The precautionary principle: a philosophical detour for a social emergency whose origin was falsely thought of to being science and technology

Ana Bazac

Science Challenges in the 21st Century

Iași, July 2036

The precautionary principle – on the agenda

- ? Because of the **risks** overwhelming the present society (GMOs, the nuclear, the climate crisis, the crisis of the living environment / ~'biosphere', species extinction, resources depletion (water), acidification of oceans, biotechnological manipulations, **war**…….)
- **Risks** – seem to be "natural", inevitable, unforeseeable in a way or another ("a world of uncertainties") → human action must be **precautious** and **efficient**

∴ :1) **crises – risks – precaution**

2) for risks are "natural" etc., precaution cannot be total

3) though **some** risks are determined by technology, (their) solution is technology (2 attitudes: epistemological and technological optimism; ideological blindness)

4) "whole story – new" (**crises-risks** – idea of **precaution**)

But it is not new

- **D**ialectic of **continuity** and **discontinuity of crises and their solving**

  i) quantitative accumulations leading and not leading to new qualities / the new qualities are not necessarily superior

  ii) **continuity of the power relations** / **domination-submission**

  iii) continuity of scientific and technological paradigms

  "**There were crises and risks, and relative solving**" (standpoint of both the fatalist/ lazy (solution: copying of the past) and optimist (solution: possible)

- **Discontinuity** – **gravity** of **crises** and **risks**: i) multiplying geometrically, ii) malign and existential, iii) technology – a new generator

↓

THE MODEL OF CRISES-SOLVING – POST

including today

- On the one hand, "it's normal": if the problem does not exist, there is no need of solution;
- On the other hand: if there are crises, neither **PRUDENCE** nor **precaution** did exist as collective behaviour / decision

Three concepts: **PRUDENCE**, **prevention**, **precaution**

- As emphasised by the 'precautionary principle', **precaution** = to prevent the **BAD** actions and consequences
- In common parlance: semantic superposition of the three concepts
- Philosophy: the logical and historical origin - **PRUDENCE**
- Opposed to the **common understanding** (reserve, passivity, circumspection, "impartiality"/neutrality, prevention)
- **Φρόνησις**: **1)** to think before acting (*pro-meteia*), **2)** to examine variants / **alternatives**, **3)** to choose the best one (to anticipate), **4)** to act accordingly (**PRUDENCE** – towards **any** action, not only the **risky**)

  PRUDENCE – possible, it reflects the learning process of man, 'world 3' (Popper) allowing the transmission of information supporting **PRUDENCE**
- **PRUDENCE** – towards the ***telos*** of things (ancient epistemological optimism: we aim only what is good, according to the ***telos***, since we are rational) (we project from the outset the nuclear with the less **risks**..)
- **PRUDENCE** – **ontological principle** (man – the main explaining factor): counter the human vulnerability, assure predictability, controllability, possibility to improve

Prevention

- The **ancient PRUDENCE** – did not focus **explicitly** on consequences (nor the concept of **risks** did exist)
- The **modern PRUDENCE** – calculus of **consequences** (in the modern scientific model: cause – effect…)
- **Risks** are identified (there is no uncertainty concerning them), but they are potential, are not yet actualised (their avoiding – possible)
- **Technology** brings the problem of **frequency** of **risks** in 2 cases:

  1) frequency is known (ex. use of alcohol, tobacco, drugs) (I consider this aspect of the problem as belonging to **prevention**, and not to **PRUDENCE**) **!!** ignoring these risks – has no epistemological, but social causes

  2) frequency cannot be estimated (nuclear, car, plane, dam break)

Prevention = logical result of **PRUDENCE**, its finishing (avoids the "evil")

Precaution / the precautionary principle

- "The discovering" of this **principle** – is the sign that **PRUDENCE** was weak / lacked
- The **principle** reflects the contemporary tendency to repair **risky** and **scientifically** **unsubstantiated** actions which **already have occurred**
- **Risks** – **actual** (not only potential), but **neither** their amplitude **nor** their frequency **were calculated** (some ones: 'foresight – impossible')

↓↓↓

- Already there are **losses**
- And **losses** – from extremely grave to irreversible

See the absolutely new phenomena (generated by technology): GMOs, general anthropic pollution, emissions from electronic devices, genetical manipulation

!!! T**echnological** causes should not be separated from the **social-political** ones

- The **principle** – tends to minimise **losses**, thus **risks**, BUT…..

The principle of precaution

- **After** the **agglomeration** of **losses** (Second International Conference on the Protection of the North Sea, London, 24-25 November 1987; Rio Declaration on Environment and Development, The United Nations Conference on Environment and Development, 1992, Convention on Biological Diversity, UN, 1992 (prevention))
- Content of the **principle**:

  - inexistence of the (full) scientific certainty over the **losses** does not legitimate to continue the **risky** actions (is not a "pretext" to postpone the **prevention**)

  - **prevention**/forbidding some activities – must be "cost-effective"

  - one must evaluate the dangers, the counter-measures, the research
- The **principle** impose a **limit** to "instrumental actions with cumulative logic" (paraphrase to capitalist logic)

However

- Though the **risky** actions have generated not only a general maximal uncertainty, but also certainty concerning the causes and spread of the harmful results of the **risky** actions

!!!! They **did not stop overall**, and the strong counter-measures in privileged "islands"/fragments **could not reverse the general harmful/malign course** (*Living Planet Report* 2016)

- There is a **maximal gravity** of **losses**, even irreversible character of some transformations due to the malignant actions
- The tableau emphasises the absurdity of **irrational** collective conduct towards the individual *so to speak* **rationality** (1. the individual is rational, the collective – not; 2. the social rationality of the individual corresponds to the rationality of society) (!!! Politics/ **domination-submission relations**)

Aristotle's model of PRUDENCE vs. the "diseases"/abnormal states determined by different degrees of LACK OF PRUDENCE

- **Lack of prudence** : when one **does not know** what he does (**PRUDENCE = to know**)
- **Lack of prudence** : when one does not understand the ***telos*** of his actions (**to know = to know the reason to be of things and actions**)
- **Lack of prudence** : when one aims only the means/intermediate ends (pleasure, wealth, honours), and not the ***telos*** of the human actions **(to know = to not confound the *telos* with intermediate ends**)

If man is not active, his reason / PRUDENCE remain only potential

- **Minimal prudence**: if one acts **perfunctorily / underworks** (**PRUDENCE = to act with excellence /in a virtuous manner**)
- **Minimal prudence**: if one **does not like** to be **prudent** (to do in an excellent manner what is needed) / in modern terms, if one feels to be constrained, unfree (**PRUDENCE = to like to be reasonable**)
- **Minimal prudence**: if he does not act firmly convinced, intentionally, but either restrained, continent, or on the contrary tempestuously, as an adventurist (**PRUDENCE = to be convinced that to behave in a prudent manner is the best behaviour**)

Psychological explanation of the individual assent of **anti prudential** social behaviour

- We arrive to think that **social imprudence** would be normal, because our manner to think is so **framed within the paradigms we were used to**, that
- **WE CAN NO LONGER IMAGINE SOMETHING ELSE**
- If we think in this manner, we also are **imprudent**

↓↓↓

- **We continue to do what the PRUDENCE forbids**: to think and act in a **fragmentary, unilateral and reductionist** manner

!!! Only **PRUDENCE** supposes (structurally) pluralism, **alternatives**: 1) the choice of alternative X supposes the existence of Y, Z…; 2) there are never only 2 extremes (evil and the other/lesser evil) (Aristotle: triad, and nuances)

!!! **If there are no alternatives**, **PRUDENCE** has no worth (is not followed by **prevention**)

!!! **PRUDENCE** = **responsibility**: a **prudent** behaviour does not consider the evils as simply occurred, but constructed; it searches for **causes** (it is not **opinion**, but **episteme**), and analyses the **consequences** (in order to prevent “precaution”)

The frame of power relations

- A methodological **principle**: the impersonal “one” must be concretised
- The human **decisions** – take place **within the power relations/ domination-submission** (it’s necessary to integrate the sociology of knowledge and action within the epistemology of precaution)
- The **power relations** – **ontological** explaining factor of man and his reality
- Distance between the precautionary principle – and its application

(private versus holistic/social interests)

(The private interest → “it comes what may coming” principle)

↓↓↓

- The perverting of common thinking concerning the actions and their **risks**: people do no believe what they know; they accommodate risks; they consider risks and danger as ‘the normal’
- Viz. (Dupuy 1991) the enormity of **losses** and their sudden occurring are seen as an uncontrollable evil coming from outside
- The awareness of the evil – low
- **Kant’s solution** (*What is Enlightenment*, 1784): the professional is citizen who must express **publicly** his criticism (the dual situation ≠ opportunism, but civism)

Intermezzo: technology as **ontological** factor

- The explaining factors of man – as historical/ concrete conditions, are not viewed **all the way**, thus tiil and within the concrete determinism of **power relations**
- ∃ inorganic matter (I), organic living matter (II), organised inorganic matter/ artificial objects/ **technology** (III)
- **Technology**: generated by both the human logic/needs, and its own logic: the **technical** object sends to **technical** growth, as life that has as source its own constitution: so, **technology** is not only a means (subordinated to the human) (in popular culture: autonomisation of **technology** (Aladin's lamp, Matrix)
- **Technology** – as Epimetheus (motivation to make/to **technically** grow – seems to stop the thinking on **consequences**, as if the logic of man would be conducted by the logic of **technological** objects (Stiegler 1998, 2008)
- But do not forget the frame of **power relations**
- As Stiegler, the present technophobia / techno-philia ignore the **power relations**: the rhythm of **technology** annuls the human **responsibility**

Where is science?

- Originally (logically and historically), science and **technology** cannot be reduced one to another
- science - knowledge of **causes** and **principles**, laws/regularities, ideal modelling
- **technology** - to make / to put something within reality
- Separation of science and **technology**:

  - generated by the historical division of physical-intellectual work

  - 'out-of-date' (in the modern viewpoint where practicability – the only criterion of the worth of scientific research)

  - good (science = grounding, the moment of *logos*, before doing) (**technology** = hasty; science – not only before but also after **technological** applications, and accumulations of practical proofs)
- The present **techno-science**: has epistemological and social reasons

Though both must be **responsible**, decision pertains to possessors of power

- But the dominant ideology: 'science with its uncertainties would be guilty'

Science means PRUDENCE

- But **PRUDENCE** doesn't mean limits to *logos*
- Science must be **prudent**, it's enough
- **Technology** should be **precautious**: to counter its own malign results
- The lack of moderation of **technology** – is **generated outside it** (even the internal principle "if something can be done, will be done"): the pseudo-innovations, the malignant innovations, the too much

(see only light pollution; wireless/micro wave pollution)

Outside science and **technology**, the dominant ideology – though criticising something in order to be credible – does **not** do this "all the way"/ not emphasising the profound **causes** and **consequences** (Stiglitz: everything within the market rules (carbon trade))

The 20th century tradition of epistemological **pessimism**

- Heidegger – critique of **technology** (pattern of autonomous and more powerful **technology**/object than man/subject) (because of the **exclusion of power relations**, 'man – powerless, **technology**/history have dethroned him')
- But: 1) man's lack of power, 2) the **technological** possible as necessary /inherent, 3) the manipulability of any kind of matter, including of man (as instrument/object/'matter'), 4) reduction of every object (including of man as object) dissolving gratuitousness, 5) obsolescence of man together with the programmed desuetude of objects, 6) the fetish of objects and the worthlessness of man, 7) the illusion of freedom of choice, 8) the appearance of material abundance, including through the immaterial/virtual, favouring indifference **till the annulling of precaution** = results of the logic of **power relations** where the **private** interest diverts the logic of **social** interest/ of man's power over the objects he creates, and not of the **ontology** of **technology** (**always more**)

Issuing **principles** and…

- Philosophy puts the problem of the **universal** and the **universalizable** – of the **value** that must be **universalizable** just because otherwise it is not **value** (Kant)
- This problem is not stranger to **science**, but it is so to the promoters of **power relations**
- Hans Jonas 1979: the **categorical imperative** of **responsibility**:
- Act such that the effects be compatible with the continuity of an authentic human life on Earth
- Act so as the effects do not destroy the possibility of such life
- Do not endanger the conditions of indefinite survival of humankind on Earth
- Include in your choice the future integrity of man as secondary object of your will
- Still, **non-prudence**, **non-prevention**, **non-precaution** have continued
- **Prevention** – **fragmented, non-systemic, late, even irreversible** (for the individual), cascading effects, the crisis is not over, it becomes permanent, risks grow (for society)

♥ **Disclosing** (as a certain philosophy does) – **no longer enough** ♥

Development of science as a ground for solutions

- **I** stage (Aristotle): scientific knowledge – of **causes** (the object, known from reality, and the consequences – given) (**Why?**)
- **II** stage (modern science and the first half of the 20th century): scientific knowledge = to emphasise new objects, separated / isolated (till ideal objects/models) → measuring, quality following the quantities; → the object is no longer neutral (**What?**, **How?**)
- **III** stage (the present science – still weak unity with philosophy): scientific knowledge → systemic, **holistic** (**causes** and **consequences** – integrated in systems; multi, inter, and trans-disciplinary) **anticipative** (the **anticipative** system – its present state depends not only on past states but also on possible future states (Nadin)

♣ Out of this objective development of science, there are forms of **civic activism of scientists** (because of the frame of **power relations**) ♣

To search for **causes** **all the way**

- Not only for the immediate/close **causes**, but also for different types of far away ones
- The unexpected phenomena – must not be viewed as given (perception of **causality** – must be developed)

(Examples: Case & Deaton 2015: *Rising morbidity and mortality in midlife among white non-Hispanic Americans in the 21st century*: first/ visible causes: drugs, alcohol, chronic pains, liver cancer; causes behind these: outside the general answer/ the neo-liberal economy: abusive prescriptions of opioids on the ground of economic insecurity (wages, but also pensions associated with stock market risks/pension funds as investment funds), aggressive promotion of opioids, stashing the rapid dependency they cause)

- The unexpected phenomena – must not be viewed as given, but searched in a **unitary**, **holistic** manner
- The model of the calculation of **consequences** – positive → at least to precaution
- But, because of the **power relations** – it is applied in a fragmentary manner

What kind of **solutions** in the present **technoscience**?

- Today, **science** – integrated with **technology**
- **Science** – must not be stopped, but
- Not all the models must not be applied / **not everything that can be done must be done**
- **Technology** fragments (tends to realise everything that is possible from a **technical** standpoint) and subordinates itself to all who demand the **technical** possible
- Ex. Rio did not pose the problem of ecologically malign consequences of wars (from this point of view, Rio was a limited ecolo. theoretical solution); or planes pollute, but not the passenger aircraft must be stopped, but the warplanes
- **Science**: **technology** must not be subordinated to the fragmentary / isolated cost-benefit calculation (Van Damme and Banfield 2011: highways means economic gains, but ecological **losses** (habitats separation etc.)

♣ **Costs should not be externalized, and gains should not be privatized** ♣

PRUDENCE does not stop the research, but gives it new, **alternative** goals

Prudence, **anticipation**, future studies

- **PRUDENCE** supposes **alternatives** (future studies), including the desirable, the probable, the possible
- **PRUDENC**E supposes **holism** / systemic approach
- **PRUDENCE** supposes **critical** view over presumptions and paradigms
- **PRUDENCE** supposes **plurality of the time hori**zons and **circumspect attitude towards the extrapolations from the past**
- **PRUDENCE** supposes only **mundane causality** / activism, not *Deus ex machina* and fatalism
- **PRUDENC**E supposes **plurality of methods** (and non-conformism)
- **PRUDENCE** supposes operating with the uncertain (tendency) and with the open dialectic of quantitative accumulations – new qualities

Science, technology, philosophy

- **Technology** – know **how**; science – know **what** and **why**
- Both science and **technology** search the particular, arriving at the general (model, law, generalizability in application)
- **Philosophy** searches both the particular and the general, but is interested in the intelligibility of the **whole**, in the integration of particular meanings in the **whole**
- (new sciences (ecology, ecological economics, Georgescu-Roegen) – holistic, emphasising the necessity of science-philosophy integration
- **The end – meeting the needs**, but both the meeting and the needs – framed by the **power relations**: → 1) exacerbation of false needs, 2) waste and programmed obsolescence of objects, 3) anti needs and harmful objects
- **Philosophy**: the quality of objects – not only to answer to needs, but to answer **well** (Aristotle: virtue – excellence; Kotarbinski 1976)