

#humandata

@uts\_mdsi

# The future of the information professions in a data-intensive world

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# CONNECTED INTELLIGENCE CENTRE

Human-Centred Analytics for Societal Learning

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Welcome to the Connected Intelligence Centre  
Enjoy browsing our research, education and outreach activities  
on human-centred data and analytics as they impact education and wider society

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ALIA URLs 8 Sept 2016

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## MDSI students take awards in 2016 Unearthed Sydney hackathon

26 Aug 2016



### In summary:

- UTS Master of Data Science and Innovation students have won all three prizes at the 2016 Unearthed Sydney hackathon
- The 54 hour long event challenged participants to prototype solutions to solve Big Data challenges in the resources sector.

# Data Transformations

Scene Setting: Making Sense  
Rise of the Machine (Learning)  
Creative/Analytic enabling  
Data Science for Innovation  
Uncertainty & Insight  
Next Steps



data is explosive, evolving, infinite



**Awash with data, but starved of analysts**

# Living on the edge

*“Explore. Experiment. Foul up, sometimes. Then repeat.”*



Don Juan in Österreich,  
den andern in Böhmen,  
o Schwergewicht in Bayern,  
kann's nur am Dreifesselberg geb'n.





# Agency vs AI

Creative Disruption  
invites Insight

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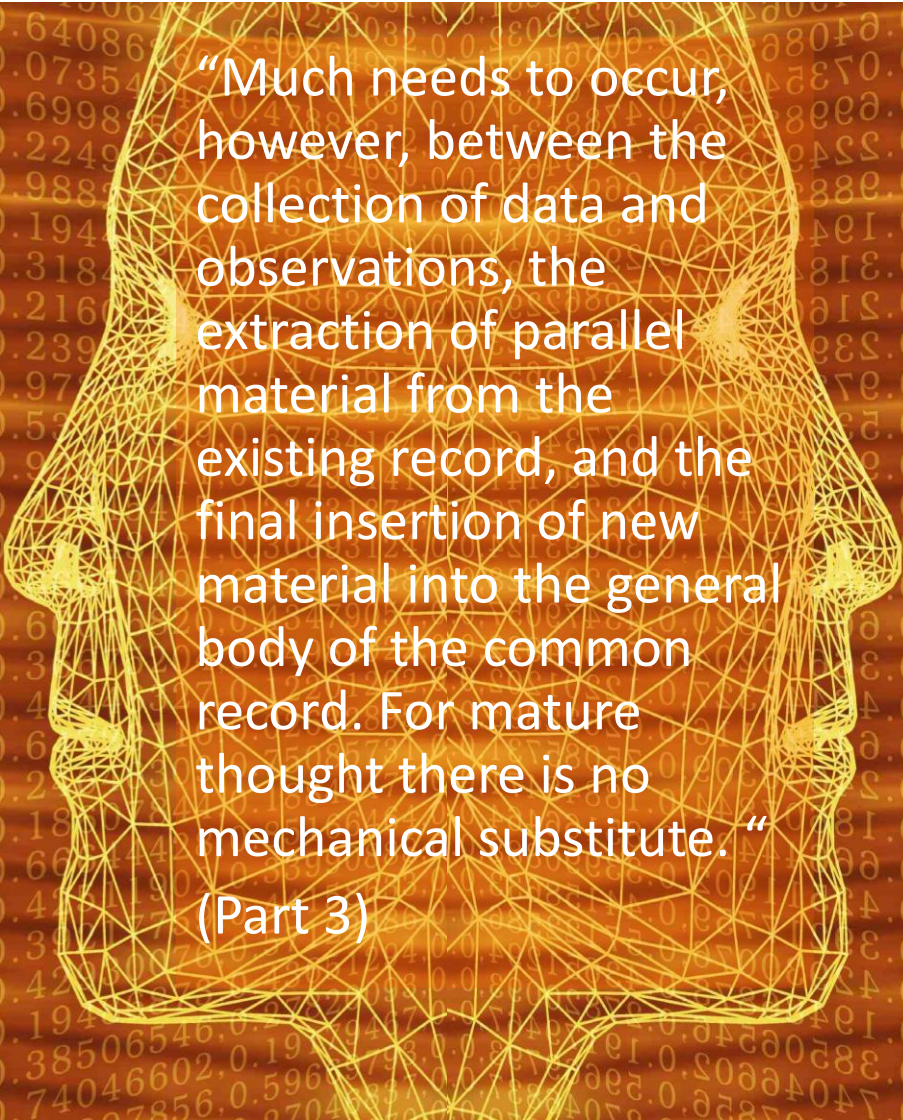
[http://wallpaperbeta.com/terminator\\_3\\_rise\\_of\\_the\\_machines\\_film\\_movies](http://wallpaperbeta.com/terminator_3_rise_of_the_machines_film_movies)

# Human search engines?





# Vannevar Bush (1945) As We May Think



“Much needs to occur, however, between the collection of data and observations, the extraction of parallel material from the existing record, and the final insertion of new material into the general body of the common record. For mature thought there is no mechanical substitute.”

(Part 3)

“There may be millions of fine thoughts, and the account of the experience on which they are based, all encased within stone walls of acceptable architectural form; but if the scholar can get at only one a week by diligent search, his syntheses are not likely to keep up with the current scene.”

(Part 5)



**Where do you want to think?**

**Where do you do your best thinking?**

# Creative Ecologies & Information

"The main question of our age  
is how we live our lives. ...

How do we handle ideas and  
knowledge, both our own and  
other people's?

What relationship to ideas do  
we want?

Where do we want to think?"

Howkins (2009) *Creative Ecologies*



*'...we are losing the time to look and to think at exactly the moment we have produced a remarkable new set of tools for scholarly investigation and communication' (Levy 2007)*





**PLAN**



**PLAY**



**pressure**



*pause*



## Convergent thinking

logical  
planned  
structured  
analytical

## Divergent thinking

intuitive  
imaginative  
extemporaneous  
disruptive



# Creative Disruption invites Insight

Uncertainty  
Ambiguity  
Risk taking  
Divergence





# eight aspects of information handling that aid research creativity

1. Recognising/creating patterns
2. Identifying analogies
3. Interdisciplinary contact
4. Dealing with false knowledge
5. Identifying exceptions/inconsistencies
6. Favouring chance
7. Random stimulation of ideas
8. Temporary suspension of evaluation

(Bawden, 1986)





# information particularly supportive of creative process

interdisciplinary information  
peripheral information  
speculative information  
exceptions and inconsistencies

In certainty there is  
limitation; in  
uncertainty there is the  
loving magic of infinity  
dancing with our  
desires.

meetville.com

*Zenshine*

## **conducive to divergent thinking**

less likely to conform to established understandings of person  
exploring that information

## **Challenge: Finding information vs engaging with it**



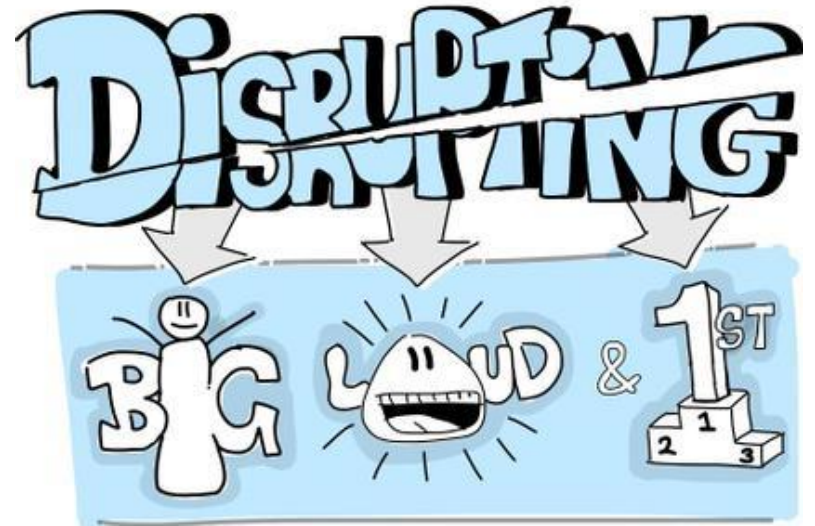
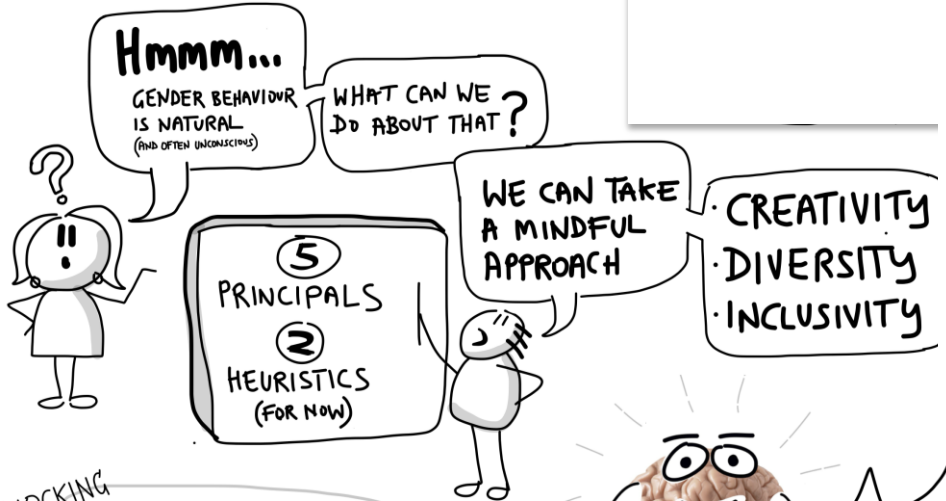
# Inclusivity leads to better outcomes

**BREAKING THROUGH THE MARZIPAN LAYER**



**NEW PEDAGOGIES FOR AN INCLUSIVE CURRICULUM**

ANDERSON, WAITE & BAWA @CreateNDiverse





*“What is the right speed, then? ...the critical slowdown may thus be as critical as the critical acceleration”*

(Derrida, 1984)





A tropical beach scene with a wooden bench in the foreground, turquoise water, and mountains in the background. The image is framed by palm fronds at the top and sides. The text is overlaid on the lower half of the image.

**The invisible work of the 'pause':**  
Thinking at the edge  
Untapped potential of intuitive judgments

# Human Centred Data Science

developing creative, collective and computational capacities



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**connected**



**creative**

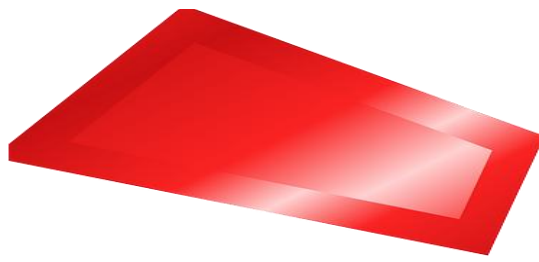


**collective**

## Transdisciplinary approach: 3 key CI qualities



# Tackling Wicked Problems Data for Hindsight ... Insight ... Foresight



**Innovation**

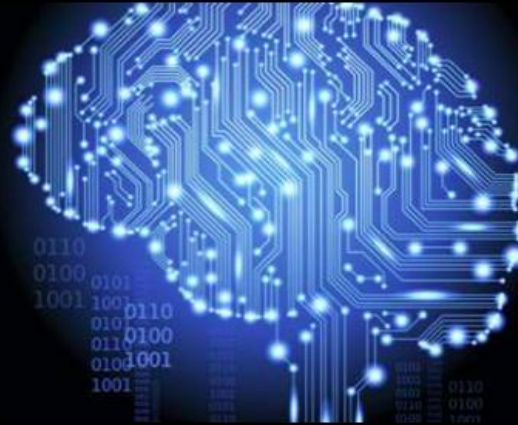


**industry**  
**insight**  
**incubation**  
**Ingenuity**  
**inclusivity**



# Anthropology of risk & uncertainty

"It's fine to celebrate success, but it is more important to heed the lessons of failure." Bill Gates



"Fail faster. Succeed sooner."  
David Kelley, IDEO



# Riding the waves of MDSI learning



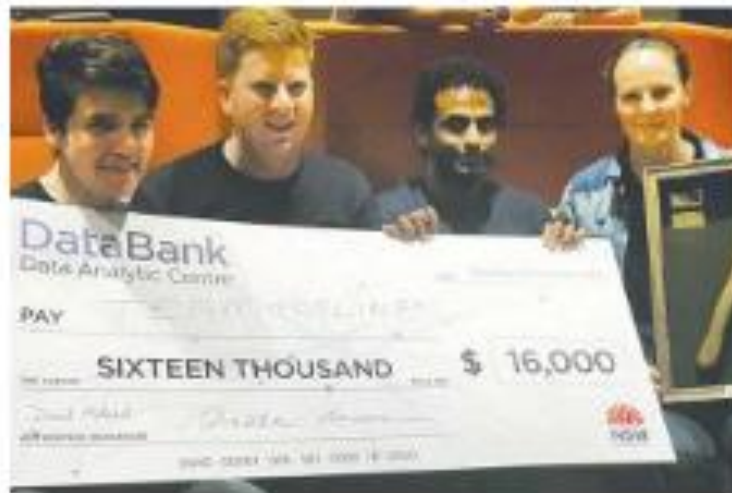
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## Hackathons replace lectures

26 Aug 2016











Team Gosling with the Transport NSW hackathon.  
Photo by: Theresa Anderson

### In summary:

- UTS's Connected Intelligence Centre (CIC) has established a partnership with the NSW Government to embed real-life hackathon challenges into the curriculum of three MDSI subjects
- The collaboration was the brainchild of MDSI Course Director Dr Theresa Anderson after she saw six MDSI students successfully competed in two hackathons, for Unearthed Sydney and Transport NSW, in 2015

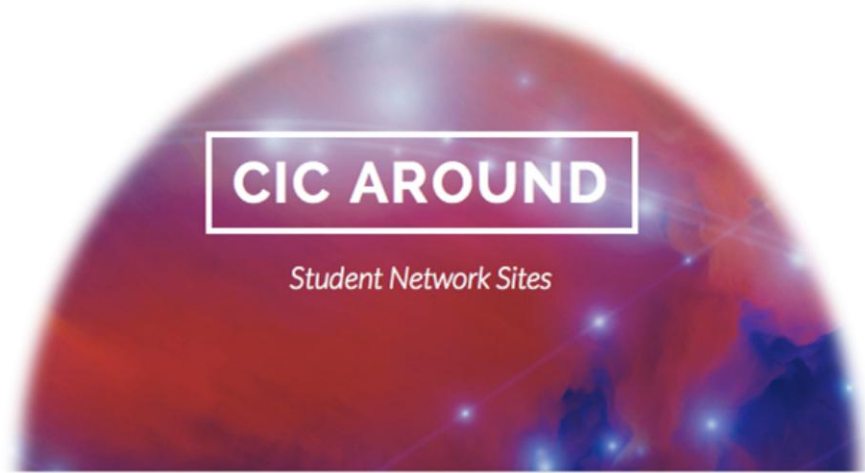


# Collective Intelligence: Data Science is a team sport

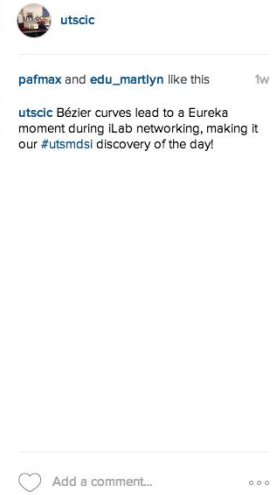
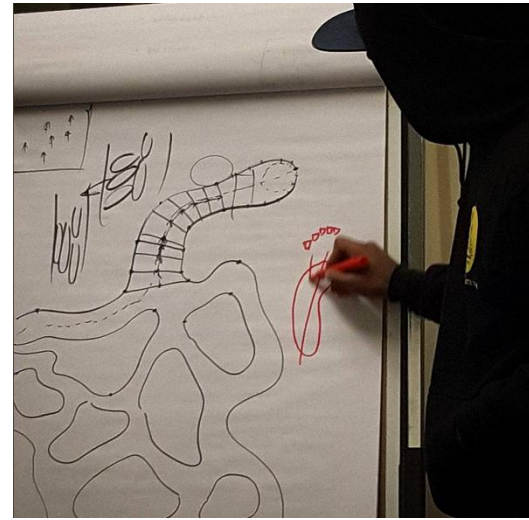
	Project Manager
	Programmer
	<i>Visualization/Storyteller</i>
	Statistician
	ANALYST
	Communicator
	<i>Problem Solver</i>
	<i>Researcher</i>







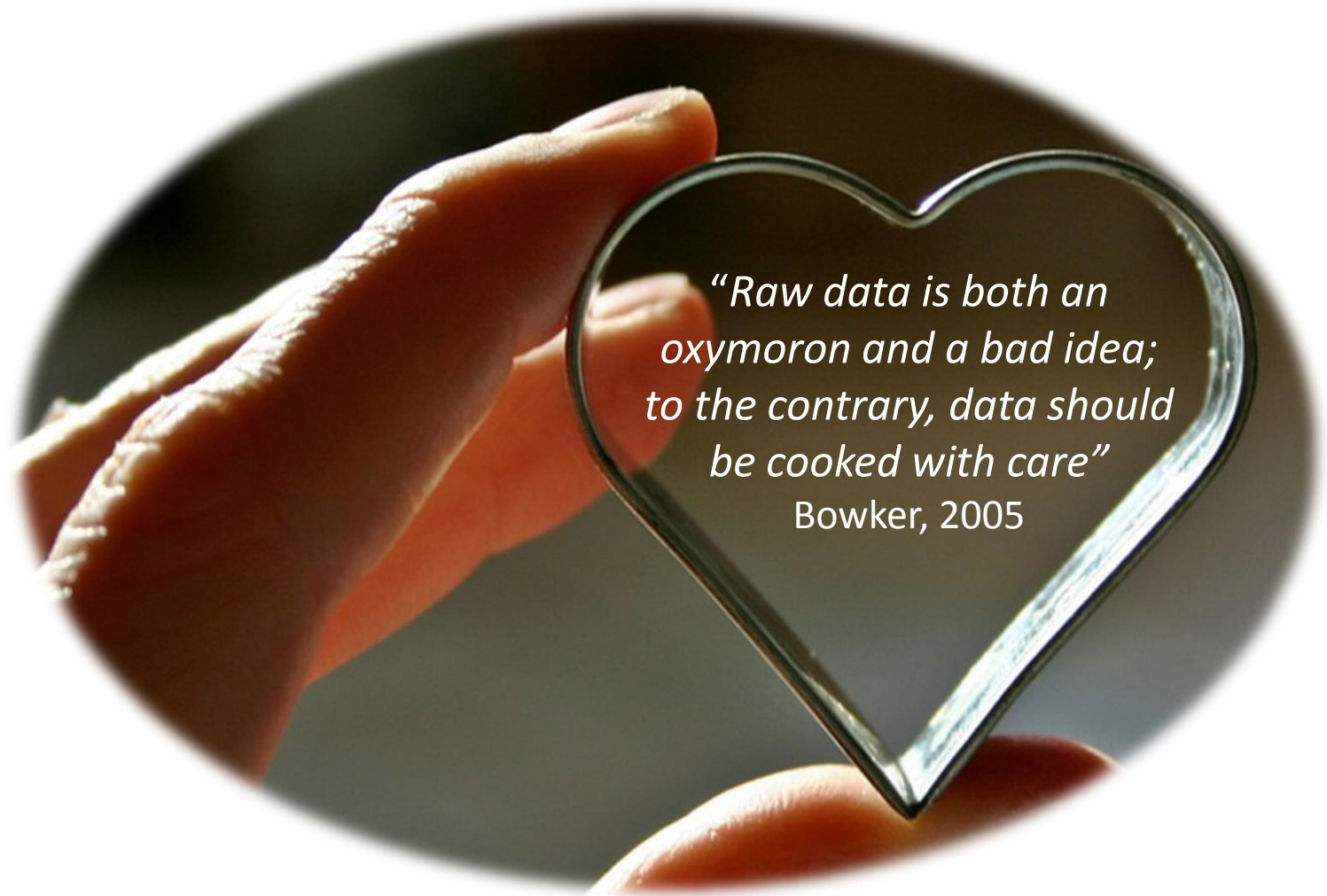
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# Curating a Participatory Curriculum

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*“Raw data is both an  
oxymoron and a bad idea;  
to the contrary, data should  
be cooked with care”  
Bowker, 2005*

# **Data’s human value: Holding algorithms accountable**

# Transdisciplinarity: Crossing borders



“the world has problems,  
universities have departments”  
(Brewer 1999)

**Creative Intelligence =**

Creativity

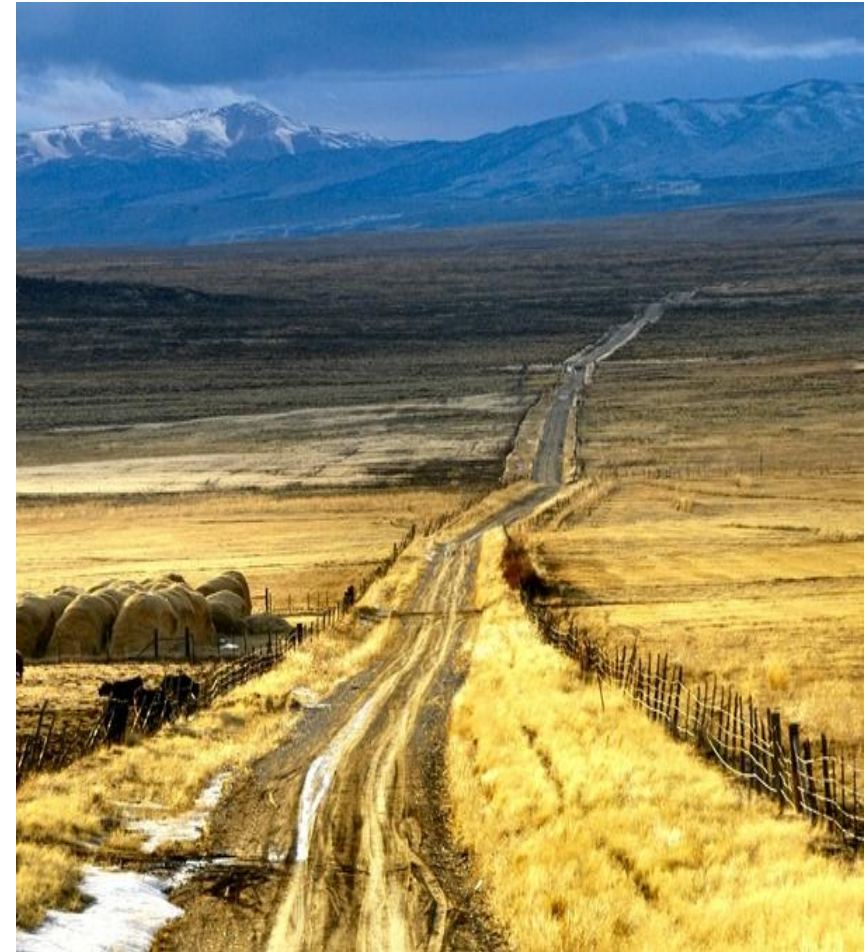
Uncertainty

Risk

Resilience

Photo by Peter Leibing

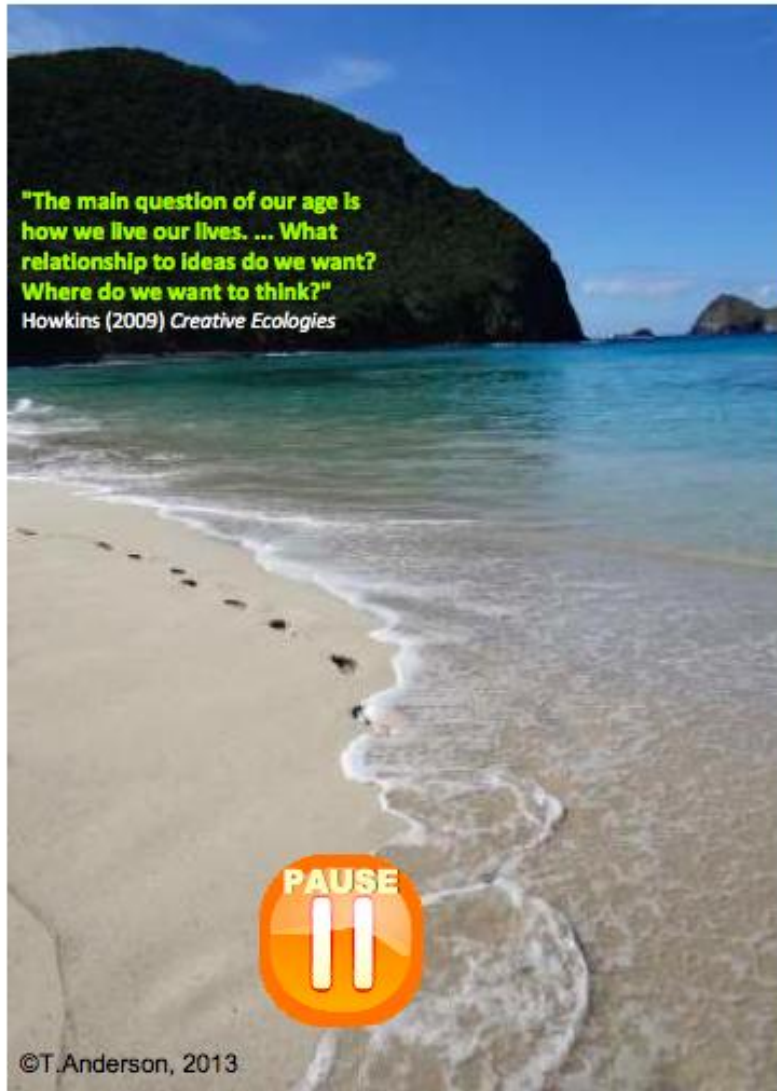
# Can we embrace a (more) uncertain life? How do we make space to be creative & innovative?



# Challenge your imagination & “obviousness” of the world



# Make time to listen to the unspoken. Make time to think



*develop new ways of living in a world without foundations*  
(Eisenberg, 2001)

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@PlayingwPauses

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Network: email [cic@uts.edu.au](mailto:cic@uts.edu.au) Subject:  
[humandata]

*Thank you*