

‘Acknowledgement of Country’ by Jonathan Hill

*Today we stand in footsteps millennia old.
May we acknowledge the traditional owners
whose cultures and customs have nurtured,
and continue to nurture, this land,
since men and women
awoke from the great dream.
We honour the presence of these ancestors
who reside in the imagination of this land
and whose irrepressible spirituality
flows through all creation.*

Source: **Jonathan Hill is an Aboriginal poet living in New South Wales.**



Application
Systems Evaluation Theory



Why SYSTEMS THINKING?

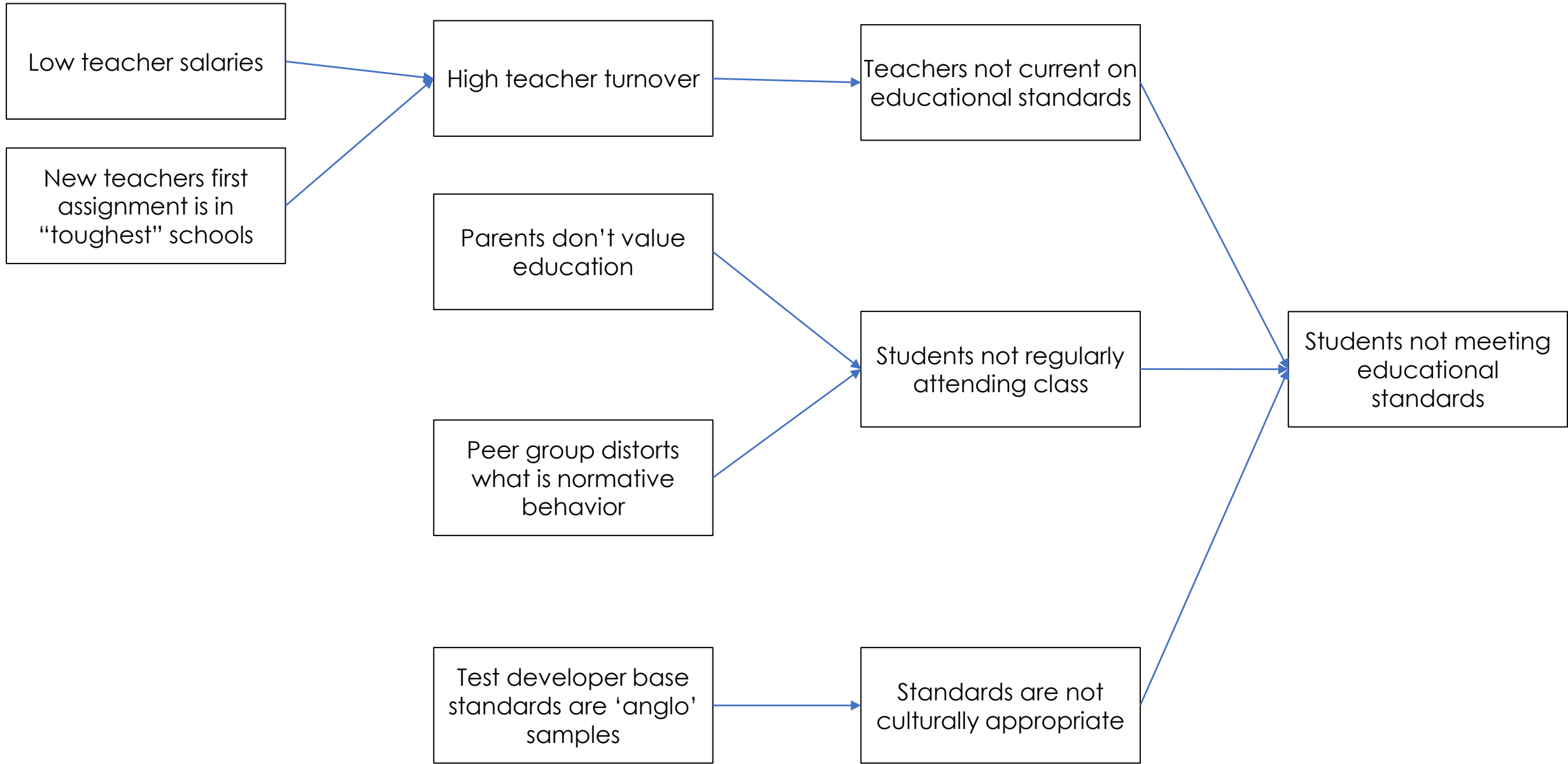
How systems thinking principles are actually
applied in an evaluation

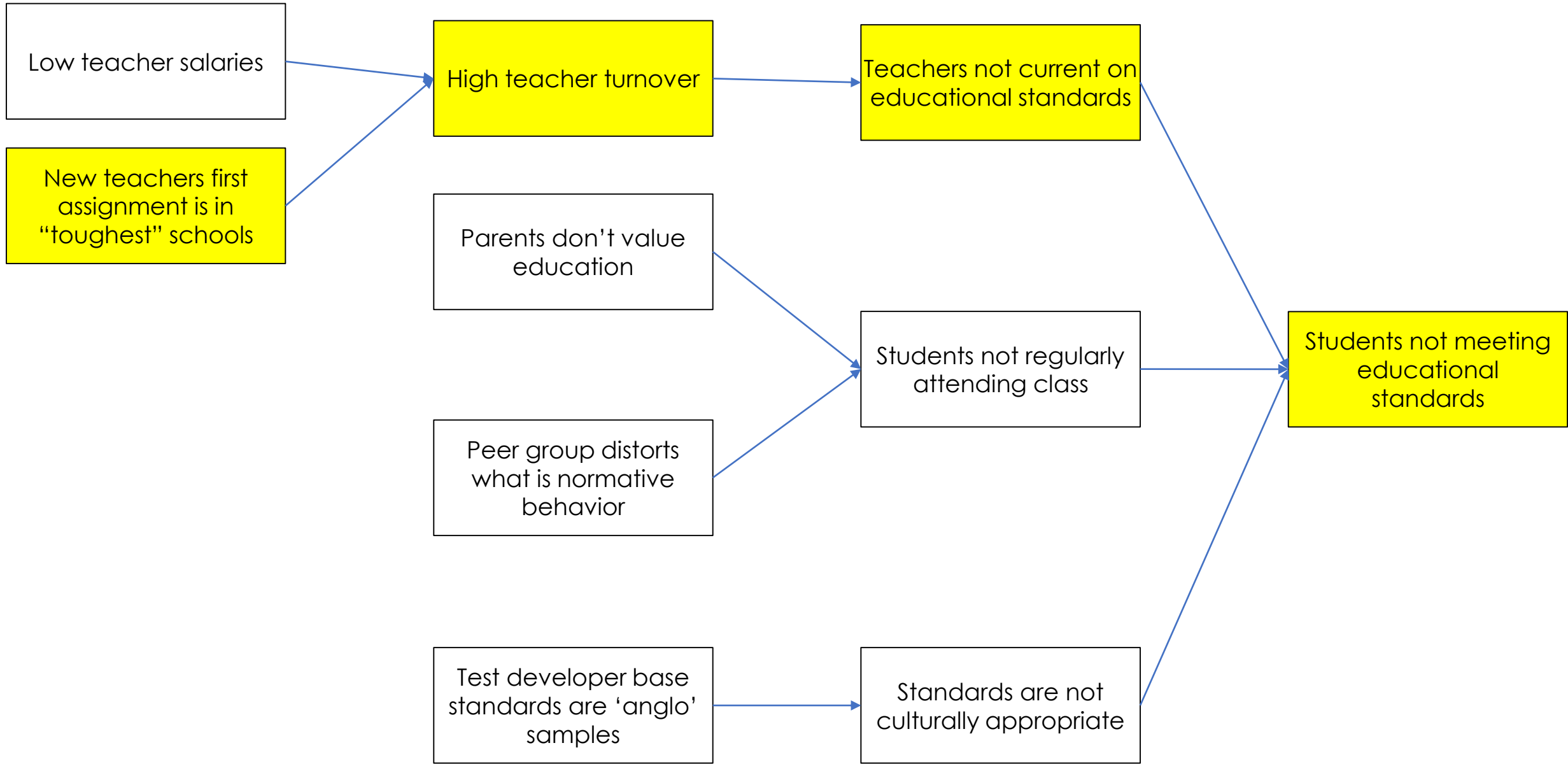
Systems Evaluation Theory (SET) has been developed because of a frustration with logic models in evaluation being linear, isolated and removed from context

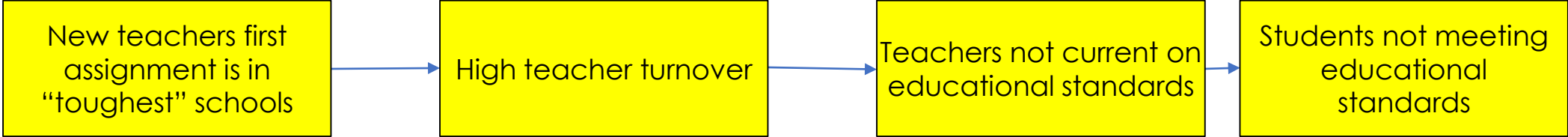
**The connection between logic models and systems thinking concepts
Ralph Renger, Lew Atkinson, Jessica Renger, Jirina Renger, Gary Hart**

First Published June 19, 2019 Research Article

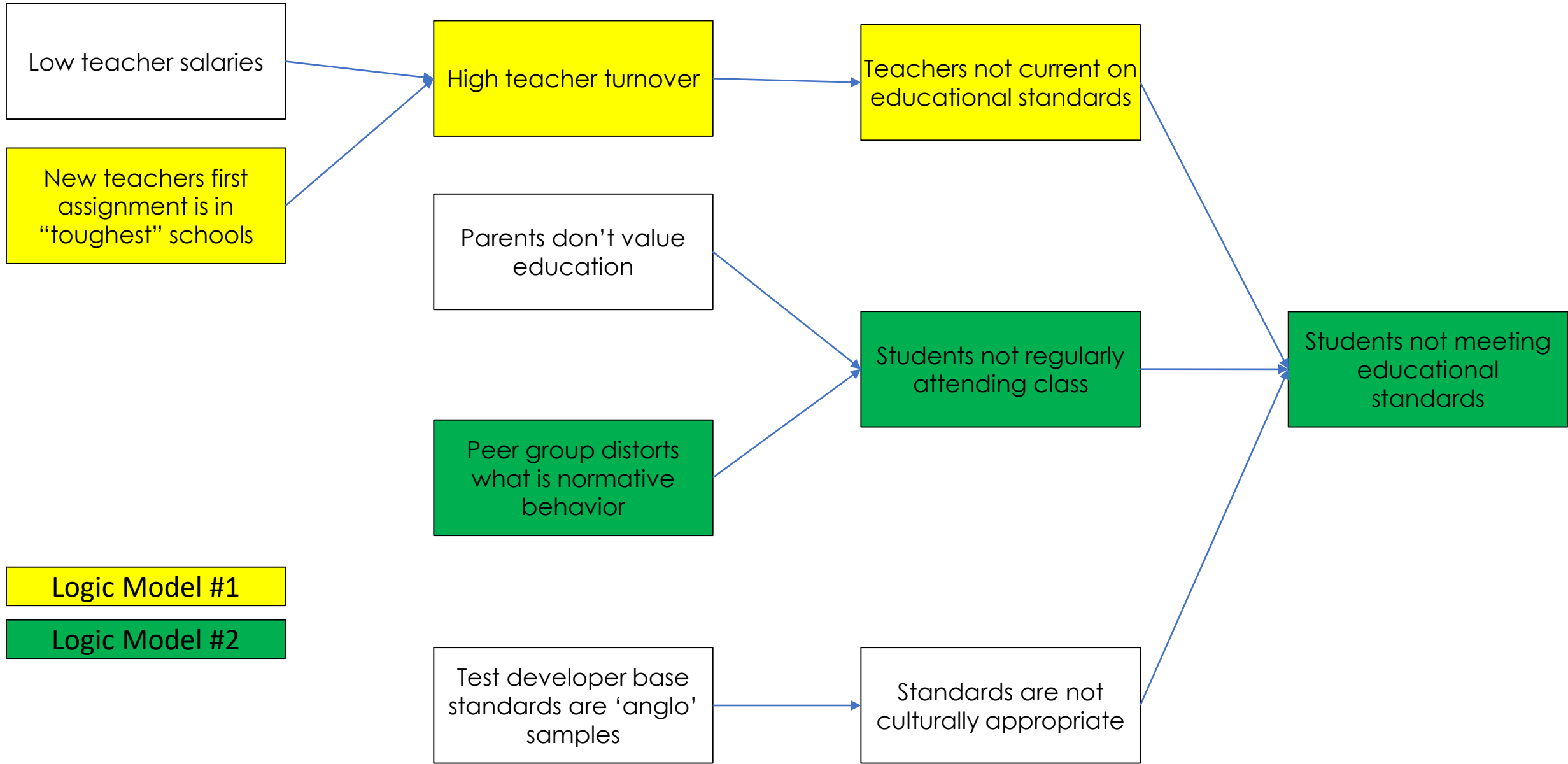
<https://doi.org/10.1177/1035719X19853660>





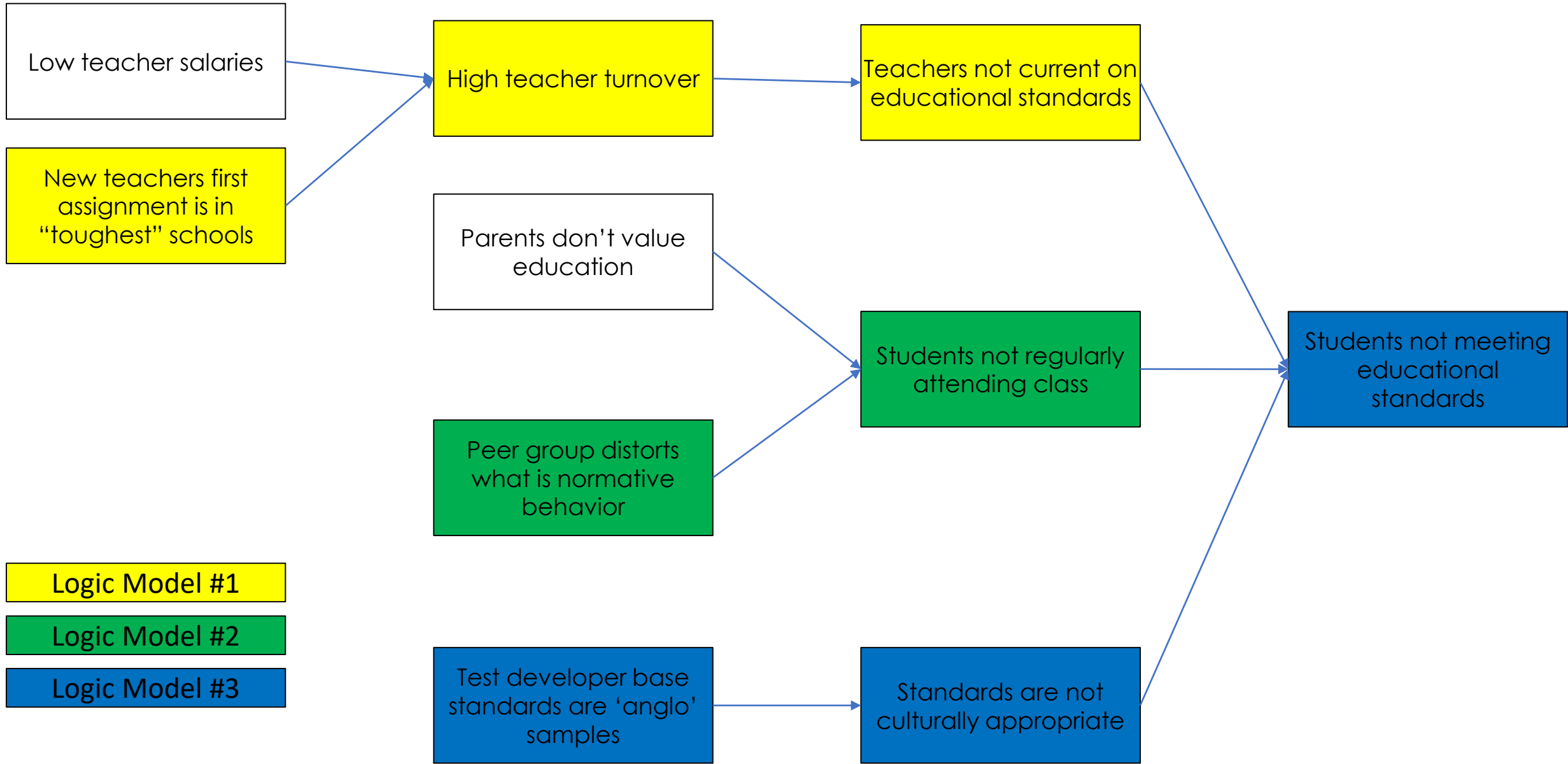


Program Assumptions	Intervention	Inputs	Outputs	Immediate	Intermediate	Long Term
If new teachers are brought along slowly they will be better prepared for tougher challenges, have longer tenure, be better prepared and students will have higher achievement	Teacher mentoring program	Funding Mentor training curriculum	Number of teachers in program	Lower teacher attrition rates	Teacher curriculum aligned with standards	Improved test scores



Logic Model #1

Logic Model #2



Logic Model #1

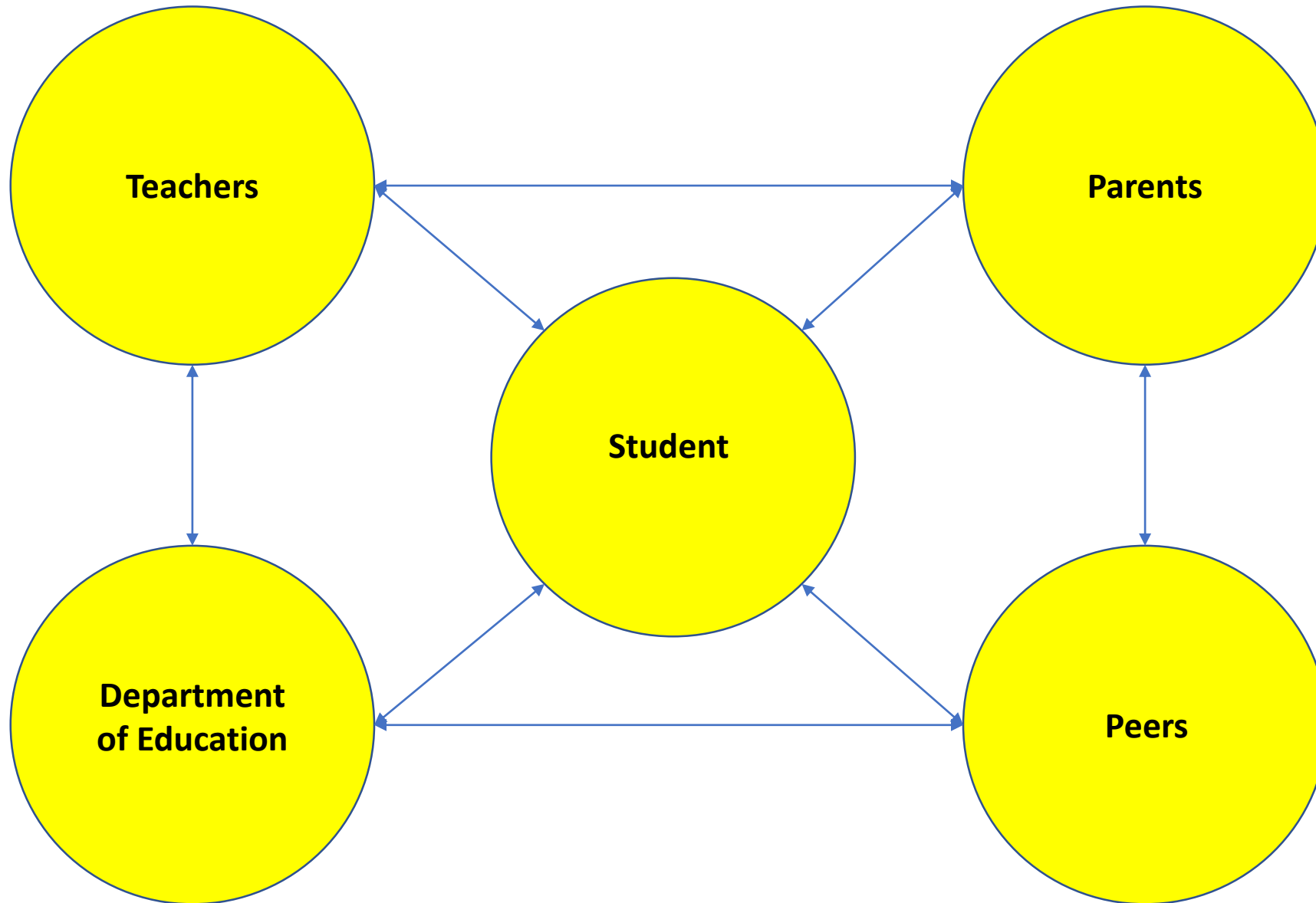
Logic Model #2

Logic Model #3

Why is SET different?

SET looks at a program as a series of systems (rather than a linear cause and effect process) and develops an understanding of the various interactions.

SET recognizes the need to evaluate the effectiveness of the system as a whole— attempting to isolate and evaluate the effectiveness of any part or subsystem is nonsensical.



SUMMARY OF KEY TERMS

Systems Evaluation Theory

- Boundaries
- Performance
- Feedback
- Cascading failures
- Reflex arcs

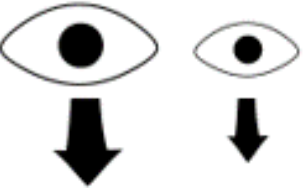
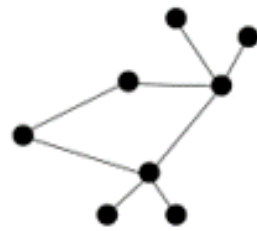
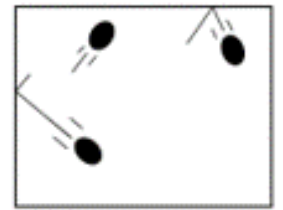
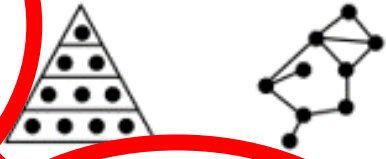
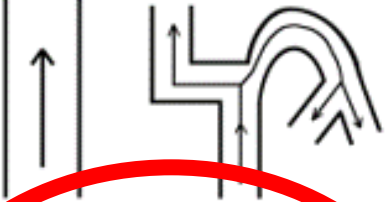







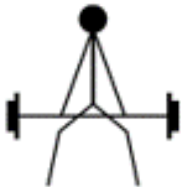

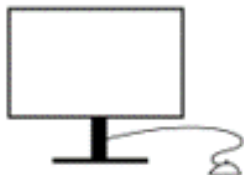
Principles for Effective Use of Systems Thinking in Evaluation

April 2018

- Relationships
- Emergence
- Dynamics



SET incorporates
all these principles

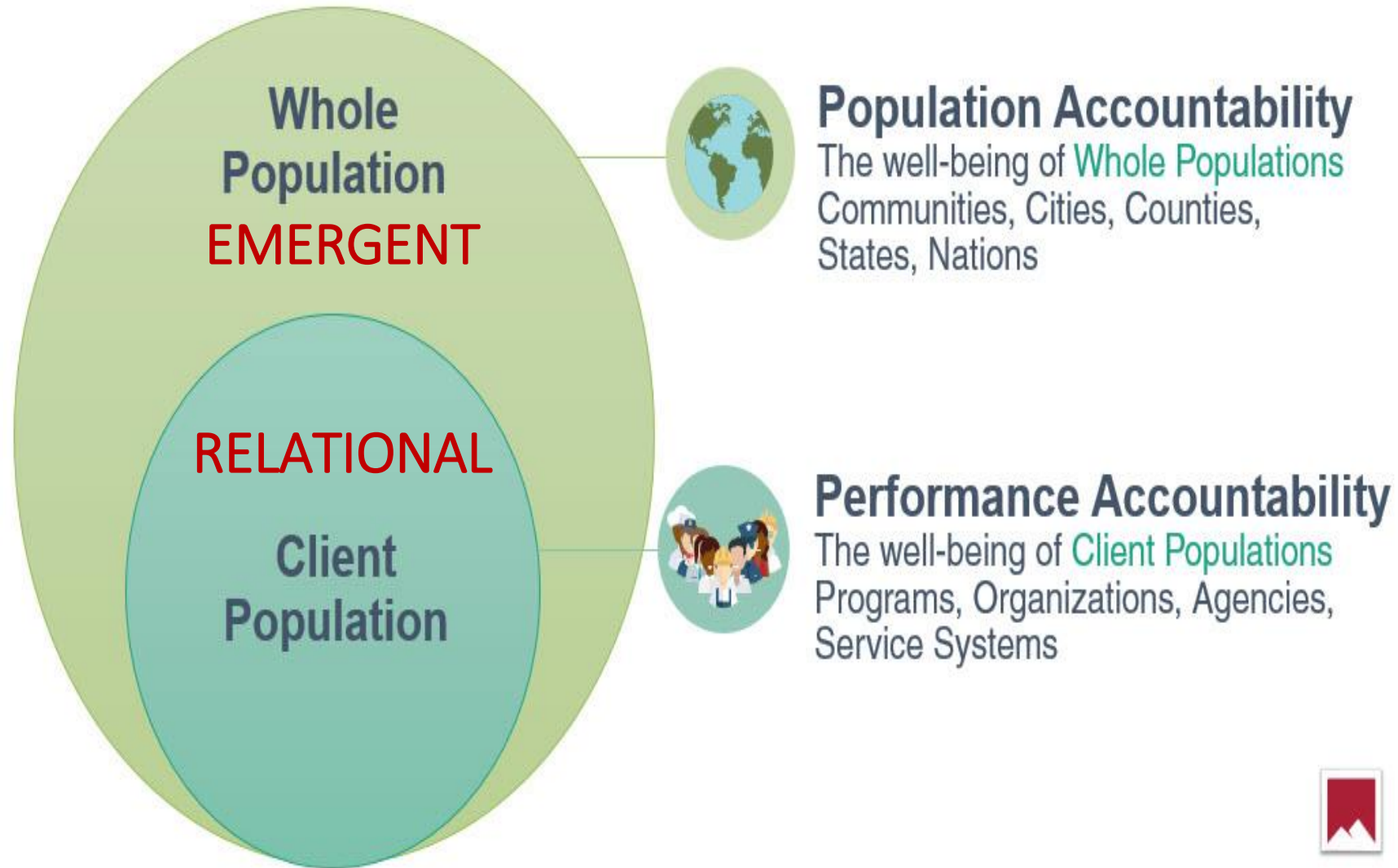
<p>PERSPECTIVES</p> 	<p>CONNECTEDNESS</p> 	<p>BOUNDARIES</p> 	<p>HIERARCHIES VS NETWORKS</p> 	<p>LINEAR VS NON-LINEAR</p> 
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<p>LEADERSHIP</p> 	<p>SYSTEMS WASTE</p> 	<p>TRAINING</p> 	<p>CULTURE</p> 	<p>I.T.</p> 

SET in 3 Steps

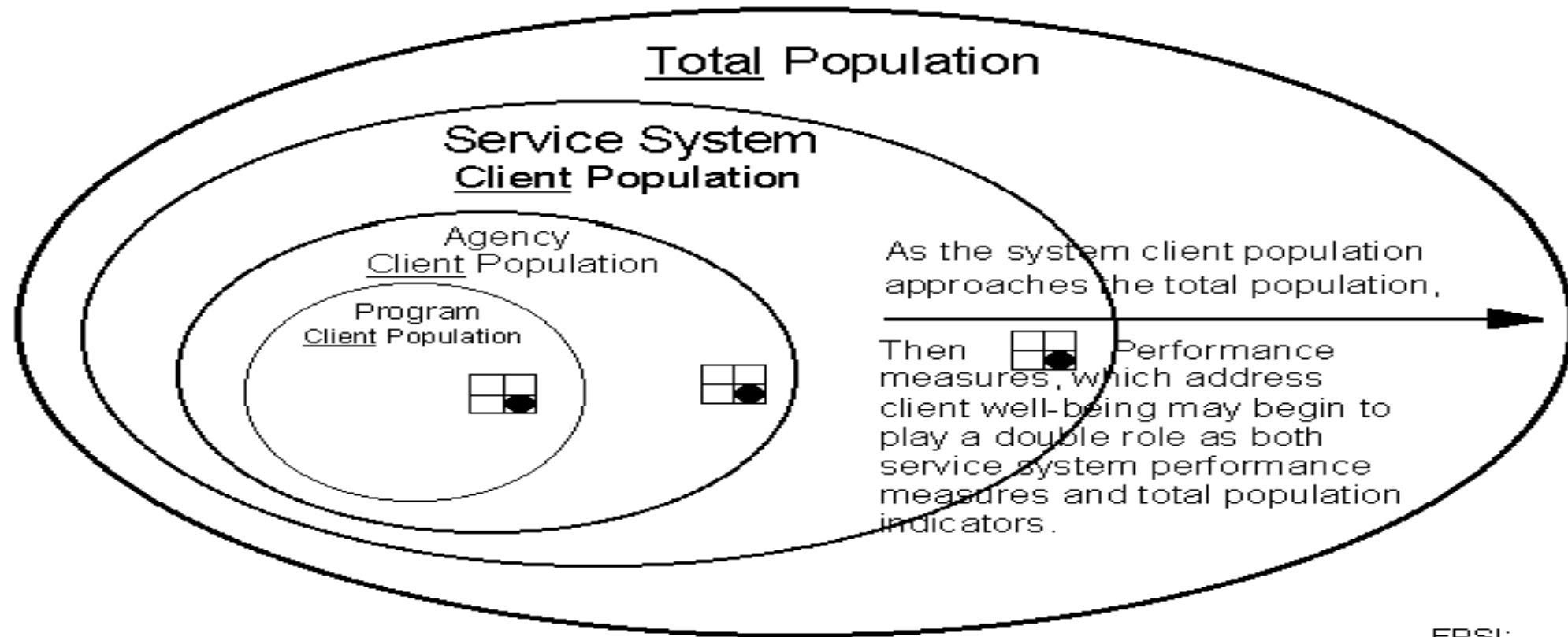
1. Define the system boundaries, elements, and relationships.
2. Evaluate efficiency in terms of how well the elements work together toward a common system goal.
3. Evaluate effectiveness in terms of how well the elements work together toward a common system goal.

A series of additional system concepts are brought to bear to meet the step 2 and 3 needs (including; feedback loops, reflex arcs, wholeness, synergy, etc.)

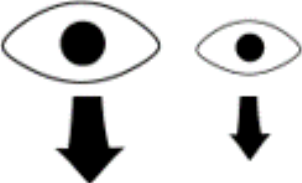


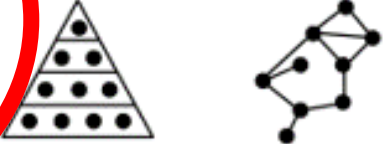
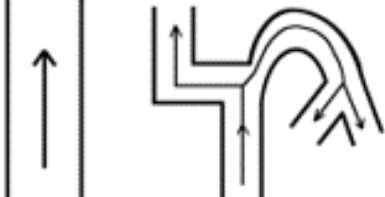







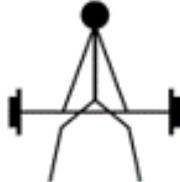

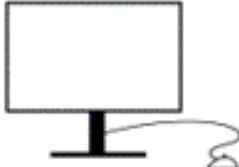
Results Based Accountability & Boundaries



An Advanced View of the Relationship Between Indicators and Performance Measures

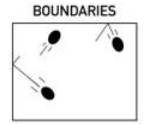


“it is extremely rare that any one program can change population conditions...p 98”

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Boundaries

Identify key boundaries. Look at the range of boundaries and potential consequences. Make transparent and justify the boundaries used.

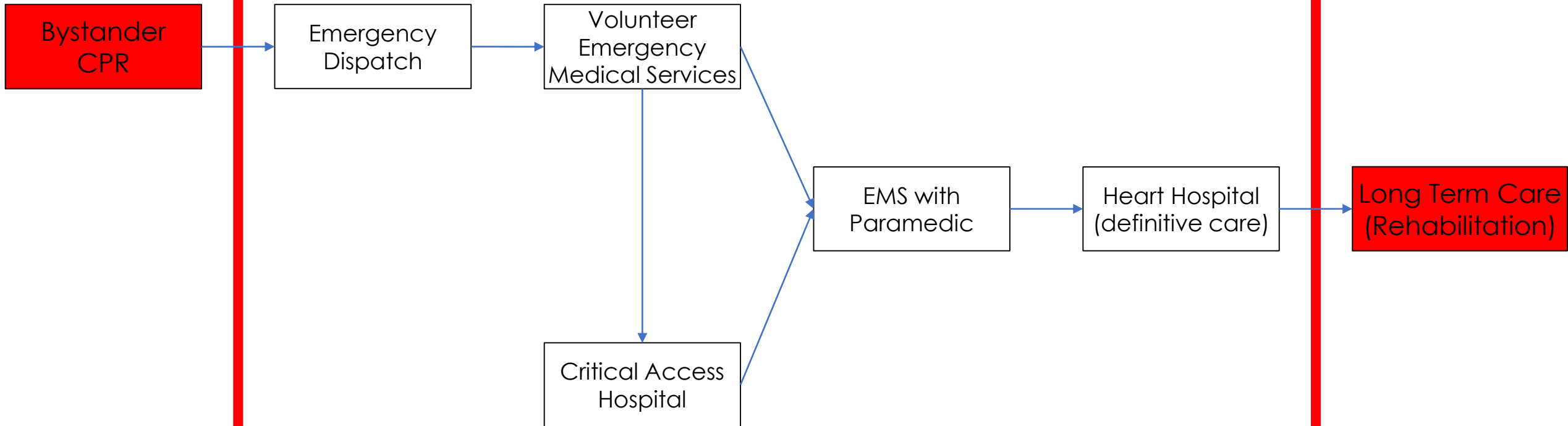


- Define system boundaries
 - Define common system goals
 - Define system inputs
 - Validate definitions and goals
- Elements aligned within the common goal are included in the system boundaries; those that are not aligned with the goal are excluded from the system boundaries.
- Define subsystems and subsystem boundaries

Goal

Get patient to definitive care as quickly as possible





START POINT - the stimulus that begins the system working towards its common goal.

END POINT - when the system stops working toward the goal, regardless of what has been achieved

IMPORTANT – whose perspectives need to be included for credibility, and to ensure the results are used?

An aerial photograph of a river basin. A winding river flows through the center, surrounded by agricultural fields and some forested areas. The terrain is a mix of brown, tan, and green, indicating different types of land use and vegetation. The river has several meanders and oxbow-like curves.

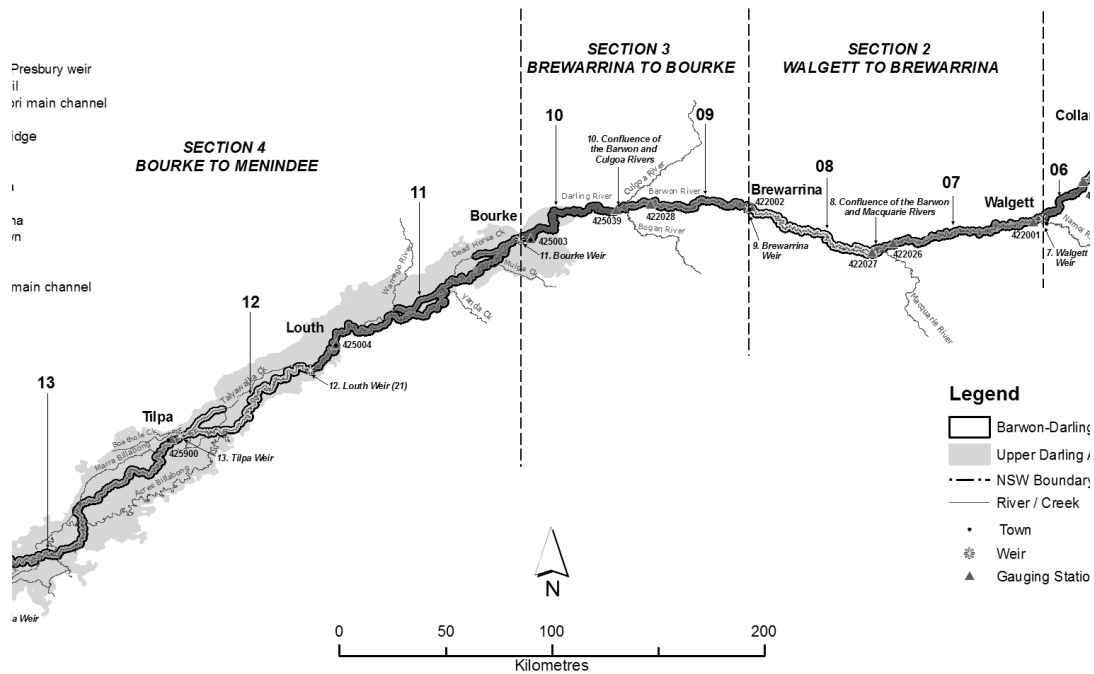
Goal

To improve the Basin's environment, while balancing social and economic needs in a sustainable way.

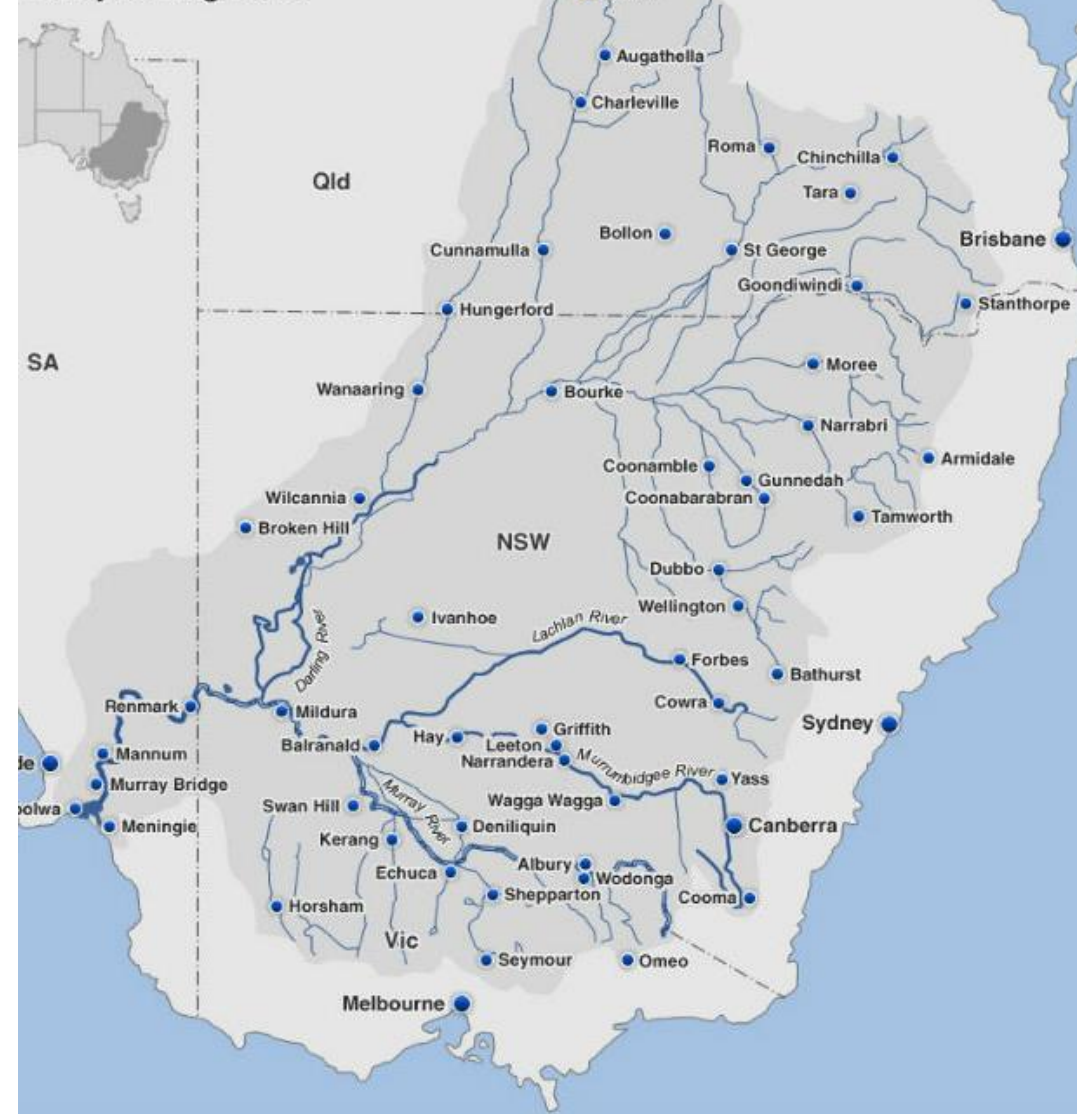
NAME

fluence Management Zone	08	Boorooma to Brewarrina Management Zone
Upstream Mogil Mogil Weir Pool Management Zone	09	Brewarrina to Culgoa River Junction Management Zone
Management Zone	10	Culgoa River Junction to Bourke Management Zone
Collarenebri Management Zone	11	Bourke to Louth Management Zone
Walgett Weir Pool Management Zone	12	Louth to Tilpa Management Zone
Management Zone	13	Tilpa to Wilcannia Management Zone
Boorooma Management Zone	14	Wilcannia to Upstream Lake Wetherell Management Zone

QUEENSLAND

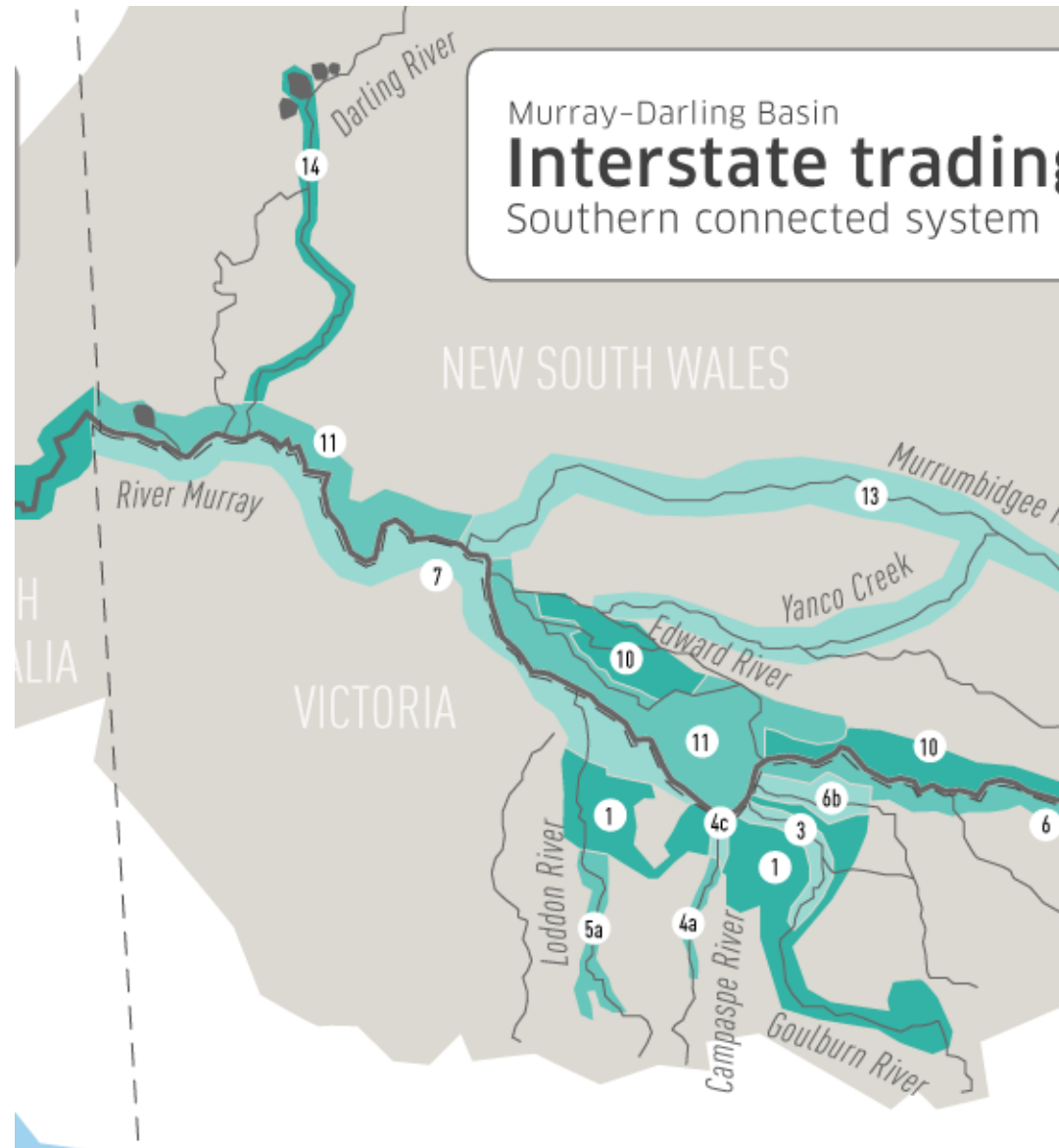
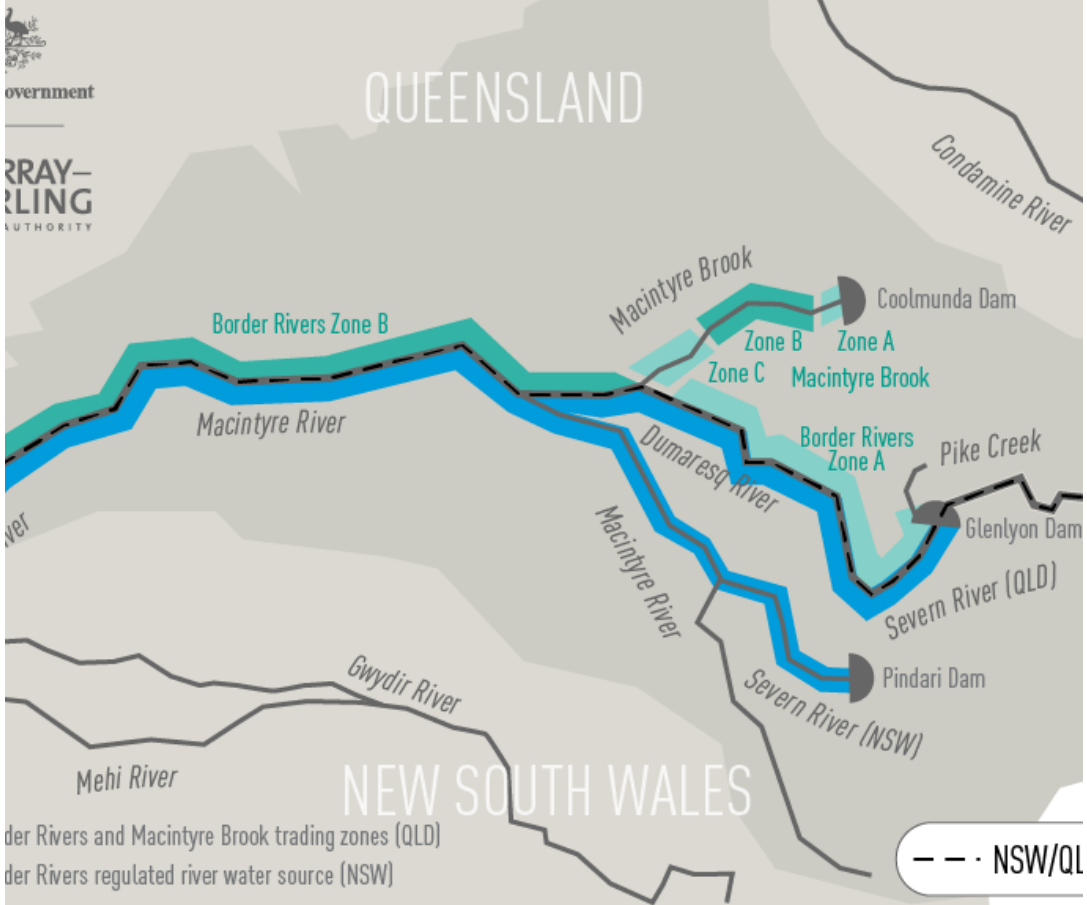


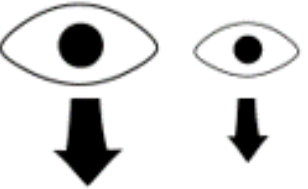
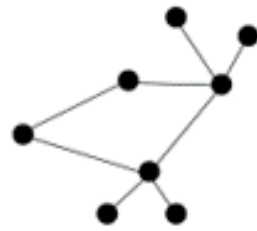
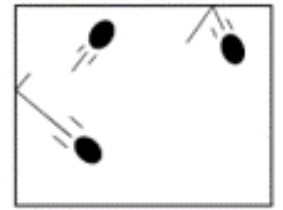

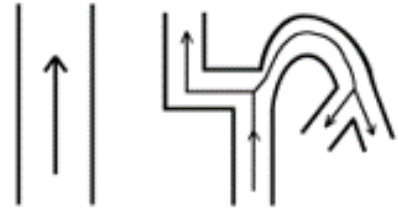

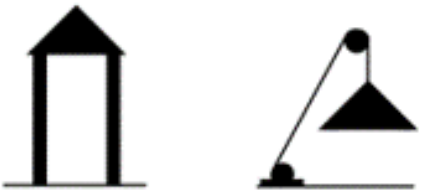


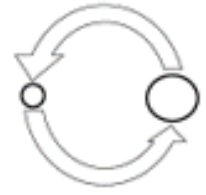


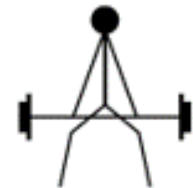

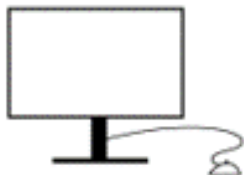
Murray-Darling Basin





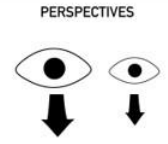
Murray-Darling Basin
Interstate trading zo
NSW/QLD Border Rivers



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Perspectives

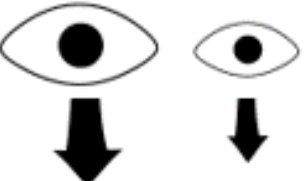
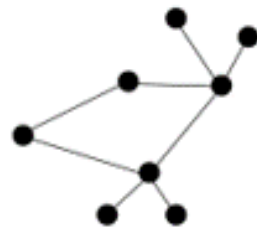
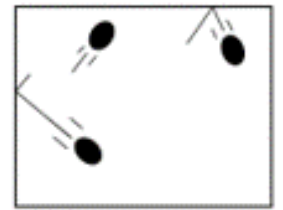

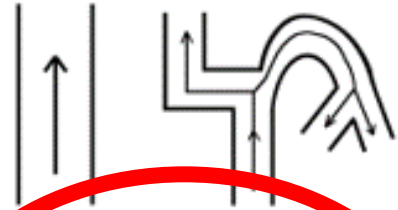




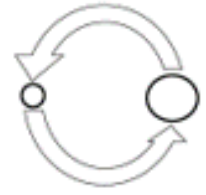


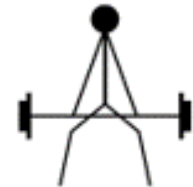

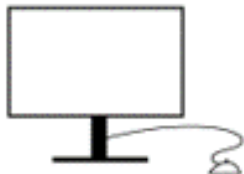
Capture and understand diverse perspectives. Include dissent and consensus. Attend the types of power and consequences associated with each perspective.



- Capture, critically deliberate on, work to understand, represent, and appropriately address diverse perspectives
- Seek dissent as well as consensus

Perspective...



<p>PERSPECTIVES</p> 	<p>CONCECTEDNESS</p> 	<p>BOUNDARIES</p> 	<p>HIERARCHIES VS NETWORKS</p> 	<p>LINEAR VS NON-LINEAR</p> 
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Feedback Loops

Systems must continually monitor the environment and make corrective actions in order to survive and grow.

FEEDBACK LOOP



- System feedback mechanism
 - How well is it functioning?
 - Within systems
 - Between systems
- Closed?
- Frequency, timeliness, credibility, specificity, and relevance.

急診即時資訊

等待候診人數

2

等待推床人數

0

等待住院人數

11

等待加護病床
人數

1

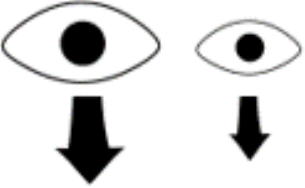
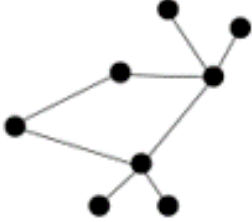





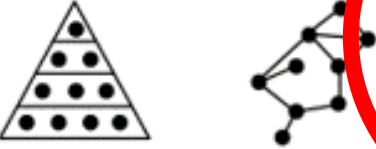

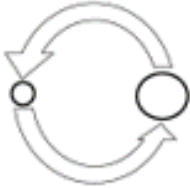


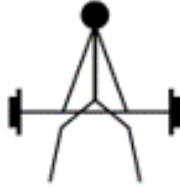

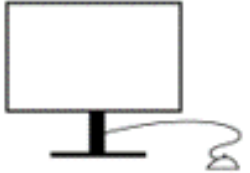
未向119通報滿床

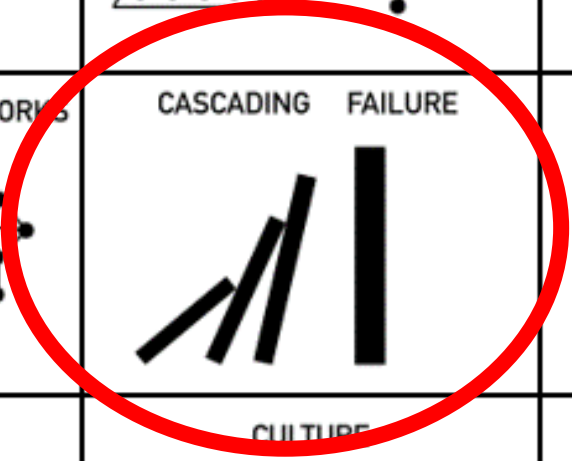
預防流感，請落實洗手等個人衛生措施，避免接觸禽鳥類；
返國後如出現發燒、咳嗽等類流感症狀，應戴上口罩儘速就醫

19/9/11 上午 10:48:03



風味

<p>PERSPECTIVES</p> 	<p>CONCECTEDNESS</p> 	<p>BOUNDARIES</p> 	<p>HIERARCHIES VS NETWORKS</p> 	<p>LINEAR VS NON-LINEAR</p> 
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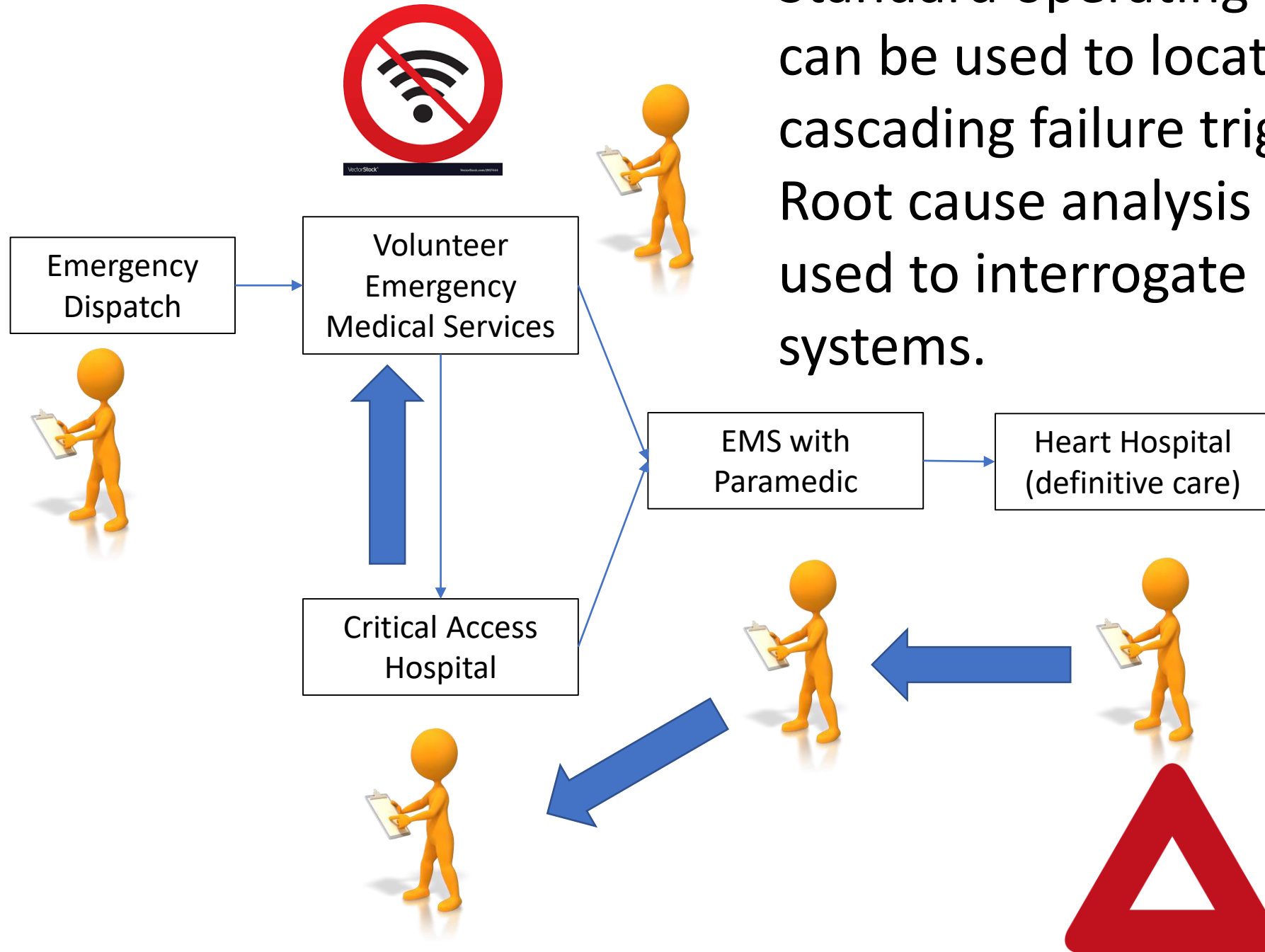
Cascading failure

A cascading failure occurs when a problem is passed from one subsystem to a downstream system creating domino effect that undermines system efficiency and effectiveness.



- A problem is passed from one subsystem to a downstream subsystem creating a domino effect
- Undermines system efficiency and effectiveness
- Also known as ***unintended consequences (UIC)***

Standard operating procedures can be used to locate system cascading failure trigger points. Root cause analysis is a process used to interrogate known systems.







2019 Menindee fish kills

- Insufficient oxygen – created by blue green algae
- Not enough water to avoid catastrophic outcomes

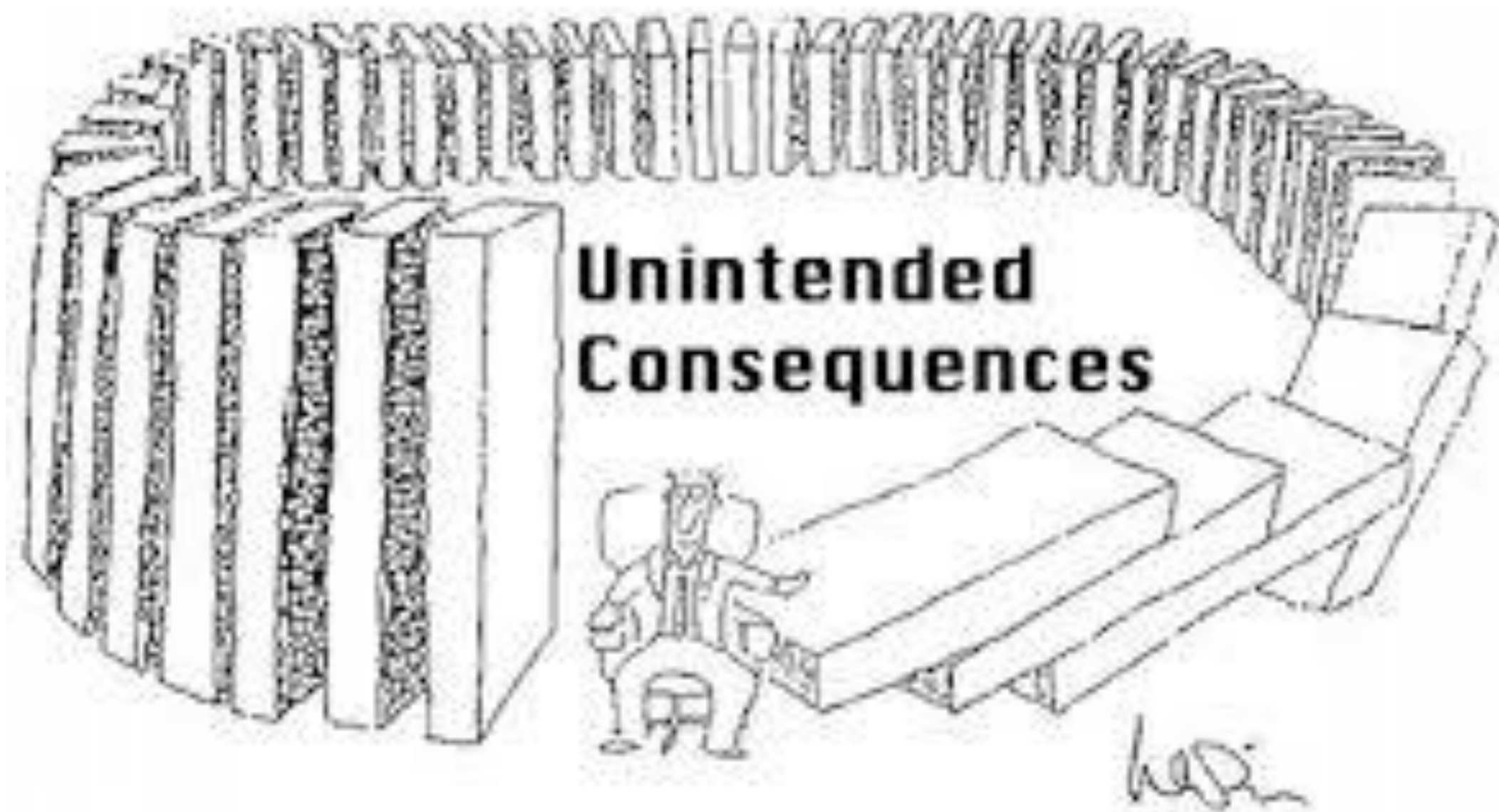
(excess water extraction upstream – each water sharing plan, intermingled with water trading, contributed to this failure)



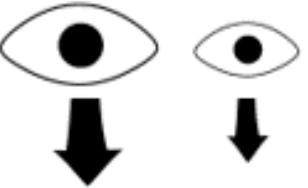
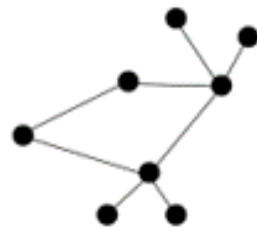
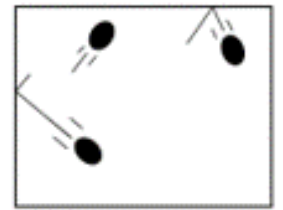
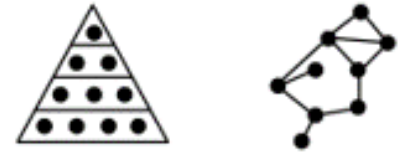
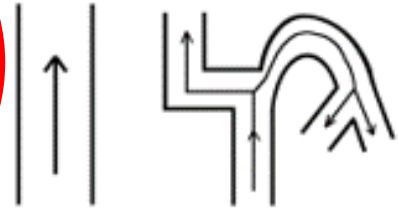




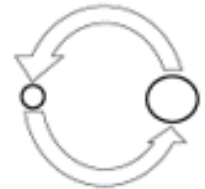


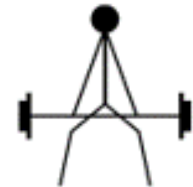

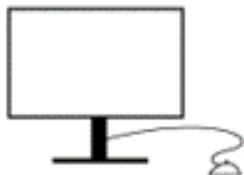
NSW minister altered Barwon-Darling water-sharing plan to favour irrigators

.... the combined impact of the changes was that diversions of water for irrigation grew by 32% or 51.4 GL

<https://www.theguardian.com/australia-news/2018/feb/08/nsw-minister-altered-barwon-darling-water-sharing-plan-to-favour-irrigators>



**Unintended
Consequences**

<p>PERSPECTIVES</p> 	<p>CONCECTEDNESS</p> 	<p>BOUNDARIES</p> 	<p>HIERARCHIES VS NETWORKS</p> 	<p>LINEAR VS NON-LINEAR</p> 
<p>OBJECTS VS RELATIONSHIPS</p> 	<p>STRUCTURES VS PROCESSES</p> 	<p>HIERARCHIES VS NETWORKS</p> 	<p>CASCADING FAILURE</p> 	<p>FEEDBACK LOOP</p> 
<p>LEADERSHIP</p> 	<p>SYSTEMS WASTE</p> 	<p>TRAINING</p> 	<p>CULTURE</p> 	<p>I.T.</p> 

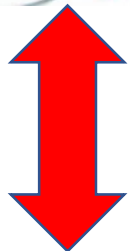
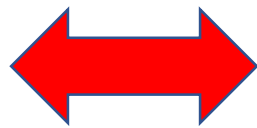
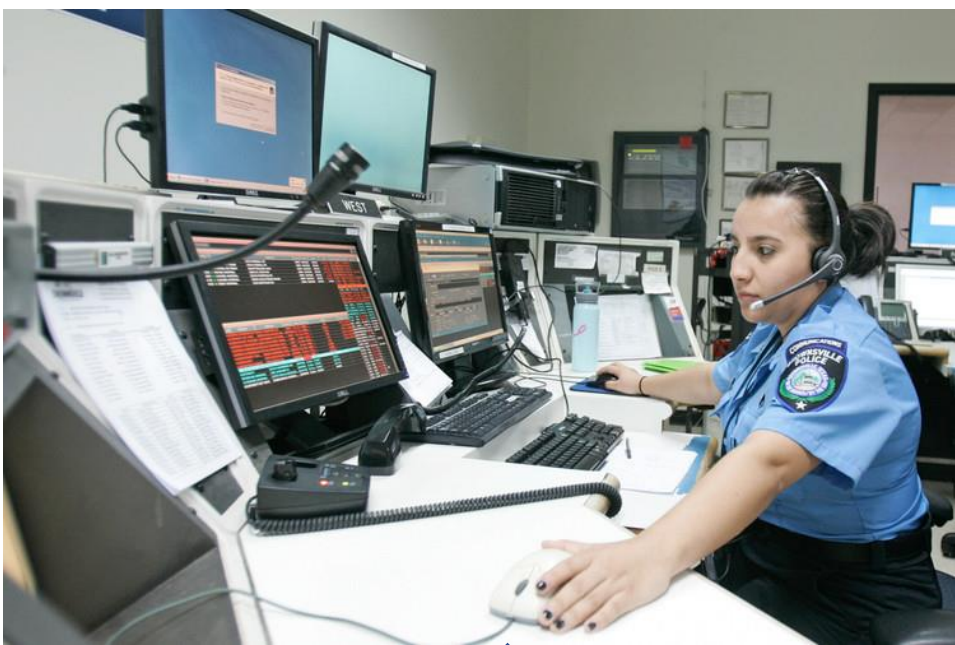
Reflex Arcs

A reflex arc is a short cut to another part of the process resulting from a decision point in the system.

REFLEX ARC



- The ability of a system, in certain circumstances, to cut out unnecessary steps



Applying Systems Thinking Concepts in Evaluating Programs & Systems

Workshop venue: Victoria University, College of Law and Justice, Phillips Common Room located on Level 2, [City Queen Campus](#), 295 Queen Street, Melbourne.

Workshop Date & Time: Wednesday 11 March 2020 9:00 am to 4:30 pm

Workshop Price: \$450 + GST (AES members receive 15% discount)

Registration link:
<https://hainescentreaustralia.com.au/registration/>

Please note that the target audience for this workshop will be evaluation practitioners who are considering inclusion of systems evaluation within their practice.



The flyer is a vertical rectangular document with a blue and white color scheme. At the top left is a portrait of Dr. Ralph Renger. The title is in a large, bold, blue font. Below the title, it says 'Dr Ralph Renger presents public workshops in Australia'. A blue box on the left contains the text 'Workshop Details'. To the right of this box, the date, location, cost, and contact information are listed. Below this is a large, abstract, geometric graphic. The bottom section of the flyer contains a detailed biography of Dr. Renger, his research interests, and a testimonial from Kelly Minas.

Applying Systems Thinking Concepts in Evaluating Programs & Systems
Dr Ralph Renger presents public workshops in Australia

Workshop Details

Date
Wednesday 11th March, 2020

Location
Melbourne, Victoria.
Details to be advised

Cost
\$450 + GST
(AES members receive 15% discount)

Contact
Brian Keogh
briankeogh@icloud.com
0439 028 269

Dr Ralph Renger
Dr Renger specialises in applying system thinking concepts to evaluate programs and systems. He published System Evaluation Theory (SET) in 2015 and continues to evolve and apply SET.

For the last decade Dr Renger has been a Professor of Public Health in the Schools of Medicine at the University of Arizona and the University of North Dakota.

He has spent over twenty five years being responsible for evaluating local, state, national and international programs. These evaluations have covered a broad range of interventions. The evaluations have included:

- Mining injuries prevention programs in Zambia
- Deforestation alleviation programs in Brazil
- Seasonal affect disorder programs in Alaska
- Children's social skills programs in Germany

Dr Renger has also carried out many evaluations across the US and Canada.

Advancing systems theory methods for program evaluation
Dr Renger has published over 70 articles in peer reviewed publications around the world. His experience in the field has made him aware and frustrated with the limitations surrounding the foundations to evaluation being established through program logics. As a result he developed Systems Evaluation Theory (SET). Since his first article on SET, he has collaborated and developed his theory with evaluation practitioners across the globe.

For this workshop, he will be supported by Brian Keogh & Dr Lewie Atkinson, two Australian collaborators with Dr Renger in the development of SET.

"Thanks for a wonderful workshop. I think it was probably the most useful one I've attended in my years at American Evaluation Association"

Kelly Minas
AEA National Conference, Minnesota 2019