GACD Implementation Science e-Hub

ADVANCED PROGRAMME

GLOBAL ALLIANCE FOR CHRONIC DISEASES
AN ALLIANCE OF HEALTH RESEARCH FUNDERS

MODULE 2 | LECTURE 2C

Connecting context, complexity, and scale up

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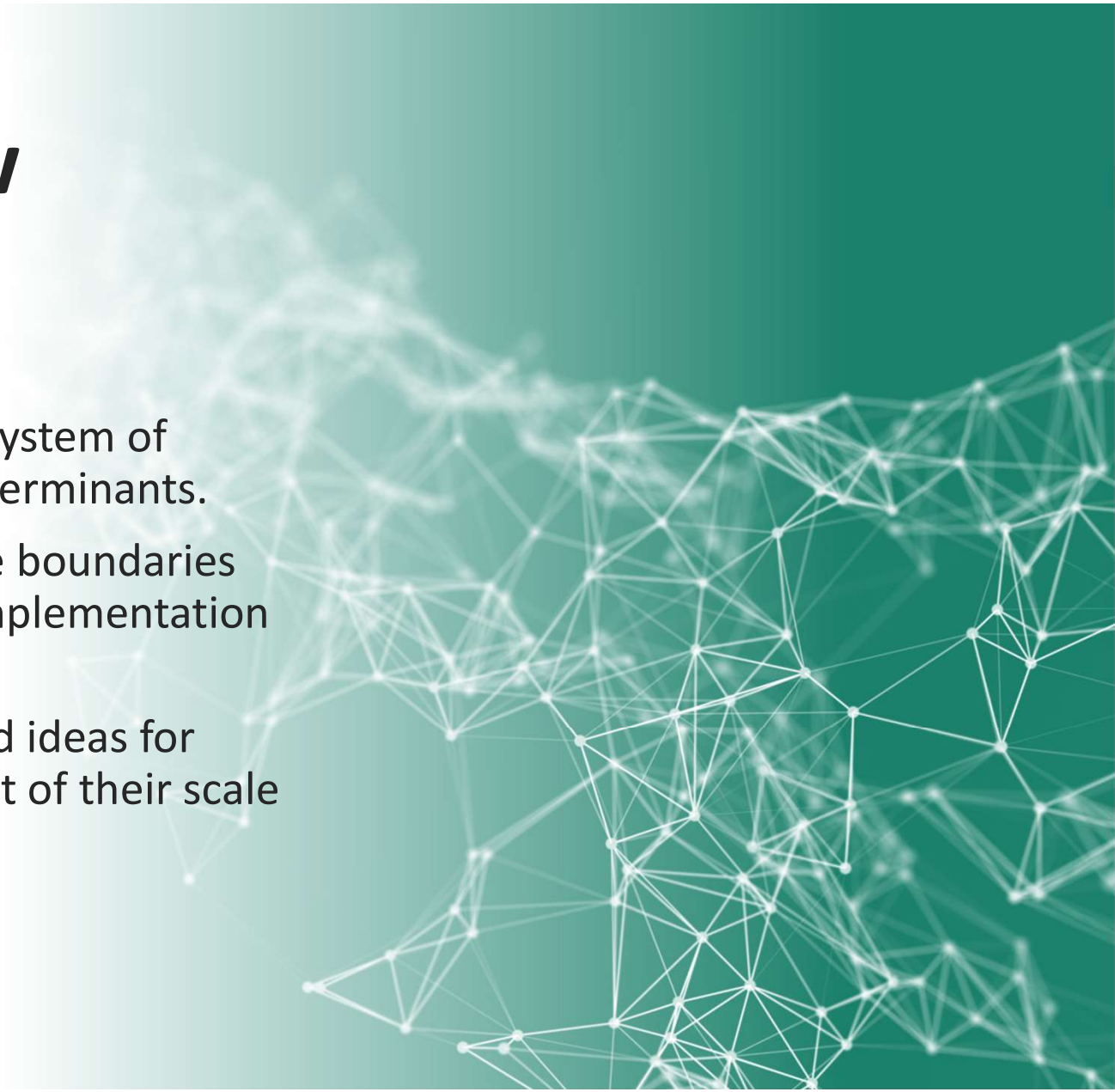
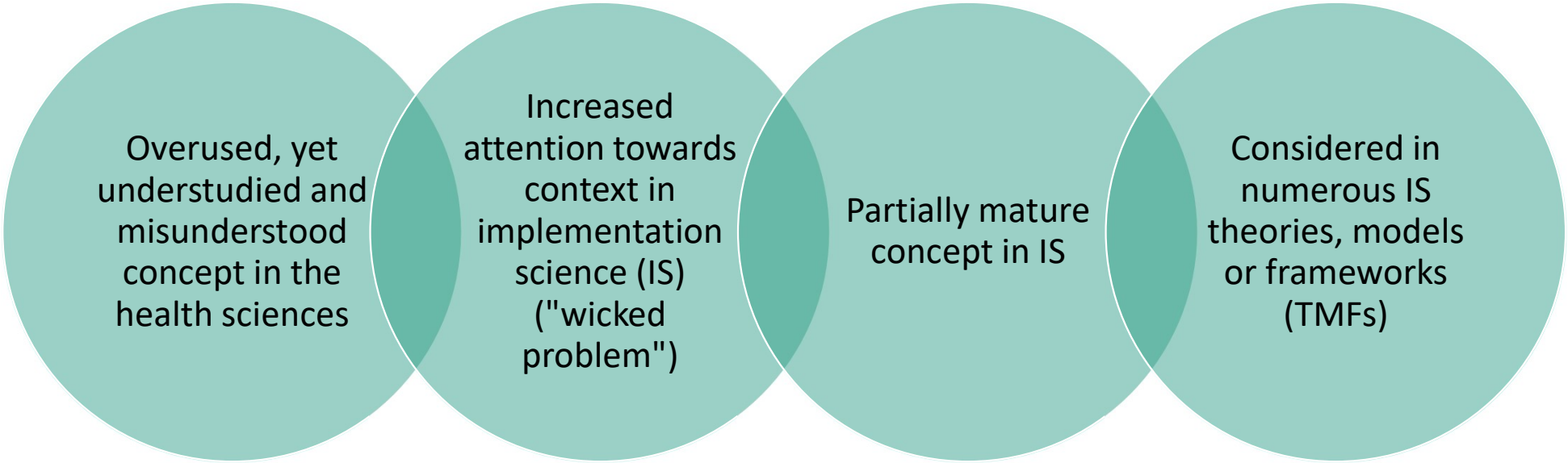
Lecture overview

- Context as a dynamic, evolving system of interactions, beyond a list of determinants.
- The challenges of identifying the boundaries of context, interventions, and implementation strategies.
- Guiding principles, concepts, and ideas for researchers to define the context of their scale up research project.

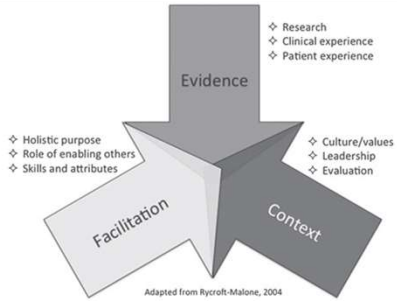


What is context?

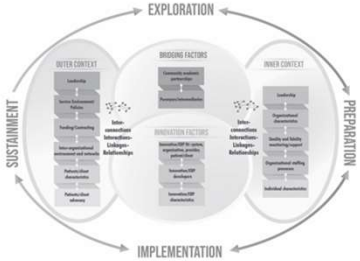


Current representation of context in TMFs

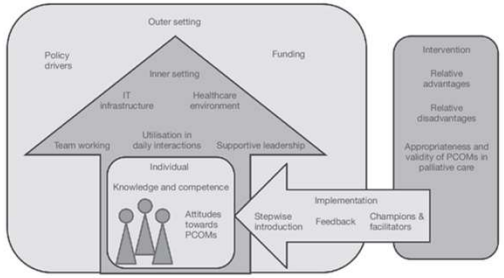
PARIHS framework (Rycroft-Malone)



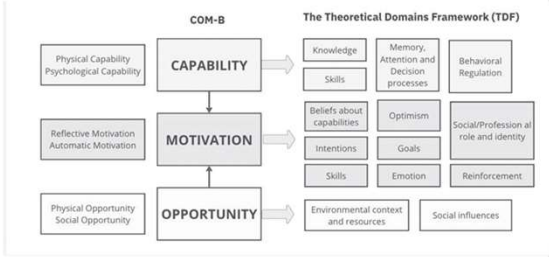
EPIS Framework (Aarons et al.)



CFIR (Damschroder et al.)



Theoretical Domains Framework (Michie et al.)



Current concepts of context

Setting or environment

(Kitson et al. 2006)

Context includes anything external to the intervention

(Moore et al. 2015)

Encompasses a range of characteristics and circumstances, including active and distinct aspects that surround and influence the implementation process. Rather than serving as a passive backdrop, context interacts with, shapes, and can either facilitate or constrain both the intervention and its implementation

(Pfadenhauer et al. 2015)

Normal conditions of practice that shape a healthcare team's capacity to implement change

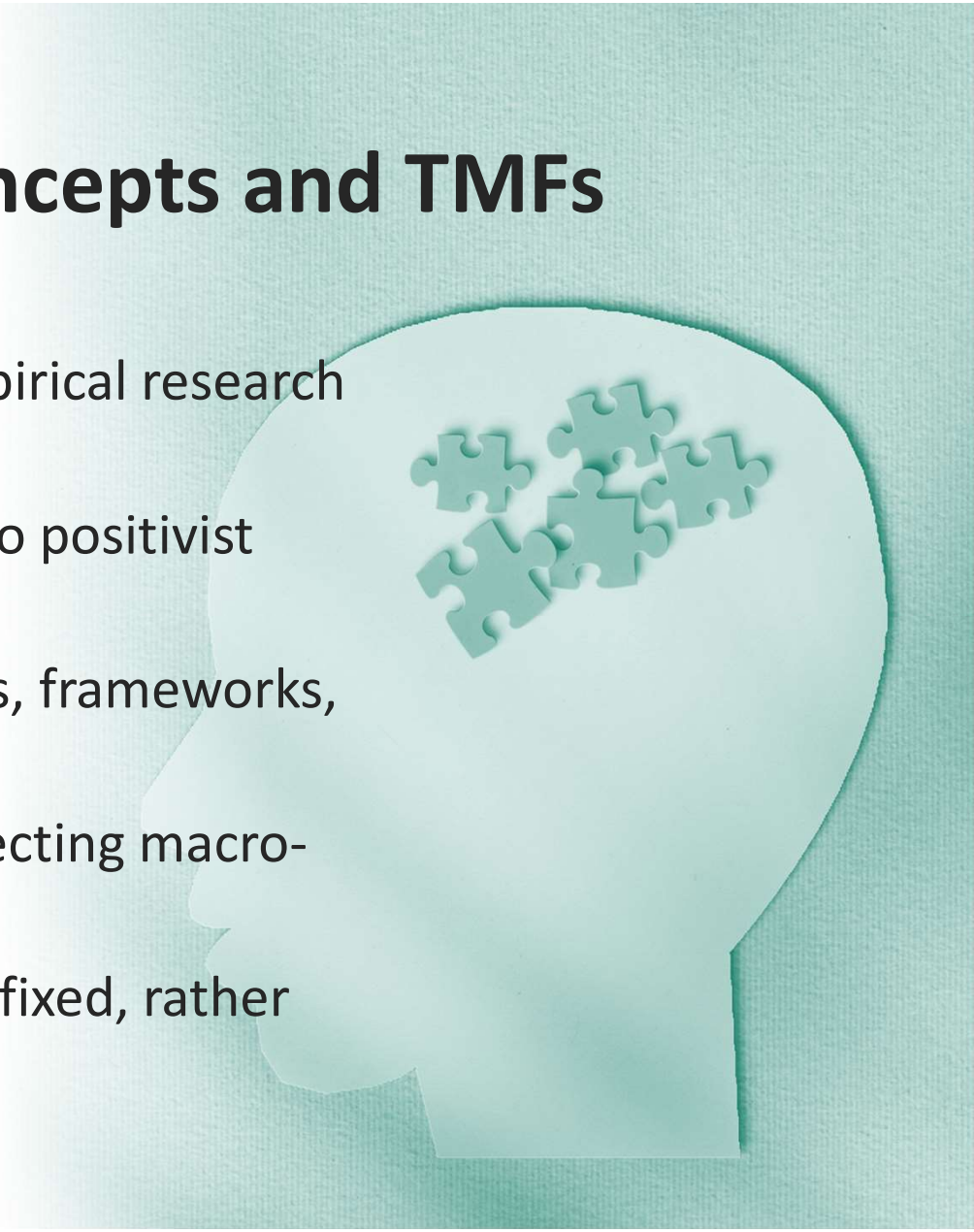
(May 2016)

A multi-dimensional construct encompassing micro, meso, and macro level determinants that are pre-existing, dynamic, and emergent throughout the implementation process

(Rogers et al. 2020)

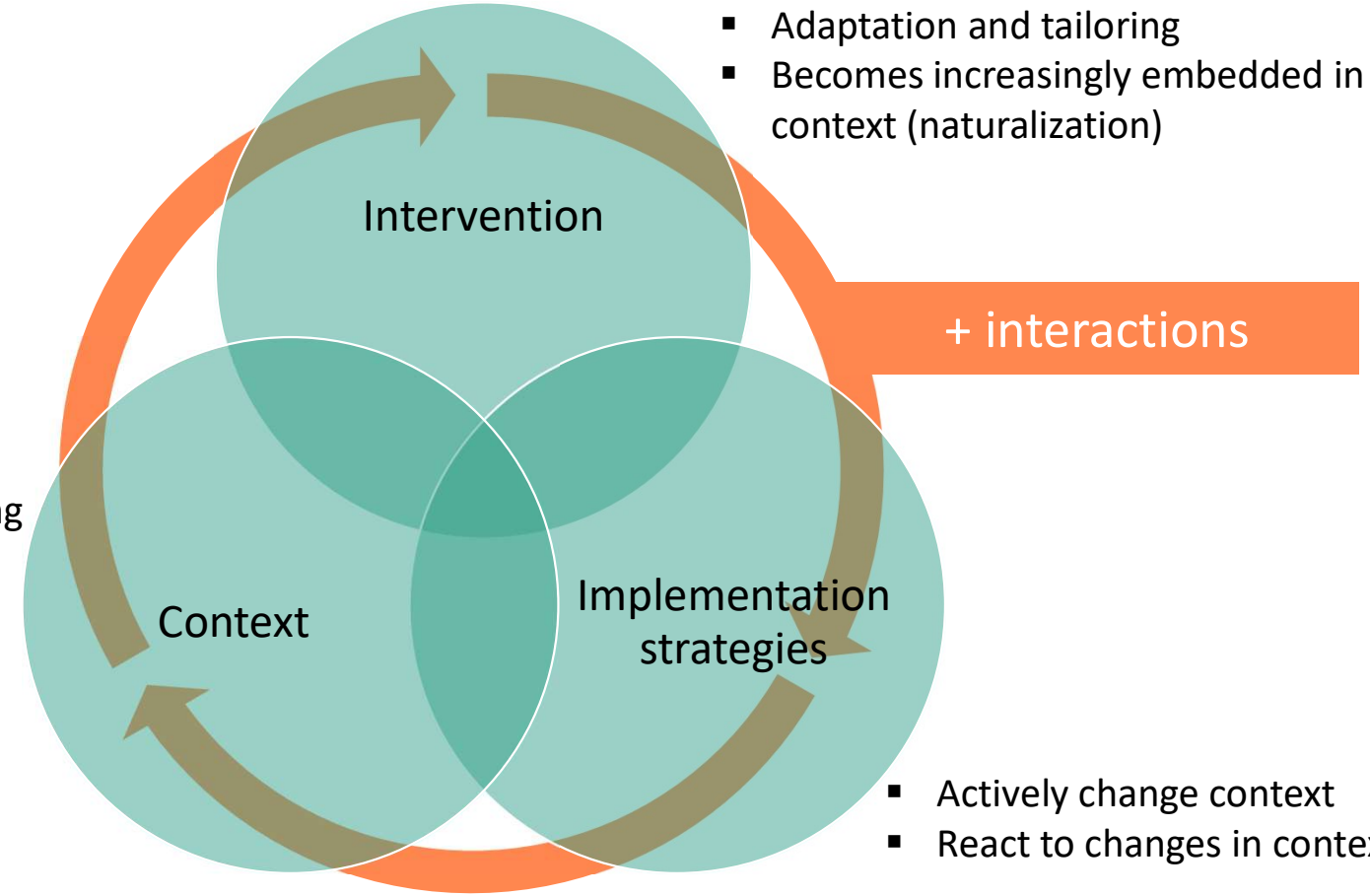
Current shortcomings in concepts and TMFs

- Lack of conceptual clarity and limited empirical research on context.
- Methods often oversimplify context due to positivist paradigms.
- Challenges in assessing context (e.g., tools, frameworks, resources).
- Narrow focus on micro/meso levels, neglecting macro-level and systemic interconnectedness.
- Static view of and approach to context as fixed, rather than dynamic and complex.



Blurred lines

- Adaptation and tailoring
- Becomes increasingly embedded in context (naturalization)



- No clear edges
- Dynamic, self-organizing
- Emergence

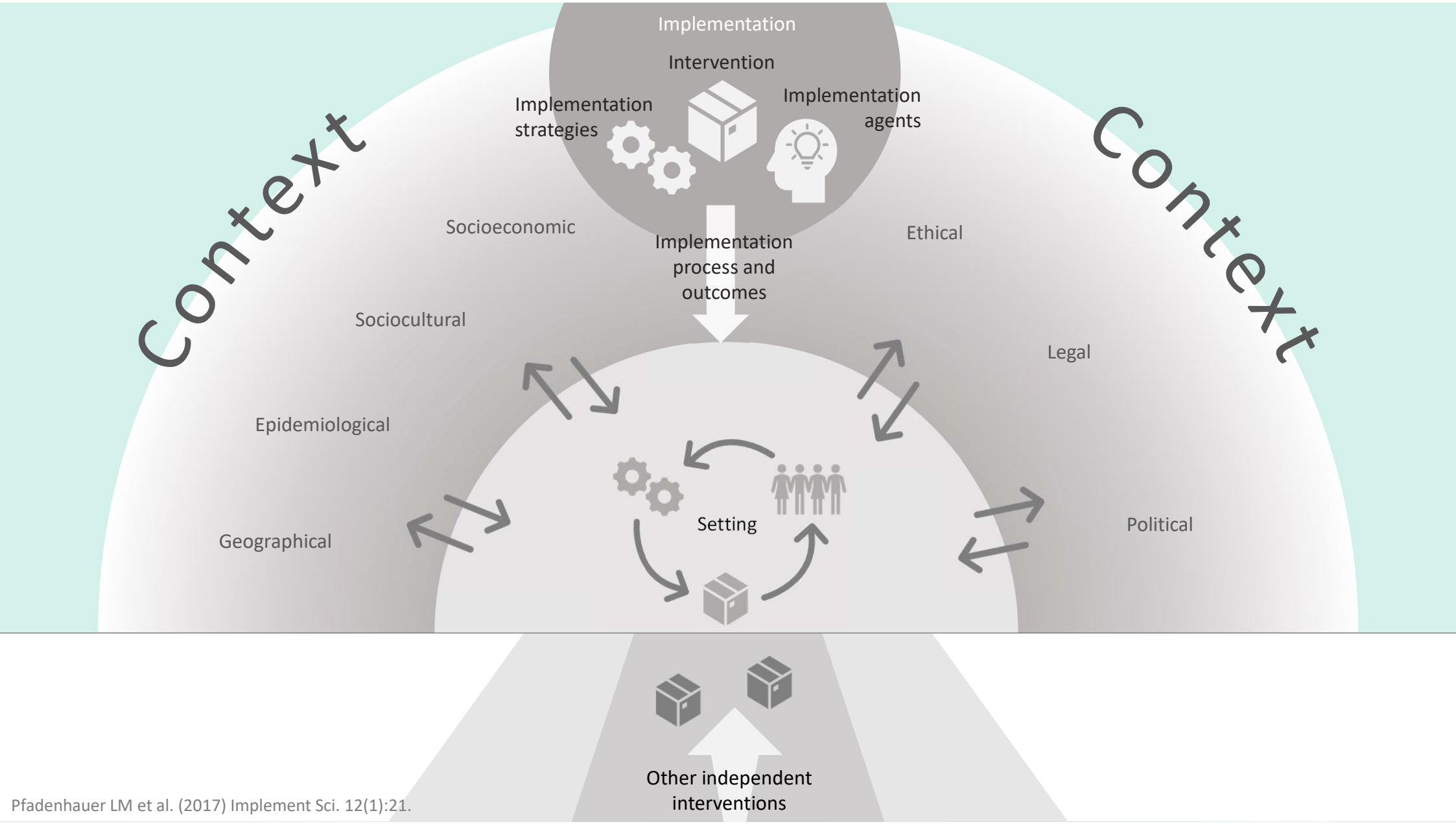
- Actively change context
- React to changes in context

What complexity sciences and systems thinking can add

Focus: structures, relationships, and interdependence among components within systems

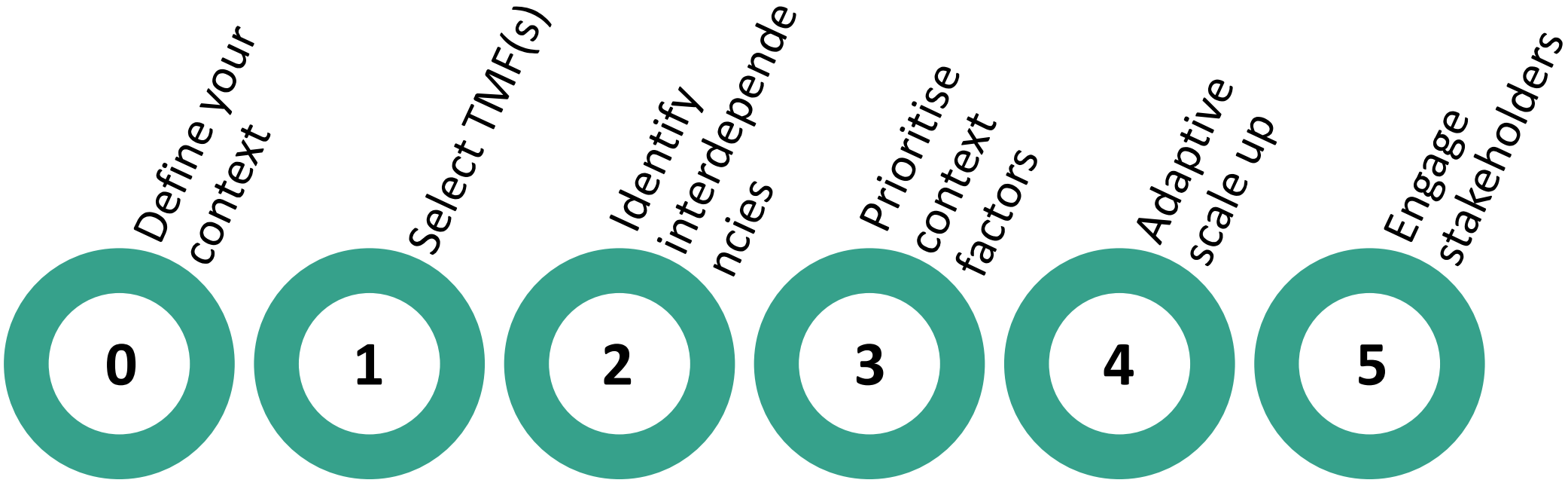
Goals: aim to understand and predict behaviour within systems

- Interconnectedness
- Holism
- Feedback loops
- Non-linearity
- Emergence
- Adaptation
- Self-organization



Pfadenhauer LM et al. (2017) Implement Sci. 12(1):21.

Recommendations for integrating complexity considerations into the scale up of interventions



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Define your context

Why?
Having a common understanding of your context helps making context more tangible

What?
Using existing definitions, come up with your own working definition

Consider…
- What are relevant levels of context in your specific case
- What are relevant domains to your intervention
- What are relevant components to your intervention

How to…
- Brainstorming
- Consult literature
- Engage stakeholders

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Select your TMF(s)

Why?
Ensures scale-up is theory-informed, thus building upon and furthering knowledge

Consider…
- Which criteria does the TMF have to fulfill?
- Which aspects should the TMF capture?
- What aspects are not captured by TMF?
- Do you need to integrate/combine multiple TMFs?

What?
Select one or multiple TMFs to facilitate the assessment and analysis of all relevant aspects of scale up; integrated TMFs

How to…
- Systematically search literature for appropriate TMFs
- Integrate stakeholders into selection process

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Identify interdependencies

Why?
Ensures sustainable, effective, and equitable scaling, avoiding unintended consequences

What?
Use complexity science and systems thinking to identify interdependencies within the context

Consider…
- Who are the key actors (e.g., policymakers, practitioners, communities)?
- How do structural forces on the macro and meso level (e.g., political climate, socio-economic factors) shape the environment?

How to…
- Stakeholder mapping and analysis; social network analysis
- System mapping, policy analysis, realist reviews, ethnography, social network analysis, participatory research, multi-level modelling, complex systems simulation (agent based modeling)

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Prioritize context factors

Why?
Ensure relevance, feasibility and acceptability of intervention

Consider…
- Which factors of context are most likely to interact with my intervention of interest?
- Which of these are stable/dynamic?

What?
Prioritize your most important context factors

How to…
- Use appropriate (!) multilevel, multicomponent TMFs
- Multiple methods available for operationalization (e.g. framework analysis, environmental scan...)
- Engage stakeholders (e.g. qualitative research; nominal group techniques, Delphi method...)

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Adaptive scale up

Why?
Complex, dynamic, and unpredictable systems require adaptable approaches

What?
Conceptualize your scale-up as adaptive process responding to phenomena such as emergence and non-linearity

Consider…
- What are mechanisms and strategies that can be implemented to facilitate a flexible response to unanticipated changes?

How to…
- Implement mechanisms/strategies: Interactive learning cycles; participatory action research, scenario planning, ...
- Monitoring: Monitoring and sharing broad outcome indicators

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Engage stakeholders at multiple levels and timepoints

Why?
Ensure acceptability, relevance, feasibility and sustainability of scale-up

What?
Engage stakeholders ideally alongside the scale-up process

Consider…
- Who is affected by the scale-up?
- Who has an interest in the scale-up?
- Who has the power to influence the scale-up?
- Who do we want to/need to inform about the scale-up?

How to…
- Formal stakeholder engagement strategy: Stakeholder mapping, analysis and engagement
- Participatory research methods

Key messages

1	There are no definite definitions and boundaries to context which requires researcher to find their own working definition of context
2	When defining, assessing and analysing context, researchers should conceptualize context as complex system that has properties such as being dynamic, emerging and adaptive
3	With the lack of concise definitions and boundaries in scale-up projects, researchers are advised to carefully define context, select appropriate frameworks, identify interdependencies, prioritize factors, plan adaptively, and engage stakeholders throughout

Reference list

- Rycroft-Malone J. The PARIHS framework--a framework for guiding the implementation of evidence-based practice. J Nurs Care Qual. 2004 Oct-Dec;19(4):297-304.
- Aarons GA, Hurlburt M, Horwitz SM. Advancing a conceptual model of evidence-based practice implementation in public service sectors. Adm Policy Ment Hlth. 2011;38:4–23.
- Damschroder LJ, Aron DC, Keith RE, Kirsh SR, Alexander JA, Lowery JC. Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. Implement Sci. 2009 Aug 7;4:50. doi: 10.1186/1748-5908-4-50. PMID: 19664226; PMCID: PMC2736161.
- May, C.R., Johnson, M. & Finch, T. Implementation, context and complexity. *Implementation Sci* **11**, 141 (2016). https://doi.org/10.1186/s13012-016-0506-3
- Michie, S et al. “Making psychological theory useful for implementing evidence based practice: a consensus approach.” *Quality & safety in health care* vol. 14,1 (2005): 26-33. doi:10.1136/qshc.2004.011155
- Moore GF, Audrey S, Barker M, Bond L, Bonell C, Hardeman W, Moore L, O'Cathain A, Tinati T, Wight D, Baird J. Process evaluation of complex interventions: Medical Research Council guidance. BMJ. 2015 Mar 19;350:h1258. doi: 10.1136/bmj.h1258. PMID: 25791983; PMCID: PMC4366184.
- Pfadenhauer, Lisa M et al. “Making sense of complexity in context and implementation: the Context and Implementation of Complex Interventions (CICI) framework.” *Implementation science : IS* vol. 12,1 21. 15 Feb. 2017, doi:10.1186/s13012-017-0552-5