Friday 8 October, 11:15am–12:30pm CET

TRANSLATE

Enriching Science with Citizen Voices and Values

Abstract

Emerging fields of science like advanced artificial intelligence (AI), human genome engineering and longevity research will all have profound impacts on people's everyday lives. That makes it an imperative to involve citizens in the scientific process and incorporate their experiences and perspectives into the way research is done. Ensuring all citizens are informed of the latest advances and how these relate to their lives is a crucial first step. The development of a global sounding board designed to gather citizens' voices and values will enrich science by unearthing the breakthroughs people most need and helping co-develop regulatory frameworks that are fit for purpose. Cooperative research can also help scientists break out of dogmatic ways of thinking and rediscover valuable traditional knowledge.

- What are the best ways to involve citizens in the scientific process?
- What can and should citizens contribute to the most advanced scientific disciplines?
- How can policymakers design frameworks that help scientists and citizens to interact?

Participants

Moderated by:

Alain Kaufmann, Director, ColLaboratoire, University of Lausanne, Projet SantéPerSo, Switzerland

With:

Claudia Chwalisz, Policy Analyst, Leading work on innovative citizen participation, OECD Open Government Unit; Author; Member, Democracy R&D Network, France

Nicola Forster, Co-Founder, Foraus think tank, Switzerland *(remotely)*

Samira Kiani, CEO and Founder, GenexGen; Director, Tomorrow.Life Initiative; Associate Professor, Liver Research Center, Department of Pathology, School of Medicine, University of Pittsburgh; Member, GESDA Academic Forum, USA

Simon Niemeyer, Associate Dean, Research, Faculty of Business, Government and Law, University of Canberra; Project Leader, Global Citizens' Assembly on Genome Editing, Australia *(remotely)*

Mamokgethi Phakeng, Vice-Chancellor, University of Cape Town; Board Member, GESDA, South Africa *(remotely)*

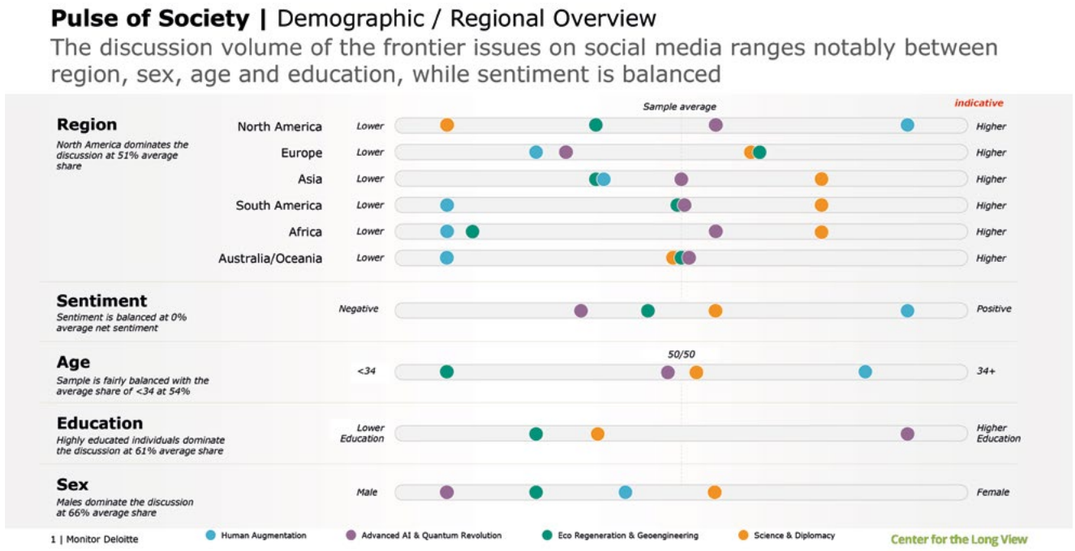
Highlights

Many experts agree that more public engagement with science is needed, not only as a top-down approach in which scientists spout their brilliant ideas and solutions to the most pressing challenges of the day, but also as a genuine dialogue and opportunity for mutual learning. More disagreement exists over just how to accomplish that. Mutual learning involves gathering broad perspectives and spreading awareness about how science and technology dominate seemingly every aspect of our modern lives, in ways both liberating and terrifying. Done well, public engagement can serve as a democratic platform for citizens to join with scientists and policymakers in decision-making. "We have to discuss deeply the issue of articulating academic and scientific excellence with social relevance – social relevance considered as a bottom-up issue – and to ask how diplomacy could help in this endeavour," summed up Alain Kaufmann, whose research and teaching focus on the sociology of science and technology, scientific communication and mediation, technological risks, research ethics, public participation, action research, and some aspects of biomedical research. "It requires all kinds of approaches aimed at informing, but we know that simply informing people is not sufficient."

For a project launched by GESDA with the Center for the Long View (CLV), Nicola Forster said a new AI-based tool was developed that "combines machine objectivity with human intuition". He said it was used to sift through more than 11 million documents on social media that indicate citizens' views on science, and the results were used in GESDA's Science Breakthrough Radar® as a reflection of those who are interested in science and what differences there might be among them according to demographic and geographic variables.

It included a "sentiment analysis" to find what people considered controversial, positive, or negative, Forster said, but its purpose ultimately was to find out "where we should build bridges" between scientists and the general public.

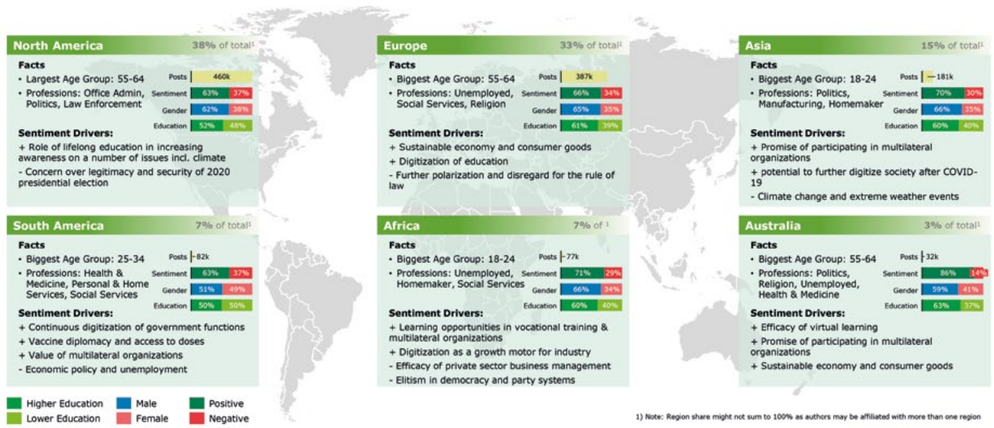
Among the findings were that North America and Europe dominate the global discussion, with a bias towards English-language publications; eco-regeneration and geoengineering generally figure positively in people's conversations, while "people are much more afraid" of the quantum revolution and advanced AI, he said. Younger people tend to talk more about the environment, eco-regeneration, and geoengineering, he added. The most highly educated among them were more engaged with quantum computing and advanced AI, and conversations were dominated by males, who made up two-thirds of those who expressed views about the Radar. On the topics of science and diplomacy, mostly people over 55 years old engaged on the topic in North America. By comparison, in Asia most people in their late teens and early 20s were the most engaged on that topic. There was some negative sentiment on digital democracy, particularly regarding e-voting systems in Africa. Other people feared losing their jobs due to automation. Many people, unsurprisingly, focused on COVID-19.



Social Media

Science & Diplomacy | Demographic Differences by Region

Where is the discussion taking place and who is driving it?

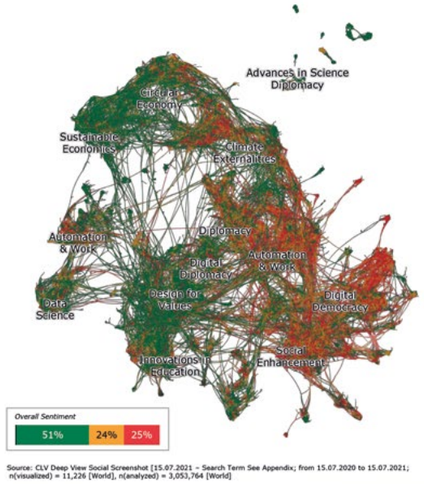


1) Note: Region share might not sum to 100% as authors may be affiliated with more than one region

Center for the Long View

Social Media

Social Media | Science & Diplomacy Sentiment View



Source: CLV Deep View Social Screenshot [15.07.2021 – Search Term See Appendix; from 15.07.2020 to 15.07.2021; n(visualized) = 11,226 [World], n(analyzed) = 3,053,764 [World]

Sentiment Drivers

Positive sentiment is centered around:

- **Sustainable Economics** specifically around sustainable consumer goods (e.g. fashion, cosmetics) as well as recyclable materials, plastic-free living
- **Innovations in Education** specifically in digital, decentralized education as well as the gender diversity in education (e.g. female, LGBTQ+ education)
- **Design for Values** with regard to charity systems focusing on providing education to minority groups and those in need
- **Advances in Science Diplomacy** primarily regarding the integration of non-state actors in diplomacy through educational programs such as e.g. International Model United Nations

Neutral/mixed sentiment is centered around:

- **Climate Externalities** through a number of reports on nature protection projects and studies
- **Diplomacy** focusing on US-Middle East and US-Russia relationship

Negative sentiment is centered around:

- **Digital Democracy,** voting safety, validity and E-Voting Systems as well as general authority are being discussed negatively, driven by the US elections
- **Automation & Work** in the form of employment instability, fear of losing employment, amplified by COVID-19 lay-offs
- **Climate Externalities** such as extreme weather events (e.g. Forest Fires, Floods) and slowly dissipating ecosystems (e.g. Amazon, Permafrost)

Community dominant in the discussion: Citizens Public Sector Academia Private Sector

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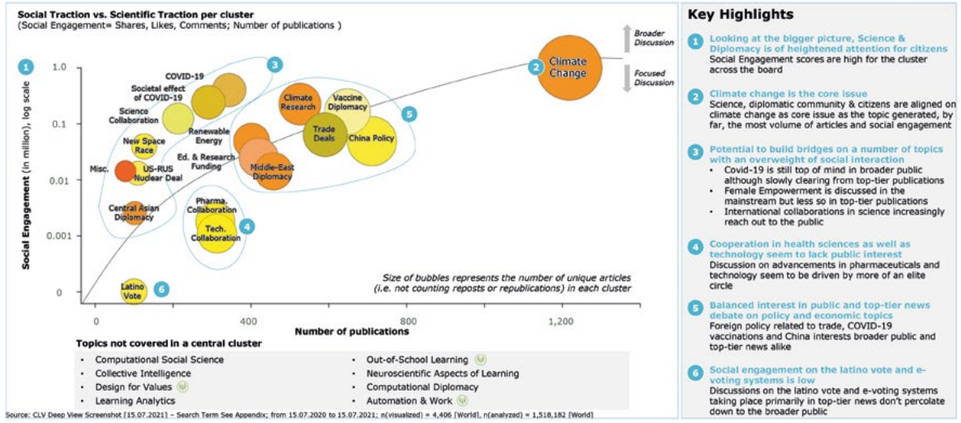
News & Blogs

Science & Diplomacy | Social Engagement per Cluster

Is there a disconnect between society and experts?



Key Highlights

1. **Looking at the bigger picture, Science & Diplomacy is of heightened attention for citizens**
   Social Engagement scores are high for the cluster across the board
2. **Climate change is the core issue**
   Science, diplomatic community & citizens are aligned on climate change as core issue as the topic generated, by far, the most volume of articles and social engagement
3. **Potential to build bridges on a number of topics with an overweight of social interaction**
   - Covid-19 is still top of mind in broader public although slowly clearing from top-tier publications
   - Female Empowerment is discussed in the mainstream but less so in top-tier publications
   - International collaborations in science increasingly reach out to the public
4. **Cooperation in health sciences as well as technology seem to lack public interest**
   Discussion on advancements in pharmaceuticals and technology seem to be driven by more of an elite circle
5. **Balanced interest in public and top-tier news debate on policy and economic topics**
   Foreign policy related to trade, COVID-19 vaccinations and China interests broader public and top-tier news alike
6. **Social engagement on the latino vote and e-voting systems is low**
   Discussions on the latino vote and e-voting systems taking place primarily in top-tier news don't percolate down to the broader public

Source: CLV Deep View Screenshot [15.07.2021 – Search Term See Appendix; from 15.07.2020 to 15.07.2021; n(visualized) = 4,406 [World], n(analyzed) = 1,518,182 [World]

Topic covered on social media

Center for the Long View

"If something is high up on the scientific agenda but not on the public agenda, probably there's a need to engage in more discussions and try to build bridges between the public, the broader public, and science," said Forster, a social entrepreneur who has initiated and moderated innovation and participation processes in various foreign ministries, foundations, and international organizations. "And I think today, there's a big need for building bridges between the silos. And obviously Switzerland is a place with great universities but also all these international organizations, countries which are represented in Geneva. It can be the place for GESDA to emerge and play a positive role for everyone. This can be part of the answer why it can be an honest broker."

Mamokgethi Phakeng said what makes GESDA an honest broker as it tries to start more conversations among voices from around the world is partly that "Geneva is probably the most trusted to do this." A poll of the session audience found 68% of respondents favoured action and community-based research, and other types of knowledge co-production from among the different approaches to include citizen's participation in the "making" of science, taking into consideration time, finances, geographical limitations, and other respective impacts. Some 42% favoured citizen conferences or juries, deliberative polls, focus groups and other forms of consultation; 21% favoured social networks, websites, and other forms of data mining; and 11% favoured the use of citizen science such as Galaxy Zoo, Foldit and iNaturalist.

As people tire of COVID-19 pandemic lockdowns and government-ordered restrictions, the anti-vaccination movement has also shown that a "correlation" exists between those who mistrust vaccines and those who mistrust government, Kaufmann noted, adding that if the movement were seen as an "experiment" it might also demonstrate that a top-down approach to spreading scientific expertise "is not producing any effect". To make citizen engagement effective, said Phakeng, the first question that must be answered is why involve society? "Because once we get to the why, then we can ask other questions," she said. "Then we would say, who in society do we want to engage? And how do we engage them, and what does that engagement look like?" Phakeng, an expert in mathematics education who has won awards for her research and community work, pointed to the benefits of a university-run community centre for youth and women that could encourage more widespread participation in science research without an underlying sense of obligation. Building community centres for science is crucial, she noted, since everyone can contribute something to the scientific effort and to the community. And "who reaches out" matters. "And we saw we have a lot of lessons from HIV/AIDS in our country, in South Africa. For example, when we involved [South African Anglican cleric and theologian, known for his work as an anti-apartheid and human rights activist, also Bishop of Johannesburg] Desmond Tutu, and him lending his name to HIV research, but also to research at our university in Cape Town," she said. "Because trust is key. We want people to be involved and to engage for different kinds of reasons. But if they do not trust, they pull back."

The usual approach towards citizen engagement with science, particularly with public crises, is outreach aimed at educating the public. With the rise of disinformation and widespread mistrust in governance and media, however, such an approach too often falls on deaf ears. True engagement and participation depend largely on communication. For that reason, Samira Kiani said she joined with filmmaker Cody Sheehy, CEO of the US-based Filmstacker, in starting "Tomorrow.life", an initiative with a mission to expand public engagement with science through connecting scientists and people with stories with filmmakers. People are asked to film themselves on their phones, upload that to an online platform where other video contents on science issues already are at disposal, and create video stories with that entire material, then share them to share on social media. "We started to question how humans connect?" she said. "And one of the cores of these connections is this emotional connection that we can build between us, and one of the elements of that is the power of the storytelling. Because all of us connect with the stories and especially visual stories." It represents an effort to connect scientists with citizens, said Kiani, a medical doctor whose career is built around her passion for applying Crispr technology to synthetic biology and "to rebuild the trust toward the scientific research," she said. "I wanted to humanize scientists, basically."

To illustrate the problem, Simon Niemeyer shared a project that showed a film producer's view of gene editing as a powerful new tool that could bring alarming results as a "Pandora's box" that could "get out of control". The project looked at who should get to decide these scientific questions. "We aimed to demonstrate that meaningful global citizen deliberation can be possible on such a big and complex issue," he said. "We actually work best when we're acting together, developing a sort of diversity in terms of the understanding, the knowledge, but also the values and aspirations. And the best science is actually one where we integrate a wide set of considerations into more sophisticated models, if you like, and the same is true for deliberation."

But no single approach alone can bridge the divide between scientists and citizens, said Niemeyer, a social scientist and professor whose research interests focus on the broad fields of deliberative democracy. "It is our argument and belief that any process that can achieve that actually produces better outcomes in terms of the decisions we make," he said. "We're talking about a portfolio of approaches to a very complex set of challenges."

Mamokgethi Phakeng

Through her work, Claudia Chwalisz said she has learned that connecting public input into decision-making is about creating the conditions for diverse populations to grapple with complexity and then to work deliberatively to find common ground in a collective effort. "One of the reasons why public deliberation is so important on this is that these are not just technical issues. These questions are really about what kind of society do we want? And so those raise moral questions, ethical questions," said Chwalisz, who leads the OECD's innovative citizen participation, which explores how to bring public judgment to improve decision-making and strengthen democracy. "These are questions for political and societal debate, and I think that what we've seen as part of the rise of populism, part of the rise of distrust in governments and also in experts, is because a lot of these political questions have been put to a more technocratic approach of let's just deal with them with the experts," she said. "There's a demand for more innovation and more experimentation – and in a way that genuinely, meaningfully gives people a voice, not just in a consultative, 'tick box' kind of way."

Simon Niemeyer

Takeaway Messages

More citizen engagement is needed when something is high on the scientific agenda but not on the public agenda. GESDA, as part of International Geneva, has the credibility to play a positive role. Diversity of involved citizenry is key.

A correlation exists between the anti-vaccination movement and those who mistrust government, further showing that a top-down approach to spreading scientific expertise won't work. What is needed is building trust by first examining why and how citizens should become more engaged.

With the rise of disinformation and widespread mistrust in governance and media, true engagement and participation depends largely on communication and storytelling that humanizes scientists.

The person who communicates is also a message in him/herself! Is it a trusted person? Is it a person with whom society can identify?

No single approach in terms of citizen involvement in science processes can bridge the divide between scientists and citizens, which could improve as people learn to grapple with complexity and find common ground.

More information

Session recording on YouTube

Related interviews: Claudia Chwalisz, Samira Kiani

Tweets related to the session

Related content in the 2021 Science Breakthrough Radar®

The Pulse of Society on Three Questions for Tomorrow, Overview of the Analysis, Who are we?, How are we going to live together?, How can we ensure humanity's wellbeing while sustaining the health of our planet?, The Pulse of Society on Frontier Issues, Overview of the Analysis, Quantum Revolution and Advanced AI, Human Augmentation, Eco-Regeneration and Geo-Engineering, Science and Diplomacy

Complex Systems for Social Enhancement and related breakthroughs at five, ten and 25 years: Full breakthrough brief, Digital Democracy, Collective Intelligence, Design for Values