Epistemology and ontology of the futures research

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1.5.2010

The present situation of the futures research

- Lot of different methods, though same methods - the scenario method and the Delphi method - are more used than others
- Art or science discussion

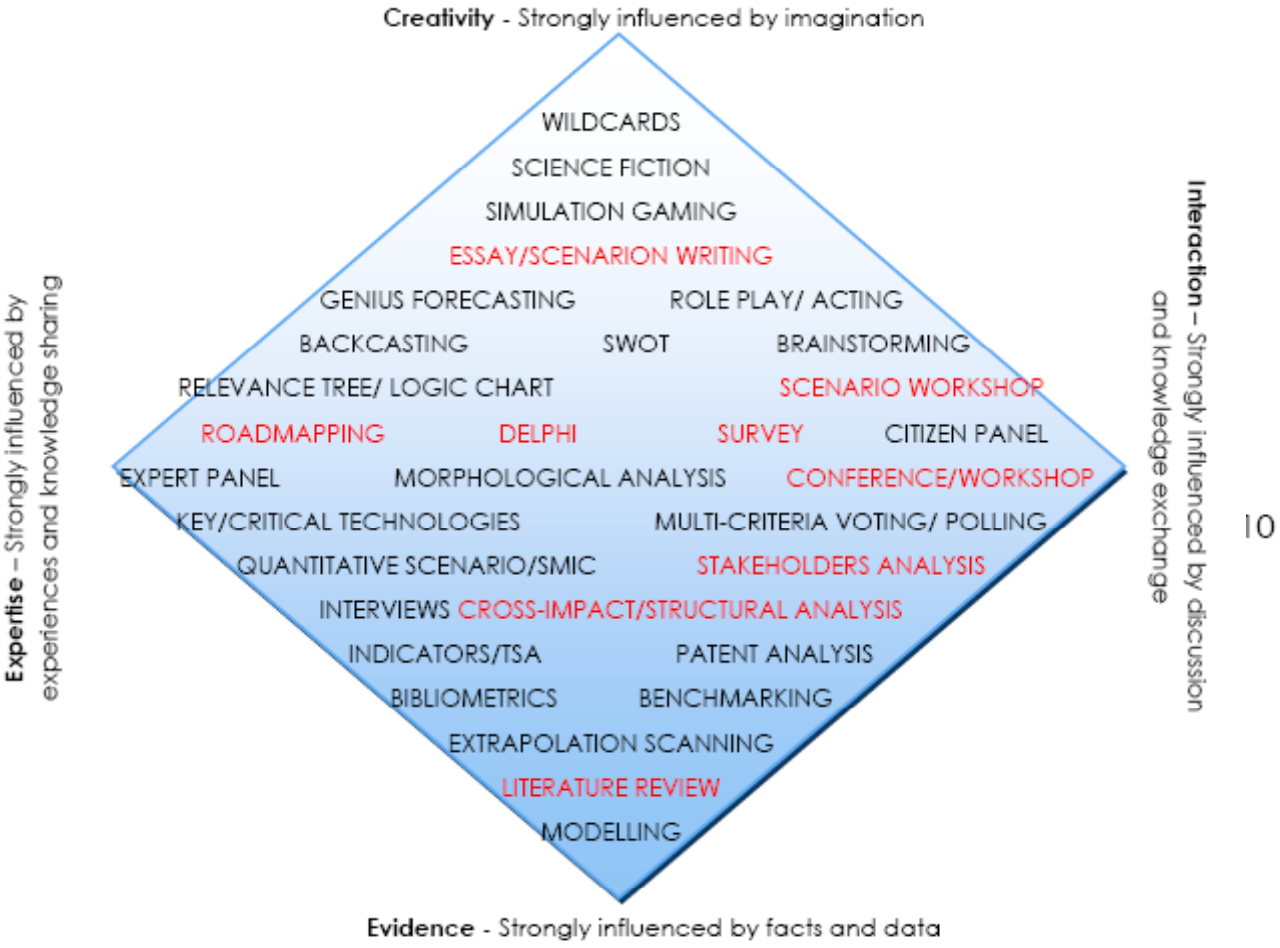


Figure 3 - Foresight Diamond

Are these philosophical assumptions behind futures research “that most futurists would accept” enough?

(Millennium project Futures Research Methodology 3.0, Introduction)

1. You cannot know the future, but a range of possible futures can be known.
2. The likelihood of a future event or condition can be changed by policy, and policy consequences can be forecasted.
3. Gradations of foreknowledge and probabilities can be made; we can be more certain about the sunrise than about the rise of the stock market.
4. No single method should be trusted by itself; hence, cross-referencing methods improve foresight.
5. Humans will have more influence on the future than they did in the past.

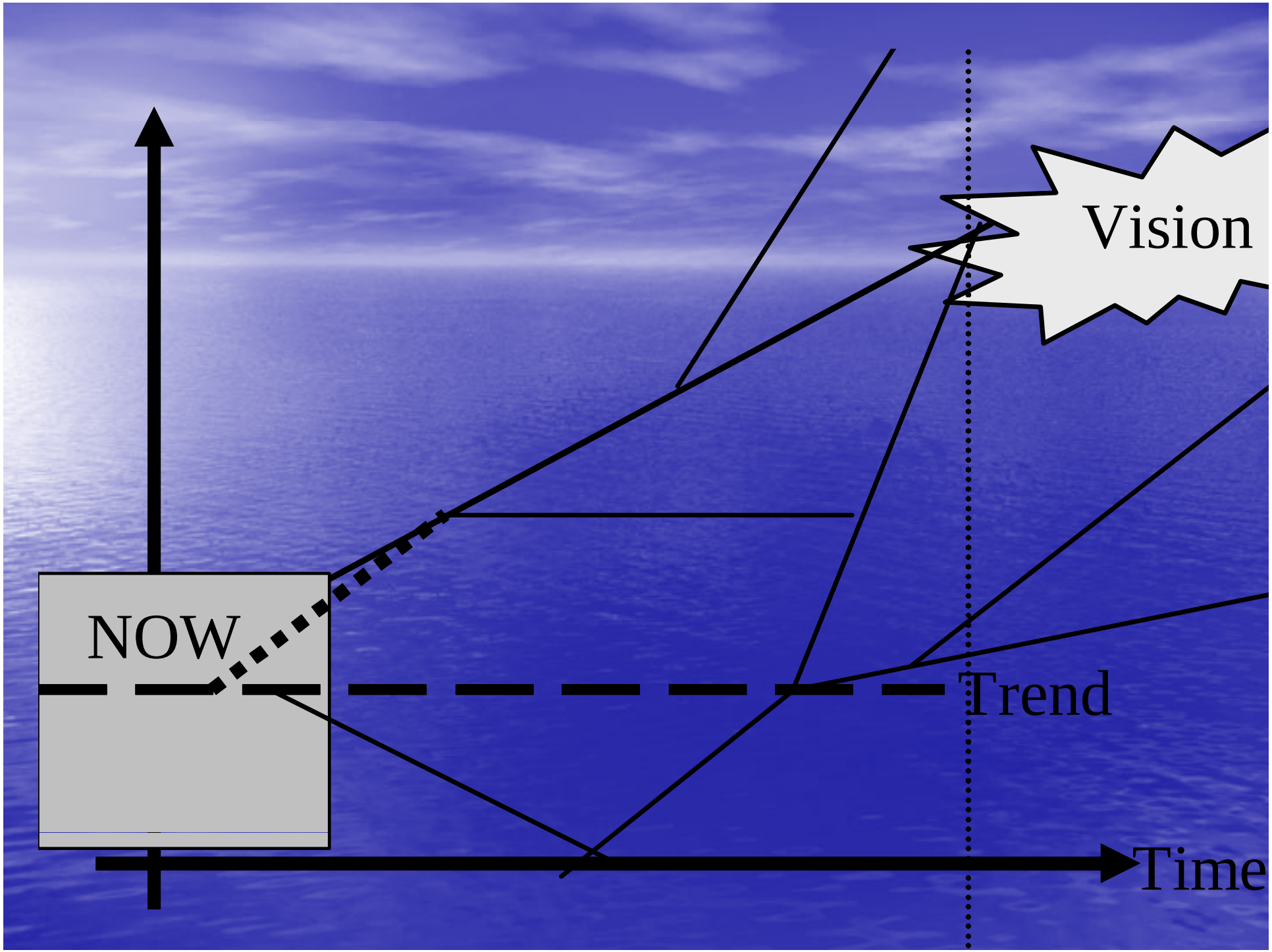
More strict epistemology or even ontology for the futures research is needed

In the long run it is impossible really to improve the skills of the futures researchers without more strict conceptual and theoretical frameworks.

The issue Futura 1/2009 was dedicated to an attempt to find more strict philosophical basis for futures research: e.g.Eleonara Masini, G. E. von Wright, Oiva Ketonen, Wendell Bell, Ilkka Niiniluoto and Pentti Malaska

Theory of futuribles by Pentti Malaska (Malaska ja Virtanen 2009)

- In systemic language the future process is under-determined by the past
- Futurological knowledge is ”true” if it assets something that is not impossible in the material world, or something that is not impossible for human make real
- Interpretation in my general theory of consistence: capacity limits. Capability limits – limits of behavior that one will not regret - belong to the capacity limits
- The futures map and its relevant variables


Vision
NOW
Trend
Time

Why contingency is not sufficent epistemology for the futures research?

- G.H. von Wright (and Malaska): Objects of the genuine knowledge of the future must be contingent. Sufficient criterion: a state of affairs is contingent if it is of a generic character such that states of this character sometimes obtain sometimes not.
- Practical interpretation: Variables with different values.
- For futures research (or the futures mapping) the key question is not to define values in given variables but how to identify most relevant variables and how to get actors to understand each others e.g. for the common commitment for action.
- The different interpretations, languages or criteria of sameness. ”The unique objective language” is an illusion, the language is always a mental language of somebody.

Taulukko 1 Ikääntyvän Suomen tulevaisuustaulu - keskeiset vaikuttavat tekijät ja niiden kehitysmahdollisuudet

Kehitystä tarkastellaan 15 vuoden tähtäyksellä, jos ei muuta mainintaa	Vaikuttavan tekijän eri kehitysmahdollisuudet		
Keskeiset vaikuttavat tekijät	A	B	C
1. Talouskasvu	1% tai vähemmän	2-3%	4% tai enemmän
2. Suurten ikäluokkien siirtyminen eläkkeelle	Varhain	Myöhään	Epäyhtenäisesti
3. Miten suuret ikäluokat hakevat hyvinvointia?	Parantamalla työssä olon laatua ja muuntamalla työtä harrastukseksi.	Pyrkien vapautumaan ansiotyön kahleista ”vastuuttomaan vapauteen”	Osa hakee elämän laatua palkkatyöstä, osa parantaa lisä-ansioilla eläkettään
4. Osallistuminen ikääntyneiden hoitoon vapaaehtoistyönä (myös omaisapu)	Enemmän kuin nykyisin	Saman verran kuin nykyisin	Vähemmän kuin nykyisin
5. Suurten ikäluokkien fyysiset ja henkiset valmiudet itsenäiseen selviytymiseen työelämästä poistuttaessa	Tyypillistä väsymys ja turhautuminen	Hyvät	Epäyhtenäiset
6. Yli 60-vuotiaiden suomalaisten asuminen ulkomailla 30 vuoden tähtäyksellä	Vähän	Paljon	Hyvin paljon
7. Siirtolaisten määrä	Vähäinen	Melko suuri	Suuri
8. Mistä siirtolaiset tulevat?	Tasaisesti EU-alueelta, myös uusista jäsen-maista	Pääasiassa uusista EU:n jäsenmaista, osin Venäjältä	Kaikkialta maailmasta, myös kehitysmaista
9. Siirtolaisten perus-koulutus	Korkea	Pääasiassa matala	Sekä koulutettuja että kouluttamattomia
10. Itsenäistä selviytymistä tukevan teknologian käyttö	Suppeaa	Laajaa	Erittäin laajaa
11. Hoivatyön tarve	Lisääntyy selvästi enemmän kuin mitä seuraa väestörakenteen muutoksesta	Lisääntyy vastaten väestörakenteen muutosta	Lisääntyy vähemmän kuin mitä seuraa väestörakenteen muutoksesta

The target with the ”generic table” (Malaska 2009) is minimal problem of relevant variables not maximal problem of all possible variables

- Decisions are made based on “good enough” conditions, not looking for perfect understanding of the situation: enough relevant variables
- In common actions of many actors the actors’ interpretations of the situation (criteria of sameness) typically differ
- Minimal problem of “simplicity” also a target in the mathematics and physics

Why the ontology is a necessity for the futures research?

- We need to make a difference between beings that belong to our language and those that do not depend on our language (our criteria of sameness)
- Viljo Martikainen (2004) has realized that making the distinction between “Materially Manifesting Entities” and ”Mentally subsisting entities”

Martikainen (2004): Materially Manifesting Entities

- Though sciences do not know what material is, we are justified to assume that all material entities with which we can interact manifest - at least partly – in space, state, or phase dimensions as function of time,
- A singular material entity can vary in size from neutrinos… molecules to the organic and inorganic entities of the planet Earth and other material entities of our universe.
- The second type of material entities are signs, symbols, special terms, words, and sentences, which have materially manifesting entities as their reference… There is a certain - though varying - degree of **intersubjectivity** in the ways the referents of these terms are interpreted between members of scientific and other communities, organisations, and cultures.

Martikainen (2004): Mentally subsisting entities

- Mental states like sensations, perceptions, emotions, values, motivations, norms, memory representations of singular entities or their systems and interactions, and images describing the previous, etc. They have their space, phase, state and meanings as function of time only in human mind in its experiencing processes.
- At the same time, signs, symbols, words, and sentences are the manifesting elements of our natural or formal languages. They are expressions of our linguistic abilities that give us the mental freedom to move in our discussions and communications in time and space, state, and phase dimensions of the entities of our attention.

A generalization concerning beings for which we have to suppose ”a mentality” and others that do not need it.

- The universe includes two types of beings: not-learning beings and learning beings or actors
- Not-learning beings behave based on their invariant rules of behavior. They have invariant criteria of sameness: in similar situations from their point of view they behave similarly from their point of view e.g. based on “laws of nature”
- Actors are able to change their behavior depending on their learning and acting capacities. They are able to change their criteria of sameness.

Necessary conditions for an actor

Let us suppose that a first being had in the past correctly predicted the behavior of a second being in a situation. There are three necessary conditions for the second being to be a genuine learning being or an actor from the point of view of the first being

- a) The second being has not-realized interests
- b) The second being has an active memory as a store of its learning experiences
- c)The second being has capacities to change its behaviour as the result of its learning.

Interests of actors and shared visions of learning systems

- An integrated whole of target variable (dimension), means and actions. ”Reasonable” interest like in the Keekok Lee’s model (Wendell Bell 2009), final criterium not-regretted behavior.
- Genuine interest: An ideal concept. The binary target dimension of two criteria of sameness (or variable with two values) does never change their preference order.
- Percieved interest: The actor prefers in the binary target dimension of two criteria of sameness (or variable with two values) value a to value b

Not-learning and learning systems

- The universe includes two types of systems: not-learning systems and learning systems
- Not-learning system behaves based on its invariant rules of behaviour. Its elements might be both not-learning beings and learning beings. But not-learning elements dominate its behaviour. Example: the system of the sun and the planets.
- The efficient interaction of actors dominates the learning system. Without such an interaction e.g. some not-desirable future might dominate (compare Bernhard de Jouvenel 1967)

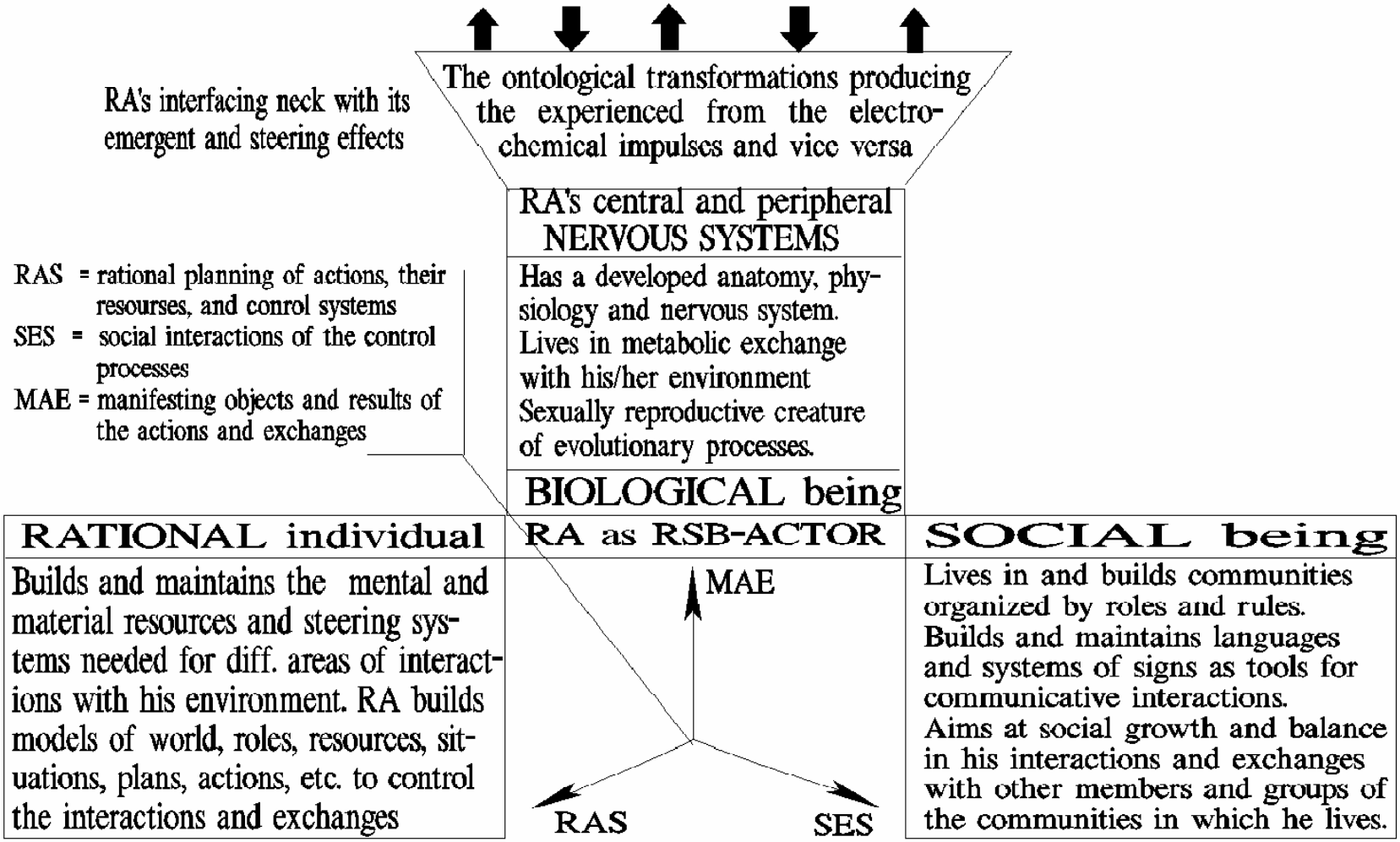


Figure 2.2 The Rational, Social, and Biological Dimensions of RA and His Actions

An important implication of the theory: Basic types of experts

- Scientists are experts in:

Permanent behavioral invariances of not-learning beings (e.g. technologies) and evidence based theories of systems strongly dominated by them (e.g. the climate system)

Facts and evidence based theories of the learning behavior of actors and systems that they dominate: e.g habits, routines, equilibrium solutions in the political, economic and other types of games (expertise in ”transient invariances”)

An important implication of the theory: Basic types of experts (2)

- Decision makers:

They are able alone or with other decision makers to realize different types of futures. ”Best” decision maker experts those with wide capacity limits (powerful). Everybody is the decision maker of his or her life

- Synthesizers:

Experts in complicated futures oriented learning systems. Some with scientific approach, most now with the craft based on expertise from futures oriented processes

E.G a futures researcher that is able to collect valid and relevant arguments from scientists and decision makers concerning the futures and makes a futures map which is consistent with those arguments