

How to evaluate in complex and adverse settings

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Solutions

Outline of presentation

- ❖ The challenge of evaluating when an intervention is 'complex'
- ❖ Initiatives underway in the UK
- ❖ Key features of complex systems
- ❖ Strategies for evaluation planning and management
- ❖ Design solutions
- ❖ Questions and discussion

Challenging settings



- ✘ Growing demand for ‘evidence based policy’
- ✘ Increased demand for evaluation in sectors more used to economic and natural science based research
- ✘ Evaluations often taking place in challenging settings:
 - **M**ultifaceted projects, programmes and policies,
 - **E**mergent and **E**MBEDDED in a dynamic context, sometimes
 - **S**truggling, and
 - **S**ubject to unexpected changes, with outcomes often
 - **Y**et to be clarified (broad and unspecific)
- ✘ Recognition that current evaluations designs and approaches are not addressing this effectively

Government funded initiatives

- ✘ Two new centres set up with government funding:



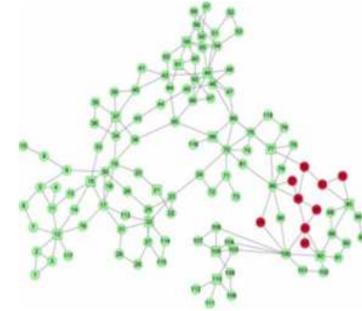
- ✘ New evaluation approaches and case studies explored, new resources, advice, workshops and trainings
- ✘ 'Magenta book' - cross government evaluation guidance revised with new annex on complexity
- ✘ Complex Evaluation Framework Guidance for DEFRA (Department of Farming and Rural Affairs)

Looking to complexity sciences for solutions

Simple



Complicated

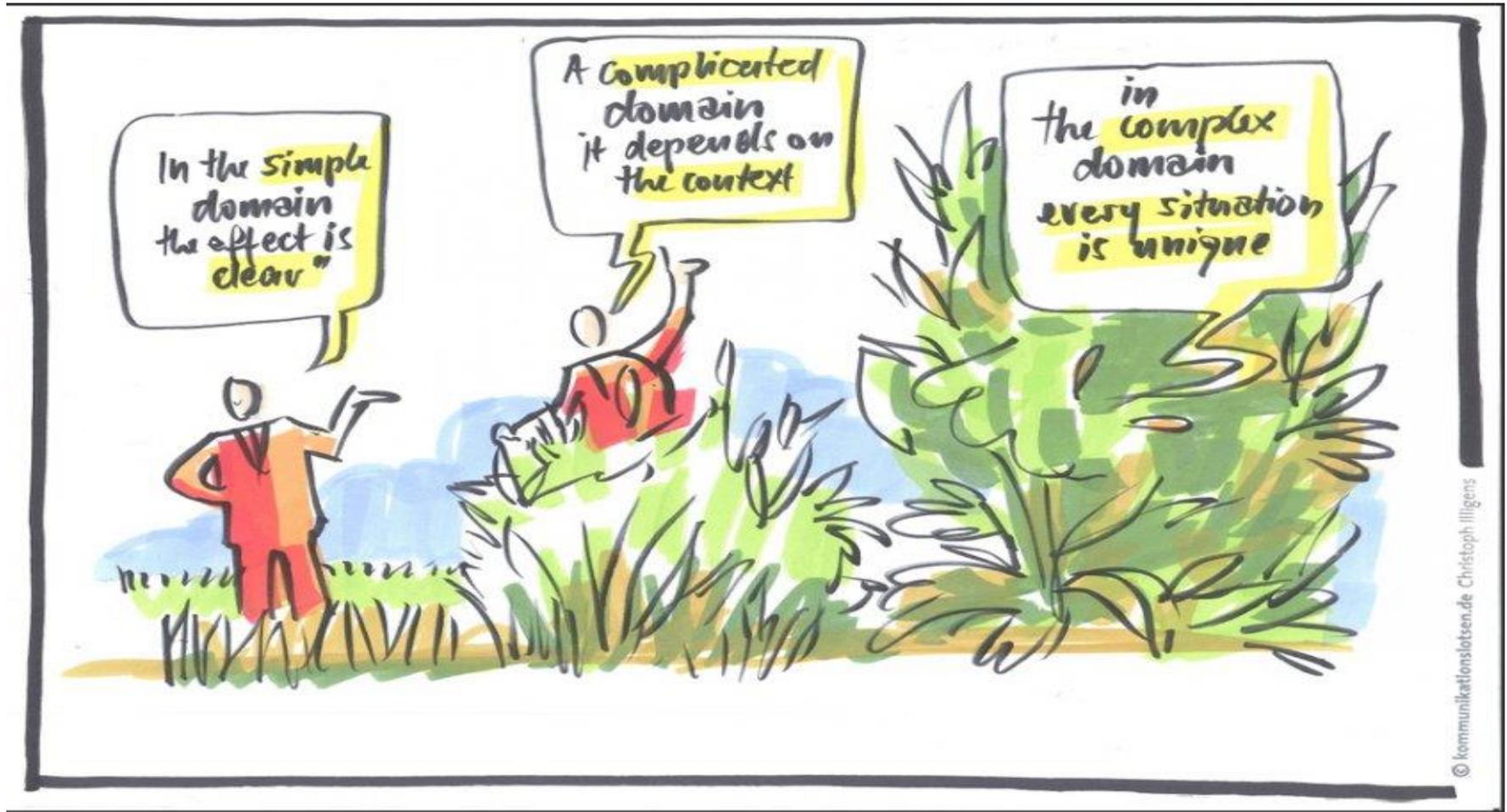


Complex

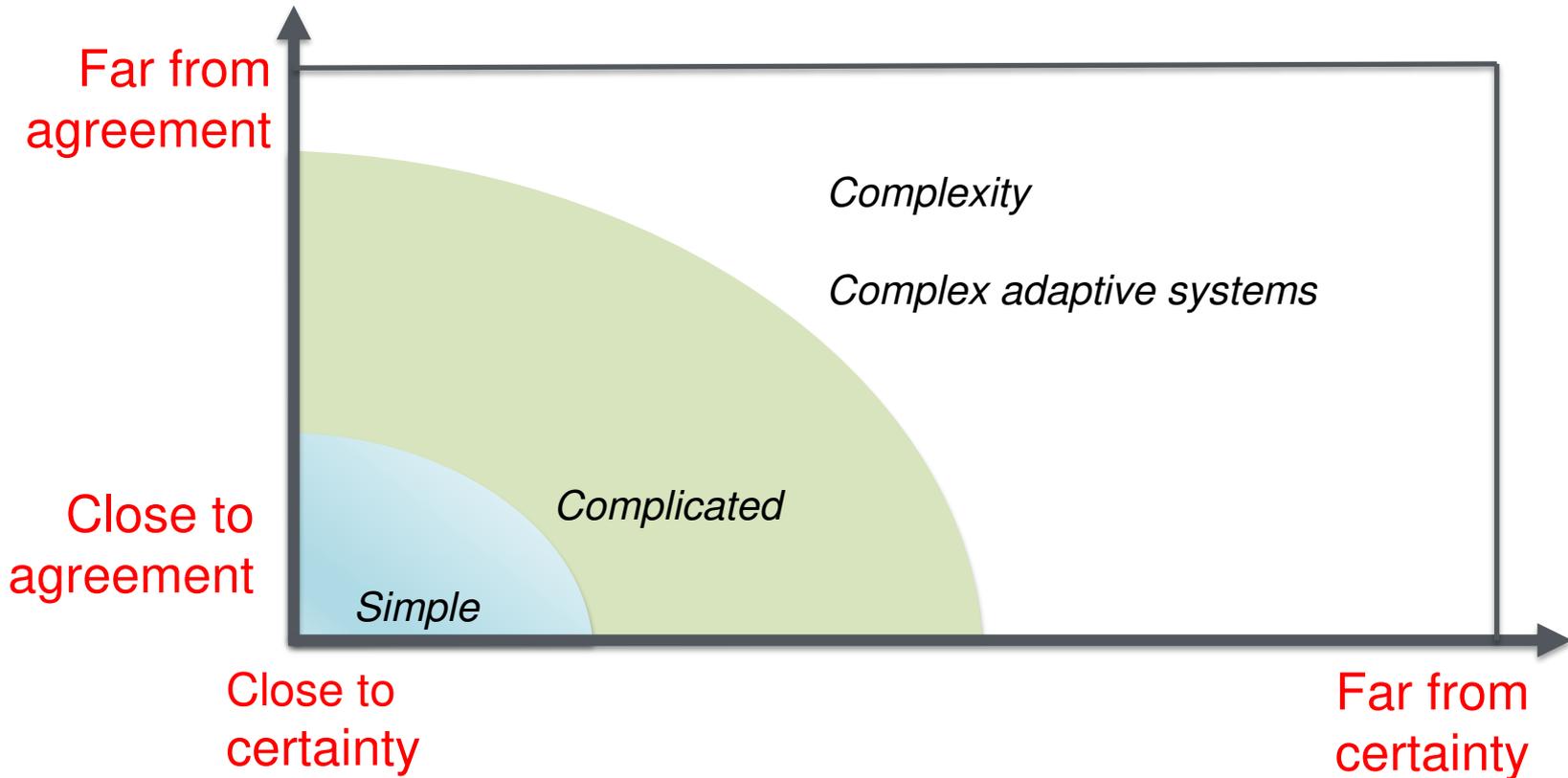
A project, programme or policy is increasingly complex when

- ✘ It is highly innovative (uncertainty over outcomes)
- ✘ The environment is rapidly changing (even more uncertainty)
- ✘ Many layers, many organisations and individuals involved
- ✘ Multiple actions introduced at different levels (national, regional, local)
- ✘ There is diversity of opinion and views about best action and appropriate outcomes

An evaluator view of complexity

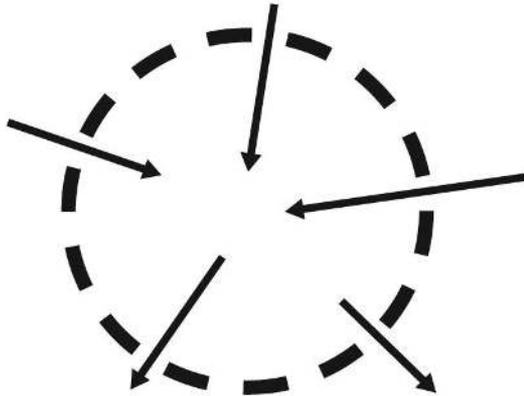


Two key dimensions that add to complexity*



* Adapted from the 'Stacy Matrix' of complex organisations

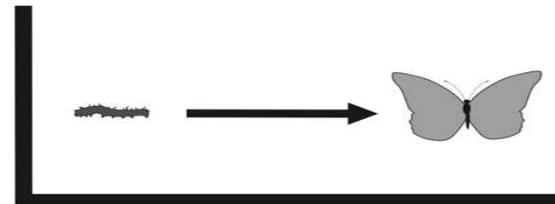
Complex systems are open systems



An **open system** has many links and connections into its wider environment, and is affected by changes happening elsewhere.

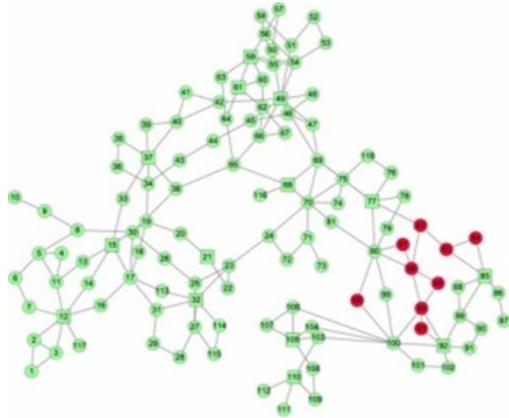
Example

A food production company may change rapidly in response to changes in food fashion or in the cost and availability of key ingredients.



Complex systems are in a **constant state of change.**

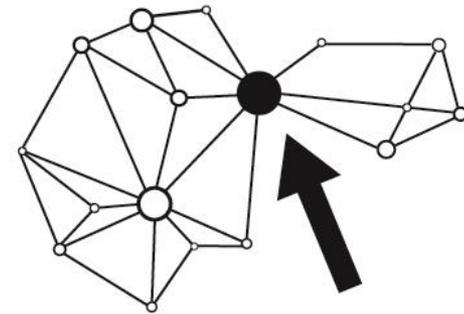
Multiple relationships, levers and hubs



A complex system has **multiple components** – in human systems this means multiple stakeholders and multiple perspectives

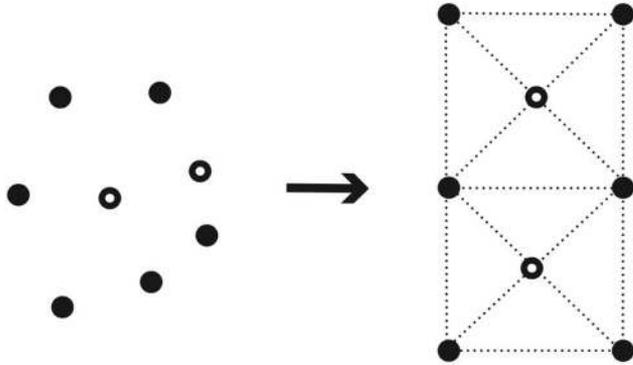
Example

A well-connected and highly motivated individual or group may be mobilised to champion a particular cause. They can equally become a major obstacle to change through vetoing or blocking this



Levers and hubs: Some components have more influence than others because of their connections.

Self organisation and emergence

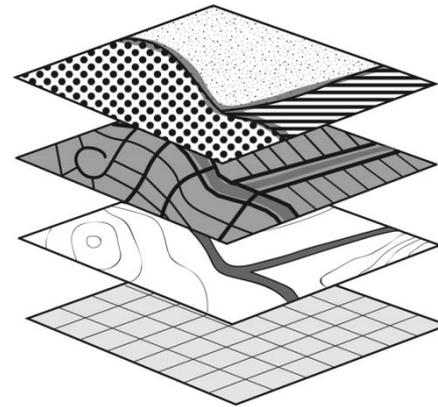


Emergent properties: New, unexpected higher-level properties can arise from the interaction between the components within a system.

Complex systems are **self organising**

Example

Emergent properties can be seen in the formation of social movements, social norms and new markets, or even in the formation of a queue...



Adaptation and feedback



Components or actors within the system **learn and evolve**, changing the behaviour of the whole system.

Feedback loops happen when one process or interaction influences the input into the next iteration of the same process.



Example:

Individuals may try to 'game the system' (e.g. by heating empty, or previously unheated, buildings to obtain a renewable heating subsidy)

Feedback loops can increase or suppress the changes taking place.

Non linearity, unpredictability and ... unknowns

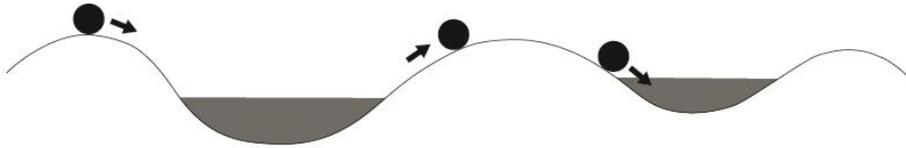
Example

A new product may be slow to take-off but after a certain point sales will accelerate, before slowing again as the market is saturated

Unpredictable outcomes happen when there is a **non-linear** relationship between inputs on outcomes: small changes lead to large effects in one place, but have little impact elsewhere. This can lead to sudden large scale change, slowing down or changing direction



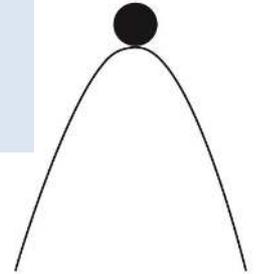
Tipping points and attractors/domains of stability



Systems may have several relatively stable states (called **attractors** or **domains of stability**).

Changes in the wider context can cause these to evolve – moving a system from one stable state to another.

Tipping points are the threshold beyond which a system goes through rapid change into a different state.



Example

Economic recessions, the existence of 'poverty traps' and the characteristics (and social segregation within) different neighbourhoods.

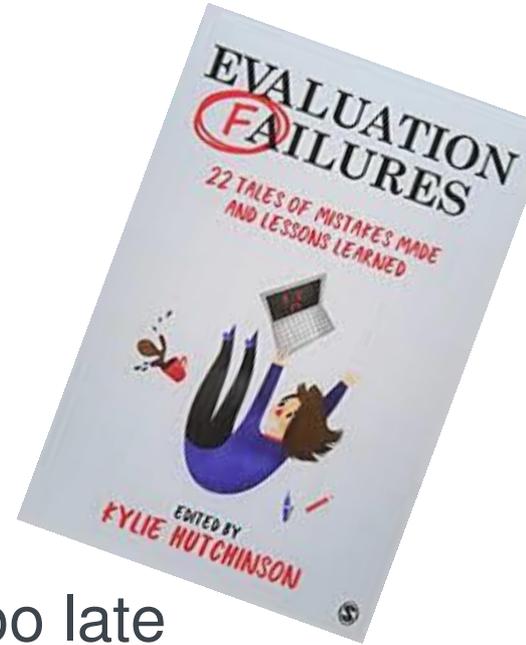
Evaluation challenges

Complex system challenges	Evaluation challenges
Multiple interactions and influences	<ul style="list-style-type: none"> • Long, indirect causal chains linking inputs to impacts
Systems may be in continual change, or may resist change	<ul style="list-style-type: none"> • Objectives, design and data requirements may change over time • The programme may not reach a 'final state' when the evaluation comes to an end
Openness Context (and history) matters	<ul style="list-style-type: none"> • Hard to establish a clear boundary Difficult to standardise the intervention • Outcomes may vary from one context to another
Multiple perspectives	<ul style="list-style-type: none"> • Need data from multiple sources/informants
The nature of the change is unpredictable Multiple causality	<ul style="list-style-type: none"> • Evaluation plans may need to change to address emergence of unexpected features • New methods may be needed for causality and attribution
Complexity is difficult to communicate	<ul style="list-style-type: none"> • Difficulties in communicating methodology and findings

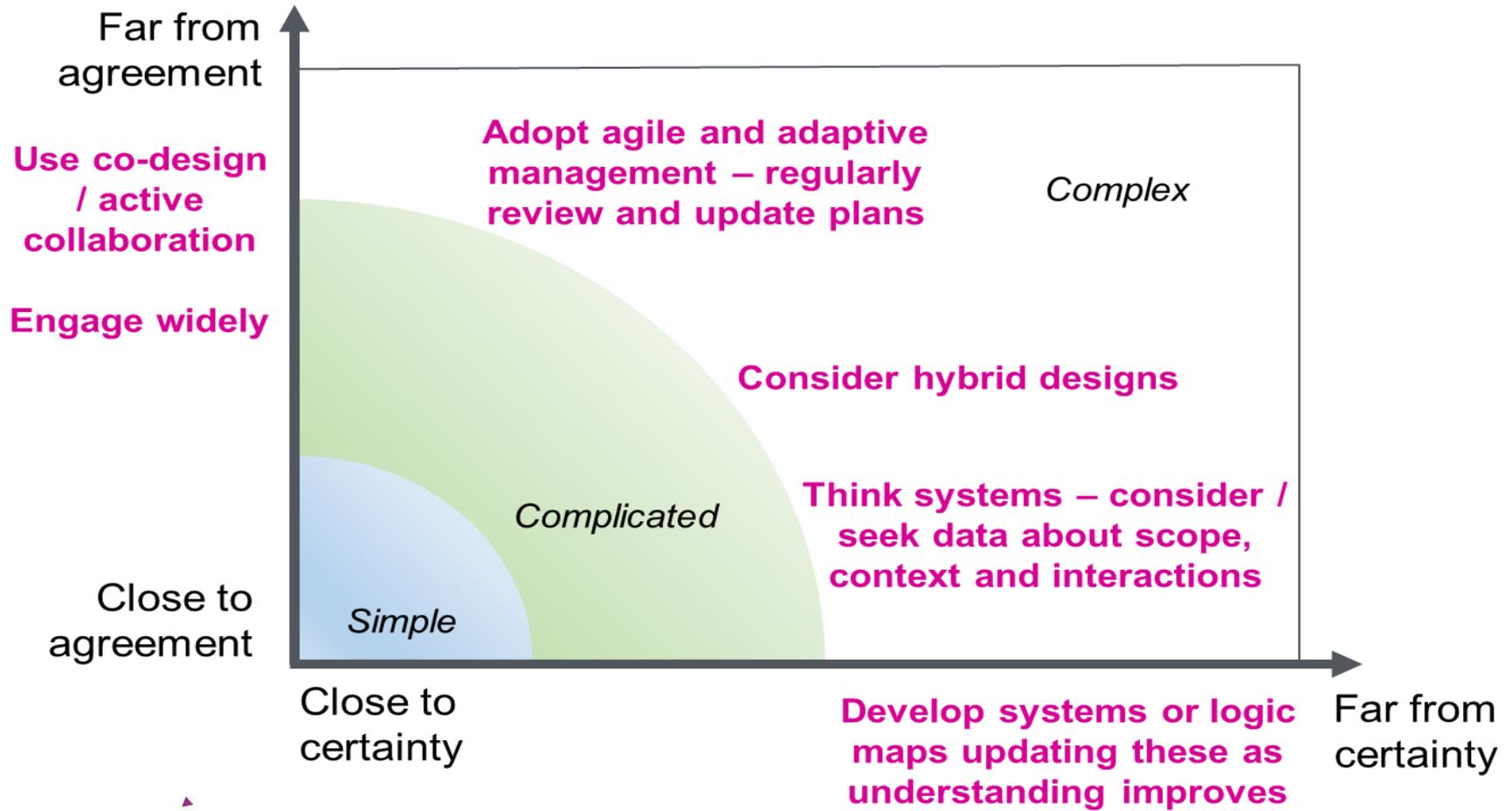
New evaluation approaches and methods may not be the answer

Complex evaluations fail because

- ❖ Key stakeholders not properly engaged or consulted
- ❖ System challenges (red flags) ignored until too late
- ❖ Evaluation designs aren't (or can't be) adapted to meet changing circumstances
- ❖ Evaluations continued when it might be better to stop

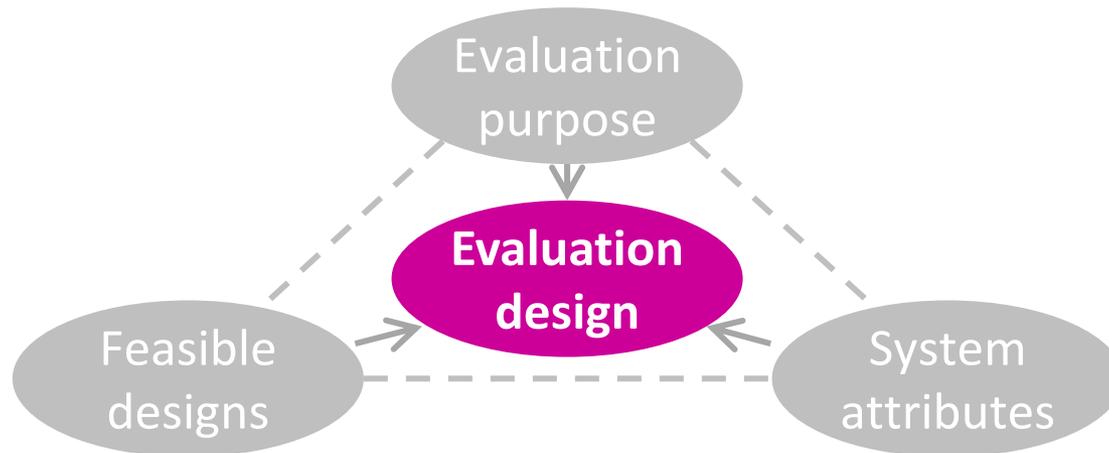


Planning and management is especially important



Choosing an evaluation approach

- ✘ Wide range of approaches suitable including some less familiar ones
- ✘ Hybrid designs likely to be most useful
 - mix may change over course of the evaluation
- ✘ No simple, mechanistic way to selecting the right approach
- ✘ Three key, interrelated considerations:



Useful questions: clarifying purpose

How will the findings be used?

✘ For Listening and Building:

- To ensure diverse voices are heard
- To build trust and legitimacy
- To generate champions for change



Emancipatory approaches

Evaluation purpose

✘ For Learning:

- To build understanding
- To manage risk and uncertainty
- To improve this policy
- To improve similar policies



Theory based approaches

✘ For Accountability:

- To establish if the policy:
 - ... was implemented as intended ...
 - ... is having the impacts anticipated ...
 - ... is delivering value for money?

Model based approaches



Useful questions: system attributes

Is there a good, common understanding of the system and its complexity - for example:

✘ **Agreement:** Are view points aligned, OR

- Are there multiple perspectives OR even
- Controversy?



Participative
approaches

✘ **Certainty:** Is there a clear understanding of what influences outcomes and how:

- Is there a clear direct relationship between your intervention and outcomes, OR
- Do many factors influence outcomes in ways that are difficult to understand and predict
- Have unanticipated outcomes occurred
- Can you clearly define the scope of the evaluation?



System
mapping

- Do outcomes differ depending on context?



Realist
approaches, QCA

- Is the policy (and the system in response to this) still evolving?



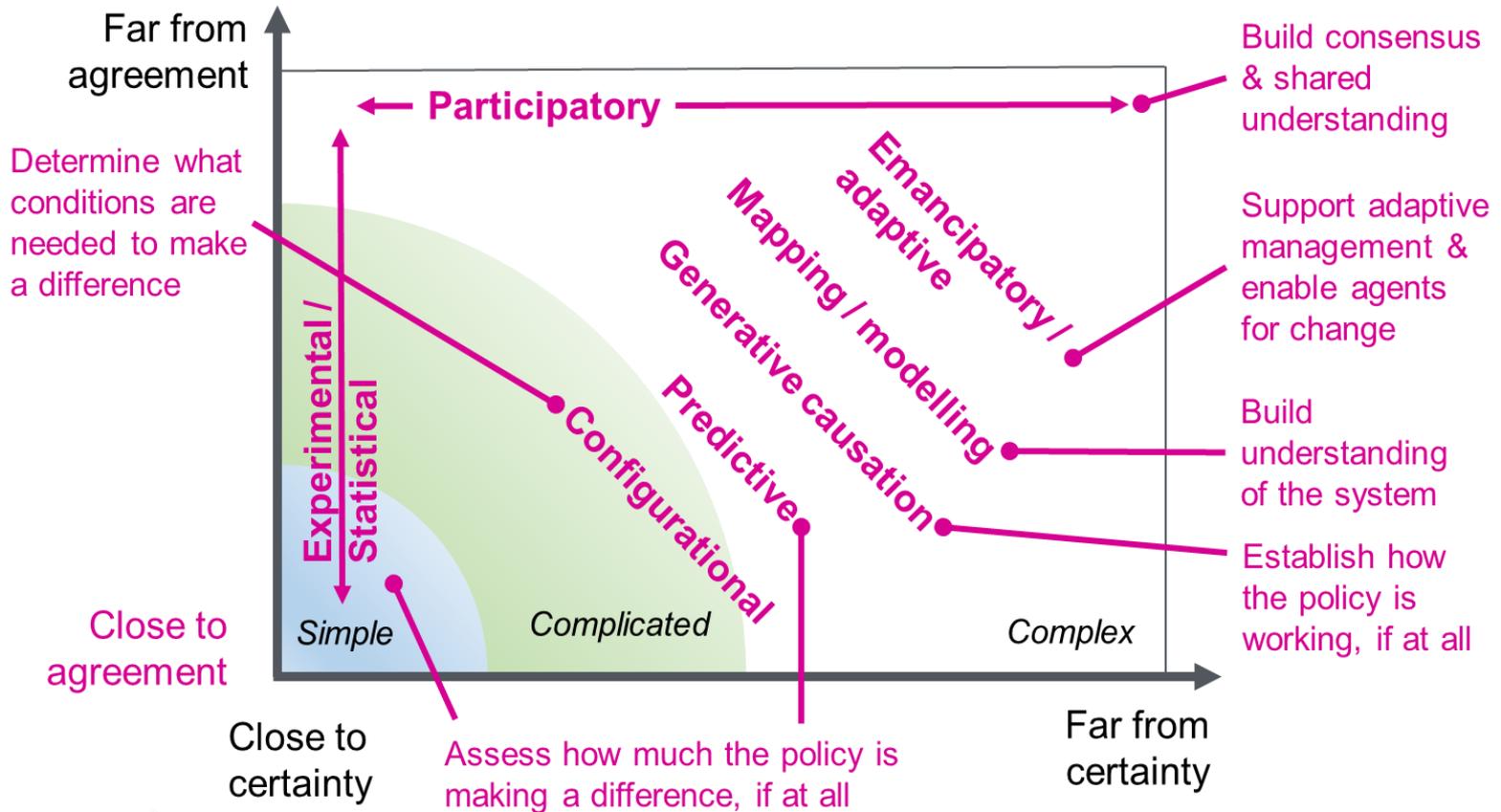
Developmental
approaches

Useful questions: feasible designs

- ✘ Are the evaluation methods and approaches affordable and proportionate in terms of:
 - the expertise required
 - the data available or obtainable
 - the information you need / the risks of getting the answer 'wrong'?

- ✘ Are key stakeholders comfortable with the approach proposed:
 - Is the approach acceptable
 - Is there an appreciation that the level of quantitative rigour and certainty of outcome may be limited, even using sophisticated evaluation methods

Evaluation approaches to address complexity challenges



Examples of approaches

- ✘ Participative/Emancipatory/adaptive: e.g. Developmental Evaluation, Action Research
- ✘ Theory based approaches/ generative causation: e.g. Realist Evaluation, Contribution Analysis, Theory of Change
- ✘ Configurational approaches: e.g. Case studies, Qualitative Comparative Analysis, Process tracing with Bayesian updating
- ✘ Modelling and mapping: e.g. system mapping, agent based modelling

In summary

In complex and adverse settings

- Use complexity framework to analyse situation
- Prepare yourself (and your clients) for unpredictability and uncertainty
- 'Map' the system (theory of change, systems mapping)
- Consider innovative evaluation approaches
- But be willing to change methods and design in response to changing situation or understandings
- Keep your head!



Good luck!



Any questions?

For more information

- ✘ CECAN: <https://www.cecan.ac.uk/> for information and events related to complex evaluation across the Nexus
- ✘ Tavistock Institute for evaluation support
<http://www.tavinstitute.org/> or d.hills@tavinstitute.org
- ✘ Risk Solutions: for evaluation and system mapping support <https://www.risksol.co.uk> or helen.wilkinson@risksol.co.uk
- ✘ <https://www.betterevaluation.org/> for information about evaluation strategies and methods
- ✘ <https://www.youtube.com/channel/UCutCcajxhR33k9UR-DdLsAQ> for information about complexity and complex adaptive systems

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