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SYSTEMIC STRATEGY:

Systemic Design Methods for Complex Systems Change

Ryan J. A. Murphy (MUN) & Peter Jones (OCAD U)

Outline & Takeaways

Combining systems models with theories of change/action

1. Systemic design is a key discipline for appreciating complexity and “muddling through” progress in wicked problems
2. A conventional approach to designing change initiatives (Theories of Change) is effective for **strategizing** but may problematically reduce complexity
3. Systemic design methods (Causal Loop Diagrams) can augment these methods
4. We show how to use these methods together to design change strategies
5. A seed-tree-forest metaphor provides a framework for systemic strategies

Systemic design & systems change

Transdisciplinarity and wicked problems

- Systemic design is a key practice for systems change

  (Jones, 2017)

- Aim: foster strategic changes across systems to bring about progress at scale

  (Gopal & Kania, 2015)

- There is an increasing interest in systemic change from foundations, philanthropists, investors, NGOs, and governments

  ("Systems Change," 2020; Walker, 2017; "Systems Change: An Emerging Practice in Impact Investing," 2019; Banerjee et al., 2019; OECD, 2017)

- The problem: how do we connect systemic design methods with conventional approaches to problem-solving?

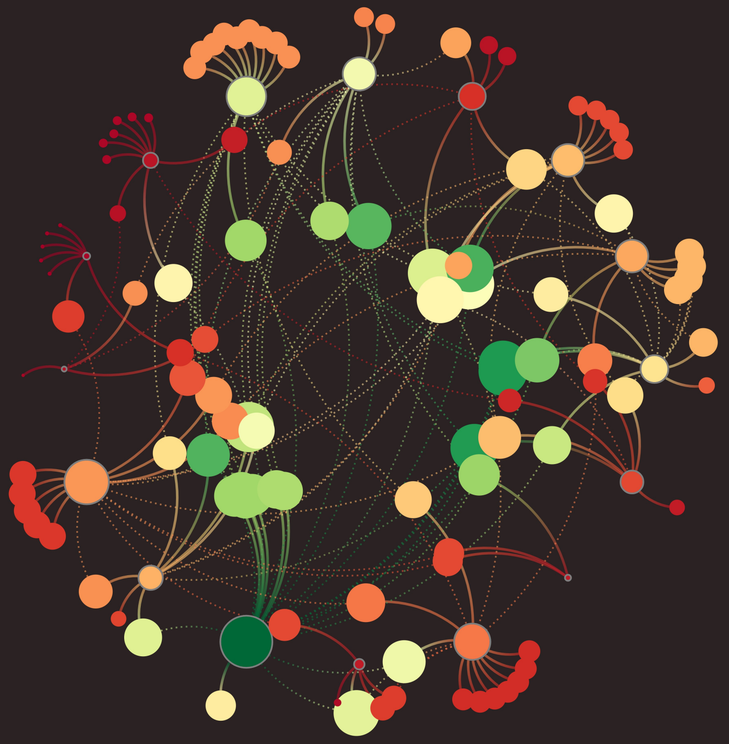


Image: Leverage analysis of the SDGs and their targets (Murphy & Jones, 2019)

Theory of Change

A conventional approach to program (intervention) design

- Theories of Change (ToC) and their counterparts, Theories of Action (ToA) are fundamental tools of program design and evaluation

  (Mackinnon, 2006)

- ToCs and ToAs:
  - Make explicit a team's understanding of the problem
  - Externalize assumptions (and biases)
  - Create shared mental models about the ways interventions should work

  ("Theory of Change: A Practical Tool," 2004)

- Useful in communicating ideas and engaging collaborators and stakeholders

  (Abercrombie et al., 2018, p. 5)

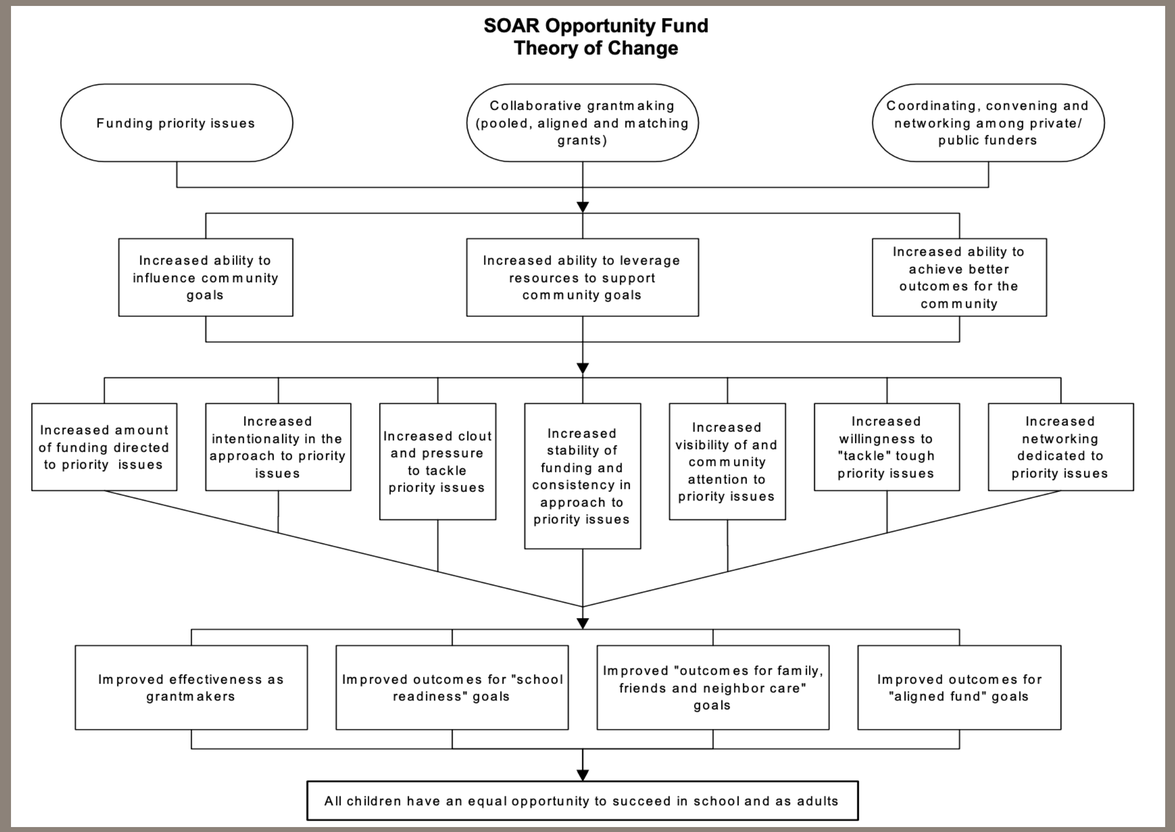


Image: An example Theory of Change, excerpted from "Theory of Change: A Practical Tool," 2004, p. 25)

Theory of Change

A conventional approach to program (intervention) design

- However!
  - ToCs may be overly reductive.

(Abercrombie et al., 2018, p. 5)

    - Overly linear
    - Compact
    - Feedbacks?
- <u>Is there a way to ensure systemic complexity isn't lost in ToCs?</u>

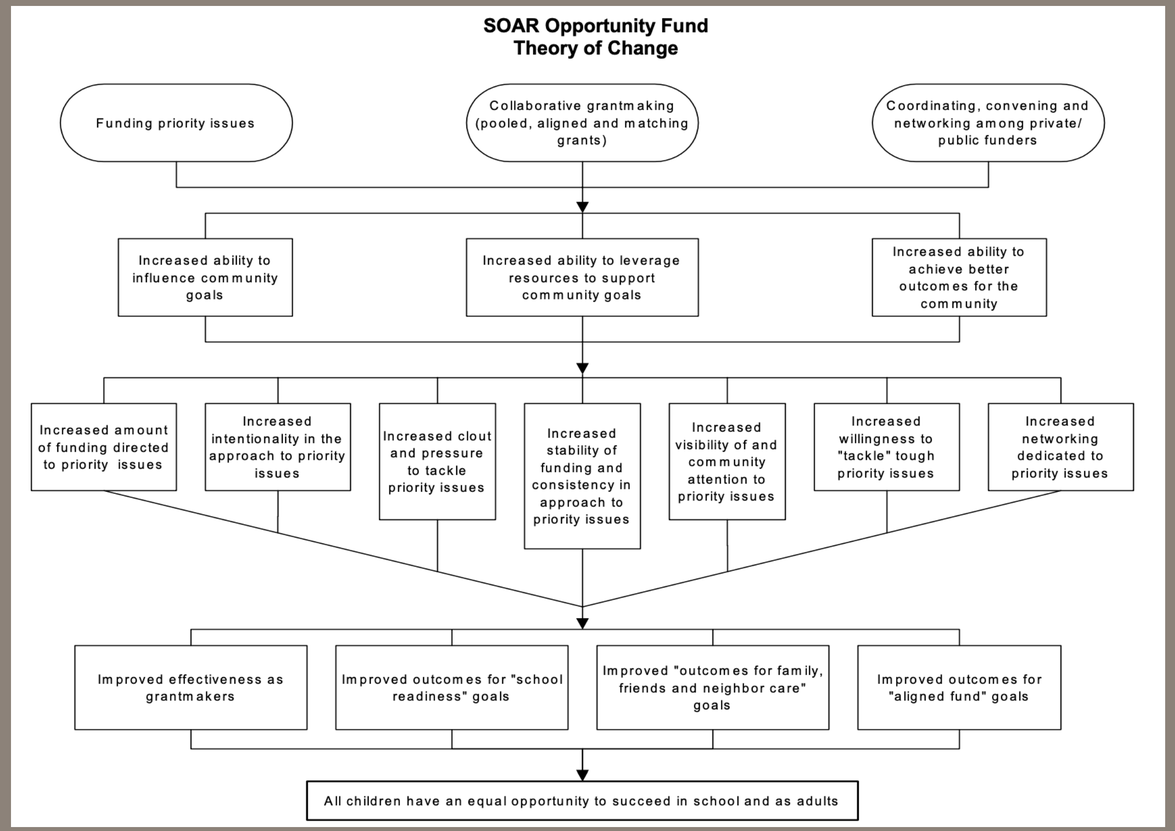


Image: An example Theory of Change, excerpted from "Theory of Change: A Practical Tool," 2004, p. 25)

Causal Loop (or Influence) Diagrams

Mapping complexity

- Causal Loop Diagrams (CLDs) capture the structure of change in systems
  - Similar to ToCs, but:
    - CLDs do not shy away from complexity
    - Represent systemic dynamics
    - Illustrate counterintuitive (and strategically valuable) feedback loops and other structures

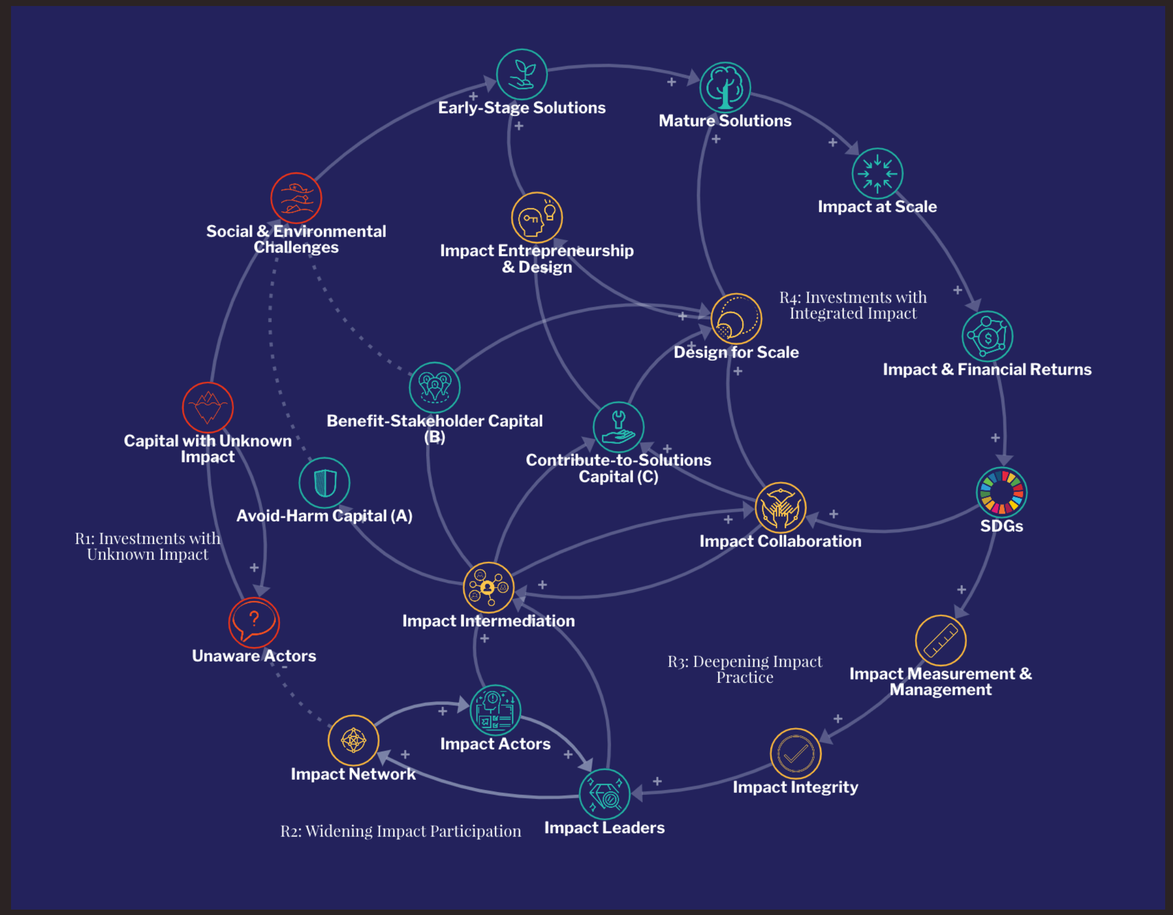
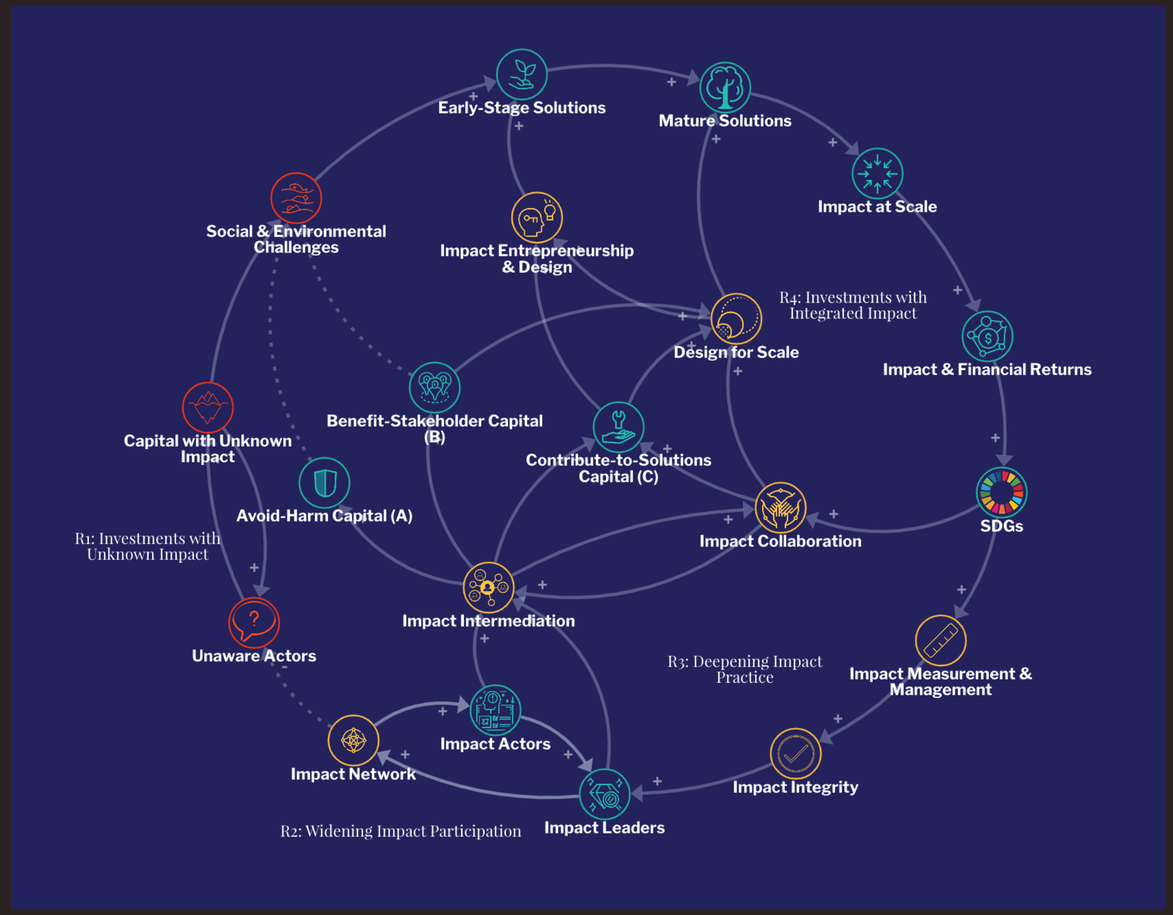


Image: Causal Loop Diagram representing the Global Steering Group for Impact Investment's change strategy (Global Steering Group for Impact Investment, 2018, p. 16-17)

Causal Loop (or Influence) Diagrams

Mapping complexity

- However!
  - CLDs may be overly complex
  - Can be hard to communicate
  - Can be hard to *use*



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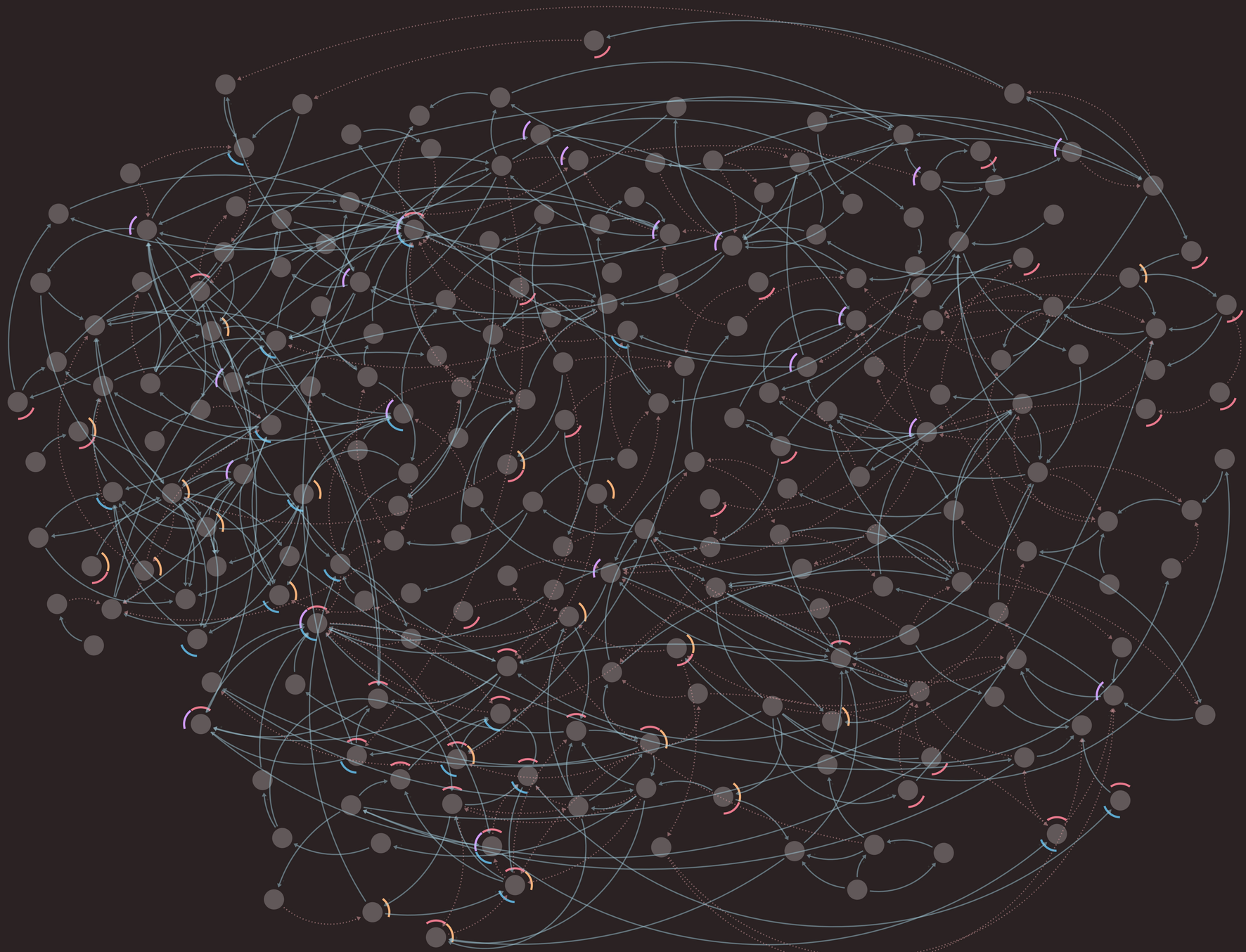

reaction
opposite direction

Causal Loop (or Influence) Diagrams

Mapping complexity

- The challenge:
  - Use CLDs to appreciate the complexity of the problem
  - Use ToCs to design effective strategies
- The response: Systemic Theories of Change

Systemic Theories of Change

Using leverage analysis to combine CLDs and ToCs

- A Systemic Theory of Change (SToC) uses CLDs and a technique called *leverage analysis* to develop systemically-informed ToCs

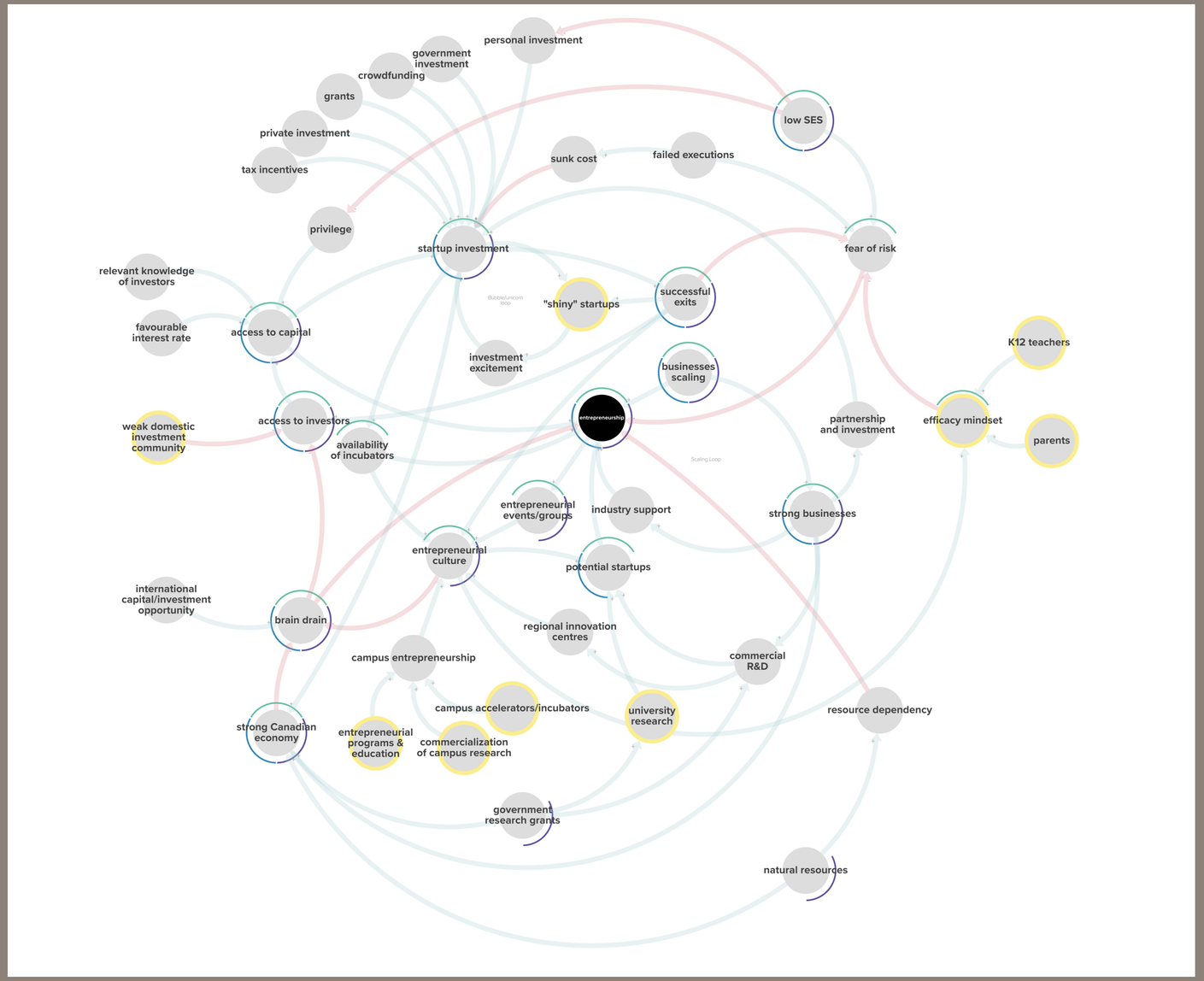
(Murphy & Jones, 2019; Murphy & Jones, 2020)

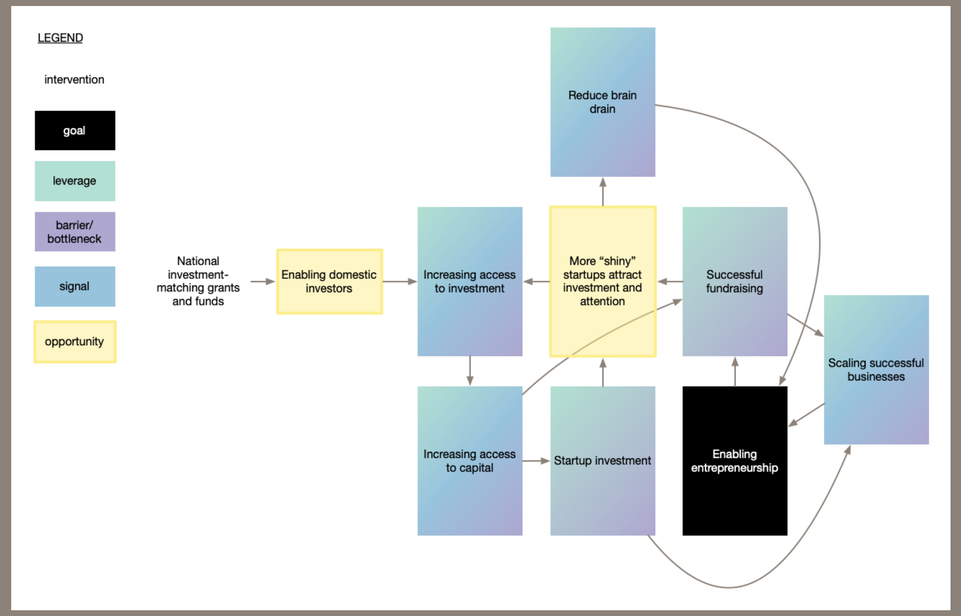
- The process:
  - Map and model complexity with a CLD
  - Identify the goal/target phenomena in the system
  - Conduct leverage analysis to identify high-leverage phenomena, bottlenecks and barriers to change, and other features
  - Identify systemic theories of change by charting paths between points of intervention, leverage points, other systems features, and goals/targets

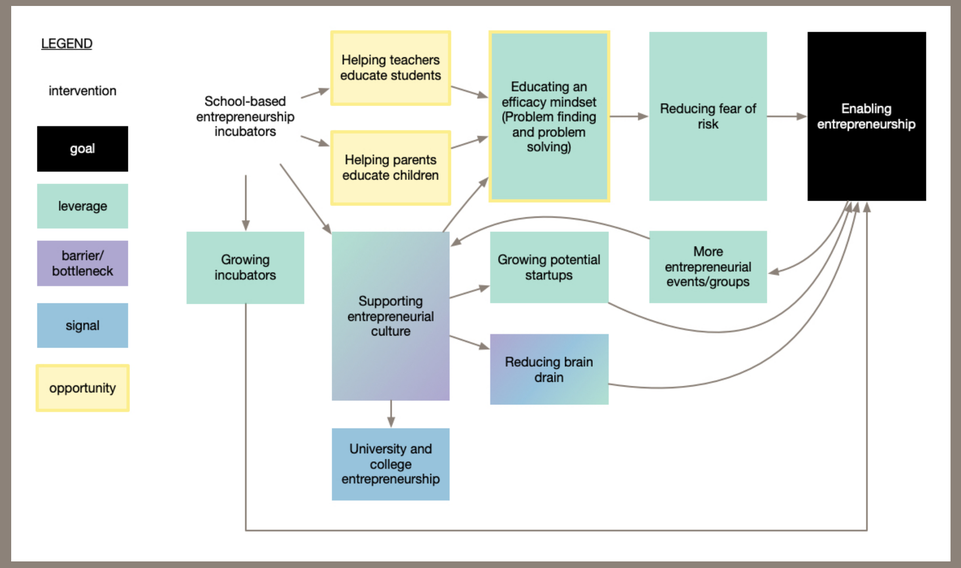
Below: CLD of Canada's entrepreneurship system visualized with the results of leverage analysis

(Murphy & Jones, 2020)

Right: Two possible SToCs







Towards Systemic Strategies

Leveraging complexity

- How might we combine multiple SToCs to develop comprehensive strategies for complex systems change?
  - Strategy seeds, trees, and forests

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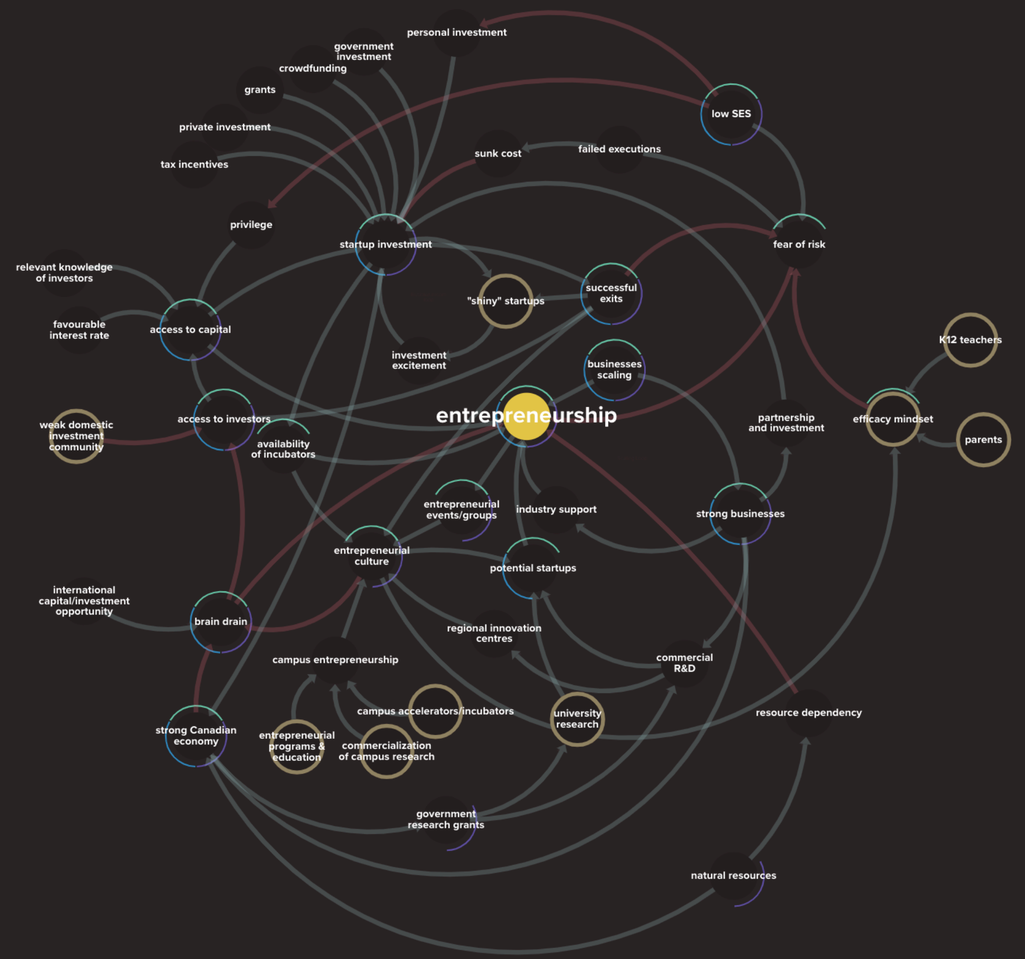
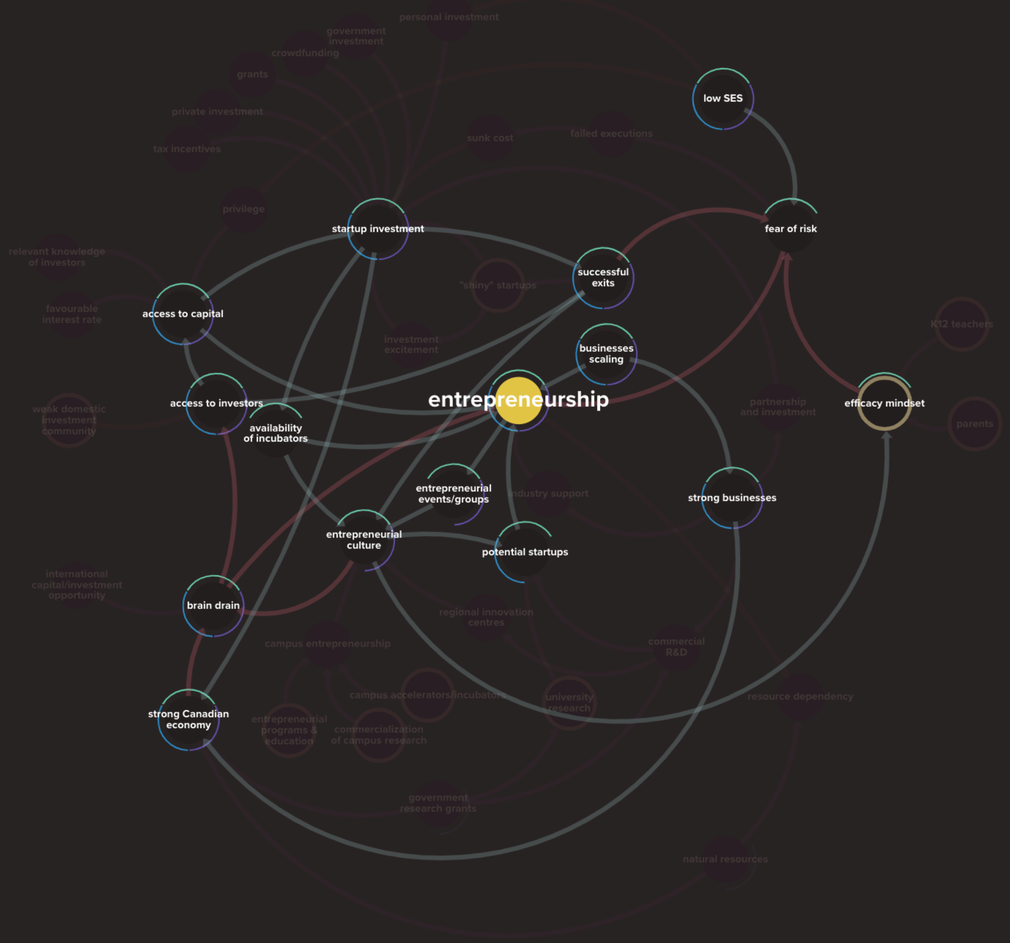


Towards Systemic Strategies

Leveraging complexity

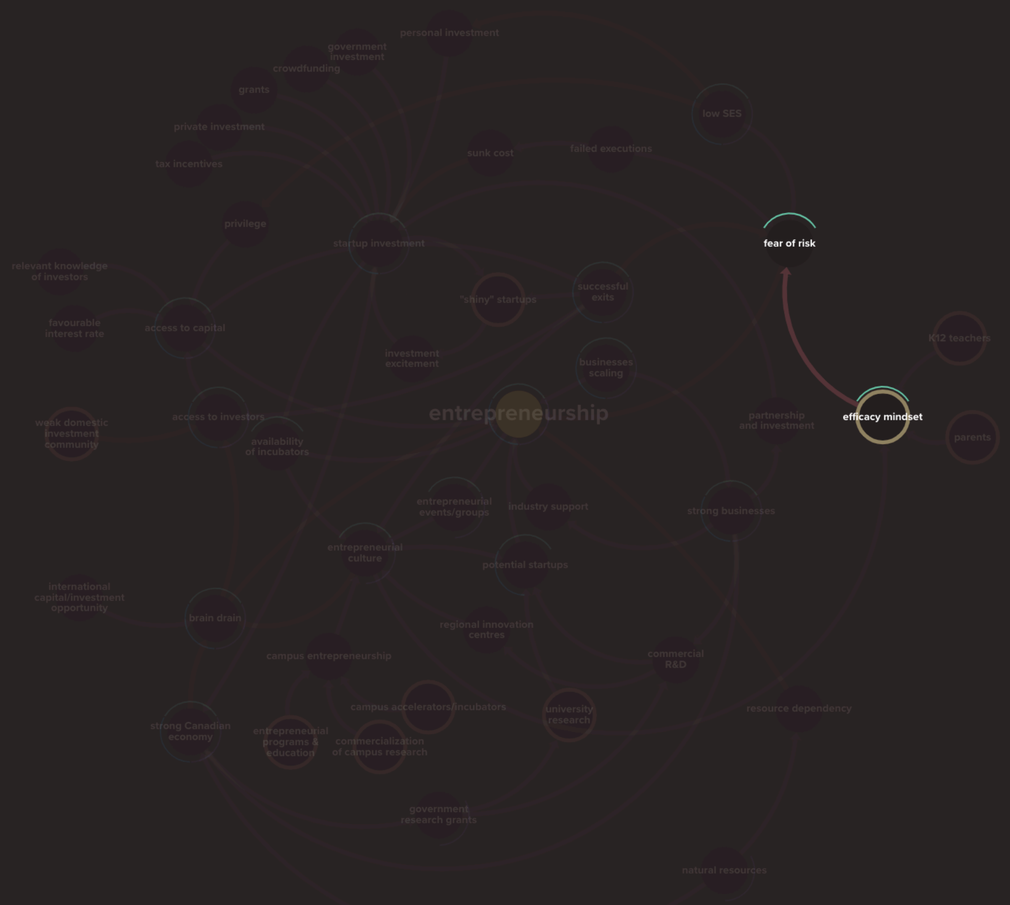
- How might we combine multiple SToCs to develop comprehensive strategies for complex systems change?
  - Strategy seeds, trees, and forests
    - High-leverage points provide “seeds” for strategic ideas



Towards Systemic Strategies

Leveraging complexity

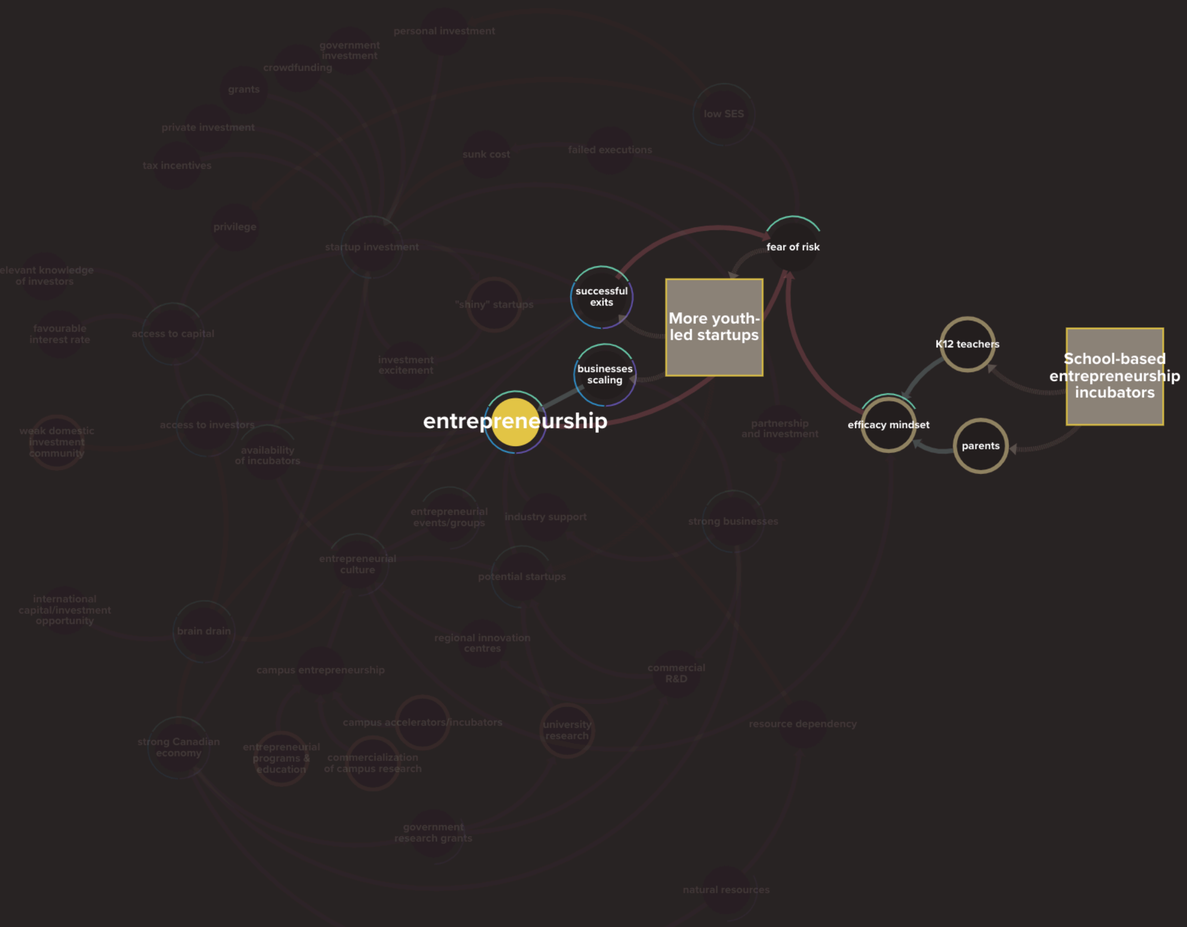
- How might we combine multiple SToCs to develop comprehensive strategies for complex systems change?
  - Strategy seeds, trees, and forests
    - High-leverage points provide “seeds” for strategic ideas
    - Choosing one (or several thematically-related phenomena), work outwards to build a tree of strategy options



Towards Systemic Strategies

Leveraging complexity

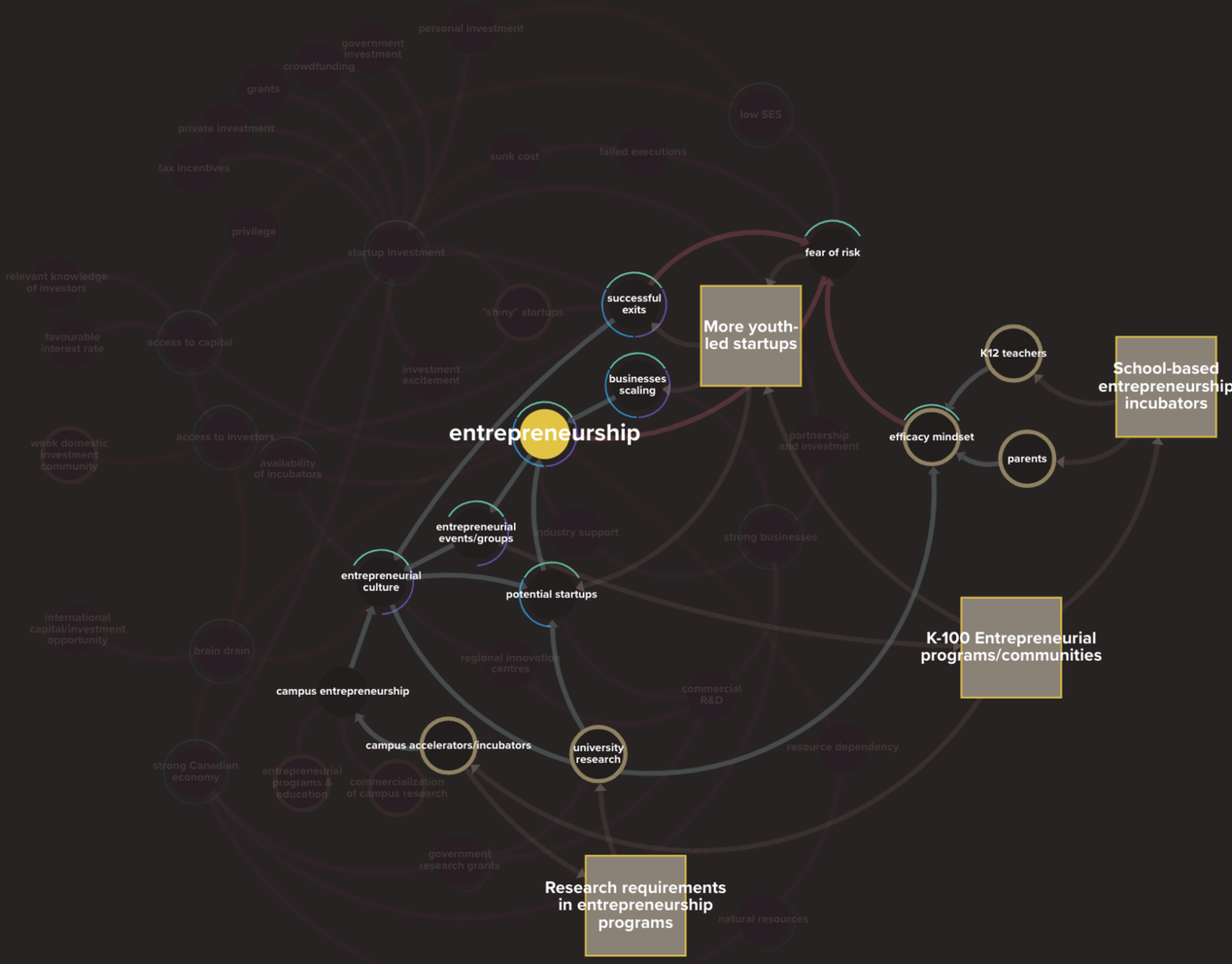
- How might we combine multiple SToCs to develop comprehensive strategies for complex systems change?
  - Strategy seeds, trees, and forests
    - Grow strategic “roots” by identifying interventions on accessible phenomena: opportunities that are easily acted upon by the initiative’s collaborators
    - Grow strategic “branches” by finding paths between the seeds and the goal



Towards Systemic Strategies

Leveraging complexity

- How might we combine multiple SToCs to develop comprehensive strategies for complex systems change?
  - Strategy seeds, trees, and forests
    - Grow strategic “forests” by identifying multiple trees with linked/related interventions, resources, or other alignments



Strategy seeds, trees, and forests

A metaphor for systemic strategy

- Strategy seeds provide a useful and compelling way to initiate systemic strategic thinking
- Strategy trees are analogous to Theories of Change/Action, only they account for systemic context and structures
- Strategy trees also fit with conventional management strategy tools

  E.g., Strategy maps (Kaplan & Norton, 2000)

- Like natural forests, strategy forests form systems with emergent and self-sustaining behaviour

Conclusions

- We have presented:
  - a novel method of integrating conventional approaches to change strategy with systemic design
  - A useful metaphor-framework for the development of comprehensive change strategies
- Future research:
  - How to effectively incorporate systems archetypes and feedback loops?
  - Is this process intuitive for people unfamiliar with systemic design?
  - Is this process *actually* more effective than conventional approaches?

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