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Rationality in a Complex World: Pushing Back the Frontiers

Main points of the presentation

- **1) Complex structure of the human rationality.**

- **2) A paradox or dichotomy: rational activities make the world progressively more complex thus impeding the rationality.**

- **3) Objective factors limiting the rationality in a complex world:**
- **3.1) Natural bounds, cultural fragmentation, vested interests, democratic-voting impossibility, etc.**
- **3.2) Subjective responses on individual level**

- **4) Epistemological and psychological impediments: illusions, apprehensions (lack of confidence), nostalgia for the absolute.**

- **5) Pushing back the boundaries: some views**

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(1)   Rationality is exercise of reason; the mean to derive conclusions when considering things deliberately.
Rational decision: not just reasoned, but also optimal for achieving a goal or solving a problem.

Rather often, rationality is supposed to be independent *strictu sensu*

of emotions, personal feelings or any kind of instincts:

- a really rational process of analysis is expected to be purely objective

  and logical *(Cogito, ergo sum)*.

- If the actor has been influenced by personal emotions, feelings,

  instincts or culturally specific, moral codes and norms, the analysis is

  qualified as irrational because perturbed by subjective bias.

(1):The complex structure of rationality according to contemporary neurobiology

- Observing patients with brain damage perturbing the emotional sphere, neurologists have concluded, that <u>reason alone is insufficient even for the efficient operation of the intellect</u>.

- Damage to the *prefrontal cortex*, can leave the patient apparently intellectually unimpaired but incapable of making complex decisions.

- Paradoxically, the cold "robotic-like" decision-making is closer to the acting of brain-damaged individuals while
- the normal cognitive agents need their emotional biases in order to make the <u>complicated</u> human decision-making mechanism efficient.

(1):A clinical case presented by *Antonio Damasio*

- A patient with a brain tumour successfully removed got damaged frontal lobes. Some time after the operation, he had driven to the hospital on icy roads. He recounted his experience logically, describing how he had avoided accidents by applying the rules for driving on ice. Yet when he had to decide between two dates for his next appointment, he was unable to make even this very simple choice.

- In people with normal brains, the decisions are "weighted" by emotions and this enables them to take decisions quickly according to how they feel! Patients with damaged prefrontal lobes, in contrast, are robot-like.

(1): According to Damasio, Descartes' famous "cogito" -- I think, therefore I am" -- is profoundly mistaken. Thinking is a late evolutionary development. Long before the thought, there was feeling; so humans are still primarily feeling organisms!

- *Damasio* **makes the important point that it is not only the brain that we need to focus on; feeling includes the body as a whole. He uses the metaphor of a landscape to describe this idea.**

- **The *viscera* (heart, lungs, gut) and the muscles are the components of this landscape, and a "feeling" is a momentary view of part of that landscape. These feelings are totally essential to the quality of being human.**

(1): The complex structure of the human rationality according to Max Weber
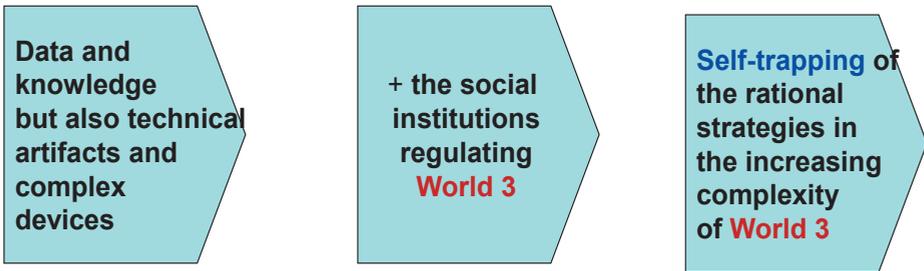
- *1) Zweckrational* **related to the expectations about the behavior of other human beings or objects as bases to attain "rationally pursued and calculated" ends.**

- **2) *Wertrational* or value/belief-oriented: some ethical, aesthetic, religious or other motive, independent of whether it will lead to success.**

- **3) *Affectual*, determined by specific affects, feelings, or emotions.**

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- **4) *Traditional*, determined by ingrained habituation.**

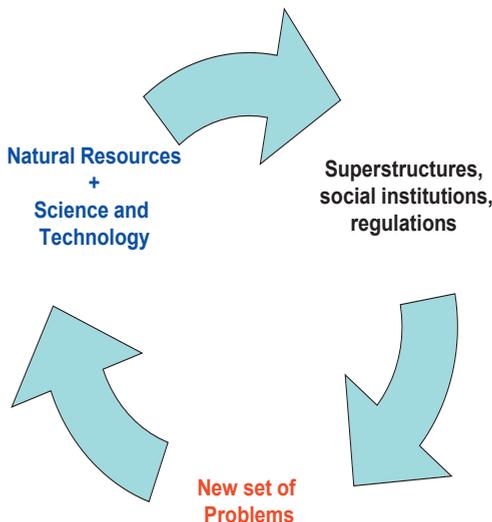**(2) Rationality as strategy for successive reasoned problem solving**

by active political units (nation- states, empires- civilizations or other groupings of states)

results with the time in a more complex world

(WORLD 3, if we use the metaphor of Popper)

Data and knowledge but also technical artifacts and complex devices

+ the social institutions regulating World 3

Self-trapping of the rational strategies in the increasing complexity of World 3

(2) An evolutionary world 3 having at least two components: a scientific-technical and an institutional- social one, is getting more and more complex.

Natural Resources
+
Science and Technology

Superstructures, social institutions, regulations

New set of Problems

(2) World 3 getting with the time more and more complex generates problems more and more difficult to solve rationally

- Metaphorically, one may compare this increasing difficulty to the *Stokes force* which increases with the viscosity (*m*) of the medium and the velocity (*V*) of the particle which moves through the medium:

$$F \sim mV$$

- *At some point the resistance to the rationality could become critically high thus blocking the capacity of taking reasoned decisions in the time frame available.*

- *We may call this effect self-trapping of the rationality in the complexity of the WORLD 3 created with its means.*

- *Examples: 1) after Fukushima 2011 disaster the energy dilemma: develop or not develop further the nuclear power plants in Japan but also elsewhere.*
- *2) "Merkel's" dilemma: decreasing the budget deficits and/or striving for further growth but risking next public's debt increase.*

How to get out from the trap

- Failure and decline in policy making
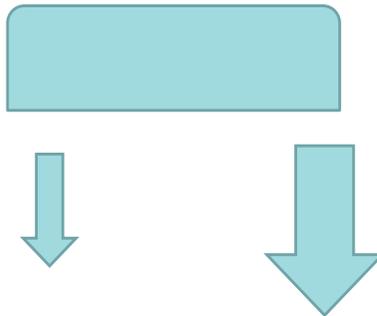
-         corruption?   Institutional inertia!

(3) Objective factors limiting the rationality
3.1 Natural bounds to problem-solving capacity.

- **1) Timeframe available or imposed**
- **Too short time imparted could be compensated at least partly by considerable energy and/or information inputs.**

- **2) Available energy (physical but also social)**
- **Low energy resources impose usage of longer timeframes, which to be shorten need a lot of supplementary information.**

- **3) Limits of the information available (uncertainties); limits to the computational capacity**
- **Insufficient information implies longer time intervals and mobilization of bigger amounts of energy**

(3) Objective Factors Limiting Rationality:
3.1Collective impossibility resulting from the addition of a number of perfectly rational individual choices

- **The difficulties with voting for finding issue from a dilemma were first identified by the French mathematician and social scientist   Marquis de Condorcet in 1785.**

- **Democratic voting creates contradictions!**

- **As we pass from individual choices to some form of collective choice a paradox arises shown also by Kenneth Arrow (1972 Nobel Prize for economics).**

- **Option: negotiating *versus* voting?**

(3) Objective factors limiting the rationality:
3.2 Subjective responses on individual level

- **The interplay between the components of the rationality as individual strategy permits adaptation in some limits to the objective bounds: (i) the time frame imposed, (ii) the information and material resources available, (iii) the degree of preparedness to face the unforeseen, (iv) the overall confidence on the social institutions including the state (their reliability), etc.**
- ***Clausewitz* in *On the War* for a capable commander :**
- *"Intellect which, even in the midst of intense obscurity, is not without some traces of inner light, which lead to the truth, and then the resolution and courage to follow this faint light".*
- *"The mind must first awaken the feeling of courage, and then be guided and supported by it…in momentary emergencies the man is swayed more by his feelings than his thoughts".*

(3) The view of Clausewitz corresponds perfectly to Spinosa's understanding

- **Spinosa suggested that the intensities of the affects are usually so strong that the only hope to overcome a harmful affect – an irrational passion- is to struggle against with a more strong positive affect, but generated by the reason.**

- **In another words, Spinoza recommended to struggle with a negative emotion with a stronger but positive emotion, provided by the reason but not only with the reason!**

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(4) Epistemological and psychological impediments to the rationality pushing to irrationalism

• Metaphysical illusion

- **The desire to link all things together is a deep human inclination.**

- **Symptomatic dichotomy: the greatest scientific achievements spring from the most insightful and elegant reductions of the superficial complexities of Nature to reveal their underlying simplicities, while the greatest blunders (including harmful and misleading ideologies) usually arise from the oversimplification of aspects of reality that subsequently prove to be far more complex than supposed initially.**

(4)Epistemological impediments: other aberrations

- **Rationalization.Spurious rational explanation (of human conduct). This modern usage for explanation of actions designed to make them seen more rational than they are originates in the article"*Rationalization in everyday life*" (1908) by the disciple of Freud, Ernest Jones.**

- **Intentionallity.The property of mental phenomena whereby the mind can contemplate non-existant objects and state of affairs, while the ordinary relations cannot hold between something that exists and something else that does not exist. The paranoias are extreme examples of mental attitude with non-existant objects. According to *Brentano*, intentionallity is the distinctive characteristic of mental phenomena.**

(4) Psychological (existential) impediments

- **Escape from freedom (Erich Fromm) of those "who has not courage to be" (Carl Rogers according to Professor A.Zucconi)**

a common substitute for exercising "freedom " is to submit to an authoritarian system that replaces an old order with another of different external appearance but identical function for the faint - hearted: *to eliminate apprehension and lack of confidence by prescribing what to think and how to act*.

(4) Psychological (existential) impediments

- **Nostalgia for the absolute (Georg Steiner)**
- **the decline of formal religious systems has left a moral and emotional emptiness in Western culture and alternative "mythologies" like Marxism, Freudian psychology, Levy-Straussian anthropology and/or fads of irrationalism introduced themselves.**

Has the irrational been explained rationally?

• **Referring to the intuitions of *Spinosa*, Schopenhauer, and Clausewitz, stressing the contribution of Freud and the last scientific discoveries of the neurobiology**

• my answer is yes

• to a *great extent* thus pushing to *some extent* back the boundaries to the rationality

(5)Against such a background how we could push back the boundaries limiting the rationality?
5.1 Directed Incrementalism

• ***Decision-making* is purposeful and guided by clear goals, articulated visions and guiding principles. At first glance, it generates only minor changes in the form of small-scale adaptations to policies, which may appear as merely incremental short-term policy changes, but on the long run emerge as policies clearly leading at stated goals relying mostly on negotiating than on voting.**

(5.2)The role of the negotiations: megadiplomacy (Parag Khanna)

- **The question is who and how has strong word in the decision- making?**

- **National sovereign Governments, groups of Governments, bankers and other financial and business lobbies? Trade unions? Scientific societies and academies? Non-governmental organizations? A complex blend of them?**

Looking for creative minorities

- *Arnold Toynbee* **considered the history as evolution of civilizations. Civilizations arose** *in response* **to some set of challenges, when "creative minorities" devised appropriate solutions. By** *responding to challenges***, civilizations grow. They decline when stop responding creatively:**

    - **"***Civilizations die from suicide, not by murder.***"**

5.2 Involving the creative minorities into constructive policy-defining negotiations

- **Substituting *civilization* with any relatively stable *active political unit* (civilization is not such one) we may agree with Toynbee on the role of the *creative minorities*.**

  - **Identifying such in various strata of the society and giving them the opportunity to participate in constructive negotiations on various levels ("megadiplomacy") aiming at consesual decisions is probably the means we are looking for.**

What we really may need is

- **less applied science** increasing the crowd of technological paraphernalia but much more **applied humanities** serving the directed incrementalism aiming at the liberation of the society from the actual consumerism's trap.

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- **Thank you for the kind attention**

How to get out from the trap

- Failure and decline

» Corruption   Institutional inertia
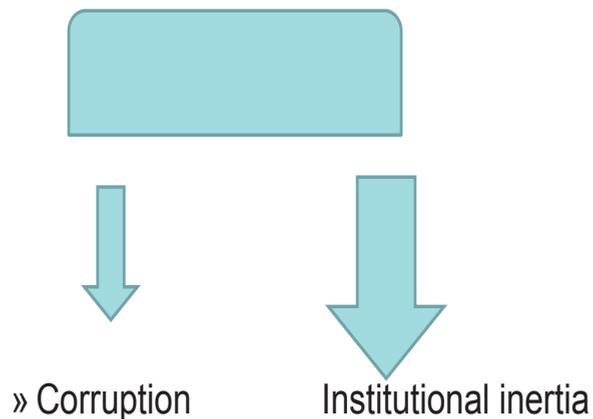
Who are today the creative minorities capable to take the responsibility for preserving the civilization?

- **David Rothkopf's superclass**: those about 6 000- 7 000 most rich and influential jet set people from all over the world (about one per million of human population), among them some actual and former Heads of State, CEO's of the biggest multinationals, media tycoons, billionaires actively managing their investments, entrepreneurs in the high tecs, oil bosses, managers of hedge funds, stock-exchange brokers, high-level military commanders, religious gurus, the handful of writers, scientists and artist with high impact on the society, and even some terrorists and criminals?

- And or some world overarching GO' and NGO's like **G-20** States out of nearly 200 members of UN but comprising more than 2/3 of the world population and producing about 85% of the world GDP?

- What is their legitimacy from the point of view of the democratic criteria?

European Modernity projects

- Apparant universalism in political rationality as possible only in a Europocentric world which lasted until about sixties or seventies of the previous century. It was possible only because the elites in the non-European countries were not only trained but educated in the tradition of European enlightment's values. Those people were much closer to their teachers, friends and student-mates from the leading European and North-American Universities than to their fellow-nationals living oftenly in the age of the traditional peasant societies. Speaking the same language and believing in the same values- those of the modernity made them supporters of the same universal modernity project.

Government decision-making processes:generally more practical and political than scientific or technical.

- Incrementalist perspective on public policymaking introduced byLindblom (1959). He initially suggested it as an alternative to the rationalist perspective on public policymaking that had emerged in the late-1930s. Citing the doubts that political scientists, like Simon (1955), had raised about the **impracticality** of rationalism, Lindblom claimed that government decision-making processes are generally more practical and political than scientific or technical: a process of 'successive limited comparisons', comparing only a few familiar alternatives for appropriateness and stopping when they have found one that is acceptable.

- This alternative is typically not that different from those already in place,

  since beginning anew requires a redistribution of limited resources:

  potentially costly and politically risky, and bureaucratic operating procedures

  perpetuate existing arrangements and inhibit innovation. Thus, decisions

  are "continually building out from the current situation, step-by-step by small

  degrees.

Disjoined and directed incrementalism

- According to Lindblom (1959), policymakers, faced with cognitive and political constraints, make choices by "**muddling through"** and move in small increments from one situation to the next; in other words, the decisions they make are based on limited analyses of incremental alternatives and therefore do not bring sweeping changes to policies.

- Lindblom had emphasized disjointed incrementalism, when decisions are unplanned, informed by incomplete information and contested analyses, and result in marginal adaptations to policies that can, expressly or not, accumulate to produce significant change.

- Rice and Prince added directed incrementalism, when decisions are purposeful, guided by clear goals, visions or principles, and generate seemingly minor changes that are oriented towards the achievement of goals in the long-term. Thus, directed incrementalism is different because it refers to processes of decision-making and patterns of policy changes that are goal-oriented.

- For example, Lindblom (1979: 517) claimed that incrementalism is neither inherently conservative nor promotes shortsighted decisions, as the size and direction of incrementalchanges emerge from deliberate bargaining processes. He said that it is also not
- undemocratic because the policymakers making decisions are elected politicians and the
- bureaucrats accountable to them (Lindblom 1968). Elsewhere, his adherents have acknowledged that the appropriateness of incrementalism depends on contextual factors, such as whether the policy is new and the number of decision-makers involved (Bendor1995).

Five PRINCIPLES OF POLITICAL REALISM
## Hans Morgenthau/ George Kenan/ Henri Kissinger

- **1.**Political realism believes that politics, like society in general, is governed by objective laws with roots in the human nature. In order to improve society it is first necessary to understand the laws by which society lives.
- **2.** The main signpost that helps political realism to find its way through the landscape of international politics is the concept of interest defined in terms of power (and not reason!!!)
- **3.** Realism assumes that its key concept of interest defined as power is an objective category, which is universally valid, but it does not endow that concept with a meaning that is fixed once and for all.
  4. Political realism is aware of the moral significance of political action. It is also aware of the ineluctable tension between the moral command and the requirements of successful political action.
  Realism maintains that universal moral principles cannot be applied to the actions of states in their abstract universal formulation, but that they must be filtered through the concrete circumstances of time and place.

  5. Political realism refuses to identify the moral aspirations of a particular nation with the moral laws that govern the universe. As it distinguishes between truth and opinion, so it distinguishes between truth and idolatry.

For solving democratically the problems negotiations are more important than voting

- German companies have done an outstanding job of adjusting to the needs of the global market. They are innovative, flexible and efficient.
- The parties to wage negotiations have also helped the economy. Germany's unions have accepted far lower wage increases in recent years compared to unions in other countries. This has boosted the competitiveness of German economies and of their products on the global market.

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(3) Objective Factors limiting the rationality
3.1Societal level: natural factors

- 1) time available or imposed
- Insufficient times could be trade off by a lot of energy and/or information
- Three principal natural limiting factors:
- 2) scarcity of energy
- Low energy resources impose usage of longer timeframes which to be shorten need a lot of information
- 3) Limits to information available or to computational capacity
- Insufficient information implies longer time intervals and waste of energy

- Triangle of the Swiss physicist

T=0

I=0   E = 0
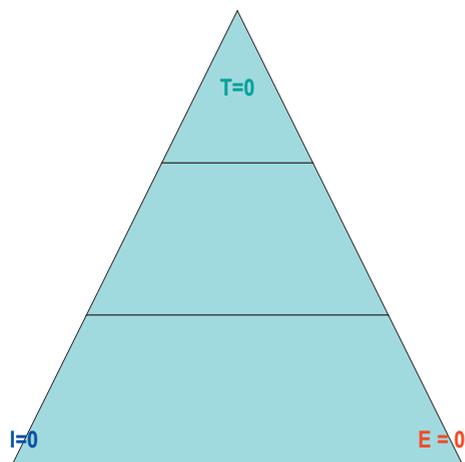
- How to solve such societal dilemmas with democratic means? Social scientists and politicians have long been interested in the subtleties of voting. Today, voting is not confined to human electorates and ice-skating competitions; advanced technological systems as space missions , are often under control of a number of computers (an odd number!) which "vote" on the basis of the data analysis they have performed, whether or not the launch takes place. If two vote "*abort*" and one votes "*launch*", the mission is aborted. Stranger still, there are serious theories of the working of the human mind that picture it as a multi-leveled system of separate influences which interact rather like a society, each voting for a given course of action.

- This "society of mind"{ picture pioneered by *Marvyn Minsky* certainly stroke a resonance cord with our feelings of being in "two minds", or of indecisiveness in the face of complex alternatives. **Thus we might envissage that any form of natural complexity that is sufficient to produce self-reference, or allow concious choices, will share any limitations that voting procedures might share.**

The Rise and Fall of the Civilizations
active units according to Thierry de Montbrial

- **With the civilizations as units identified, Arnold Toynbee presented the history of each in terms of challenge-and-response. Civilizations arose in response to some set of challenges of extreme difficulty, when "creative minorities" devised solutions that reoriented their entire society.**

- **When a civilization responds to challenges, it grows. Civilizations declined when their leaders stopped responding creatively, and the civilizations then sank owing to nationalism, militarism, and the tyranny of a despotic minority. Toynbee argued that "Civilizations die from suicide, not by murder."**

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- **For Toynbee, civilizations were not intangible or unalterable machines but a network of social relationships within the border and therefore subject to both wise and unwise decisions they made.**