

HOW TO CHANGE COMPLEX SYSTEMS

BACKGROUND

SEVEN TOOLS FOR ANALYSING COMPLEX SYSTEMS

“The world will do most of the work for you, provided you cooperate with it by identifying how it really works and aligning with those realities.” - Joseph Tussman.

Sounds great! The problem is that it is hard to understand how the world really works. We have tools to do it, but the tools tend to be limited by one of three factors:

(1) Not comprehensive: SWOT Analysis is the most popular tool, but it tends to overlook human nature, which typically is at the centre of system malfunctions.

(2) Not intuitive: Systems Mapping is comprehensive, but it tends to be too difficult for teams to use. It creates engineering-like models of stocks, flows, and feedback loops.

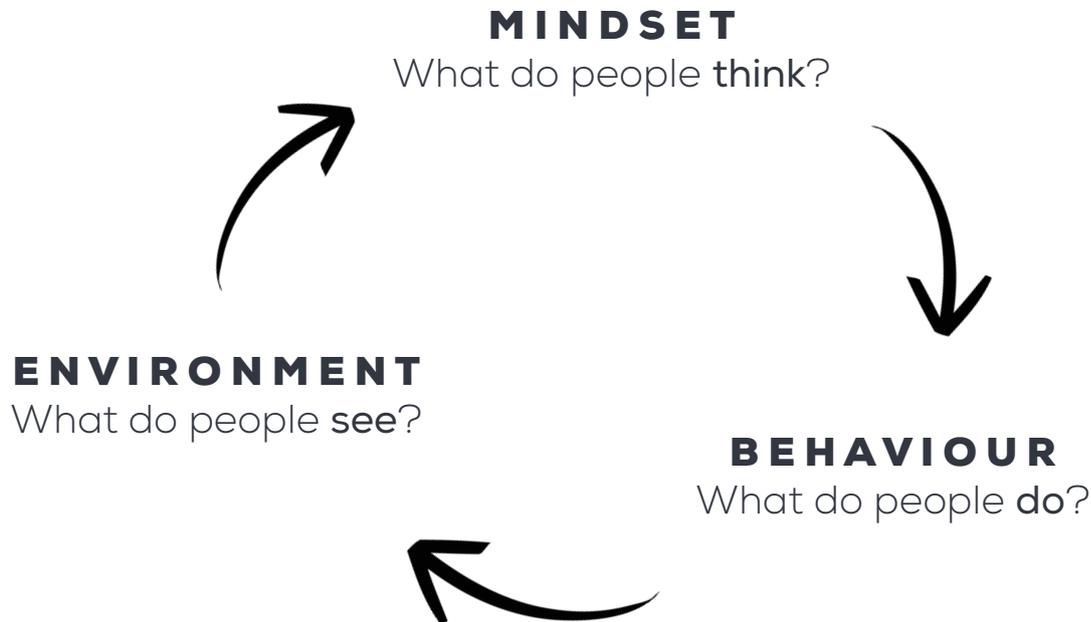
(3) Not practical: The normal way we study complex systems is that we make a list of all of the problems that we want to solve. The problem is that no organisation has the resources to solve 20 problems simultaneously, and even if we did, dividing resources equally between 20 problems may be far less effective than identifying a few key leverage points. However, identifying a “root problem” is controversial. It is always safer to stick with an irrefutable list of 20 problems than to say, “This is where we should invest 80% of energy” - even if the latter is more effective in the real world.

Below is a list of the most common tools for analysing complex systems (albeit not comprehensive). For clarity, each tool has been graded (albeit subjectively) for three qualities: is it intuitive, practical, and comprehensive?

	Comprehensive	Intuitive	Practical	Limitations
Gut Analysis		X		Tends to be done in a hurry by an individual. Tends toward naive solutions.
SWOT Analysis		X		Tends to be negatively vs. solution focused. Tends to ignore interactions. Tends to ignore human nature.
Systems Modelling	X			Tends towards over-confidence. Based on modernist assumptions of predictability and certainty.
PEST Analysis		X		Focuses on external factors only: political, economic, social, technological. Variations add legal, environmental, ethical (PESTLE)
Five Forces			X	Focuses on external competition only: threat of existing competition, new entrants & products, bargaining power of suppliers & buyers.
Force Field Analysis		X		Similar to SWOT but more visually intuitive showing driving and restraining forces of end goal.
Five-Fold Why		X	X	Focuses on root causes analysis by asking why something is happening 5x's. Tends toward mono-causal explanations and be narrow in view.

STEP 1: DIAGNOSIS

HOW TO ANALYSE COMPLEX SYSTEMS WITH MINDSET MAPPING



If our current options are not comprehensive, not intuitive, or not practical, is there an alternative that can (1) put human nature at the centre, (2) simplify complexity, and (3) give actionable insight?

Yes, welcome to Mindset Mapping - a new tool to analyse and change complex systems. It's still going to be hard but now at least it's manageable. Everything you need to know is in the graphic above. (Really!) The difficulty in analysing systems is not listing all the components, but showing the relationship between the components. Mindset Mapping forces one to show the relationships between individuals, their structures, and the ideologies which reproduce the system and explain the behaviour of individuals.

If you are thinking the tool seems too simple (and I hope it does), this is what you should know about the tool's research basis (expanded on page 5):

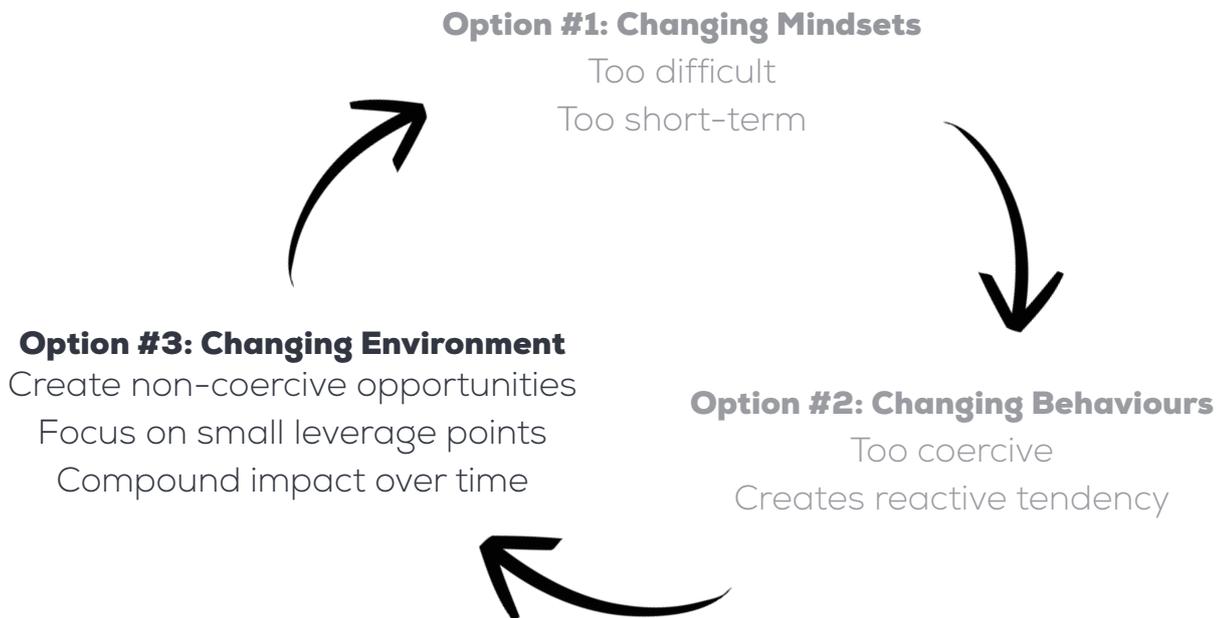
(1) Built it on 150-years of social theory: Mindset Mapping synthesises the three major schools of social thought (conflict theory, structural functional theory, symbolic interaction theory) into a single model for systems analysis.

(2) Uses ideal types to simplify complexity: John Maynard Keynes said, "It is better to be roughly right than precisely wrong." By turning the data into a story line using ideal types (see explanation on page 5), the data becomes meaningful and usable.

(3) Uses flywheels to identify root problems: Flywheels are the small, almost imperceptible behaviours that drive the system. They are both the cause of the problem and the potential solution.

STEP 2: PRESCRIPTION

HOW TO CHANGE COMPLEX SYSTEMS WITH MINDSET MAPPING



Problem

There are at least four problems with changing complex systems:

- (1) **It is difficult:** Most leaders lack the charisma to consistently inspire change. So intervening at the level of mindsets does not reliably scale. Assumptions are simply too difficult to change. Warren Buffett said, "What the human being is best at doing is interpreting all new information so that their prior conclusions remain intact."
- (2) **It is short-term:** If you do manage to inspire someone enough to change their mindsets, it is in all likelihood short-lived. Why? Their environment swallows up their good intentions. One hour of inspiration can't compete with 24 hours of socialisation.
- (3) **It is coercive:** You can mandate individuals to change their behaviour, but it is coercive. It produces a reactive tendency, i.e. the desire to do the opposite.
- (4) **It creates more problems:** Anyone who has been part of a master plan for social change knows that it creates as many problems as it solves. The solution fixes immediate problems but introduces too many unintended consequences. E.g. China's Great Leap Forward and Cultural Revolution of 1950-70s, corporate organisational change programmes, etc.

Solution

If you can't change mindsets directly or coerce behaviour, what can you do? Create non-coercive opportunities within people's existing environment. Thaler and Sunstein (2008) call these "nudges". For example, it looks like creating an after-school programme in an at-risk neighbourhood (e.g. YMCA, Boys & Girls Club). It is an outdoor gym. It is putting healthy snacks in your cupboard. It is filling your home with good books (vs. an iPad loaded with Netflix). It is exposing people to good role models. It doesn't have to be big but it does have to be aligned with the root problem, so that year-after-year you are chipping away at it with small interventions.

THE RESEARCH

READ MORE ON CHANGING SYSTEMS WITH MINDSET MAPPING

Summary: Mindset Mapping looks simple, but it is actually based on 150 years of social theory. This is a summary of some of the big ideas that have shaped the model.

Source	Summary
Ideal Types (Max Weber 1949)	How does one make sense of something as large as society (or even an organisation)? For Weber, one must synthesise the individuals into a composite archetype to study it.
Structuration Theory (Anthony Giddens 1986)	For 100 years, sociologists argued whether structures or individuals matter more. For many, Giddens settled the debate by saying both matter but neither is determinative.
Attribution Theory (Franz Heider 1958)	It is not only our beliefs which affect our behaviour but by observing our own behaviour we change our beliefs.
Modes of Production (Karl Marx 1867)	For Marx, the modes of production (environment) determines the relations of production (behaviour). Therefore, to change the individual, one must change their structures.
Social Facts (Emile Durkheim 1895)	The father of sociology (along with Marx & Weber) believed that "social facts" were the proper object of study for sociology. Social facts are the mindsets which transcend individuals but exert social control over them.
Power of Choice (Viktor Frankl 1946)	Austrian psychiatrist and Holocaust survivor said, "Between stimulus and response there is a space, and in that space is our power to choose." That is why life is not deterministic.
Socialisation (Talcott Parsons 1937)	How do mindsets form? Through socialisation, by which the beliefs and behaviours of our environment become our own. What we see, we become.
Positive deviants / outliers (Wishik et al. 1976)	Every system has outliers, those who live in the same environment with the same resources but behave differently - and often better. How? A different mindset.
Flywheel (Jim Collins 2001)	Good companies pursue "the next big thing". Great companies invest in their flywheel. They are the few, small activities rightly aligned for big results.
Nudge Theory (Thaler & Sunstein 2008)	How do you influence mass behaviour without coercion and financial incentives? Nobel laureate Richard Thalers says nudges.
Grand Plans vs. Piecemeal (William Easterly 2006)	After 16 years with the World Bank, William Easterly grew tired of "utopian social engineering" and instead advocates piecemeal, democratic reforms at the grassroots.