LiFT Leadership for Transition

Foundations, Principles and Inspirational Resources of **Integral Politics**

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8. Complexity Science for New Politics in Theory and Practice

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Chapter 8

Complexity science for New Politics in Theory and Practice

Overview, essentials and relevance

What is complexity?

A complex adaptive system is one where the relationships between different elements are not obviously or fully apparent, there are dynamic changes, causal relationships are non-linear and properties and behaviors are emergent.

A complex adaptive system "is never the sum of its parts; it's the product of their interaction" (Ackoff, 1973). In an interdependent world, where action or change in one part of a system has unanticipated knock-on effects on another, how do we take an approach that is open to understanding the differences in diverse experiences, values and perceptions; whilst recognizing a collective whole?

> *"There's no love in a carbon atom, no hurricane in a water molecule, no financial collapse in a dollar bill." – Peter Dodds*

We talk about a condition of complexity if at least the following five conditions exist in a given situation:

1) Highly Unpredictable:

It's very difficult to predict the interactions of agents in the system.

2) Contagious:

As a system is well connected between its nodes, agents within them will spread quickly. This can be a virus in a pandemic or gossip in social media

3) No complete control:

Agents are decentralized, like the geese flying in organized V-shaped flocks. Is there any single leader? We don't know.

4) No complete information:

No one in the system has complete information, like in the stock market, no one has complete information on future price movements of stock. Each investor is an agent in the market and the patterns of working of the market emerge.

5) Adaptive nature:

Complex systems are adaptive in nature. When new technologies emerge, systems start to adopt them and adapt to new innovations and evolve.

One particular trait of a Complex Adaptive System is emergence. **Emergence** is a phenomenon in which the development and interaction of 'things' or agents in a system creates **novel** characteristics and behaviors. Emergence means that these novel properties are not derived solely from any single part of the system, they have no single cause. Instead, they evolve through various interactions in the system and develop unpredictably. Put simply by Aristotle "the whole is more than the sum of its parts".

What is anthro-complexity?

Anthro-complexity considers questions of how humanity makes sense of this world to act within it. When considering the complexity of human systems, compared to what we might consider being mathematical or computational complexity, there are some distinctive features. This largely comes down to some of the cognitive and social characteristics that can be seen as distinctly human:

Intelligence: No matter where we stand, human cognition being embodied, embedded, enculturated and enabling, and perhaps also enacted and extended, we need to allow for reflection on experience, for abstraction from experience, and for all else that we associate with higher levels of cognition.

Intentionality: In recognizing that how humans are attracted to different opportunities for action goes beyond responding to stimuli, Anthro-Complexity foregrounds matters relating to purpose (or priorities) in ways which highlight our facility with abstraction and which introduce deliberative choice and goal setting.

Identity: Our awareness of the fluidity in how we "show up" in different contexts, and of the way we hold lightly or tightly to any coherence we perceive in how we take things as unfolding, means those of us navigating Anthro-Complexity must delve into notions of recognition, respect and dignity in ways which we commonly find difficult to convey outside of our narratives.

The Cynefin® Framework

The Cynefin® framework developed by Dave Snowden provides a way of recognizing and orienting the different types of ontological systems that exist, including complex adaptive systems. The Cynefin framework provides a tool by which people can orient themselves, to better understand and make sense of the systems that they interact with (Snowden & Boone, 2007).

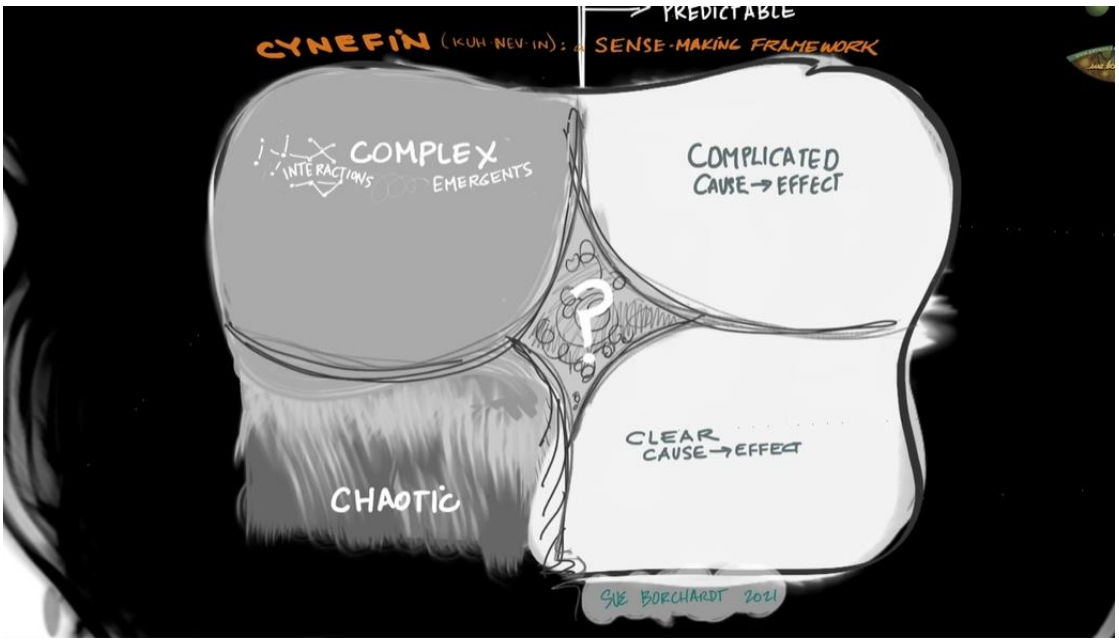
An anthro-complexity-informed approach is about having an understanding of the types of systems and dynamics at play in a given situation (externally) as well as the self-awareness (internal) to act or make decisions that are appropriate to the given system.

This video by research artist, Sue Borchardt, provides a simple graphical walk-through of the Cynefin framework. All of the following illustrations are taken from this video to walk the reader through the different domains of the Cynefin Framework (https://www.youtube.com/watch?v=nPErDG1UryU © Sue Borchardt).

The Cynefin framework and its domains

At its most basic, the Cynefin® framework allows us to distinguish between three different types of systems:

- **Ordered systems** in which cause and effect relationships are either clear or discoverable through analysis. Within the Cynefin framework, this is subdivided into Clear and Complicated.
- **Complex systems** in which the only way to understand the system is to interact.
- **Chaotic systems** in which turbulence prevails and immediate stabilizing action is required (cynefin.io).



(https://www.youtube.com/watch?v=nPErDG1UryU © Sue Borchardt)

One of the most common mistakes is to have a kind of **'domain dissonance',** that is, to be in one domain (type of system), but make decisions on the basis of another (usually unconsciously). It is most common to treat complex problems as though they are simple or complicated, for example, managing employees as if they are a machine, rather than individuals with psychological needs and biases. Each of the domains is ontologically different *(i.e. what is happening at the material and interactional level)* and therefore requires a different epistemological approach to understand them *(i.e. how do we know what is happening).*

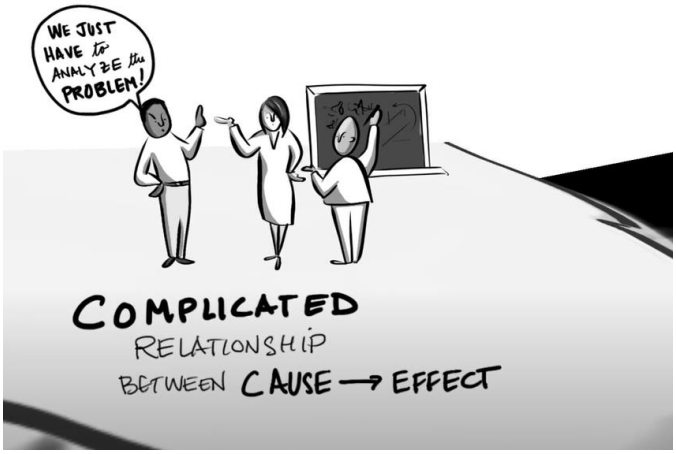
Knowing and finding out within the different domains

The key reason why it's important to know what type of system you're in is that different systems require different forms of inquiry and responses.

In the **clear** domain, it is possible to fully understand and manage all of the variables, therefore strictly quantitative or decision tree-type logic can be applied. You can sense what is happening, categorize it into a well-established and understood category, and respond according to best practice and established procedures. An example of this is a checklist of items that are not allowed in your hand luggage when boarding a plane.

Clear:

- Cause and effect are obvious and known to just about everyone
- You can guarantee the outcome
- The process and the outcome are reliable and repeatable
- All of the variables are known (known knowns)
- Fact-based management
- Best practice applies



Still an ordered system, the **complicated** domain requires greater analysis and the use of experts. The complicated domain has variables that might not be known, but it is possible to figure them out with analysis. This often requires expertise and to sense what is happening, analyze and understand the things that are not yet known and then respond. For example, the engineering process of building a bridge (Image: © Sue Borchardt).

Complicated:

- The domain of the expert
- Cause and effect relationships are not obvious
- An average person my see Symptoms but not know the cause
- There may be multiple "right answers'
- Some of the variables are known, and an expert could identify the ones that are unknown (known unknowns)
- Assess and analyze (with the help of experts)
- Good practice applies
- Refer to experts for details

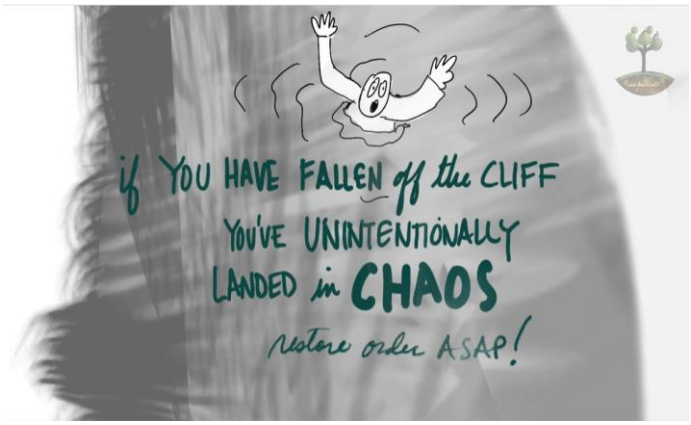
In the **complex** domain, cause and effect relationships are not recognizable by sensing alone. You need to probe, sense and respond so that you can try something out, see how the system reacts before taking action. This is the domain of safe to fail probes. An example here would be holding a children's party.

Rationale, culture and context and all play a very important parts of the way a complex system functions, and a small change in one of these can have significant implications for the functioning

of the whole system, hence it is not enough to know what is happening, but you need to unpack "the why' (and there may be multiple). The combination of both quantitative measures of what is happening as well as qualitative explanations about why things happen the way they do, provides a greater sensitivity to any inquiry, and from a political perspective helps ensure that decisions are made with greater awareness of the less tangible qualities of a system or group of people (Image: © Sue Borchardt).

Complex:

- Emergence and entanglement
- Difficult to identify cause and effect, you may be able to see some cause and effect relationships, but there will always be unintended consequences of any action
- There are more variables than you can see or manage
- Things are connected directly and indirectly
- There are unknown variables and variables may change (they are adaptive)
- Nonlinear behavior
- Complex systems interact with the external environment
- "never the sum of its parts; it's the product of their interaction" (Ackoff)
- The only way to find out how the system will respond is to interact with it
- Action goes into amplifying and dampening characteristics, but not into controlling them completely.

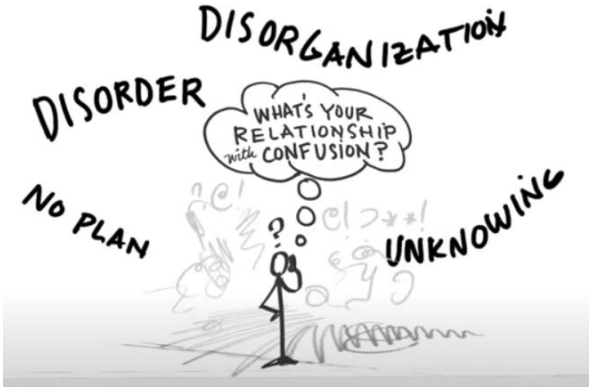


In the **chaotic** domain, it is suggested to act, sense and respond because there are no effective constraints within the given time, so you need to create them by acting and creating new constraints. An example of a chaotic system is the immediate aftermath of a natural disaster.

However, there is also the possibility to take a controlled and "shallow dive" into the chaotic domain for a short time, for example, if you would like to boost innovative thinking (Image: © Sue Borchardt).

And then there is Confusion or "Aporia"

When you notice that you feel like the image describes, you are most likely in the zone in the middle (between the four fields in the Cynefin graph) called Disorder or Aporia. It simply means that you are not sure which domain we are in. That's why **disorder** here has a sense of disorientation rather than mess (chaos). Over time the name of this domain has been changed to Confused and recently to Aporia. This domain is key to understanding and using Cynefin, particularly when having to make decisions where the problem resides in many domains (Image: © Sue Borchardt).



A theory of change for complex systems

The previous section, where recognizing the nature of the domain in terms of clarity or complexity is key, offers a different approach to the traditional theory of change, in which changes can be achieved with small, contextual 'nudges'—in which aspects of the decision-making context are changed.

Typically, nudge theory is applied by decision-makers deciding what they want to achieve and then using environmental changes or messaging to move citizens towards this ideal end point. With this soft paternalistic approach, citizens are really being pulled towards someone else's preferred state with no dialogue or opportunity to voice their preference on what the desired outcome should be in the first place (Sætra, 2019; Jones, Pykett & Whitehead, 2011; Yeung, 2017). This practice is underpinned by the idea that some people know what is best for others — an example of the type of ideology we need to move past if we want to create a new politics and a more deliberative form of democracy.

The Cynefin Centre has developed an alternative approach to this traditional theory of change by beginning with mapping the dispositional state of a population at a moment in time. From this data we can ascertain a particular direction or directions that we might wish to nudge towards. This is managing the potential to evolve from the present state by starting from where people are, as opposed to where someone deems they should be. This ensures that nudges are ethical and authentic to the needs of the community. Through real-time observation of change, we can also make sure that interventions are sustainable over time. Rather than relying on a grand vision of where you want to be long-term, it is more effective within the domain of complexity to map where you currently are and start to make small interventions to move in a desired direction. These interventions should be safe-to-fail rather than fail-safe and enable remaining open to different perspectives. We can call this the vector theory of change.

Dispositional States

Mapping the current disposition of the network reveals natural points of interventions. It also provides insights into whether there is a propensity to change which may indicate when to introduce an intervention and how it will be received. In our workshops, participants consider "How do we create more stories like the ones people have identified as positive, and fewer like those that people felt were negative?"

Coherent heterogeneity

Complex domains, being unpredictable by nature, are argued as providing coherent conclusions mainly in retrospect, in other words, in the complex domain, hindsight does not lead to foresight and is also highly context dependent. However, also in the complex domain we can apply "Tests for coherence" as described by Dave Snowden. In another article, Snowden points out that "The value of coherence allows for contingent truth. While we don't know everything, we are at least going in the right direction". Complexity theory also recognizes the need for heterogeneity while at the same time, it is important that "**the differences, in a relevant context, are capable of coherence"** and that the differences are not "aligned" away. [1]

[1] For an overview on the topic of coherence, alignment and complexity please see the following blog articles by Bettina Geiken (2020) Complexity, a mostly unexplored opportunity and (2022) Coherence matters**!** Mapping a new paradigm quality.

Principles of acting in a complex domain

In order to best understand a complex adaptive system, Snowden and Rancati (2020, EU field Guide for managing complexity (and chaos) in times of crisis) suggest that the following principles for acting within an anthro-complexity system should apply:

1. Work at a coherent level of granularity, which generally means to work at a lower, or more finely grained, level of detail
2. Distribute the cognition when orientating a problem, issue or situation within a wider context. Leaders in complex domains should be playing a coordinating function, and for that, they need to tap into the perspectives of people with direct experience of the issue at hand. *In other words: share in the thinking and sense-making – participants become subjects of the inquiry, not objects*
3. Disintermediate the decision-maker from the activity. Decision makers need to have access to the raw data in order to make evidence-informed decisions, rather than relying on colleagues to do their sense-making for them; *in other words: remove the 'middle-man' interpretation. Include and synthesize multiple forms of knowledge, especially the use of narrative.*
4. Scale a complex adaptive system by decomposition (to the lowest level of coherent granularity) and rapid recombination. A good comparison is, for example, the natural process of decomposition in nature: dead organic substances are broken down into simpler organic or inorganic matter such as carbon dioxide, water, simple sugars and mineral salts and as such are the building blocks for new life – at scale.

Summary: How to navigate complexity

There are three **guiding questions** that will help us to navigate complexity:

- *What can I change?*
- *Where can I monitor the impact of change?*
- *Where can I readily amplify success or dampen failure?*

And there really are only **three things we can manage** in a complex adaptive system:

- connections,
- constraints, and
- energy allocation.

These **actions** will help us **to navigate complexity**:

- Identify which aspects of the system are complex.
- Identify, from what is in play, the things available to manage.
- We only need to understand enough, not everything, in order to act.
- From what's in play, consider what can be modified (or modulated).
- From what can be modified, what can be monitored.
- From what can be monitored, what can be rapidly amplified or dampened.

There are also some more core tools that will be useful in aiding in a complexity journey, for example constraint mapping, creating a constraint mapping, creating a human sensor network, and sense-making bottom-up rather than vs planning top-down, designing safe-to-fail experiments etc. Exploring these tools in more detail is highly recommended, but would go beyond the scope of this publication.

Sense-Making and SenseMaker®

What is Sense-Making?

The primary concern of sense-making in this context is with supporting context-appropriate decision-making. Sense-making refers here to the act of processing what is going on and making sense of the world in order to act on it.

There are currently 5 major schools of thought around sensemaking or sense-making (see Peter Hayward Jones; *Sensemaking Methodology: A Liberation Theory of Communicative Agency*).

In this context, we work with the definition of Dave Snowden from the Cynefin Company, our associate partner in the LIFT project (see *Cynefin® – Weaving Sense-Making into the Fabric of our World.* by Snowden & Friends, published in 2020, as well as Bethan Smith's blog: What is sensemaking?).

Sense-making is primarily a social activity and starts generally after the data collection in workshops or in co-analysis. A tool that enables sense-making at scale in many different contexts (e.g. corporate, community, NGO, research) is the SenseMaker® by The Cynefin Company (previously Cognitive Edge) which is an associate partner of the LiFT project. Its non-profit branch The Cynefin Centre made the software available to the project. The SenseMaker Tool and the Cynefin Framework are featured in the recently published EU Field Guide "Managing complexity (and chaos) in times of crisis", which recognizes their use and validity at a European policy level.

What is SenseMaker®?

This short video explains the basic approach and thinking behind the SenseMaker® tool and methodology. SenseMaker® is an online crowd-sourcing research tool for collecting and self-interpreting micro-narratives and for discovering actionable insights beyond what surveys and focus groups usually offer. It offers a science-based approach to guide collective impact and leverage the strengths of being human in uncertain times.

SenseMaker® collects micro-stories about a single experience together with the interpretation of the micro-story by the respondents themselves. In doing so, the tool can collect and process thousands of stories in a single capture. Looking at the collective distribution of the stories with their interpretation, it allows us to identify patterns and themes and to identify collectively held beliefs, tensions and contradictions.

The aim of any SenseMaker® approach is to democratize the research and engagement process by placing the respondent at the intersections of statistics and storytelling. Respondents are asked to be the owner of their own micro-narratives. The tool can be used as a platform for real-time distributed network responses to key issues or in defining collective insight with a view to taking action.

> *"SenseMaker® is a form of distributed ethnography, as it transfers the work of interpretation of narratives from the researcher to participants. Through this self-signification, SenseMaker® removes*

> *ethnographic coding and expert re-interpretation, as participants assign meaning to their own micro-narratives, which enables large-scale explorations, reduces researcher bias, and allows for more objective analysis."* (Van der Merwe *et al*, 2019:25).

SenseMaker® replaces immersive interviews with micro-narratives sourced from people's lived experiences. The research questions are built into the tool as signifiers which allow micro-narratives to be plotted in space.

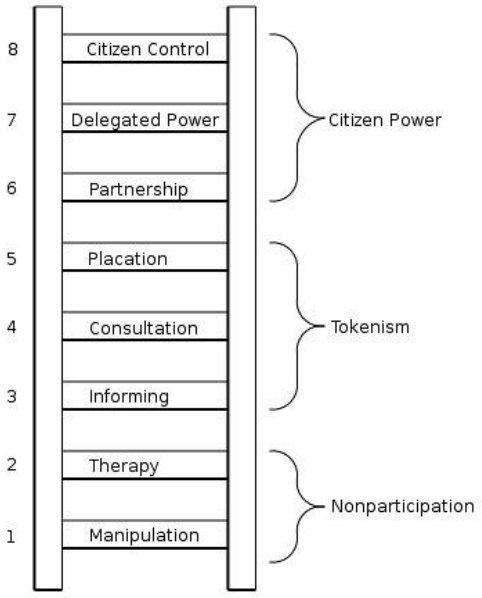
As each micro-narrative is collected, a triad (triangle) or dyad (slider) is offered to allow signification. As the respondent selects where the micro-narrative should sit, the tool generates numerical coordinates in ways which link qualitative and quantitative data and allow the display and analysis of mathematical patterns in map form (Source: https://cynefin.io/wiki/SenseMaker). It is important to highlight that the collected stories are anonymous, no person-related data is collected, and the collected data is stored for a limited time on an EU server.

For further reading into SenseMaker design and application, The Learning Power of Listening (Guijt, I. et al 2022) is a guide for those who wish to coordinate, participate in, or support the use of SenseMaker as a complexity-aware, narrative-based method — in conducting assessments, monitoring progress, and carrying out evaluations or research. The guide can be used for personal reference or for training others involved in a SenseMaker project.

Sense-making and SenseMaker in citizens' engagement and political decision-making

Sense-making and the use of the SenseMaker® tool not only provide the potential for bottom-up approaches to democratic processes but also for multi-directional peer-to-peer engagement in such processes. New Politics needs to be framed beyond the dichotomy of the 'doers' and the 'done to', 'the government` and 'the governed'. Inherent to that is the recognition and enablement of citizen agency, which enshrines both individual and collective responsibility. In this approach, there is great **potential to change how we do politics and be political agents.**

Citizen engagement can take many forms such as direct outreach to citizens and information campaigns, public meetings and consultation, deliberative processes such as citizens' assemblies and citizens' juries, and using SenseMaker® in any of these contexts. The degree of citizen engagement can be measured on Arnstein's ladder of engagement which ranges from manipulation at the bottom to citizen control at the top (Arnstein, 1969, pp. 216-224). Lower rungs of engagement are about one-way communication; decision-makers telling citizens their plans. The higher rungs of the metaphorical ladder refer to when citizens have real decision-making power, where they are in dialogue with decision-makers or are themselves the decision-makers, whereby information, ideas and decision-making capacity flow between them.



Drawing on Arnstein's ladder, the SenseMaker approach can be designed and configured to provide participation methods ranging from consultation right through to empowerment.

At the more citizen empowerment end of the spectrum, SenseMaker can be used to understand the public perceptions and experiences of any given phenomena — this can be used to more democratically set agendas and highlight areas for deliberation, as with case studies such as the Measuring the Mountain participatory legislation evaluation. Whilst collective sense-making can enrich deliberation processes, the output can be used to advocate for change. (*Image attribution and find out more about Arnstein's Ladder of Participation:* https://lithgow-schmidt.dk/sherry-arnstein/ladder-of-citizen-participation.html.

Domains of application

Methodologically this tool and approach provide promising new ways to inform New Politics both in terms of knowledge, value/insight and participation.

From a **knowledge perspective,** a recognition of the need for both breadth and depth of knowledge is embedded into the tool, by encouraging a deeper more reflexive process for participants to contribute, whilst remaining intentionally open to different issues and topics in a horizons scanning approach. Providing the ability to map knowledge and its change over time in a more fluid way, SenseMaker enables real-time mapping of sentiments and narratives in a way that offers a greater sense of aliveness and context. This has the potential to build greater empathy in political engagement. The process is designed to be somewhat open-ended and longitudinal in order to prevent the ossification of knowledge and to enable new ideas and observations to surface and be identified much earlier. Additionally, the approach recognizes and includes outliers, without the risk of some of the more traditional approaches to cleaning data that do not fit normal distributions. We consider SenseMaker to be a post-normal approach to research and engagement. More openness to new and emerging ideas without drowning out emerging ideas and marginal voices, and ensuring that they are represented. Advocacy is built into the system.

From a **participation perspective,** the ability to participate through multiple means, participation is deeper and 'thicker' than traditional methods. There is an inherent social building of social capital and community through participation, especially with regard to when it is applied through the use of interviewing/citizen journalism. Furthermore, the ability to engage with open data and peer-to-peer knowledge flow, data and insight generation has the potential to become a collective resource rather than an extractive process.

If applied -well. SenseMaker offers the opportunity for citizen participation to be better integrated into the decision-making process at a formative stage, as opposed to a more consultative/ voting process whereby propositions are preformed and institutions offer formed ideas. The SenseMaker methodology and allied methods provide the ability to embed citizen voice in the generation of topics/ideas/conclusions/recommendations/solutions in a more formative way, enabling codesign or deferred design of interventions based upon the initial horizons scanning from SenseMaker. Further, a range of ways in which people can participate, potentially makes this technique more accessible and scalable, with a recognition that different people have different preferences on how they prefer to participate, for example, self-directed response in more of a questionnaire style may suit some people and topics, whereas for other the social element of interviewing may be more appropriate or preferable; this approach allows for either or both approaches.

Community development and social network weaving qualities are especially associated with more interview-based implementations whilst the pandemic prevented this from happening at scale on this occasion with regards to data collection, deliberative processes and collective sensemaking activities have a very strong sense of community and empathy building through encouraging people to meaningfully discuss topics and issues that touch upon people's lives in different ways. An example of this approach can be demonstrated by the 'valleys stories' project.

Designing political engagements and citizen participation to mitigate against the fundamental attribution error, to take into account the context and environment of each participant in order to build more compassion and prevent dehumanization in political debate and decision-making.

The tool enables any dissonance between rhetoric and reality to become more apparent by offering a lived experience 'small noticing' or narrative to accompany points of view shared, political positions can be held more accountable and be validated or invalidated by large volumes of experiential evidence and the aggregate of the associated quantitative points of view.

Applied to the field of political decision-making, SenseMaker® is a flexible tool that can be used for a variety of purposes and approaches to collecting data, in a variety of contexts, which in turn feed into a wide range of applications and ways to use SenseMaker® outputs, for example:

- As a channel for citizens' voice, advocacy and co-creation in policymaking
- Interviewing, story collection and citizen journalism
- Creating citizen sensor networks for real-time feedback
- Real-time engagements/polling, e.g. conferences and events
- Exploring new ideas and crowdsourcing ideas from communities
- Integrating into citizens' assemblies/juries
- Participatory agenda setting and testing conclusions with wider audiences
- Bespoke academic research tools
- Participatory evaluation
- Monitoring, evaluating and measuring social impact
- Participatory budgeting
- Knowledge exchange and peer learning network

For more information please consult the Whitepaper Engage. Empower. Enact - Citizen Engagement & Democratic Innovation program, published in 2021 by Bethan Smith and Linda Doyle from the Cynefin Centre *(©2021 Cognitive Edge Pte Ltd. Cynefin Centre business unit of Cognitive Edge).*

Areas of application in the political arena

Engaging citizens by inviting them to share their stories is immensely powerful. However, we can go even further together by using the SM tool for deepening the collaboration between citizens and decision-makers. In deliberative democratic processes, such as citizens' assemblies or citizens' juries, citizens learn about the issue from experts and those with direct experience, before discussing it with their peers and before making a decision. This means that members of the public can make informed decisions that serve the interests of their community. Deliberative processes can give decision-makers legitimacy to act on

controversial issues and provide a basis for cross-party support.

Deliberative democracy processes such as sortation-based citizens' assemblies and citizens' juries are important because they allow citizens to learn about a topic in-depth, and hear from experts and those directly affected by the issue, before making a decision. An informed public is a key aspect of democracy. Citizen engagement has led to many successful decisions and projects around the globe, e.g., in Ireland, Poland, and Australia.

> *"The citizens' assembly showed that if you structure the debate around information, discussion, questions and answers, and allow citizens to really thrash things out with expert advice, very often people will shift their positions" Sadhbh O'Neill, an expert adviser to the citizens' assembly on Climate Change, Ireland* (Stefanini, 2019).

In this regard, not only can the SM software be used to facilitate and stimulate discussion in many deliberative contexts, such as community workshops or conferences, but it can also be used to serve a variety of different purposes.

Mapping the system: Controversial topics are tricky, and so is knowing when to take action such as holding a referendum or citizens' assembly. SenseMaker® can be used to better understand citizens' beliefs, needs and feelings on a specific issue so that decision-makers can determine whether it is the right time to engage in a costly deliberative process.

Priority setting: The tool can be used to set priority topics that a citizens' assembly/jury would deliberate on. This ensures that the deliberative process is focused on what really matters to the community/population.

Witness testimony on mass: Witness testimonies from citizens who are directly impacted by the issue at hand are a key part of citizens' assemblies and juries. The software can be used to allow the whole population to testify. In addition to some of those who share their testimony face to face with the assembly, a selection of the stories captured with the software could be discussed during the process. The full dataset could be made available to everyone taking part in the process.

Data collection & synthesizing: During a deliberative process, many different arguments, proposals and questions are raised. SenseMaker® can help to synthesize the thoughts and ideas of the assembly itself in real-time. This could help members understand where they are at collectively and how to best move forward. It could also be used to understand how the assembly members are finding the experience of taking part, which would help the organizers to address issues quickly and to prevent attrition. This data would also be of great interest to academics studying deliberative processes.

Real-time feedback from the wider community: SenseMaker® can provide real-time feedback from the broader community on the citizens' assembly decisions or recommendations. The assembly could then decide to adjust their decisions/recommendations based on the broader community's input. Using the tool during the assembly can make the assembly process more interactive and engaging for viewers, whilst allowing members of the assembly to sense-check and consult more widely. This requires planning the assembly process, facilities and technical set-up prior to the event in order to work seamlessly (Source: https://cynefin.io/wiki/SenseMaker).

Concrete applications of the Cynefin framework, Sensemaker® tool & Sense-making approach

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Added Value of the SenseMaker approach for political decision-making processes

What is the added value of using SM as a tool for mapping the field as a basis for better decision-making or other political processes, as compared to more conventional survey tools? Here are some general values that SenseMaker provides not just better than other traditional surveys, but in entirely **new quality based on different principles:**

Founded on the principles of **empowerment, democratization and collective intelligence**, this approach allows capturing narratives on a relevant topic from different perspectives, allowing the respondent to discuss what matters to them without leading questions. This also ensures that the engagement and data capture framework is flexible enough to be relevant and useful to the diverse range of people involved.

- By observing the **design principles derived from complexity theory and cognitive sciences** it is possible to collect quantitative and qualitative contextualized data that are as unbiased as possible by the (unconscious) hypotheses of the researchers. This captures what really happens.
- The capture gives the participants in a collective (city, valley, neighborhood, organization) of whatever type an **active voice and the power to evaluate and interpret their own experience**. This may have a cathartic effect on the participants and give a felt-sense of being seen or heard.
- Everyone in a city or community **can contribute to the process** of telling their stories – good and bad – and adding meaning by interpreting their own experience. Like in a hologram, each story can have the power to contain or point to the whole system. Measures and actions can be derived on the basis of the entire "experience landscape".

- Everybody in a city or community can contribute without having to reach a certain level of awareness (**developmental bias**), having to adopt certain values, having to understand systemic relationships or having process skills.
- Since data volumes are no longer a problem nowadays, neither in the acquisition nor in the processing, this approach can **be easily scaled to process large amounts of data.**
- Sensemaking as a process does not end with the recording of states, attitudes, and micro-narratives, but supports a **collective process of interpreting one's own current landscape and deriving concrete action potential. The creation of new, meaningful meta-narratives is encouraged.**

(Source: https://ezc.partners/2021/11/16/sense-and-the-city/#more-7205)

Concrete applications and examples

Case studies from the LIFT Project

One major field of work within the LIFT project was, in fact, the application of Cynefin, Sense-Making and SenseMaker technology® in different political and decision-making contexts. The detailed Study report on good and emergent practices using the SenseMaker tool presents six case studies, four of which have been developed specifically as part of the LIFT action research, while two other case studies were developed by LIFT Partner EZC Partners in different contexts. However, the authors deemed the additional case studies highly relevant to the topic of political decision-making.

The case studies presented were:

1. The LIFT Capture on Covid
2. European Politics (COFE)
3. Climate Change (SEAS)
4. Leadership Conference (Reimagine Leadership)
5. MediaFutures (PONTE)
6. Collective Trauma Healing and Democratic Competencies (Pocket Project)

Although unanticipated within our LIFT project, the disruption through the pandemic has provided an incredible catalyst for approaching our topic of New Politics**.** The pandemic has provided an unwanted, yet deep mirror for our societies on a global and local scale. It has triggered hopes for the disruption of obsolete societal and political structures, as well as fears and old traumas. It has made disconnects, disbalances and systemic pathologies more pronounced, visible and tangible. As the multilevel, multiphasic pandemic, and now the war in Ukraine goes on, the SenseMaker captures have underlined that we suffer simultaneously from a crisis in leadership and in politics.

Summary of insights from the LIFT case studies

The SenseMaker® has proven to be an excellent tool for probing into human systems, such as networks and communities, and bringing back vibrant data points at different levels of meaning-making:

- **Micro-narrative**: each small micro-story collected provides context and a subjective experience (descriptive self-awareness). in their sum they point to systemic issues, trends, attitudes and ideation patterns at the collective level.
- **Sense-making**: On the level of attitudes and assumptions, it helps to make participants' dispositional states visible, because it unveils a mosaic of nuances that no other survey or poll can provide.
- **Reflexivity**: Integrating a more reflexive process into the way that information is shared and political processes are run enables more considered reflexive politics rather than reactionary 'triggered' and superficial discourse. The process of responding to the SenseMaker integrates a slower kind of politics by having the participants not only share their points of view but reflect upon what underlies their beliefs and opinions, and during interpretation take into account not only the points of view of others but the contexts that have shaped those points of view.
- **Scale**: SenseMaker works with human systems at any scale. A key challenge in sensemaking is getting the level of granularity right, that is, sensemaking and intervening at the level at which those involved have the ability to act. In complex (or chaotic) situations, data from those with lived experience is crucial to ensure accurate and authentic data.
- **Change and action**: The resulting sensemaking processes provide wide access to action, agency and change.

The **Cynefin Centre** has conducted over the last 10 years numerous SenseMaker and Sensemaking activities in different contexts and countries. For more detail, please refer to the brochure **"Citizens Engagement & Democratic Innovation Case Studies"** that has been published in 2021 by Bethan Smith and Linda Doyle from the Cynefin Centre *(©2021 Cognitive Edge Pte Ltd. Cynefin Centre business unit).* Cases relevant to community building are, for example, **Community capacity building in Cape Town (South Africa)**, (see - Ziervogel et al. (2022) - Supporting transformative climate adaptation: community-level capacity building and knowledge cocreation in South Africa); **Policy & legislation evaluation measuring the mountain (Wales),** and the Research study: **Meaning-making in a context of climate change: supporting agency and political engagement (Sweden)** (Wamsler et al 2022).

The Integral Quality of the Complexity-based approaches

The authors of this chapter have long-standing experience with both frameworks, the Integral Framework including most types of developmental stage theories (DST) that are at the core of Integral Theory, as well as the application of the Cynefin Framework and SenseMaker Application.
As one moves into the complex domain, the more the relational aspects between people, their mindset, beliefs and conscious and unconscious assumptions, in short, the **inner dimensions of the human being become vitally important**, if we are to understand the human system at hand. While operating in simple or complicated domains, the more functional aspects and hard facts of the process or situation are in the foreground, which would map onto the outer dimensions of Ken Wilber's Integral Framework (see chapter 4). In that sense, it could be argued, that the integral quality, (which looks at the inner and outer dimensions, the individual and the collective aspects of any given context, see AQAL framework) is implicit in the application of complexity-based approaches and frameworks.

Context and appropriateness

The Cynefin framework helps to understand which type of domain one is operating in, how complex (non-linear), complicated (linear) or chaotic (no cause and effect) it is and which type of data gathering and decision-making is **appropriate**.

An anthro-complexity approach considers the appropriateness of a particular type or category of human development with regard to the **context** at hand; that is to say that no one way of thinking or seeing the world is inherently better or more developed than another, but depending on the situation, culture or context, different approaches will be more or less beneficial or appropriate.

Sheer practical applications of this SM approach ensure that people, no matter which developmental "stage" they currently occupy, can contribute in invaluable ways in exploring what is going on in the relationships, the behaviors, beliefs, assumptions and attitudes of the present moment, without having to undergo any training in values, development, leadership or similar. This also makes this sense-making approach immediately scalable.

Ultimately from an Anthro-complexity perspective, development stages can be seen as modulators within a system, that may in some occasions or contexts be organized hierarchically. However, it is important to establish that there is no universal hierarchy, this is dependent on the culture of context being explored.

Connecting belief patterns with data

A key learning from this project was the importance of understanding the narrative and **the 'why' around why people hold certain beliefs and opinions.** It has allowed us to recognize and develop the capacity to understand the context and motivation behind beliefs, as opposed to a more traditional ballot box style of political engagement that only evidences the 'what' and not the 'why'. A more contextually informed approach to citizen engagement and democracy could allow for more subtle and inclusive approaches to decision-making and action, recognizing that one size often does not fit all (see Aurobindo's claim in chapter 1) and that a more qualitatively informed approach can help uncover potential solutions and challenges much earlier in the political process.

The ability to **maintain a connection between the belief or idea,** and the context in which it is formed (through the binding of the qualitative and quantitative elements of the SenseMaker), allows us to **use context as a variable of belief**. This, in turn, allows the explanation and justification of holding such beliefs or ideas, but enables another to empathize better with the individual's response but better depict 'their side of the story'. This can enable more meaningful deliberation and conversations to take place as result and works to mitigate against misconstruction and the co-opting of stories to fulfil certain ideological positions by ensuring that those are explicitly positioned by the respondent themselves.

Further to this, it allows for the idea of 'bounded applicability' to be applied, that is to recognize that **sometimes something is appropriate, and other times not**. This will depend upon context. As a result, we are able to look at data, stories and deliberations and develop a more nuanced response based upon what contextual issues are at play at any given time, and avoid taking an idea or a positioning as fixed and universally applicable.

References

Research papers

Ackoff, R. (1973) "Science in the Systems Age: beyond IE, OR and MS." in: Operations Research Vol 21, pp. 664.

Arnstein, S. R. (1969). A ladder of citizen participation. Journal of the American Institute of planners, 35(4), 216-224.

Fisher, G. S., & Hotchkiss, A. (2008). A model of occupational empowerment for marginalized populations in community environments. Occupational Therapy in Health Care, 22(1), 55-71.

Fricker, M. (2007). *Epistemic injustice : power and the ethics of knowing*. Oxford: Oxford University Press.

Gaventa, J., & Barrett, G. (2012). Mapping the outcomes of citizen engagement. World Development, 40(12), 2399-2410.

Guijt, I., Gottret, M.V., Hanchar, A.,Deprez, S., Muckenhirn, R. (2022). The Learning Power of Listening - Practical guidance for using SenseMaker. eBook: 9781788532006, Paperback: 9781788531986, Hardback: 9781788531993. https://practicalactionpublishing.com/book/2622/the-learning-power-of-listening

Jagosh, J., Macaulay, A. C., Pluye, P., Salsberg, J. O. N., Bush, P. L., Henderson, J. I. M., ... & Greenhalgh, T. (2012). Uncovering the benefits of participatory research: implications of a realist review for health research and practice. The Milbank Quarterly, 90(2), 311-346.

Jones, R., Pykett, J., & Whitehead, M. (2011). The geographies of soft paternalism in the UK: the rise of the avuncular state and changing behaviour after neoliberalism. Geography Compass, 5(1), 50-62.

Kurtz, C.F. and Snowden, D. (2003), The New Dynamics of Strategy: IBM Systems Journal, VOL 42, No 3; http://alumni.media.mit.edu/~brooks/storybiz/kurtz.pdf

Nabatchi, T., & Leighninger, M. (2015). Public participation for 21st-century democracy. John Wiley & Sons

Sætra, E., (2019). Teaching Controversial Issues: A Pragmatic View of the Criterion Debate. Journal of Philosophy of Education, Volume 53, Issue2, Pages 323-339

Snowden, D. & Boone, M. (2007). A leader's framework for decision-making. Harvard Business Review, November 2007 pp. 69-76.

Snowden, D. & Rancati, A., Managing complexity (and chaos) in times of crisis. A field guide for decision makers inspired by the Cynefin framework, Publications Office of the European Union, Luxembourg, 2021,ISBN 978-92-76-28844-2 (online),978-92-76-28843-5 (print), JRC123629.

Snowden, D. and Stanbridge, P. (2004), The landscape of management: Creating the context for understanding social complexity. E:CO Special Double Issue Vol. 6 Nos. 1-2 pp. 140-148 https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.452.1904&rep=rep1&type=pdf

Starbuck, W. H., & Milliken, F. J. (1988). Executives' perceptual filters: What they notice and how they make sense. Republished Donald Hambrick (ed.). The Executive Effect: Concepts and Methods for Studying Top Managers. Greenwich. CT: JAI Press, 1988, pp. 35-65

Stein Z. (2010): "Human Development 1: Higher levels are not always better (sorry everyone)". An excerpt from: Stein, Z. (in press). On the use of the term Integral. Published proceedings of the 2nd biannual Integral Theory Conference. Esbjörn-Hargens (Ed.). Forthcoming SUNY press. http://www.zakstein.org/human-development-1-higher-levels-not-always-better-sorry-everyone/

Uomoto, J. M. (1986). Examination of psychological distress in ethnic minorities from a learned helplessness framework. Professional Psychology: Research and Practice, 17(5), 448.

Urquhart, C., Mei Chun Lam, L., Cheuk, B., Dervin, B.L., (2019). Sense-Making/Sensemaking. Oxford Bibliographies - https://www.oxfordbibliographies.com/view/document/obo-9780199756841/obo-9780199756841-0112.xml

Van der Merwe, Liza & Biggs, Reinette & Preiser, Rika & Cunningham, Charmaine & Snowden, David & O'Brien, Karen & Jenal, Marcus & Vosloo, Marietjie & Blignaut, Sonja & Goh, Zhen. (2019). Making Sense of Complexity: Using SenseMaker as a Research Tool. Systems. 7. 25. - https://www.mdpi.com/2079-8954/7/2/25

Wamsler, C., Osberg,G., Panagiotou, A., Smith, B., Stanbridge, P., Osika, W. & Mundaca, L. (2022). Meaning-making in a context of climate change: supporting agency and political engagement

Taylor and Francis Online. Published online: 26 Sep 2022 - https://www.tandfonline.com/-doi/full/10.1080/14693062.2022.2121254

Waterman, R. H., Jr. (1990). Adhocracy: The power to change. Memphis, TN: Whittle Direct Books.

Weick, K. E., Sutcliffe, K. M., & Obstfeld, D. (2005). Organizing and the process of sensemaking. Organizational Science, 16(4), 409-422.

Yeung, K. (2017). 'Hypernudge': Big Data as a mode of regulation by design. Information, Communication & Society, 20(1), 118-136

Ziervogel, G., Enqvist, J., Metelerkamp, L. & van Breda, J. (2022) Supporting transformative climate adaptation: community-level capacity building and knowledge cocreation in South Africa, Climate Policy, 22:5, 607-622. https://www.tandfonline.com/doi/pdf/10.1080/14693062.2020.1863180

Blog articles and other Publications by Cynefin Centre

A blog post series on the origins of Cynefin: https://cdn.cognitive-edge.com/wp-content/uploads/sites/2/2020/11/16124043/The-Origins-of-Cynefin-Cognitive-Edge.pdf

Doyle, L. (2021) Change & Complexity: Vector Theory of Change https://cdn.cognitive-edge.com/wp-content/uploads/sites/12/2022/02/02160119/VTOC-paper-2022.pdf

Smith, B & Doyle, L. (2021) Engage. Empower. Enact - Citizen Engagement & Democratic Innovation programme, Cognitive Edge https://cdn.cognitive-edge.com/wp-content/uploads/sites/12/2022/04/25120421/Citizen-Engagement-White-paper-2022.pdf

Citizen Engagement and Democratic Innovation Case Studies https://cdn.cognitive-edge.com/wp-content/uploads/sites/12/2022/05/03102403/citizen-engagement-and-democratic-innovation-case-studies.pdf

Smith, B. 2022. Active Sensemaking, Sense-Making, Sensemaker: Apocalypse of The Proven Words https://thecynefin.co/making-sense-of-active-sensemaking-sensemaker/

Snowden, Multi-ontology Sense-making; a new simplicity in decision making

https://cdn.cognitive-edge.com/wp-content/uploads/sites/2/2020/11/16123913/40-Multi-ontology-sense-makingv2-May05.pdf

Kurtz and Snowden, Bramble Bushes in a Thicket
https://cdn.cognitive-edge.com/wp-content/uploads/sites/2/2020/11/16123947/52-Bramble-Bushes-in-a-Thicket-1.pdf

Citizen Engagement and Democratic Innovation Series. Whitepaper
https://cdn.cognitive-edge.com/wp-content/uploads/sites/12/2022/04/25120421/Citizen-Engagement-White-paper-2022.pdf

Citizen Engagement and Democratic Innovation Case Studies
https://cdn.cognitive-edge.com/wp-content/uploads/sites/12/2022/05/03102403/citizen-engagement-and-democratic-innovation-case-studies.pdf

Citizen Sensor Network Paper
https://cdn.cognitive-edge.com/wp-content/uploads/sites/12/2022/02/02160847/citizen-sensor-network-paper-2022.pdf

Five Schools of Sensemaking
https://cynefin.io/wiki/Schools_of_sense-making#The_Five_Schools_of_Organisational_Sense-makingrdbibliographies.com/view/document/obo-9780199756841/obo-9780199756841-0112.xml

Snowden, D & Friends (2020) Cynefin - Weaving Sense-Making into the Fabric of Our World. Paperback ISBN-10 1735379905

Snowden, D. and Rancati, A., Managing complexity (and chaos) in times of crisis. A field guide for decision makers inspired by the Cynefin framework, Publications Office of the European Union, Luxembourg, 2021, ISBN 978-92-76-28844-2 (online),978-92-76-28843-5 (print), JRC123629. 12.

Other relevant resources

EZC Partners (2021). Sense and the city. https://ezc.partners/2021/11/16/sense-and-the-city/#more-7205)

Geiken, B.(2020) Complexity, a mostly unexplored opportunity,
https://www.linkedin.com/pulse/complexity-mostly-unexplored-opportunity-bettina-geiken-phd

Geiken, B.(2022) Coherence matters! Mapping a new paradigm quality, https://www.ifis-freiburg.de/2022-05/coherence-matters-mapping-new-paradigm-quality

Jones, P. (2015).*Sensemaking Methodology: A Liberation Theory of Communicative Agency*.
https://www.epicpeople.org/sensemaking-methodology/

Stefanini, S. (2019) A democratic experiment in Ireland could become the model for fighting climate change. QUARTZ. https://qz.com/1553567/a-democratic-experiment-in-ireland-could-becomethe-model-for-fighting-climate-change/

Summary Box: Key concepts and elements

*** Complex adaptive system:** A complex adaptive system is one where the relationships between different elements are not obviously or fully apparent. There are dynamic changes, causal relationships are non-linear and properties and behaviors are emergent.

- **Highly Unpredictable:** It's very difficult to predict the interactions of agents in the system.
- **Contagious:** As the agents in the system are well connected, things will spread quickly.
- **No complete control:** They are decentralized, like the geese flying in organized V-shaped flocks.
- **No complete information:** No one in the system has complete information.
- **Adaptive nature:** They are adaptive in nature.
- **Emergence** is a phenomenon in which the development and interaction of 'things' or agents in a system create **novel** characteristics and behaviors.

* **Anthro-complexity** considers the questions of how humanity makes sense of this world in order to act within it, as compared to what we might consider being mathematical or computational complexity, There are some features that can be seen as distinctly human: **intelligence, intentionality and identity**

*** Coherent heterogeneity:** As you increase variety within the (complex) system to the point where it becomes heterogeneous, it matters that the differences are capable of coherence. While there may be conflict, alignment, within context, should be relatively easy to achieve.

***The Cynefin framework and its domains:** At its most basic, the Cynefin® framework is a decision support framework. Gallows distinguishes between three different types of systems:

- **Ordered systems:** cause and effect relationships are either clear or discoverable through analysis.
- **Complex systems:** the only way to understand the system is to interact.
- **Chaotic systems:** turbulence prevails and immediate stabilizing action is required.

Graphical walk-through: https://www.youtube.com/watch?v=nPErDG1UryU © Sue Borchardt

* **A theory of change for complex systems:** This is about mapping the dispositional state of a population or system at a moment in time. From this data, we can ascertain a particular direction or direction that we might wish to nudge towards. This is managing the potential to evolve from the present state by starting from where people are, as opposed to where someone deems they should be.

*** Sensemaking/Sense-Making (SM):** the act of taking multiple sources and varieties of data and synthesizing it into one picture and making a judgment call on how best to act. It is the process of "structuring the unknown" (Waterman, 1990, p. 41). *Naturalizing Sense-Making* is one of the five schools of SM. It is defined by its use of natural science as a constraint on the development and generation of praxis to support SM. This also implies the question of sufficiency: "how do I know enough to determine the type of action to take?" SM is primarily a **social activity and starts generally during and after the data collection** in workshops or in co-analysis. A tool that enables SM at scale in many different contexts (e.g. corporate, community, NGO, research) is the SenseMaker®.

*** SenseMaker®:** an online crowd-sourcing research tool for collecting and self-interpreting micro-narratives and for discovering actionable insights beyond surveys and focus groups. It offers a science-based approach to guide collective impact and leverage the strengths of being human in uncertain times. Outlier stories averaged away in traditional surveys, are important as weak signal detection as diverse viewpoints are necessary for a system to stay adaptive.

*** Further reading:** LIFT IO N° 6: Sense-Making for society; Wiki - https://cynefin.io/wiki/Main_Page