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What is Climate Science?

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Abstract

Around the world, in the field of environment, as connected to energy and climate, many common concepts are inherently confusing or have become confused. This paper highlights some of the related contradictions in such very basic concepts as science, climate, climate system, climate change. Historical documents (among others, the birth document of the Consensus in Villach, 1985, and the 1992 UN Framework Convention on Climate Change, UNFCCC) testify, how the climate science has been distorted step-by-step, to the point, where physical reality is no longer the reference for some researchers, but the problem itself. In reality, the physics-oriented climate science can exclusively be regarded as basis for climate science, as far as the rules of sciences are strictly followed. The so-called "science-for-policy" is nothing else than sophistry. Healthy and honest climate science can only be considered beyond any enforced climate change "consensus".

Keywords: science; climate; climate system; climate change; climate science, sophistry

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1. Introduction

Since its foundation in 2022, the Energy Working Group of the Batthyány Society of Professors, a conservative think-tank (PBK EM) has been warning about the unsustainability of mainstream climate policy in Hungary. Although our lecture series in 2024−2025 included presentation even from Richard Lindzen (Lindzen 2025), of notable fame, our views have only seldom reached the Hungarian public. In 2025, the Chair of the Energy Working Group, as one of the Ordinary Members of the Hungarian Academy of Sciences, managed to organize an international conference at the premises of the Hungarian Academy of Sciences, entitled „Beyond the Climate Change Consensus" (BCCC). This paper was presented as the introductory lecture at the BCCC conference, held on December 8, 2025, followed by two keynote lectures, one by Koutsoyiannis (2025b) and another by Furfari (2025), which are also published in this issue. The goal of this presentation has been to demonstrate, purely on the basis of historical documents, how the basic concepts of climate science were distorted, leading to a sophistry-for-climate-policy which lacks all the prerequisites for being considered as true science. There are no numbers or formulas in this presentation, so hopefully the message will be understandable to a wider audience.

2. Science, Climate, Climate System, Climate Change

2.1 What is Science?

All classical definitions of the term science sound very similar to the broad, albeit clear enough and self-explaining concept given by the President of the Hungarian Academy of Sciences over a century ago (Kornis 1922): Science is *"…a methodological and systematic human activity aimed at learning about reality"*. About the Greek origin of the concept see Koutsoyiannis (2025a).

Various features of science were highlighted from time to time. For example, according to Popper 1935) *"science progresses by attempting to falsify or refute hypotheses"*, in empiric, objective, and rational ways. Kuhn (1962) defined the periods of *"normal science"* within a shared paradigm and periodic *"revolutions"*, where a new paradigm replaces the old one. I also recall the approach by Ván (2025): *"science is an everlasting self-correction".* All the aforementioned approaches elucidate different aspects of the same principle of science, called briefly *"common sense"* by Feynman (1969).

Feyerabend's (1975) postmodern "science", as he defined it, *"is an essentially anarchistic enterprise: theoretical anarchism is more humanitarian and more likely to encourage progress than its law-and-order alternatives"*, it is actually not science, because the reality is subordinated to terms independent of the subject of science, such as "progress". Feyerabend's suggested approach of *"anything goes",* violates the rules of science. The so-called consensus building is also outside the rules of science, since any consensus is based on values and/or interests of people, and not exclusively on the physical reality.

2.2. What is Climate?

The ancient Greek „κλίμα" means inclination, slope, latitude. The Hungarian „éghajlat" means „the bend of the sky", a very expressive concept. Herbertson's (1907) definition (*"climate is what on an average we may expect, weather is what we actually get"*) is exact, while in the modern concepts, which sounds in AI wording as „*the average weather patterns in a region over a long period, typically 30 years or more, including temperature, precipitation, and humidity*, is also problematic.

These modern definitions of climate, as it has been observed by Demetris Koutsoyiannis, do not highlight the non-static nature. As Koutsoyiannis (2021) has reminded us: „*Climate is represented as a time average… A time average of a stochastic process (…) is not a number but a stochastic process per se."*

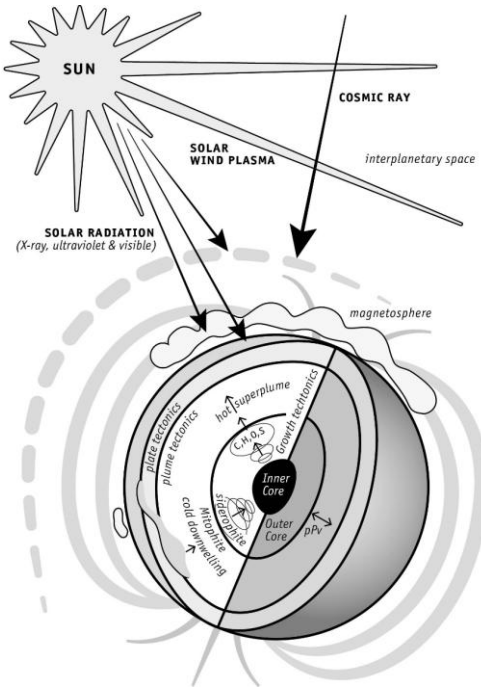

Figure 1: Several elements of the Earth System, based on Yuen et al. (2007). The figure in the title page was redrawn by Márton Juhász (JmTypography).

2.3 What is the Climate System?

Since the atmosphere in a simple model can be considered like an "apple peel" around the planet Earth (see Figure 1), in my geophysical approach (Szarka 2021) the climate system is the ensemble of elements of the Earth System with their interactions. One group of these elements is extraterrestrial (Sun, Solar System, space), another group is terrestrial: the phenomena of the atmosphere, geosphere, hydrosphere, cryosphere, biosphere (including human contribution). Among the interactions, many are not precisely known and many are completely unknown.

At a first glance, the concept of Climate System by UNFCCC (1992) seems to be complete (*"totality of the atmosphere, hydrosphere, biosphere and geosphere and their interactions"*), however, it is restrictive: for example, the Sun is completely missing from it.

2.4. What is Climate Change?

The Concept of Climate Change by WMO is considered as if it would be changes in numbers: *"Climate change is the term used to describe changes in the state of the climate that can be identified by changes in the average and/or the variability of its properties and that persists for an extended period, typically decades or longer."* In geophysical approach, the term climate change has meant characteristic climatic state of a region, due to the ever-changing components of the Earth System. In a given region it is a series of numbers, changing on decadal scale, But, according to Koutsoyiannis (2021), Climate Change is a process, since "*the climate, like the weather, has been ever-changing*". In this approach Climate Change is just a redundancy, so the whole concept is merely pleonasm.

At the same time, according to UNFCCC (1992), the Climate Change is *"attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods".* The UNFCCC definition is restrictive; it is in conflict even with the WMO definition.

Since all these bricks of climate science are controversial, before defining climate science itself, we should look at a few documents in more details, first of all, the UN Framework Convention on Climate Change (UNFCCC 1992).

3. Thought Diverting Documents

3.1. UNFCCC

UNFCCC (1992) puts human-caused greenhouse gases (GHGs) in the spotlight of research. All phenomena and all interactions outside the UNFCCC framework are largely ignored or attributed implicitly, sometimes explicitly, to humans. The study area of UNFCCC's "climate "cience" is restricted only to what is inside the Framework Convention. With other words: this Framework Convention has framed the thoughts of those involved with climate science. The study of space, solar system, Sun, complexity of H_2O roles (including hydrosphere, cryosphere and clouds), geodynamics (including volcanos), biodynamics (e. g., global greening), energy transports and feedbacks (e.g., Le Chatelier's principle) are largely subordinated to the Framework Convention. Most so-called climate scientists ignore most of the world outside UNFCCC. Climate scientists should be reminded, that a single point, as an entity with zero dimensions, is fundamentally unable to represent a sphere, which is a three-dimensional object.

It is evident that the restricted focus and restrictive definitions lead to biased conclusions. From 1992 on, the UNFCCC has been leading science to wrong conclusions. The reference basis of INFCCC was the „Climate Consensus".

3.2 How and when was the Climate Consensus declared?

The declaration of the climate consensus was made more than 40 years ago. It was well prepared,

of course. The ID card details of the Consensus contain the following (WMO 1986):

Name: International Conference on the Assessment of the Role of Carbon Dioxide and of the Other Greenhouse Gases in Climate Variations and Associated Impacts. *Parentage:* UNEP, ICSU, WMO (that time with new leadership). *Place of birth***:** Villach (Austria). Date of birth: October 9-15, 1985. *Birth document:* WMO-No. 661.

As it stands in page 7 of WMO (1986): *"this conference has two important tasks:*

- *to develop a consensus statement on the present state of our scientific knowledge of increases in CO_2 and other radiatively active gases, and the physical and socio-economic impacts, and*
- *to develop sound recommendations for action by countries and by international agencies, based on this scientific consensus."*

Item 1 of the consensus has been, in effect, the same for four decades: *"(1) The amounts of some trace gases in the troposphere, notably carbon dioxide (CO_2), nitrous oxide (N_2O, methane (CH_4), ozone (O_3) and chloro-fluorocarbons (CFC) are increasing. These gases are essentially transparent to incoming short-wave solar radiation but they absorb and emit longwave radiation and are thus able to influence the Earth's climate."*

It is a fact that the Consensus lacks all scientific knowledge born after 1985. For example, that time there was no any idea about the Earth' energy balance at the top of the atmosphere, elements of which have been monitored by NASA only since 2000. It is known from NASA CERES data basis (e.g., Miller 2023) that the actual warming in the 21st century is due first of all to an increase in Absorbed Shortwave Radiation (ASR), and the trends are changing on a decadal scale both in ASR and in Outgoing Longwave Radiation (OLR).

The Consensus-declaring Villach conference, as a reference basis, had crucial role on the evolution of the climate science. According to the Hungarian meteorologist, Rudolf Czelnai (1933−2025, Assistant/Deputy Secretary-General of the that time WMO): "*…the position of the great powers … was that climate change is a political issue. We ourselves felt … who understand it better than us take charge of stirring up the international public's interest in the climate issue.* He added in his charming style: *"With this, we strayed onto somewhat swampy ground."* (Czelnai 2006). One of the visible consequences of the Villach meeting has been directly manifested in the loosening of the scientific standards of the Gevena climate conferences from 1979 to 1991. Czelnai (2006) described it ironically as follows: "*The difference is about the same as buying bread in a small bakery or a supermarket. The latter has more bread, but the former is much better."*

3.3. Distortion of Climate Science in Hungary

Well-documented Hungarian sources (Faragó 1981, 2010, 2021, 2025) tell that Hungary has been involved in the activities of international environmental organizations from the very beginning, including cooperation in climate science and climate policy. Both the World Council of Economy and Development (WCED, in its popular name, the Brundtland Committee), and its Program Council had Hungarian members.

One of the conclusions of a huge "climate science" project in Hungary („VAHAVA" 2003−2006, led by the former WCED member) explicitly urged *"a comprehensive domestic climate policy"* (Faragó 2021). The unequal relationship between climate science and politics is well illustrated by the following sentence: *"…the conclusions of the scientific community's analyses have been and are being taken into account in policy programs 'more or less', depending on other aspects and priorities".* Politics fatally embraced Hungarian climate science, too.

4. The Present Situation

The present situation is completely illustrated by a few selected documents.

- It is a common turn of phrase in argument that *"we have known the determining cause*

for a long time" (Haszpra 2022).

- It is openly admitted that reality for the mainstream think-tanks is disturbing: *"Climate science requires a methodological shift away from its initial „physics-first" orientation toward one of usability-centered science-for-policy"* (Jebeile, Roussos 2023). It is amazing that they would like indeed to isolate climate science from the physical reality: *"physical science's „value-free ideal" can hamper the production of usable science-for-policy"*.
- Melissa Fleming (UN Under-Secretary-General for Communication) spoke about the science of climate change without restraint at the WEF event of October 2022: *"We own the science"* (WEF 2022).

5. Finally, what is Climate Science?

Climate science should simply follow the rules of Science: it is *"a methodological and systematic human activity aimed at learning about"* the climate of Earth. Only physics-oriented climate science can be considered as science, as far as the rules of sciences are strictly followed. Climate science is far from being settled; questions are always welcome.

In climate science, "anything goes" and consensus building does not work the same way as in science in general. Therefore, what the mainstream and the public calls "science-for-climate-policy" is nothing else than sophistry-for-science-policy. Dogmatic adherence to a frozen view based on the 1985 consensus is "no way" science. It is time to rigorously re-examine each and every climate claim. I recommend to start this re-examination with comparing two U.S. documents: the physics-oriented Climate Working Group (2025) and the policy-oriented Dessler and Kopp (2025).

Symbolizing science with watercrafts (see Figure 2), science in the past was a raft, with various hypotheses on it. Presently we have a huge warship, with CO_2 inside as ammunition. It is a sophistry-for-climate-policy and not science. In the future a return to a true climate science is unavoidable: a sailing boat should carry again exciting and conflicting hypotheses, and the doves above the sailing boat should remind us to the strict rules of science, and the roots of the common sense, coming from the heaven.

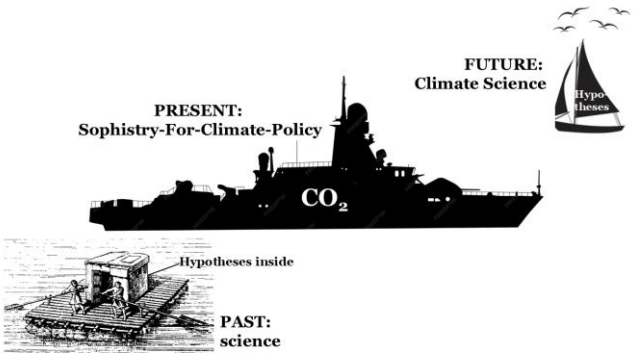

Figure 2: The past, present and hopeful future state of climate science are symbolized by watercrafts. The raft symbol is taken from Márki (1910).

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