

ESCENARIOS COMO ANTICIPACIÓN RESPONSABLE

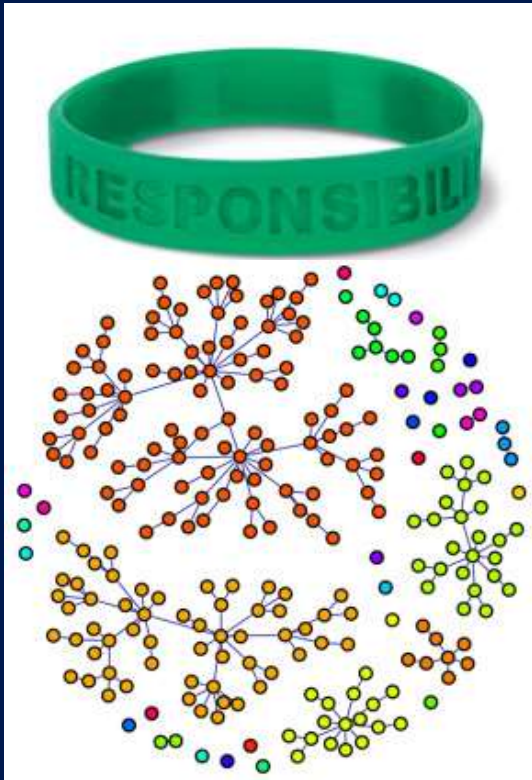
SCENARIOS AS RESPONSIBLE ANTICIPATION

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Main Idea



RAISA D'SOUZA

The practice of scenarios (scenario planning, scenario development, scenario thinking etc.) implies responsibility.

Scenarios are influential on decisions and activities that change the future and have effect on others.

The presentation

Scenarios and uncertain knowledge

Spheres of responsibility

Readjusting perspectives

Cartesian anxiety

Robert Rosen: Anticipatory Systems

Modelling relations and foresight

Ethics and responsibility

Responsible role of scenarios in anticipatory system

Annexe: Values of Futures Studies

SCENARIOS

Scenarios

Attempts to explore alternative states of being:

separated from the present by some temporal movement and

separated from each other by a turn or difference in logic or reasoning.

Looking ahead...

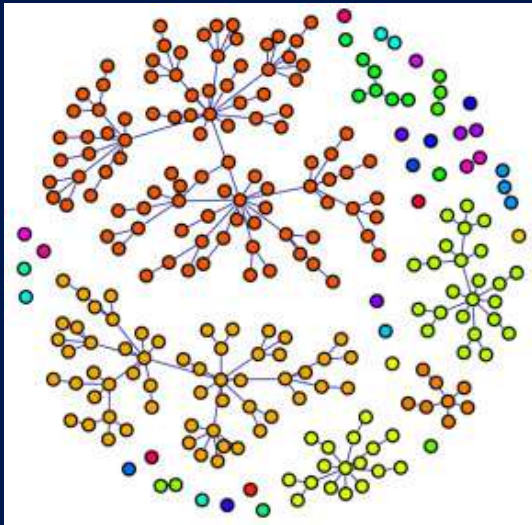
Purposeful as 'the future(s) of X'

Scenarios

Address uncertainty... tending toward risk
(Cf. F Knight)

Assume a significant level of ontological security (belief in certainty of knowledge) about the present and its relationship to the future

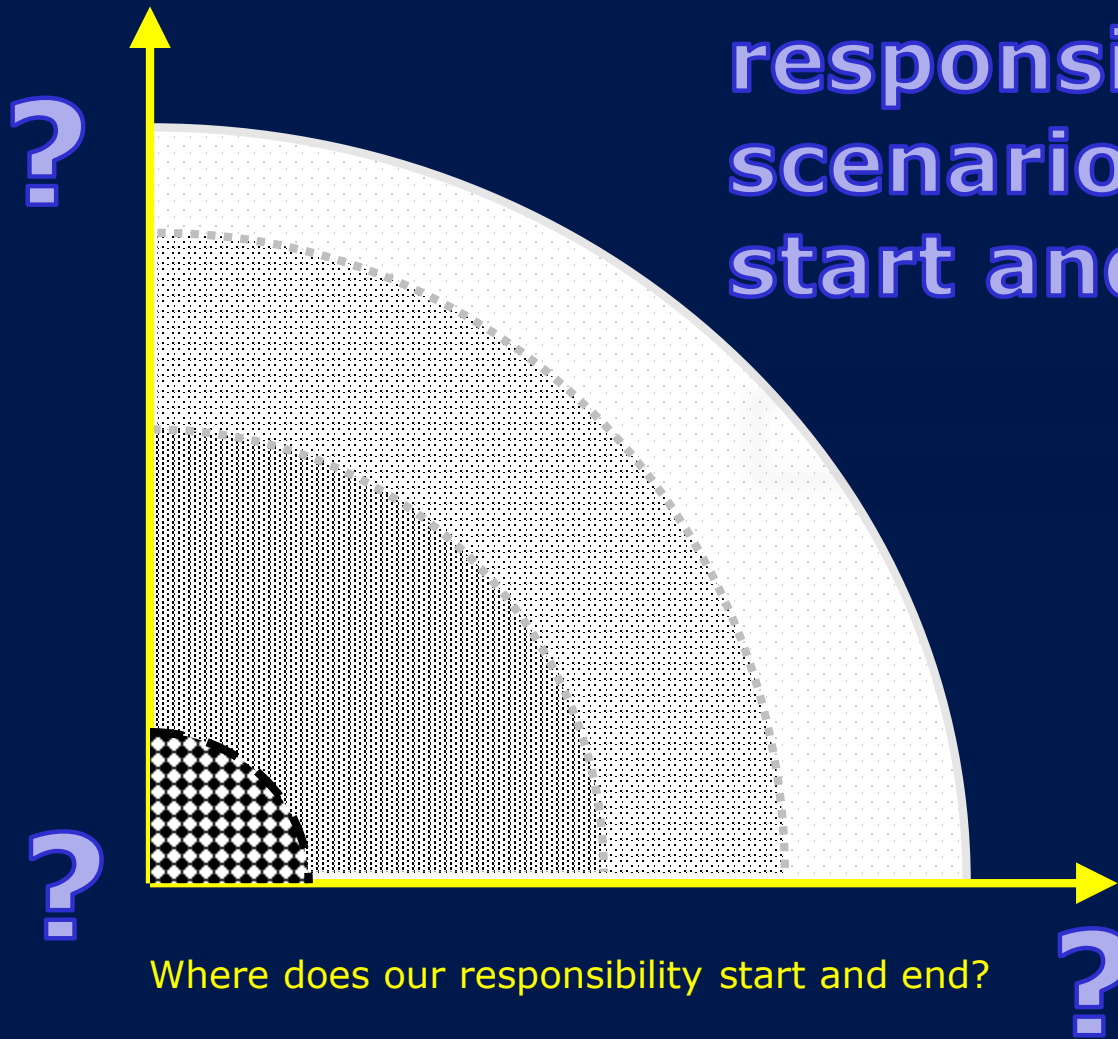
Limitations



The scope of scenarios is always limited and **far less** than the reach of the network connections to that scenario

Where does our responsibility as scenario planners start and end?

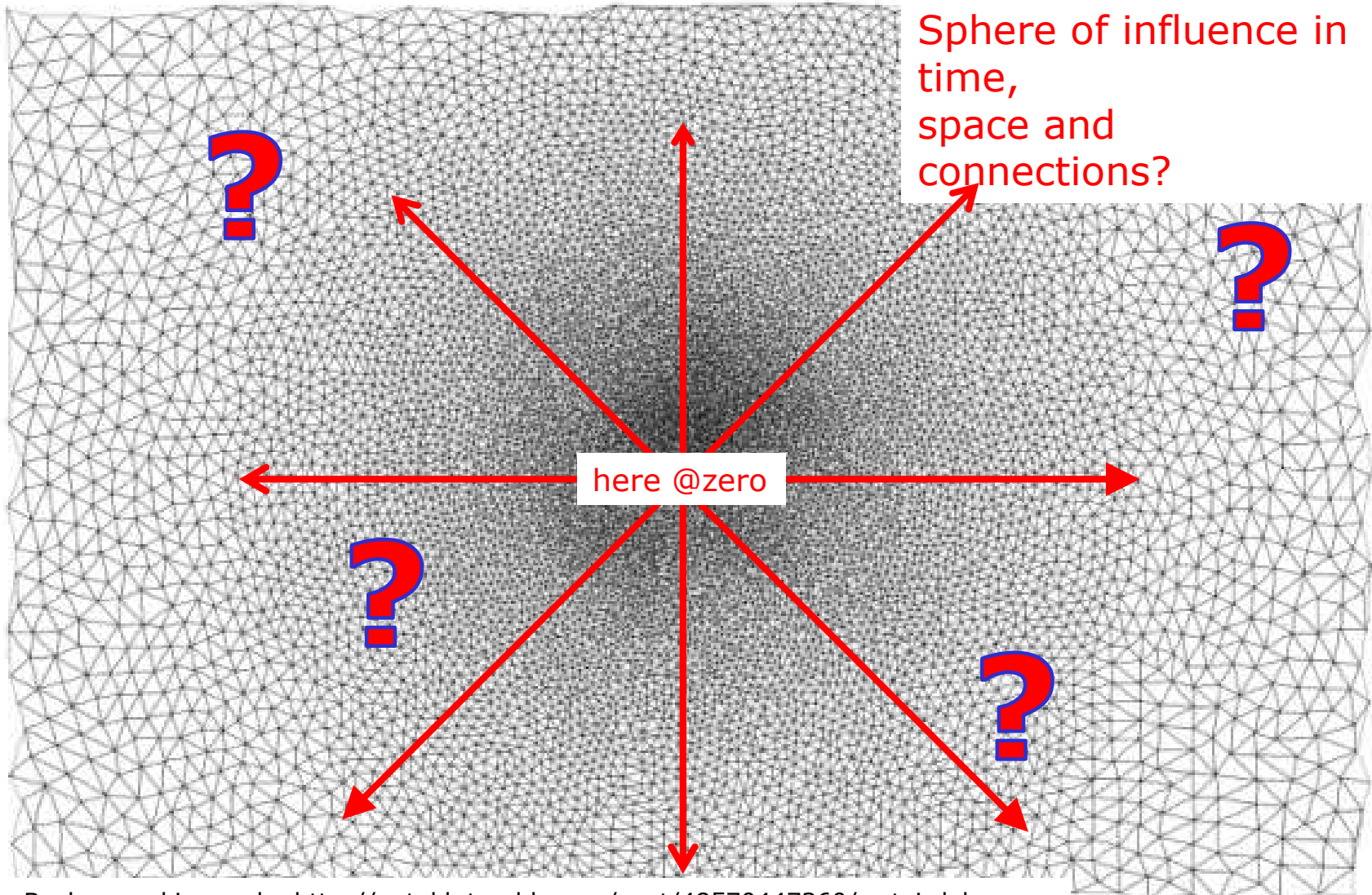
Sphere of influence



Time

Where does our responsibility start and end?

Sphere of influence in time, space and connections?



Background image by <http://patakk.tumblr.com/post/48570447360/mrtvi-delaunay>

Readjusting perspectives

RESPONSIBILITY

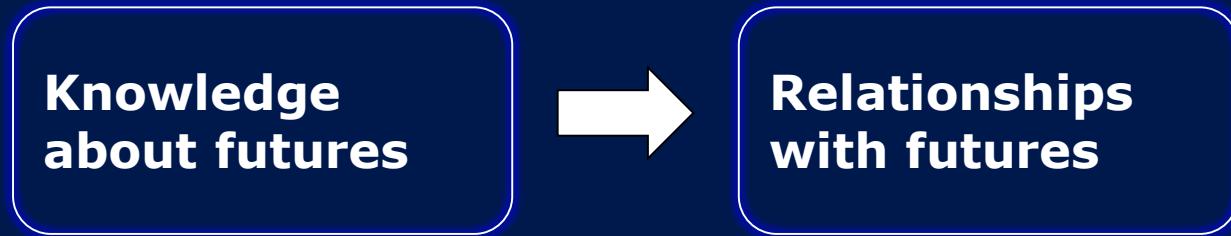
Responsibility

“The contemporary imperative of **responsibility** requires that *responsibility be adequate to the sphere of influence*. This very reasonable demand, however, moves **ethics** from the tangible sphere of spatially delimited rights and duties to compatriots and contemporaries, towards the **open and unlimited realm** of beings and organisms **unborn and unknowable...**

...Our moral duty, [...] is to ensure the **future of Being and human spontaneity.**”

Barbara Adam (2011)

Re-adjusting perspectives



The focus of scenarios is typically on the changing environment (e.g. PESTLE etc.) and creating knowledge about possible future states of being. A responsibility for **accuracy** is implied by this focus

My proposal is that to **be responsible** as scenario developers, we must be mindful of the relationships between present and futures.

Role of Futures Studies / Foresight

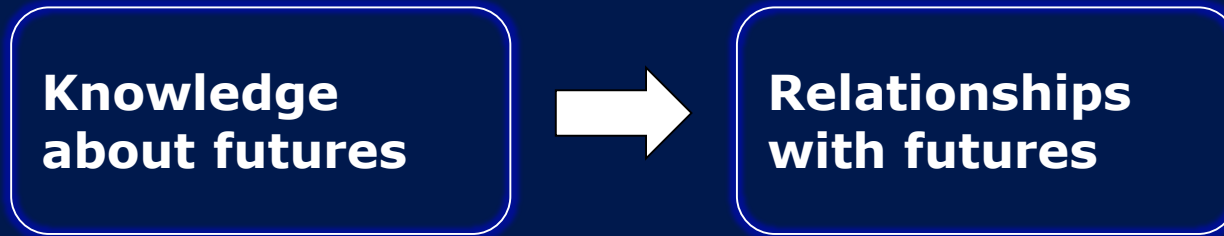
Foresight:
to what
effect?

“The initiative should be taken here and now, at all levels of the social system, to release a vitality to construct a society ... “
(de Jouvenel H, 1986, p133)

“...building projects for the future through actions based on clearly articulated values”
Masini (2006, p1168).

“help us evolve to this new stage of ‘normality.’” (Sardar 2010, p435)

Re-adjusting perspectives



On ethics in Futures Studies –Special Issue of Futures Journal, 2015

Gary et al : *Hines and Gold (2013)* noted that Professional Futurists (as a body) lacked, among other things, professional ethics (*inter alia*)

Bateman “to focus more broadly on expanding and deepening the choices of what students learn” [by relinquishing control]

Celaschi and Celi: “Advanced Design communicates directly [...] in an attempt to re-establish common interests and virtuous relationships”

Poli: Be sure that the relevant agents are generating their [own] future. Or at least, that the generation of new futures exceeds the consumption of the available future



Frank H Knight

“Risk, Uncertainty and Profit”

<http://www.econlib.org/library/Knight/knRUPCover.html>

Published 1921
Boston, MA: Hart,
Schaffner & Marx;
Houghton Mifflin Co.

Based on award-
winning dissertation
essay.

**“The net result of
the inquiry is by no
means a defense
of the existing
order. On the
contrary, it is
probably to
emphasize the
inherent defects of
free enterprise. ”
(Author’s Preface)**

“the exact science of inference has little place in forming the opinions upon which decisions of conduct are based [...] We act upon estimates rather than inferences, upon “judgment” or “intuition,” not reasoning, for the most part.” (III.VII.36)

IGNORANCE

(an absence of known knowledge)

Generated exponentially from new knowledge

Awareness of unrecognisable patterns and inter-connections

An unfounded confidence in (fallible) 'scientific' knowledge

A state of anxiety over "unknown unknowns"

Cartesian Anxiety

ROBERT ROSEN'S
ANTICIPATORY SYSTEMS

Scenario Planning

In a Knightian uncertainty sense (and after Minzberg (1994)), **scenario planning is an oxymoron**, a self-contradicting notion. If futures are uncertain then they cannot be planned, as planning requires certainty or measurable uncertainty

Cartesian Anxiety

the desire “to find some fixed point, some stable rock upon which we can secure our lives against the vicissitudes that constantly threaten us.” (Bernstein, 1983, p18)

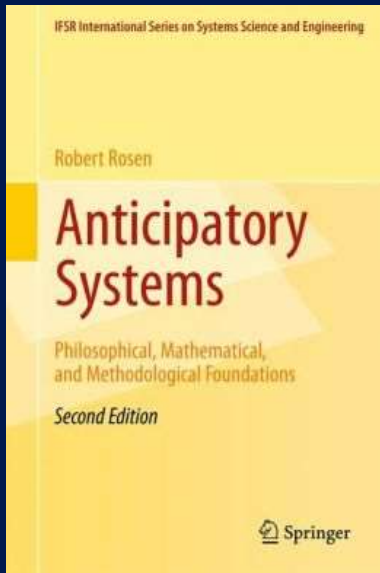
As scenario developers, do we have a responsibility to offer such security?

Or to make clear the impossibility of this notion?

Step forward Robert Rosen (1934–1988)

Wikipedia entry says his work includes

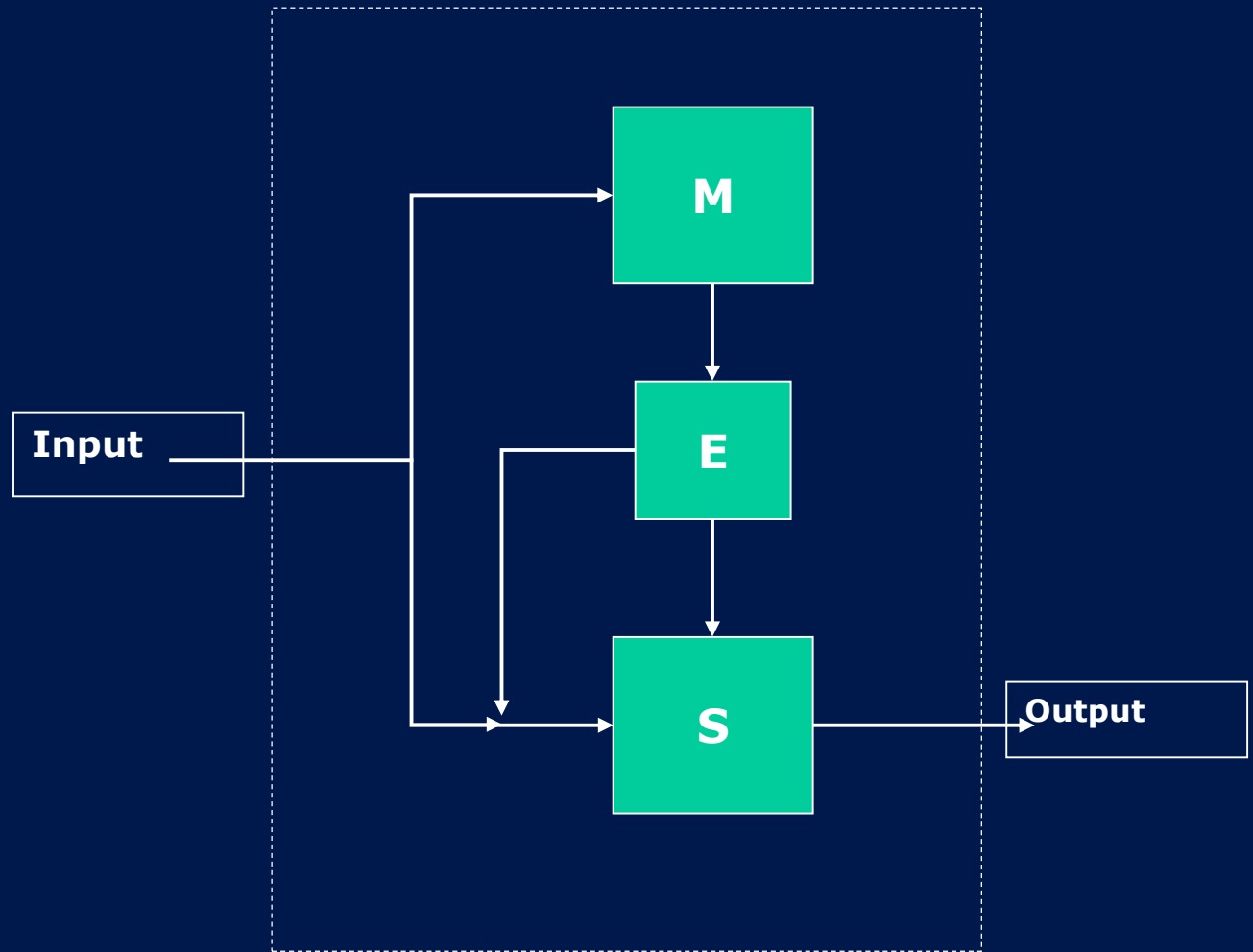
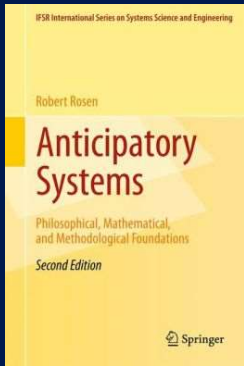
developing a specific definition
of **complexity** that is based on relations and,
by extension, principles of organization
developing **Complex Systems Biology** from
the point of view of Relational Biology as
well as Quantum Genetics
developing a rigorous theoretical foundation
for **living organisms as “anticipatory systems”**



Anticipatory system

“An anticipatory system is a natural system that contains an internal predictive model of itself and of its environment, which allows it to change state at an instant in accord with the model’s predictions pertaining to a later instant” (Rosen 1985, p341).

Rosen, R. (1985). *Anticipatory systems : philosophical, mathematical and methodological foundations*. Oxford: Pergamon.



Anticipatory System (Rosen 1985, Louie 2010)

MS is a composite system

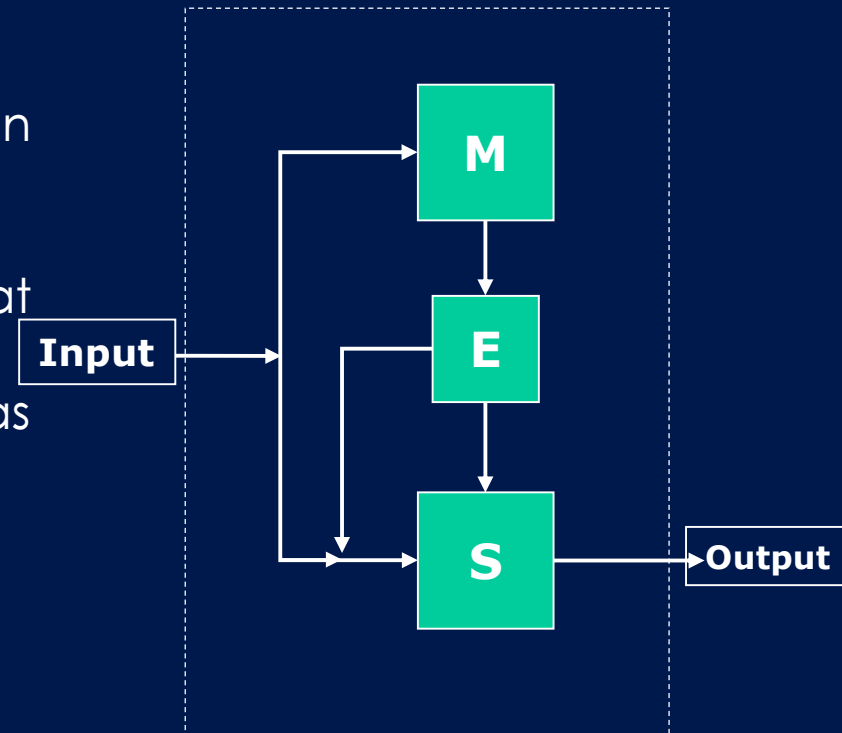
M is a predictive model – by looking at a present state of **M**, one obtains information pertaining to a future state of **S**.

M is equipped with a set **E** of effectors that operate either on **S** itself or on the environmental inputs to **S**, in such a way as to change the dynamical properties of **S**.

An anticipatory system **S** entails the following:

S possesses a model subsystem **M**;
there is an orthogonality between the model **M** and the collection of observables of **S** ~ **M**;

the rate of change (the adaptation) of observables of **S** ~ **M** depends on **M**;
the effect of the model **M** creates a discrepancy – **S** would have behaved differently if **M** were absent.



Foresight as explicit anticipatory system

Modelling relationship

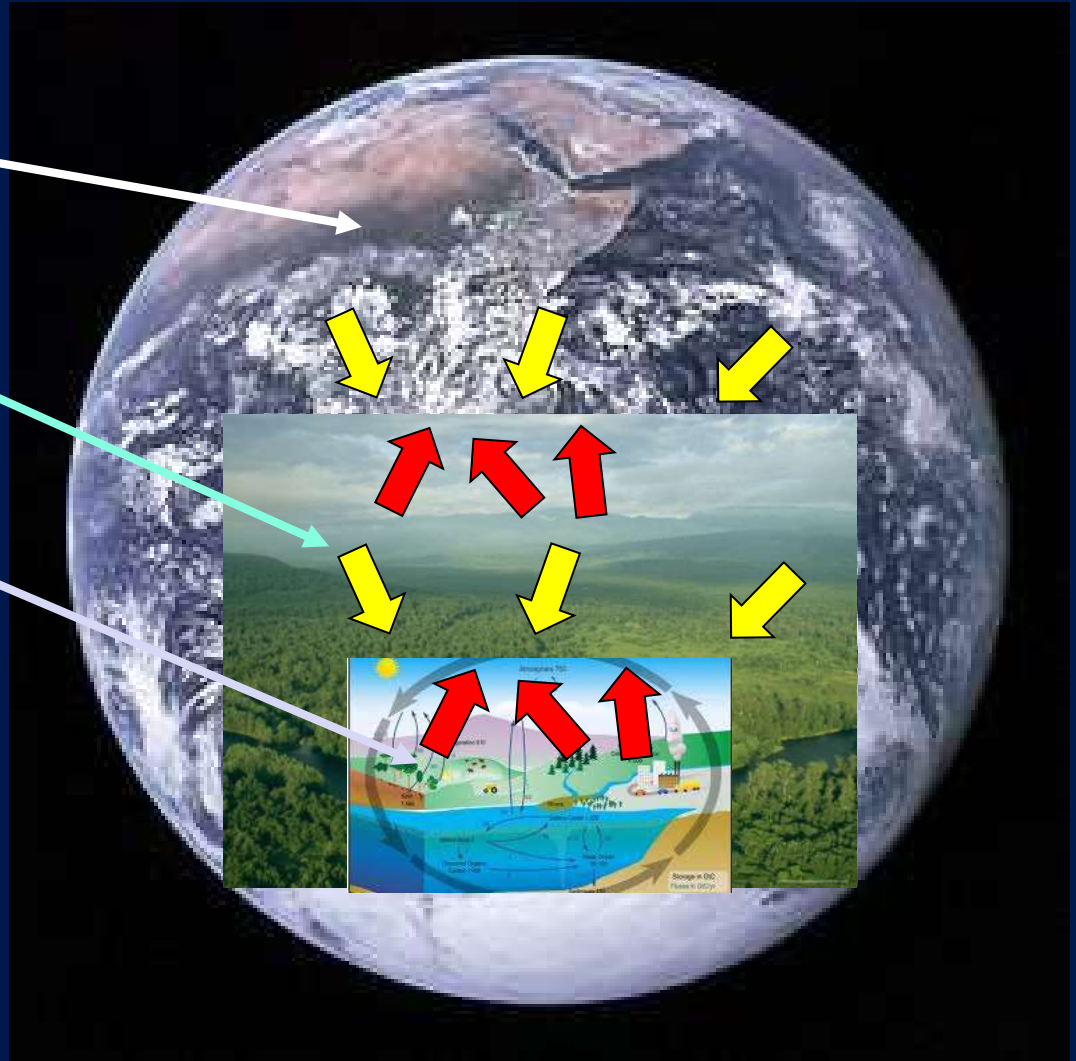
Environment

System (with natural 'models')

Representative Models

Sensing

Effectors

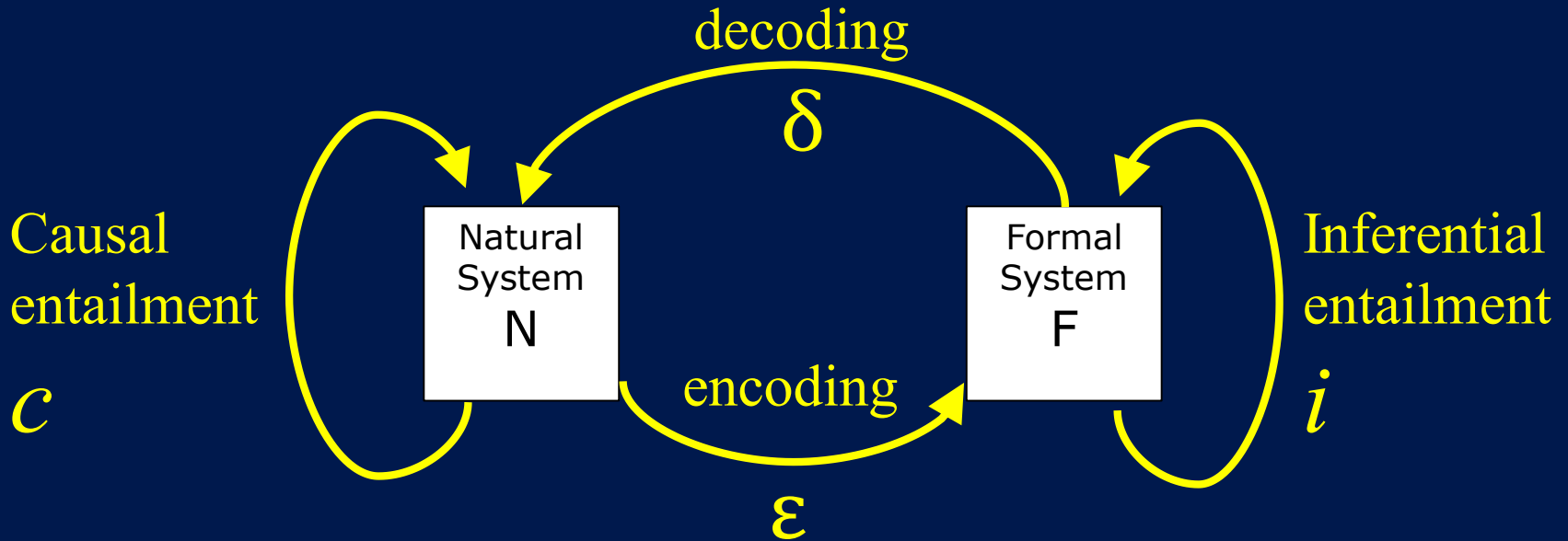


Inference and modelling relation

Modelling relation is the way that the agent's internal model (of themselves in their environment) is related to themselves in their environment.

It is this model which forms the inferences guiding the purposeful activities of the agent...

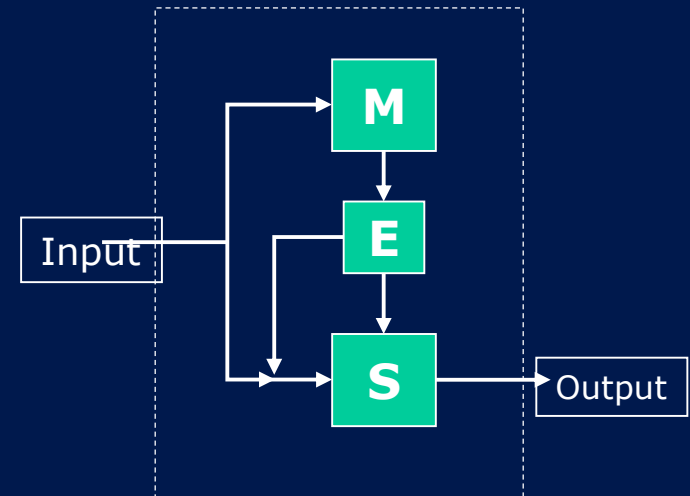
Modelling relation



Implication of Rosen:

Effector activity is stimulated by inferential entailment, not by casual entailment

Rosen 1985, Louie 2010



Internal predictive model

Rosen concluded that the complex organization of a living organism must be thought of **as containing internal predictive models** [...] Living behaviors are **in response** to such **internal** models, rather than in response to causal relations that directly originate with the environment (which, in contrast, is the characteristic of non-living systems). Rosen called this anticipatory behaviour”

(Kineman 2007)

The future causes the present

Rosen makes clear that the causal entailment of “the future” state of the system on that system, is at odds with the assumption of **Newtonian** systems, which is to “never allow future states of the system to affect the present changes of state”.

Feed forward

Rosen's system theory asserts the significance to living systems of prediction as a causal process. As Nadin (2015) explains, Rosen's anticipatory system is a system whose current state depends not only upon a previous state, but also upon a future state. It is also a system that contains a model of itself in its environment **that acts faster than the real time** of the system.

A note on prediction

Rosen's use of 'prediction' is precise. Organisms act on predictions. The predictions may be completely inaccurate, but the actions are motivated by expected effects.

Scenario development generally denies predictable futures and certainly rejects point estimates. Instead scenarios are 'explorations'... conjectures.. (de Jouvenal) of possible futures... open multiple futures...

But **decisions** imply **prediction**, even if knowingly fallible.

Modelling relations and prediction

What could possibly go wrong?

Monitor for
“senescence”
(maladaption)

A. Fallible knowledge

1. Bad model
 1. Wrong variables, encoding
 2. Wrong paradigm (non-anticipatory)
 3. Systems states lack correspondence
2. Bad effectors
 1. Need power to effect change
 2. Act on the right things

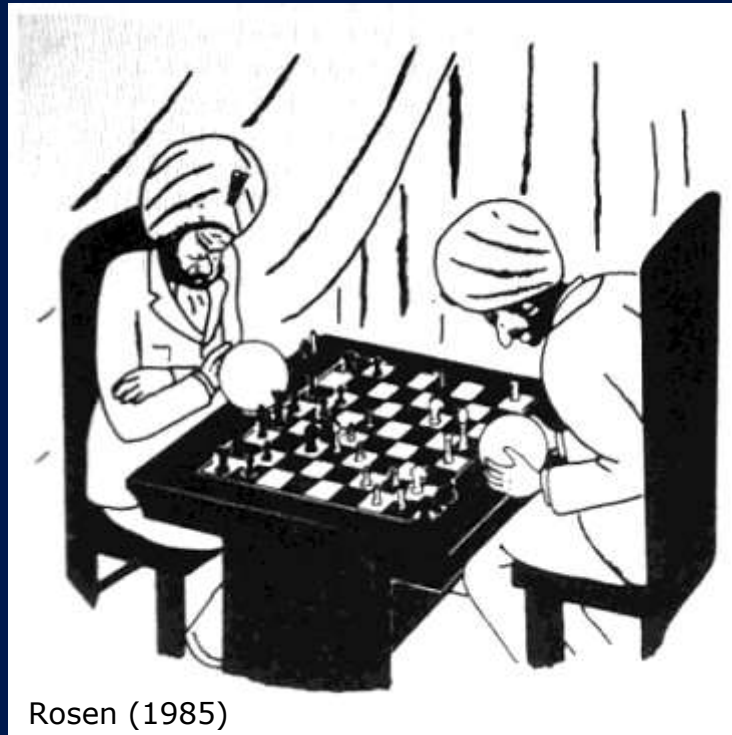
B. Side effects

1. Unintended consequences – system based on **functions** (of actors with degrees of freedom)

Modelling relations and prediction

What could possibly go wrong?

- A. Fallible knowledge
- B. Side effects
- C. “Recursion” and “infinite regress”
 1. When the environment is anticipatory
 2. Instability caused by *reflexivity*



Rosen (1985)

Modelling relations and reflexivity

Relational knowledge, rather than “facts”

“reflective of temporal relationships between the organism and its environment, or the internal and external, in which action is motivated by perceived differences between an existing and preferred state”
(Bateson, reported by Tognetti, 1999, p696).

Reflexivity is consistent with Rosen's inferential entailment in that agential interpretation is the basis of their knowing, and therefore causal on behaviour.

Foresight in Anticipatory Systems

ETHICS AND RESPONSIBILITY

“What should we do”

“the character of a predictive model assumes almost an **ethical character** even in a purely abstract context. We might even say that the models embodied in an anticipatory system are what **comprise its individuality**; what distinguish it uniquely from other systems. As we have seen, a change in these models is a **change of identity...**”
(Robert Rosen, 1985/ 2012, p370)

“What should we do”

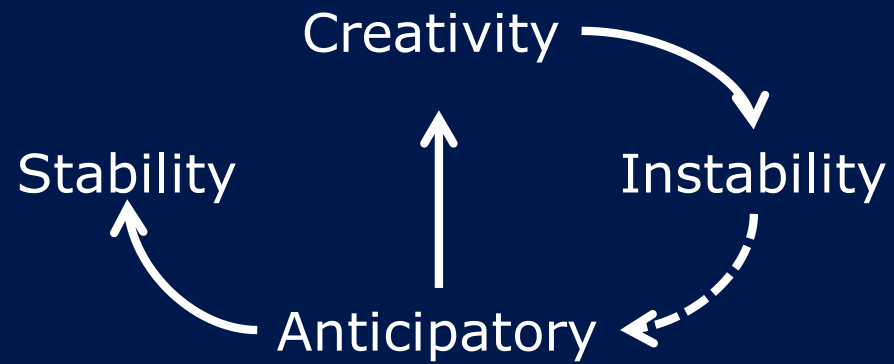
The choice of what is **desirable** or **undesirable** represents “a kind of constraint added from the outside, and enters into the planning process in an equally weighty fashion as does the model M and the effector system E” (R. Rosen, 1974, p6)

Anticipation as process...

... mediates (between) knowledge and action, and hence has causal power.

Anticipation as causal ...

What if:



Anticipation

Anticipation as part of the temporality of being (*Cf Heidegger*)

Anticipation gives absence meaning

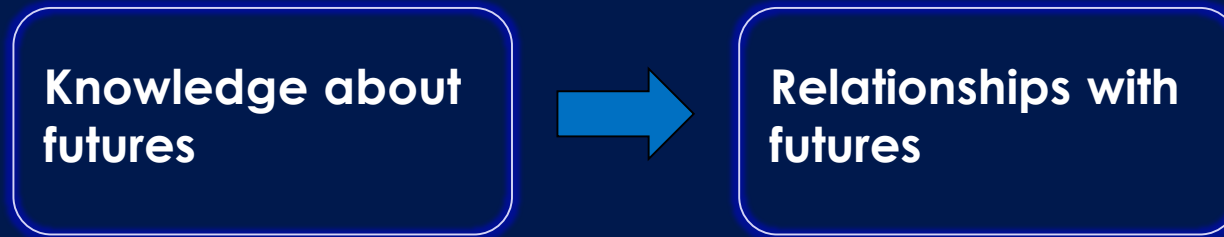
Anticipation causes effects and stability

Values and the anticipation of value is central to modelling relations

Re-adjusting perspectives

Ontological

Ethical



Complexity
and Systems

Anticipatory process
Responsibility

Ontology

Scenarios as models of an evolving
'knowledge world'

Generating
Representing
Curating
Narrating



Knowledge / understanding

Constructed fallibilities?

- risk rather than uncertainties
- Conceptually and evaluatively framed in existing boundaries

Ethical Anticipated Futures

**Imagination
Anticipation
Aspiration**



**Affect: emotions, sensations,
values, relationships**

Futures as cultural facts (Appadurai 2013)

Role of scenarios / foresight

Essential role of scenarios as an approach to revealing modelling relations in the multiple anticipatory systems at work in the organisation

Scenarios in anticipatory systems

What causal and inferential entailments exist at multiple sites?

What new forms of novelty are being created and who understands them?

What forms of modelling are performative?

What forms of *anticipatory work* are needed in the organisation for strategic existential survival?

Implications

This moves the location of scenario work from a centralised strategic planning process to an **embodied strategic anticipation process**, embedded in the everyday practices but with strong cross organisational communications to improve the quality of knowledge and hence the precision of inferential entailments.

Discussion questions

What does it mean to generate and use scenarios responsibly?

In what ways do scenario methods require responsibility?

What are scenario builders responsible for?

ANNEXE

Mission and Identity of Futures Journal

Futures Mission and Identity

Confidence



Complexity

1968: “Confidence from chaos”

2012: “Moving Forward with Complexity and Diversity”

Extent of world knowledge, and the generative process and the actions arising from such knowledge, produce [ever] greater complexity and diversity

Power

...all voices of future generations need to be heard; particularly the voices of those people whose present and futures are blighted and threatened by dominant groups.

Futures

Multiple narratives

The futures field, and its associated Namesakes, is one of the most exciting and intellectually challenging arenas of contemporary times. Without doubt, it offers the most important social, economic and political narratives of a rapidly changing, globalised world.

Principles

Discourses within the field reflect the zeitgeist, while more fundamental principles of how humans live and act, individually and collectively, to shape the futures of everyone and everything on the planet are constantly interrogated.

Futures

Diversity

Complexity and diversity fundamentally change the relationship between humans and their futures, and how we study and explore these futures.

Reflexivity

We cannot control our futures. But we can control ourselves and we can be aware of some, if not all, consequences of our actions.

Revealing

We can be aware of the emasculation of diverse futures by institutional power, which is frequently hidden. Knowledge about the future will never be enough because it is incomplete at best.

Futures

Virtues

The corollary of this uncertainty puts greater emphasis on the processes by which futures are generated and the ethical and moral frameworks that guide human activity within these processes. The futures field is not a virtue free zone.

Critical

Every claim made about the future has to be questioned and critically examined. All claims about the future, one could argue, are coloured by the intentions of the claimant.

Guide

Our research and intellectual endeavours should act as a guide to uncertain times and societies' relationships with their own futures.

Inspire

We need to and we can make an important contribution to the development and survival of humanity. Our work should inspire people to do good things.

Fuller and Sardar 2012

Further reading

Fuller, T. (2016). Anxious relationships: the unmarked futures for post-normal scenarios in anticipatory systems *Technological Forecasting and Social Change, in press.*

See also bibliography attached.



谢谢你

THANK YOU

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