference.org/)

**Systems, Modelling and Simulation**
- 23-26 April 2017, Symposium on Theory of Modeling and Simulation, Virginia Beach, Virginia, United States of America (http://tms-devs.org/)
- 11-12 May 2017, 22nd Coalition Theory Network Workshop, Glasgow, United Kingdom (www.coalitiontheory.net/content/22nd-coalition-theory-network-workshop)
- 23-26 May 2017, 31st European Conference on Modelling and Simulation (ECMS 2016), Budapest, Hungary (http://www.scs-europe.net/conf/ecms2017/)
- 30 May - 2 June 2017, 10th Chaotic Modeling and Simulation International Conference (CHAOS), Barcelona, Spain (http://www.cmsim.org/chaos2017.html)
- 18-21 June 2017, 12th International Conference on Systems of Systems Engineering (SoSE): Internet of Things as System of System, Waikoloa, Hawaii (http://2017.sosengineering.org/)
- 20-24 June 2017, 14th International Conference of Sociocybernetics: Sociocybernetics, innovation and social conflicts, Medellin, Columbia (https://sociocybernetics.wordpress.com/icsc2017_cfp_v1/)
- [NEW] 5-8 July 2017, International Conference on Social Computing, Behavioral-Cultural Modeling, & Prediction (SBP-BRiMS 17), Washington DC, United States of America (http://sbp-brims.org/2017/about/)
- 9-12 July 2017, 25th Conference on User Modeling, Adaptation and Personalization, Bratislava, Slovakia (http://www.um.org/umap2017/)
- 9-14 July 2017, 61st Meeting of the International Society for the Systems Sciences: From Science to Systemic Solutions - System Thinking for Everyone, Vienna, Austria (https://www.isss2017vienna.com/)
- 15-20 July 2017, 27th Annual International Council on Systems Engineering (INCOSE) Symposium: Unlocking Innovation through Systems Engineering, Adelaide, Australia (http://www.incose.org/symp2017/home/when-where)
- 16-20 July 2017, 35th International Conference of the System Dynamics Society: 60th Anniversary Celebration, Cambridge, Massachusetts, United States of America (http://conference.systemdynamics.org/)
- 17-21 July 2017, 21st Conference of the International Federation of Operational Research Societies, Quebec City, Canada (http://ifors2017.ca/)
- 7-10 August 2017, Conference of the American Society for Cybernetics: Resilience and Ethics - Implications, Salem, Massachusetts, United States of America (http://asc-cybernetics.org/2017-2/)
- 12-14 September 2017, Operational Research (OR) 59 Annual Conference, Loughborough, United Kingdom (http://www.theorsociety.com/Pages/Conferences/OR59/OR59.aspx)
- 17-22 September 2017, Conference on Complex Systems, Cancun, Mexico (http://ccs17.unam.mx/)
- [NEW] 25-29 September 2017, Social Simulation Conference 2017, Dublin, Ireland (http://www.sim2017.com/)
- [NEW] 18-20 October 2017, Relating Systems Thinking and Design (RSD5) Symposium: Environment, Economy, Democracy: Flourishing Together, Oslo, Norway (http://systemic-design.net/)
- [NEW] 3-6 December 2017, Winter Simulation Conference: Simulation Everywhere! Las Vegas, United States of America (http://meetings2.informs.org/wordpress/wsc2017/)

- 3-8 December 2017, 22nd Modelling and Simulation Society of Australia and New Zealand Congress: Managing Cumulative Risks through Model-based Processes, Tasmania, Australia, (http://www.mssanz.org.au/modsim2017/index.html)
- [NEW] 12-13 December 2017, 8th French Conference on Complex Systems Design & Management (CSD&M), Paris, France (http://www.2017.csdm.fr/)
- [NEW] 8-10 January 2018, 10th International Conference on Computer Modelling and Simulation, Sydney, Australia (http://www.iccms.org/)

## Team Science and Project Management
- 1-3 May 2017, Project Management Institute (PMI) Global Congress 2017, Rome, Italy (http://congresses.pmi.org/emea2017)
- 12-14 June 2017, Science of Team Science 2017 Conference, Clearwater Beach, Florida, United States of America (http://www.scienceofteamscience.org/)
- 20-22 July 2017, 11th Annual INGRoup Conference, Saint Louis, Missouri, United States of America (http://www.ingroup.net/conference.html)
- [NEW] 26-30 September 2017, Project Management Institute (PMI) Global Congress 2017 - North America, Chicago, Illinois, United States of America (http://www.pmi.org/global-conference)

## Uncertainty, Risk and Decision Making
- 20-23 June 2017, Bi-annual International Conference on Naturalistic Decision Making (NDM13), Bath, United Kingdom (http://www.bath.ac.uk/management/news_events/events/naturalistic-decision-making/index.html)
- [NEW] 4-6 October 2017, 11th International Conference on Scalable Uncertainty Management (SUM 2017), Granada, Spain (http://idbis.ugr.es/sum2017/)
- 8-10 November 2017, 2nd International Conference on Anticipation, London, United Kingdom (http://www.projectanticipation.org/index.php?option=com_content&view=article&id=97&Itemid=612)
- 10-14 December 2017, Society for Risk Analysis (SRA) Annual Meeting, Arlington, Virginia, United States of America (http://www.sra.org/events/sra-2017-annual-meeting)
- [NEW] 11-15 June 2018, 17th International Conference on Information Processing and Management of Uncertainty in Knowledge-Based Systems, Cadiz, Spain (http://ipmu2018.uca.es/)
- [NEW] 6-8 May 2019, 5th World Congress on Risk: Development and Resilience, Cape Town, South Africa (http://www.sra.org/worldcongress2019)

## Bridging the Gap from Research to Policy and Practice
- 17-18 May 2017, Canadian Knowledge Mobilization Forum, Ottawa/Gatineau Canada (http://www.knowledgemobilization.net/forum/)
- 20-21 June 2017, Global Implementation Conference: Expanding Implementation Perspectives - Engaging Systems, Toronto, Canada (http://gic.globalimplementation.org/)
- [NEW] 8-9 September 2017, 4th Biennial Society for Implementation Research Collaboration (SIRC): Implementation Mechanisms: What Makes Implementation Work and Why? Seattle, Washington, United States of America (https://societyforimplementationresearchcollaboration.org/4th-biennial-society-for-implementation-research-collaboration/)

## Other (including Sustainability Science)

- 8-10 May 2017, 8th Annual National Organization of Research Development Professionals (NORDP) Research Development Conference, Orlando, USA (http://www.nordp.org/annual-conference)
- 20-21 July 2017, 14th International Conference of Engaged Scholars and Practitioners: Creating Culture Entrepreneurship and Knowledge through Engagement, Adelaide, Australia (http://www.engagementaustralia.org.au/conference)
- 2-4 November 2017, 9th International Conference for the Humanities, Arts, Science, and Technology Alliance and Collaboratory (HASTAC): The possible Worlds of Digital Humanities, Orlando, Florida (http://hastac2017.org/)
- 27 November - 1 December 2017, XXII International Conference of the Society for Human Ecology: Envisioning pathways to just and sustainable futures - Celebrating diversity, pursuing integration, and developing liveable communities, Los Baños, Philippines (http://societyforhumanecology.org/)
- [NEW] 5-8 December 2017, 31st Australian and New Zealand Academy of Management (ANZAM) Conference: Managing in a digital age, Melbourne, Australia (http://anzamconference.org/)
- [NEW] 11-15 December 2017, 9th Annual Ecosystem Services Partnership (ESP) Conference, Shenzhen, China (http://www.espconference.org/espconference2017#.WONQGIWGNhE)

## ABOUT I2S NEWS

The aim of this newsletter is to provide regular (bi-monthly) updates about new resources added to the Integration and Implementation Sciences website (http://i2s.anu.edu.au/resources). These resources are useful for researchers interested in Integration and Implementation Sciences (I2S), which underpins the investigation and tackling of complex real world problems, by:

- Synthesizing knowledge from different disciplines and stakeholders,
- Understanding and managing diverse unknowns, and
- Providing integrated research support for policy and practice change.

In general, each issue features tools (concepts and methods), case studies and/or approaches relevant to I2S - either a useful compilation or one or more examples of note. We also provide information about journals, professional associations & networks and conferences where researchers can learn from others, report their findings and interact with like-minded peers. The newsletter also reports on discussions in the LinkedIn group "Global Network for Research Integration and Implementation": http://www.linkedin.com/groups/Global-Network-Research-Integration-Implementation-4888295 (when these occur) and new entries on the Integration and Implementation Insights blog: http://I2Insights.org.

I2S News is archived at: http://i2s.anu.edu.au/what-i2s/i2s-publications/i2s-news.

Useful links:

- I2S website: http://i2s.anu.edu.au
- I2S on YouTube: https://www.youtube.com/user/i2sTalks
- LinkedIn group "Global Network for Research Integration and Implementation": http://www.linkedin.com/groups/Global-Network-Research-Integration-Implementation-4888295
- I2Insights blog: http://I2Insights.org

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