Mini-review

What`s a global science summit?

Abstract

The scientific world calls for a Synthesis-of-Science (SoS) for better coordination of the common human efforts for a better world. The best approaches today are compoundings by headlines without any common internal structure and original conclusions. Neuroeconomic Psychology (NeP) is the micro part of SoS, where risk-willingness orders the Big5 Taxonomy replacing the mainstream paradigm of Bounded Rationality. This study complements the micro level NeP with a Universal Technology Assessment (UTA) synthesizing the macro level. UTA extends technology assessment in healthcare including the Ecosystem identifying the following macroeconomic targets for implementing a sustainable development:

1. *A broad international Tariff on CO2 emissions (ET)* to accelerate transition to a carbon neutral economy.

2. *Universal Basic Income (UBI)* for equalization of income.

3. Point 1-2 serve the 17 UN Goals on Sustainable Development and is acceptable for *collaboration across-the-center* to moderate majority of both democratic wings.

4. *Meditative in-depth-relaxation* serves stress-management. Eventually in combination with neurofeedback.

5. *Better mutual understanding between genders* is requested, because neuroeconomics shows that females are risk-averse while males are risk-willing.

Alternatives to SoS are discussed. No one is contradictory, but the most are complementary.

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Introduction

The Novo Nordic Foundation calls 2024 for a GLOBAL SCIENCE SUMMIT. Any scientific synthesis must feed new conclusions beyond compounding the premises like Hydrogen and Oxygen form water. An example is the synthesis of behavioral science by Neuroeconomic Model which orders the Big5 Taxonomy by risk-willingness into Neuroeconomic Psychology (NeP).[1–3] NeP is framed in the basic brain dynamics as identified by the Triune Conception of Brain and Behavior,[4] see Figure 1. The functional relationship between the Autonomic Nervous System (X-axis) and Frontal Cognition (T-axis) is determined by neuroeconomic trials.[1] The ordering of the Big5 by risk-willingness is based on correlation studies.[5]

NeP guides individual behavior, however, human behavior has a collective aspect that must be guided, too. Economics is Utilitarianism which is integrated with Healthcare by HTA.

Universal Technology Assessment (UTA) expands HTA to include the Ecosystem. This approach to a synthesis-of-science (SoS) synthesizes NeP and UTA with five top-targets:

1. *Implementation of a broad Tariff on CO_2 emissions (ET)* to accelerate transition to a carbon neutral economy. CO2 knows no national borders, therefore ET must be implemented globally by international collaboration.

2. *Universal Basic Income (UBI)* is an effective personal income tax system for equalization of income recommended by a series of Nobel Laureates. In industrialized countries, UBI can be financed by savings and simplification of tax deductions.

3. Point 1-2 and a continued carbon neutral growth in GDP serve the 17 UN Goals on Sustainable Development and is recommended for *collaboration across-the-center* to a moderate majority of both democratic wings.

4. *Meditative in-depth-relaxation* is an individual intervention towards epidemic stress explained by Neuroeconomics. Better stress-management helps to prevent Depression, Cardio-vascular and other diseases. Also, it saves health expenditures.

Modern devices for Neurofeedback serve stress-management by relaxation, too.

5. *Better mutual understanding between genders* is requested, because neuroeconomics shows that females are risk-averse while males are risk-willing.

This approach to UTA is concluded from existing research! However, what are the alternatives to UTA?

Method

To find alternatives to SoS, international science databases such as PubMed, EconLit and PsychInfo are searched. Far the most studies termed "Synthesis" are in reality "Compoundings of headlines" without any structural integration feeding new conclusions. Especially in healthcare, there are many compoundings termed synthesis, for instance "A Synthesis of Implementation Science Frameworks and Application to Global Health Gabs".[6] This study lists 52 studies without any other common structure than a headline delimiting the target. The following 6 alternatives are selected for a closer scrutiny with a view on the most versatile check of the validity of the SoS concept:

1. Achieving sustainable development goals: predicaments and strategies.[7]

2. Algorithmic thinking theory (ATT).[8]

3. Sustainable development with steadily maturing humanity: A guideline for the prospective global community.[9]

4. Sustainable development and human well-being.[10]

5. The International synthesis consortium.[11]

6. Institute for new economic thinking (INET).[12]

Discussion of selected alternatives to SoS

Ad 1.[7] The ambitious United Nations Sustainable Development Goals (SDG) have been criticized for being universal, broadly framed, inconsistent and difficult to quantify, implement and monitor. This study quantifies and prioritizes SDG and their impact on sustainable development. Structural equation models identify the underlying pillars of the SDGs as the 3P (prosperity, social stress and environment).[7] These results reveal, too, that the developed countries benefit most by focusing on social and environmental factors, whereas the developing countries benefit most by retaining their focus on economic and social factors.
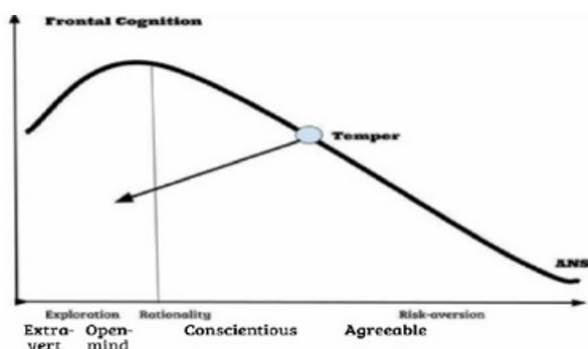
Figure 1 Neuroeconomic psychology.

This study is in no way an alternative to the SoS but a very important background study identifying the 3P as the crucial pillars of the 17 Un SDG like in this study.

Ad 2.[8] This model of algorithmic thinking theory (ATT) aims to replace the BR paradigm by artificial Intelligence (AI).

By correspondence with this author, we have agreed that 3P may serve as a kind of operational framework for the development of AI relevant to Socioeconomics and sustainable development.

Ad 3.[9] This study summarizes the findings by the International Institute of Advanced Studies (IIAS) that has organized annual Symposia on interdisciplinary collaboration for 30 years in Baden-Baden, Germany. Hiwaki concludes that the implementation of a complex scientific alternative to the neoclassical paradigm on BR requires a basic reform of the whole educational system targeting sustainable development by life-long education.

The SoS identifies decision-making biases as "Extraversion" and "Conscientiousness" in large and important minorities of the population, see Table 1. Already British Empiricists as Locke, Bacon and Hume recognized in the 17th Century such prejudices as the basal obstacle to improve human quality-of-life (QALY). This has implied an unprecedented growth in positivist science feeding the whole modern HiTec. However, before disseminating this basal knowledge to the general public, we must improve the level of understanding of Table 1 within our own group of behavioral scientists, for instance by quest`-lectures.

Table 1 Scientific method of behavioral science

Value of thesis	Sample-based decision	
	Accept	**Reject**
TRUE	Positivist knowledge	Type 1 Error or subjective conscientiousness
FALSE	Type 2 Error or subjective extraversion	Personal integrity

Note: Neuroeconomic model (NeM) orders the Big5 types by risk-willingness:[3]

a) Extraverts and open-minded correlate positively with risk-willingness.

b) Conscientious and agreeables correlate negatively with risk-willingness.

Ad 4.[10] The years, we find an increasing awareness among researchers addressing the broad public, focusing on human wellbeing. Wellbeing is defined by the International Panel of Climate Change (IPCC) as "A state of existence that fulfills various human needs, including material living conditions and quality of life, as well as the ability to pursue one's goals, to thrive, and feel satisfied with one's life".

Despite the good intentions, wellbeing is not a positivist model of behavior. Due to the frequent decision-making biases explained in Table 1, it's not possible to disseminate UTA directly to the broad democratic public, before the internal level of understanding among behavioral scientists such biases has been improved.

Ad 5.[11] The International Synthesis Consortium (ISC) aims to coordinate organizations that work for sustainable development by a scientific approach, see Appendix. The ISC has 16 local centers distributed over 5 Continents. The specific target of each center is distributed as shown in Table 2. The most frequent target is the 56% working for an "Overall Synthesis", like described by SoS.

Table 2 Distribution of Local Center Targets in ISC

Biodiversity	Ecosystem	Overall synthesis
1	7	9

ISC is in no way an alternative, but a complement demonstrating the strong interest for a global synthesis of science like SoS.

Ad 6.[12] The Institute for New Economic Thinking (INET) works for cross-disciplinary economics guiding economic policies, like this project. INET is based on partnerships with 15 different research institutions distributed all over the world and itself has no model of a global synthesis of science. INET has been involved in hundreds of scientific publications.

An INET publication of special relevance to the present study states "The path to better understanding the economy requires treating the economy as the complex system that it really is. We need more realistic behavioral models, but even more important, we need to capture the most important components of the economy and their most important interactions, and make realistic models of institutions."[13] The solution is according to Farmer Econometrics which replaces paradigmatic top-down models by a bottom up, data-driven, but fundamentally ad hoc approach. A point of view still representing mainstream economics.

The SoS focuses instead on Neuroeconomic Psychology (NeP), expanding the mental flexibility for interdisciplinary collaboration, as the key challenge to stronger human collaboration.

Conclusion

UTA combines Neuroeconomic Psychology (NeP) and health technology assessment expanded with the ecological dimension. The present scientific literature shows no real alternatives, but several approaches that complement it. First of all it identifies a rather simple path to improved interdisciplinary collaboration for sustainable deveöopment by a stronger internal focus on decision-making biases among behavioral scientists.

A broad agreement on a Global Synthesis of Science (SoS) is definitely going to strengthen the top-level of coordination at both the micro- and the macro-level. For some time we are looking for eventual contradicting alternatives until any conclusions are made.

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Conflicts of interest

The authors declare that there is no conflict of interest.

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