



LEAVES, A Newsletter of the INTERNATIONAL ENVIRONMENT FORUM
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From the Editor, Request for information for upcoming newsletters

This newsletter is an opportunity for IEF members to share their experiences, activities, and initiatives that are taking place at the community level on environment, climate change, and sustainability. All members are welcome to contribute information about related activities, upcoming conferences, news from like-minded organizations, recommended websites, book reviews, etc. Please send information to newsletter@ief.org. Please share the Leaves newsletter and IEF membership information with family, friends, and associates and encourage interested persons to consider becoming a member of the IEF.

IEF Lecture Webinars

By IEF Member Khela Baskett, IEF webinar coordinator

10th IEF Webinar

The Accelerating Environmental Crisis: A 60-year Perspective with Arthur Dahl January 22nd, 2022

1pm EDT, 18:00 GMT (UK), 19:00 CET, 22:30 IST (New Delhi)

Register Here: <https://us06web.zoom.us/meeting/register/tZUufuuppjwJHNyREar-v3HEGcSr7iT4b9No>

Description:

The 1960's saw the first signs that our material civilization was having environmental impacts, leading to the first Earth Day in 1970 and the United Nations Conference on the Human Environment in Stockholm in 1972. Warnings of limits to growth led to calls for more sustainable development in the 1980s, with a high point at the Rio Earth Summit in 1992 adopting Agenda 21 and conventions on climate change and biodiversity. Despite advances such as the adoption of the Sustainable Development Goals and the Paris Agreement on Climate Change in 2015, environmental crises have accelerated, driven by vested interests and pushing beyond planetary boundaries now threatening systems collapse. The latest science and the Secretary-General's "Our Common Agenda" lay out the fundamental transformation that is now urgently needed. This overview builds on Arthur Dahl's personal experience of these events over the last 60 years.

Speaker Curriculum Vitae:

Dr. Arthur Lyon Dahl is an environmental scientist, President of the International Environment Forum, on the Advisory Board of the Global Governance Forum, and a retired Deputy Assistant Executive Director of UNEP,

with 60 years' international experience. He participated in the 1972 Stockholm Conference on the Human Environment, organised the Secretariat of the Pacific Regional Environment Programme (SPREP), served in the secretariat for the 1992 UN Conference on Environment and Development (Rio Earth Summit), coordinated the UN System-wide Earthwatch, and lead the development of indicators of sustainable development. His recent work concerns proposals for UN reform and effective global environmental governance.

You can find all the information about past and future lectures on this new [Lectures](#) page.

IEF Board Up-date

Strategic Planning

The IEF Board is currently in the process of developing its strategic planning. In this process it considers the guidance it has received from the Baha'i International Development Organization (BIDO), the recent messages of the Universal House of Justice, especially its 30 December 2021 message on the 9-Year Plan, as well as suggestions from members received over the past year.

The current focus is on two broad areas of action:

- **Global public discourse** with the goal of reconceptualizing concepts and elevating the traditional debate with spiritual principles. Our Annual Conference, the preparation of statements on various topics, and collaboration with like-minded organizations are major areas of action in this field.
- **Encourage and assist IEF members** to engage actively at the local level by participating in public discourse, by promoting knowledge about environmental issues including perspectives grounded in spiritual principles, and by social action toward sustainable practices. Public discourse and social action at the local level need to come from the grassroots and reflect the local reality. It is not the role of IEF to lead such initiatives, but the IEF can share reports of experiences, case studies and any educational materials developed in response to local needs on its website or in the newsletter.

IEF Annual Conference

The IEF Board decided to hold its 26th Annual Conference in connection with Stockholm+50 which will take place on **2-3 June 2022**. This conference has a special significance for IEF: Its President Arthur Dahl participated in the Stockholm Conference on the Human Environment 50 years ago, which will open many doors for public discourse.

Ideas, Approaches, and Social Change: Emerging insights from the Bahá'í Community's 75-year engagement with the United Nations

A Wilmette Institute Webinar



The Wilmette Institute will offer a webinar with **Dr. Julia Berger on January 30**, 2pm EST, 20:00 CET

In her talk, Dr. Berger traces the experience of a community whose ideas about social order and the mechanisms of social change are refashioning familiar notions of politics as well as religion. Focusing on the Bahá'í International Community (BIC), an international non-governmental organization (NGO) which represents the worldwide Bahá'í community in global fora—most notably, at the United Nations.

Dr. Berger explores a unique and timely example of an approach to social change that goes beyond the divisive, antagonistic modes that tend to characterize political processes—one that lays the foundations for new patterns of relationships among individuals, communities, and governing institutions—patterns attuned to the needs of an evolving, interdependent global community. The lecture focuses on several elements of a framework that shapes the Bahá'í approach to politics, including a developmental view of history, and the principle of the oneness of humanity, and further, examines the role of the Administrative Order in shaping the BIC's engagement with the international community.

The lecture outlines an effort, echoed in wider scholarship, to enlarge the moral imagination about the vision, values, structures, and protagonists needed to forge a social order to meet the needs of the age in which we live.

For more information and to register, go here: <https://wilmetteinstitute.org/ideas-approaches-and-social-change/>

Putting farmers first: BIC releases statement on food security

<https://www.bic.org/news/putting-farmers-first-bic-releases-statement-food-security>

The Bahá'í International Community's United Nations Office in Geneva released a statement *Putting farmers first: BIC releases statement on food security* marking the 2021 United Nations Food Systems Summit.

Here is the last paragraph:

“Humanity has yet to devise an environmentally sustainable system of food production and distribution that responds to the needs of all. Bringing about an arrangement that ensures the just production and distribution of food for every member of the human family will require a more sophisticated approach to the generation of knowledge and the formation of systems that are tasked with supporting community prosperity. When policy considerations are shaped by a concern for humanity’s well-being, rather than by the interests of a few, more equitable solutions become apparent. The inclusion of a wider range of sources of insight will create possibilities for sustainable and resourceful approaches that are more reflective of local and global realities. By taking concrete steps along these fronts, the central paradox of food security can begin to be addressed more holistically and productive capacity be translated into universal prosperity.”



To read the whole statement, go here: <https://www.bic.org/statements/first-active-agent-human-society-putting-farmers-heart-food-security-policy>

To read an article about it, go here: <https://www.bic.org/news/putting-farmers-first-bic-releases-statement-food-security>

Up-dates from our Partner Organizations

ebbf (Ethical Business Building the Future)

ebbf embarked on a new project with the goal of developing the ideas in the paper of IEF President Arthur Dahl on [Global Systems Accounting Beyond Economics](#).

Different working groups have been meeting to consult on topics such as Minimum Living Standard, Spiritual Capital, Knowledge and Education, Biodiversity, and Health. Several IEF members in addition to Arthur Dahl are taking part. The results from the consultations will be shared at the ebbf conference 12-15 May.

Global Peace and Prosperity Forum

In 2021, the Global Peace and Prosperity Forum has highlighted the disproportionate impacts of COVID-19 on the vulnerable and marginalised, addressed inequalities, racial injustice and climate change, intensified its focus on challenges disproportionately affecting women and young people who are so vital to peace and prosperity, and connected with the widest international communities in the spirit of international cooperation and collaboration.

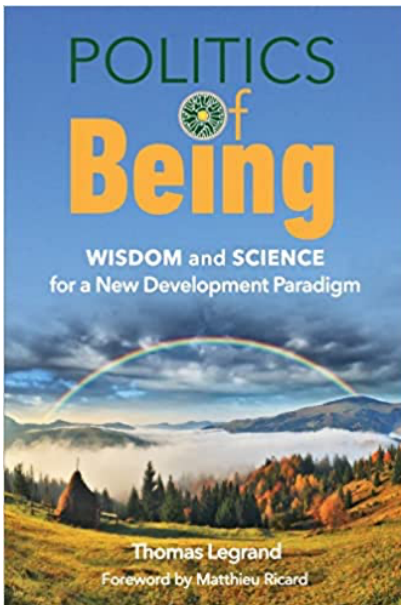
Here is the link to their videos in English: <https://www.globalpeaceandprosperityforum.com/videos-in-english>

Politics of Being: Wisdom and Science for a New Development Paradigm

by Thomas Legrand

Ocean of Wisdom Press, 2021, 518 p.

Book review by Arthur Lyon Dahl



If you set out to synthesize all the latest thinking about what is wrong with the world and what needs to be done to fix it, you might end up with a book like “Politics of Being”. What is remarkable is that it is equally strong on both the rational social science approach and the need for spirituality and values. The author, Thomas Legrand, has a Ph.D. in economics and many years’ experience working in the field of sustainability for UN agencies, private companies and NGOs, with a focus on forest conservation, climate change, sustainable finance, organizational transformation, and leadership. He also shares in the book his spiritual journey starting as a French Catholic, discovering native spirituality in Mexico, exploring many traditions and practices, and finally embracing Buddhism, living near a monastery in Southwest France.

“The Politics of Being” starts by exploring sustainability as a collective awakening, escaping from an obsolete development path that is destroying the planet and precipitating an evolutive crisis, and suggesting the need to move from “having” to “being” as the new paradigm. It then reviews the spiritual values which can serve as the foundation for what Legrand calls the Politics of Being. These values include: understanding, life, happiness, love,

peace, mindfulness and light. The book then becomes practical with proposals for an agenda for action, covering childhood and family, education, work and organization, health, food and agriculture, nature, justice, economy, and governance. It concludes with suggestions for how to put the politics of being into practice, including accepting that we are one world with a rich diversity of many nations, requiring leaders with both wisdom and spirituality.

Legrand summarizes his book in ten core messages. We need a collective shift of consciousness, a cultural evolution of a spiritual nature, to address our current challenges. As a wisdom-based, science-informed approach, a politics of being can support this evolution. Cultivating our fundamental “interbeing” or relational nature is instrumental to allow us to live in harmony with one another and the Earth community. Societies progress as they increasingly honor the highest values, qualities, and ideals, such as freedom, goodness, beauty, truth, understanding, life, happiness, love, peace, etc. The focus on being, the highest values, wisdom and science, provides a simple conceptual framework for a politics of being, which can integrate all relevant claims and initiatives. Our institutions should help cultivate human virtues. Concrete and actionable policy recommendations supporting this agenda already exist in many sectors. Spiritual teachings and wisdom traditions, through dialogue among them and with science, have much to bring to inspire, help design, and implement a politics of being. Each nation needs to reconnect to its own soul and wisdom to develop its version of a politics of being. Healing trauma is, for individuals and societies, the gateway to being.

This remarkable book might best be described as the journey of an enlightened intellectual, searching everywhere for what seem to be the best ideas and experiences, and assembling them into a coherent vision for a new development paradigm. It is thoroughly documented, as one would expect from an academic, including in the domains of research that provide a scientific basis for understanding spirituality. It is open and inclusive, proposing the kind of path that could bring everyone together, including those who have difficulties with traditional religions. Since it is deeply rooted in personal experience, it has a ring of authenticity, even if there might be issues with the vocabulary used in some descriptions of felt experiences.

From a Bahá’í perspective, many of its approaches resonate with Bahá’í principles including our higher spiritual purpose, the harmony of science and religion, the oneness of humankind, unity in diversity, moderation in material civilization and respect for nature and the environment. There are three pages explaining the Bahá’í Faith, and several mentions of Bahá’u’lláh and quotations from Bahá’í texts. The chapter

on governance features a whole section on the Bahá'í governance system and the need for international governance as proposed in the Bahá'í vision. It also cites and summarizes the proposals for UN reform described in the Lopez-Claros, Dahl and Groff book on *Global Governance and the Emergence of Global Institutions for the 21st Century*.

For those looking for an introduction to a wide range of sources, from philosophy and mindfulness to psychology and development, as they relate to our human condition, this is a good place to start. But as with all such efforts to propose solutions to the problems of the world, the question that is not easily addressed is how to implement these ideas and where to find the kind of new world leaders that Legrand calls for. He cites Gandhi, Mandela and Dr. Martin Luther King Jr., but such leaders are extremely rare. His politics of being may resonate with those already on a spiritual path, but that will not stop the rich and powerful behind the present materialistic system. It may take more than an intellectual approach and an individual version of spirituality to catalyze the necessary transformation that we all hope for. Perhaps this book will lead more in the right direction.

Thomas Legrand is organizing an online launching party on 22 January at 7 a.m Los Angeles time, 10 a.m. New York time, 4 pm CET (Paris time), 10 pm Bangkok time. During this two-hour session, which will be recorded and shared publicly, he will talk about his personal journey throughout this book, early readers will share how it resonated with them, and there will be time to connect and share. You can register here: <https://us02web.zoom.us/j/84411111111>

A trailer video can be seen here: <https://www.youtube.com/watch?v=5TvAGpiM5A0>

The book can be ordered from various sources: <https://politicsofbeing.com/get-the-book/>. The e-book is available now, and the book itself will be released on 22 January 2022.

A two hour book launch can be viewed at <https://www.youtube.com/watch?v=aK6iJJzorDg>.

Global Citizenship, Sustainable Development Goals (SDGs), and Gender Equality

By IEF Associate Abdul Majid Teewno

Already in the middle of the 20th century, many people throughout the world reached the understanding that sustainability of the earth would only be possible when the concept of global citizenship became a reality. Global citizenship can be considered an ideology that encourages every individual on earth to contribute to the care of this globe simply because they are citizens of it.

The need for global citizenship can be appreciated when reflecting on the interconnectedness of biodiversity on the earth. It is often thought that every species has made a contribution toward a harmonious existence. In a like manner, every human action has had an impact on the earth either directly or indirectly. Humanity has faced many disasters and in the future many more will occur due to human interactions.

One of the biggest threats to the world is considered to be climate change. For example, everything in this world, being dependent on temperature, has existed within a certain temperature range. If the temperature range for a

certain plant or animal decreased or increased outside of its usual range, the result could be danger or disaster. Since human actions have affected climate change which in turn has affected the world at large, global citizenship has become imperative.

Sustainable development, as its name implies, focuses on sustainability. Sustainability means the use of resources in such a way that they can be useful for the next generation and do not contribute to the deterioration of the environment.

One initiative to head off an unsustainable situation was undertaken by the United Nations Organization (UNO). This occurred when it was observed that the globe was heading towards self-destruction. Hunger, terrorism, disasters, inequality, and racism were taking the lives of thousands of people. At this point, 17 interconnected Sustainable Development Goals were proffered for implementation to promote global citizenship for the sustainability of the Earth.

Among these goals, gender equality is paramount. It is plainly evident that a major part of

the development of society is largely dependent on women. For example, from birth to the teenage period, 80% of the contributions to growth and education of a child come from women. The child will learn what the mother/gardener teaches. Learning and teaching of facts, effective communication, basic skills, social interaction, sports, and languages, in a proper way, is an undeniable need for children so they can grow to overcome the psychological and physical pressures that will arise in their lives. Mothers need to be able to pass these talents on to their children.

Parents have a tremendous amount of influence on their children. The children notice what their parents say and do. Especially at the younger ages, children learn everything from their parents. They do what their parents tell them to do, without being aware of the consequences. Thus, a woman can be considered the foster parent of society. To accomplish this task, she needs to be well educated and disciplined. That is why gender equality is considered the most important goal in the Sustainable Development Goals.

Today, the Gender Development Index (GDI) is utilized to measure the gender equality of a country. According to the Human Development Report 2020 of the United Nations Development Program (UNDP), some countries have a very low GDI (one country has 0.488 and another 0.660). This is a

disastrous form of inequality, and is reflected in the scorecard of those countries rankings with low scores for women in economic participation and opportunity, educational attainment, health and survival, and political empowerment. The result is a loss of economic, educational, and health opportunities.

In this era where the world is putting greater effort into the enhancement of women's empowerment, some countries are having the opposite effect. There are still male-dominant countries where the dominance of one person is in actuality depression for another. This male dominant culture has a negative psychological, educational, and disciplinary impact on women. Since the female population of the world is 49.6%, not giving proper education and employment opportunities to women is an injustice to a country in regards to the economy, development, culture, and literacy. Thus, there is a huge loss of development because of male dominance.

All human beings are born free and equal in dignity and rights. Remember that a right is a freedom of some kind or something to which one is entitled by nature of being human. As stated in Article 1 of the Universal Declaration of Human Rights (UDHR): "We are all born into this world and should be given the same opportunities and given a fair shot at a life well-lived."

Religions and Ecology: Restoring the Earth Community

The Yale University and Coursera offer free massive online courses to understand the ecological teachings and practices of religious traditions across the planet:

- Introduction to Religions and Ecology
- Indigenous Religions and Ecology
- South Asian Religions and Ecology
- East Asian Religions and Ecology
- Western Religions and Ecology
- Christianity and Ecology

Key facts:

- Accessible to a general audience
- Start anytime and work at your own pace
- Audit any course for free
- Take courses separately or together as a specialization
- Engage with community mentors to support and deepen your learning

To learn more, visit fore.yale.edu/online-courses where you will find a fact sheet of frequently asked questions.

UNGA to Hold Five-Part Consultation on *Our Common Agenda*

UN Member States will begin consultations in February on the UN Secretary-General's proposals for *Our Common Agenda*, a set of 90 ways to realize a "greener, safer, better" future and avert a historical breakdown of societies. Discussions will be organized into five thematic clusters.

The [Our Common Agenda](#) report responds to the September 2020 declaration on the commemoration of the UN's 75th anniversary, and was presented to UN Member States on 10 September 2021. It identifies actions that could advance the 12 commitments made by world leaders in that declaration in ways that also accelerate the achievement of the SDGs.

The UNGA President is convening a series of "open, inclusive, informal" consultations, with intergovernmental discussions to take place in a five-part series over the course of February and March 2022.

Each consultation is scheduled to take place over two days, starting with a briefing by the Secretary-General on the proposals related to the respective cluster. To enable Member States to discuss the report's proposals and their potential means of implementation, the consultation will also include a half-day informal plenary debate, and a day of panel discussions with UN system representatives and stakeholders, such as young people, civil society and private sector representatives, and academics.

Source: based on SDG Knowledge Hub of IISD 5 January 2022: <http://sdg.iisd.org/news/unga-to-hold-five-part-consultation-on-our-common-agenda/>

Second Edition of the Global Risks Perceptions Report Launched

Source: [FutureEarth](#)

Future Earth, Sustainability in the Digital Age and the International Science Council shared the findings of the second annual survey of scientists' perceptions of risks in [the Global Risks Perceptions Report 2021](#). This new report was launched during a live webinar on December 13, 2021 that featured members of the survey's Scientific Advisory Committee and the Head of Global Risks and Geopolitical Agenda at the World Economic Forum (WEF).

The survey was directly inspired by the WEF's fundamental work in risk perceptions analysis over the last 16 years. The survey asked scientists for their evaluation of the likelihood and impact of the 35 global risks identified by the WEF in their annual survey of the business and economics communities.

The report highlights several key messages.

- Scientists systematically ranked likelihood and impact of global risks higher than members of business and economic communities.
- All surveyed communities rated environmental risks among the most urgent global risks humanity faces today and as highly interconnected with other global risks.
- Technological risks are now seen as more likely to occur, compared to earlier findings.
- Five risks emerge as most likely to form an interconnected cluster of risks and lead to a global systemic crisis: failure to take climate action – biodiversity loss – infectious disease – extreme weather events – human environmental damage.
- Scientists highlighted the need to prioritize inequality as a standalone risk in assessments and perception analyses.
- Business and science communities are only two groups of many more with perspectives relevant to dialogues about global risks. There is a continued need to learn from each other and build a global community around mitigating risks.

Environmental News from around the World

'Seed Savers Network' helps Kenyan farmers adapt to erratic weather

Source: <https://yaleclimateconnections.org/2021/12/seed-savers-network-helps-kenyan-farmers-adapt-to-erratic-weather/>

In some parts of Kenya, the rainy season is getting shorter, causing drought. When rain does come, it sometimes falls during severe storms that cause floods and crop damage. That's making farming more difficult than it was in the past.

Daniel Wanjama is co-founder of [Seed Savers Network, Kenya](#). The group trains growers to select and save seeds with erratic weather in mind. "One of the most important aspect[s] of selection is selecting the fastest growing, by identifying the first one to flower," Wanjama says.

He says fast-growing plants can reach maturity within a shorter growing season, before a drought sets in.

The group also encourages farmers to avoid growing just one crop. Wanjama says planting a single crop makes farmers vulnerable, because too much – or too little – rain can wipe out a harvest.

So he suggests farmers grow a diverse range of crops that thrive in different conditions. For example, Wanjama says that if maize withers in a drought, farmers could still harvest sweet potatoes. "If sweet potatoes do not grow because the rainfall was even less, we could have cassava," he says.

So he says these methods could help Kenyan farmers protect their livelihoods in a warmer future.

New Climate Maps Show a Transformed United States

Source: <https://projects.propublica.org/climate-migration/>

According to new data from the Rhodium Group analyzed by ProPublica and The New York Times Magazine, warming temperatures and changing rainfall will drive agriculture and temperate climates northward, while sea level rise will consume coastlines and dangerous levels of humidity will swamp the Mississippi River valley.

Taken with other recent research showing that the most habitable climate in North America will shift northward and the incidence of large fires will increase across the country, this suggests that the climate crisis will [profoundly interrupt the way we live and farm in the United States](#). The article shows how the North American places where humans have lived for thousands of years will shift and what changes are in store for this country.

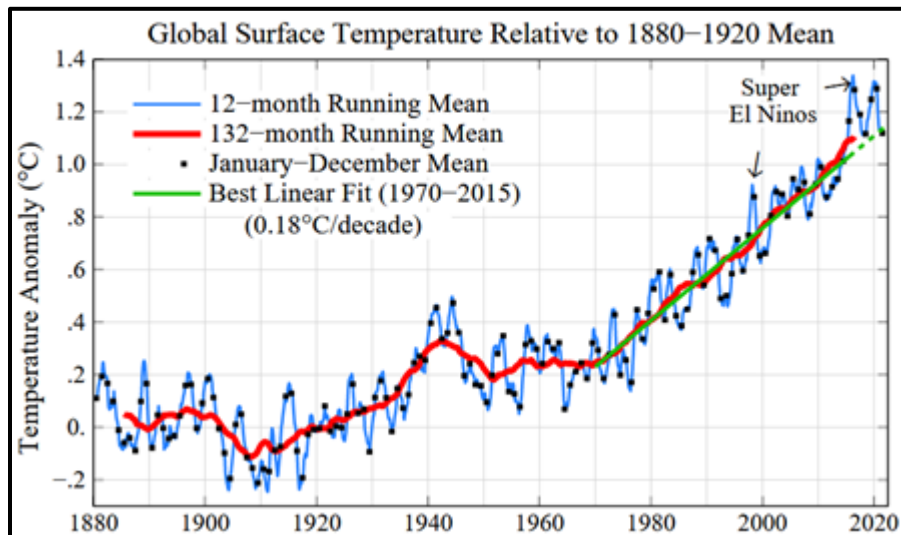
Items of Interest from the World of Science

Global Temperature in 2021

Source: <https://mailchi.mp/caa/global-temperature-in-2021?e=77785d2d4a>

Below is an abstract and graph from a paper by James Hansen, Makiko Sato and Reto Ruedy, published on 13 January 2022

Global surface temperature in 2021 (Fig. 1) was +1.12°C (~2°F) relative to the 1880-1920 average in the GISS (Goddard Institute for Space Studies) analysis. 2021 and 2018 are tied for 6th warmest year in the instrumental record. The eight warmest years in the record occurred in the past eight years. The warming rate over land is about 2.5 times faster than over the ocean. The irregular El Nino/La Nina cycle dominates interannual temperature variability, which suggests that 2022 will not be much warmer than 2021, but 2023 could set a new record. Moreover, three factors: (1) accelerating greenhouse gas (GHG) emissions, (2) decreasing aerosols, (3) the solar irradiance cycle will add to an already record-high planetary energy imbalance and drive global temperature beyond the 1.5°C limit – likely during the 2020s. Because of inertia and response lags in the climate and energy systems, the 2°C limit also will likely be exceeded by midcentury, barring intervention to reduce anthropogenic interference with the planet's energy balance.



To read the whole paper, go to <https://mailchi.mp/caa/global-temperature-in-2021?e=77785d2d4a>

Tipping Elements Discussion Series

This series of online discussions convened by AIMEs, Future Earth, Earth Commission and WCRP aims to advance the knowledge about tipping elements, irreversibility, and abrupt changes in the Earth system. It supports efforts to increase consistency in treatment of tipping elements in the scientific community, develop a research agenda, and design joint experiments and ideas for a [Tipping Element Model Intercomparison Project \(TipMip\)](#).

The 60-90 min events are held monthly and feature presentations from scientists working on the frontiers of earth systems research.

Register for each event individually to receive joining instructions. When an event has passed, you can access recordings and materials on the link below.

https://tippingpointsseries.confetti.events/?utm_source=Future+Earth+Newsletter&utm_campaign=12f8c4b593-EMAIL_CAMPAIGN_2019_06_27_02_33_COPY_01&utm_medium=email&utm_term=0_53def20e3a-12f8c4b593-288803245

The discussion series is a joint activity of the [Analysis, Integration, and Modeling of the Earth System \(AIMEs\)](#) global research project of Future Earth, the [Earth Commission](#) Working Group 1 Earth and Human Systems Intercomparison Modelling Project (EHSMIP) under the [Global Commons Alliance](#), and the [Safe Landing Climates Light House Activity](#) of World Climate Research Programme (WCRP).

America's big mistake about science literacy came back to haunt us in 2021

Ethan Siegel wrote an excellent article about science literacy. Below are some excerpts. It is worth reading the whole article here: <https://medium.com/starts-with-a-bang/americas-big-mistake-about-science-literacy-came-back-to-haunt-us-in-2021-d3de1ca559c6>

In this day and age, it's virtually impossible to have sufficient expertise to figure out what the complete, comprehensive, scientifically validated truth surrounding any issue is. Unless you yourself have spent many years studying, researching, and actively participating in furthering the scientific endeavor in a particular field, you can be certain — with an incredibly high degree of confidence — that your non-expertise will fundamentally limit the depth and breadth of your understanding. Put simply, your inexperience, relative to that of bona fide professionals, gives you too many blind spots that you yourself will be unaware of, to be able to distinguish what's valid and conclusive from what's not.

We have this persistent myth that's been a part of a society for a very long time: that if [you just do your own "research,"](#) figuring out what you're capable of learning from reading and listening to other sources, you'll be just as capable of the experts at distinguishing truths from falsehoods. That if you just learn enough of the relevant facts and apply your logic, intuition, and critical reasoning skills to any problem you encounter, you'll be as scientifically literate as anyone, empowering you to make expert-level decisions as routinely as the experts themselves can.

This fundamental misunderstanding of what it means to be scientifically literate, and the accompanying, even if unintentional, devaluation of actual expertise, is in large part why so many of us mistrust and misunderstand science today. We can correct our course, but only if we understand what it actually means to be scientifically literate. ...

Rather than requiring that mastery [scientific expertise in everything] to exist among everyone — [a foolhardy and unattainable goal](#) — a much more powerful measure of scientific literacy can be imparted to the general public through only two metrics:

- fostering an awareness of what the enterprise of science actually is,
- and fostering an appreciation for how applying the best known science to our societal problems positively impacts all of us.

At its very core, the enterprise of science is two things simultaneously, where neither one has any value without the other. On the one hand, science is the full suite of knowledge and data relevant to a particular issue: the cumulative answer to every aspect of one particular question, "what is true?" On the other hand, science is also a process for testing, inquiring, refining, and reproducing results that will probe and reveal further information about the Universe, beyond what is presently known. When one talks about "being aware" of the enterprise of science, it requires a recognition of your own incompetence in all areas compared to the greatest experts, including, if you yourself are a scientist, of your own ignorance and incompetence in various aspects of even your own field.

So, then, how do we create a scientifically literate society? No one's going to like the answer, but here it is: it's going to take a lot more listening to the relevant, appropriate experts, and a lot of shutting the remainder of what you're hearing — the noise — out. Bad news: most of what you listen to or watch is noise. Most of the media you consume is noise. And much of what you can find on the internet, particularly if you're having that information curated to you through social media, is not just noise, but actively misinforming you in a way that's designed to play to your preconceived biases. You're not going to become any more scientifically literate without putting the requisite effort in, the same way you won't become a more ethical person without examining your actions and how they've impacted others.

There is one bias, however, that will prevent you from ever becoming scientifically literate in these meaningful ways — being aware of the enterprise of science and being appreciative of the impacts our scientific advances have on our lives and our society — unless you overcome it: you absolutely must be willing to admit when you have been wrong. Science is not concerned with what you believe, what compels you, what your logic or intuition or gut feeling tells you, or even what you know, in your heart, to be correct. Science is concerned with what is empirically, verifiably true about this Universe we all inhabit, and when it tells us that "we were wrong" about something, we can be certain that we were.

The idea that we can choose our experts based on what they're saying and how palatable their message is to us — or worse, based on how well they already agree with our preconceptions — is a recipe for disaster. The one weapon we have against our own ignorance, and our own unwillingness to revise our previously held convictions, is scientific literacy: the ability to gather and assimilate information that itself lies beyond our own expertise to obtain for ourselves.