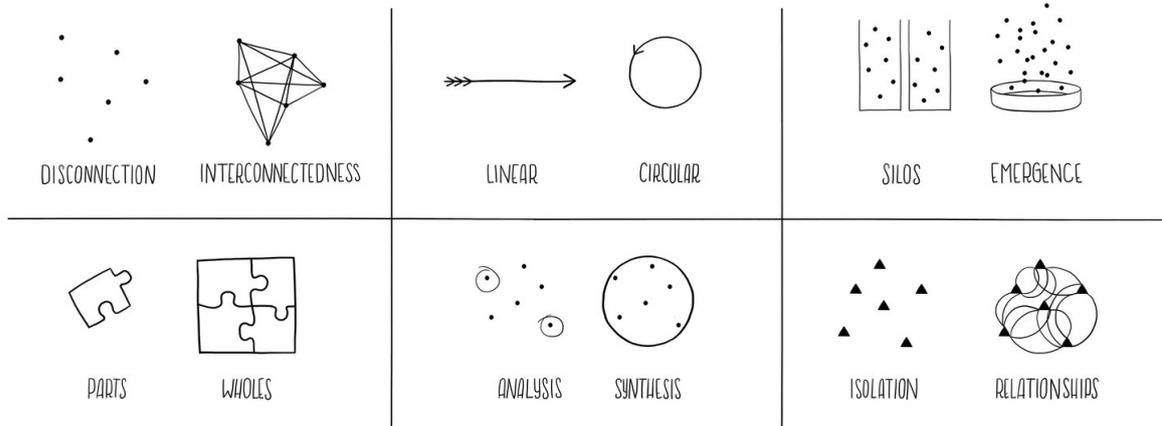


Systems Thinking

TOOLS OF A SYSTEM THINKER



<https://www.disruptdesign.co/blog/an-introduction-to-the-disruptive-design-method>



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Welcome!!

This is our first communication, so it is all a bit of an experiment to see what works for everyone.

We have grouped notions into these categories:

- a. **Classical theory discussion** – this includes systems theory generally and system theory being used in evaluation.
- b. **Ideas** – any item of interest. This is systems thinking orientated to practical use.
- c. **Controversy Corner** – discussion is boring if everyone agrees. It's always great to have some hullabaloo. Some great ideas can come out of disagreeing with someone and having to justify why.

To see what you think we will do a follow up survey (after all, we are in the evaluation game!). We promise it will be quick and easy. You know....it will help us improve.

If people send us ideas about systems, we will feature everyone as much as possible.

Our feature people this time are **Julie** Elliott and **Gregory** Masters. We have attached biogs, contacts and photos so you can know them a bit better.

Lewe
Ralph
Brian

Classic Theory Discussion

These are the foundation ideas. We are presenting three contributions on 'classic theory'.

A. Why a systems approach

Dr RL Ackoff was an organisational theorist and a pioneer in systems thinking (1919-2009).

"Individual systems are purposive...knowledge and understanding of their aims can only be gained by taking into account the mechanisms of social, cultural, and psychological systems".¹

It's a great overview of why systems thinking is important. The resolution is not so sharp, but Lewe thinks he looks better that way (both Dr Ackoff and Dr Lewe).

Lewe has forwarded this link from RL Ackoff...

<https://www.youtube.com/watch?v=OqEeIG8aPPk&feature=youtu.be>

B. Who thinks in this area?

Karl Ludwig von Bertalanffy, an Austrian biologist (1901-1972) is recognised as one of the founders. He created a mathematical model for an organism's growth (a fish) over time in 1934 and his work influenced Dr Ackoff strongly. Here's the formula in case you come across a fish that needs it (and in my area, I have lots of fish that need it...):

$$L(a) = L_{\infty}(1 - \exp(-k(a - a_0)))$$

Julie forwarded this map to give an overview of where we are now (click on the link below). This overview is focussed on complexity.

Castellani, Brian (2018) "Map of the Complexity Sciences" Art & Science Factory

https://www.art-sciencefactory.com/complexity-map_feb09.html

C. System theory and evaluation?

Okay, let's start with the Americans. **Ralph** comes from that country. And, as we know, **Ralph** has produced over seventy articles and is developing **Systems Evaluation Theory** (he is from German extraction...his work ethic is strong)

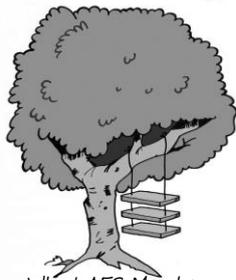
The American Evaluation Society has a Systems in Evaluation TIG (TIG means topical interest group).

They have produced "Principles for Effective Use of Systems Thinking in Evaluation Practice"

<https://www.systemsinevaluation.com/wp-content/uploads/2018/10/SETIG-Principles-FINAL-DRAFT-2018-9-9.pdf>

There was a lot of deliberation over this, but it successfully came out like one of those swing diagrams....

¹ Kirby, Maurice & Rosenhead, Jonathan. (2005). IFORS' operational research hall of fame: Russell L. Ackoff. International Transactions in Operational Research. 12. 129-134. 10.1111/j.1475-3995.2005.00493.x.



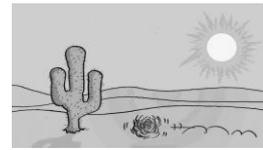
*What AES Members
talked about for systems
principles*



Draft One



*Principles for Effective
Use of Systems Thinking
in Evaluation (FINAL)*



Follow up on use...

In brief, what it says in a somewhat laborious way is that evaluators should use the principles of interrelationships, perspectives, boundaries, and dynamics in integrated ways...that's it. Now you have the four core concepts. How good is that???!!!

Now let's go to New Zealand. **Kara, Judy & Adrian** come from that country...

Bob Williams, a New Zealander, has done heaps of work on systems theory for evaluation. He lives in the beautiful city of Wellington and has co-produced this book:

"Systems Concepts in Action: A Practitioner's Toolkit" Bob Williams, Richard Hummelbrunner
<http://www.bobwilliams.co.nz/systems.html>

We will review his toolkit in coming editions. This is an amalgam of system tools from lots of people.

Greg presents one of these below.

Ideas

A. Mapping systems:

Below is a visual representation of the supply chain of a laptop computer created by Leonardo A Bonanni. It's an interesting idea to know this system is required to produce something we work on every day. He created the open source sourcemap program to enable companies to track products and environmental risks by knowing the supply chain.



<https://open.sourcemap.com/maps/57d0d127dd3780d6272b3f8c>

Ralph is currently working on a check list for developing a systems overview for evaluation based on his 2105 article in the Australian Evaluation Journal.

He has just sold out his workshop at the American Evaluation Society conference in Minneapolis. The only other things they have there are lakes.

B. Using systems:

Greg has recommended and summarised the **Cynefin** framework below. He knows that you will ALL have read this article in the last AES journal:

Stone-Jovicich, Samantha; McMillan, Larelle; Percy, Helen; Turner, James; White, Toni; Chen, Lan. Evaluating monitoring, evaluation and learning initiatives in the New Zealand and Australian agricultural research and innovation systems: the MEL2 framework. Evaluation Journal of Australasia. 2019; 19(1):8-21. <https://doi.org/10.1177/1035719X18823567>

...and you will all be thinking of that famous New Zealand horror movie from 2006 about agricultural research called "Black Sheep" (please be careful about clicking through to the preview below)

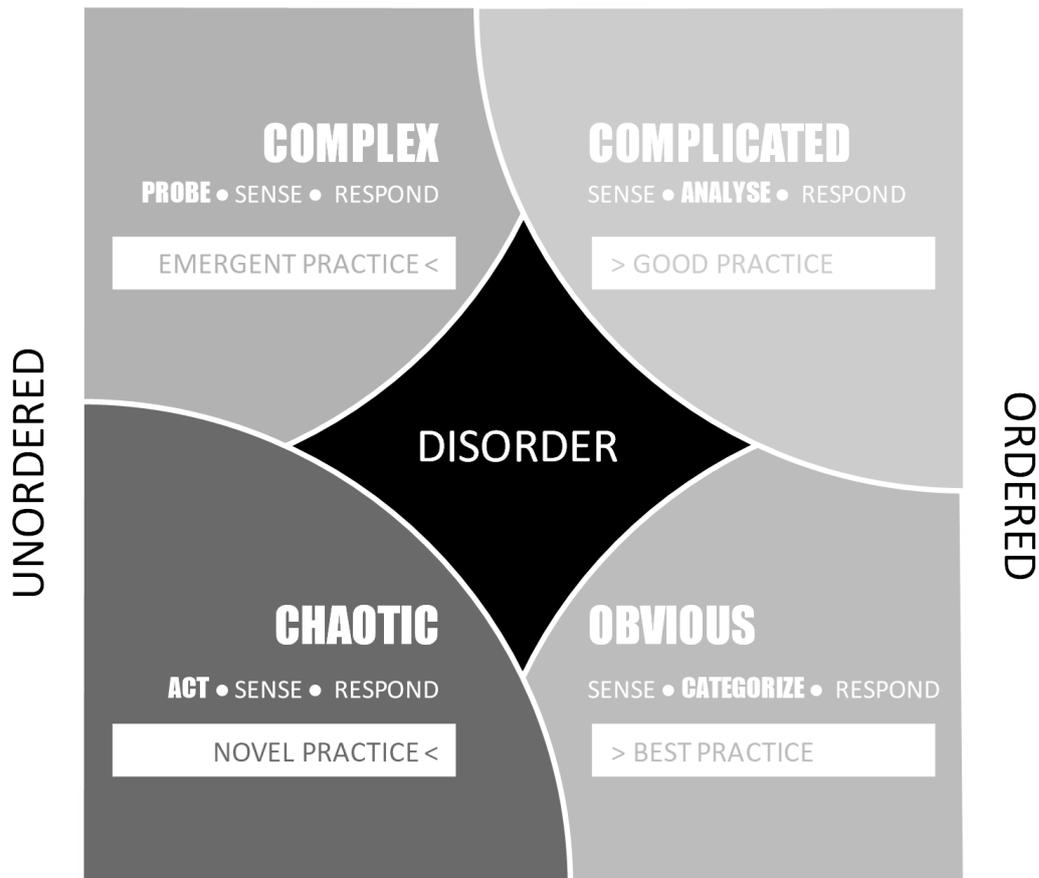
<https://www.imdb.com/title/tt0779982/videoplayer/vi177473049>

However, the use of the **Cynefin** framework is also interesting.

i. *Evaluation and Complexity: the Cynefin Framework*

The Cynefin Framework² was developed by Dave Snowden when he worked in IBM in the late twentieth century and subsequently. His Harvard Business Review paper describing the framework³ is regarded as a classic.

As depicted in the figure below, the framework comprises four domains: *simple, complicated, complex chaotic*. Central to the theory is the need to vary policy responses and decision-making approaches from domain to domain. That is, one size does not fit all and indeed Snowden warns of the risk of being locked into a preferred or dominant style that is suitable for only one domain.



SIMPLE DOMAIN

Description	Health Care Example	Recommended Approach
The relationship between cause and effect is clear. A will cause B (throwing a stone)	A patient presenting with a common problem where there is a standard operating procedure (e.g. a cut requiring stitches)	Best Practice

² Cynefin is pronounced as kuh-NEV-in. It is a Welsh word meaning habitat or the place of our belonging.

³ <https://hbr.org/2007/11/a-leaders-framework-for-decision-making>

COMPLICATED

Description	Health Care Example	Recommended Approach
The relationship between cause and effect requires analysis and/or experience and there may be multiple valid approaches to managing (landing on the moon)	A patient with a head injury and multiple physical and mental health symptoms	Good Practice

COMPLEX

Description	Health Care Example	Recommended Approach
Systems with inter-dependencies and multi-causal relationships with no clear solutions (raising a child)	Childhood obesity	Emergent Practice

CHAOTIC

Description	Health Care Example	Recommended Approach
Chaos when there is no sense of order and cause and effect are unclear (the 9/11 terrorist attacks)	Multiple fatalities and injuries caused by a bomb	Act

The dark section labelled *disorder* in the figure represents those situations where we simply do not know which of the four domains we are operating in – we then use the framework to make sense of the situation, or its constituent parts, and allocate them to the respective domain.

ii. Implications for Evaluation

The most significant implication of the Cynefin framework for evaluation is that no one evaluation approach is appropriate for all domains. For example, logic models make sense for the simple domain with clear cause-effect relationships and, possibly, more sophisticated logic models may work in the complicated domain.

In the complex domain, which pertains to systems, logic models will fail because they are too linear and reductive and are unable to capture the richness of multi-causality and interdependencies. In this domain every situation is unique and therefore a more sophisticated and varied suite of evaluation tools is required: action research, ethnographic approaches, qualitative research, network analyses, process mapping and so on.

Controversy Corner

This section follows the time-honoured tradition of putting it out there, getting a restrained reply, and then being able to put your protagonist right. The convincing nature of the proof is left to the reader....

'Complexity theory is too complex'

Julie: (just putting it out there)

I wonder whether this is how you'd position systems in relation to complexity and why you are not forming a 'Complexity Evaluation Theory' group instead. To me, this seems much more cutting edge and builds on earlier traditions including systems. Our friends in NZ are making pretty good progress (refer to attached very recent article). There is also keen interest in the UK but the AEA seem frozen in only using complexity concepts as merely 'sensitising concepts' as advocated by Patton, Developmental Evaluation. Also, I notice that Jonny Morrell has taken an idiosyncratic approach to it.

Ralph: (trying to be a diplomat)

"Complexity theory has great potential to add sophistication to our evaluations. However, it has been our experience that complexity theory, like chaos theory, has remained a theoretical argument. As Carol Weiss, one of the leading evaluators in our field wrote "nothing is as practical as a good theory". All three of us value theory, but we need to see its application."

"Our clients must use the evaluation information to inform their decision-making. Utility is one of the evaluation standards and of course the subject of Quinn-Patton's several textbooks. We must be able to explain to our clients what we are proposing to do and then implement it in a way they understand. If we do this, then they are more likely to believe and use the results to assist decision-making. Our experience is that our customers eyes glaze over when we start talking complexity theory; they become disengaged. This is because we haven't learned how to bridge the theory-practice gap and show how complexity theory can be applied, simply, to make evaluations better."

Julie: (helping Ralph...)

Thanks Ralph, I appreciate your point of view but *'the game is afoot'* (Shakespeare, in King Henry IV Part I, 1597). A group such as this one should be able to contribute to this discussion and learn how to apply complexity, including by making connections with complexity thinkers in the fields of public policy and administration, and organisational management. We can learn from other disciplines how to talk about complexity so that the eyes of clients light up. If they are in the business of social problem solving, they'll get it. For the evaluation field, it might mean breaking down some of the intellectual barriers erected in the early days of evaluation and thinking about how complexity changes the way we think about the construction of evaluative knowledge. In regard to unresolved disagreements about knowledge, Shadish and colleagues state,

'Part of what drives these disagreements is the ultimate obscurity of certain ontological matters (E.g. How complex is the world?) might have great epistemological and methodological import if known' (Shadish, et al. 1991, p. 470).

Thomas Schwandt recently argued that that the evaluation field is showing some signs of post-normal thinking. This is an in-between period where old orthodoxies are dying, new ones have yet to be born, and very few things seem to make sense. Schwandt says that failing to acknowledge complexity is not simply a technical error but also an ethical one (Schwandt, 2019).

Here are some articles:

Schwandt, T. A. (2019) Post-normal evaluation? *Evaluation* 2019, Vol. 25(3) 317–329

Kallemeyn, L.M., Hall, J.N. & Gates, E. “Exploring the Relevance of Complexity Theory for Mixed Methods Research”, *Journal of Mixed Methods Research*, 1-17, 2019 DOI: 10.1177/155868981987242

Matheson, A., Walton, M., Gray, R., Wehipeihanda, N. & Wistow, J. “Strengthening prevention in communities through systems change: lessons from the evaluation of Healthy Families NZ” *Health Promotion International*, 2019, 1-11, DOI: 10.1093/heapro/daz092

These articles are hot off the press, and Julie is at the forefront as part of her research.

Biographies and gossip

These are the people contributing to the first newsletter:

A. Julie(Elliott)



Julie is best known as Executive Producer on the zombie apocalypse movie "Me and My Mates Vs the Zombie Apocalypse" (2014).

Julie Elliott is also a PhD student at the School of Media and Communication, RMIT University. Her research project is 'Developing Complexity-congruent evaluation theory and practice.'

Contact: julie.jcelliot@gmail.com

B. Greg(Masters)



Greg describes himself as a scary bald bloke.

Greg also runs Nexus Management Consulting (Sydney). This very successful consulting firm specialises in strategic planning, program evaluation and management review to help organisations change for the better.

Contact: gmasters@nexusmc.com

C. Lewe (Atkinson)



Lewe likes to wear Hawaiian shirts and play the banjo.

Lewe is also the powerhouse behind Haines Centre for Strategic Management (Brisbane). He lives and breathes systems thinking – and is always working towards the practical application of system thinking principles to business (and government) sustainability.

Contact: lewis@hainescentreasia.com

D. Ralph (Renger)



Ralph's daughters refer to him as 'the arrow' because of his hair style.

Ralph has published over seventy articles in academic journals, and taught systems for more years than he can remember. For the last thirty years he has presented to conferences around the world.

Contact: ralph@justevaluation.com

E. Brian (Keogh)



Brian has recently found out his name is most well-known as a dog's name because of bravery during WW11. The book **'The Amazing Adventures Of Bing The Parachuting Dog'** was published in 2012 (they changed Brian's name to Bing!!!)

He has a company 'Cobalt59' with a lovely person called Julieanne, and he likes working with the people above.

Contact: briankeogh@icloud.com