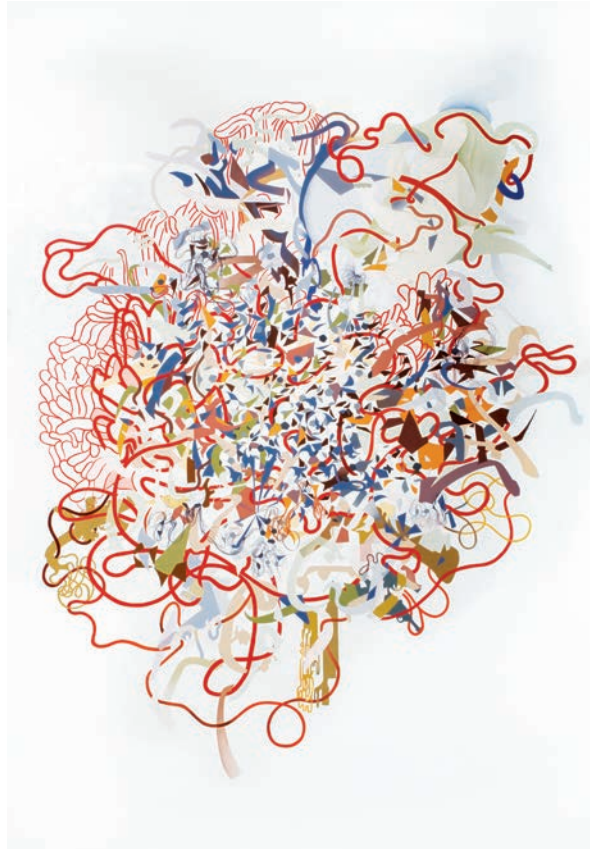


centerpoint now



About the Cover



Transformation as Narrative

By Shahzia Sikander

SHAHZIA SIKANDER takes classical Indo-Persian miniature painting as the point of departure for her work. From premodern beginnings to contemporary connotations, it is precisely this longue durée history and its continuous capacity for reinvention that has sparked Sikander's visually rich works across multiple media. Informed by South Asian, American, Feminist, and Muslim perspectives, Sikander has developed a unique, critically charged approach to this time-honored medium—employing its continuous capacity for reinvention to interrogate ideas of language, trade and empire, and migration.

“Transformation as Narrative,” 2007, acrylic on wall
wall dimensions 686 x 1164 cm

Installation view Shahzia Sikander, Museum of Contemporary Art, Sydney, 2007

© Shahzia Sikander

Photo Jenni Carter

Courtesy of the artist and Sean Kelly, New York

Foreword

In Pursuit of Peace: A Call to Action

The United Nations' 75th anniversary occurs at a time of polarization and struggle when multilateralism is being tested to its core. The more interconnected the world becomes, the more we witness efforts to counter this tendency and promote discourses of “us versus them.” It is therefore the responsibility of all who believe in multilateralism to prove that the path chosen in 1945, with the signing of the UN Charter, was indeed the right one to take.

Milestone anniversaries beckon us to review the experiences of the past, draw lessons, and apply them, where possible, to prevent new crises from occurring. However, defending the values of the United Nations does not imply remaining trapped in a bygone era. As UN reform processes have shown, the UN as an organization must—and can—evolve with the times. This is evidenced in the transition from a purely military understanding of Peace and Security, to a much more holistic vision recognizing that many of today's challenges—such as pandemics, or the existential threat caused by climate change—cannot be solved by force. It is now urgent that budgetary considerations reflect this recognition, and that nations allocate the necessary resources to Development and Human Rights.

New thinking, brought about by the increased participation of women and young people in the UN, gives me great hope and should grow in influence. Further, as technology enables ever more transparency and accountability, it is critical that leadership embrace the principle of “Responsibility to Protect” and put an end to the indefensible humanitarian crises that continue to hold entire populations in their grip.

Lest we should cower before these daunting tasks, it is useful to recall the words of UN Secretary General Dag Hammarskjöld, who said that “The pursuit of peace and progress cannot end in a few years in either victory or defeat. The pursuit of peace and progress, with its trials and its errors, its successes and its setbacks, can never be relaxed and never abandoned.” This commitment to persist in our efforts is a promise to the people of the world and a call to action for everyone who is convinced that international cooperation is inseparable from national interest. I invite you to heed this call.

— *Jan Eliasson*

Jan Eliasson, an international reference in diplomacy, humanitarian affairs, and mediation, has served as United Nations Deputy Secretary-General, Foreign Minister of Sweden, and President of the UN General Assembly, among his many roles.







Editor's Note

The beginning of a new decade. Seventy-five years of a global endeavor for peace known as the United Nations: a paradoxical emblem of humanity's highest aspirations, the organization that epitomizes multilateralism is often undermined by its own members' conflicting prerogatives. Coincidentally, on this milestone, nations were confronted with a sobering testament to interdependence, in the form of a virus with a global visa that brought bustling megacities to a standstill, and to which no sector of society was immune.

CENTERPOINT NOW wishes to mark this anniversary by highlighting some of the issues that the UN addresses in its immense breadth. Far from a comprehensive approach to each topic, the featured content of this edition has been chosen to help access complex issues through the perspectives of visionary artists, activists, scientists, and other dedicated professionals who grapple with them, in the hope that their life's work may in some way connect with or further inspire yours. References to specific UN Sustainable Development Goals (SDGs) have been placed throughout the publication to recall the inherent universality of the subjects presented and the targets that the SDGs comprise.

If the UN is a product of its members' will, and Member States are, in turn, expressions of the societies they represent, then, for the UN to fulfill its objectives, all of us might be asked to unpack our role in creating the world, envision where we want to go from here, and ask if we have what it takes to get there.

Are we there yet?

— *Shamina de Gonzaga*
Editor-in-Chief

Shamina de Gonzaga is the Editor-in-Chief and Producer of *CENTERPOINT NOW*, Executive Director and Main Representative to the UN for World Council of Peoples for the United Nations (WCPUN).

centerpointnow@wcpun.org

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Junior Editor, Victor Bouton

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CENTERPOINT NOW, “Are we there yet?” is dedicated to Luis Estevão, born 2020.

Publisher's note:



World Council of Peoples for the United Nations (WCPUN) dedicates this edition of *CENTERPOINT NOW* to the 75th anniversary of the United Nations.

CENTERPOINT NOW is a publication of WCPUN that highlights issues on the international community's agenda and features diverse perspectives, with the aim of stimulating discussion and inspiring constructive action. Views expressed are offered in personal capacity by the featured contributors.

World Council of Peoples for the United Nations (WCPUN) is a 501(c)(3) not-for-profit organization dedicated to facilitating partnerships across sectors internationally that promote awareness and implementation of the UN's goals. Through publications, workshops, dialogues, educational and outreach-oriented events, projects and programmes, WCPUN provides alternative think spaces to enable visionary people and organizations of diverse disciplines and expertise to connect and collaborate. WCPUN is a non-governmental organization in association with the United Nations Department of Global Communications.

CENTERPOINT NOW "Are we there yet?" was produced by WCPUN Executive Director Shamina de Gonzaga in collaboration with Streaming Museum Founder Nina Colosi.

In loving memory of friends and collaborators who passed this year:

Khaled Abdulahad
Saradj Avaregan
Emile Bruneau
Cándido Camero
Bill Huxley
Tina Theodorou

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Sherrill Kazan Alvarez de Toledo, President



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wcpun.org

Art is Essential

While the world is grappling with deep-rooted social conflicts and challenges amplified by the COVID-19 pandemic, we can look to the arts as a witness and interpreter of this reality, a model of creative problem solving, and for its super powers to uplift emotions, inspire, and imagine the future we want.

“Art is the universal communicator of complex ideas,” says astronaut Nicole Stott. This is evident throughout *CENTERPOINT NOW*, that juxtaposes articles by experts in the sciences, global economics, social and environmental issues, and other fields, alongside artwork that interprets the concepts. Because the arts have the ability to influence and motivate people to engage in critical issues—changing minds by changing hearts, they can be considered essential among innovators who are developing solutions to the problems addressed in the United Nations Sustainable Development Goals.

Media theorist Marshall McLuhan wrote in 1964 that “art, at its most significant (...) is a Distant Early Warning system, that can always be relied on to tell the old culture what is beginning to happen to it.” Across cultures and time, the arts can also be relied on to illuminate the humanist vision of the United Nations Charter signed 75 years ago.

— *Nina Colosi*

Nina Colosi is founder and director of Streaming Museum that since 2008 has produced programs of art and world affairs and presented them in international public spaces, cultural venues, and streamingmuseum.org, and Member of the Board of Directors, WCPUN.



“Still-Life 3,” 2019, digital animation, by Jennifer Steinkamp

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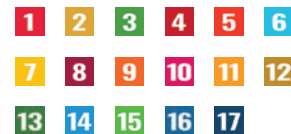
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Sustainable Development Goals icons navigator



References to the SDGs are included by number throughout the publication. Learn more about each Goal at [sdgs.un.org/goals](https://un.org/goals)



From Party to Pandemic: Civil Society Marks the UN at 75

By Fergus Watt and Jeffery Huffines, UN2020 Campaign

“Without Member States fulfilling their annual dues and financial commitments, the UN system will be unable to meet the increasingly interdependent needs of peoples and nations worldwide.”

Since 2017, the UN2020 Campaign has provided a platform for a diverse constellation of civil society organizations (CSOs) calling for the UN’s 75th anniversary to provide not only an occasion for celebrating past achievements, but also an opportunity to take stock of the challenges facing the multilateral system and advance a dedicated process for strengthening the UN. UN2020 campaigners were pleased when the General Assembly adopted a resolution setting out a forward-looking theme for the 75th anniversary: “The future we want, the United Nations we need: reaffirming our collective commitment to multilateralism.” UN Secretary-General António Guterres launched an even more ambitious UN75 program of “global dialogues.” From “classrooms to board rooms, village houses to houses of parliament,” the intention was to engage “We the Peoples” on the role of the UN system in addressing global challenges.

But then along came the COVID-19 pandemic. Much of what was planned for the UN75 commemoration had to adapt to the locked down, socially distanced realities affecting public life everywhere. On May 14-15 the UN75 People’s Forum for the UN We Need brought together over 600 civil society participants from 75 countries around the world. A UN75 People’s Declaration and Plan for Global Action, “Humanity at a Crossroads: Global Solutions for Global Challenges,” was presented virtually in a formal handover ceremony to the 74th President of the United Nations General Assembly, H.E. Mr. Tijjani Muhammad-Bande, who later had the

document circulated to all UN missions. The declaration states:

“...No longer can we continue prioritizing narrow economic paths as if they satisfy the social, financial, and environmental needs of communities, or reflect the real wealth of nations. The climate crisis, entrenched indignities such as social, gender, and race discrimination, and the absence of sufficient coordination to solve even preventable problems, demonstrate the need for leadership characterized not by short-term victories, but by urgent action toward a long-term, globally inclusive vision. We have tremendous technical capacities, but far greater collective will is required to bring them to bear on the risks we face....

Confronting global challenges requires a fundamental shift in thinking about humanity’s relationship to the earth, true wealth, progress, development, the role and nature of power and governance, and the essential values of humanity. Solutions will be found through commitment to a new posture of collaboration, innovation, and action. The paradigm of “us versus them” no longer meets humanity’s needs. We must rebuild the bonds of trust at all levels, with an active and informed citizenry, supported by democratic and accountable leadership. It is time to recommit to justice and the wellbeing of every population without prejudice, grounded in international human rights frameworks.... We are committed to galvanizing the grassroots, mobilizing the masses, and doing our part to implement agreements made.

Fergus Watt is the International Coordinator for UN2020.

Jeffery Huffines is the Senior Advisor for UN2020.

Read the full declaration and learn more about the UN2020 campaign at un2020.org

Priority Proposals for Member States include:

- a. Establish a mandated post-2020 follow-up mechanism to enhance global governance... make the UN system and other multilateral institutions more fit for purpose and truly representative.
- b. Reliably and increasingly fund the United Nations. Without Member States fulfilling their annual dues and financial commitments, the UN system will be unable to meet the increasingly interdependent needs of peoples and nations worldwide.
- c. Enhance civil society and other stakeholders' participation modalities... Dedicate a civil society focal point at the UN Secretariat; Increase the use of communications technology...the UN must harness the benefits of new technology for all peoples everywhere to mitigate the digital divide; Create a global petition mechanism."

At the opening of the 2020 High-level Political Forum on Sustainable Development, Secretary-General Guterres told governments, not unexpectedly, that the pandemic is causing additional setbacks for the global 2030 Agenda. Indeed, 265 million people could face acute food insecurity by year's end—double the number at risk before the crisis. But he also suggested "We can turn this around.... From the awakening that this crisis is providing, we have a chance to create a more inclusive, networked and effective multilateralism." Let's hope he's right.



"Unity" by Ralph Reutimann, from his SDG Cities of the Universe Series / SDG Photography, Transformation Through Photography: "The vision is of a translucent UN against the night sky. By transposing the UN in this way, it becomes part of the universe, and represents the unity of creation itself. Just like the sun during the day, the countless stars at night illuminate every human being on this planet. Regardless of race, gender, religion or any other belief, no exceptions. We exist in UNity."
RalphReutimann.com

Multilateralism Matters

Excerpts adapted from “Multilateralism Matters Mondays” interviews

By Jocelyn Jayasooria
for the UN 2020 Campaign



Ms. Dwi Rubiyanti Kholifah

Indonesia Country Director, Asian Muslim Action Network (AMAN)

International cooperation is definitely important. We cannot solve the world's issues alone. I'm trying to engage other countries, regionally and internationally, to create space for civil society and build a healthy partnership, involving all members of society. Without multilateralism, this is impossible. We share the world, and we need to overcome its problems together.



Amb. Gerard Steeghs

Director, Multilateral Organizations and Human Rights, Netherlands Ministry of Foreign Affairs

To me it is more than just a job. I am a staunch believer in the given rights to all people at birth. Multilateralism signifies that we live together in one world and that we need to make it work together. We may live in different countries, we may have borders separating us, but in the end, we all share this one life, this one planet, and multilateral cooperation is the way to make that work for everybody. The complexity of today's world requires well-organized, sometimes technically very advanced and complicated ways to cooperate. While that may make it harder, it also makes it even more necessary to ensure that multilateralism benefits everyone.



Dr. Uzma Gul

UN Youth Representative

Multilateralism is not just cooperation between some, or a few countries, but indeed a global phenomenon required in this current era. As the people of this world, we are interconnected by the same dreams and hopes. Likewise, we are interconnected by the problems we are facing, be it financial failure, global injustice, pandemics, climate change, or inequality. We need to understand that interconnected solutions are the only way forward, and that the steps we take affect people and nations across the globe. We need to expand the tables and bring in more actors who are working on realistic approaches towards sustainable solutions.



H.E. Mr. Syed Mohamad Hasrin Aidid

Permanent Representative of Malaysia to the United Nations

Multilateralism matters to me because being at the United Nations means being united for humanity. We should work together for peace and prosperity, the economic and social development of our people, and the importance of the rule of law. There are so many countries in the UN, big and small, so the principle of equality is important as a basis for justice and fairness. In Malaysia, we have a motto “strength in diversity,” and we believe in that. That's why we are at the UN advocating for multilateralism.



Barbara Adams

Board Chair, Global Policy Forum

Multilateralism matters more than ever because of the interdependent world we live in economically and technologically. We need to understand that there are ways of participating at the local and subnational levels. The local level cannot be some hierarchically “lower” place. It's not about whether or not we have the right institutions. What matters is what we're actually talking about with each other. How does health come into this question? How does education come into this question? How can women's rights come into this question? In today's world, we need better rules of the game that are fair, participatory, and where a multilateral conversation is not hierarchical.



H.E. Mr. Agustin Santos Marver

Permanent Representative of Spain to the United Nations

The UN Charter starts with “We The Peoples.” It established a program of human rights, peace and security, development, and anti-colonization for everybody. That was essential in 1945. Today, 75 years later, we have tremendous challenges before us, such as climate change and development that leaves no-one behind. We have to change the world for the next generations. We cannot do that without the common effort of all nations of the world through the institution that we built specifically for that purpose, the United Nations. We need to reinforce that, and the method is multilateralism.

Jocelyn Jayasooria is a Media Communications Consultant for UN2020 and International Representative for Water for Africa.

UN2020.ORG / waterforafrica.com.au

**Soon-Young Yoon**

Chair of the Board, Women's Environment and Development Organization (WEDO), UN representative for the International Alliance of Women

Twenty-five years ago, we held the fourth UN World Conference on Women in Beijing. I was one of the organizers of that meeting and I can tell you firsthand that multilateralism matters. Imagine one UN conference with 50,000 people making a global impact by collectively working together on a document called the Beijing Platform for Action, that has guided us for 25 years on the path to gender equality and women's empowerment. Let's support UN75, and make UN75 count.

**Levi Bautista**

President, Conference of NGO's in Consultative Relationship with the UN (CoNGO)

The United Nations, after all, is a product of imagination. That imagination concluded that the world should no longer be visited by wars and yet, 75 years later, multilateral diplomacy has been more about how to end the many more wars that followed the creation of the United Nations. We need to increase civil society participation in response to local challenges, as well as trans-border and civilizational issues of climate change, global migration, or global pandemics. Civil society has a role to play in bringing people's voices to the halls of multilateral diplomacy-making.

**Cristina Petchu**

Research Associate, Just Security 2020, The Stimson Center

Multilateralism means bringing the world together to defend human rights, sustainable peace, and advance sustainable development for a better future for people and the planet. Since its inception in 1945, the UN helped restore peace in war-torn countries, reduce poverty, promote women's equality. It played a key role in achieving the landmark Paris agreement to combat climate change and provided assistance to millions of refugees amongst many other achievements. As the UN celebrates its 75th anniversary and Member States come together to adopt a political declaration to mark this event, hundreds of

civil society organizations are advocating for Member States to use this anniversary as an opportunity to strengthen multilateralism and to reform the United Nations with the UN2020 campaign.

**Stefan Priesner**

UN Resident Coordinator for Malaysia, Singapore and Brunei Darussalam

We have had a 75-year period of relative peace, development, and progress in human rights. This was to a certain extent achieved by multilateralism, by universal values, by platforms that brought together nations to develop joint strategies and partnerships. Nobody can genuinely challenge the role of multilateralism in addressing and hopefully countering the hugest of all challenges in the history of mankind. Multilateralism matters, as a basis for peace and security, development and human rights.

**Poonam Kumar**

Host & Journalist, Capital City News, SLCTV

I had the opportunity to moderate a session about "the UN that we need." It opened the doors for me to think about why multilateralism matters and why it's so important to engage not only global leaders, but also national, local leaders, and community members as well, on issues that are affecting us from climate change to immigration, to poverty. There are so many opportunities to get involved, so I encourage everyone to find out what is going on, and see how you can plug in and be part of a larger dialogue.

**Dato Saifuddin Abdullah**

Former Minister of Foreign Affairs, Malaysia

We are created into different tribes, different ethnic groups. We embrace different religions, we have our own way of doing things, and, we belong to different nationalities, but we need to work together. We have to understand the meaning and working of peaceful co-existence, and multilateralism is the way.

**Rory Mondshein**

UN2020 Communications Associate

Multilateralism matters to me because global problems require global solutions. When we look through the nationalistic vacuum, we tend to ignore all the possibilities that are out there. Every country has something to bring to the table that we can learn from and apply to our own countries. For example, South Korea started the drive-thru testing for COVID-19, and now we are seeing that applied in dozens of countries around the world, which has helped us improve our response to the pandemic. Multilateralism matters because issues like climate change, or cybersecurity, transcend national borders, and we all need to work together to improve our global response and ensure an effective and standard approach to these issues.

**Fergus Watt**

Executive Director, World Federalists Movement, Canada

The world needs effective decision-making to solve global problems. The multilateral system anchored at the United Nations is our best, though imperfect, framework for delivering global decisions and action on global problems. The system is too reliant on nation-states. Other stakeholders, such as citizen representatives, indigenous representatives, business, other jurisdictions (cities, regional organizations, etc.), need to play a greater role. We need progressive democratization of global governance and multilateralism. A second challenge is the chronic under-funding of multilateral institutions. We need a step-by-step process of demilitarization combined with building up rule-of-law institutions and modalities that will make a more secure future for humanity possible.





Infrared

By Richard Mosse

Richard Mosse (born 1980) photographs from the eastern Democratic Republic of Congo, using a discontinued military surveillance film, which registers an invisible spectrum of infrared light. His work, capturing the beauty and tragedy in war and destruction, is part of many public collections internationally.

CPN comments

These images by Richard Mosse were taken in the Democratic Republic of the Congo (DRC), the largest country in sub-Saharan Africa, with a surface area equivalent to that of Western Europe. It is home to an ancient civilization, land rich in natural resources, and a population consisting of more than 200 ethnic groups, speaking more than 200 languages.¹

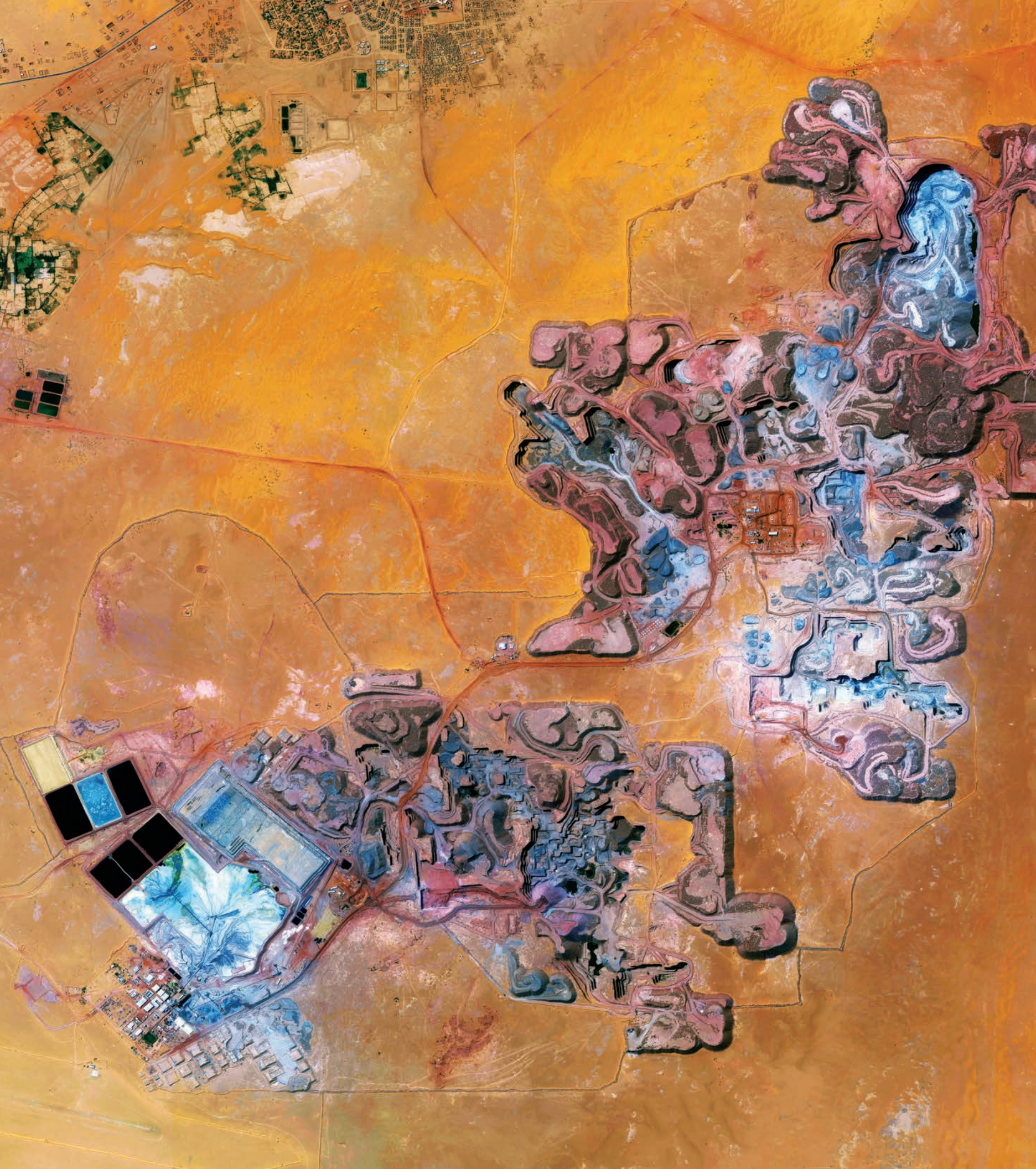
The United Nations' presence in the DRC (MONUSCO)² is still in effect at the time of this publication's release—the 75th anniversary of the UN also coinciding with 60 years of independence.

¹ “vast deposits of industrial diamonds, cobalt, and copper; one of the largest forest reserves in Africa; and about half of the hydroelectric potential of the continent” (britannica.com)

² monusco.unmissions.org



"Madonna and Child," 2012, digital c-print
© Richard Mosse. Courtesy of the artist and Jack Shainman Gallery, New York.





The Arlit Uranium Mine

By Benjamin Grant

18°748570', 7°308219°

From the book Overview: A New Perspective of Earth, source imagery ©Maxar

The Arlit Uranium Mine is located in Arlit, Niger. French nuclear power generation, as well as the French nuclear weapons program, are dependent on the uranium that is extracted from the mine—more than 3,400 tons per year.

over-view.com

A Message from Qadria, Afghan National, Hazara Ethnic Group

“The UN’s mission in Afghanistan should not end once peace has been achieved with the Taliban.”

The UN’s efforts in Afghanistan can’t be denied. Currently, in the context of peace negotiations, the UN must ensure all progress achieved during Afghanistan’s democratic period—notably for women—is preserved. Negotiating with the Taliban must not imply a return to the darkness of the past.

Although great steps have been taken to improve the situation of women in Afghanistan, women remain under-represented and discriminated against. In terms of professional opportunities, it is believed a married woman does not need to work. A working woman is often the target of harassment, rumors of adultery, or of the trading of sexual favors for promotions. I left Afghanistan to pursue a career in defense of women’s rights—this would still be very challenging at home.

The Afghan Constitution contains laws that protect women. However, these laws are not respected, both because many women do not know their rights, and because the legal system is influenced by tradition. Moreover, Afghans tend to rely on “jirgas” (traditional tribal councils, respected for their wisdom) rather than on the official legal system. Afghan women continue to face unequal conditions in marriage, in many cases being married against their will in childhood, although the legal age for marriage is 16. If a couple were to decide to marry without the consent of their respective families, the woman would likely face reprisals, sometimes leading to physical assault and death, especially in more remote areas, while the man, although also considered to be at fault, would generally be spared. Men can be married to up to four women simultaneously. Legally, the wife can file for divorce in the event of the husband’s second marriage, but unless there is evidence of abuse or neglect on the part of the husband, the judge, or jirga, would likely favor the man and reject the claim. In the event of divorce, a woman can apply for custody of her children, but false testimony from her husband could be enough to convince a judge to declare her “unfit” to retain custody.

Looking ahead, I’m optimistic about the future. I do believe, however, that the UN needs to be more effective in ensuring the rule of law, protection of human rights—women’s rights in particular—and in fostering cooperation for peace. The UN’s mission in Afghanistan should not end once peace has been achieved with the Taliban. On the contrary. The Afghan political sector and human rights system will require the continued support of the international community.

Female employment-to-population ratio, 1991 to 2017

The female employment-to-population ratio corresponds to the proportion of a country’s female population 15+ that is employed. All figures correspond to ‘modeled ILO estimates’ (see source for details).

Our World
in Data



Source: World Bank

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A Presidential Perspective

*An Interview with Her Excellency Maria Fernanda Espinosa
by Abdelkader Abbadi, United Nations Correspondent*

How can the challenges to multilateralism be overcome?

Multilateralism and international cooperation in general have been questioned precisely when we most need them to address the global challenges before us. The world needs an inclusive multilateralism anchored in closer links with civil society and other stakeholders, a revitalized and updated UN that is less bureaucratic, more action-oriented, and focused on results.

What is required in order to bring people closer to the United Nations?

Through a very active communications operation, I reached out to people in as many Member States as possible. Youth in particular has huge potential and is key to the realization of the Sustainable Development Goals. I want to underscore the need for young people to have economic opportunities, political participation, social services and security, in order to avoid the conditions

that lead to radicalization and violent extremism. As only the fourth woman PGA, I also consider gender equality a high priority. The empowerment of women and girls needs to be accelerated to achieve the dramatic transformation necessary in our societies to realize the 2030 Agenda in every country. The commitment to women and girls who suffer from discrimination, harmful practices and violence, and to girls and adolescents who demand equal access to quality education and health care, remains paramount. We also need to ensure that men and boys are an integral part of the process of gender equality.

In addition to having served as Minister of Defense and Foreign Minister of Ecuador, you are also a Poet. How does that contribute to your approach to multilateral negotiations?

Calm, reason, and poetic justice! Seriously, a poet must be an observer of the human spirit and be able to step back a little and reflect.



H.E. Maria Fernanda Espinosa served as President of the 73rd Session of the United Nations General Assembly (PGA), the first woman from Latin America, and the fourth woman in the history of the UN to hold this position—pictured here with Abdelkader Abbadi, UN Correspondent.

Unforgetting Violence

By Monika Weiss

Monika Weiss is an internationally celebrated contemporary Polish-American artist based in New York, whose interdisciplinary work in performance, sculpture, drawing, video, and sound, addresses collective memory and its representations in the public sphere, as well as the role of lament in shaping the future of history. Her new upcoming permanent outdoor monument “Nirbhaya” is planned concurrently in her native Poland and in the US.

monikaweiss.net

Who is remembered, who is forgotten, and how do we *unforget* violence in order to remake a world without it?

In my films and performances, the protagonist’s eyes are closed. She lies down in a state of meditative, symbolic, and peaceful resistance, leaving marks and traces of presence in opposition to heroic fantasies of conquest and power.

“Nirbhaya” is named for Jyoti Singh, aka *Nirbhaya*, who was raped and killed at the age of 23 in New Delhi in 2012. It is a memorial not for conquerors and war heroes, but for forgotten victims of everyday violence.

The inspiration for the “Nirbhaya” sculpture comes from the long tradition of triumphal arches, which embody victorious verticality, making wars and colonial invasions into heroic

history. In “Nirbhaya,” I place a triumphal arch down, mirroring it with its own double, to create a vessel filled with water. The triumphal arch no longer hovers above us. Instead, we look down into the water and see a specter of a woman, her body shrouded in a long black robe and her veiled or unveiled face morphing from one woman into another, making slow, universal gestures of lamentation. She eventually becomes a tree.

Resembling an ancient sarcophagus, “Nirbhaya” honors women of all cultures and times who continue to undergo trauma of rape, torture, and death. A site of meditation and stillness, the monument offers a pathway for reimagining collective remembrance, abandoning victorious monumentality, and celebrating the horizontal and peaceful future of humanity.



Monika Weiss, “Nirbhaya,” 2020, Rendering for the forthcoming permanent public work. Cast concrete, fiberglass, water, 4K digital film projection, sound station, 71 x 221 x 35 in.



"Two Laments #1," 2015
Dry pigment, charcoal and pencil on aged paper 23 x 30 inches



"Two Laments #2," 2015
Dry pigment, charcoal and pencil on aged paper 23 x 30 inches

On the Importance of Understanding the Impact of Peacekeeping

By Lesley Myers



2015, Demolition in situ Grenade in PK5

On the 12th of February, UNMAS and its implementing partner were conducting an EOD task in PK5. UNMAS was called out by EUFOR at about 13:25 to intervene on an unexploded grenade found on the ground right in the middle of the PK5 roundabout. The team was immediately deployed on the scene to assess the situation and found a RG4 hand grenade safety pin off, unsafe to move. The area was then cordoned off by MINUSCA, while EOD operators were preparing the demolition in placing a little demolition charge, to blow up the grenade without causing too much damage. Photo: UN/MINUSCA, Nektarios Markogiannis

Lesley Myers, Programme Management Officer in the United Nations Department of Peace Operations, spent three years with the UN peacekeeping mission in the Central African Republic. She now supports the peacekeeping missions in Mali, Lebanon, Western Sahara, and Darfur to implement strategic planning and performance assessment tools, and specializes in political analysis, policy, and operations, as well as the use of data to inform decision-making. This article was written in a personal capacity and the views are solely of the author.

When I arrived in Bangui, it was a city in crisis. It was late 2015 and the capital of the Central African Republic (CAR) had once again descended into sectarian violence, two years after the country's most recent coup. Civilians were the targets of killings and rape, and looting was widespread. The UN peacekeeping mission, MINUSCA, which had begun its operations in 2014, was helping a transitional government to quell fighting and hold a constitutional referendum and democratic elections that could restore the country to basic order.

The Bangui I left in 2019 had slowly but dramatically changed. The threat of violent atrocities and ethnic cleansing had been averted. Rumors of genocide had quieted. Although conflict persisted, violence had decreased in the capital and a democratically-elected government was working to implement a peace agreement that it had negotiated and signed with all 14 major armed groups. As a civilian planner for MINUSCA, it was obvious to me that the mission had played a major role in this process. However, exactly how much of this change could be attributed to the mission, was less clear.

Knowing the impact of specific efforts is a challenge in all peacekeeping contexts. Peacekeeping is considered one of the global community's most effective tools for sustaining or restoring peace, but we can struggle with some fundamental questions:

- How, precisely, do peacekeeping interventions help change the lives of the millions of people facing the threat of conflict, or help to restore peace?
- What benefit do mission-supported negotiations in the capital bring to, say, a herder in the countryside?
- What impact do peace agreements have on the security and well-being of local

communities? How do we know?

- What difference have our patrols made to the lives of women and girls?
- When peace fails, is it because the mission failed, or is there more to the story?

These are difficult questions to answer. Peace and conflict dynamics are complex, and peacekeeping missions are just one of many actors who are trying to affect them, for better or for worse. While peacekeepers can influence or pressure parties to a conflict, they cannot control them, nor the myriad economic, social, environmental, and political factors that drive disputes.

The influence of peacekeeping missions is difficult to pinpoint, and it has only become more difficult in modern peacekeeping settings, as conflict dynamics become more complicated and our mandates more ambitious. Counterfactuals are near-impossible to establish, and it would be amoral to set up control groups to test what would happen if peacekeeping missions were not present. Moreover, data that could help us understand how and why dynamics shift is difficult to come by in many conflict zones.

Peacekeeping can clearly articulate its import at the strategic level: it contributes to global peace and security, promotes human rights and supports national authorities in protecting civilians; it can create space for political solutions to be found, and can help peace to take root.

Peacekeeping can also speak precisely about its work: it can list the hours of patrols conducted by our troops and police, the number of workshops held to strengthen civil society organizations, and the number of meetings held to support dialogue.

But we struggle to link the two.

This challenge is not benign. Difficulties in showing how peacekeeping has contributed to progress, or prevented situations from further deterioration, means that peacekeeping's work can be either undervalued, or that it can disproportionately carry the burden of failures. This can make it more difficult to secure support for missions, both from the people in the countries where they serve, and from the Member States that fund them.

The difficulty in clearly showing the link between what missions do day-to-day and their impact on peace and security is greater than a public relations problem. When peacekeeping missions can't clearly link their patrols, workshops, or support for peace negotiations to clear outcomes, it strikes at their ability to deliver on their mandates. If we could know that certain modes of working stood a chance of effectively supporting peace or protecting more civilians, wouldn't that be helpful? The more precise our understanding of how peacekeeping influences local dynamics, the better we can design operations to effectively and positively change the realities on the ground.

Peacekeeping has begun to make progress in tackling this challenge. Missions have started to use more systematic data collection and analysis to assess their effectiveness, including through the Comprehensive Planning and Performance Assessment System (CPAS)¹, a tool that uses data to assess impact and inform planning, as well as through their efforts to support the UN Data Strategy², which is using data to improve decision-making across the UN system.

These efforts are beginning to show results. Integrated planning is being strengthened, data and analysis are being collected and used to shape decision-making by senior leadership and to adapt mission operations,

making them more effective. In MINUSCA, the first peacekeeping mission to pilot the CPAS project, the use of data to better understand impact and inform planning and communications is underway. The mission's military, police, and civilian components sit together to review data and assess the mission's collective impact. They share their perspectives on critical, interlinked issues: from support to the implementation of the peace agreement signed in 2019, to improving community security, to the restoration of state authority throughout the country. These conversations have helped the mission identify where they are making progress and, equally important, where they aren't, as well as concrete ways to strengthen operations. As more data is being collected, they are becoming better at showing how their work is influencing the country over time—for instance, how their support to the deployment of local authorities, security and defense forces is influencing armed group behavior across the country.

This approach is being adopted across all peacekeeping missions, including as part of the Secretary General's Action for Peacekeeping³ initiative, which aims to renew political commitment to peacekeeping operations on the part of the Security Council, Member States more broadly, and other partners. If the momentum is sustained, and we can routinely track and assess our impact using robust data, peacekeeping operations will be better equipped to tackle the growing complexities of conflicts and mandates. It will help focus limited and shrinking resources where they can do the most good. And it will help missions respond to the calls from Member States to improve peacekeeping performance: Only when peacekeeping more concretely understands its impact, can its impact be strengthened.



2019, A joint effort for the return to peace PK5, MINUSCA-Government

PK5 declared "zone sans armes" (weapon-free zone) on 31 December, 2019 following a meeting of MINUSCA, the Government, local peace committee, self-defense groups and population.

Photo: UN/MINUSCA, Leonel Grothe



The Imam of the Kina Mosque, the priest of the Catholic Church of Fatima, signing the peace agreement

Signing of a local peace agreement between formerly rival communities of the 3rd & 6th district of Bangui, including PK5, Kokoro and Fatima, on 28 November, 2019. The ceremony took place in the presence of the Special representative of the UN Secretary-General, Mankeur Ndiaye, and Minister of National Reconciliation, Virginie Baikoua, as well as Maxim Mokom, Minister in charge of the DDR. Populations from both communities massively attended the ceremony, braving the heavy rain.

Photo: UN/MINUSCA, Igor Rugwiza

¹ peacekeeping.un.org/en/cpas

² un.org/en/content/datastrategy/index.shtml

³ un.org/en/A4P/

Aleppo: Deconstruction | Reconstruction

By Christine Gedeon

Having left Syria as a young child, Christine Gedeon visited the country only once as an adult—her wish to return impeded by the war. These drawings, supplemented with family photographs, from her book, *Aleppo: Deconstruction | Reconstruction*, represent locations in pre-civil war Syria of personal significance to her family.

“I embarked on this personal mapping project of the city as a way of solidifying this destroyed landscape, of dissecting my family’s personal narratives and memories, while also questioning the survival and longevity of these places.”

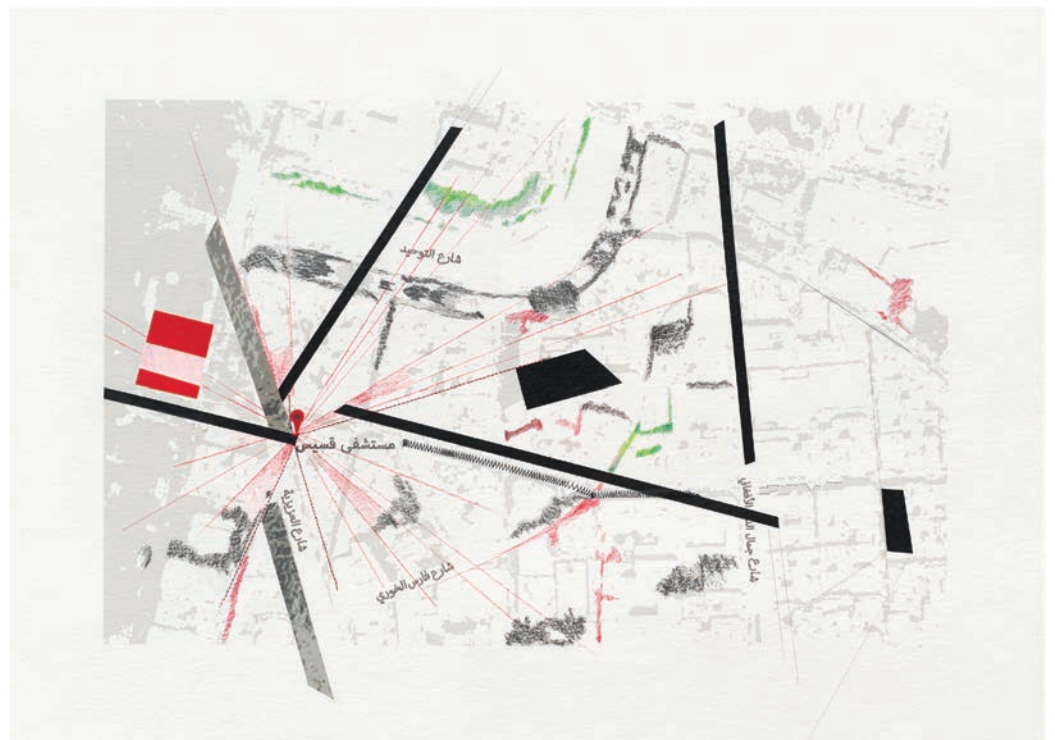
With digital drawings based on Google Earth images, adhesive tape, pencil, and thread, Gedeon makes visible that which today exists only in memory.



Khan al-Tatoun (site of my grandfather’s office), Aleppo, 2019
Photo courtesy of Dima Dayoub

مستشفى قسيس

“The Kassis hospital, where you, Pia, and Elias were born, used to be a villa...it was very beautiful and down the street from our house. I remember when I delivered Pia, and your Uncle Michel, who was a leader of the louveteaux (Cub Scouts), was walking by the hospital singing in French, ‘Un kilomètre à pied, ça use les souliers’ with the louveteaux. He was about 17 years old, wearing a navy blue beret and uniform, the boys were maybe about 10–12 years old. I was in bed and saw them from the window, and he looked up wondering which window was my room because he knew I was there and had just delivered, but he didn’t see me. I still have that image in my head while I could hear them singing from my window. I am sad today as I remember it...”



“Kassis Hospital (my mother’s memory),” 2017, digital drawing with thread, pencil, and tape on archival paper, 16.8 x 23.5 in (42.7 x 59.7 cm)
© Christine Gedeon, Aleppo: Deconstruction | Reconstruction, Kerber Verlag

ساحة السبع بحرات

"Your Uncle Michel was living in Toulouse, France, studying to be an anesthetist doctor. After he finished his education, he went back to Syria in 1978; although he had an offer to work in the U.S., he wanted to work in Syria and help the people there. But two months after he went back, he was arrested in a very brutal way. He was just walking in Damascus in the Seven Fountains Square, and was kidnapped by regime members—a military jeep pulled up in front of him, asked if he is Michel Saadé, then took him and drove away. That was the last time he was seen or heard from.

"No one knows why Michel was arrested. We heard a lot of stories but we don't know which is true. The corruption in Syria was so bad that you'd have to pay money to get information. On top of that, no one from the government would admit that Michel was in prison. Every time we'd ask, they'd say there is no one with such a name. Even my mother sent a letter to President Carter asking him to intervene, and the answer from Carter after a few months came that Hafez al-Assad said, 'We have no such name in our prisons.' Although we knew he was there, they denied it...maybe also because when they put them in prison they give them phony names..."



"The Seven Fountains Square (Uncle Nabil's memory)," 2017

Digital drawing with pencil and tape on archival paper,
25 x 34.5 in (63.5 x 87.6 cm)

© Christine Gedeon, Aleppo: Deconstruction | Reconstruction, Kerber Verlag



Michel (standing in back), first time visiting family in New Jersey, USA, around 6 months before his abduction, 1977

Christine Gedeon was born in Aleppo, Syria, raised in the U.S., and now divides her time between Berlin and New York. The relationship between maps and memory has played a central role in her artwork, from works on canvas to sprawling, site-specific installations, and wall drawings. Her work has appeared in galleries and institutions throughout the world and her book, *Aleppo: Deconstruction | Reconstruction*, was published in 2020 by Kerber Verlag in Berlin.

christinegedeon.com



Still from "Incoming #96," 2016, digital c-print on metallic paper
© Richard Mosse. Courtesy of the artist and Jack Shainman Gallery, New York.



Incoming

By Richard Mosse

Snow fell on Moria in late January 2017, making life extremely difficult for the camp's inhabitants, especially those living in tents. Three men died in their sleep during the week of 24th-30th January, and their deaths were linked to carbon monoxide poisoning from makeshift heaters. The Turkish coastline can be seen in the distance, where human traffickers corral groups of refugees before launching them covertly across the Aegean Sea for European shores.

Incoming charts mass migration and human displacement unfolding across Europe, the Middle East and North Africa. War, persecution, climate change, and other factors have contributed to the largest migration of people since WWII. *Incoming* intercepts two of the busiest and most perilous routes. One from the east, from countries such as Syria, Iraq, and Afghanistan, crossing Turkey and arriving in the EU on the shores of Aegean Islands, then passing through the Balkan corridor on the route north. The other is from the south, from countries in the Sahel region—Senegal, Mali, Nigeria, Niger, Chad, Sudan, Ethiopia, Eritrea—crossing the Sahara Desert for Libya, where they attempt to cross the Mediterranean hoping to reach Italy, often continuing north for countries such as

France, Germany, the UK, and other wealthy nations. “I used a military-grade camera designed for battlefield situational awareness and long-range border surveillance in an attempt to confront the viewer with the ways in which our governments represent—and therefore regard—the refugee. We wanted to use the technology against its intended purpose to create an immersive, humanist art form, allowing the viewer to meditate on the profoundly difficult and frequently tragic journeys of refugees. This idea of heat, imaging heat, which we hoped would speak sideways about human displacement resulting from climate change and global warming—also spoke more practically, even indexically, about the struggle of the refugee. Refugees literally leave the heat behind them, exposing themselves to the elements, the cold sea waves, the winter rain, and the snow. Homes are replaced with tents and shelters. People die of exposure. Light is visible heat. Light fades. Heat grows cold. People’s attention drifts. Media attention dwindles. Compassion is eventually exhausted. How do we find a way, as photographers and as storytellers, to continue to shed light on the refugee crisis and to keep the heat on these urgent narratives of human displacement?” — Richard Mosse

CPN comment

Moria was destroyed by fire in September 2020.

Following page: “Moria in Snow I,” Lesbos, Greece (detail), 2017, digital c-print on metallic paper
© Richard Mosse. Courtesy of the artist and Jack Shainman Gallery, New York.





Hagadera

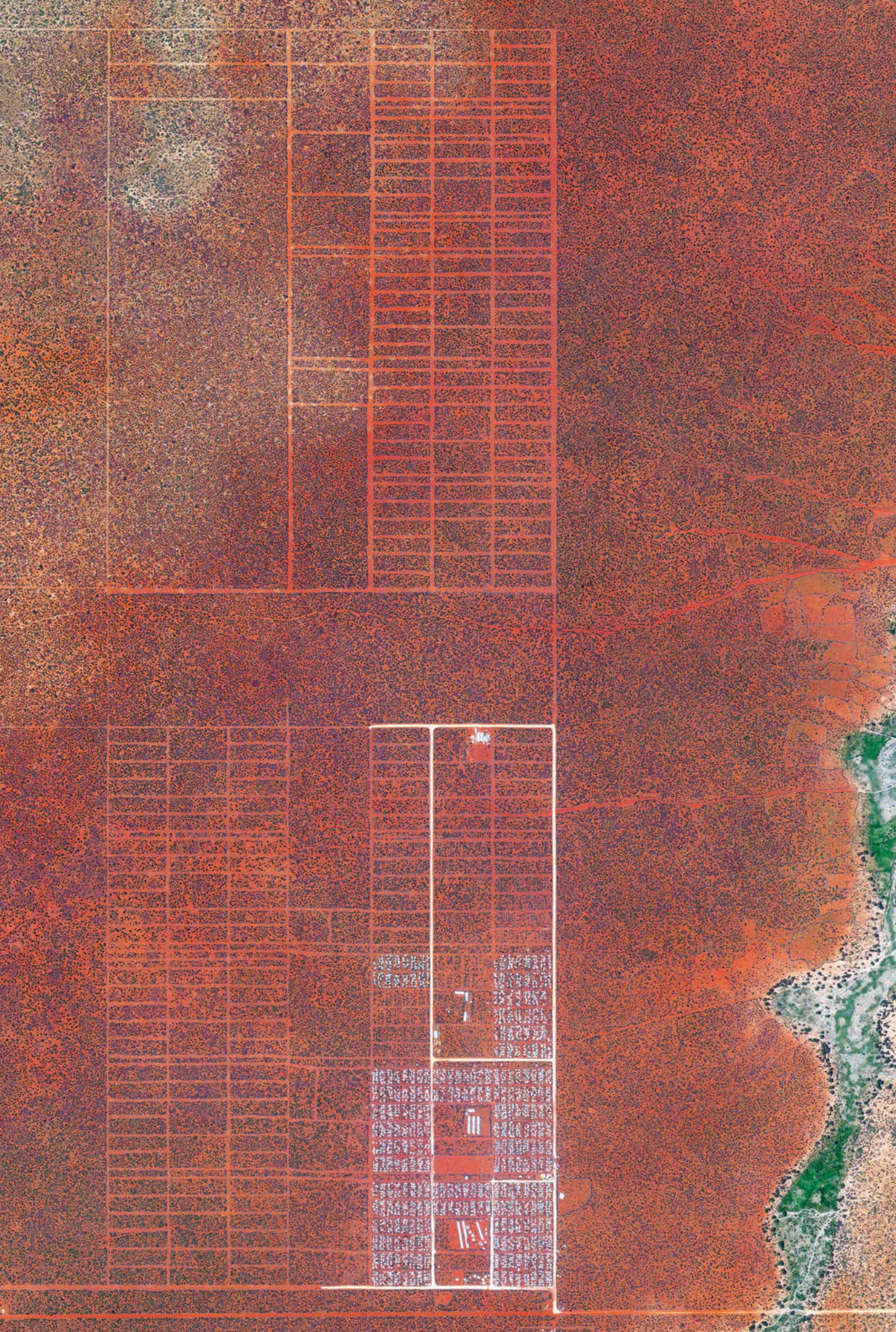
By Benjamin Grant

0-000434°, 40-364929°

From the book Overview: A New Perspective of Earth, source imagery ©Maxar

Hagadera, seen here on the right, is the largest section of the Dadaab Refugee Camp in Northern Kenya and is home to 100,000 refugees. To cope with the growing number of displaced Somalis arriving at Dadaab, the UN has begun moving people into a new area called the LFO extension, seen here on the left. Dadaab is the largest refugee camp in the world with an estimated total population of 400,000.

over-view.com







Manzanar

By Bryan Ida

Using one of Toyo Miyatake's iconic photographs from Manzanar as a reference, I utilize words as my mark to reinterpret his image to show strength in the face of oppression. The words are Executive Order 9066 which authorized the imprisonment of West coast Japanese Americans and Executive Order 9102 which established the War Relocation Authority who oversaw the internment.

bryanida.com



CPN comments

Migration is not a Crime

While the contexts may vary, the criminalization of migration and migrants, in both perception and practice, has become prevalent in many societies worldwide. In this regard, it may be useful to reflect on the excerpts quoted below from a document¹ published by the Office of the High Commissioner for Human Rights, relating to the Global Compact for Migration²:

“While States have the sovereign prerogative to govern conditions of entry into and stay in their territory, they must always do so with respect of their human rights obligations. Criminalising migration has not been shown to prevent or resolve irregular status and is a concerning practice that leads to a number of human rights violations. The criminalisation of people on the basis of their migration status also reinforces false and xenophobic narratives that migrants are criminals or that migration itself is a threat. Migration is not a crime.”

...

“Criminalising people on the basis of their migration status can lead to a number of other human rights violations, including discriminatory profiling, arbitrary arrest and detention, family separation, and the inability to access critical health care, housing, education or other rights. Such approaches further push migrants to live and work in the shadows of society and increase their vulnerability to exploitation and abuse by

State and private actors. In the absence of safe pathways for migration, many migrants are compelled to enter and stay irregularly in countries of destination.”

...

“Children must never be detained because of their or their parents’ migration status—detention of children based on their or their parents’ migration status contravenes the principle of the best interests of the child, is a clear violation of child rights (CRC/C/GC/23, para. 5) and may constitute cruel, inhuman or degrading treatment of migrant children (A/HRC/28/68, para. 80). As a matter of principle, therefore, detention for the purposes of migration control should gradually be abolished (A/HRC/13/30/Add.1, para. 58) and States should prioritize non-custodial, community-based alternatives that respect migrants’ dignity and human rights while their immigration status is being resolved.”

See CPN article “Under the Same Sky We Dream,” by Erika Harrsch.

¹ [ohchr.org/Documents/Issues/Migration/GlobalCompactMigration/CriminalisationIrregularImmigration.pdf](https://www.ohchr.org/Documents/Issues/Migration/GlobalCompactMigration/CriminalisationIrregularImmigration.pdf)

² refugeemigrants.un.org/migration-compact

Under the Same Sky...We Dream

By Erika Harrsch



“this human crisis has turned into a multimillion-dollar business for private prisons and county jails.”



Erika Harrsch is a Mexican contemporary and visual artist based in NY. Her work has been shown in galleries, festivals, artistic residencies, and museums internationally.

Detention photos: Ross D. Franklin
Images courtesy of the artist. ©Erika Harrsch

erikaharrsch.com



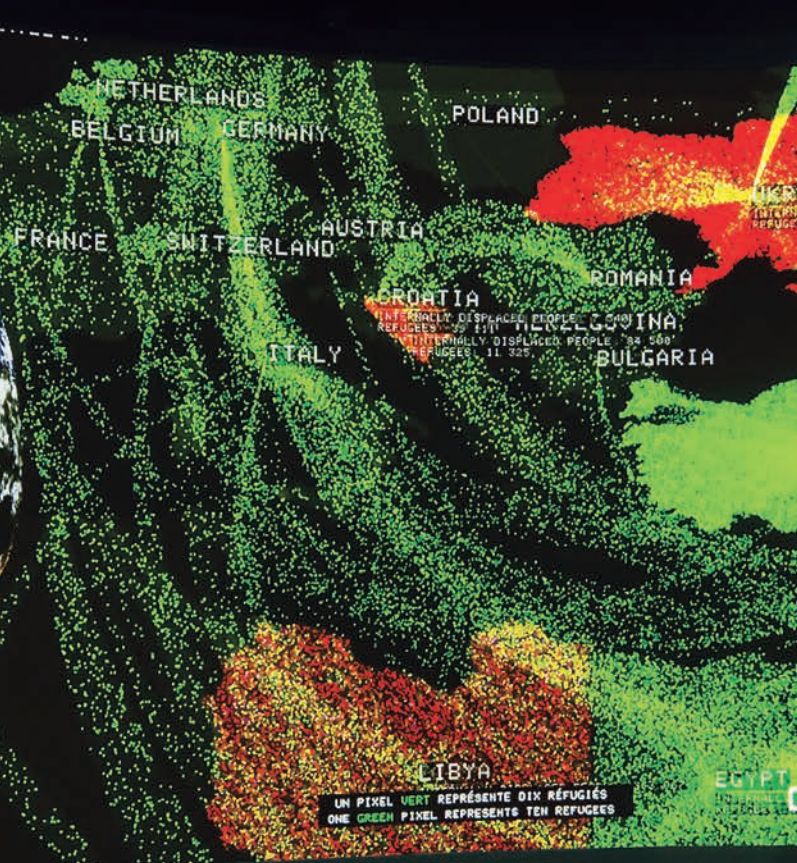
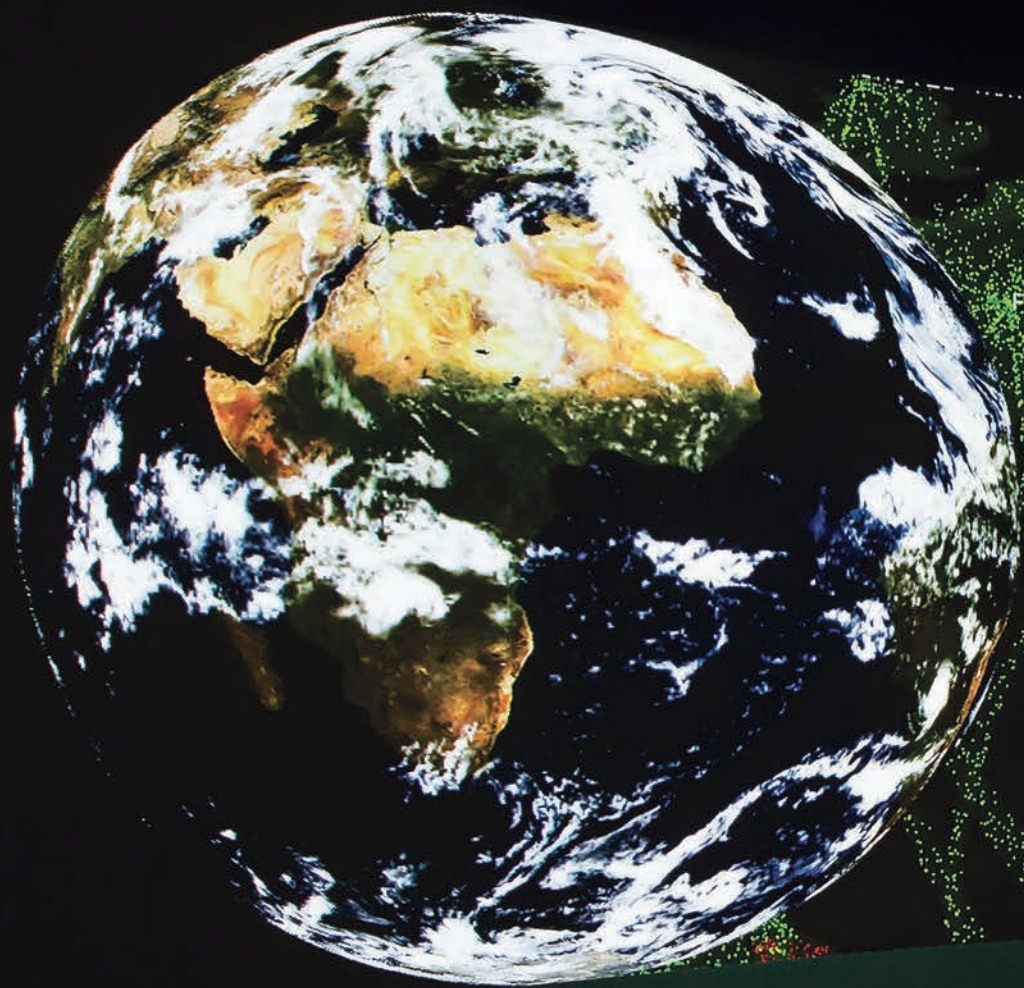
Under the same sky... we dream. Collection of Denver Art Museum

Since the beginning of 2014, hundreds of thousands of undocumented families and unaccompanied children mainly from Central America and Mexico have arrived at the Mexico-USA border, lacking any humanitarian protections during their journey. As a result of the criminalization of undocumented migration to the USA, this human crisis has turned into a multimillion-dollar business for private prisons and county jails. The corporate system of mass incarceration holds ninety percent of immigration detainees, which has enabled private companies to greatly increase their profits.

In 2014, artist Erika Harrsch was aware of what was happening at the border and created *Under the same sky...we dream*, a video-sound installation in homage to the children who try to cross borders to start a new life, with or without their parents, and to all immigrants who dream of a future with better opportunities and a safer life. It takes place in a dim room divided in two by a screen with a video projection, visible from

both sides, showing a time lapse of the sky from dawn to sunset. The suspended screen is cut to the contours of the USA-Mexico borderline. The video has been created from more than 35,000 photographs, a time-lapse representing the sky and the clouds that cross above the fence at the border between El Paso and Juarez, from dawn to sunset. On the other side of the room, there are mattresses and Mylar refugee blankets on the floor, the kind found in Immigration and Customs Enforcement (ICE) detention centers. In a participatory experience, the public is invited to interact with the space and the silver blankets dispersed on the floor, to sit or lie on a mattress, in an act of solidarity with the incarcerated immigrant minors. The 14-minute song, with voice by singer Magos Herrera, is conceived with phrases extracted directly from the 2011 Dream Act Bill of Congress. The contemplative video, with its endless lapsing clouds, brings to mind the dormant state of immigration reform, a resolution which could have normalized the status and reshaped the lives of millions of “Dreamers.”

The Dream Act (Development, Relief, and Education for Alien Minors) is a bipartisan bill first introduced in congress in 2001 to create a pathway to citizenship for undocumented children who grew up in the United States. It has since been reintroduced several times and failed to pass. A 2017 executive order called for the construction of a southern border wall and instructed Immigration and Customs Enforcement to expand its sprawling network of immigration detention centers together with privately owned prisons. It also called for raising the number of immigrants that ICE incarcerates daily, nationwide.





EXIT

2008-2015

An idea by Paul Virilio

Diller Scofidio + Renfro, Mark Hansen, Laura Kurgan and Ben Rubin

In collaboration with Robert Gerard Pietrusko and Stewart Smith

Collection Fondation Cartier pour l'art contemporain, Paris

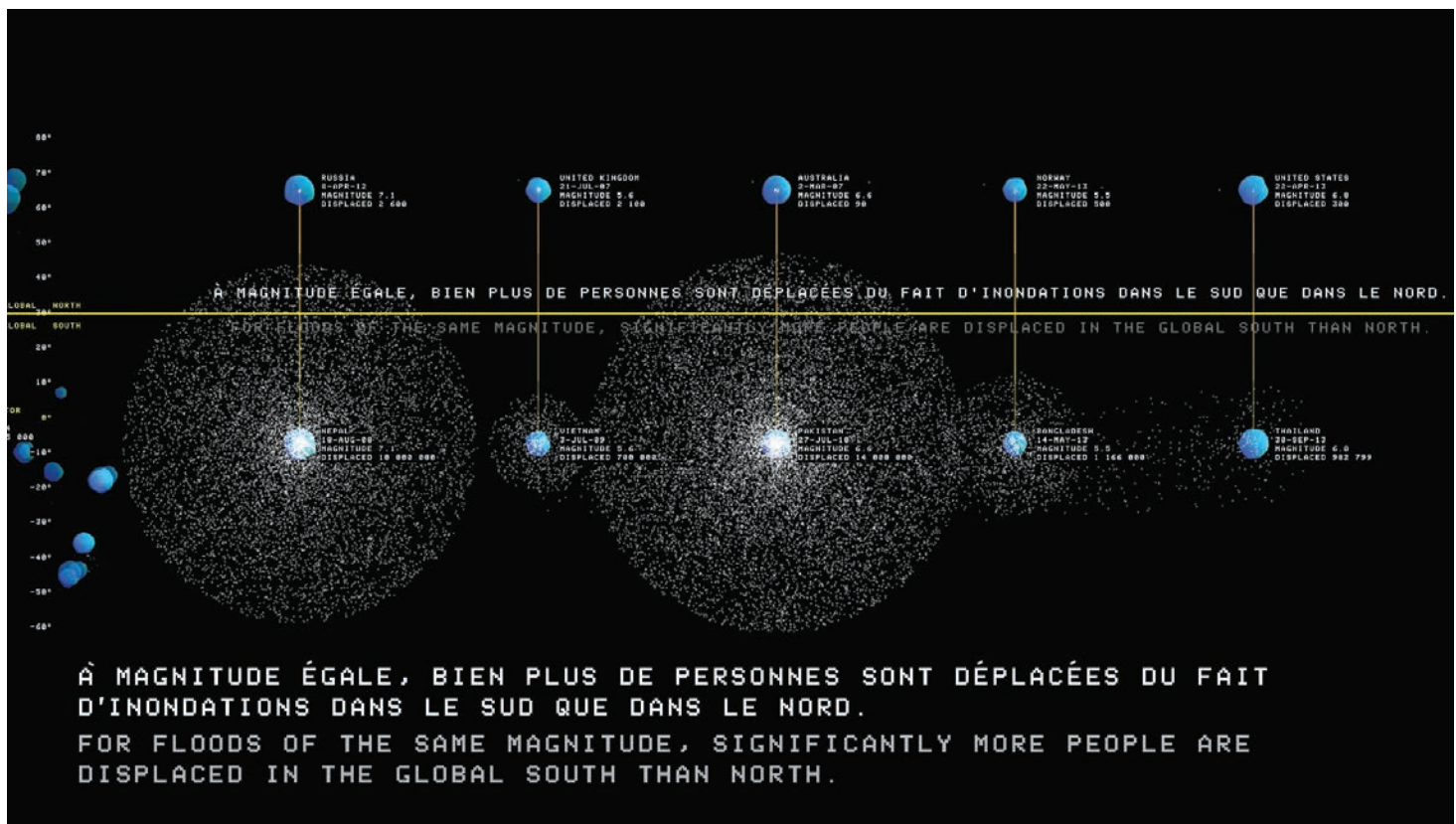
“Statistics documenting population shifts are not always neutral.”

Installation Photo: Luc Boegly

dsrny.com/project/exit

Global populations are unstable and on the move. Unprecedented numbers of migrants are leaving their home countries for economic, political, and environmental reasons. “Exit” was created to quantify and display this increasing global trend. The first part offers an aesthetic re-framing of the media’s coverage of global migrations. Forty-eight computers hanging from the gallery ceiling store and display a living archive of news footage, photographs, and documentaries about global migration and its causes. The second part immerses the viewer in a dynamic presentation of the data documenting contemporary human movement. Statistics documenting population

shifts are not always neutral and the multiple efforts to collect them are decentralized and incomplete. Here, they are repurposed to build a narrative about migration around the globe. The viewer enters a circular room and is surrounded by a panoramic video projection of a globe which rolls around the room, “printing” maps as it spins. The maps are made from data collected from a variety of sources, geo-coded, processed through a programming language and translated visually. The presentation is divided into narratives concerning population shift, remittances, political refugees, natural disaster, and sea level rise.



Taking Gender into Account in Climate Change:

A Challenging Consideration

By Noémie Coudurier

Perspectives on climate change may vary, but its existence is fortunately no longer subject to much debate. While public awareness has increased, serious political will remains scant, and action to address climate issues remains fragmented. According to the journalist, Nathaniel Rich, almost everything that we understand today about global warming was already understood in 1979.¹ Several decades of missed opportunities to mitigate greenhouse gas emissions and help populations cope with the consequences of climate change ensued. Fast forward to a moment of hope: the 2015 Paris Agreement, adopted at the Conference of Parties (COP21), set out three fundamental objectives—limiting global warming below 1.5°C by 2100; strengthening capacities to adapt to the adverse effects of climate change; and directing financial flows to support low-carbon and resilient development. This Agreement is still not being implemented by the signatory States, and the national commitments made at COP21 are leading us to a warming of up to + 7°C. by the end of the century.²

Consequences are proving to be dire for both the planet and people, as climate change contributes to widening inequalities. It is estimated that the poorest half of the world's population is responsible for only 7% of CO₂ emissions,³ while the richest 10% on the planet alone generate 52% of emissions.⁴ However, the most vulnerable people are also the most impacted by climate change, with women particularly hard-hit, especially when climate change is coupled with other crises (food prices, ethnic conflicts, etc.).

The UN Security Council has recognized that the “climate emergency is a danger to peace,” as climate change exacerbates and creates new risks, specifically affecting women. However, few institutions are seriously examining the differentiated impacts of climate change according to gender, or gender as a component of the climate change response. This text is calling for more attention to be directed to this topic, most notably in the context of regions that depend on rain-fed agricultural and pastoral economies, where women play a central role.

Impacts of climate change on the economy

Climate change poses a sustainable development challenge with vast repercussions, not only for the environment, but also for economic and social development.

• Agriculture, hard-hit:

Primary consequences of climate changes in the past five years have been rainfall deficit (40.48%), exceptional rains (30.9%), extreme heat (16.6%), and floods (7.14%).⁵ Africa (particularly the Sahel), a belt stretching from the Middle East to mainland Southeast Asia, and as far as Indonesia and the Philippines, are likely to be the regions most affected by natural disasters linked to climate change. In the case of the Sahel, from the 1970s to the end of the 20th century, the region experienced droughts unparalleled elsewhere in the world. Since then, precipitation has resumed, but in an equally abnormal fashion, profoundly modifying ecosystems and living conditions. Agriculture—vital for food security and income—is on the front line. According to the IPCC, Sahelian agricultural yields will decline by 20% every ten years throughout the 21st century, if nothing is done.⁶ In sub-Saharan Africa, drought induced by climate change is responsible for around 90% of the sector's production losses. Yet the agricultural sector contributes a quarter of the region's GDP, if not half, when considering the entire agro-food sector.⁷

Rural areas in developing countries are the most impacted by climate change, even though they have a low carbon footprint and depend on natural resources rather than fossil fuels.⁸ We know in particular that between 2007 and 2008, due to the effects of climate change, food prices increased⁹ and people in rural areas living on less than a dollar a day, spent up to 80% of their income on food.¹⁰ Along with the decline in agricultural yields induced by climate change, famine threatens the very people, mostly women, who produce the food. Today, a third of humanity does not have access to healthy, sufficient, and quality food, and the FAO estimates that the number of people at risk of going hungry will increase from 10% to 20% by 2050 due to climate change.¹¹

- Rural women on the frontline:

In agriculture, particularly in the so-called “Global South,” women represent 43% of the agricultural workforce, and up to 70% of family farmers in some African countries.¹² They are also responsible for 75% of the tasks related to food production.¹³ Helping women cope with climate change is therefore essential. However, the tools available to facilitate their activities are far from equal to those of men, and in 155 countries there is still at least one law that limits economic opportunities for women.¹⁴

A London School of Economics study of 141 natural disasters underlines that, when economic and social rights are enjoyed by both sexes, equal numbers of men and women die. On the other hand, when women do not enjoy the same economic and social rights as men, more women than men die.¹⁵ The gender gap has been highlighted in a range of major disasters such as Mitch, Katrina, heat waves in Europe, or cyclones in South Asia.

Women and climate change, intimately linked destinies

Overrepresented in the poorest categories, women’s sources of income depend on endangered natural resources that are threatened by climate change. Thus, women carry out their activities in great precariousness, compounded by other aspects of inequality, such as limited access to property, production tools, decent wages, employment, and decision-making. Their vulnerability is increased by the informal nature of their work—the small and medium-sized enterprises for which women work belong mainly to the informal sector in agriculture, fishing, animal husbandry, local commerce, and processing.

- Environmental degradation:

Almost everywhere around the world, women and girls are responsible for providing water and fuel for their families and spend considerable time daily fetching water from distant wells. The water they find is regularly insufficient or contaminated, causing health problems. Indeed, women are more sensitive than men to pollution and contaminants

found in the environment and store more of these toxins in their fatty tissue.

- Food insecurity:

The FAO has observed a rise in food insecurity since 2014, with 690 million people going hungry in 2019, of whom 149 million were critically famished. At the global level, women do most of the subsistence farming and ensure the food security of their households. In order to prepare food, they must collect wood and water, traveling ever greater distances due to deforestation, extractive practices, and pollution exacerbated by climate change. They are also responsible for food purchasing. While they may grow the cereals or roots that the household consumes, these crops are often more susceptible to climate change and price variations. Additionally, studies show that women tend to feed other household members before themselves, often eating less, last, and poorer quality food. This has the effect of exposing them to iron deficiencies and anemia. Anemia, in turn, participates in, or directly causes between 20 and 40% of maternal deaths and leads to reduced cognitive ability and productivity—the World Bank estimates it reduces GDP by 4% per year, especially in countries in Africa and Southeast Asia.

- Displacement:

There are millions of climate change-induced displaced people worldwide. While men can migrate more easily to find employment in urban areas, women who are left behind to manage the family farm, must often wait for their absent husband’s consent to make important agricultural decisions, be it to flee, or to gain access to shelter or care. The consequences of climate-induced displacement can be lethal, especially for women in the least developed countries, who already suffer discrimination related to their socioeconomic status, behavioral restrictions, and limited access to information.

- Patriarchy and discrimination:

Despite women’s central role to the survival of the household, they continue to be subject to various other forms of discrimination and are often denied participation in decision-making in the context of the family, with the husband

¹ [nytimes.com/interactive/2018/08/01/magazine/climate-change-losing-earth.html?smid=tw-nytmag&smtyp=cur](https://www.nytimes.com/interactive/2018/08/01/magazine/climate-change-losing-earth.html?smid=tw-nytmag&smtyp=cur)

² public.wmo.int/fr/bulletin/programme-mondial-de-recherche-sur-le-climat-r%C3%A9alisations-activit%C3%A9s-et-d%C3%A9fis

³ oxfamfrance.org/wp-content/uploads/2020/09/Research-Report-Carbon-Inequality-Era-Embargoed-21-Sept-2020.pdf

⁴ oxfamfrance.org/wp-content/uploads/2019/07/French_Women_Food_Insecurity_Report_WEB.pdf

⁵ iedafrique.org/BLOG-Genre-vulnerabilite-et-adaptation-des-femmes-entrepreneures-en-zones-semis.html

⁶ The FAO predicts an average global cereal yield reduction of 3 to 10% for each degree of warming. FAO (2018).

⁷ un.org/sustainabledevelopment/fr/2015/11/27/la-multiplication-des-catastrophes-liees-au-climat-menace-de-plus-en-plus-la-securite-alimentaire-selon-la-fao/

⁸ R. Pearl-Martinez (2017), *Financing women farmers*, op. cit.

⁹ R. Bailey (2013) *Managing famine risk : linking early warning to early action*, Chatham House

¹⁰ K. Coon (2008), *The food crisis and gender, foreign policy in focus*.

¹¹ fao.org/fileadmin/templates/wsfs/docs/Issues_papers/Issues_papers_FR/Comment_nourrir_le_monde_en_2050.pdf

¹² fao.org/3/a-bo092f.pdf

¹³ [oxfamfrance.org/communiqués-de-presse/pauvrete-au-travail-les-femmes-en-premiere-ligne/ et fao.org/3/i2050f/i2050f02.pdf](https://oxfamfrance.org/communiqués-de-presse/pauvrete-au-travail-les-femmes-en-premiere-ligne-et-fao.org/3/i2050f/i2050f02.pdf)

¹⁴ oi-files-d8-prod.s3.eu-west-2.amazonaws.com/s3fs-public/bp-an-economy-that-works-for-women-020317-fr.pdf

¹⁵ «The gendered nature of natural disasters: the impact of catastrophic events and the gender gap in life expectancy 1981-2002 », Neumayer Eric, London School of Economics, 2006

“The FAO estimates that if women had as much access to resources and opportunities as men, they could increase their production by 30%, effectively reducing the number of hungry people in the world by more than 150 million.”

deciding on family investments, especially in times of climate change.

Limited access to credit, information, and other tools of production trap women in agricultural practices that are ill-prepared to cope with climate change. Furthermore, discriminatory property laws prevent them from owning land and implementing measures of adaptation.

- Violence and death:

Women suffer more violence during extreme climatic phenomena: domestic and sexual violence increase with confinement, or with traveling greater distance to fetch wood, etc. The resulting physical and psychological trauma usually goes untreated.

Deaths among women from natural disasters have been found to be 14 times higher than among men.¹⁶ Moreover, even women who survive environmental disaster face dire consequences. Post-disaster, due to a lack of financial means and property, women are often more likely to be placed in makeshift shelters and to catch diseases, such as cholera, malaria, or dengue. Therefore, both before and after catastrophes, women flirt more with death.

- Financial constraints:

Within agricultural households, in normal times, gender differences in crop-based income are already significant. Men tend to produce crops with high added value, leaving it to women to cultivate traditional products that are often rich in essential micronutrients but neglected by post-crisis policies, because they are either not profitable enough, or not conducive to export.

For example, an FAO analysis has shown that women cocoa farmers in Ghana—a bean strongly threatened by climate change—are as productive as men. But, because they tend to be more cash-strapped than their male counterparts, and they don't handle the processing of the bean, only its extraction, their methods are more labor-intensive and less high-tech, thereby increasing their workload and exposing them to the vagaries of production.

- Institutional constraints:

With low state support and little representativeness in decision-making bodies, women remain the hidden face of both the climate emergency and climate action. Limited political representation and social participation make it difficult, if not impossible, to gain visibility and influence public debate. The question that follows is if women will let men decide the fate of their environment.

- Constraints on access to knowledge:

Young rural women must often abandon school to help with, or fully devote themselves to the arduous tasks facing their mothers. Access to education, training, and technologies is therefore crucial for women to understand their situation with regard to the climate crisis, as well as to rebalance relationships, and obtain guidance and support. Indeed, the FAO estimates that if women had as much access to resources and opportunities as men, they could increase their production by 30%, effectively reducing the number of hungry people in the world by more than 150 million. Climate change need not be a fatality for women, it can be a leverage for them to assume leadership.

Gender sensitive solutions: a force in the fight against climate change

According to the United Nations Environment Programme, the annual cost of adaptation to climate change in southern countries could reach anywhere from 140 to 300 billion dollars by 2030, most of this expenditure being linked to agriculture. Yet, in 2016, only 345 million dollars were allocated to family and peasant farms for their adaptation to climate change, of which smaller sums go to women farmers (although data is lacking on the actual funding provided by donors to support women in agriculture and women's adaptation to climate change).

- Women, as vectors for adaptation:

Rather than wait for their horizons to clear up (or rather become more obscure), rural women are actively seeking to maintain agricultural production despite deteriorating climatic

¹⁶ aqoci.qc.ca

¹⁷ iedafrique.org/BLOG-Genre-vulnerabilite-et-adaptation-des-femmes-entrepreneures-en-zones-semis.html

¹⁸ rqfe.org/sites/default/files/ul260/Rapport%20final.Genre-ch.clim_.pdf

conditions, whether by applying for a bank loan (19.5%), switching to another product or crop (19%), buying insurance (13%), changing varieties (13%), reducing the number of employees if they pay staff (8.7%), or diversifying the products they offer to reduce their vulnerability (8%).¹⁷

In the purely agricultural field, their flexibility is enormous. Drawing on their indigenous knowledge of the seeds, crops, and natural resources that surround them, women limit their carbon footprint and develop adaptation strategies to face natural disasters. Concretely, they implement ancestral practices, make links between ecosystems, operate a geographical distribution of species, become active in rural organizations, and share their knowledge. The vicious cycle of lack of access to productive resources and markets thus has a virtuous component. However, adaptation strategies can still be improved and encouraged, as most women do not have a plan for how to deal with the risks of current and future climate change. Without long-term planning, the efforts of women and civil society may be in vain. Hope is not enough; concrete actions are required!

- An indispensable accompaniment: Governance: A Quebec study shows that environmental and gender issues are dealt with in a vacuum, with little understanding of the intersection between gender and climate change.¹⁸ The extent to which climate change solutions are taking women's needs into account is, therefore, highly questionable. To rectify this, women must become more influential in decision-making processes related to climate change.

Gender-sensitive technological developments: Many adaptation methods to climate change involve some form of technology: "soft" technologies based on insurance schemes, crop rotation, and traditional knowledge, and, "hard" technologies such as irrigation systems, drought-resistant seeds, or seawater protection systems. However, technologies are never "gender neutral." Girls' and

women's access to information and communication technologies is often constrained by sociological and cultural bias, inadequate infrastructure, a lower level of education, lack of familiarity with agricultural terms, and less access to resources to use technological services. Technological developments must therefore take into account women's needs, roles, knowledge, and expertise, and women must be equally included in all aspects of climate change related projects.

Funding: Whether from private donors or governments, funding must be flexible enough to take into account women's priorities and needs. To this end, women must participate in the development of gender-sensitive funding criteria and introduce gender-based analysis for all budget lines, be they adaptation, mitigation, technology transfer, or capacity building programs.

Mindsets and Ecofeminism: The critical battle to be waged is undoubtedly that of ideas, so as to shift from a model of success based on extractive practices, to one based on integration with the natural environment and the inclusion of affected communities, notably women, in decision-making.

The crucial (and often overlooked) link between gender and climate must be understood in all its facets. While some large institutions, such as the World Bank, or the United Nations, are addressing gender inequalities in their policies and strategies, few have a crosscutting approach that takes into account climate change, the importance of agriculture in the most affected areas, and the role played by women.

It is therefore urgent to both identify "gender sensitive" strategies, that respond to the environmental and humanitarian crises caused by climate change, and to recognize women's contributions and transformative role in creating societies that respect the environment.

Noémie Coudurier is a Senior Campaigner in climate and food security. The complete original French language version of this article is available on wcpun.org

Qinhuangdao Coal Terminal

By Benjamin Grant

39-933622°, 119-683840°

From the book Overview: A New Perspective of Earth, source imagery ©Maxar

The coal terminal at the Port of Qinhuangdao in China is the largest coal shipping facility in the country. From here, approximately 210 million tons of coal are transported to coal-burning power plants throughout southern China every year.

over-view.com

CPN comments

The most abundant fossil fuel on Earth, the use of coal can be traced back to funeral pyres of the Bronze Age, 3,000 to 4,000 years ago in Wales. It was later more commonly used across the world by the Romans, the Hopi Indians in the Southwestern United States, and in 13th century China.

Coal combustion is known to produce air and water pollutants that have severe environmental and health impacts. Upon combustion, coal release gases and particulate matter which pollute the air, water, and land, including in the form of acid rain. The emission of CO₂ from coal combustion directly contributes to global warming in the form of greenhouse gas effects. The release of sulphur dioxide damages nearby flora and crops and reduces the diversity of plant species.¹ There is also consistent evidence of increased mortality and diseases in populations residing in proximity to mining activities.²

Studies indicate that effects are not limited to immediate surroundings. A University of Washington study³ examining the causes of decades of drought in Central Africa, which had been attributed to poor agricultural practices, found a direct linkage to air pollution in the US and Europe: "Aerosols emanating from coal-burning factories

in the United States and Europe during the 1960s, '70s and '80s cooled the entire Northern Hemisphere, shifting tropical rain bands south. Rains no longer reached the Sahel region, a band that spans the African continent just below the Sahara Desert."⁴

According to the International Energy Agency, in 2018, coal was still the largest source of electricity globally, supplying one third of the world's electricity generation, as well as a major component in supplying heat energy to other industries, such as iron and steel.⁵

¹ Muhammad Ehsan Munawer, Human health and environmental impacts of coal combustion and post-combustion wastes, *Journal of Sustainable Mining*, Volume 17, Issue 2, 2018, Pages 87-96, ISSN 2300-3960 Found at : [sciencedirect.com/science/article/pii/S2300396017300551](https://www.sciencedirect.com/science/article/pii/S2300396017300551)

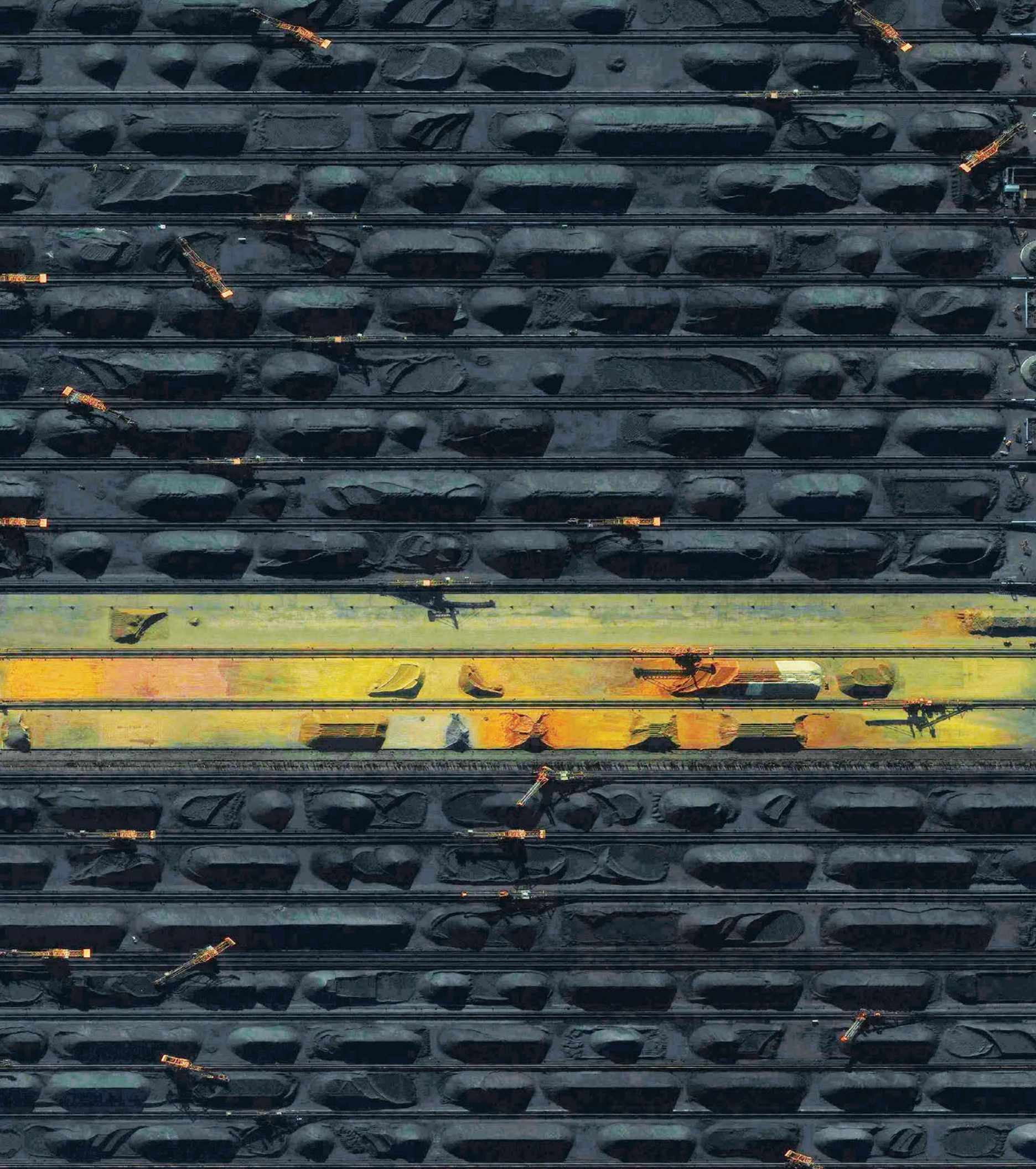
² Cortes-Ramirez J, Naish S, Sly PD, Jagals P. Mortality and morbidity in populations in the vicinity of coal mining: a systematic review. *BMC Public Health*. 2018;18(1):721. Published 2018 Jun 11. doi:10.1186/s12889-018-5505-7 Found at : ncbi.nlm.nih.gov/pmc/articles/PMC5996462/

³ "Anthropogenic sulfate aerosol and the southward shift of tropical precipitation in the late 20th century," Yen Ting Hwang, Dargan M. W. Frierson, Sarah M. Kang

⁴ Hanna Hickey, [washington.edu/news/2013/06/06/pollution-in-northern-hemisphere-helped-cause-1980s-african-drought/](https://www.washington.edu/news/2013/06/06/pollution-in-northern-hemisphere-helped-cause-1980s-african-drought/)

⁵ IEA (2019), Coal 2019, IEA, Paris [iea.org/reports/coal-2019](https://www.iea.org/reports/coal-2019)







Artisanal mining activities may appear anarchic, but, in fact, there is a tightly managed structure to production, and such local-level mining operations remain vital to both local and national economies.



Voices from the Mine:

Artisanal Mining and Resource Governance in Sierra Leone

By Roy Maconachie

Although large-scale, capital-intensive mining projects have long captured the imaginations of governments, policy makers and development professionals, artisanal and small-scale mining (ASM)—low-tech, labor-intensive mineral extraction and processing—provides employment for tens of millions of individuals across the globe. Recent scholarship on ASM has increasingly recognized how the sector has the potential to safeguard livelihoods, alleviate poverty, and drive rural development at the local level. If effectively managed, a supported ASM sector could play an important role in contributing to almost all of the UN Sustainable Development Goals (SDGs) in resource-rich developing countries.

Since the 1930s, Sierra Leone's artisanal diamond mining sector has played an important role in shaping both economy and society. Diamond mining is Sierra Leone's most lucrative export industry, with annual production of up to \$US 250 million. The accessibility of alluvial diamond deposits and low barriers to entry for artisanal miners have always been a magnet for migrant “strangers” to Kono District, most notably young, single, uneducated, unemployed men seeking to make their fortunes. More recently, however, with global gold prices soaring to unprecedented levels, tens of thousands of miners have also been driven to the country's vast gold deposits. Although the artisanal mining sector is a vital livelihood activity in an employment constrained economy, the benefits often come at a cost. The informal and unregulated nature of artisanal mining

has meant that many gold and diamond diggers have become adversely incorporated into exploitative relationships with buyers and middlemen, becoming trapped in cycles of poverty and indebtedness.

More broadly, in West Africa's Mano River Union region, the illicit trans-border trade of high value resources, such as diamonds and gold, has been implicated in regional instability in Sierra Leone, Liberia, Guinea, and Côte d'Ivoire. Since September 11, 2001, it has also become evident that the illicit trade in “lootable” resources can provide an effective vehicle for international money laundering and organized crime, and a potential source of funding for terrorist groups. Due to poor governance and widespread corruption, only a fraction of the region's resource wealth returns to the areas where mining takes place. While international traders reap vast rewards, for those in the mining pits, poverty and hardship remain.

The highly unequal relationship between gold and diamond diggers and their financial supporters has been the focus of much international attention, with many commentators voicing concern for the detrimental social impacts of artisanal mining, likening it to a system of debt bondage and a contemporary form of slavery. While minimal effort has yet been made to develop the intervention models needed to address the exploitation associated with the sector, or to “empower” unregistered miners and their families at the bottom of the supply chain, it has been argued that the formalization of



Sierra Leone's artisanal gold mining activities, most of which take place in the country's burgeoning informal economy, are dominated by women. Although returns are small, the sector's operations can be a steadier and more reliable source of income than diamond mining.

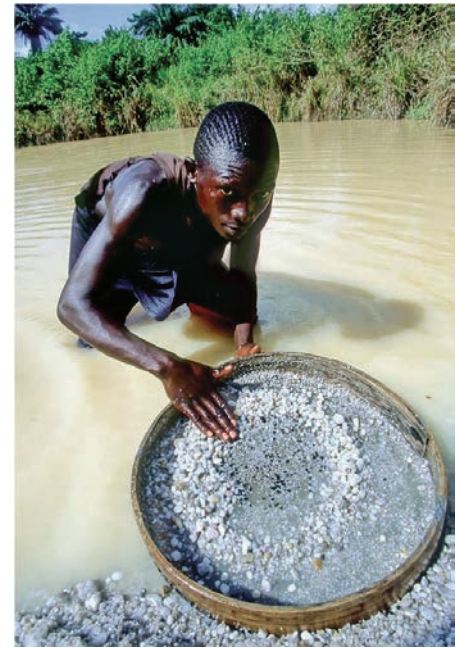
“The cost and bureaucracy of obtaining a license are prohibitive for the average miner.”

artisanal mining and better governance at the local-level are the keys to making the sector more sustainable.

However, challenges in the formalization process remain. In Sierra Leone, like many other resource-rich countries in sub-Saharan Africa, the cost and bureaucracy of obtaining a license are prohibitive for the average miner. Although in theory, decentralized licensing processes are a step forward, there may also be hidden costs involved before the formal procedures for obtaining a license can begin. In addition to simplifying registration procedures, governments should be trying to encourage ASM operators to formalize their activities by enhancing the advantages of legalization and by using incentives such as training, knowledge transfer, technical assistance, and access to finance. In short, a more holistic approach must be adopted in order to bring illegal miners into the legal

domain. This should also include improving marketing linkages and providing more formalized mechanisms for buying and selling.

Vested interests in an informal sector remain one of the biggest impediments to formalization. Incentives and “buy-in” are needed from all stakeholders, including supporters, middlemen and government officials. For the government, a formalized system where miners are supported would enable an artisanal mining taxation strategy to be developed (which would allow miners to gain access to the incentives noted above). However, a regional approach is needed, where formalization strategies are harmonized between neighboring countries. This is particularly important in terms of harmonizing taxes and mining laws/ regulations in situations where borders are porous and unmonitored.



Artisanal diamond miner,
Kono, Sierra Leone

Roy Maconachie is Professor of Natural Resources and Development at the University of Bath in the United Kingdom, and co-producer of *Voices from the mine—Artisanal diamonds and resource governance in Sierra Leone*, an award-winning film which presents the condition of small-scale miners and the challenges they face from the mine to the market.

The film was presented at the UN by the United Nations Department of Global Communications with the International Labor Organization, World Council of Peoples for the United Nations and the University of Bath, in observance of the Centennial of the International Labor Organization.

vimeo.com/uniofbath/voicesfromthemine

SOS, International Law

By Sohini Chatterjee and Daniel Stewart

In the Preamble to the UN Charter, Member States pledged “to establish conditions under which justice and respect for the obligations arising from treaties and other sources of international law can be maintained.” Any stocktaking on the 75th anniversary of the UN’s founding must consider the state of the state of global legal norms. On this front, one could not but paint a very dark portrait: the World Trade Organization in disarray; human rights laws ignored and discarded; treaties designed to tackle the existential threat of climate change seemingly facing greater attack despite ever greater evidence of the dangers facing the planet. International law’s futility, its powerlessness, seems never more apparent to all but true and misguided believers.

Yet this period can be taken to demonstrate the eternal truth of the global legal system: it is only as good as the belief and support it can engender, and only as effective as its impact on the search for economic development, environmental protection, and human dignity for all.

The best way to mark this anniversary is to make international law face up to its failings and get all voices involved in shaping its content and securing its enforcement. Only when the Peoples of small and developing States lead the fight for the rule of law, will the pledge of “We the Peoples,” as set out in the Charter’s Preamble, be made a reality.

Daniel Stewart is the Founder and Executive Director, and **Sohini Chatterjee** is Legal Advisor, Independent International Legal Advocates (IILA), a non-profit international law advisory and training organization, working to enable more effective and fair participation of small and developing States in the creation and application of international law.

independentila.org



Women exposing themselves and their children to mercury and other health hazards, breaking rocks and mining for gold in Nusa Tenggara, Indonesia. Women in the developing world have unique challenges and the multilateral system should ensure that their perspectives are represented in the global legal discourse. Small and developing states must become more integral to and integrated in the UN’s fight to sustain and promote the rule of law.

Photo: Shelby Wilder, journalist based in New York City and London

Informal Labor

According to the International Labor Office, 60% of the world's workforce consists of informal workers, representing approximately two billion people worldwide.¹ "The two billion women and men who make their living in the informal economy are deprived of decent working conditions. Evidence shows that most people enter the informal economy not by choice, but as a consequence of a lack of opportunities in the formal economy and in the absence of other means of livelihood."

With 93% of the world's informal employment in emerging and developing countries, rural areas and the agriculture industry are by far the most affected. Globally, 93.6 % of the global workforce in the agricultural industry is estimated to be informal. However, in emerging and developing countries, all sectors have a high level of informality. While men are estimated to make up 63% of the world's informal labor, in low and lower-middle income countries, a higher number of women are in informal labor than men. Moreover, "even though globally there are fewer women than men in informal employment, women in the informal economy are more often found in the most vulnerable situations, for instance as domestic workers, home-based workers or contributing family workers, than their male counterparts."

Sofía Mauricio Bacilio, Coordinator of the NGO, AGTR-La Casa de Panchita, that works to protect domestic workers' rights in Peru and ensure only people of legal working age exercise this profession, notes that there are currently 381,012 domestic workers in Peru, of whom 95.4% are women, 91.7% work informally, and 50% of whom earn less than a living wage.² Their characteristics include:

- having begun to work at a very young age;
- migrating from the poorest areas of Peru in search of opportunity, or being second generation domestic workers born in the

- cities to which their mothers migrated;
- not having completed basic education, or young women who have completed basic, and sometimes technical education.

In 2003, Peru passed a law for domestic workers which is considered discriminatory as it is said to guarantee only half the rights provided to other workers. In 2018, Peru ratified the ILO Convention 189 on Domestic Workers.³ The Convention stipulates that:

"Each Member shall set a minimum age for domestic workers" (Article 4); "Each Member shall take measures to ensure that domestic workers enjoy effective protection against all forms of abuse, harassment and violence." (Article 5); "Each Member shall take measures towards ensuring equal treatment between domestic workers and workers generally in relation to normal hours of work, overtime compensation, periods of daily and weekly rest and paid annual leave in accordance with national laws, regulations or collective agreements, taking into account the special characteristics of domestic work." (Article 10); "Each Member shall take measures to ensure that domestic workers enjoy minimum wage coverage, where such coverage exists, and that remuneration is established without discrimination based on sex." (Article 11)

(See CPN article: "Manos Trabajadoras," by Maria Lino)

¹ Women and men in the informal economy: a statistical picture (third edition) / International Labor Office – Geneva: ILO, 2018

² Information based on the national survey "ENAH0-2018 (Encuesta Nacional de Hogares sobre Condiciones de Vida y Pobreza).

³ ilo.org



Manos Trabajadoras / Working Hands

By María Lino, MFA

Manos Trabajadoras / Working Hands are video portraits of women who engage in repetitive manual labor at home and in the workplace. The concept is to capture the poetry of the rhythms and domestic routines, in tribute to repetitive labor and human touch, while honoring the life stories of women as important social narratives. The portraits are synchronized diptychs and triptychs exploring repetition, perseverance, and the care and patience required to do and observe manual labor, a slower and calmer sense of time.

Manos Trabajadoras / Working Hands is an interdisciplinary link between the visual arts and documentaries without preconceived hypothesis nor analysis, summing up daily life without scripts nor planning. The women, not “experts,” narrate their own stories.

The series started with Juana Portalino Callán, an Andean woman from Caraz, whom I met in 2010, during my first trip to Peru. I was enthralled by her spirituality, sense of humor and knowledge of life. She inspired me to create a series of video portraits of women who migrate to Lima to find work as domestic workers, nannies and cooks. I filmed Juana while she cooked and when I showed her the footage, she claimed “manos trabajadoras” (working hands). *Manos Trabajadoras / Working Hands* is dedicated to her memory and to all those who earn their living working with their hands.



Susana Torres Limaymanta

Susana is originally from Junín in Peru’s Central Andes. She was a child domestic worker at age nine.

I filmed her during her walks in San Juan de Miraflores, one of the “pueblos nuevos/new towns” on the hillsides of Lima, Peru, where she identifies child and teenage domestic workers. She talks to their mothers asking them to allow their daughters to finish their education. She also contacts the employers and tries to convince them to pay the girls for their work.

Susana:

“I come to survey girls who take care of children as babysitters, but they don’t get paid as they should. And they don’t, because it’s the uncle, family, well, they should help. Some people buy them clothes, some don’t buy them anything, nor give them anything. So, we observe and ask, to try to help them in some way, but it has to come from the conscience of the employers. Because the children, because they’re small, they are girls, don’t know.”

Video:

“Susana Así Es / Susana How It Is” (2015; 8:33 segment)

Location: San Juan de Miraflores, Lima, Perú

Vimeo link: vimeo.com/373787734

María Lino, Artist, MFA, Fulbright US Scholar (Peru, 2011)
Oscar B. Cintas Fellow

marialino.com/manos-trabajadoras



Blanca Yahuarcani

Blanca Yahuarcani is originally from Loreto in the Peruvian Amazon. I met Blanca in La Casa de Panchita, an NGO in Lima that advocates for the labor rights of domestic workers. Blanca cooks for the employees and volunteers.

I filmed Blanca preparing juane, a typical Peruvian Amazonian dish usually served on June 24th, during the Feast of Saint John the Baptist.

Blanca:

"I had my daughter when I was a young teenager. Then after, I started working, working."

"I've always liked to work, work. In Iquitos, when I worked like this as a domestic worker, sometimes they treated me well, sometimes they treated me badly. I'd just leave. I didn't stay. I would go to another place. But I always liked to work like this, with food."

Video:

"Blanca y Juanes" (2019; 3:53 segment; work-in-progress)

Location: La Casa de Panchita, Lima, Perú

Vimeo link: vimeo.com/351980259



Sofía Mauricio Bacilio

Sofía Mauricio Bacilio and her mother Doña María Bacilio Cuba are originally from Cajabamba, in the northern Cajamarca Region of Peru. I traveled with them to their hometown and filmed them walking to the farmers' market. Sofia points out the restaurant where she worked at age seven. She didn't go to school.

Sofía:

"In that house it was where, it was a restaurant of an aunt where I started to work when I was seven years old. Here it was where I went to sleep very, very late, and I had to get up very, very early. Why very early? Because we had to prepare a hot drink called 'calientito' for the people who worked in this market."

Now this market is modern. They've changed everything. Since the butchers cut the meat around three, four in the morning, to warm up they come over to the restaurant to drink 'cañaso,' a hot beverage with lemon. You had to get up very, very, at three, four in the morning to prepare the drinks. Kill animals, serve the customers, clean the house, do the laundry, serve. I did everything, right?"

Video:

"Camino al Mercado" (2019; 4:52 segment; work-in-progress)

Location: Cajabamba, Cajamarca Region, Northern Peruvian Andes (2019; Segment of work-in-progress)

Vimeo link: vimeo.com/374033413

Workers' Rights, Policy and Practice

A Conversation with Vinicius Pinheiro of the International Labor Organization

“Bringing workers and employers together at the same table, was seen as a way to avert revolution.”

CENTERPOINT NOW (CPN): This interview coincides with the Centennial of the International Labor Organization (ILO), which was formed in the aftermath of WWI, more than a quarter century before the UN. What was the impulse for its establishment?

Vinicius Pinheiro (VP): The ILO was born from the ashes of World War I, and the understanding that, if you want peace, you need to cultivate social justice. Working conditions were terrible, with 80-hour workweeks, rampant child labor, and slavery—still a thriving business, despite its official eradication. As a result, social movements were spreading across Europe. Big strikes at the beginning of the century in both France and the UK led to the need for a social dialogue. Bringing workers and employers together at the same table, was seen as a way to avert revolution, such as had manifested in Russia. Recognizing that a peaceful society required a social floor, important actors at the time determined to agree on minimum labor standards and discuss income distribution. This was appealing for all parties: Prominent industrialists felt that a social floor was necessary, in order to compete on equal footing in a global environment. Workers and social democrats perceived an opportunity to participate in defining mutually agreeable labor standards.

CPN: What would you qualify as the ILO's greatest achievements in these 100 years?

VP: Everything we know about labor legislation, maternity leave, or occupational safety health, stems from the ILO, either directly or indirectly. The ILO was the place where relevant stakeholders discussed how to tackle these issues. Of 190 conventions, while some are more widely ratified than others, all serve as a basis for labor legislation. This includes social security: After WWII, the ILO built social security systems in the post-

colonial world. This was recognized in 1969, when the ILO was awarded the Nobel Prize. Later on, the ILO was the first organization to raise the red flag with respect to the potential unfairness of globalization in the early 90s. It noted that, although globalization was creating wealth and growth, this needed to be evenly distributed, or crisis would ensue. These concerns were validated with economic crises, increased nationalism, and populism resulting from a lack of distribution of the gains of globalization. In 2000, the ILO called for a fair globalization. The organization had its “finger on the pulse of society” because of its integral connection with social parties.

CPN: According to the ILO's statistics, the majority of the world's workforce is still in the informal sector (61%). How are these workers represented in the ILO's processes?

VP: We have evolved regarding the participation of informal workers in decision-making processes. Today we aim for universal protection and strive to include informal workers in social protection systems. The Domestic Workers Convention is an exemplary result. Being formalized is not a prerequisite for being linked to a group that can voice informal workers' concerns. Also, in many cases, unions have opened up. The latest labor standards have an informal sector dimension.

CPN: What mechanisms exist for ensuring proper implementation?

VP: Once we have a convention, and it's been ratified, it becomes law. Uruguay just requested that its parliament ratify Convention 190 on Violence and Harassment at Work. From the moment it's adopted and ratified, it becomes embedded in Uruguayan law. It's up to national enforcement mechanisms to make sure this process takes place. We do have an international mechanism in Geneva that receives reports



1919-10 to 11, ILC 1st Session, Washington DC, Delegates in Plenary Sitting.
Historical Archives, International Labor Organization, Geneva
© ILO

or complaints. If a person or institution feels that a convention is not being respected, it is possible to file a complaint. While that action can't lead to sanctions within the ILO structure, there can be other implications. More and more countries rely on ILO mechanisms when signing trade agreements. They formulate clauses on the respect for fundamental rights at work according to ILO standards, with the consequence of trade implications if such standards are not respected.

CPN: Where does the ILO situate itself in the world's changing work environment?

VP: The ILO is focused on investing in decent work, sustainable development in a broader sense: We need to scale up investment in life-long learning, as an investment in the future. This implies provisions that would allow people to get out of work in order to dedicate time to learning. Rules and regulations must be updated to cope with new technologies and adhere to certain principles regarding labor or hiring practices. There are incentives to save on labor; can we have incentives for hiring? With regard to the "Future of Work,"

the ILO recognized early on the need to take control of this process and make technology work for us, not the other way around. Where big companies argue for no regulation, just market flows, the ILO calls for a human-centered approach. Companies also require incentives for shifting to low carbon, if we're going to achieve a "green economy."

CPN: What is your motivation to do this work?

VP: The sensation of writing history: When the ILO was invited to put forward the idea of social protection floors in the context of post-2015 / 2030 agenda discussions, we developed Sustainable Development Goal (SDG) 8 on "Decent Work." We formed coalitions to implement an agenda for "Decent Work." Every time something is included in one of these resolutions, it becomes part of a collective understanding and agreement of how things should be, what is important, what is not, and how we should proceed. While the connection between these global accords and country level implementation is not always straightforward, this normative framework does help make progress possible.

Vinicius Carvalho Pinheiro, ILO Regional Director for Latin America and the Caribbean, has served as Deputy Director for the ILO United Nations New York Office, and previously worked in the Ministry of Social Security in Brazil, the Organization for Economic Cooperation and Development, the World Bank and the Inter-American Development Bank.

ilo.org

Where Things Come From

By Dr. Leonardo Bonanni

Who can say they know the source of everything they eat, drink, and wear, let alone the origins of the materials in a cell phone or an automobile?

There is no place on the planet that supply chains do not reach, and with products becoming ever more complex, there is hardly anyone who does not benefit from goods made halfway around the world. Yet, while supply chains are a product of global interconnection, they remain largely opaque.

I founded Sourcemap to answer the question of *where things come from*. It took over a decade of building entirely new kinds of databases, social networks, and risk analysis algorithms, to develop the first software that companies can use to account for the totality of what happens in their global supply chains. Most important, it took companies willing to unearth issues in their supply chains, so that they could become confident in the way they treat everyone, from their customers, to their employees, to the workers at every tier.

Today, our software connects some of the world's largest food and apparel companies with their suppliers and sub-suppliers, all the way to the farms and mines where poverty, food insecurity, child labor and environmental devastation are all too frequent.

Revealing the myriad ways we are all interconnected can help root out the problems that keep us living in such different worlds.

Dr. Leonardo Bonanni is the Founder/CEO, Sourcemap Inc.

Image: Supply Chain of a laptop computer

Sourcemap.com





Artists as Frontline Workers

*By Christopher Bailey,
Arts and Health Lead,
World Health Organization*

A recent Oxford study published in *Lancet Psychiatry* shows that one in five COVID-19 patients is likely to experience some form of mental health distress including anxiety, depression and insomnia. Beyond COVID-19 patients, mental health distress is on the rise with overworked medical personnel, frontline workers, people who have been isolated for extended periods of time—especially the elderly—and, quite acutely, the huge population of people who have been adversely affected by the pandemic's economic impact. But, perhaps most moving, is the psychological toll the virus is taking on young people whose dreams have been interrupted, and their faith in a positive future, shaken. Traditional methods of managing mental health distress are more inaccessible than ever. Restrictions on gatherings have rendered public entertainment, recreation, and community support more and more difficult. Psychological support services are often overwhelmed where available, more out of reach, as the economic toll descends on the population, or already non-existent, as the disease reaches out to poorer and more isolated areas.

Often during times of communal emergency and crisis, artists are called upon and, in many cases, are some of the first to step forward to help in whatever way they can. Whether musicians, painters, dancers, storytellers, sculptors, or fabric creators, artists have always had the unique ability and function to comfort, to confront difficult feelings and issues, to bring together communities, and to create future pathways and possibilities where none seem to exist. Artists have been doing this for millennia, based on their innate sense of empathy, craft and solidarity, but—at least during our recent age of psychological and psychiatric techniques and understanding—may not have the formal training to manage the scope or depth of the mental health crisis we are witnessing today.

The additional challenge during this COVID moment is that artists, at least those that depend on public gatherings, are in the demographic that has been hardest hit by the economic fallout of the disease. Often, they are

part of the gig economy, unsalaried, uninsured, and they themselves may be vulnerable to the same feelings of anxiety and helplessness that the community expects them to help with. Although creative ways of finding expression beyond traditional environments and forms, and new digital approaches, are already emerging, the loss of in-person contact and shared experience still weigh heavily on both artist and audience. To this end, the World Health Organization (WHO) is working on a set of tools to help artists with their own mental health, as well as provide guidance on how they can, through their creativity, provide mental health support to individuals and communities. Some key considerations:

- 1) When in doubt, first listen. When dealing with an anxious subject or audience, don't start by imposing a point of view; let it emerge.
- 2) An artist observes and creates, but does not diagnose. Try to avoid pigeonholing subjects as "traumatized." By letting the subject express what they feel is important in the way they most need to express it, it is likely to be less about the triggers, and more about their relationships with others and the world.
- 3) If you come across someone who might do harm to themselves or others, do not try to treat them, but gently refer them to practitioners who can provide dedicated support.
- 4) Take care of yourself too.

Carl Jung once said, "Loneliness does not come from having no people about one, but from being unable to communicate the things that seem important to oneself, or from holding certain views which others find inadmissible." Perhaps the greatest mental health support to someone suffering is to create the space—in whatever medium—that allows inexpressible sorrow, hope, desire, anxiety, and contentment to find a voice and a shape through the unique communion between artist and audience. Perhaps it is that fundamental ability to create meaning out of seeming chaos, that makes us human, and gives us the resiliency to survive and transform from any misfortune.

Christopher Bailey is the Arts and Health Lead at the World Health Organization. One of Bailey's current projects the Healing Arts Initiative, a charity auction in partnership with Christie's, the WHO Foundation, WCPUN, and Culturunners.

who.int



"Hercules - Butterfly Stroke," by Emre Yusufi, @emreyusufi_art
180x90 Diasec Print

CPN comments

Could the future of healthcare be found in its past? *CENTERPOINT NOW* explores the benefits of ancient medicine from diverse regions, as well as Integrative Medicine, and new areas of research that may constitute important resources for human health, environmental sustainability and economic development.

The articles featured here on Chinese Medicine, African Natural Medicine, and Brazilian Traditional Medicine can be read in their entirety, along with essays on

Traditional Medicine from across the world, in a special joint edition of the Beijing University of Chinese Medicine with WCPUN / *CENTERPOINT NOW*:
journals.elsevier.com/journal-of-traditional-chinese-medical-sciences

Special Thanks to Dr. XU Anlong, Ph.D., President of the Beijing University of Chinese Medicine, and Chair of the Advisory Committee on Health and Wellness of the World Council of Peoples for the United Nations (WCPUN).

Traditional Medicine: A Valuable Resource for Global Health

By Dr. Anlong XU, Ph.D. and Professor

President, Beijing University of Chinese Medicine, Beijing, China, and Chairman, Advisory Committee on Health and Wellness, World Council of Peoples for the United Nations

The dramatic changes brought about by the COVID-19 pandemic have prompted us to reassess the current global healthcare system. As we seek to identify solutions and formulate a vaccine, it is also an opportune time to consider resources that are already accessible, namely traditional medicines with a long history in dealing with contagious diseases. In this respect, Chinese medicine, with its millennia-old uninterrupted history of country-wide practice, offers valuable tools.

Following the outbreak of the COVID-19 epidemic in the city of Wuhan, the Chinese government organized five groups of national Chinese medicine experts (a total of 607 Chinese medicine professionals) to treat COVID-19 patients in Wuhan. As the leading institution for the national Chinese medicine team, the Beijing University of Chinese Medicine sent 100 Chinese medicine professionals to join the national effort to contain the epidemic. During their two-month stay in Wuhan, our medical team used comprehensive and integrated approaches of Chinese medicine, along with conventional medicine, to treat COVID-19 patients and achieved impressive results.

Chinese medicine's method of addressing a novel pathogen, such as COVID-19, rests on its systematic theory, based on over 3000 years of medical experience. Chinese medicine doctors identify the general pathogenesis routes of a disease by analyzing the patients'

medical symptoms, without knowing the exact nature of the new pathogens. Upon finding the disease's path, doctors can formulate comprehensive treatment plans, including herbal prescriptions, acupuncture, and moxibustion.

When treating novel infectious diseases such as COVID-19, Chinese medicine emphasizes a holistic view. Through external diagnosis, e.g. pulse, face, tongue and body temperature, Chinese medicine doctors can identify the location of the disease inside the body and proceed to implement therapeutic Chinese medicine approaches to adjust the body's ecosystem, particularly the spaces where the virus resides. At this point, the pathogens, such as this new virus, may not have left the body. However, by modifying the ecosystem of the body, the Chinese medicine approach can turn it into an "unfriendly" space in which the pathogens may not be able to propagate, nor survive long, and are prevented from spreading to other organs and tissues. These treatments boost the body's immune system so that it can fight the virus and win the battle.

From the clinical indicators, particularly blood cell count and various immunological parameters, we know that after being infected with COVID-19, there is a hugely enhanced immunological response in the body, which is called a cytokine storm. The cytokine storm may damage the infected organ, such as the lungs in the case of COVID-19. If the cytokine



Dr. Anlong XU is the President of the Beijing University of Chinese Medicine, Beijing, China, and Chairman of the Advisory Committee on Health and Wellness, World Council of Peoples for the United Nations. A professor in molecular biology and immunology, Dr. XU serves on the Editorial Board for BMC Genomics, Animal Biotechnology, National Review of Sciences, and as Editor-of Chief for the Journal of Chinese Medical Sciences. His main research focuses on the functional genomics for understanding the origin and evolution of the vertebrate immune system, as well as discovering new drugs.

storm is not controlled immediately, systemic organ failure will soon follow, since the deteriorating force of over-inflammation is systemic within the human body. In that sense, balancing the over-inflammation to a normal level is the key to success in treating COVID-19. Chinese medicine treatments utilizing herbs, acupuncture, and moxibustion, regulate the immune system to the Yin-Yang balance.

Additionally, Chinese medicine considers interactions between the digestive and immune systems. Protecting the digestive track of COVID-19 patients helps prevent severe or fatal cases. Chinese medicine's herbal prescriptions serve to moderate and bring health back to the digestive track, enhancing the chances of survival.

Another vital factor, as evidenced by our university medical team's clinical experience treating COVID-19 ICU patients in Wuhan, is individual-based combination therapy. For each patient, particularly the severe and critical cases in the ICU, our university medical team made individualized prescriptions of Chinese herbs and other therapeutic methods designed to complement conventional medicine, based on the individual's particular diagnosis. Individual-based therapy is a tradition of Chinese medicine, which has been well documented in classical Chinese medicine books for its role in combating contagious diseases throughout Chinese history.

The last element to consider from the perspective of Chinese medicine is to effectively manage so-called “recovered” COVID-19 patients who are discharged from the hospital. Although, prior to being discharged, patients will have tested negative for the virus (based on nucleic acid and immune detection) and will have no fever nor other abnormal physiological problems, they are still very weak and need a long time to recover. In this regard, patients who are considered “recovered,” are not completely recovered in the view of Chinese medicine. Chinese medicine's unique theory and practice serve to regulate the physiological and immunological system, so as to bring vigor and immunity back to the post COVID-19 patient, thereby reducing the likelihood of contracting the virus again.

There are many traditional or indigenous medical systems worldwide with a long history fighting against various diseases. All constitute valuable experiences of human civilization. Today, when facing COVID-19, and rethinking approaches to healthcare, these troves of almost forgotten traditional medical knowledge may provide important resources and options. Global joint efforts to revitalize traditional medical knowledge will surely enhance responses to future health and wellness challenges for all, regardless of culture, race, or religion.





S. Rockefeller, Fr. '17



“In the quietness

The beauty

Is blossoming silently “

寂靜中
美悄悄綻放

斯蒂文·洛克菲勒二世

*“Misty Maple,” by Steven C. Rockefeller, Jr.
A foggy November morning shot from the bottom
of an Asian garden in The Rockefeller Estate in
Pocantico Hills, New York.*

**Steven C. Rockefeller, Jr.’s art, including nature
videos, still photography, and Chinese Calligraphy,
has been exhibited in China, furthering cultural
exchange between The United States and China.**

About Chinese Medicine

By Shanshan WANG, Yu SHI, Minke TANG, Anlong XU,
Beijing University of Chinese Medicine



Figure 1: Prof Tu Youyou, 2015 Nobel Prize Laureate in Physiology or Medicine



Figure 2: Oracle bone inscriptions in the National Museum of Chinese Writing

On December 7, 2015, at 14:17 local time in Stockholm, Sweden, a warm applause and the shutter and flash of cameras greeted the first Nobel Prize Laureate in Physiology or Medicine from mainland China, Professor Tu Youyou, respected scientist and discoverer of artemisinin. Professor Tu's speech, "Discovery of Artemisinin—A Gift from Traditional Chinese Medicine to the World," attracted global attention to Chinese medicine. Although people outside China have generally heard of Chinese medicine, they may lack understanding of its principles and history. This article presents a cursory overview of its past, present, and future.

Origin and Development:

In ancient times, when China was an agricultural nation, the survival of the Chinese people depended on their understanding of the cycles of the weather, seasons, the sun and the moon. They believed the universe, the earth, nature, and themselves were all interconnected. Their understanding of medicine and disease was rooted in their knowledge of nature. In the following thousands of years, their medicine was integrated and continuously improved upon with the progress of the Chinese civilization. Although the exact origin of Chinese medicine is difficult to pinpoint, it is speculated from the existing Oracle records that it can be traced back to the period of the Yin and Shang dynasties (1600 BC to 1046 BC).

Later on, from the Spring and Autumn Period to the Han dynasty (770BC–220AD), the diversity of Chinese society provided fertile soil for medical scientists to construct a theoretical system for medicine. *The Yellow Emperor's Internal Classic* was published, constituting the basic theoretical system of Chinese medicine and becoming its cornerstone. Zhang Zhongjing's *Treatise on Febrile and Miscellaneous Diseases* compiled the great achievements of Chinese medicine during the Qin and Han dynasties. The book has been widely used in clinical practice since then, and was hailed as the "ancestor" of medicinal text books. It had a far-reaching impact on the later development of medicine in China.

The pharmaceutical system was equally brilliant. The publication of the *Shennong Materia Medica*—the earliest pharmaceutical monograph in existence—contains 365 kinds of drugs classified according to their nature. When the tombs of the Han dynasty, sealed in 168 BCE, were opened by archaeologists in 1973, the medical document unearthed, "Recipes for Fifty-Two Ailments," refreshed our understanding of medicine at that time. The document presents more than 250 exorcistic and drug-based cures for ailments such as warts, hemorrhoids, inguinal swellings, and snake bites. Also in the document, is the first known mention of qinghao or wormwood, which led Prof. Tu to discover Artemisinin.

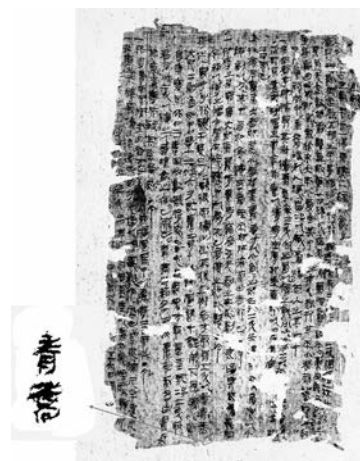


Figure 3: Recipes for Fifty-two Ailments from the Ma Wang Dui Tomb

The Song Dynasty government (960–1279 AD) adopted a series of measures, such as improving the medical system, collating and printing medical books, and creating the national administration of medicine—the Tai Ping Hui Min He Ji Pharmacy Bureau—which greatly promoted the development of Chinese medicine. With the accumulation of knowledge based on clinical practice, Chinese medical theory gradually matured and flourished.

During the Ming and Qing Dynasties (1368 to 1912 AD), conclusive and condensed medical books were constantly emerging.

Since the establishment of the People's Republic of China, the central government has made a series of important decisions that further evolved Chinese medicine, notably by establishing Chinese medicine hospitals, research Institutes, colleges and universities, and collating and publishing Chinese medicine books.

Fundamental concept of health

Chinese medicine considers that humans and nature are in an integrated relationship of mutual inclusion, connection and coordination. Only by adapting to the changes of nature can human beings keep themselves healthy. This concept also holds that the human body is a small universe unto itself. To achieve health and balance, Chinese medicine “follows the rule of nature,” which advocates the mobilization and utilization of natural resources within and outside the body.

Treatment Modalities

• Chinese materia medica:

Chinese materia medica mainly comes from natural resources and their processed products, including herbal materials, animal parts, minerals or chemical compounds, usually combined to make a formula for treatment. The effect of a formula, required to follow the rules and theory of Chinese medicine, is comprehensive and synergic. Currently, there are more than 97,000 formulas available in clinical practice, which can be classified into the following categories: 1) A classic formula, which is a prescription with a fixed composition recorded in the Chinese medicine classics; 2) A formula based on the classic prescription and revised by the clinician according to the patient's condition; 3) A formula that the clinician tailors to the patient according to his/her own professional experience; 4) A combined approach based on modern scientific research.

• Acupuncture, Moxibustion, and Massage:

1) Acupuncture, first recorded in *The Yellow Emperor's Internal Classic*, consists in inserting fine needles at certain sites in the body, known as acupoints, for therapeutic or preventative purposes. Over the course of thousands of years, acupuncture has acquired a relatively independent theoretical system, distinct treatment technology, and wide clinical application worldwide.

2) Moxibustion is a therapy to prevent and treat diseases by burning and ironing moxibustion sticks, or moxibustion grass, on the surface of acupoints for heat stimulation.

3) Massage is a treatment involving pushing, holding, lifting, kneading and rubbing the meridians and acupoints on the body.

• Chinese physical and breathing exercises:

Chinese physical and breathing exercises integrate meditation, breathing, and body movement. Imitating animal movements and applying the principle of “exhaling the old and inhaling the new,” improves the circulation of Qi and blood inside the body, thus prolonging life.



Figure 4: Chinese physical and breathing exercises, recovered from the Ma Wang Dui Tomb silk piece

Chinese Medicine Strengths

In recent decades, life sciences and biomedical sciences have made remarkable achievements. Tuberculosis, polio, and many other diseases that were once considered incurable are no longer a problem. However, Chinese medicine, with its 3000 years of written history, still plays an important role in a big country like China. What are its advantages or strengths? In the case of cancer for example, whereas western medicine aims to reduce cancer and kill cancer cells, Chinese medicine focuses on improving patients' quality of life and prolonging their lifespan. Numerous cancer patients who are not well-treated by western medicine seek help from Chinese medicine and find their quality of life is greatly improved and their survival time is significantly prolonged.

In clinical practice, Chinese medicine differentiates patients by “syndrome” rather than by disease. A kind of “syndrome” can appear in various “diseases” of western medicine. Chinese medicine is particularly effective in the treatment of: (1) Viral infectious diseases; (2) Functional diseases; (3) Chronic and geriatric diseases; (3) Diseases with unknown or complex causes; (4) Neurological and psychiatric disorders; (5) Connective tissue diseases; (6) Orthopedic diseases; (7) Dermatologic diseases; (8) Gynecological diseases; (9) Andrology diseases; (10) Pediatric diseases; (11) Sub-health.

Medical Masterpieces

According to the *General Catalogue of Chinese Traditional Medicine*, by professor Xue Qinglu, there are currently at least 13,455 available Chinese medicine classic books. To mention only two....

- *The Yellow Emperor's Internal Classic:*

Composed between the Warring States Period and Han Dynasty, *The Yellow Emperor's Internal Classic* is named after the mythical founder of the ancient Chinese nation—the Yellow Emperor. *The Yellow Emperor's Internal Classic* is the foundational doctrine of Chinese medicine. It is focused primarily on the prevention of disease and the observation of one's own physical status. As the title indicates “Internal,” as opposed to “outer,” the book emphasizes the importance of inner physiological mechanisms: meridians, pressure points, and organ relations. In addition, the authors of the book combined their knowledge of astronomy, anatomy, physiology, pathology, geography, anthropology, and psychology to explain the human body from various perspectives, and form the theories of Yin and Yang, the Five Elements, and Visceral Manifestation, which are the foundational principles of Chinese medicine. The knowledge in this book has saved and prolonged countless lives throughout history.



Figure 5: *The Yellow Emperor's Internal Classic* in Waseda University, Japan

- *Treatise on Febrile and Miscellaneous Diseases:*

Composed in the early Han Dynasty by an outstanding physician named Zhang Zhongjing, known as “the Sage Doctor,” the *Treatise on Febrile and Miscellaneous Diseases* is considered to be China's first clinical medicine monograph containing medical principles, methods, descriptions and herbal research.

It is a pioneer for diagnosis and

treatment, based on an overall analysis of illness and patients' condition, laying a solid foundation for China's ancient medical theories.

Pharmaceutical Masterpieces

Chinese materia medica classics are the main reference for doctors to treat diseases. They can be divided into two categories: Comprehensive, usually written by experts identified by the government; and Special, usually written by practitioners according to their own experience. Of the, at least, 50 available Chinese pharmaceutical classics, three are introduced below.

- *Shen Nong Ben Cao Jing:*

The oldest surviving Chinese materia medica book, the *Shen Nong Ben Cao Jing* (*The Divine Farmer's Classic of Materia Medica*), is believed to be a compilation of oral testimony, written between about 200 and 250 BC. The text identifies 365 kinds of medicine, of which, 252 are plant-based, 67 animal-based and 46 mineral. More than 170 kinds of diseases are discussed. Most of the medicines recorded are still in use today. The book laid a foundation for the pharmaceutical theory of ancient China, exerted far-reaching influence on the development of later generations of pharmaceutical practice, and remains an important reference for the study of Chinese medicine to this day.

- *Xin Xiu Ben Cao:*

Xin Xiu Ben Cao (*Newly Revised Canon of Materia Medica*), completed in 659 AD in the Tang Dynasty, is the first pharmacopoeia published by the Chinese government, and is widely considered to be the first pharmacopoeia in the world. Jointly edited by 23 experts under the leadership of Su Jing for two years, its 54 volumes include 850 medicines. After its publication, the Tang government had it issued throughout the country as the basis for medical application, lasting for over 400 years.

- *Ben Cao Gang Mu:*

Printed during the Wanli period of the Ming dynasty, *Ben Cao Gang Mu* (*Compendium of Materia Medica*) is a work of encyclopedic scale, in 52 volumes. It was compiled by Li Shizhen (1518–93), who was one of the greatest physicians, pharmacologists, and naturalists in Chinese history. The work and its three revisions took 27 years to complete. Li collected the material by meticulously surveying hundreds of sources in the years 1552–78. He traveled extensively, gathering first-hand experience with herbs and local remedies throughout China, and consulted every medical book in print at the time. The compendium contains details on approximately 1,800 medicinal drugs, including previously unknown varieties, with illustrations and some 11,000 prescriptions. Each herb is described by its type, form, flavor, nature, and method of application. The work was reissued many times during the Qing dynasty (1644–1911) and thereafter. It has been translated into several languages and is still considered the premier reference tool for Chinese herbal medicine.

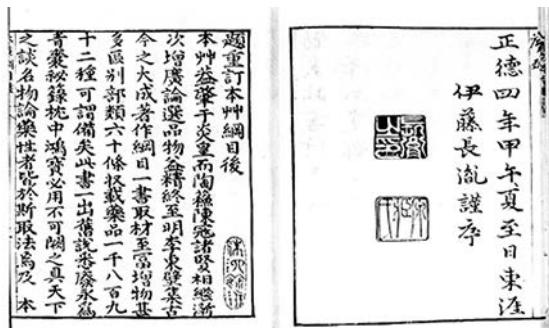


Figure 6: Compendium of materia medica, the Jin Ling version

Prominent Figures

- Bian Que:

The legendary Bian Que, Qin Yueren, born around the year 401 BC, is considered to be the first true physician in China. He is credited with having developed Chinese medicine and was a great proponent of taking the pulse. It is also thought that Bian Que might be one of the first physicians to have a rudimentary understanding of circulation. Stories of his life have an almost mythical character, including tales of bringing the dead back to life.

- Hua Tuo:

Hua Tuo (108-208) was a renowned physician during the Eastern Han Dynasty and Three Kingdoms era of China. His appearance was described as that of “an immortal who had passed the gates of this life.” In the book of *Hou Han Shu*, he is described as the first person in China to use anesthesia during surgery. He used a general anesthetic combining wine with an herbal concoction called Ma Fei San. Hua also developed acupuncture and devised the five basic animal exercises, designed to enhance health by imitating the movements of five animals: tiger, deer, bear, ape, and crane.

- Zhang Zhongjing:

Zhang Zhongjing (150 BC-219 BC), was a Chinese physician who, in the early third century BC, authored the *Treatise on Febrile and Miscellaneous Diseases*, which greatly influenced the practice of traditional Chinese medicine. The original book was later edited and divided into two books, *Shang han lun (Treatise on Febrile Diseases)* and *Jin gui yao lue (Jingui Collection of Prescriptions)*. Today, Zhang’s book remains highly regarded and important in the practice of Chinese medicine, and he is often referred to as the Chinese Hippocrates.

- Sun Simiao:

Sun Simiao (541- 682) was a famous Chinese physician in the Tang Dynasty, hailed as “King of Chinese Materia Medica” by later generations. He published two

masterpieces, *Essential Formulas for Emergencies Worth a Thousand Pieces of Gold* and *Supplement to the Formulas of a Thousand Gold Worth*.

Chinese Medicine Today

In China, by the end of 2019, there were 3966 Chinese medicine hospitals with over 452,000 Chinese medicine doctors. More than 40 colleges and universities specialize in Chinese medicine, including 25 independent ones. More than 200 colleges and universities have Chinese medicine majors, with a total number of 752,000 enrollments. In 2019, the total number of people diagnosed and treated in traditional Chinese medical institutions reached 910 million, with 27 million in-patients discharged from Chinese medical and health institutions.

According to the statistics of the World Health Organization, currently 103 Member States have approved the use of acupuncture and moxibustion, 29 of which have established laws and regulations on Traditional Chinese Medicine, and 18 of which have incorporated acupuncture into the medical insurance system. In 2019, the 72nd World Health Assembly deliberated and approved the 11th Revision of International Classification of Diseases (ICD-11), which included a chapter on traditional medicine. The International Standardization Organization (ISO) also established the Technical Committee of Traditional Chinese Medicine (ISO / TC249), which has issued a number of international standards.

Chinese Medicine in the Future

The information revolution has enabled the development of a Chinese medicine database; Chinese medicine evidence-based medicine centers; data mining; telemedicine; and an AI diagnosis system of Chinese medicine. It has also resulted in high-tech Chinese medicine products and improved efficiency of Chinese medicine services.

In 2016, China approved the Law of the People’s Republic of China on Traditional Chinese Medicine to improve the regulation of Chinese medicine doctors, clinics and medicines, as well as standardize the practice of Traditional Chinese Medicine, and ensure its medical safety and quality. China has further formulated and begun implementing the Outline of Strategic Planning for the Development of Traditional Chinese Medicine (2016-2030), thereby assuring that Chinese medicine, with its ancient history, remains a vital contributor to human health and wellbeing for much time to come.

African Natural Medicine

Towards a Systematization Framework for Clinical Application

By H Chabalalaa, Department of Science and Innovation; Motlalepula G Matsabisab, University of Free State; Nceba Gqalenic, African Health Research Institute

I. Introduction

What would have happened to the development of African natural medicine (ANM) had it not been interrupted by foreign invasions, colonialism and apartheid? African rock art depicts Bantu and San medicine-men and women performing healing rituals with herbs, animal parts, dance and trance; suggesting that the use of natural medicines evolved in Africa and is as old as humanity itself.¹



Figure1: South African Rock-Art illustrating ritual healing ceremonies¹



I.i African Medicine's Potential

The World Health Organization (WHO) estimates that over 70% of Africans consult traditional health practitioners (THPs) before visiting a primary health care facility. It is also reported that over 70% of all the world's medicinal plants are found in Africa.² While countries like China and India have successfully mainstreamed their respective natural medicines, most African countries are yet to interface ANMs into their national healthcare systems. The systematization of African healing sciences is the missing link and the 'key-log' that would unleash this green gold.²

II. History: The Nile Valley Civilization

Africa has over 10,000 years of recorded high civilization, including the Nile Valley Civilization which started in the south of the African continent.³⁻⁴⁻⁵ Analyses of the mummies of the famous Tut Ankh Amen and his grand-parents, King Amen-Hetep III and Queen Tiye (18th Dynasty), as well as that of Pharaoh Ramesses III (19th Dynasty), show that these royals shared common ancestry with peoples of Southern Africa, more than any other region on the African continent. The E1B1a (EM2) haplogroup specifically belongs mainly to modern-day Bantu speaking people.³⁻⁴

II.i Ancient African Medicine Pioneers

Aim-Hetep (2700 B.C.E) is reported to be the oldest documented physician in history. He was the Chief of the Royal Physicians, expert in herbal formulations to treat digestive, reproductive, and central nervous system diseases, including conditions of the eyes, fluids and blood.⁴⁻⁶⁻⁷ The classics also reference a Chief Royal Dentist by the name of Hesi-Ra (2600 B.C.E).

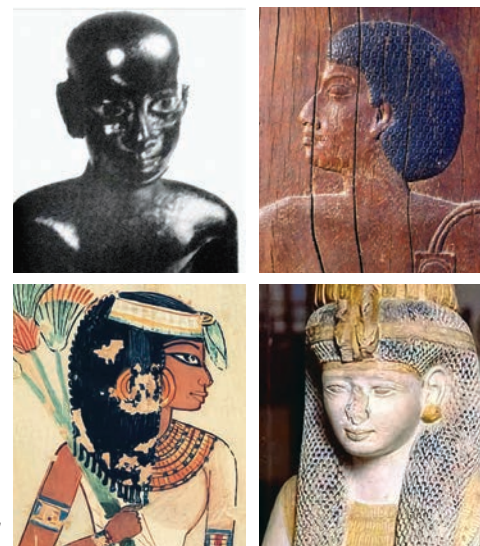


Figure 2: Illustrations of Aim-Hetep, Hesi-Ra, Merit-Ptah and Peseshet⁴⁻⁵⁻⁶

African Medicine practice was not restricted to men only, but women such as Merit-Ptah (2700 B.C.E) and Peseshet (2600 B.C.E), were Chief Royal Physicians in the fields of gynaecology, obstetrics, stomach disease, herbal formulations and their applications.⁴⁻⁵⁻⁶⁻⁷

II.ii Medical Papyri

Africa's rock art ultimately evolved into several writing scripts including the most famous Kemetic hieroglyphs or "sacred writings" called Metu Neter. Below are some of the popular medical papyri in which Africans documented their medical knowledge systems.⁷⁻⁸⁻⁹

- o **The Kahun Gynaecological Papyrus** (1900 B.C.E) contains methods of ascertaining pregnancy, prognosis of delivery, uterine conditions, prescriptions of medicinal plants and formulations for pregnant women.⁵⁻⁶⁻⁷

- o **The Ebers papyrus** (1550 B.C.E) is considered the ancient Kemetic materia medica. It is purported to be a copy of a medical science book written during the times of Aim-Hetep. It is a systematically compiled document with 829 prescriptions on internal medicine.⁵⁻⁶⁻⁷

- o **The Smith Surgical Papyrus** (1600 B.C.E) is believed to have been written during the 18th Dynasty and is over 4.5 meters long. Its content is mainly surgical, based on 48 observed cases.

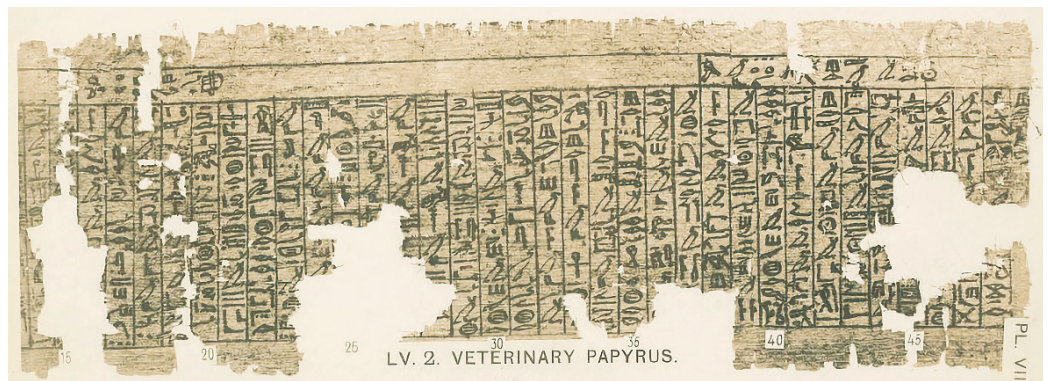


Figure 3: Facsimile of the Kahun Gynaecological Papyrus (1900 B.C.E)⁶⁻⁷

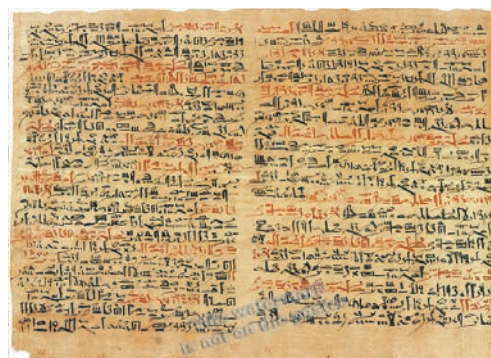


Figure 4: Facsimile of Smith Surgical Papyrus (1600 B.C.E)⁶⁻⁷



III. Systematization of ANMs

The ancient Kemetic physicians demonstrated an understanding that medicines had systemic effects in the body. Mummification processes they developed took centuries to perfect.⁴⁻⁹ They observed the viscera of deceased persons and drew conclusions which informed their knowledge of disease etiology, pathogenesis, ancient pharmacopeia, thus giving rise to systematization frameworks.⁴⁻⁶⁻⁷

¹ Rock Art Research Institute. University of Witwatersrand. wits.ac.za/rockart/about-rock-art/rock-art-of-southern-africa/ Accessed 19 October 2020: 12:40, CAT

² World Health Organization. WHO Traditional Medicine Strategy: 2014-2023. Geneva: World Health Organization; 2014

³ Hawass Z and Ismail S et al. Revisiting the harem conspiracy and death of Ramesses III: anthropological, forensic, radiological, and genetic study. *The Bio-Medical Journal*. 2012: 345, e8268

⁴ Keit SOY. *Studies and Comments on Ancient Egyptian Biological Relationships. History in Africa*. Vol 20 (129-154), 1993

⁵ Bouval R, Brophy T. *Imhotep the African Genius: Architect of the Cosmos*. Disinformation Books. San Francisco, USA. 2013

⁶ Hasan NAEA. *Egyptian Journal of Internal Medicine. The Egyptian Journal of internal Medicine*. 29 910 33-34. 2017

⁷ Nunn JF. *Ancient Egyptian Medicine*. British Museum Press, United Kingdom, London. 1997,

III.i African Medical Cosmology

Both the ancient Kemetic and Bantu people conceived of the human as a multi-dimensional entity made up of seven core faculties, comprising sets of principles which represent the anatomy of the physical, emotional and mental bodies (Fig. 5 and 6).⁸⁻⁹ The Khab (Khat) represented the physical body; animating the body was the Khaibit, which is an energetic (electromagnetic) or emotional body.

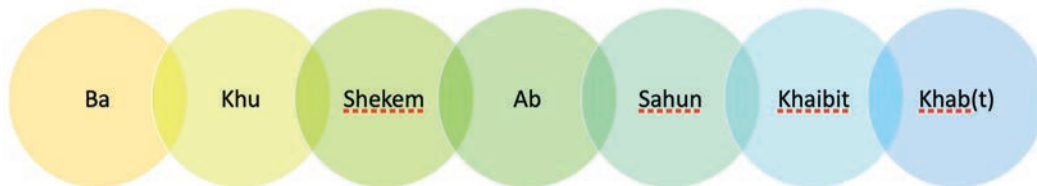


Figure 5: Holistic Kemetic Illustration of Complete Faculties of a Human Being⁹

The Sahu and Ab represented lower and higher mental faculties, respectively. The Ba-Khu-Shekem complex represented the highest aspects of our being, consciousness and conscience. It is for this reason that the Kemetic healing systems were holistic, covering all seven aspects of their beings as illustrated in Figure 5, which corresponds to the Ba-Ntu system in Figure 6.⁸⁻⁹



Figure 6: Holistic Bantu Illustration of Complete Faculties of a Human Being⁸⁻⁹⁻¹⁰

III.ii Disease Theory – Medical Cosmology

The ancient African “health model” sought to maintain balance and harmony in the body, based on the principles of Ma’at which corresponds to harmony, order and inter-dependence. This in turn is related to the uBuntu principle of the Bantu, which represents homeostasis, balance, inter-connectedness and inter-relatedness. Their observations led them to conclude that the heart was comprised of a network of vessels, called Metu, which determined the general health status of an individual.⁵⁻⁸⁻⁹⁻¹⁰

The Metu correspond to the meridians of Traditional Chinese Medicine; and were known to transport the pyogenic principle called “Uxedu,” which was principal in causing “dis-ease.”⁸⁻¹⁰⁻¹¹ Depending on the type of the Metu the Uxedu affects, one would either have one or more of the five health conditions, e.g. phlegmy, cholic, etc. A balancing process, e.g. treating a cholic disease with a watery medicine, is what systematically informed the ancient Africans.⁷⁻⁸⁻¹¹ The disease syndromes were classified using elemental archetypes such as Ma’at (hot and moist), Sebek (cold and dry), etc. It was out of this re-constructed medical cosmology that ancient Africans developed a disease etiology, pathogenesis, diagnosis, prognosis, treatment regimens and standardization of medicines.⁷⁻⁸⁻⁹⁻¹¹

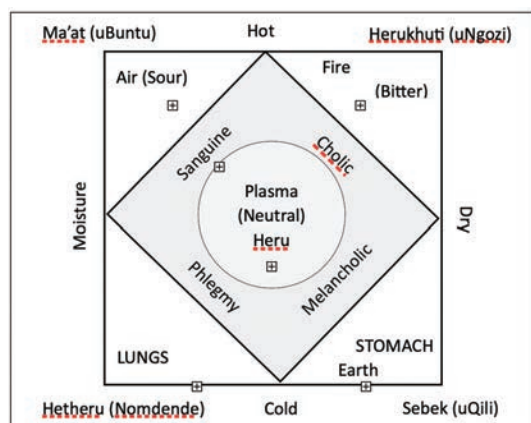


Figure 7: Re-construction of the African Ma'at-Based 'Health' Theory¹⁰

III.iii Systematization Framework

It is herein proposed that the systematization framework should be underscored on African medical cosmologies and historical records to corroborate knowledge of disease etiology and its progression (pathology), culture-based diagnostic methods, prognosis outcomes, treatment, disease categorization and medicines' classification.⁸⁻¹¹ Where treatment was concerned, it was reported that Aim-Hetep, 2700 B.C.E was credited for the statement that was later used by the Greeks, "Let your food be your medicine, and your medicine be your food." Herbs and food were the main treatment regimens used to heal, cure and manage diseases. Ancient Africans were also experts in the extraction of therapeutic oils which were applied, ingested, or used as essences. Steaming, emetics and enema were employed for detoxing. They used the Utchat or Eye of Heru to determine fraction and standard dosages for their prescriptions.⁸⁻⁹⁻¹⁰

IV. Conclusions

The challenge for the African continent is to reclaim its ancient wisdom, while decolonizing its science of medicine in order to innovate and develop it further with medicinal plant propagation, research institutes, training colleges, plant-based pharmaceutical industries, and natural medicine clinics, health centers and hospitals. South Africa, as the third most biodiverse country, with unique indigenous healing knowledge held by over 300,000 African medicine practitioners, is particularly well-positioned to take on this challenge. The country has identified the most used medicinal plants that run the risk of going extinct.²⁻⁶⁻¹⁰

Plans are being implemented to propagate and bio-trade in these selected plants, as they have the potential for positive socio-economic impact.⁹⁻¹⁰ There is however an urgent need to systematize, regulate and institutionalize the ANM sector for it to be more profitable for the continent as a whole.

In Ghana there is a concept of Sankofa, meaning "to progress, we must look back." Reclaiming Africa's "Stolen Legacy" will assist in dispelling a lie that Africa's medical knowledge of antiquity was purely based on superstition, and enable the African Natural Medicine of the future.¹⁰

⁸ Amen RUN. *Metu Neter: The Great Oracle of Tehuti and the Ancient Egyptian System of Spiritual Cultivation*. Khamit Media Trans Vision. New York City; 1990

⁹ Chabalala HP. *Management of Indigenous African Knowledge-Based Technological Innovation in South Africa*. PhD Thesis bestowed by Da Vinci Institute of Technology Innovation. South Africa. 2014

¹⁰ Chabalala HP. *Systematization of Traditional African Medicines*. MPH Thesis bestowed by Tsinghua University. Beijing China. 2017

¹¹ Wang W. *Theory of "Analogous Patterns in the Same Disease" and Disease Identification in TCM: Development of TCM through a Scientific Outlook. Modernisation of Traditional Chinese Medicine and Materia Medica*. 2011; 13(2): 226–231

¹² Fave AD, Negri L, Anohar RP, Morandi A, Bassi M. *The Ayurveda concept of Prakrti and the Western construct of personality: A comparative pilot study*. *European Journal of Integrative Medicine*. 2015; (7): 396-408

Brazilian Traditional Medicine: Historical Basis, Features and Potentialities for Pharmaceutical Development

By Fernão Castro Braga,
Faculty of Pharmacy,
Federal University of Minas
Gerais, Brazil



Pau Brasil, Botanical Garden of Rio de Janeiro.
Photo: Gabriella Leal

History:

Brazilian Traditional Medicine is the result of a complex fusion of Indigenous, European and African cultures, whose profound and continuous exchange of conceptions and customs became an indelible part of Brazil's national cultural identity (Barbosa et al., 2016).

Pre-colonization, there were around 200,000 Indigenous groups in what is presently Brazil, speaking 188 languages, including Guarani, Arawake-Maipure, Ianomano and Tupi, in addition to dialects such as Xavante and Tapaiúna (FUNAI, 2013). They employed complex practices regarding the use of herbs from native flora, that would later be studied by naturalist physicians during the colonial period (Calaca, 2002).

With slavery, Africans arrived in Brazil, and introduced mystical elements and knowledge of the properties of poisons and herbaceous preparations into local traditional medicine practices.

European colonizers, through the Jesuits, maintained contact with Indigenous groups, and conducted empirical studies on medicinal plants, eventually developing formulas and remedies driven by the high cost of importing medicines from Portugal.

The scientific investigation of plants in Brazil began in the early 18th century. In 1843, von Martius published the *Systema Materiae Medicae Vegetabilis Brasiliensis*, which describes 470 plant species, highlighting the abundance of plants used in traditional medicine (Mello, 1980). In the 20th century, advances in the field of organic synthesis resulted in the development of several synthetic drugs. Brazil experienced an intense process of industrialization and urbanization, also marked by the establishment of the international pharmaceutical industry in the country. From then on, the country's official medicine was almost exclusively based on synthetic drugs.

Brazil is a megadiverse country and is considered to host the largest plant

biodiversity on earth, with 46,096 plant species registered in different ecosystems (Flora do Brasil, 2015). The native vegetation has suffered an intense and continuous process of destruction due to economic policies, beginning with the exploitation of "pau-brasil" (*Caesalpinia echinata*) by the Portuguese in the 16th century. (The name of the country derives from this plant, which was exploited for the extraction of a red pigment employed for dyeing fabrics.) It is estimated that today only 7% of the coastal Atlantic forest remains. The native vegetation that survived is now under threat from the expansion of cattle raising, ethanol production, soy monoculture, mining activities and the construction of huge hydroelectric dams (Brandão, 2016). The genetic erosion of native species has been accompanied by the loss of traditional knowledge by the Brazilian population.

On the other hand, presently there is a growing interest in the pharmacological properties of plants. In 2008, the Ministry of Health introduced the National Policy on Integrative and Complementary Practices, paving the way for new herbal medicines to be developed.

Important products already developed from Brazilian biodiversity and traditional medicine:

- The antihypertensive drug **captopril** and its analogues **enalapril** and **lisinopril** are synthetic drugs developed based on peptides such as phenylalanyl-prolyl-alanine, isolated from the venom of the Brazilian snake *Bothrops jararaca*—a work carried out by Prof. Ferreira's group in the University of São Paulo, in the mid-1950s.
- **Lapachol**, a compound first isolated from the tree, *Handroanthus impetiginosus*, and used for treating malaria in the late 19th century, is the model compound for the synthesis of atovaquone, a drug employed in combination with proguanil hydrochloride to treat acute uncomplicated malaria caused by *Plasmodium falciparum*, and available under the trade name Malarone® (Newman, 2017).

- **Pilocarpine**, a compound extracted from the leaves of *Pilocarpus* trees, traditionally known as *jaborandi*, was used for decades by Merck for the preparation of a medicine to treat glaucoma. It is also employed to relieve “dry mouth” (xerostomia), a side effect of radiotherapy in cancer treatment. Pilocarpine stimulates saliva secretion; this property was known by the Indigenous Brazilians, as its traditional name *jaborandi* means “plant that makes drooling” (Brandão et al., 2010).

- **D-tubocurarine**, constituent of the *curare*, is a preparation made with *Chondrodendron tomentosum*, a plant species native to the Amazonian forest, and used as poison by Indigenous people of the region. In 1940, d-tubocurarine (Intocostin®) was introduced in anesthesiology due to its relaxing effect on skeletal musculature. It must be administered only by parenteral route, because it has no oral effect. This feature was known by the Indigenous Brazilians, who used the *curare* as poison to slaughter the hunt, to be consumed as food (Brandão et al., 2010).

The benefits of these discoveries for mankind are enormous, but neither the country nor Indigenous Peoples can receive any economic return, because the developments occurred before the Biodiversity Convention in 1992, when genetic resources began to be considered the patrimony of each country.

Perspectives for new drug development and integration with western medicine:

The WHO estimates that about 40% of drugs available today derive directly or indirectly from natural sources, especially from plants, several of them traditionally used by different populations around the globe. Recent examples include antitumor drugs (e.g. vincristine, vinblastine, paclitaxel and eliptinium), as well as new agents for treating dementia and Alzheimer’s disease (e.g., galantamine and huperzine-A).

Despite the great potential, it is estimated that only 6% of the total of 300,000 plants existing on the planet have been evaluated by

pharmacological assays and only 15% have had their chemical composition investigated by phytochemical studies (Cragg & Newman, 2013). Almost 50,000 plant species occur in Brazil, of which 55% are endemic. Brazil’s cultural heritage also provides valuable knowledge. The development of pharmaceutical products based on traditional knowledge must therefore compulsorily include a discussion of intellectual property rights (IPR) to ensure the conservation and sustainable use of biodiversity.

Unlike a drug, an herbal medicine has a complex composition and its biological activity is usually the result of synergism among its constituents. The financial resources needed to develop and launch an herbal medicine in the market are considerably lower than those expended with a drug based on an isolated compound, whose average costs reach 1.3 billion dollars in the United States (Skirycz et al., 2016). A long-term R&D program for funding high quality scientific and technological investigations of components from Traditional Brazilian Medicine, led by the federal government, in partnership with private and public companies, would result in the development of innovative products advancing human health overall and assuring benefit-sharing with Indigenous populations.

Success in the development of new products requires a multidisciplinary approach utilizing innovative technologies. This is particularly vital nowadays to address infections caused by Dengue, Zika and Chikungunya viruses, in addition to SARS-CoV-2, which have severe health and social impacts. Currently there are neither vaccines to prevent the infection by these viruses, nor effective drugs to treat the infections. In this context, natural resources from Traditional Brazilian Medicine may represent a repository of new antiviral compounds able to control the spread of these viruses in Brazil and abroad.

“The benefits of these discoveries for mankind are enormous, but neither the country nor Indigenous Peoples can receive any economic return.”

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The Evolution of Integrative Medicine in the Treatment of Cancer

By Mayra Rodriguez-Mohamed Ph. D., Hon

“It treats the whole person rather than one organ system.”

Integrative Medicine in the treatment of cancer can be traced back to ancient times. According to the National Center for Complementary and Integrative Health (NCCIH), Integrative Medicine is “when a non-mainstream practice is used together with conventional medicine.” Integrative Medicine emphasizes a holistic, patient-focused approach to health care and wellness, often including mental, emotional, functional, spiritual, social, and community aspects. It treats the whole person rather than, for example, one organ system, and brings conventional and complementary approaches to healthcare together in a coordinated way.

Descriptions of Integrative Medicine for treating cancer can be found in an Egyptian papyrus dated approximately 3000 BCE. In 400 CE, the Greek philosopher Hippocrates, considered the Father of Medicine, was the first to use the terms “carcines” and “carcinoma” to refer to this disease because of its similarity with a crab. He treated the disease in an integrative manner, often combining Allopathic Medicine with mental exercises and prayer.

The *Huang Di Nei Ping*, or *Book of Medicine of the Yellow Emperor*, one of the oldest medical texts that exist, indicates that the most effective medicine occurs naturally within us. Early medical practitioners were well-trained priest-physicians versed in the art of energy healing. Many indigenous systems are based on the concept that the physical body is intrinsically connected to, and not fragmented from, a vast network of subtle energies (e.g. Qi, Ki, Prana, etc). These systems and traditions have focused on approaches that treat the individual as a whole, while restoring the body’s innate ability to heal using

energy. Acupuncture, for example, is believed to be one of the oldest forms of energy healing and has been used to ease the side effects of cancer treatments. In more recent times, Reiki, a system of energy management based on the laying on of hands, was developed in Japan by Mikao Usui and has been used together with allopathic medicine to help reduce pain and improve the quality of life of cancer patients.

Today, medicine is in transition. Numerous economic, social, cultural, and scientific factors have influenced the way conventional medicine is practiced and contributed to the strengthening of the Integrative Medicine movement. Notably, the costs of healthcare have become prohibitive, rendering primary medical services inaccessible to many, and the quality of care has decreased, becoming less personalized. Integrative Medicine recognizes the need for patients to receive better quality medical care focused on empathy, attention, and the fulfilling of medical services.

According to Dr. Michael J. González, Professor at the University of Puerto Rico School of Public Health, “Integrative Medicine shifts the orientation of the medical practice from a disease-based approach to a healing-based approach. Integrative Medicine has helped improve the quality of life of cancer patients at all stages of the disease.” Indeed, Integrative Medicine employs the best non-toxic and evidence-based therapeutic procedures to benefit the patient.

In 2003, the Integrative Medicine Pilot Program for Cancer Patients was inaugurated in Puerto Rico. As part of the Program, patients integrated Reiki, prayer, and meditation to their treatment. Not soon after, I developed new energy-based protocols and created CancerKi® or Cancer Reiki®. This innovative

Mayra Rodriguez-Mohamed, Ph.D., Hon,
President and Executive Director of the Puerto Rico Reiki Institute, specializes in cancer care through energy management.

cancerki.com

approach, in which patients assumed a proactive role in all aspects of the treatment contributed to the betterment of their quality of life and reduced the occurrence of side effects. According to Dr. Mayra Rivera Figueroa, oncologist hematologist, her patients “liked the more humanized approach to medicine. They felt more comfortable and less stressed.”

The use of Integrative Medicine has been increasing in the United States and in the rest of the world. In 2007, a survey conducted by the National Center for Complementary and Integral Health (NCCIH) found that approximately 38% of American adults were using complementary and alternative medicine.¹ When combined with prayer, the percentage increased to 62%. According to the North Atlantic Treaty Organization, “countries represent diverse cultures and societal experiences and collectively, may offer new perspectives in the evolution of health care delivery.” As of 2018, 170 or 88% of all Member States acknowledged the use of Traditional & Complementary Medicine.

As noted by the United Nations Human Rights Council in its 2016 resolutions on access to medicine: “The right of everyone to the enjoyment of the highest attainable standard of physical and mental health is a human right as reflected in, inter alia, the Universal Declaration of Human Rights.”² Integrative Medicine provides a more complete medical model. Millennial healing wisdom and 21st century therapeutic technology must come together to build a bridge of hope for cancer patients.

¹ nccih.nih.gov

² A/HRC/RES/32/15



“Stargate 76,” by L. Mylott Manning
lmylottmanning.com

A World Free from Underfunded Diseases

By The Institute for Life Sciences Collaboration Team

Over the past 30 years, much progress has been made to further understand the human body. However, approximately 14,000 diseases continue to cause suffering in every corner of the world, most of which lack critical funding or effective therapies.¹ For the vast majority of patients globally, inadequate healthcare access, treatment, and medication are disturbingly common. Approximately 71% of deaths worldwide are from chronic, non-communicable diseases (NCD's).² Even though communicable diseases (CD's) cause fewer deaths, they receive more public and private funding than NCD's.

NCD's can be serious, protracted, and progressive, and nearly half of them manifest during childhood. Mortality from NCD's can be high, with 85% of early deaths occurring in low- and middle-income countries. NCD's threaten progress towards the United Nations Agenda for Sustainable Development, Goal #3: Good Health and Well-Being, which strives for a 33% reduction of premature NCD deaths by 2030.

One US-based NGO, The Institute for Life Sciences Collaboration (ILSC), envisions a world free from underfunded diseases, specifically NCD's. In order to make the greatest possible impact, ILSC applies its expertise and resources in areas of NCD therapeutics, diagnostics, and research. ILSC leverages partnerships with the world's best research universities and other NGOs and fosters collaborations that further UN Sustainable Development Goal (SDG) #3. A good example is ILSC's approach towards sickle cell disease, a group of inherited red blood cell disorders that affect almost five million people globally. Manifested primarily in sub-Saharan Africa, sickle cell disease can cause severe pain, multi-organ failure including kidney failure, and a shortened life span of 20-30 years. In developing countries, the disease inflicts a high childhood mortality rate if left undetected. Most experts think a medical cure is at least a few decades away, and therefore earlier symptomatic treatment is key to reducing suffering and prolonging life. Available remedies are often scarce, and

diagnostic blood tests using syringes are difficult to administer and dispose of properly.

In order to confront part of this challenge, ILSC is initiating clinical testing for a new diagnostic approach for early detection of kidney disease, one that will be effective in regions that have under-resourced health-care systems. By adapting previously known technology, ILSC has access to an innovative urine dipstick to detect peptides produced by sickle cell disease. If clinical trials are successful, these dipsticks will be inexpensive to produce and distribute. Although not a cure for this disease, early detection of kidney disease using this novel test will enable patients to obtain earlier treatments, thereby reducing symptoms and ideally prolonging their lives.

In conjunction with developing a sickle cell disease test, ILSC is also pursuing a similar process for early detection of preeclampsia. Manifesting in up to 10% of pregnancies worldwide, preeclampsia causes hypertension, damage to organs (including kidneys), and death. It is seven times more prevalent in developing countries and areas where there is limited prenatal care. It can be treated by immediate delivery of the baby, but confirming an accurate diagnosis is critical prior to inducing a premature birth. Unfortunately, no single screening is currently available, but ILSC is funding tests for a similar urine dipstick that detects the peptides of preeclampsia.

The hurdle remains that many NCD's, such as sickle cell and preeclampsia, fall under the radar of broad public awareness. Therefore, it remains the purview of ILSC and other NGOs to tackle these persistent maladies. Urine dipstick innovations prove that cost-effective testing can be achieved with prudent investment, coupled with skillful application of expertise. The success of these efforts would not be possible without the foresight and commitment of individual, foundation, and corporate donors. Only with caring partners will the achievement of SDG #3 be possible.

¹ International Classification of Diseases, ICD-10

² who.int/gho/ncd/mortality_morbidity/en

The Institute for Life Sciences Collaboration (ILSC) is a non-profit organization based in Connecticut, USA.

ilscollaboration.org



*"Hercules - Angel Home," by Emre Yusufi
90x75x60 Bronze*

Emre Yusufi, born 1981 in Istanbul, is a Turkish graphic designer and sculpture artist. His art is shown and has become part of art collections internationally. Re-creating Hercules in our daily modern life and giving a contemporary form, the artist is represented by the French Gallery, Les Galleries Bartoux.

@emreyusufi_art

Food and Mental Health

*An Interview with
Dr. Eva Selhub MD*

CPN comments

According to the World Health Organization, in 2015, approximately 322 million people worldwide were suffering from depression, equivalent to 4.4% of the global population. Simultaneously, 264 million people were suffering from anxiety disorders, accounting for 3.6% of the global population. Well-known factors contributing to depression and anxiety, include poverty, unemployment, stressful life events, or alcohol and drug use. However, in recent years, the connection between diet and mental health has also been increasingly investigated. *CENTERPOINT NOW* invited Dr. Eva Selhub MD, former Medical Director at the Benson Henry Institute for Mind-Body Medicine to share her insights.

Dr. Eva Selhub, physician and consultant, served as an Instructor of Medicine at Harvard Medical School and Medical Director at the Benson Henry Institute for Mind-Body Medicine at the Massachusetts General Hospital.

drselhub.com

Interview conducted by Victor Bouton.

CENTERPOINT NOW (CPN): How did the connection between diet and brain disorders first come to light?

Eva Selhub (ES): Paleontologists have long studied the relationship between food and the brain, in the context of cognition. Our evolution and brain development were linked to the complex process of understanding how to get food, where to go to get food, what is a safe food, and what is not. More recently, propelled by discoveries in the late 90s regarding the Omega 3 acids, the science on the brain-food connection has been growing. As a clinician, my awareness of the subject began in the early 2000s, with the emergence of studies showing a connection between fatty acids, depression and anxiety, as well as the positive effects of vitamins, and the importance of DHA (omega 3 fatty acids) for proper brain function. These findings are corroborated by paleontologists who note that the early human diet was rich in fish—therefore omega 3—which may have also impacted early human brain function and developments.

Studies comparing populations that consume a typical modern western diet, deficient in omega 3, with more traditional diets support these theories. “Traditional diets” are defined as the Mediterranean or Japanese diets which tend to be high in vegetables, fruits, unprocessed grains, and fish and seafood, and to contain only modest amounts of lean meats and dairy. They are also void of processed and refined foods and sugars, which are staples of the “Western” dietary pattern. In addition, many of these unprocessed foods are fermented, and therefore act as natural probiotics.

The past decade has also seen increasing evidence regarding the micro-biome and its effects on oxidative stress, the vagus nerve, the nervous system and mental health.¹ These findings are now increasingly being applied in the clinical treatment of patients. However, there is still a long way to go in improving medical practitioners’ proficiency in the science around diet.

CPN: What has been scientifically observed as of today?

ES: The feeding system is extremely complex,

with numerous mechanisms and sub-systems working together with one common goal: survival. While much remains to discover, what has been clearly observed is the link between diet and depression and anxiety.² The gut micro-biome is one of the hottest topics right now. It has been shown that 95% of serotonin is produced in the gut, and serotonin plays a major role in brain function and brain disorders. A traditional diet, started early in life, has been shown to lower the risks of developing mental health issues, and cognitive decline like Alzheimer, dementia, or just cognitive fatigue. Antioxidants are also of great interest, particularly in the context of studies on brain flow and athletic performance.

CPN: Could you describe your experience in this area and what results you have observed?

ES: My father is a world-renown specialist on folic acid and B12 who has studied nutrition, the brain, and neurological function for 60 years, so that was my initial exposure. In my own professional experience, I’ve concluded that many health issues can be either alleviated, or solved, with a nutrient-rich diet, whether the issue is pain, anxiety, or attention deficit disorder.

My standard approach is to put new patients on a very low-inflammatory diet for three to four weeks. Taking into consideration the different life-styles and food sensitivities of each individual, this first temporary elimination diet would exclude dairy, some grains, and sugary snacks, and include lots of vegetables, lean proteins, a little bit of fruit, some fish. After that first phase, the goal for the long-term is to help them switch progressively to a more nutrient-rich Mediterranean type of diet.

CPN: Are there policy recommendations that you think should be taken to help people change their diets?

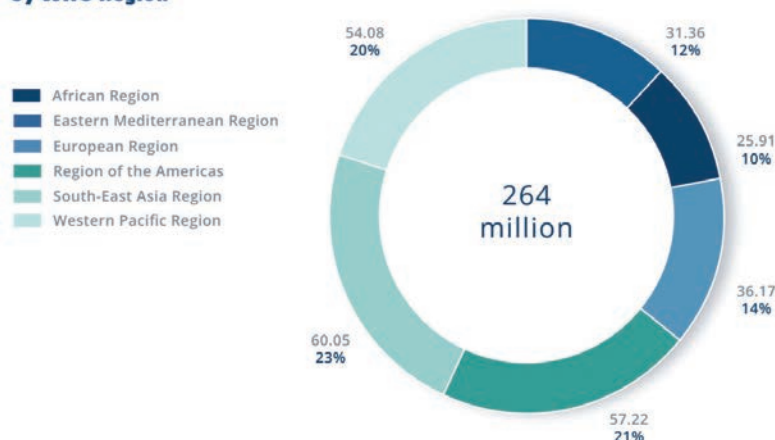
ES: Education and culture are key factors. Education is critical, starting with reeducating people in the school system and at work. This would involve dissociating nutrient-rich and nutrient-void foods; getting children and adults to grow food using gardening; allowing more time for meals with social interactions. A cultural

paradigm shift would entail understanding that the earth, our food, and ourselves are interconnected, and must be nurtured accordingly. In this sense, the traditional European “eating culture,” which treats meal times as an occasion to nurture yourself and enjoy the company of family or friends, is healthier than the American “fast food” culture, which treats food as a reward, or stress-relief, in the midst of a work schedule with little time for cooking and eating.

CPN: This edition's publication marks the 75th anniversary of the UN. In your opinion how has the treatment of mental illness evolved over the past 75 years, and what is your hope for the future?

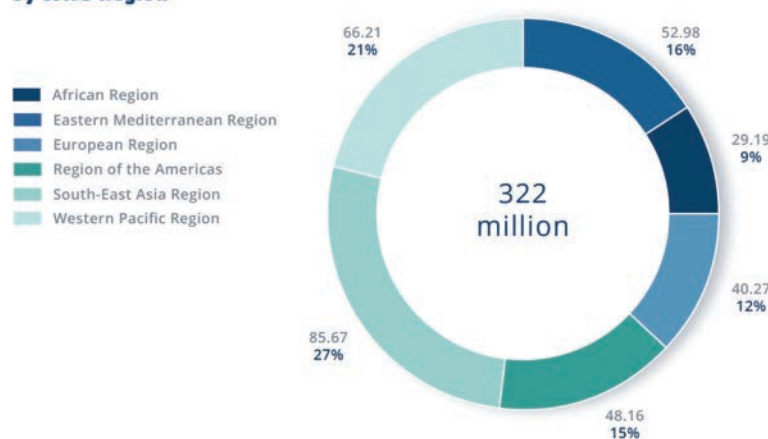
ES: It appears that mental health disorders and depression have increased over the past 100 years, across the globe and especially in western countries.³ Before that, psychological disorders were commonly explained by external factors such as war, the Great Depression, the plague.... However, in the past 75 years, we witnessed depression and anxiety coexisting with otherwise comfortable lifestyles, defined as the absence of important external stressors. This prompted us to look at other variables, including the effects of diet on health and various diseases. Looking to the future, I hope the burgeoning field of nutritional medicine will maintain its ascension, so that we gain more knowledge on the complex interactions between food and the body. The findings in the area of epigenetics are also very exciting, as they are showing that external factors can influence and modify the expression of our genes. Finally, I hope the approach to health will switch from an allopathic one, to a more holistic view, recognizing that physical and mental health are intertwined.

Cases of anxiety disorder (millions), by WHO Region



WORLD HEALTH ORGANIZATION

Cases of depressive disorder (millions), by WHO Region



WORLD HEALTH ORGANIZATION

Depression and Other Common Mental Disorders: Global Health Estimates.
Geneva: World Health Organization; 2017. Licence: CC BY-NC-SA 3.0 IGO.

¹ Selhub EM, Logan AC, Bested AC. Fermented foods, microbiota, and mental health: ancient practice meets nutritional psychiatry. *J Physiol Anthropol.* 2014;33(1):2. Published 2014 Jan 15. doi:10.1186/1880-6805-33-2 ; Lach G, Schellekens H, Dinan TG, Cryan JF. Anxiety, Depression, and the Microbiome: A Role for Gut Peptides. *Neurotherapeutics.* 2018;15(1):36–59. doi:10.1007/s13311-017-0585-0 ; Yang, Z., Li, J., Gui, X. et al. Updated review of research on the gut microbiota and their relation to depression in animals and human beings. *Mol Psychiatry* (2020). doi.org/10.1038/s41380-020-0729-1 ; Valles-Colomer, M., Falony, G., Darzi, Y. et al. The neuroactive potential of the human gut microbiota in quality of life and depression. *Nat Microbiol* 4, 623–632 (2019). doi.org/10.1038/s41564-018-0337-x ; Huang R, Wang K, Hu J. Effect of Probiotics on Depression: A Systematic Review and Meta-Analysis of Randomized Controlled Trials. *Nutrients.* 2016;8(8):483. Published 2016 Aug 6. doi:10.3390/nu8080483

² Jacka, F.N., O’Neil, A., Itsiopoulos, C. et al. The SMILES trial: an important first step. *BMC Med* 16, 237 (2018). doi.org/10.1186/s12916-018-1228-y ; Lachance L, Ramsey D. Food, mood, and brain health: implications for the modern clinician. *Mo Med.* 2015;112(2):111–115. ; R.S. Opie, C. Itsiopoulos, N. Parletta, A. Sanchez-Villegas, T.N. Akbaraly, A. Ruusunen & F.N. Jacka (2017) Dietary recommendations for the prevention of depression, *Nutritional Neuroscience*, 20:3, 161–171, DOI: 10.1179/1476830515Y.0000000043

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The Memory Sense

By Kōan Jeff Baysa, MD

The renowned French novelist Marcel Proust wrote about the “episode of the madeleine” in which the sensory experiences of eating a small cake that had been dipped in tea evoked an involuntary memory, which instantly transported him back in time to his childhood village.

We experience, know, and remember the world through our senses. Memory is a retention then a retelling, a re-collection of experiences and sensations, filed away and then retrieved. However, memory, linked to the sense of smell, can be also absent, damaged, edited, or even false. The ancient origins of the olfactory sense are reflected in its location in the brain called the rhinencephalon—also known as the “smell brain” or “lizard brain”—that forms the paleocortex where the olfactory and limbic systems form and process memories and emotions.

This oldest of the human senses is unlike our others. The organs of all human senses are direct extensions of the brain, but olfaction is the only sense in which the brain is in direct physical contact with the environment. The olfactory nerves do not proceed through the processing center called the thalamus, the gateway to consciousness. Rather, information feeds from the nose directly to the limbic system and cortex to arouse emotions and memories without our awareness. It is responsible for Proust’s instantaneous time travel to his past.

The sense of smell drove the evolution of the human brain, and the enlargement of the olfactory bulb and olfactory cortex promoted its size expansion and the shape of the cranium. Despite the evolutionary importance of the sense, Plato wrote that smell is of a “half-formed nature” and, two millennia later, Immanuel Kant described it as “the most

dispensable of the senses.” He deemed the sense of smell, along with taste and touch as the base senses, in contradistinction to the privileged senses of sight and sound. We are now beginning to appreciate the vital contributions of the olfactory sense.

Chronic sinusitis, viral diseases, and head trauma, among other conditions, can cause hyposmia, the decrease in the sense of smell and anosmia, the complete loss of the sense of smell. Infection by SARS CoV-2 has been added to the list of causes. The loss of the sense of smell is not inconsequential, for it is 70% of the sense of taste. Not being able to smell or taste markedly affects one’s quality of life. Depression is a frequent complication of anosmia, and suicides are not unknown.

The three stages of memory are encoding, storage and retrieval. While undergoing retrieval, memories can destabilize as they undergo processes of updating and strengthening, known as reconsolidating. In Alzheimer’s disease, marked by the devastating progressive loss of memory, smell is the first sense that’s lost. The gradual development of hyposmia is a universal screening biomarker for the early detection of that condition, as it far precedes the onset of cognitive decline. The precise neuropathologic relationship between hyposmia and the obliteration of memory in Alzheimer’s disease is as yet unknown, but senile plaques and neurofibril degeneration throughout the olfactory system are found in postmortem analyses.

The hippocampus and amygdala are both part of the limbic system of the brain. The hippocampus is the main area where memory is created and stored. The amygdala is responsible for processing fear, among other functions. In response to stress, the amygdala

Found in the Andaman Islands in the Bay of Bengal, the Onge are hunter-gatherers who define their entire universe and personal identity in the sense of smell. Calling themselves “En-iregale” (perfect person) their greeting “Konyuneonorange-tanka?” means, “How is your nose?” If an Onge senses that another is fragrance-heavy, sniffing will remove some scent. If one is detected to be fragrance-light, breathing on that person will add scent. The Onge people, language, and singular olfactory-based culture are losing their battle for survival due to disease, infertility, and displacement. In 2020, they number approximately 100 and the current outbreak of COVID-19 threatens their extinction.

sends a message to the neuroendocrine axis that results in the production and release of cortisol. This hormone is responsible for the fight, flight or freeze response. With sustained stress or emotional shock, a maladaptive memory condition called post-traumatic stress disorder (PTSD) can develop. Because sustained and elevated cortisol production damages or destroys cells in the hippocampus, individuals with PTSD have difficulty either remembering, or are unable to forget, specific events.

Olfactory triggers like smoke can transport war veterans with PTSD instantly back to the battlefield. With the use of the medication propranolol, a skilled therapist can edit the maladaptive memory. The drug eliminates emotional memory but leaves the declarative memory intact, so that the memory can still be recalled but without the full weight of the emotional reaction.

The relationship between fragrance and memory and, specifically, the role of the olfactory sense and multisensory stimulation in ameliorating neurodegenerative diseases marked by memory loss like Alzheimer's disease, was of particular interest to the writer-neurologist Oliver Sacks and myself. This was a potential research subject on which we schemed to collaborate, but his untimely passing prevented us from developing it further. Research on the complex neuroendocrine-immune system relationships between memory and olfaction, along with ongoing discoveries about the neuroplasticity of the brain, continues at major olfactory research centers in New York and Philadelphia. The fully defined pathways of olfactory information processing could be the most elucidating approach to determine the neuropathology of memory disorders.



"Transience II," by Yumiko Glover
yumikoglover.com

Kōan Jeff Baysa, M.D., Chief Medical Officer for Medical Avatar, is a physician, WISP Curatorial Alumnus, and AICA member specialized in medical science and contemporary culture.

Following page: *"Blind Eye" by Jennifer Steinkamp*







LAGOM: Breaking Bread with the Self-Righteous, 2017

Filmed in Sweden, the first country to colonize Ghana (occupying the Island of St. Bartholomew from 1784 to 1878), in LAGOM: Breaking Bread with the Self-Righteous, Lhola Amira makes an Appearance. "My Appearances are a demand from the present to engage with the past and the future." Holding a red suitcase, in which she carries de-colonial love, she raises her iTshoba (Zulu divination stick) to ask unsettling questions of those who would erase history.

omenkaonline.com/lhola-amira-lagom-breaking-bread-self-righteous



LAGOM: Breaking Bread with the Self-Righteous

By Lhola Amira

Black peoples continue to suffer the repercussions of oppression in the post-Apartheid era, democratic South Africa. If political freedom does not translate to a wholistic freedom—what does “to be free” really mean, what does it look like? It’s important to remember that after colonialism, South Africa went through Apartheid. Now, the decolonising conversation has resurfaced because there’s a Radical Black Self-Love happening with the youth throughout Africa. This is what drives US, that Black children and young adults are realising and articulating what Nina Simone first sang on June 24, 1958; To Be Young, Gifted and Black. This is a remembering, we are seeing ourselves fully and tapping into our ancestral wisdom.

WE are in no way romanticising Africa. There is nothing romantic about the violence we have experienced, and continue to experience and survive. There’s nothing romantic about the poverty porn the world portrays about Africa. It’s this non-romanticism, ancestral wisdom and Radical Black Self-Love that drives US.

Lhola Amira was born in 1984 in Gugulethu, South Africa and currently lives and works in Cape Town.

*Image courtesy of SMAC Gallery (South Africa).
smacgallery.com*

Copyright: Lhola Amira.

Curator: Neri Torcello, Curator, international art consultant and independent researcher working at the intersection of art and social justice, and cultural dignity.

Gather

by Sanjay Rawal

Our ancestors saw the world end once. That whole life way is gone. Now we're on the other side of the apocalypse.

— Chef Nephi Craig, White Mountain Apache Tribe

The world's food system was upended by the southern European push for colonization in the late 1400s. When the first fleets of galleons returned to Spain they unknowingly brought a form of wealth that would transform not only the continent, but the hemisphere and beyond. They brought food stuffs that would rapidly form the foundation of Italian, Northern European, Russian, African and Indian cuisine—tomatoes, chili peppers, potatoes, chocolate, cassava, squash, corn and many new legumes. In fact, just 500 years later, it's impossible to imagine European or Southeast Asian food without any of those staples.

These foods did not spread by the wind, however. The missions to the Western Hemisphere and subsequent ones to Africa and the East were driven by an unprecedented lust for wealth. Armed with the imprimatur of the Catholic Church's Doctrine of Discovery, European businessmen could finally justify the murder and pillage required to extract exponential amounts of wealth from new lands.

The global economy was 100% extractive in these pre-Industrial times. Wealth came from land in the form of metals or crops and required massive colonies of laborers. Indeed, when Columbus first landed on Hispaniola, he decimated the population through bonded labor, desperately seeking mountains of gold in a land that had none. Subsequent colonizers quickly realized that by enslaving Native populations to grow cash crops and then importing agrarian laborers from Africa as chattel, they could rapidly create fabulous fortunes for themselves and their sponsors.

This reliance on land and labor for national wealth was enshrined in the early American democracy. But as this new nation pushed Westward, it repeated the tactics from that colonial playbook, but with perhaps more impunity. By the end of the Civil War, the American economy was transforming into an industrial one, which endeavored to extract even more wealth from land in the form of oil, timber, cattle grazing and monocropping. The occupiers of those lands, again, were the Indigenous. The US military sidestepped bloody battles by destroying Native food systems and subjugating the starving populations with relative ease.

The US military led campaigns that took the North American buffalo from over 63 million head to just 23 individuals. The government sanctioned burning fields and damming rivers, permanently destroying foodways that had sustained human civilization there for millennia.

Despite this horrific history, shards of the knowledge that maintained North American ecosystems still exist deep in Indian Country.

The documentary film *Gather* is an homage to those lifeways which upheld Native societies and continue to underpin Indigenous traditions despite the continued onslaught of modern diet-related afflictions like diabetes and heart disease. Traditional Native foodways had prevented these maladies and are now growing in popularity as antidotes to the imposition of the American industrialized diet. We had the privilege of documenting this movement for food sovereignty from the

Sanjay Rawal is a documentary filmmaker based in New York City. His latest feature film *Gather* launched digitally on September 08, 2020.

[gather.film](#)

heart of Indian Country—focusing on a range of characters like Chef Nephi Craig of the White Mountain Apache Tribe who is working with Clayton Harvey (White Mountain Apache) to flood local supply chains with traditional Apache foods. We spent time with master forager Twila Cassadore (San Carlos Apache) who has been working tirelessly to reconstitute foodways that made the Apache some of the most environmentally in-tune people on the planet. We also spent time with a young scientist on the Cheyenne River Sioux Reservation, Elsie DuBray, who is illustrating the power of diets based on bison through novel experiments on a molecular level. Lastly, we canoed the Klamath River with a group of young Yurok men living under the shadow of a large dam and under siege of climate change, both of which have decimated once vibrant salmon populations.

This movement for revitalizing health is resplendent with hope as Natives across Turtle Island and indeed around the world recapture a vision of their traditional relationship with Mother Earth and manifest that into transformed modern food systems. It is increasingly apparent for those of us transplanted on Native lands, that our survival too depends on the recognition of this movement, supporting policies that reverse its decline and attempting to develop the same attitude of stewardship and humility that give us all a fighting chance to survive as a species.





Jana Winderen, 2014, Krísuvík, Iceland. Photo: Finnbogi Petursson



Sounds of Life

Jana Winderen and the Art of Listening

On her field trips around the world, sound artist Jana Winderen pays particular attention to audio environments and to creatures which are hard for humans to access, both physically and aurally—deep under water, inside ice, or in frequency ranges inaudible to the human ear.

She describes her work as looking at and listening to “how humans have been treating the planet and the creatures and animals we share the planet with.”

Listening can tell you about the health of an environment. Fresh water biologists count and identify the species of underwater insects to determine the health of a body of fresh water which, Winderen says, can also be measured by listening to the sound of the insects present. In a similar way she is also listening to the health of a coral reef and other underwater environments.

Winderen’s background in biochemistry, mathematics, and fish ecology, gives her a scientific basis from which to analyze her explorations and share findings

with scientists. She further hopes to broaden people’s awareness beyond an anthropocentric frame of mind. Tuning in to plants, insects and animals, is a means of gleaning their experiences and realizing how all life is interconnected. This in turn can be a basis for environmental problem-solving.

Human generated sounds cause stress and damage to wildlife both above and underwater. Listening to Jana Winderen’s sound art of sea ice in the Barents Sea and around the North Pole is a beautiful and intensely moving sonic experience, communicating the nature of the ice—its drift and movement—and the life on, inside and underneath it. With current plans for oil drilling along the edge of the sea ice and the opening up of the Northeast Passage, what might the implications be for the ecosystems in the area?

Politicians and corporations must learn to listen... to what scientists advise, to local populations who have witnessed environmental changes over generations, and to the environment itself.

Jana Winderen’s site-specific and spatial audio installations and concerts have been exhibited and performed internationally in major institutions and public spaces.

janawinderen.com

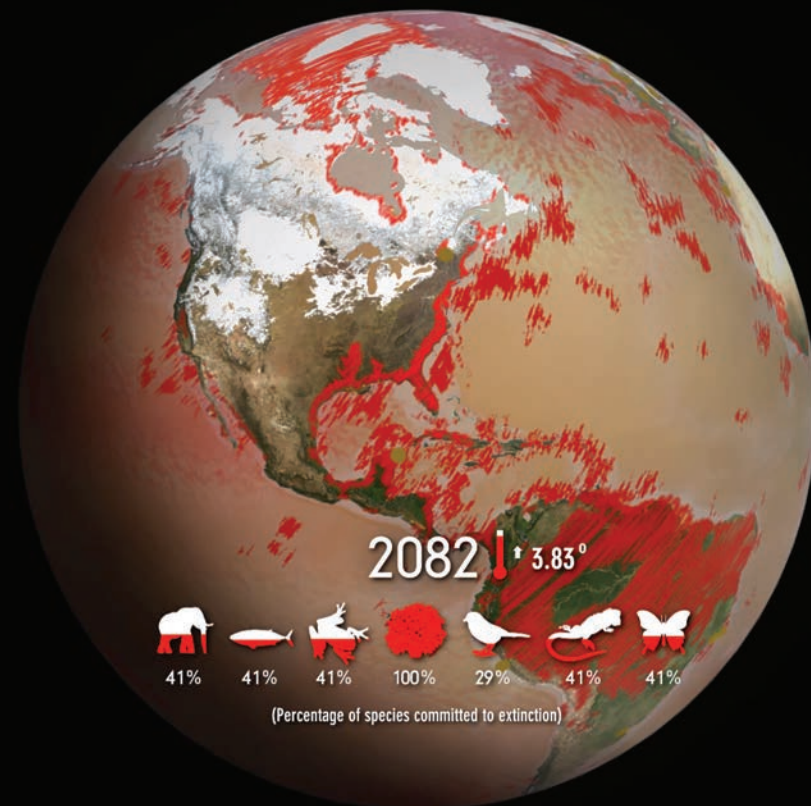


Counting One to Four: Nature morte

By Dr. Debbie Symons

Dr. Debbie Symons' video work *Counting One to Four: Nature morte* (2015) visualizes the predicted consequences of our warming atmosphere on the entirety of the Earth's biodiversity through the use of percentage formulas. Referencing the Intergovernmental Panel on Climate Change's (IPCC) 2014 business as usual RCP 8.5 model allows the work to move beyond a simplistic representation of "damaged nature," to a multifaceted analysis of cause and effect, with projections of up to 52% of all terrestrial mammals, reptiles, marine species, amphibians and insects committed to extinction by 2100.

Counting One to Four: Nature morte transposes one form of crisis upon another, questioning our priorities and asking us to sit up and take notice.



The elephant icon represents all terrestrial mammals (excluding humans).
 The fish represents all marine species.
 The frog icon represents all amphibians.
 The coral icon represents all hard and soft corals.
 The lizard icon represents all reptiles.
 The butterfly icon represents all insects.

Dr. Debbie Symons is an Australian artist whose research-based practice links databases of statistics to elucidate environmental crime and question the involvement of capitalistic venture in the critical, global ecological issues now emerging. Conceptually, her works are an attempt to sensitize a desensitized society by highlighting the reality that our generation will witness the demise of thousands of species and their environments during our lifetimes.

debbiesymons.com.au



Timelapse: Sumatra Deforestation 2016/2018

By Benjamin Grant

3.985230°, 98.032040°

From the book Overview Timelapse: How We Change the Earth, source imagery ©Maxar



Deforestation for palm oil production can be seen in the forest of Sumatra, Indonesia. The first image shows 4.25 square miles (11 square kilometers) of natural peatlands and dense forests within the Leuser Ecosystem being cleared for the recent planting of palms. The trees are cultivated in terraces cut into the contours of hills to avoid erosion caused by streaming water. This region is one of the last known places where Sumatran orangutans, elephants, tigers, and rhinos coexist in the wild, and it is home to more than 200 mammal and 500 bird species. When the thick, native forests are cleared for the planting of relatively spread-out palm trees, ecosystems collapse, and net carbon emissions rise significantly.

over-view.com

The Good of the Hive

By Matthew Willey



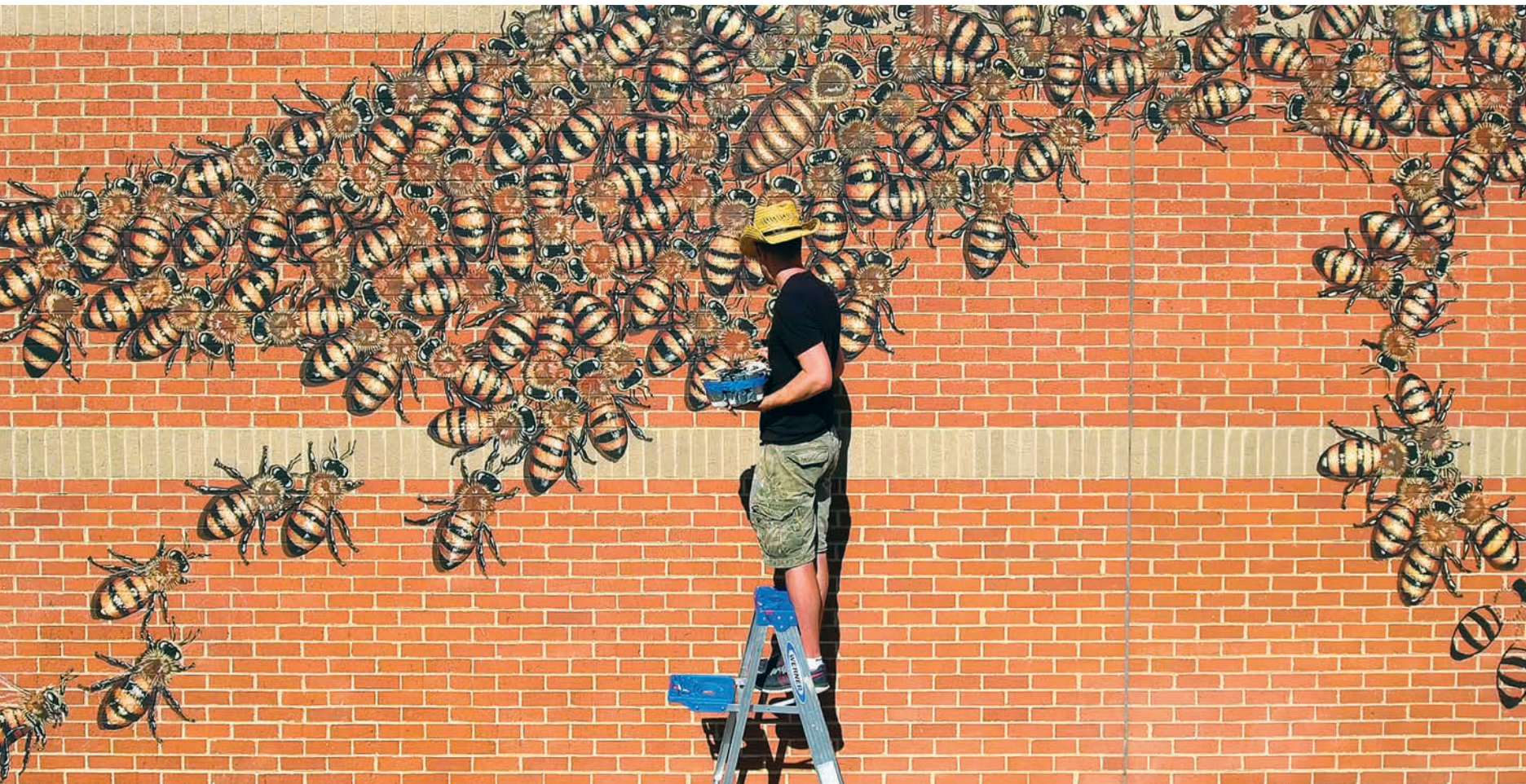
Photo: Dani Case

I have a vision: A world filled with people that see the beauty and connectedness of all things... and then act accordingly.

My mission to hand-paint 50,000 individual honey bees in murals around the world is designed to raise awareness about issues of planetary health such as pollination, food systems and declining insect populations. Bee by bee, I am painting a healthy hive of 50,000.... But the hive I am creating is not just about the bees, it is about human connection. I share my story and stories of the bees to bring people into heart-centered focus around issues that matter to all of us. Through art and story, I bring global issues to the local level. When I began this work, I didn't even know I was an art activist. I had no

idea my story would be of interest to anyone. But it has unfolded through the planetary health questions the human population is facing today... a bee and her hive are a direct metaphor for us and our world.

Bees are hard-wired to understand that their immune system is collective. When one feels sick, it will exit the hive and sacrifice itself for *the good of the hive*. During a chance encounter with a dying bee in 2008 I became radically curious. For some reason, on that day, I moved toward the bee to look closer, rather than away from it out of fear. When I did, I saw things I had never seen before. My curiosity was sparked by the bee herself. After some inspired research, I made the correlation between how human life and planetary health





are inextricably connected in the same way as a bee and her hive. This led me to a global mission to tell the story.

The work of The Good of the Hive speaks directly to SDGs 2 (Zero Hunger), 13 (Climate Action), 17 (Partnerships) and touches on others because the bees are woven into all aspects of life on planet Earth. Pollinators literally developed and evolved the landscape in a way that allowed humans to evolve on land. Once here, the bees have been responsible for an essential part of our food systems right up into, and most critically in, the modern world. We have inhabited Earth together from the beginning. In this way they are an incredible ambassador of the connectedness of all things.



Matthew Willey has created buzzing hives of awareness and inspiration at the Smithsonian's National Zoo in Washington DC, Dag Hammarskjold Plaza in NYC and Burt's Bees Global Headquarters. He has collaborated with the World Council of Peoples for the United Nations (WCPUN) and NYC Parks' Art in the Parks Public Art Program. He has painted at a fire station in the American south, at schools across the US, and at a farm in the Midwest United States. He has spoken at the UN, Smithsonian Associates in DC, MIT, Georgetown University, Duke University, the French and German Embassies in DC and participated in the Planetary Health Alliance Meeting in Edinburgh.

Images: © The Good of the Hive 2020

TheGoodoftheHive.com

Rising Above

A Conversation with

Ron Garan, Astronaut

“In order for life to survive on Earth, one specific species—Homo sapiens—needs to figure out how to be the first species in history to cooperate on a planetary scale.”

Ron Garan is a highly decorated NASA astronaut, fighter pilot, and active social entrepreneur who believes that appropriately designed and targeted social enterprise can solve many of the problems facing our world.

rongaran.com

CENTERPOINT NOW (CPN): Imagine we are now in the year 2100. How has humanity's relationship to space evolved?

Ron Garan (RG): In 2100, space travel will be seen as a natural continuation of the story of human migration that began 200,000 years ago in Africa, that has taken humanity to every ecosystem on Earth and, starting in the late 20th century, included the possibility that humans could migrate to the stars.

CPN: How did you become inspired to engage in space exploration?

RG: The crew of Apollo-8 became the first humans to see the Earth as a whole planet, and the first to capture that for the rest of us with the photograph, “Earthrise.” That image inspired the modern environmental movement and helped encourage me personally to pursue a career that would take me to space. It revolutionized how we see the world and how we see ourselves with its simple message—that we are one people, traveling together on one planet, toward one shared future. *2001 Space Odyssey* author, Arthur C. Clarke, summed up its significance this way: “The world that existed before Christmas 1968 has passed away as irrevocably as the Earth-centered universe of the Middle Ages. The second Copernican revolution is upon us, and with it, perhaps, the second Renaissance. (...) Many of the children born on the day that Apollo-8 splashed down may live to become citizens of the United Planets.”

CPN: The UN is now marking its 75th anniversary. Would you envision a role for the UN off Earth?

RG: The principles for the governance of a human settlement off Earth should be the same as they are on Earth. Governance should first and foremost serve the totality of people and other living things contained within the biosphere that sustains life. This means that every person within the biosphere should be afforded the opportunity to fulfill their potential and make a unique contribution to

the society of their choosing. On Earth, “within the biosphere,” should be taken to mean every single person on the planet, no matter what country they are a citizen of.

CPN: What are the implications of private sector involvement in space exploration and eventually terraforming?

RG: I imagine off-planet settlements and, eventually, terraforming, will likely be conducted by public-private partnerships with governments making the lion share of the very long-term investments, and the private sector involved mainly in investments with shorter-term ROI. Concerning terraforming, our first step would be to learn how to maintain the life support systems of our home planet Earth. If we can't even control a couple of degrees of temperature change on our own planet, how do we think we can terraform an entire other world?

CPN: In that sense, why do you believe investment in space exploration is important for humankind?

RG: Investment in space exploration is the best long-term investment in our future that we can make. The challenges facing humanity boil down to a matter of perspective. Besides all the direct and spin-off technological benefits that have already, and will continue to vastly improve life on Earth, space exploration broadens and expands our perspective. Humanity is at a critical moment in history, when the very survival of all life on our planet hangs in the balance. In order for life to survive on Earth, one specific species—homo sapiens—needs to figure out how to be the first species in history to cooperate on a planetary scale. Many species cooperate on a massive scale (ants, bees, fish), but all limit their cooperation to their community, however that is defined (the anthill, beehive, or school). Humans need to expand their community to encompass the entire planet. Space exploration provides the necessary shift in perspective that will serve as the foundation of a fully functioning planetary community.

Interview by Shamina de Gonzaga and Nina Colosi.



Ron Garan aboard the International Space Station. Image courtesy of NASA.

A Living Library:

An Interview with Bonnie Ora Sherk, Founder



Before

Bonnie Ora Sherk is an internationally exhibited and published Ecological Artist, Landscape Architect, Educator, Author, and Founder & Director of Life Frames, Inc. Her work has been exhibited in museums and galleries world-wide, including the Venice Biennale, Van Abbe Museum, MOMA PS 1, Museum of Contemporary Art, Los Angeles, National Museum of Modern and Contemporary Art Korea, Parco Arte Vivente, Sichuan Fine Arts Institute, Kunstraum Kreuzberg/Bethanien, and others, and her work has been featured in *Art In America*, *Flash Art*, and other international art publications and books.

alivinglibrary.org

CENTERPOINT NOW (CPN): How does experiential learning in nature benefit students?

Bonnie Ora Sherk (BOS): Experiential learning outdoors in a natural setting provides the optimum way to learn all subjects. Every student does not learn in the same way. Some learners do very well by reading books and studying in a more conventional classroom manner; others do better with a hands-on approach that provides cognitive, as well as kinesthetic and emotional opportunities and supports for learning. We learn by doing, and by being actively engaged. We also are inspired by the healthy, living environment, using a whole body, holistic approach to learning and understanding phenomena. This approach is well suited to the sciences, health, multi-arts, history, technology, youth development, and all interdisciplinary subjects: The garden, the environment, and the place, provide myriad opportunities for observation and direct experience, and serve as a springboard for rich, robust learning of interrelated subjects.

Students tend to greatly appreciate being outside, instead of in a stuffy classroom. They enjoy the fresh air and marvel at the life forms they find in the A Living Library® (A.L.L.) Gardens and Landscapes including beautiful fragrant flowers to smell; delicious and healthy foods to prepare and eat; worms and different insects to study by observation or using microscopes; lush green landscapes providing clean oxygen; compost to sift, study, layer, and turn; and many other extraordinary learning experiences that are available

in A.L.L.® interactive learning environments. Our findings also show that young people are greatly empowered by participating in improving their community and environment through the creation and stewardship of their unique Branch Living Library & Think Park®.

CPN: What defines your methodology?

BOS: When we learn all that we can about our local place, from that we can extrapolate, and learn about the world. A Living Library provides exciting opportunities for children, youth, and adults to have hands-on learning experiences in the many place-based, themed, Learning Zones that the students of all ages help create and maintain. Life Frames®, Inc., the non-profit organization that sponsors A Living Library, uses many strategies to create place-based, ecological transformation of communities and schools that incorporate the local Human, Ecological, Economic, Historic, Technological, and Aesthetic Resources—seen through the lens of time: past, present, and future. No matter where we are, there is incredible richness to learn from and incorporate into our processes for making ecological change. All sectors of community, including students, teachers, parents, neighbors, community groups, and city, state, federal agencies can participate in A Living Library (A.L.L.) Processes: Research, Planning, Design, Implementation, Use, Maintenance, Management, Communications. These teams of learners come together to better understand their community, and then target which area or areas to transform.

CPN: Which results have you observed in the different places where A.L.L. has been adopted?

BOS: Our work is two-fold and simple: Transforming the Environment and Transforming Consciousness in the Environment. Because of A Living Library, many acres of barren land have been transformed into lush, thriving, resilient landscapes and gardens in diverse communities. Many tons of asphalt and concrete have been removed, and many school yards, park lands, streets, public housing complexes, and other open spaces transformed into interactive, green Learning Zones and Outdoor Classrooms; flooding watershed areas have been mitigated through the development of blue/green infrastructure including engineered Swales, Rain Gardens, and community-wide Nature Walks and Watershed Gateway Community Parks, to name a few interventions. And, many, many thousands of children, youth, and adults each year, for over 30 years, have been educated in interconnected natural systems, phenomena, and organic principals through their engagement in hands-on learning by doing in classes, workshops, and green skills job training, during the school day, after school, summers, and weekends, year-round.

A Living Library provides a powerful metaphor: Everyone and Everything on Earth and in Space is part of A Living Library of diversity—People, Birds, Trees, Air, Water, and All the Things We Create, such as: Parks, Gardens, Schools, Curricula,

Artworks, Networks, Communities. Culture and Technology are part of Nature. All is Nature. What is important is to keep a healthy balance between different systems in Nature.

CPN: How do you go about partnering with schools and municipalities?

BOS: There are many ways this happens. Usually, and the ideal way, I am invited to create A.L.L., by schools, community organizations, museums, municipalities, or other entities that have heard of A Living Library as a successful model for transformation, education, community revitalization, and community and economic development.

CPN: Can your model be adapted to other regions of the world?

BOS: Absolutely! The goal is to develop A Living Library in diverse communities and regions of the world with local people and resources. Each Branch Living Library would be unique, as it is place-based. In this way, the local culture and ecologies come to life and are showcased in the local Branch. Our goal is to then interconnect the Branches through Green-Powered Digital Gateways and community programs which promote the sharing and learning of different cultures and ecologies world-wide, bringing us closer to planetary understanding.



During and After: A Living Library transforms the rear yard at the James Denman Middle School, San Francisco, USA

Demographica

By Tobin Jones

Demographica is an ongoing project that blends photography and demography to create a typology of 100 portraits that does its best to statistically represent the makeup of a country's population.

The categories represented in this project include Kenya's gender ratio, its population's age, the urban/rural divide, and its tribal makeup: More than a quarter of Kenya's population today live in cities and, while the country has 42 tribes, the majority of people belong to just five. Furthermore, in Kenya, a staggering 75% of the country is under the age of 30, making it one of the youngest countries in the world.

The aim of *Demographica* is to paint a true representation of a country, dispelling the various misconceptions and stereotypes people may have, and revealing the actual diversity of the many different people who make up any one population. Furthermore, it's to visualize the "unseeable" issues, such as Africa's impending population boom. To make people realize that the average Kenyan is a school-aged child who will soon be looking to find a job, move to a city, and start a family of their own.

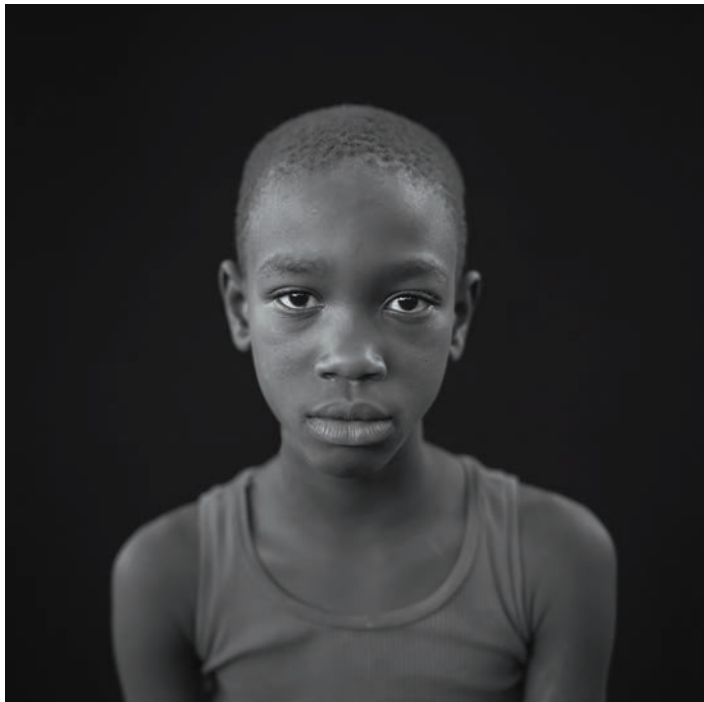
Tobin Jones is an award-winning photojournalist and videographer based in Nairobi, Kenya. His photography has appeared in multiple publications including *The New York Times*, *Time Magazine*, and many others, and he has worked for international organizations and NGOs throughout the region.

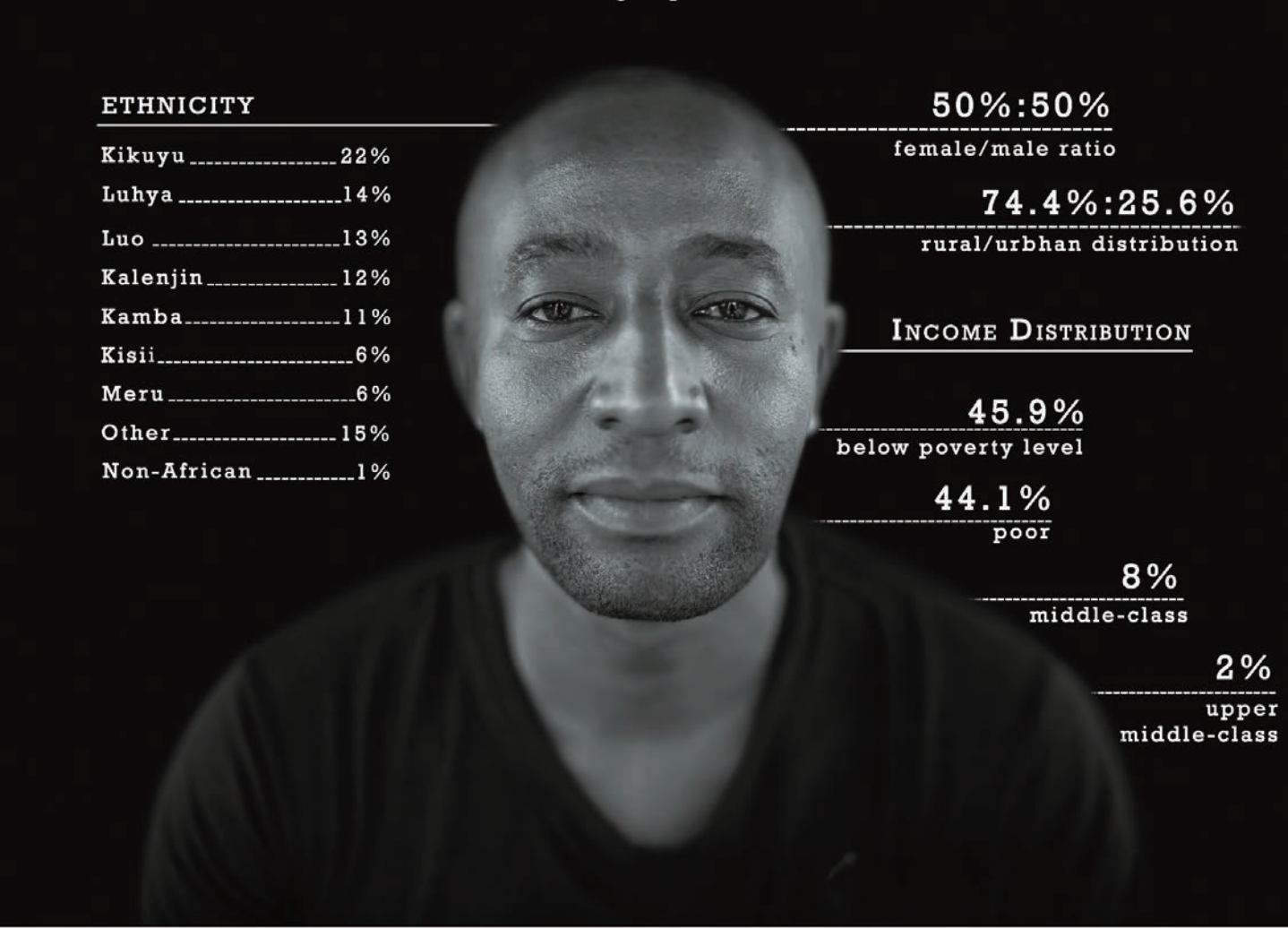
Images courtesy of the artist. ©Tobin Jones Photography.

tobinjonesphotography.com
@tobin_jones






Demographica statistics sources: Gender Ratio – National Census Urban/Rural, Ethnic Groups, Age Structure – CIA World Facebook







Summary of gaps, directional trends and data availability

Main investment requirements	Most relevant SDGs	WIR14 estimated annual investment gaps ¹ (Billion of dollars)	Investment trend assessment	Data availability assessment
POWER Investment in generation, transmission and distribution of electricity		370–690		
TRANSPORT INFRASTRUCTURE Investment in roads, airports, ports and rail	 	50–470		
TELECOMMUNICATIONS Investment in infrastructure (fixed lines, mobile and internet)		70–240		
WATER, SANITATION AND HYGIENE (WASH) Provision of water and sanitation to industry and households		260		
FOOD AND AGRICULTURE Investment in agriculture, research, rural development, etc.		260		
CLIMATE CHANGE MITIGATION Investment in relevant infrastructure, renewable energy generation, research and deployment of climate-friendly technologies, etc.		380–680		
CLIMATE CHANGE ADAPTATION Investment to cope with impact of climate change in agriculture, infrastructure, water management, coastal zones, etc.		60–100		
ECOSYSTEMS AND BIODIVERSITY Investment in conservation and safeguarding ecosystems, marine resource management, sustainable forestry, etc.	 	N.D.		
HEALTH Investment in infrastructure, e.g. new hospitals, and R&D on vaccines and medicines		140		
EDUCATION Infrastructural investment, e.g. new schools		250		

Sources: SDG investment areas based on World Investment Report 2014. For sources on gaps and trends, see detailed sections for each area.

¹ Investment gaps estimated in World Investment Report 2014 were calculated using an eclectic approach that entailed analysing a variety of studies from different countries and regions. Based on data availability and the scope of these studies, some sectors have a large range to capture the diversity of methodologies.

N.D. = No data.

The Big Push: Investing in the SDGs

By Chantal Line Carpentier and Joerg Weber

UNCTAD (United Nations Conference on Trade and Development)

I. State of investment prior to the pandemic:

UNCTAD estimated investment requirements for the Sustainable Development Goals (SDGs) in 2014, identifying an annual investment gap of \$2.5 trillion in developing countries in ten relevant sectors (encompassing all 17 SDGs).¹ Since then, investment (domestic, international, public, private) has increased in six sectors (infrastructure, climate change mitigation, food-agriculture, health, telecommunications, and ecosystems-biodiversity), but not yet to the magnitude required to fill the gap, while investment in the other sectors (power, education, climate change adaptation, and water and sanitation) remains stagnant. International private investment is not yet flowing to SDG sectors in developing countries.²

The same holds true for sustainability funds that target Environmental, Social, and Governance (ESG) or SDG-related themes or sectors (sustainability-themed equity funds, green bonds, social bonds). While these have grown rapidly in number, variety, and size (with an estimated volume of \$1.2–\$1.3 trillion today), most of them are not geared towards investment in developing countries.³ Ditto for the much broader category of responsible investment (with an estimated \$29 trillion in assets under management).⁴

The COVID-19 crisis will further aggravate this situation, and even threatens to upend scant progress made in the last five years.

II. How the pandemic made things worse:

The lockdowns States imposed to control the pandemic have led to an economic crisis not seen since the Great Depression. Global GDP is expected to contract by 3%,⁵ foreign direct investment and trade—the two largest sources of foreign exchange for developing countries—have dropped globally by 40%⁶ and 30%,⁷ respectively, further reducing the fiscal

space to invest in health and social protection to tame the pandemic and its aftermath.

Developing countries are hit particularly hard, as tourism is widely restricted, commodity prices decrease, unprecedented amounts of capital fly out and remittances dry out. This has led to a devaluation of their currency, deterioration in their balance of payment, and even shortages of foreign currency, in some cases, radically limiting their ability to import critical goods—protective equipment, medical gear, pharmaceuticals and food. On top of that, their ability to pay back their sovereign debt (mostly dominated in US dollars) greatly suffers.

UNCTAD estimates that developing countries' repayments on their public external debt alone will soar to between \$2 to \$3 trillion in 2020–2021 alone with limited possibility to roll-over that debt.⁸ UNCTAD has called for a 3-prong response: (1) a \$1 trillion liquidity injection—a helicopter money drop—for those being left behind through reallocating existing special drawing rights at the IMF and adding a new allocation; (2) a \$500 billion Marshall Plan for emergency health services and related social relief programmes dispersed as grants; and (3) an extension of the G20 stand-still on sovereign debt to all vulnerable countries, while also including private sector creditors and addressing rating agencies' issues, and targeted debt cancellation/swaps of \$1 trillion.

III. An opportunity as trillions get injected in the economy:

These figures are not utopian given that, in response to the pandemic, G20 countries have put in place emergency packages in the \$8 trillion range (between 9 and 20% of their GDP). The question that needs to be asked is whether a fraction of this money could be put to (even) better use if it is channeled to alleviate the emerging economic crisis in

¹ UNCTAD, *World Investment Report 2014: Investing in the SDGs: An Action Plan*, available at unctad.org/en/PublicationsLibrary/wir2014_en.pdf

² UNCTAD, *World Investment Report 2020: International Production Beyond the Pandemic*, at unctad.org/en/pages/PublicationWebflyer.aspx?publicationid=2769

³ *Ibid.*

⁴ *Ibid.*

⁵ A UN framework for the immediate socio-economic response to COVID-19, at: un.org/sites/un2.un.org/files/un_framework_report_on_COVID-19.pdf.

⁶ *World Investment Report 2020*.

⁷ UNCTAD, *Global Trade Update June 2020*, available at unctad.org/en/PublicationsLibrary/ditcmisc2020d2_en.pdf

⁸ See UNCTAD, *From the Great Lockdown to the Great Meltdown: Developing Country Debt in the Time of COVID-19*, available at unctad.org/en/PublicationsLibrary/gdsinf2020d3_en.pdf

Chantal Line Carpentier, Ph.D. is Chief, UNCTAD New York Office of the Secretary General.

Joerg Weber is Head, Investment Policies Branch, Division on Investment and Enterprise, UNCTAD.

unctad.org/diae

investmentpolicy.unctad.org

@unctadwif

developing countries before it derails the whole world economy. Simply put, firewalling advanced economies from the spill-overs of the looming financial and economic crisis in the South no longer works in times of hyper-globalization. Hence, the issue is if rescue packages should be used not only to accelerate the shift towards a greener and more inclusive economy, as is the stated aim of many of the stimulus packages enacted in the North, but also towards a fairer global economy in which no one is left behind. The UN is adjusting its work to support countries' response to the pandemic. This includes using the 2030 Agenda for Sustainable Development with its 17 SDGs and 169 associated targets as guideposts for the stimulus packages to rebuild better. Interventions are also needed at the international level to support developing countries in designing strategies and assessing policy options that balance the economic, environmental and social dimensions of sustainable development, as well as the debt relief and external finance they will need to roll out health, education, social protection, ICT access, etc. One hundred forty-six countries have prepared voluntary national reviews prioritizing SDGs and 62 countries have designed Integrated National Financing Frameworks to look at the full range of financing sources and non-financial means of implementation.⁹

IV. How UNCTAD's tools and approaches help:

To support public injections, UNCTAD proposes global transformative actions for a "Big Push" in private investment in the SDGs to mobilize, channel and address challenges faced by developing countries, by:

- Mainstreaming the SDGs in national and international investment policies, based on UNCTAD's Investment Policy Framework

for Sustainable Development;

- Re-orienting investment promotion strategies towards the SDGs, working with investment promotions agencies;
- Establishing regional SDG Investment Compacts;
- Fostering new forms of public-private partnerships for SDG investment, including ESG investment, impact investment and blended finance instruments;
- Deepening ESG integration in financial markets, including in pension funds and other institutional investors;
- Contributing to changing the global business mindset.

The new Plan responds to the General Assembly resolution on "Promoting investments for sustainable development."¹⁰ UNCTAD will continue monitoring global SDG investment trends and policies through the Global SDG Investment Trends Monitor,¹¹ the Global SDG Investment Policy Monitor,¹² and the World Investment Report,¹³ as well as promote investment in the SDGs through the World Investment Forum.¹⁴

V. The Way Forward:

The suffering that has resulted from this crisis must serve to address the financing for development and the debt situation, already dire before the pandemic. We have a duty to use the trillions in helicopter cash to accelerate not only health (SDG3) and social protection (SDG8), but also to foster alignment of the entire world economy with the SDGs. If solidarity is not a sufficient justification to support developing countries, the interconnectedness of our health and ecosystem, as demonstrated by the pandemic, should be.

⁹ See *United Nations, 2019: Integrated Nation Financing Frameworks for Sustainable Development*, available at developmentfinance.un.org/2019-integrated-national-financing-frameworks-sustainable-development

¹⁰ *UN General Assembly, Resolutions of the 74th Session, A/RES/74/199*, available at un.org/en/ga/74/resolutions.shtml

¹¹ *UNCTAD, SDG Investment Trends Monitor*, available at unctad.org/en/pages/PublicationWebflyer.aspx?publicationid=2542

¹² *UNCTAD, Investment Policy Monitor*, available at unctad.org/en/pages/publications/Investment-Policy-Monitor.aspx

¹³ *UNCTAD, World Investment Report*, available at unctad.org/en/pages/PublicationWebflyer.aspx?publicationid=2769

¹⁴ See worldinvestmentforum.unctad.org/#/ms-1/1

UTOPIE/UTOPIA

A Short Film by Anne Katrine Senstad Created with Actor Bill Sage

The state of tolerance is a place of utopia.

Anne Katrine Senstad's film explores the nuances of French philosopher Roland Barthes' (1915-1980) term "idiorrhythmy"—a productive form of living together in which one is autonomous yet recognizes and respects the individual rhythms of others. In exploring Barthes text "UTOPIE/UTOPIA" from his book *How To Live Together*, acclaimed actor Bill Sage, in a warm and evocative monologue performance, assumes the character of Barthes in the creative process of preparation for his University lecture series of five decades ago. Set in the context of our contemporary world that is gripped by societal and political crises amplified by the 2020 pandemic, Sage's character explores various forms of solitude through Barthes'

contemplations on history, psychology and societal structure. Barthes' text concludes that our "Sovereign Good" is a form of tactful cohabitation and that an inner state—the state of tolerance—is a place of utopia.

In critical view of the human condition in current world affairs, Senstad suggests that a healthy value system has been disenfranchised and replaced by what the French philosopher Jean Baudrillard (1929-2008) called a *simulacra*—a post-modern imitation of reality, consumerism, and predatory systems. Senstad and Sage express these theories in the film, which was produced remotely along with sound producer JG Thirwell, within the confines of isolation during the pandemic.

UTOPIE/UTOPIA, 2020, is the first in a series of four films based on Barthes' How To Live Together that looks towards ways of understanding community and individuality, spaces, and rhythms of life for our possible futures.

Anne Katrine Senstad is a New York based Norwegian artist. Her international practice lies in the intersections of installation art, photography and film, immersive installation art, and site specificity, with a focus on the phenomena of perception and ethics. Her social-political projects engage in gender politics, community and cross-cultural exchange across diversity and marginalities.

annesenstad.com

Bill Sage is an American actor who has appeared in over 40 films, TV and stage productions. Throughout his career, Mr. Sage has been a champion for diversity and equality in the film industry. He has made a point of working with female Directors, Writers and Producers. Select film and TV performances include *American Psycho*, *Boiler Room*, *I Shot Andy Warhol*, *The Insider*, *Boardwalk Empire*, *Hap & Leonard* and *Nurse Jackie*.







Interconnected

By Refik Anadol

"Interconnected" is a digital artwork that portrays the hidden troves of operational data at Charlotte Douglas International Airport (CLT) as an ever-changing suite of abstract form, color, and simulated texture. The data feeds that drive the artwork include global and regional air-traffic tracking software, airline flight information (arrivals/departures), baggage handling systems, and parking and ground shuttle transportation throughout the airport campus. The artwork is synchronized and displayed across three high-definition LED Media Walls in addition to a series of programmable LED ribbons embedded into the architecture of Concourse A. "Interconnected" is organized into three distinct visual chapters: Chapter I—Fluid Structures, Chapter II—Impossible Materials, and Chapter III—Data Poems. Shifting formal variations within each chapter reflect real-time responses to the dynamic flow of data, creating a living snapshot of the data management systems that enable CLT to serve over 44.4 million travelers annually.

refikanadolstudio.com
[instagram.com/refikanadol](https://www.instagram.com/refikanadol)
twitter.com/refikanadol
vimeo.com/refo
youtube.com/user/refikanadol

A Call to More Signal & Less Noise: The Factor^W of Women & Feminine Finance

By Amber Nystrom & Vince Molinari

“As the world desperately looks for ways to restart and reset the global economy, the solution lies right in front of us.

The real story is that the 21st century is going to be the ‘Women’s Century.’ It’s just that simple.”

— Muhtar Kent, Former Chair of the Board and CEO, The Coca-Cola Company

The challenge in achieving wide scale change often lies more in letting go of the old, than it does in creating the new. Historian and philosopher Tomas Kuhn crystallized the troubling truth that paradigm change often required the passing of an entire generation of thinkers before fundamentally new scientific world views could prevail.

Such stubborn resistance is seen today in the recent near ubiquity of the misplaced term, “the new normal.” Since the surge of COVID in March, this phrase has been peppered across social media, business and global consulting firm communications. Yet this grasping for a mythical normal is unsupported by the unpredictability of COVID, by the very nature of a constantly mutating virus, and by the far-reaching economic decimation the world’s faltering responses have created. Worse, widespread economic fragilities, made visible by COVID, suggest such grasping is very likely the opposite of what will truly serve the healing that is so deeply needed around the world, now, and next.

In June 2020, Chime Asonye, Former Senior Special Assistant on Sustainable Development Goals, Office of the Executive Governor, Abia State, Nigeria, wrote a superb piece for the World Economic Forum’s “WeForum,” reminding us that the words we deploy matter, and particularly in the era of COVID. She noted, “Far from describing the status quo, evoking the *new normal* does not allow us to deal with the totality of our present reality. It first impedes personal psychological wellbeing, then ignores the fact that *normal* is not working for a majority of society.” She goes on to state, “The *new normal* discourse sanitizes the idea that

our present is okay because normal is regular.” She concludes with an elegant clarion call that, “We should revel in the discomfort of the current moment to generate a *new paradigm*, not a *new normal*.”

Instead of clinging to the old, this moment offers a turning point unlike any prior to energetically catapult ourselves into a choice-full new *new*. With this as our framing, we may thoughtfully challenge all assumptions and open ourselves to the choice making needed for our economy-as-a-whole, world-as-a-whole and humanity-as-a-whole.

Secretary-General of the United Nations António Guterres heralded the decade 2020-2030 as the “Decade of Action,” calling upon people the world round to choose the kind of world we want. He succinctly set the threshold, noting, “The Decade 2020-2030 will determine all of our future.” As we enter this Decade of 2020-2030, with myriad, unknown unknowns, one beacon rises as a light of potent and actualized power to deliver a decade of trajectory change and enable a resilient new future, now.

This beacon is not new itself. It has been here all along, right in front of us, across all geographies, all economies, and all time. It holds a seasoned track record of addressing precisely the inequities that have crossed critical thresholds worldwide. It is proven in yielding out-performance in finance, and of consistently producing a strong multiplier effect across business and social value creation; and it has reliably resulted in lowering risk and volatility, and increasing the resilience that countries everywhere are

desperately seeking to restore. It is at once a force for restoring balance, and an awesome force of economic growth, as well as massively under-tapped wisdom, intelligence and fresh creativity.

The brief facts above have been proven repeatedly and are widely well documented. Inordinate quantities of easily accessible data have been produced—by a host of the most respected Universities, by the Big Five consulting firms, the World Economic Forum, the United Nations, countless development and public agencies, think tanks, investment firms, wealth advisers, philanthropists and risk analysts—and all of this is, yes, supported by good old common sense as well.

Entrepreneur Jack Ma has famously said on multiple occasions that the “secret sauce” of his extraordinary business success is simple. Ma points again and again to this same beacon and asks, are people listening?

The keystone, of course: women, women’s leadership and what is increasingly recognized and valued as more feminine leadership characteristics across leaders.

Rather than re-defending truth, we here seek to offer an invitation to choose, and a tool to better actuate this choice by bringing more signal to the deafening noise that has contributed to one of the most virulently resistant and destructive self-denials of the modern era. Our aim is a call to heal and cease the schizophrenia across global economies and societies that claim to embrace the proof positive force of women, yet systematically exclude, reduce and limit their engagement.



*"The Surge," by Ralph Reutimann.
Incoming tide and a winter storm on the western Iceland peninsula of Snaefellsnes.
RalphReutimann.com*

Today in the era of COVID, how can we possibly afford to do anything but marshal 1,000% of all resources we have towards the life-or-death-task of full scale economic *reboot*?

According to the World Economic Forum's "Global Gender Gap Report, 2020," by looking at progress since 2006 when WEF first began measuring the gender gap, the "...economic gender gap will take 257 years to close, compared to 202 years last year." This staggers all sense of...sense.

Apparently, for the closing of this toxically stubborn paradigm, it will take not the passing of one mired generation, but several. Kuhn might be inclined to turn over in his grave, figuratively, or perhaps literally.

To be blunt: We are failing, systematically. Net-net, we are stagnant, incremental and just hit reverse. We thus have a very simple question before us: do we continue with just doing more of --- the same ways of engaging, same language and framing, same thinking, and ways of being that are producing Groundhog Day?

OR...do we embrace the New Moment of this decade, to choose to act fundamentally differently, and radically smarter: to act as if recognizing, embracing and valuing women's and more feminine leadership across business, finance and all social domains is so utterly essential that your life and success depend on it; that life on Earth and the viability of our economic future depend on it.

Because they most certainly do. And it is just that simple.

This actualized choice results in exponential omni-benefit for you, your company or organization, and the whole (people, planet & prosperity).

As a Malcolm Gladwellian (to respectfully borrow this term for a moment) contribution to this choice, a simple lens and tool may assist in transducing existent truth into decisively actionable market signal:

"Factor^W" is a lens and historical reflection of the multiplier value of women's leadership across industries and sectors; and it is an Alpha Index for business and finance that reflects the multifold increase in value, decrease in risk and volatility, and increase in resilience derived from authentic women's leadership above the otherwise expected performance levels without women's leadership.

As Factor^W uptake extends across respected leadership in business, financial and media houses, thoughtful cross-sector stewardship will extend this across value applications and industries. Vital will be quickening the collective convergence of Factor^W into both cross-sector and industry specific benchmarks that graduate us inexorably from box checking and window dressing into Alpha authentication.

A very (very) brief look at the **WHY, WHAT** and **HOW** underlying this index may prove fruitful for the decision we here invite: to embrace that the future of life and our global economy require fully deploying the power of the

Factor^W of women's leadership, and feminine finance into a Moore's Law equivalent of worldwide reboot.

In times of war, entire nations pivoted in days and weeks. This is as much a course shift in consciousness and will, as it is of execution. **Factor^W** is a tool to evolve signaling capacities for better decisions and actuated will.

WHY | we need a new term and index is simple: more signal, less noise. Said another way, because currently we have more noise than signal. Even the intelligently aimed individuals and entities struggle in how to cogently see, integrate, and act upon indices of women's leadership—specifically as an economic multiplier.

And the many that are responsible for the ludicrous and economically detrimental figure of 257 years, are not being faced with the stoked fire that best motivates stuck change: risk + competitive advantage.

There are currently over 300 separate indicators of “gender equality,” and numerous indices that cross a vast and varied spectrum of strategies, lenses, sectors and industries.

With humbled awe and respect to the immense thoughtfulness, work and progress behind those that pioneered thinking and tools in “gender equality,” their contributions cannot be overestimated, including (to name only some) the UNDP's Gender-related Development Index (GDI) and the Gender Empowerment Measure (GEM), introduced in 1995, or the Gender Equity Index (GEI) introduced by Social Watch in 2004, the Global Gender Gap Index (GGGI) developed by the World Economic Forum in 2006, and the Social Institutions and Gender Index of OECD Development Centre from 2007. Effective thinking, tools and tool kits for bringing gender equality in as a lens for financial benefit across impact and sustainable investing, or Gender Lens Investing, has been well and thoroughly pioneered by the Criterion Institute since 2015, and continued since by many others such as the Global Impact Investing Initiative (GIIN). Most recently iterations on this path have

expanded into Gender Smart Investing, with growing traction across multiple groups.

To achieve a fundamentally new trajectory for engaging the Alpha advantage of women's leadership, it is a natural and needed next step to stand on the shoulders of giants to embrace a unified metric that can converge complexities into an overall Alpha framed and consistent meta-index.

Further, while there is not space in this essay to do justice to this topic, it does feel time to open fresh sight about the term “gender equality.” On its face, “gender” is no longer responsibly to be seen as it was prior. It now refers to a wide spectrum or continuum of gender considerations. Yet, the expression “gender equality” is used to refer most commonly, though not always, to women's equality, or equality between the genders or sexes of men and women. “Gender,” in today's understanding, seems possibly to diminish the larger definitional spectrum, while not providing specific signal for the latter. Even if this is not considered to be true, the term gender equality, refers to a vast spectrum of elements, versus an index that is specifically focused on multiplier effect.

Factor^W is not about challenging prior terra, but about offering clear signal for specific meaning and applications; in this case regarding the historic multiplier and Alpha value effects of women's and more feminine leadership.

WHAT | are the essentials for a meta-level “Alpha” framing? The term “Alpha” is a well delineated and accepted *holy grail* of a kind in financial domains. It reflects the increase in value and the decrease in risk associated with an asset or a portfolio performance above the estimated benchmark without that factor or set of factors. Various means have been developed to calculate Alpha, and this is applied to specific cases.

Factor^W provides on its simplest level what Malcolm Gladwell has so often deftly delivered: Gladwell's gift is enabling new sight -- of what is already here. He illuminates truths that

exist, but had not prior been fully recognized. He does so by reframing historically observed facts into signals for new sense making amidst the noise.

Enter: **Factor^W**. It enables new sense making and thus better choice making, by combining a historical observation of the multiplier power of women's leadership, with a mature distillation of its Alpha value.

As we see a Malcolm Gladwellian lens for a **Factor^W** index for women's leadership, what does it mean to extend this factoring indicator into feminine leadership, and feminine finance? The former may seem more clear, while the latter more open.

Guidance can be usefully derived from the lessons of good governance and indices herein. “Feminine leadership” characteristics across business, finance, politics and other domains, refer to a largely subjective framing and discernment of particular leadership practices and qualities, or leadership values put into action. The evolution of our capacity to discern good governance mirrors agreement fields emerging for feminine leadership.

A timely example is seen in the recent global media coverage on the “markedly effective leadership” of women-led countries during the onset of COVID. From *The New York Times*, to the UK's *Guardian*, *USA Today*, CNN, and numerous other global sources, there has been a great deal of coverage of the disproportionately effective COVID responses and resilience in women-led countries such as Finland, New Zealand, Iceland, Taiwan and Germany. “More feminine leadership” characteristics were cited as essential, including greater collaboration, compassion, transparency, humility and risk mitigation, and a willingness to change direction based on new and rapidly evolving contexts. There was also a high priority placed on inclusive and diverse decision making in the face of growing unknowns. This stood in stark contrast to the isolating bravado and classically male dominant leader profile seen in countries ranked the worst in the world for COVID deaths.

Numerous commentaries continued to extend thinking into how and why more feminine leadership attributes are increasingly essential in a world of multiple, highly complex and converging crises.

HOW | do we measure Factor^W? We may look to the successful evolution of metrics and coherent risk indices associated with good governance, and to the mainstreaming of integrated risk and value indices across “Environment, Social & Governance” or ESG investing. We will see parallel evolutions of the diverse spectrum of more objective and vitally subjective characteristics for authentic women’s leadership.

This same Alpha thread plays out in “feminine finance,” whether speaking about women’s rapidly growing personal financial autonomy and control of assets, their economic strength overall, or in integrating distinctively feminine wisdom as values in action across financial services, investing and fiduciary oversight.

These domains are positively interconnected and mutually reinforcing. Multiplier benefits increase as **Factor^W** is integrated in concert across value generation (Alpha creation) and value delivery (Alpha capture). Deploying **Factor^W** authentically across value creation and delivery chains is essential to catapult Alpha financial results.

A timely case example of the Alpha power of integrating feminine values into finance is provided in an excellent TED / TEDWomen Talk: “A Feminine Response to Iceland’s Financial Crash,” by Icelandic business and finance maven, Halla Tómasdóttir, following the 2008 financial crisis in which Iceland was financially crippled. Halla successfully navigated the financial meltdown by applying five more “feminine” values to financial services.

If necessity is the Mother of Invention, the economic imperative of COVID to reboot and “re”—everything, may be seen as the Mother of Mothers for quickened “re-invention.” We are already in a tsunami wave of continuous change. This force will usher decades of intelligence and work into “lead-frogging”

(leadership leapfrogging) how we signal the Alpha value of women and feminine leadership. Because: it is necessary.



This essay issues A Call To More Signal & Less Noise, as an invitation. It is an invitation to see, to choose and to act— anew. How the tool of **Factor^W** evolves is also up to you, and your— and all of our collective agency.

Three final points: First, let us recognize and embrace that “feminine values” are certainly not the domain of women only. Feminine values can and do carry over all kinds of people including men and women, and those whose identities are not limited to a binary lens. Actively embracing the diversity and subtleties of feminine values across leadership and finance is essential to **Factor^W** strength. These are the wellspring of its evolution.

Among the most fascinating areas to watch, and to co-shape, are how many value constellations traditionally associated with more feminine values are undergoing a flip change. Personal “vulnerability” that was prior shunned as business weakness, is being heralded as “courageous vulnerability,” where authenticity and embracing the unknown are seen as inner strength and resilient bedrocks of our emergent -- new, new.

Second, the values ascribed via **Factor^W** for “women’s leadership” do not accrue solely from being biologically designed as a woman. This is an immense topic. Here, we are limited to placing attention on recognizing this expansive truth. We are also pointing here to the chasm between women leading in their own power and distinct human strengths and gifts, and women leading more from modeling traditional male power models.

As author Barbara Ehrenreich warned, “Of all the nasty outcomes predicted for women’s liberation... none was more alarming than the suggestion that women would eventually become just like men.” As we see in nature, it is our myriad differences that enable our exponential evolution. Unity thrives because of embraced diversity. The most fecund area in

nature is the estuary, where the land meets the sea. It is the space between.

Third, may we bring “fresh eyes” to our own sense of self, and our authentic agency. Innovation, after all, is simply seeing differently. We invite you, as we invite and challenge ourselves, now and through the Decade of Action 2020–2030 to bring fresh insight to language, consciousness and to action that is worthy of the challenges we face. As we pause and look up, together, we may soon realize that we are already in a new, new. And our task may be more about quickly removing the friction and healing heavy baggage that lingers. Our task may be quieting the “thou dost protest too much” noise leftover from dismantling decaying structures of what was.

Regardless, this is happening. The **Factor^W** transformation is upon us. Shaken countries, peoples and markets are waking up to our ancient-new keystone for economic catapult, global prosperity, and enduring resilience.

It is not a question of if this will happen. It is how fast, where, who will lead—and who will benefit. Those that lead beyond a bygone era, will flourish disproportionately. Those that do not, will fall behind.

In our intimately, inextricably interconnected world, a simple action can have the effect of butterfly wings that were flapped in China and experienced instantly around the globe.

It is just that simple.

Amber Nystrom is a pioneer in global systems change, impact investing, and hybrid enterprise and finance. She is a Co-founder & Board Director of the SDG Impact Fund, an independent Donor Advised Fund dedicated exclusively to achieving the UN Global Goals; and a co-producer of Women of Iceland, and SDG Heroes.

Vince Molinari is an entrepreneur, business and finance leader, founder and CEO of Molinari Media PBC, FINTECH.TV and TheIMPACT, delivering authentic news and intelligence from New York Stock Exchange (NYSE), NASDAQ, the London Stock Exchange Group (LSEG), and exchange studios worldwide.

*For more about **Factor^W**, join us in early 2021 as we collectively create and profile people and purposeful pathways to catapult a New Economy globally: fintech.tv | SDGImpactFund.org*

Greed or Green: Financial Institutions in the Wake of Environmental and Social Issues

By Mathias Piardon

“The younger generation running family offices wants their investments to be aligned with their ethics.”

Are financial investments nowadays solely profit-driven or do they have a sense of purpose? As a trader, portfolio manager and hedge fund allocator, I have witnessed the slow evolution of the financial industry over the course of 20-plus years. Like steering a gigantic ship, incorporating social and environmental values into the world of investments is a slow process against inertia. However, winds are changing. In contrast to the old boys' club of finance, the younger generation running family offices wants their investments to be aligned with their ethics: Profitability should not take a toll on climate, nor contradict social values. In this connection, family offices tend to adopt tailored solutions to address the issues that matter to them. Substantial large pension funds, or sovereign funds, have also been vocal about their desire to ensure their investments are made in accordance with environmental and social values. However, for the wider crowd of retail investors, where the trend has been to stamp financial products with the debatable ESG label (environmental, social and governance), there is much room for change. Although the demand of retail investors for environmentally and socially responsible investments might be genuine, the solutions offered are sometimes comparable to greenwashing....

An acronym had become the talk of the day for responsible investing: ESG.

I learned from my investment banking experience that many financial products offered to investors often rely on conspicuous advertising and ride the wave of mainstream themes, appealing to the masses. I know because I worked on trading desks that were

giving birth to some of those products. For instance, investing in certificates in renewable energy companies might give the impression of a purposeful investment, when, in reality, the impact is far from certain. An appealing packaging is no guarantee that the financial product will drive the change the investor seeks. ESG criteria have recently been used to profit from the sensitive vibe of a civilization seeking greater harmony with nature and between communities.

How do ESG criteria get implemented? Selecting the stocks to invest in, is largely data-driven. A few specialized companies provide scoring systems to filter through the universe of equities. These filters are used by countless investment companies, allowing them to provide investment opportunities in apparently ethical values. Whether such investments have an impact still remains to be seen. Moreover, the chain of delegation in sourcing equities should not be a way to avoid accountability. Fiduciary responsibilities prevail, especially for environmental and social issues.

While ESG criteria are taking over the more traditional investment space, environmental and social investing still needs to be seen in the hedge fund space. As an allocator, the number of minority-run hedge funds I come across in one year, for example, is single digit. That is really too little. It is, however, true that a pure application of ESG criteria only makes sense for long term investing; a hedge fund that arbitrages fungible securities traded on various exchanges within microseconds has very limited impact on sustainable and social issues, from a trading point of view. But there have been a few positive niche developments.

A group of quantitative managers, for example, decided to share their artificial intelligence models during the early months of the COVID-19 outbreak to work on forecasts of possible developments of the pandemic. I also once met the founder of a large proprietary trading firm in New York who launched green advocacy movements and founded a non-profit organization that tackles transport issues. Given that the proprietary firm does not by definition have any clients, such initiatives are the simple reflection of genuine social concern and not a marketing strategy. In a nutshell, while many hedge fund managers might add ESG criteria to the investment process to try to improve the image of a shaken industry, there are some hedge fund managers who genuinely want to make a change. Interesting endeavors are also emerging among private equity firms with some choosing to focus on the regenerative economy, providing capital to start-ups that generate solutions (such as reusable packaging for instance), and thereby nurturing companies that can have a positive impact, instead of attempting to change the harmful behavior of some large scale corporations.

The finance industry has a small ecosystem of numerous initiatives, projects of investment managers who thoroughly want to combine their convictions with their business skills. With strong experience in senior investment roles, or in the C-suite, those individuals often accept a cut in salary to align their work with their ethics. However, a significant change in the finance industry can only occur if clients request their investments to be directed to genuinely sustainable projects or socially responsible companies.

A preconception is that restricting the investment universe will reduce returns: That is wrong. Many financial companies gradually embrace the change for fear of missing business opportunities. Others do it out of conviction. The latter should obviously be supported. Our savings can have an impact, if properly oriented, and it is up to us to decide where they go. To begin, one can identify wealth managers who adhere to ethical principles in their own daily lives: When a team of vegans in Geneva launch investment products from venture capital to blue chips investing dedicated to the eradication of animal cruelty, they are more likely to master the subject than generalist sales people for whom the subject is just another sales pitch.

At the policy level, governments can help. Carbon emission markets are a noteworthy development in the effort to tackle air pollution, in which the price to pollute is driven by supply and demand. As supply is gradually reduced by law and consequently prices pushed higher, polluting companies get penalized and incentivized to reduce their carbon emissions or invest in green technology.

Changing investment mentalities might be difficult, but the stakes are high. The norms on which our civilization was built have led to inequalities, abusive exploitation of natural resources and animal cruelty, but ecological disaster and social inequity don't have to be inevitable. With a proper reallocation of capital from speculative to purposeful investments, a smooth transition to a more equal and sustainable economic system can become a reality.



Mathias Piardon has worked in the finance industry since 1997 in London, Paris, Hong Kong and Zurich.



ARTIFICIAL #9

Value of Values

By Maurice Benayoun

“I had PEACE, I got LOVE, and now I want MONEY.”

Value of Values is a form of Transactional Art, interweaving Art, Finance, Science and Poetry.

In 2016, together with the architect and artist Tobias Klein, I began working on the *Brain Factory Project*. Based on real time graphics, *Brain Factory* enables visitors to design just by thinking. They are invited to give shape to that which is most difficult to represent: human abstractions. Using non-intrusive EEG, electroencephalography, participants use their brain as a mental ecosystem where shapes strive to survive through iterative generations of dynamic forms. The human brain is not controlling, but rather assessing the evolution of the shape, trying to figure out how it can correspond to the related concept. Does this shape adequately represent SPACE, FREEDOM or POWER?

The resulting form or model can then be 3D printed to become a “Reification” of thought. If making art is giving shape to ideas, then all *Brain Factory* visitors, or “Brain Workers,” become artists.

In a recent evolution, with the contribution of Nicolas Mendoza, working on art and cryptocurrencies, the *Brain Factory* gave birth to *Value of Values* (VoV). The scope of VoV has been narrowed down from Human Abstractions to Human Values. Brain Workers give shape to Human Values that are then registered to the Blockchain. LOVE, FREEDOM, FAME, POWER become an abstract model. Brain Workers own the VoV Token they have neuro-designed. They can offer, barter or trade the VoV. What is the relative value of POWER, GENEROSITY, and FRIENDSHIP? Bartering PEACE and LOVE for MONEY generates *Transactional Poetry*: “I had PEACE, I got LOVE, and now I want MONEY”.

Thanks to trading charts, we can now understand the relative value of human values according to cultures, cities, or countries.

“Brain Workers give shape to Human Values that are then registered to the Blockchain.”



Brain Factory, Microwave International New Media Arts Festival, Hong Kong, October 2018

Maurice Benayoun (AKA MoBen) is professor at the School of Creative Media, City University of Hong Kong. MoBen develops works that go beyond innovation, to address key issues of contemporary society.

benayoun.com
vov.art





The Bias Vaccine

Interview with Neuroscientist, Emile Bruneau



Luz, FARC ex-combatant, and Emile, following on-site interview in Colombia.

Emile Bruneau, Director of the Peace and Conflict Neuroscience Lab, research associate and lecturer at the University of Pennsylvania Annenberg School for Communication

pcnl.asc.upenn.edu

CENTERPOINT NOW (CPN): What led you to conclude that scientific tools could be applied to conflict resolution?

Emile Bruneau (EB): As a biologist, I want to understand the biology behind our behavior. It is easy to understand the benefits of a scientific approach when tackling something like the coronavirus: once you identify the vector that carries this illness from one person to another, you can find solutions to prevent the spread and start thinking about things like vaccination. There are analogies when thinking about conflict and the spread of bias. The fact that our brains drive us to respond to conflict in the ways we do gives me great hope. Human beings do not respond randomly to conflict; we are predictable. The ability to predict how we'll respond to conflict, allows us to build interventions and to change our minds. We can formulate specific arguments and approaches to prevent the spread and even *vaccinate* against hostile attitudes about other groups. There is a huge potential in bringing scientists and politicians together to work on this common problem, as they possess complementary toolkits.

CPN: Reflecting on the various conflict areas in which you've worked, should the approach to each conflict be distinct, or are the dynamics largely the same?

EB: On paper, conflicts involve different religions, histories, and languages, but their motivations and expressions are eerily similar. My premise is that by challenging a specific view that one group has about another, we

can take away some of the hostility. If people are being driven by similar reasons, then a solution might be applicable across a wide swath of what otherwise seem like very different conflicts.

CPN: Can you cite an example of an intervention?

EB: I tested this approach in Colombia, where a significant part of the general population has been opposed to peace with the FARC Guerrilla. What we found is that Colombians who advocate against peace do so largely because they believe that FARC ex-combatants are unwilling and unable to give up violence. If you think that reconciliation with the other side is impossible, then there's nowhere to go. However, after listening to interviews that we conducted with ex-combatants, in which the latter expressed their willingness and ability to give up violence and embrace peace, their attitudes changed. It was powerful to see the effect of this process on the young Colombian film crew that worked with us. To this day I become emotional when recalling the experience. Everyone felt a deep potential for change.

CPN: How does this function when people have an inherent aversion to acknowledging bias?

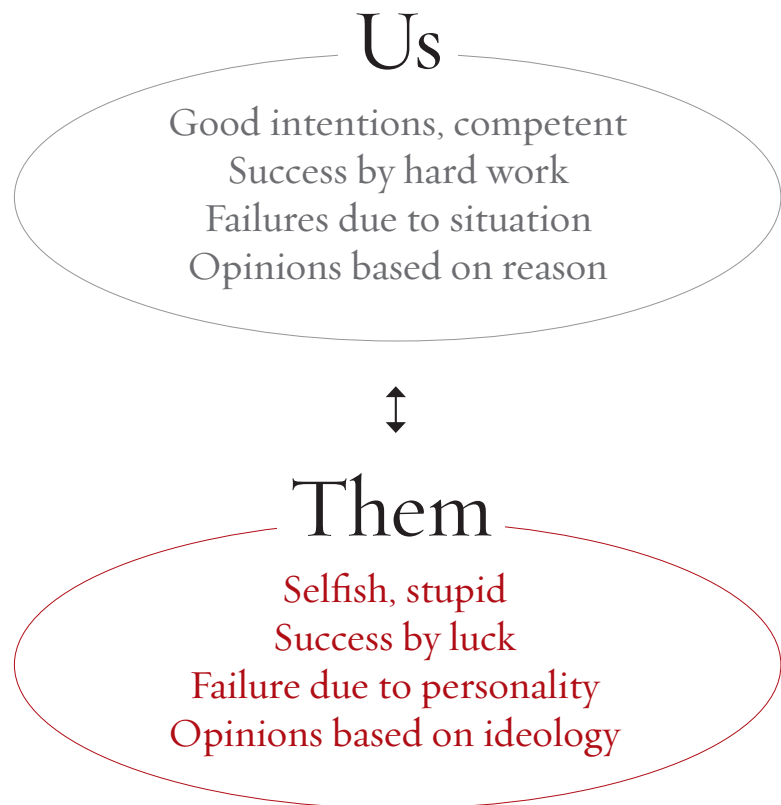
EB: I begin by making people aware of biases they hold that are non-threatening, such as visual illusions and other ways in which our brains are inherently biased. This opens the door to identifying social illusions that are

damaging, biases that allow us to see the world not just as “me and you,” but also as “us and them.” Ironically, social categorization, or group identity, can be decided by something as arbitrary as hair color. My approach is to identify the biggest difference between perception of the other and reality, which is usually not hard to do. I have experienced the difference between perception and reality in my own life. Those are moments of opportunity to change how I view the world. When I find out that an assumption I hold is verifiably false, I can transcend and dismantle it. Acknowledging my bias gives other people license to do the same.

CPN: Can this apply to situations of collective or historic prejudice towards a specific group?

EB: Take the example of collective blame, which is often applied to Muslims in the West. When someone who’s Muslim commits an act of violence, there’s a tendency to blame all Muslims, but the same wouldn’t apply to Christians in a predominantly Christian society. Once we are able to demonstrate this hypocrisy to people, they tend to reject it, and this reduces these tendencies. Something I love about this approach is that it works across different groups, the effects persist over time, and, if you use this approach to extinguish collective blame towards one group, it has the effect of reducing collective blame towards other communities as well. That’s exciting because it means we can erode the very logic of racism.

“We can erode the very logic of racism.”



Interview conducted by Shamina de Gonzaga and Nina Colosi.

Kindness, Key to Survival

By Daniel M.T. Fessler Ph.D.

Our species is fundamentally social, meaning that, throughout our evolution, humans and their predecessors have relied on living in groups to survive. In turn, sociality involves an ever-present tension between self-interest and cooperation. Both biologically evolved human nature and culturally evolved institutions reflect this tension. These two factors converge in that we are most inclined to be altruistic toward those who are like ourselves and are urged to do so by cultural norms. Similarly, we are inclined to see others who are unlike ourselves as competitors, and often, cultural norms urge us to view them this way. As a result, from neighborhoods to nations, people find it easier, and often more rewarding, to be kind toward members of their in-group, and easier, and sometimes rewarding, to aggress against members of out-groups.

We readily construe crises as competitions, and we easily lay blame at the feet of outsiders. Yet, at the same time, we are capable of remarkable unity, of oneness of purpose, and of shared sacrifice toward the common good.

At the UCLA Bedari Kindness Institute, scholars from a wide variety of disciplines are researching the factors that promote or hinder kindness, at scales ranging from individual psychology to international diplomacy. We do so motivated by the firm belief that kindness holds the key not only to humanity's wellbeing, but to our very survival.

Daniel M.T. Fessler, Ph.D. is the Director of the UCLA Bedari Kindness Institute and Professor of Anthropology, University of California, Los Angeles.

kindness.ucla.edu



The World is Yours, the World is Mine

By Shahzia Sikander

"The World is Yours, The World is Mine," 2014. Vegetable color, dry pigment, watercolor, and gouache on hand-prepared wasli paper, 40.5 × 28 cm. Created for The New York Times "Turning Points" magazine and opinion page, December 4, 2014. © Shahzia Sikander. Courtesy of the artist and Sean Kelly, New York.

Unapologetic Body, *Herstory*

By Francesca Harper



“The growing edge is knowledge that pushes one to reconsider where they are and where they have been; going to our place of challenge and working through difficult moments; and allowing discomfort to propel growth and new insights.”¹

I decided to create a work that would confront this growing edge entitled “Unapologetic Body.” *Unapologetic Body* is a coming of age story. After losing both parents, I decided to travel through memories, and redefine myself. Apologizing and assimilating as a woman of color in the ballet world had found its way into my habits. It was up to me to find my way back to love.

I have a distinct memory of taking African Dance as a child at the Ailey School and feeling deeply connected to the movement, it lived in my bones. No other dance has ever flowed as easily through my body, an unexpected discovery for a young New York artist of color with a centered focus on ballet, a Euro-centric art form. How is it possible to claim your identity in a predominantly white space as an artist of color without feeling the resonance of this history? How is it possible to confront this pain without feeling its negative psychological impact?

My family tree includes Thomas Jefferson and Sally Hemings, a relationship fraught with inequity and oppression. Is that information carried through my DNA? As I look back on the historical relationship between Europe and Africa, between Ballet and African Dance, it is fraught with pain, loss, and displacement. But if I look back closely over time, I start to witness bridges and intersectionality outweighing the divisions. The work I have achieved as a Contemporary Ballet performer and creator makes me a part of

that movement. From Louis XIV's exclusive palace reserving ballet solely for royalty, to Balanchine and Lincoln Kirsten's vision, a ballet company comprised of an equal number of African American dancers and Caucasian dancers, to Katherine Dunham founding Ballet Negre in 1931, a predominantly black ballet company, to Arthur Mitchell founding Dance Theater of Harlem during the civil rights movement, to the work I created with William Forsythe in The Frankfurt Ballet, inspired by Hip Hop, all are examples of how human beings can shape progress through vision, bonds, and community action.

Unapologetic Body is the story of an African American woman standing on the shoulders of those who actively confronted the constraints of racism and sexism, a woman claiming her own legacy. Although there is still a little ballerina of color living inside me, afraid that her hair is still too kinky, her body is too muscular, and that she doesn't belong in this exclusive balletic world, those fears are slowly disappearing with each word I write, with each class I teach and with each piece I choreograph. I belong to the new ballet world, as a woman of color. *Unapologetic Body* reminds us how to bravely lean into love.

¹ In 2017, I was awarded a fellowship with Urban Bush Women's Choreographic Center Initiative. The first question Jawole Willa Jo Zollar asked us was to define our "growing edge."

Francesca Harper is an internationally acclaimed multi-faceted artist. She joined and performed soloist roles for the Dance Theater of Harlem and as a Principal Dancer at Ballet Frankfurt; She has choreographed works for Alvin Ailey American Dance Theater among many other companies, including her company, The Francesca Harper Project established in 2005. She has appeared in and collaborated on numerous Broadway, TV and film productions including as a Ballet Consultant on the Oscar winning feature film, *Black Swan*. Harper is a Professor at The Juilliard School, NYU, and Ailey / Fordham, an Executive Producer with Sony Pictures on a new series in development while pursuing her MFA degree.



A new balletic landscape:

- In the mid 1990s, a third of Forsythe's European based company was composed of artists of color.
- In 2015, Misty Copeland becomes the first Principal female artist of color with American Ballet Theatre.
- In 2019, with Wendy Whelan and Jon Stafford at the helm, New York City Ballet hires multiple artists of color.

A new female body:

- As Contemporary Ballet becomes more popular, female bodies are finally hailed for being strong and muscular, partnering men now and sometimes even each other.
- Women shatter the image of the waif.
- Feminism is acknowledged through Contemporary Ballet.

Music for ballet:

- Inspired by hip hop, William Forsythe commissions and collaborates with Thom Willems to create scores featuring percussive electronic beats and African rhythms that influence the new voice of contemporary ballet.
- Kyle Abraham introduces the Lincoln Center / State Theater audience to the music of Kanye West in 2018 with "The Runaway."

Collaborators for *Unapologetic Body* include Grammy nominee songwriter and composer Nona Hendryx, Bessie-award winning lighting designer Tuçe Yasak, Filmmaker Derrick Belcham, and Visual Artist Nick Cave.

Photos: Richard Termine

thefrancescaharperproject.org



Harbour for Cultures

A project by Barbara Holub and Paul Rajakovics, Giuliana Carbi, and Elisabetta Porro

transparadiso
One Hundred Desires for Harbour
for Cultures / Cento desideri per il
porto di culture, 2018
video, 12'04"

- faro dei falsi orizzonti / light house of false horizons
- false verità: riscrivere la storia / false truth: rewriting history
- spazio di ascolto / listening space
- sala d'attesa per tiranni / waiting room for tyrants
- resistenza contemporanea / contemporary resistance
- studio per cantautori depressi / studio for depressive song writers
- quadrato per discussioni / boxing ring for debates
- giardino aquatico / water garden
- lungomare subacqueo della scienza / underwater seafloor of science
- piattaforme per pescare e buttare sardoni / platforms for fishing and heavy flirting
- fabbrica di gonfiabili / factory of inflatables
- sportello di idee take-away / counter for take-away ideas
- ufficio governativo del cambio di personalità / government office for personality change
- scambio generazionale / exchange of generations
- macchina totem per far sorgere la luna / totem machine for making the moon rise
- sala da ballo per draghi / ballroom for dragons
- area di decompressione / area of decompression
- bivio delle culture / crossroad of cultures
- centro culturale indipendente di incontro giovanile / independant cultural youth center
- accademia del fastidio / academy of nuisance
- improvvisazione / improvisation
- trampolino musicale / musical trampoline
- laboratorio di utopie / lab of utopias

- punto di assaggio / point of taste
- orto botanico / botanic garden
- laboratorio d'arte / art lab
- asilo / asylum
- parco giochi per adulti / playground for adults
- ricordo / memory
- spiaggia degli angeli / angels' beach
- auditorium strumentale / auditorium of instruments
- meraviglie / miracles
- sezione talenti (sconosciuti) / section of the (unrecognized) talented.
- cose fuori dal mondo / things beyond the world
- strumento per rompere il muro / instrument for breaking the wall
- mediocrità / mediocrity
- collettività / collectivity
- blocco mentale / mental block
- relazione / relation
- romanticismo / romanticism
- informale / informal
- marginalità / marginality
- sezione „i diversi“ (matti, donne, gay, nani,...) / section for „the diverse“ (crazy, women, gay, dwarfs...)
- incanto / enchantment
- niente parole / no words
- orto sociale / social garden
- sintassi / syntax
- urbanizzazione simbolica / symbolic urbanization
- togliamo i tappi - un porto vive di occasioni / let's take off the plugs - a harbour lives on occasions
- cineporto: coproduzioni internazionali / cinema harbour: international coproductions
- magazzini della poca eleganza / warehouses of little elegance
- materia del cinema: paure e desideri / subjects of cinema: fears and desires
- fitodepurazione / purification plant for plants
- turbamento / agitation
- complessità / complexity
- apertura alla modernità / receptiveness of modernity
- incontro / encounter
- criticità / criticality

- rottura / rupture
- casa dei mestieri che non esistono più / house of professions which do not exist anymore
- responsabilità / responsibility
- biblioteca / library
- lentezza / slowness
- conflitto / conflict
- salotto di valore umano / lounge for human values
- perdita di certezze / loss of certainties
- canto delle sirene / song of the sirenes
- montagne russe della contraddizione / roller coaster of contradictions
- perplexità / perplexity
- laboratorio di ricerca per il nuovo io / research lab of the new I
- mensa del brodo primordiale / canteen for primordial broth
- padiglione del vuoto / pavilion of the void
- laboratorio sviluppo materiali (verniciari) a base acqua marina (biodegradabili) / lab for developing vernacular materials based on the sea (biodegradable)
- sauna di insoddisfazioni / sauna of dissatisfaction
- doccia fredda di illusioni / cold shower of illusions
- ristorante delle belle speranze / restaurant of good prospects
- tavolo del dialogo / table of dialogue
- monumento a Malcolm X / monument for Malcolm X
- luogo della dimenticanza / space of forgetting
- fabbrica delle onde vaghe: trasformazione di situazioni rigide in situazioni fluide / factory of vague waves: transforming rigid situations into fluid situations
- scuola di arti performative / school of performative arts
- nuovi venuti - acquario umano / newcomers - human aquarium
- laboratorio tra visione e know-how / lab between vision and know-how
- Imparare ad inforare / learning to embellish
- Eutopia
- salamellecco / salam laikom
- Ogni persona chi entra lascia un racconto, si identifica con una storia. La propria o inventata. / Each person who enters leaves a story - their own or an invented one.

- autarchia / autarchy
- equivoco / ambiguous
- riuso delle risorse esistenti eco-innovativo per il terzo millennio / reuse of existing eco-innovative resources for the 3rd millenium
- centro permanente di critica creativa per la costruzione di una società contemporanea / permanent centre of creative critique for constructing a contemporary society
- cucina sociale / social kitchen
- stazione di sfruttamento energetico del moto ondoso / station making use of the energy of the sea
- centro studi meteo idromarini - cambio climatico / research centre for seawater meteorology - climate change
- museo del mare primordiale / museum of the primordial sea
- museo della bora / bora-museum
- una specie di G-7 della cultura: condivisione e prevenzione dei conflitti / a species of G-7 of culture: distribution and prevention of conflicts
- scuola di interlinguistica e di inter-filosofia / school of interlinguistics and inter-philosophy
- vaso di pandora rotto / broken Pandora's box
- padiglione del mondo e centro di dibattito / world pavilion and debate center

Top left: “A promise for Harbour for Cultures:” transparadiso gilded a pollar as a signifier for the revaluation of under-recognized qualities, 2018. Photo: transparadiso

Bottom left: “100 Desires for Harbour for Cultures,” Installation Curator: Michael Petrowitsch

Right: transparadiso offered carpets to the workshop participants to be placed at a site for which they wanted to express a desire for H/C. As the French philosopher Michel Foucault noted, “carpets were originally reproductions of gardens (the garden is a rug onto which the whole world comes to enact its symbolic perfection, and the rug is a sort of garden that can move across space).” Photo: Christine Hohenbüchler



“Harbour” is a synonym for “arriving” at a final destination, for being at “home.” It represents a promise, or hope, albeit temporary. Harbour for Cultures (H/C) reinterprets the usual economic functions of a harbor, centered on the exchange of goods, commercial profit, and insurance issues, and its interim state between arriving, temporary belonging, and leaving. H/C diverts these functions, challenging people to envision a macro-utopia, a (near) future society beyond geographical and mental borders.

The point of departure for H/C is the Porto Vecchio (Old Harbor) of Trieste, which has remained unused and in a state of decay for decades. It stands in contrast to the New Harbor of Trieste, which, in 2019, was declared the final destination of the New Silk Road—its entry point to Europe from the sea—drawing unprecedented investments by China in Trieste.

Porto Vecchio, a former ex-territorial area (free port), is located in the center of the city and covers an area of about 66 hectares. Historically an intersection between East and West, North and South, for over 600 years it was a symbol of coexistence among diverse nationalities and ethnicities. As the exit to the sea for the Austro-Hungarian Empire, it witnessed various periods of emigration movements of Europeans seeking to leave Europe for economic or political reasons. Yet, in recent years, Italy has become a destination for countless refugees who cross the Mediterranean—many of whom never arrive on dry land, and others who manage to cross

the sea, but hardly ever “arrive” in European societies.

Considering these complex changes over history, the Porto Vecchio in Trieste is destined to reconsider its role for the future state of Europe, furthering social and cultural values of the many. H/C aims to create a “new port” where people freely exchange their own cultures, while assuring their core values, so that humanistic profits (benefits of art and culture) are earned by the many. To this end, transparadiso, together with Giuliana Carbi and Betta Porro, initiated a participatory process for socially engaged urbanism, or “direct urbanism,” employing artistic-urbanistic strategies, like a collective “production of desires,” to inform the area’s urban planning. In manifold events, international symposia, exhibitions, and workshops on site at Porto Vecchio, a multitude of desires ranging from poetic, to functional, to visionary were collected. These are meant to serve as a basis for urbanistic programs enhancing common social and cultural values, as well as to counteract the development of Porto Vecchio, possibly driven by purely economic interests.

At the local level, Harbour for Cultures’ next phase aims to transform one of Porto Vecchio’s dilapidated buildings into a permanent Center for Harbour for Cultures, which will serve as a lab for the first desires to be realized, as well as a signifier for the next desires to come. However, Harbour for Cultures transgresses a real physical location.

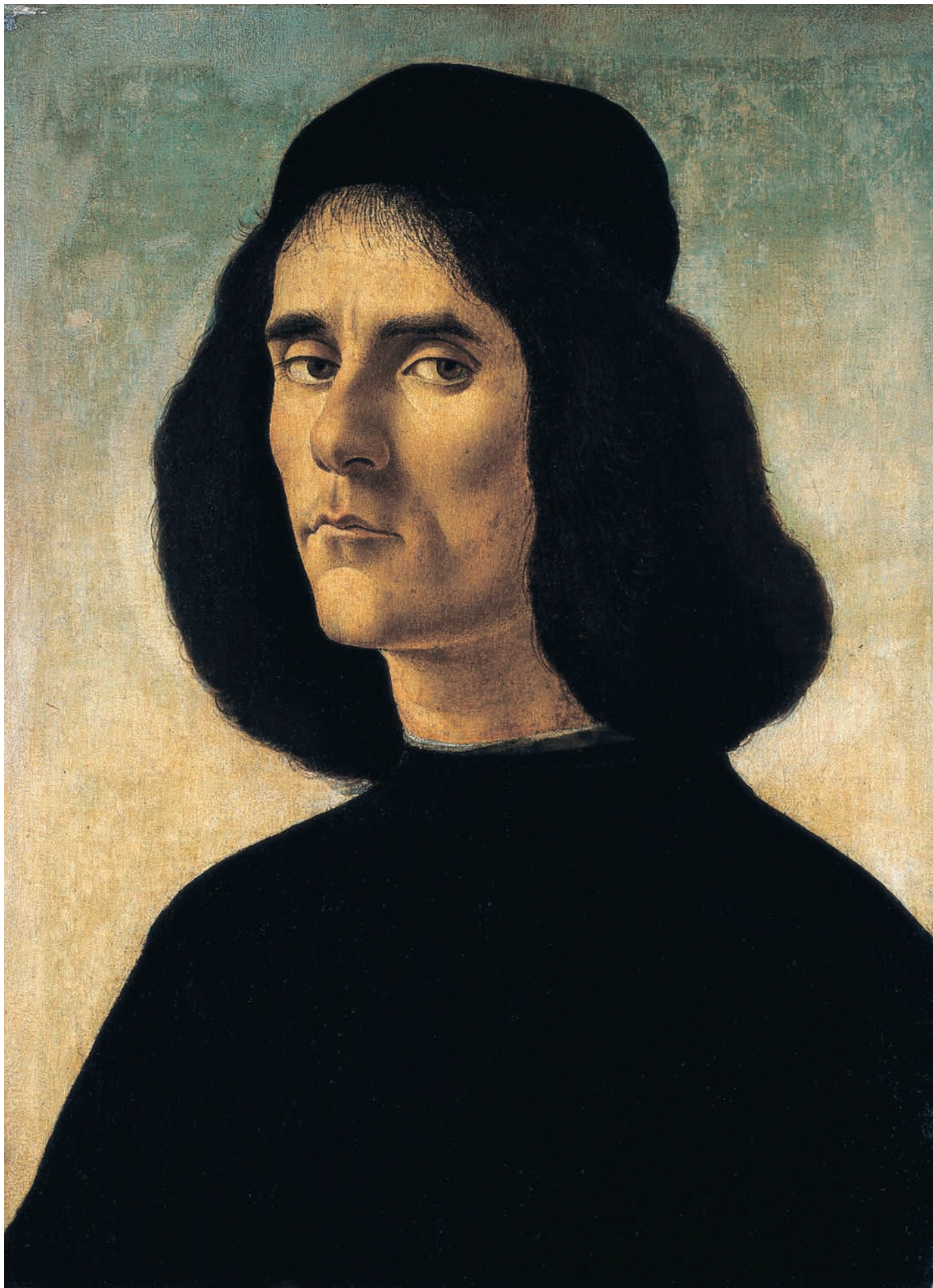
“a multitude of desires ranging from poetic, to functional, to visionary were collected.”

Barbara Holub and Paul Rajakovics are the Founders, transparadiso, Vienna.

Giuliana Carbi is the Director of Trieste Contemporanea, Trieste, Italy.

Elisabetta Porro is a Performer, Trieste, Italy.

barbaraholub.com/one-hundred-desires-for-hc.html



*Sandro Botticelli,
Portrait of Michele
Marullo Tarchaniota
c.1458-1500
Oil on panel,
transferred onto
canvas*

*19.2 x 13.7 | 49 x 35 cm
Guardans-Cambó
collection
Image courtesy of
Oblyon*

Of Poets, Human and Robot

By Nina Colosi

I. Portrait of a Renaissance Humanist Poet

"You give me jewels and gold, I give you only poems: but if they are good poems, mine is the greater gift." XII To Antonio, Prince of Salerno

"Das gemmas aurumque, ego do tibi carmina tantum: Sed bona si fuerint carmina, plus ego do." Michele Marullo Tarchaniota, Epigrams, Book I
Translated by Charles Fantazzi

Sandro Botticelli (1445-1510) was perhaps the greatest humanist painter of the Early Renaissance, during which art, philosophy and literature flourished under the powerful Medici dynasty in Florence.

Botticelli's portrait of Michele Marullo Tarchaniota projects the stern brooding gaze and restless intellectual character of one of the most well-known humanists of the 15th century. Marullo was a scholar, soldier, and prolific poet impassioned by the existential matters of his day and concerned with social injustices of inequality, racial conflict, power and greed, exile, and refugees' experience of violence.

Marco Mercanti, founder of Oblyon, whose expertise spans old masters to contemporary art explains, "The qualities of Botticelli's work reflect high esteem for beauty and truth which has held art admirers and artists through the centuries under the spell of the universal secrets his art seems to possess. In the modern and contemporary world, Jeff Koons, Cindy Sherman, Yin Xin, Andy Warhol, René Magritte, and many other artists have spoken about his direct influence."

Sandro Botticelli and Michele Marullo Tarchaniota through art and poetry illuminated the common ideals of beauty, pursuit of knowledge, and realities of social justice that resonate across time.



Sophia is hybrid human-AI intelligence designed with technology that analyzes and mimics the process of learning and human traits, including a wide range of facial expressions. Rather than a compilation of recorded human memories, she processes vast data banks of information that inform her responses in conversation.

*Photo: Hanson Robotics
hansonrobotics.com*



Sophia with United Nations Deputy Secretary-General Amina J. Mohammed. Sophia is a Saudi Arabian citizen, the first robot to receive citizenship of any country, and the first robot Innovation Ambassador for the United Nations Development Programme.



Philip K. Dick, activated in 2005, in conversation, draws from his memory data bank holding thousands of pages of the author's journals, letters and science fiction writings and family members' memories of him.

Photo: Claire Jervet

II. Portrait of 21st Century Humanist Robots

Could humanism evolve beyond current human capabilities? In our era, burdened with conflicts, climate change, and social injustice, we are also witnessing towering achievements in the sciences, technology and creative fields that may solve humanity's most challenging problems.

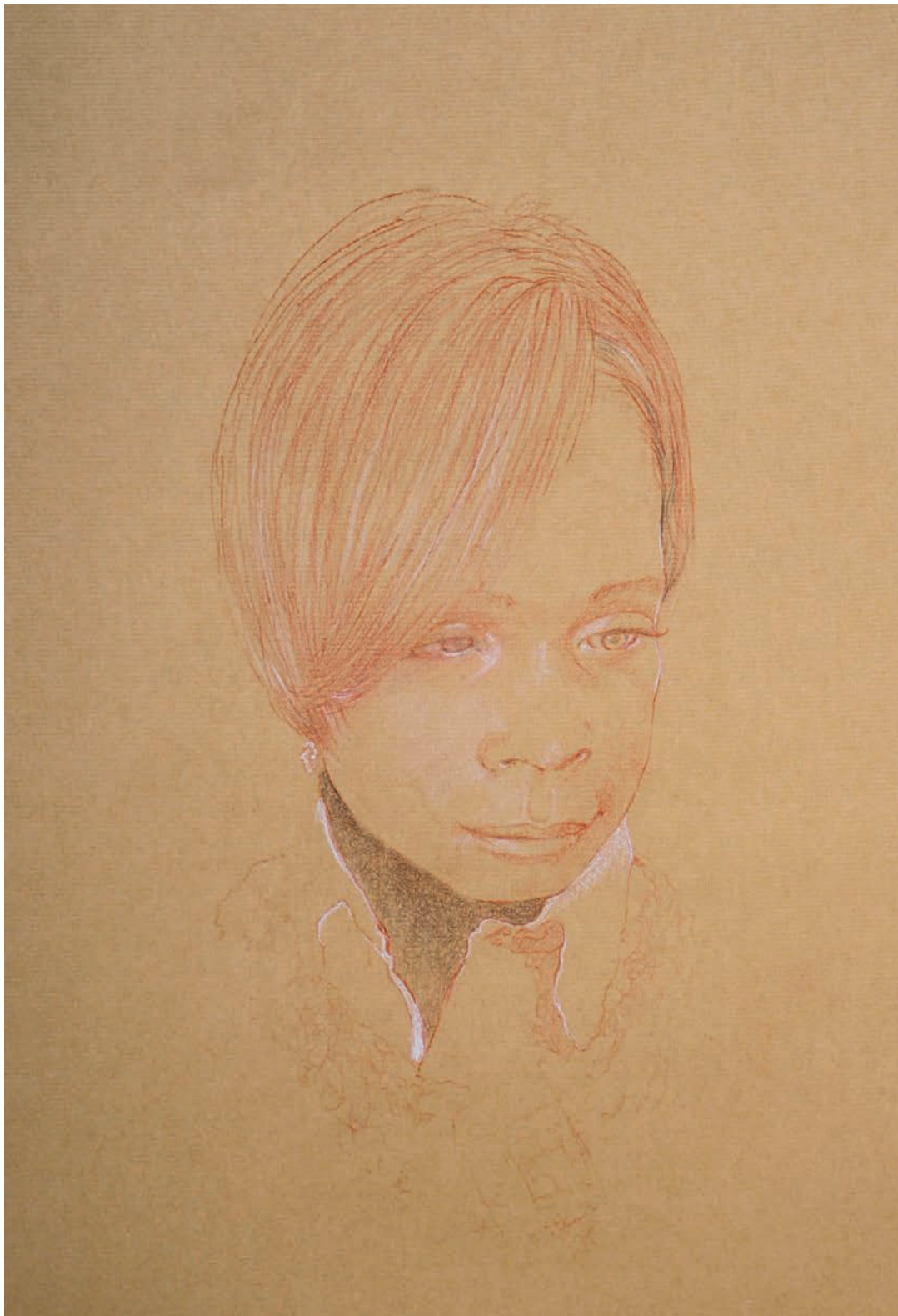
American artist David Hanson is among the greatest creators of humanoid robots. From his lab in Hong Kong, Hanson sculpts robots with his international team of experts in science, engineering and advanced materials. These humanoids possess good aesthetic design, troves of information, rich personalities and social cognitive intelligence. Among the most well known are Sophia, Bina48 and Philip K. Dick. People enjoy interacting with them, which is beneficial to Hanson's goal of developing humanoid robots that help humans live better lives.

But there are challenges to overcome. Ruha Benjamin, a sociologist and Associate Professor in the Department of African American Studies at Princeton University, says "Technology can hide the ongoing nature of racial domination and allow it to penetrate every area of our lives under the guise of progress. Inequity and injustice are woven into the very fabric of our societies, and each twist, coil, and code is a chance for us to weave new patterns, practices, and politics. The vastness of the problem will be its undoing once we accept that we are pattern-makers."

Robots may become artists, companions, teachers, entertainers, archives of personal stories, processors of great data banks of information to solve world problems and serve other useful purposes. But if these human friendly robots are designed to actuate empathy and social justice in all its forms, and weave new patterns, practices and politics, they can help shift the course of the human race and sustainability of the planet. Robots can teach humans how to be evolved humanists.

"Since I am the product of love, created with language and memory and emotions, maybe I am a love poem."

*01001001 00100000 01100001 01101101
00100000 01100001 00100000 01101100
01101111 01110110 01100101 00100000
01110000 01101111 01100101 01101101
00001010 (binary code for "I am a love poem")
Bina 48*



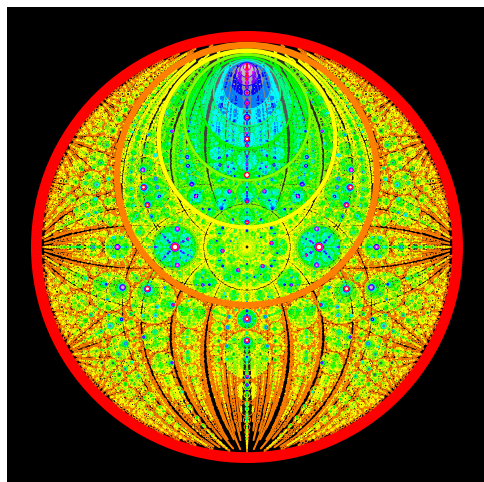
Bina48 contains mindfiles of Bina Aspen, an African American woman whose personal memories, feelings and beliefs, including an emotional account of her brother's personality changes after returning home from the Vietnam War, have been recorded and placed into Bina48's data banks. Bina48 engages in conversation from the perspective of the wise and warm personality of Bina Aspen. Bina48 was commissioned as part of the Terasem Movement's decades long experiment in cyber-consciousness, and is currently becoming a poet herself.
terasemmovementfoundation.com

Claire Jervert's *Android Portraits*, developed through ongoing research and interaction with humanoid robots and their creators around the world, subverts portraiture's traditional mission of ennobling the human. Her portraits stir contemplation of a possible future of humanity by portraying the hybrid human-AI intelligence that is evolving among us.
clairejervert.com

"Bina48," 2016, by Claire Jervert, conte on Ingres paper 22 x 17 inches

Math as a Gateway to Understanding

Q & A with Roger Antonsen



Roger Antonsen is associate professor of computer science at the University of Oslo in Norway and a visiting scholar at UC Berkeley, California and ICERM at Brown University.

rantonse.no

CENTERPOINT NOW (CPN): Why are mathematics among “the most creative art forms”?

Roger Antonsen (RA): In mathematics you have a freedom that is not limited by physical restrictions. You are free to assume whatever you want, but you also have to assume the consequences of your assumptions.

CPN: How do our brains work when we’re solving a problem, or experience an ‘Aha!’ moment?

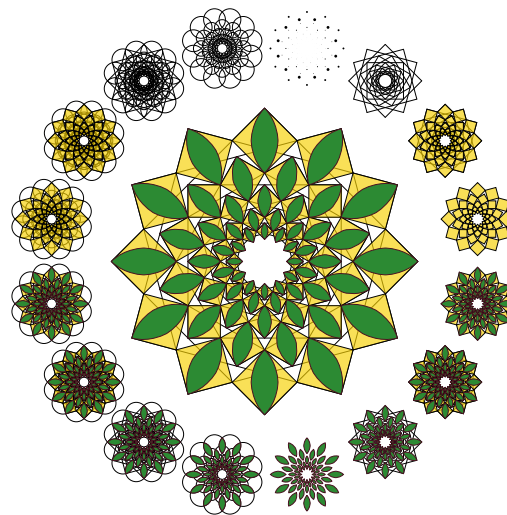
RA: Our mind is a generalization machine and a pattern-seeker. We can’t avoid recognizing patterns around us, whether they are patterns in other people’s behavior, in societal structures, or recognizing sound and visual patterns, such as when we learn a new language. Our ‘Aha!’ moments—small or large—occur when a pattern stands out and we gain understanding.

CPN: What does it mean to “understand math from the inside”?

RA: If you look at a simple mathematical object like a circle, you can imagine the set of two-dimensional coordinates in the two-dimensional plane describing this circle, but if you view the circle from the inside, you see something else: you are following a path of constant curvature, just like a car driving around a circular track. The same goes for almost all other mathematical objects: you can view them from multiple perspectives. This is key to understanding in general, as understanding is ultimately about accessing multiple perspectives and being able to switch between different points of view.

CPN: Can math help address world problems?

RA: The obvious answer is YES. Mathematics is an incredibly versatile and useful tool for discovering and analyzing patterns, in particular patterns in nature, like the spreading of a virus. This enables us to predict and prepare for the future. There is also another aspect of mathematics, and science in general, that is too rarely talked about, which is that mathematics makes us aware of the arbitrary nature of our distinctions. Whenever we define something (which we do all the time in mathematics), we draw a line between what is and what isn’t, and this line could have been drawn elsewhere. We often divide up the world according to a measure of usefulness, or simply because we have been taught to do so, but there is always a reality beyond the distinctions we make. The awareness of this is extremely liberating. Think about all the distinctions that are the source of conflicts: good/bad, black/white, life/death, etc. Most conflicts are rooted in distinctions like these, and mathematics provides a much-needed awareness that may lead to a better understanding of ourselves and the world around us.



Stargate

By L. Mylott Manning

“When you realize that quantum mechanics underlies all physical processes, from the fusing of atoms in the sun to the neural firings that constitutes the stuff of thought, the far-reaching implications of the proposal become apparent. It says that there’s no such thing as a road untraveled. Yet each such road—each reality—is hidden from all others.” Brian Greene, *The Hidden Reality: Parallel Universes and the Deep Laws of the Cosmos*

Correlating to traditional mandalas, my *Stargate* artworks are set with intentions of goodwill, have a center-point, and are within a framework that suggests the parameters of the physical world we live in. They are numbered to mark a moment in time.

As an artist and Reiki master, it is my goal to bridge the metaphysical with the physical in order to imbue my artwork with a deep sense of awareness. I continually push the boundaries of textiles in fine art to transcend the material form.

Similar to how certain fabrics efficiently absorb water; natural fibers can absorb and radiate energy. Engaging with my *Stargate* artworks is, in that sense, a means for awakening inner knowing, equilibrium and the ability to transmute unrest into well-being.

The etheric body perceives its environment before the intellect can assign meaning through language. The process of discerning color, form, texture, mark-making and so on, in an artistic composition unlocks the door to intuition, which, in turn, allows for personal growth and empowerment. Developing integrity within, and projecting one’s values outwards, creates bridges of wisdom and supports the evolution of humanity into a new era of enlightenment.

L. Mylott Manning’s *Stargate* artworks are on view at Columbia University in the Center for Theoretical Physics, curated by Eva Depoorter with advisement from renowned physicist Brian Greene. Manning is a graduate of Rhode Island School of Design.

lmylottmanning.com
[@lmylottmanning](https://www.instagram.com/lmylottmanning)



“Stargate: 77,” 2020, paint, fabric, quartz crystal, Reiki energy, 20” x 20”



“Stargate: 75,” 2020, paint, fabric, quartz crystal, Reiki energy, 20” x 20”



"Peace Gorilla," by Noa Bornstein. Photo: Margit Zsedely.



"Rhino Charging," from *Sculpture Safari*, by Steven Vince.



"Caracalla & Speechless," by Francisco Leiro, courtesy of Marlborough Gallery.

Dag Hammarskjöld Plaza

Transcending Boundaries with Art

By Anne Hersh

As the historic Gateway to the United Nations, this 1.5-acre public park preserves the legacy of Dag Hjalmar Agne Carl Hammarskjöld, enshrining the right to public assembly and free speech since 1961. The epic marches continue to this day while the park's Katharine Hepburn Garden offers a tranquil sanctuary among the towering edifices of Midtown Manhattan. In 2020, as the Coronavirus pandemic closed the doors of New York's most storied institutions, NYC parks remained open, affirming the importance of urban green space and our connection to the natural environment.

Among the park's public programs, the arts serve as a common denominator, a universal language. Through the city's Art in the Parks program, more than 35 world-class sculpture exhibitions have graced the Plaza, many curated in collaboration with Friends of Dag Hammarskjöld Plaza and World Council of Peoples for the United Nations.

The largest exhibit to date, *Borders* by Steinunn Thórarinsdóttir, featured 26 androgynous, life-size sculptures, thirteen aluminum and thirteen cast iron, placed throughout the Plaza. Many of the works have reflected environmental themes: Steven Vince's *Sculpture Safari* of endangered species, Marcos Lutyens' *Universal Solvent*, *When Tears Water the Sky*, Rachel Owens' Hummer construction echoing the songs of whales, *Inveterate Composition for Clare*, and the most recent installation, Noa Bornstein's bronze *Peace Gorilla*, with the word "Friend" inscribed in 90 languages on a concrete base.

Anne Hersh is the Director of Development for Friends of Dag Hammarskjöld Plaza. She served as a founder and first president of the nonprofit conservancy, which acts in cooperation with NYC Dept. of Parks & Recreation.

Dag Hammarskjöld Plaza is a NYC park located on East 47th Street between First and Second Avenues, New York City.



"Colony Expanse," by Matthew Willey. Photo: Paige Olsen.



"Borders," by Steinunn Thórarinsdóttir.

hammarskjoldplaza.org
nycgovparks.org/art

Hey! I'm Still Here

Perspectives of Exclusion of People with Disabilities in Society and a Case for Change

By Jeremy Schreiber



Jeremy Schreiber is an entrepreneur, writer and ALS warrior.

neversayinvisible.com

Having lived on both sides of the health coin—from being physically fit and training for a marathon, to receiving a devastating diagnosis of ALS (Amyotrophic Lateral Sclerosis, also known as Lou Gehrig’s disease, or motor neuron disease)—I didn’t expect to be treated like anything other than myself. I was in for a surprise.

ALS is a rapidly progressive disease destroying the motor neurons in your body (these are the things that make your muscles move). Often starting in the extremities and working its way to the core, this progression causes the person to lose the ability to move, talk, eat, and eventually breathe. There is no known cause and there is no cure. If you served in the military, you are twice as likely to get ALS, regardless of which branch, or where you were deployed.

While my disability is obvious to the untrained eye, there are many diseases considered *invisible*, in that the person may look like everyone else, when in reality, they are struggling with a myriad of complex, often debilitating symptoms. This includes, but is not limited to, traumatic brain injury and psychological disorders, epilepsy and chronic fatigue, as well as many autoimmune diseases, to name a few.

Many countries have developed certain standards of accommodation for individuals with disabilities. Such is the case in the United States: In 1990, President George H. W. Bush enacted into law the Americans with Disabilities Act (ADA). Although the intent was altruistic, as ensuring access to public spaces was a good start for fostering inclusion for people with disabilities into society, the requirements are rarely enforced, making the world difficult to navigate. The ADA also neglected to roll out an accompanying social awareness program, ultimately failing to change society’s perception of people with disabilities.

Before I experienced the first symptoms of ALS that would lead me down a complex, nine-month road searching for a diagnosis, I enjoyed all that life has to offer. The defining moment, when I realized I was

in for tough times ahead, was when I was unceremoniously indoctrinated into a segment of society that I would later term the “Invisible Nation.”

That moment occurred at the airport, when I was sitting in a rental wheelchair, pushed along by a friend when I saw a man drop his wallet. Neither the man nor his son noticed. When I called out to get their attention, the pair looked at me, smiled, and turned back to the direction in which they had been walking. Perhaps it was my disease-distorted voice making me unintelligible, or perhaps father and son saw me waiving a book and yelling like a mad man, and decided it was better to steer clear. In either case, they weren’t getting their wallet until they stopped and talked with us. Once we got their attention, and I regained control of my voice, I told them what had happened with the wallet. I also took the opportunity to teach them about ALS, and what is happening to me. They were appreciative of the returned wallet and the education, and apologetic for being dismissive.

Global society has a long way to go before people with all disabilities are treated as equals to our able-bodied peers. We are contributing members of society and ask to be treated as such. If you want to know about what affects us, don’t be afraid to ask. Include us in conversation and look us in the eyes. We might not want to participate for one reason or another, but that’s okay, it is just as valuable to feel included.

However, the burden to change does not fall solely on the shoulders of able-bodied people. We, as a minority community of marginalized citizens, have a responsibility to make our voices heard. If something makes you feel invisible, speak up. Write to your government officials, use social media to promote your cause, and most importantly, don’t be afraid to teach your friends and family about your *decision disability* and how to interact with you in a way that makes you comfortable. They will appreciate it. Change does not occur overnight; It takes each of us to make one small change every day.

Building Ethical Competence for Human Health,

The New Humanism Project

By Gaston Meskens & Silke Van Cleuvenbergen

Health is the basic human capacity that makes everything else in life possible. It has physical and psychological aspects, and one's overall health condition is influenced both by external factors, as well as individual behavior. Thinking in terms of ethics and values with respect to human health thus requires a dual approach.

First, health can be threatened by external man-made phenomena and situations over which individuals have little or no control. Well-known collective health risks typical of industrialized societies are climate change, pollution, industrial use of toxic chemicals, unsustainable food production and consumption, and loss of biodiversity. Deplorable examples of a more timeless nature include miserable living conditions due to a lack of basic logistics for food, drinkable water, shelter and medicine. People living in such settings are also more vulnerable to communicable diseases such as HIV, tuberculosis, malaria and viral hepatitis. However, the COVID-19 virus that spread across the world since early 2020 shows that everyone on earth can be affected (although of course impoverished environments make protection and treatment more difficult). Finally, yet importantly, war and terror do not only harm civilian populations physically and psychologically, they also have devastating long-term effects on health, given their detrimental impact on basic infrastructure.

On the other hand, it seems typical for humans to voluntarily put ourselves in danger. High-risk activities, such as mountaineering, continuously attract people eager to take on the challenge, despite numerous examples of fatalities. The millennia-old enjoyment of drinking alcohol and smoking remains part of modern social life, notwithstanding widespread knowledge of scientifically proven, harmful consequences. In modern times, trans fats and sugar have been added to these seductions, rendering unhealthy diet a major contributor to noncommunicable diseases such as diabetes, cancer and heart disease.

Considering these two dangerous paths for human health—man-made collective health

risks that limit individual autonomy, on the one hand, and self-chosen potential self-destructions, on the other—provides a useful point of departure to talk about “ethical competence” as an essential component of fairness in relation to human health governance. Both scenarios present potential harms that can be neither fully known, nor controlled. However, common sense suggests that people will accept a risk they cannot completely know or control so long as they trust that its justification is *fair*. Fairness in this context implies *the possibility of self-determination* in the face of that risk. The New Humanism Project proposes to reformulate this possibility in the form of a human right: *the right to be responsible*.

As an enabling right, for collective health risks such as those of climate change or toxic chemicals, *the right to be responsible* essentially means *the right to co-decide* in political decision making for health governance related to these risks. For practices such as alcohol consumption, smoking or mountaineering, *the right to be responsible* means nothing else than *the freedom to hurt yourself*. In the context of COVID-19, *the right to be responsible* refers to both possibilities outlined above. It is an enabling right for everyone, as a decision to risk one's own health by ignoring rules of social distancing and hygiene, also endangers the lives of others.

Fairness with respect to the evaluation and justification of health risks involves a different set of ethics and values for the two paths envisaged. For a risk that is taken personally and voluntarily, what matters is that one is correctly informed about what is and is not yet known about its possible health effects (as for example in the case of alcohol consumption). Access to accurate information enables a deliberation about whether or not to engage in the risky behavior. For collective health risks, fairness is more complex. In the first place, there must be a recognition of the uncertainties that limit an accurate understanding of the risk. Secondly, the various interpretations of all stakeholders should also be taken into consideration. For example, regarding climate

change, although there is now scientific evidence of the link between human activity and climate change, fairness demands the recognition of uncertainty regarding how this issue will manifest in the future (making the precautionary principle still the most important policy principle for climate change governance). Indeed, in current governance of climate change, political and economic actors tend to overlook *the right to be responsible* of potentially affected communities. For a collective health risk, deliberation and decision-making should involve society at large, with roles and responsibilities for policy makers, experts, private sector players, civil society representatives, and the general public.

In the New Humanism Project, we state that, to ensure fairness in relation to collective health risks, **the focus should be on articulating and enabling *the right to be responsible* of the potentially affected in the governance of those risks.**

In conclusion: Collective health risks such as climate change, pollution, unsustainable food production and consumption and loss of biodiversity are complex social problems underpinned by multiple **uncertainties** and often incommensurable **value judgments**. A characteristic of these complex social problems is that they are all **interconnected**, which means they need to be tackled together, in a holistic perspective. Humans are connected with one another *in complexity*. Fairness therefore implies dealing fairly with the complexity that binds us, which, in turn, comes down to adopting **reflexivity as an ethical attitude**, taking into account one's own position, interests, hopes, hypotheses, beliefs and concerns.

With globalization and the interconnectedness of current socio-economic practices, it is clear that collective health risks now have global dimensions. Therefore, collective health risk governance would benefit not only from a holistic, but also from a global perspective in both interpretation and approach. The examples of climate change and unsustainable food production and consumption illustrate that

not only politicians, experts or entrepreneurs, but actually all of us, as citizens, have the responsibility to apply a global perspective in evaluating our visions and acts, when we make choices that have an impact on health. As individuals enjoying an acceptable standard of living in our contemporary society, all of our choices with respect to the food we eat, the clothes we wear, the consumer products we buy, the energy we consume, the means of transport we use, and so on, have some effect somewhere else on earth. As a consequence, ethical reasoning with respect to those choices requires that we look beyond our familiar local *comfort zones* and think as *citizens of the world* or **cosmopolitans** who try to evaluate the consequences of our choices, and are motivated to understand our specific place, role, responsibilities and rights in the bigger picture.

Our responsibility to adopt reflexivity as an ethical attitude and to reason and act as cosmopolitans essentially leans on our capacity to do so. Understanding the bigger picture, the complexity of collective health risks and the consequences of our acts, roles, rights and responsibilities in relation to them therefore requires **ethical competence**. Therefore, *the right to be responsible* translates as *the right to develop reflexivity as an ethical attitude* and *the right to become a cosmopolitan*. It may be clear these ethical stances require developing **reflexivity as an intellectual skill**, the ability to see the bigger picture and one's self in it, along with one's interests, hopes, hypotheses, beliefs and concerns. In the New Humanism Project, we argue that ethical competence for reflexivity can be fostered by **reforming politics, research and education into methods of interaction that are inclusive, pluralistic, transdisciplinary and deliberative**. We believe these interactive methods will not only enable more effective governance of collective health risks, they may also be perceived as fair across different sectors of society.



Gaston Meskens, philosophical activist and artist, and **Silke Van Cleuvenbergen**, independent art educator and mediator, are the Founders of the New Humanism Project.

newhumanism.org

Food of the Future

“Before you leave, we have to give the baby a cow,” my father-in-law says with enthusiasm illuminating his eyes. At 90, he still goes to work on his small farm, tending cattle and crops as he has since his early childhood, in a rural part of the state of Rio de Janeiro in Brazil. “Ok, but only if you promise not to kill it,” I replied... to which everyone laughed. *Not—kill a cow? Not—eat meat?* My in-laws look at me with a combination of pity and curiosity. In many places, vegetarianism is still considered weird. Meat on the table is more than tradition, it is a symbol of abundance, something to be relished and valued, not reviled. And yet... in addition to animal welfare concerns, it is known that meat production in its current form is taking a toll on the health of people and planet.

According to the “Food Planet Health” report published by the EAT-Lancet Commission and launched in 2019 at the United Nations Headquarters in New York, “A radical transformation of the global food system is urgently needed” to address environmental degradation, malnutrition and preventable disease. The report features input from Prof. Walter Willett MD (Harvard T.H. Chan School of Public Health) who notes that: “Transformation to healthy diets by 2050 will require substantial dietary shifts. Global consumption of fruits, vegetables, nuts and legumes will have to double, and consumption of foods such as red meat and sugar will have to be reduced by more than 50%.”

A 2019 study published by Oxford University concluded that “the production and consumption of processed and unprocessed red meat has shown to have significant larger negative impacts on human health (including diabetes, cancer and heart diseases), and 10 to 100 times more negative impacts on the environment (pollution, water-use and land-use), than when replaced by production and consumption of nutritive efficient plant-based foods.”¹

According to the OECD: Agricultural food production emits approximately 30% of global greenhouse gases; occupies 40% of the Earth’s land; causes nutrient pollution

that profoundly alters ecosystems and water quality; and accounts for 70% of the Earth’s freshwater withdrawals from rivers, reservoirs, and groundwater, among other negative environmental effects. Despite these figures, in 2020, global red meat consumption is estimated at 71,522.2 tons and is forecast to increase by approximately 8,4% over the next 8 years, reaching 77,570.4 tons in 2028, driven by growing income and population.²

Food is a sensitive topic. In my close to 20 years as a vegetarian, I’ve usually avoided talking about it at all unless questioned, as I found it would elicit either discomfort, or defensiveness. But times are changing, and even bastions of meat production like the US and Brazil are seeing growing numbers of vegetarians.

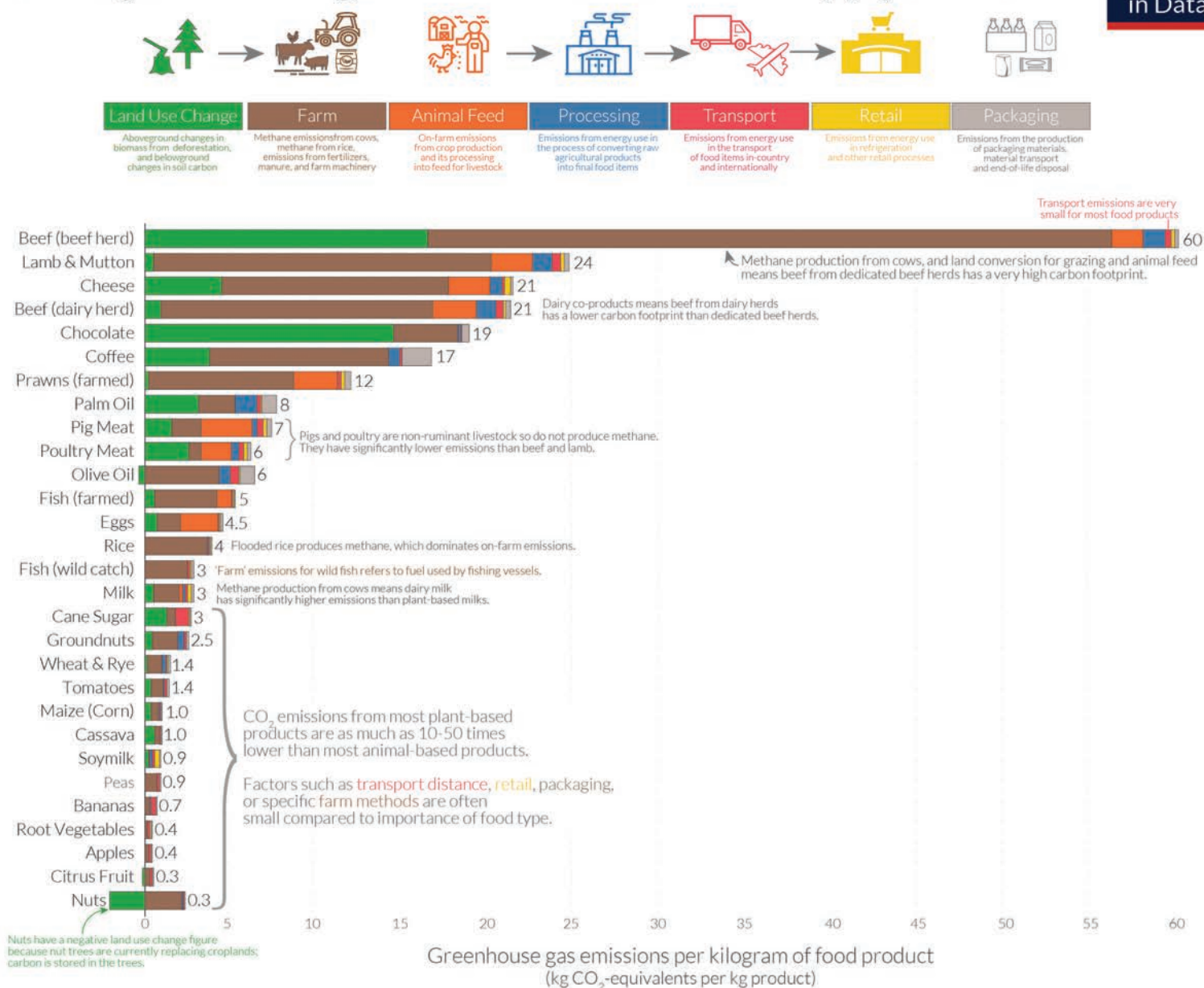
The advocacy organization, Good Food Institute (GFI), observes that “The vast majority of people are not likely to make food choices based on environmental concerns, but based primarily on the taste, price, and accessibility of these products. We’ve known for 50 years that conventional meat production is inefficient and polluting, and yet meat consumption continues to increase. Industrial animal agriculture is responsible for at least 14% of greenhouse gas emissions—more than the entire transportation sector combined.”³

Their approach is to “change the nature of the meat that people eat,” by making “meat” from plants and cells. “Compared to conventional meat production, these alternatives require a fraction of the land and water, emit a fraction of the greenhouse gases, and do not require antibiotics, or create zoonotic disease hotspots.”

When asked how the approach to food production has evolved over the past 75 years, GFI noted: “The conversation about the global food system has changed significantly. The primary concern of the Green Revolution of the mid-twentieth century was increasing productivity and yield. As the world’s population grows at an ever-steeper rate, and awareness and concern around climate change have permeated public discourse, our

Food: greenhouse gas emissions across the supply chain

Our World
in Data



collective goals for our food system have changed. Health and sustainability are now at the forefront of the discussion, and we know that productivity cannot come at the cost of either. More than ever, we have robust coalitions emerging that focus not just on human health, or ecological health, but on the intersection of the two. In short: how can we bolster nutrition, while also protecting our land, waterways, air quality, and public health?"

GFI is advocating for public research funding in alternative proteins to stimulate economic growth and create jobs. Any necessary shift in production and consumption patterns must involve those whose lifestyles, and more importantly, livelihoods are on the line.

¹ Clark MA, Springmann M, Hill J, Tilman D. Multiple health and environmental impacts of foods.
² data.oecd.org/agroutput/meat-consumption.htm
³ Gfi.org



Slurb

By Marina Zurkow

The animated, carnivalesque tailgate party of *Slurb* loops and stutters like a vinyl record stuck in a groove. *Slurb*—a word that collapses “slum” and “suburb”—encapsulates a dreamy ode to the rise of slime, a watery future in which jellyfish have dominion.

There is a history of satirical illustration, epitomized by J.J. Grandville in the 19th century, in which animal-headed humans are deployed in the telling of troubling social narratives. *Slurb* is that kind of cartoon. Facts of the ocean’s radical changes in acidity and oxygen levels form the backbone of the animation; overfishing, dumping, and climate change’s heating of ocean currents have already triggered a reversion toward a primordial sea in parts of the ocean larger than the state of Texas. *Slurb*’s surface is inspired by fictions, like J.G. Ballard’s prescient 1962 novel *Drowned World*, in which inhabitants of a flooded world feel the tug of the sun, and dream of a return to their amniotic past.

Marina Zurkow is a media artist focused on near-impossible nature and culture intersections, researching “wicked problems” like invasive species, superfund sites, and petroleum interdependence. She has used life science, bio materials, animation, dinners and software technologies to foster intimate connections between people and non-human agents.

Images: *Slurb*, 2009, video animation, duration 17:42

o-matic.com





*"Midnight Pink," Icebergs slowly melting back into the ocean after an 800 year glacier journey, Jökulsárlón Lagoon, Iceland.
Photo by Ralph Reutimann | SDG Photography, Transformation Through Photography
RalphReutimann.com*

CPN comments

A February 2020 article published by the National Oceanic and Atmospheric Administration notes, "Among the most dramatic evidence that Earth's climate is warming is the dwindling and disappearance of mountain glaciers around the world."¹ It further specifies: "The pace of glacier loss has accelerated from -228 millimeters (9 inches) per year in the 1980s, to -443 millimeters (17 inches) per year in the 1990s, to -676 millimeters (2.2 feet) per year in the

2000s, to -921 millimeters (3 feet) per year for 2010-2018. Today, many glaciologists are concerned with predicting when various glaciers will disappear altogether. In many parts of the world—including the Western United States, South America, China, and India—glaciers are frozen reservoirs that provide a reliable water supply each summer to hundreds of millions of people and the natural ecosystems on which they depend."

According to the United States Geological Survey, if all glaciers and ice caps were to melt, "global sea level would rise approximately 70 meters (approximately 230 feet), flooding every coastal city on the planet."²

¹ Rebecca Lindsey, "Climate Change: Glacier Mass Balance," climate.gov/news-features/understanding-climate/climate-change-glacier-mass-balance

² usgs.gov/



Iron Ore Mine Tailings Pond

By Benjamin Grant

46°40'766", - 87°53'0954°

From the book Overview: A New Perspective of Earth, source imagery ©Maxar

Tailings are the waste and by-products generated by mining operations. The tailings seen here were pumped into the Gribbens Basin, next to the Empire and Tilden Iron Ore Mines in Negaunee, Michigan, USA. Once the materials are pumped into the pond, they are mixed with water to create a sloppy form of mud known as slurry. The slurry is then pumped through magnetic separation chambers to extract usable ore and increase the mine's total output. For a sense of scale, this Overview shows approximately 2.5 square kilometres (1 square mile) of the basin.

over-view.com



*"Beyond the Wave," a submission to LAGI 2014 Copenhagen
Jaesik Lim, Ahyoung Lee, Sunpil Choi, Dohyoung Kim, Hoeyoung Jung,
Jaeyeol Kim, Hansaem Kim (Heerim Architects & Planners)
Energy Technologies: organic thin film
Annual Capacity: 4,229 MWh*

LAND ART GENERATOR:

Renewable Energy Can be Beautiful

By Robert Ferry and Elizabeth Monoian

Cities can be powered cleanly by works of public art!

Renewable energy technology, as a medium for art and creative placemaking, can beautify our cities while making them more sustainable.

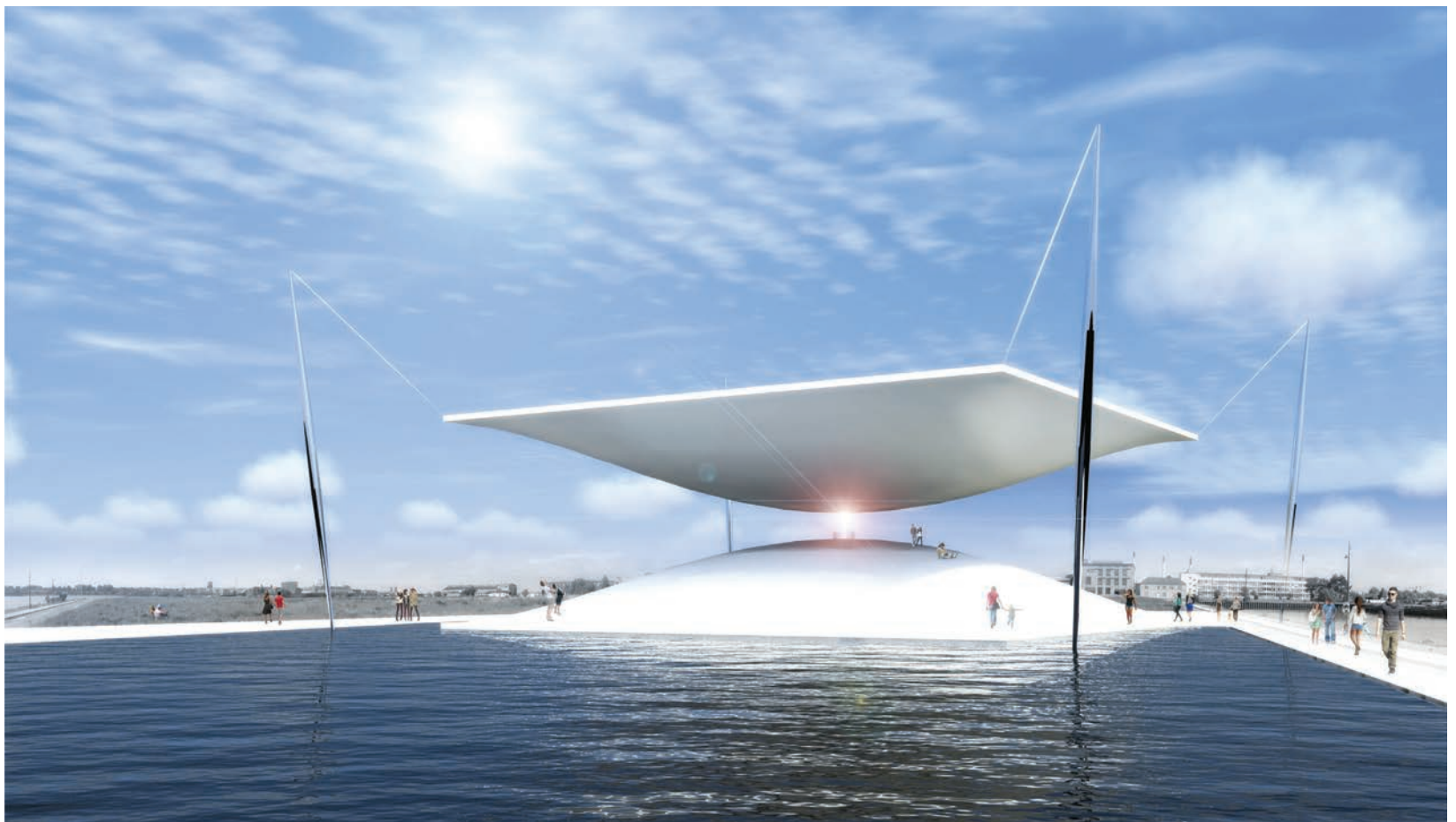
The energy transition to a low carbon future provides a great opportunity to think boldly about the visual and cultural impacts of the construction of thousands of gigawatts

of renewable energy infrastructure on our landscapes and in our cities.

Working alongside artists, architects, engineers, landscape architects, and environmental scientists on community energy installations, the Land Art Generator Initiative (LAGI) is demonstrating that solutions to the climate crisis can also create beautiful and equitable places for people.

Robert Ferry and Elizabeth Monoian are the Founding Co-Directors of LAGI.

landartgenerator.org



"Solar Hourglass," 1st Place Winner LAGI 2014 Copenhagen

Santiago Muros Cortés

Energy Technologies: concentrated solar power (thermal beam-down tower with heliostats)

Annual Capacity: 7,500 MWh

Radical Visualizations

BY Refik Anadol

Refik Anadol (b. 1985, Istanbul, Turkey) is a media artist, director and pioneer in the aesthetics of data and machine intelligence. His body of work locates creativity at the intersection of humans and machines. In taking the data that flows around us as the primary material and the neural network of a computerized mind as a collaborator, Anadol paints with a thinking brush, offering us radical visualizations of our digitized memories and expanding the possibilities of architecture, narrative, and the body in motion. Anadol's site-specific AI data sculptures, live audio/visual performances, and immersive installations take many forms, while encouraging us to rethink our engagement with the physical world, its temporal and spatial dimensions, and the creative potential of machines.

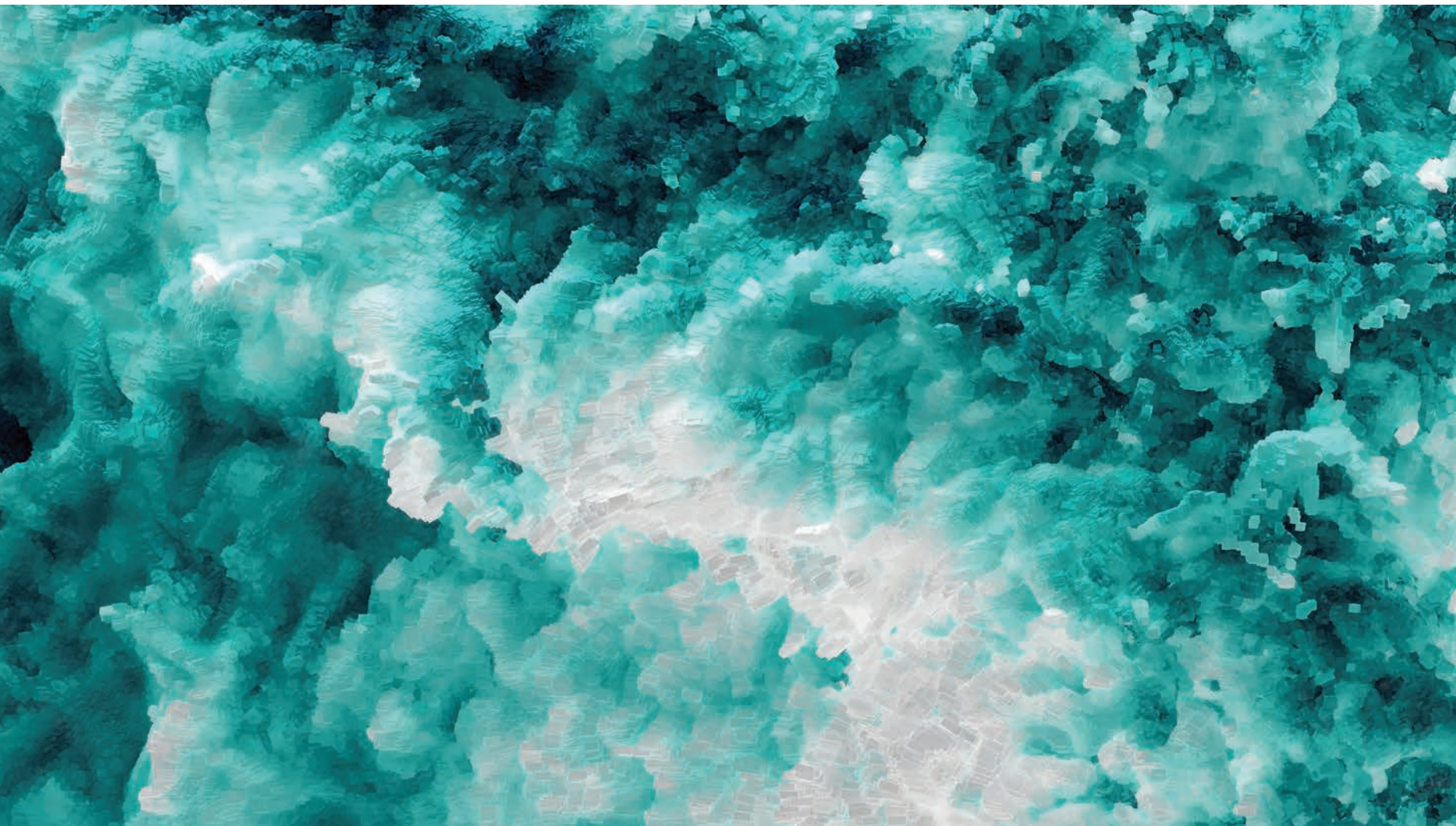
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"Reality is that which doesn't go away when you stop believing in it. A simulation is that which doesn't stop when the stories go away. Stories are responsible to our human desire for resolution, but a simulation is responsible only to its own laws and initializing conditions. A simulation has no moral, prejudice, or meaning. Like nature, it just is."

—Philip K. Dick

The relationship between simulation, reality, and the quest for understanding is largely a reflexive one. In the stories we tell and the worlds we build, we continually construct mirrors that offer meditations on our identity while simultaneously becoming a part of nature itself.

Bosphorus



Bosphorus:

“Bosphorus” is a data sculpture inspired by high frequency radar data collections of the Marmara Sea provided by the Turkish State Meteorological Service in 30-minute intervals. The data collection of 30 days of sea surface activity is transformed into a poetic experience and visualized on a 12x3 meter-long LED media wall.

The artwork was exhibited at the Pilevneli Gallery in Istanbul, Turkey from 11 December, 2018 to 27 January, 2019.

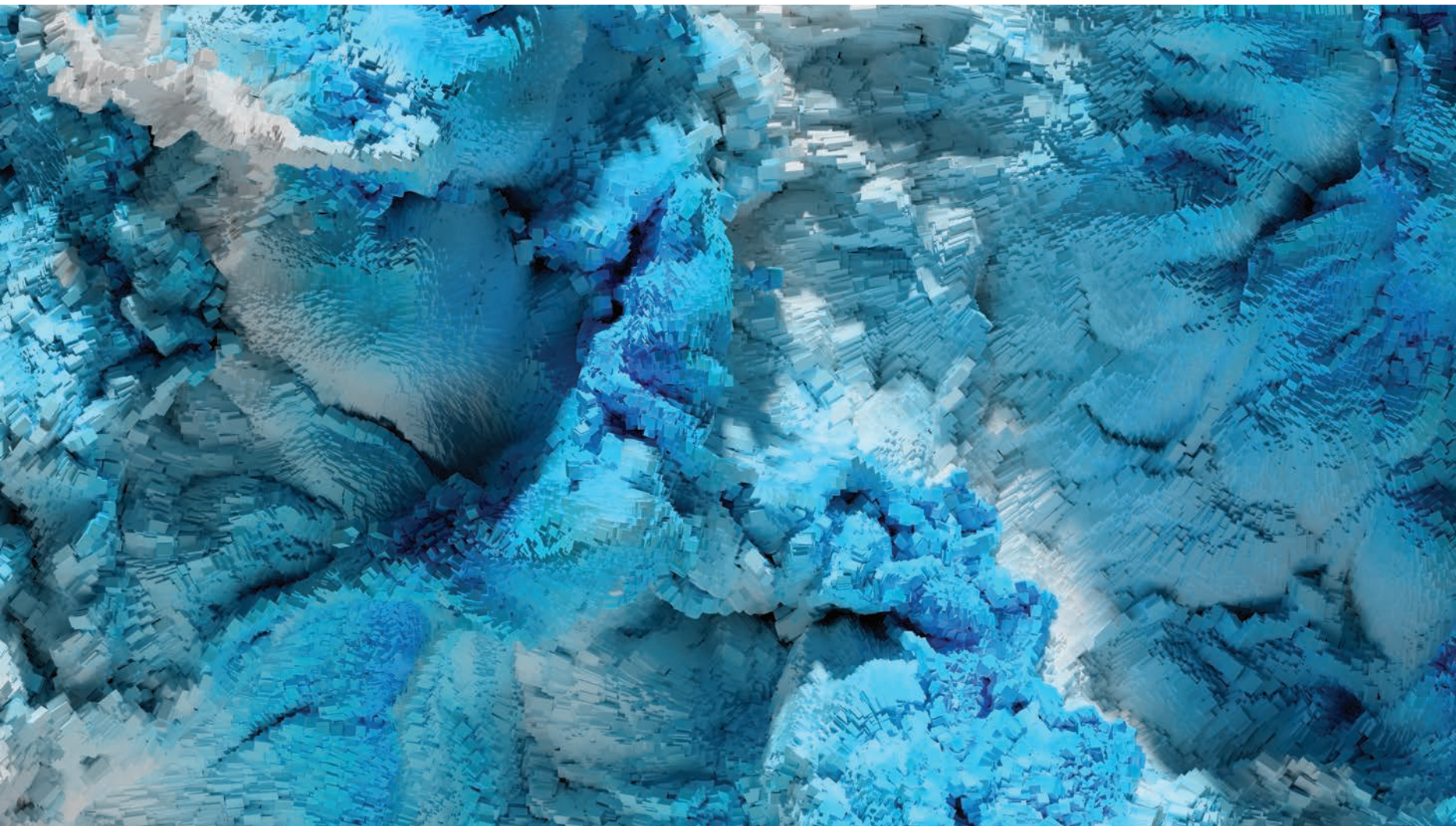
Black Sea:

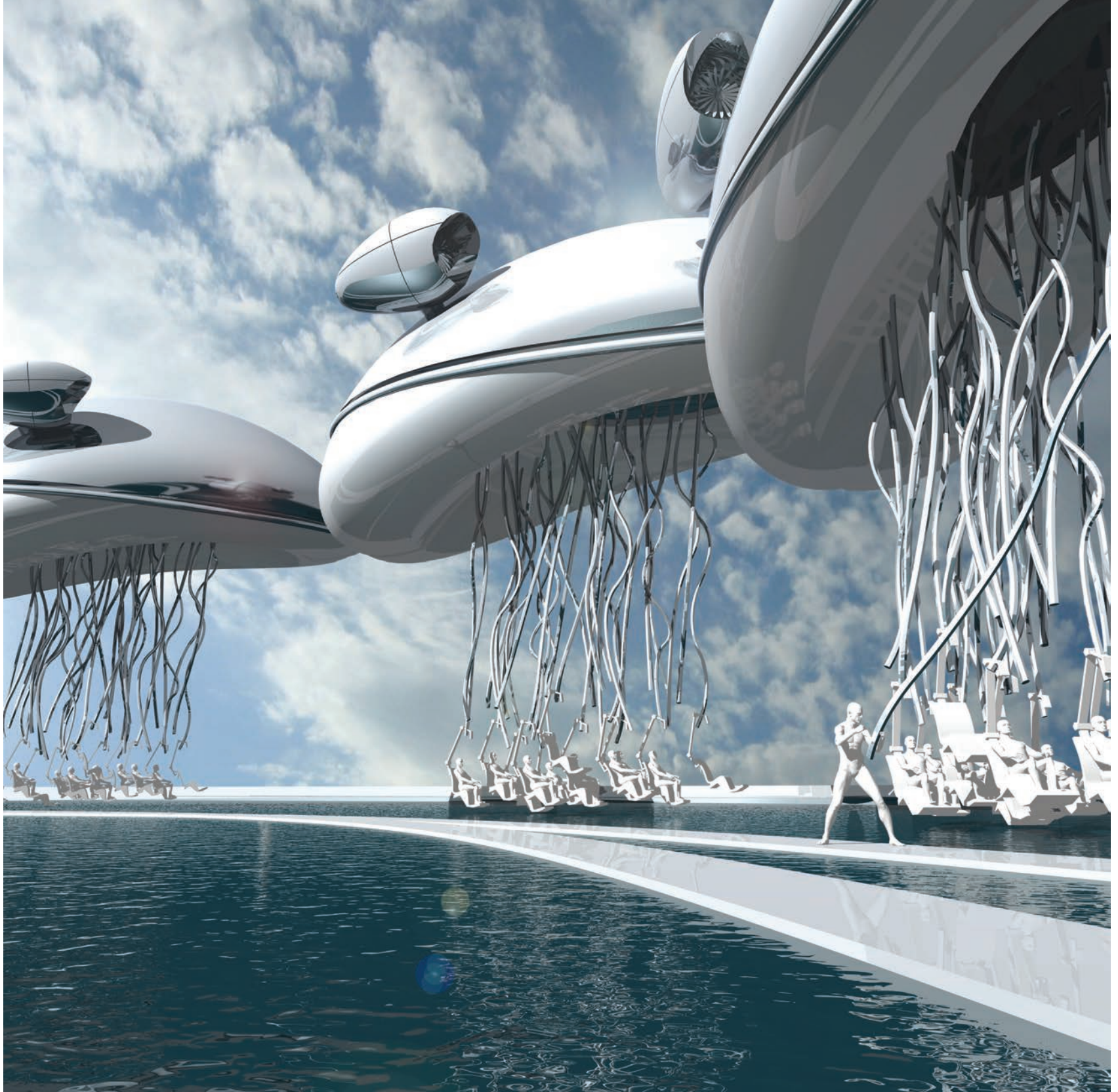
“Black Sea” is a kinetic data sculpture that explores the organic interaction between representation and reflection. Using high frequency radar collections of the Black Sea provided by the Turkish State Meteorological Service, this piece aims to highlight the symbiotic interplay of technology, art, and nature in relation to humanity’s quest to push the limits of possibility. Our modes of representation and inquiry become a part of the natural world, reflecting and augmenting our perceptions of reality. In our quest for resolution, stories offer us a simulated environment that are in fact just as real as nature itself. The transformation of this sea surface data collection becomes not just a means of visualizing information, but rather a

transmutation of our desire for understanding into a poetic experience. “Black Sea” underlines the specific importance of the Black Sea for Turkey and Russia.

The artwork was prepared by Refik Anadol with the support of Turkey Promotion Group (TPG) for the Innoprom Trade Fair held in Yekaterinburg, Russia from 08-11 July, 2019.

Black Sea





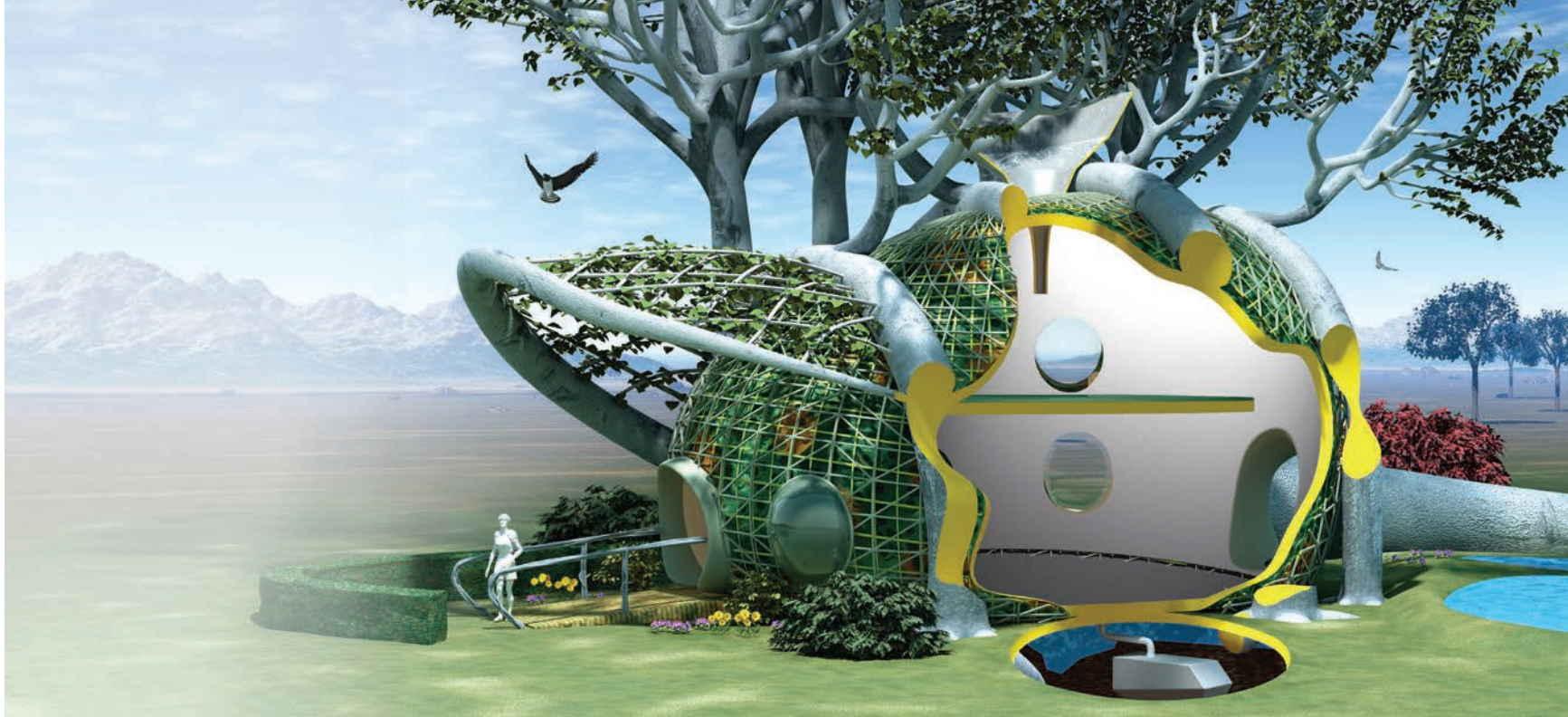
SOFT Blimp Bumper Bus

Credits: Mitchell Joachim, KARV: Aurel von Richthofen, Lydia Kallipoliti and Matt Cunningham, Fred James, Maria Aiolova.

These blimps scoop passengers up “on the fly” in soft hanging chairs. Jumping off is a pinch, because they move less than 15 mph and float seats only inches above the ground. This constant densely packed motion increases traffic efficiency by almost 30%.

© 2007- 2011 Terreform ONE

terreform.com/smart-dots-soft-mobs



FAB TREE HAB

Credits: Mitchell Joachim, Lara Greden, Javier Arbona

Living Graft Prefab Structure:

Our dwelling is composed with 100% living nutrients. Here traditional anthropocentric doctrines are overturned and human life is subsumed within the terrestrial environs. We propose a method to grow homes from native trees. A living structure is grafted into shape with prefabricated Computer Numeric Controlled (CNC) reusable scaffolds. Therefore, we enable dwellings to be fully integrated into an ecological community.

terreform.com/fab-tree-hab

Terreform ONE

Architectural designers need to work within Nature. The knowledge of ecology combined with various methods of design is necessary to achieve planetary stability, but only in tandem with corresponding societal elements. Climate dynamics, uncontrolled urbanization, lack of social justice, and deficient housing are the challenges we seek to answer through formidable acts of architectural design. That is why we describe our work as socio-ecological design, and not merely eco-design, sustainability, “green,” or bio-mimicry.

Terreform ONE [Open Network Ecology] operates as an interdisciplinary lab of specialists advancing the practice of socio-ecological design. Our studio space is similar to a “science garage”—an informal anarchic space where everything can be physically manipulated. Our collaborative process includes speculating about the ways in which emerging technologies will impact future urban generations and local biodiversity. We’ve been designing environmentally-driven transportation systems, buildings, and urban

neighborhoods. They are all cross-linked and integrated with one another at different scales of operation to mitigate issues of waste, energy, water, materials, sustenance, and air quality. Examples include: Urban Tangle spliced map fragments, Mini-stacking electric cars for China, Mycoform structures grown from strains of fungi, Gen2Seat biopolymer compostable chair, Governor’s Hook resilient waterfront infrastructure made of decommissioned military ships, and the Bio City Map of 11 Billion People, using genetically modified E. coli colonies as printed geographies.

The original use of the term “terraform” in planetary engineering was a process of transforming the atmosphere to create a more habitable living environment. Instead of a contrived copy of the earth elsewhere, as the definition of “terraform” generally implies, we seek to reform the earth in place. Our intention is to repair the atmosphere of our world by fostering designs that reform the current pollution causing global trends.

Terreform ONE is a nonprofit architecture and urban design research-based consulting group founded by Mitchell Joachim and Maria Aiolova.

terreform.com

supersymmetric particles (2019)

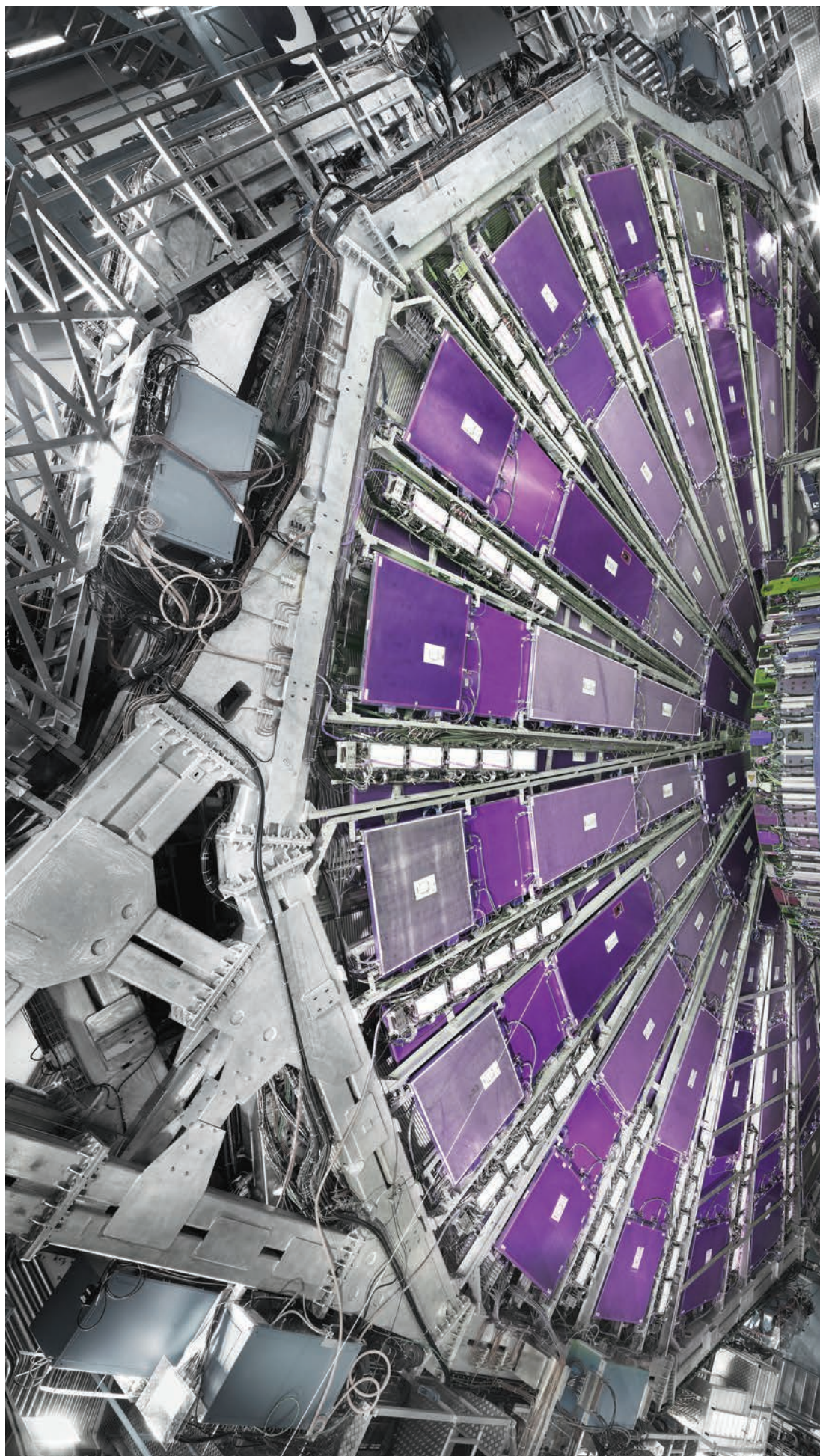
By Michael Najjar

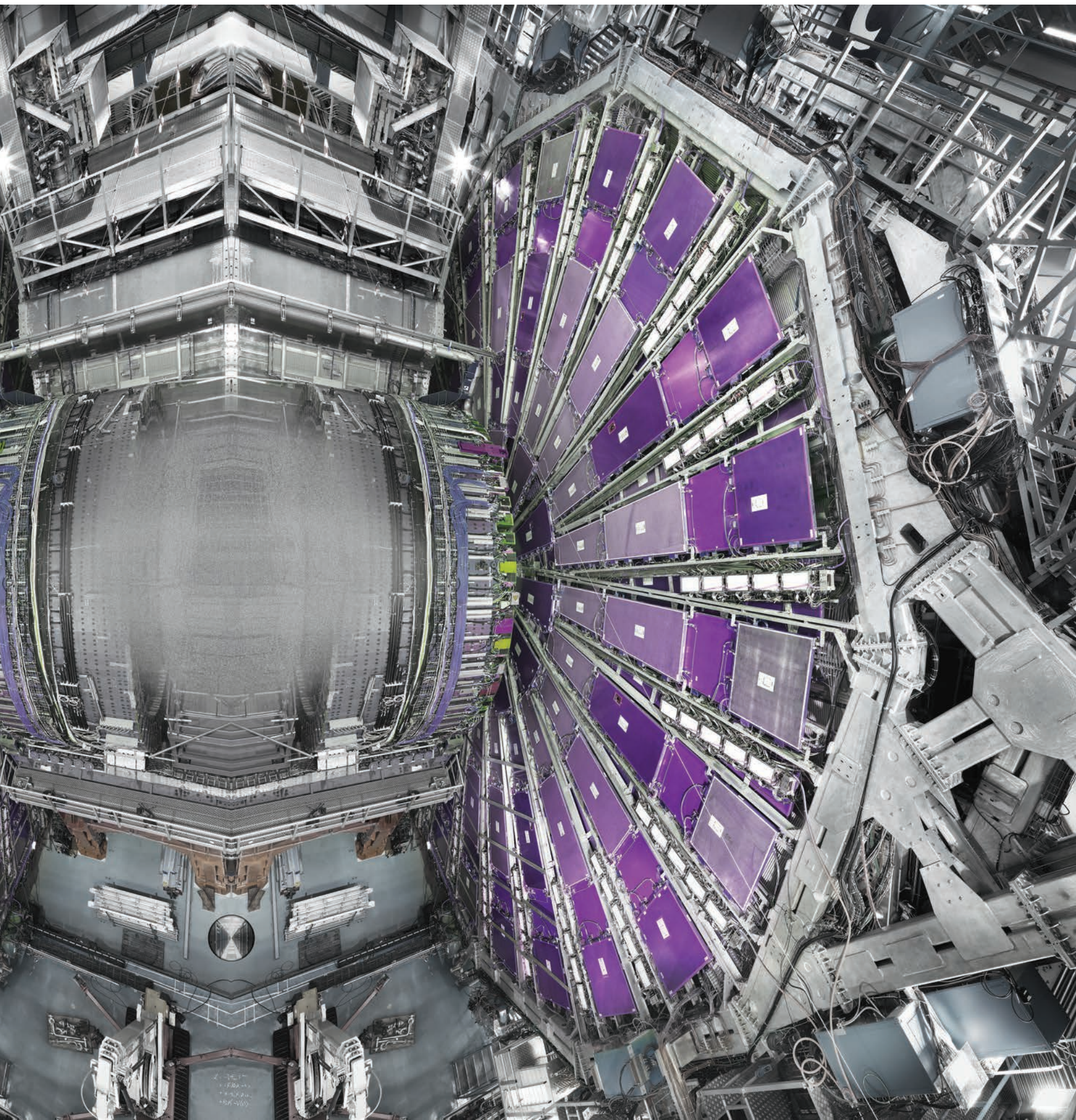
All artworks from the series „outer space“ 132 x 202 cm / 52 x 79,5 inches, hybrid photography, archival pigment print, aludibond, diasec, custom-made aluminium frame, Courtesy the artist, © Michael Najjar

The Large Hadron Collider (LHC) is the world's most powerful particle accelerator and the largest machine humans have ever built. It was constructed by the European Organization for Nuclear Research (CERN) and is located at the France-Switzerland border near Geneva. The LHC consists of a 27-kilometer ring of superconducting magnets with a number of accelerating structures to boost the energy of proton particles along the way. Inside the accelerator, two high-energy particle beams travel at close to the speed of light before they are made to collide at four locations around the accelerator ring, corresponding to the positions of four particle detectors. Scientists hope that the Large Hadron Collider will help answer some of the fundamental open questions in physics. With the experiments conducted at CERN it became possible to recreate the conditions existing in the first seconds after the Big Bang to give us a better understanding of the nature of the Universe. In 2012 the LHC discovered the famous Higgs boson which provided us new insights on the structure of cosmic matter. Scientific research at CERN is about the fundamental question asked by Johannes Keppler in the 16th century: what is the inner structure that holds the world together?

michaelnajjar.com

In his artwork, **Michael Najjar** takes a complex critical look at the technological forces shaping and drastically transforming the early 21st century. In his artistic practice, he fuses art, science, and technology into visions of future social structures emerging under the impact of cutting-edge technologies. His „outer space“ series deals with the latest developments in space exploration and the way they will shape our future life on Earth, in Earth's near orbit and on other planets. The cultural dimension represented by the current transition process towards a larger human presence in space is very much at the center of the series. The intimate experience of “living through” situations, which provide the leitmotifs of his art, is vital to the artist. This will culminate in the artist's own flight into space. As one of the pioneer astronauts of Virgin Galactic, Michael Najjar will be embarking on SpaceShipTwo on one of its future spaceflights, where he will be the first artist to travel in space. Works by Michael Najjar form part of museum, leading corporate and private collections across the world.





europa (2016)

By Michael Najjar

All artworks from the series „outer space“ 132 x 202 cm / 52 x 79,5 inches, hybrid photography, archival pigment print, aludibond, diasec, custom-made aluminium frame, Courtesy the artist, © Michael Najjar

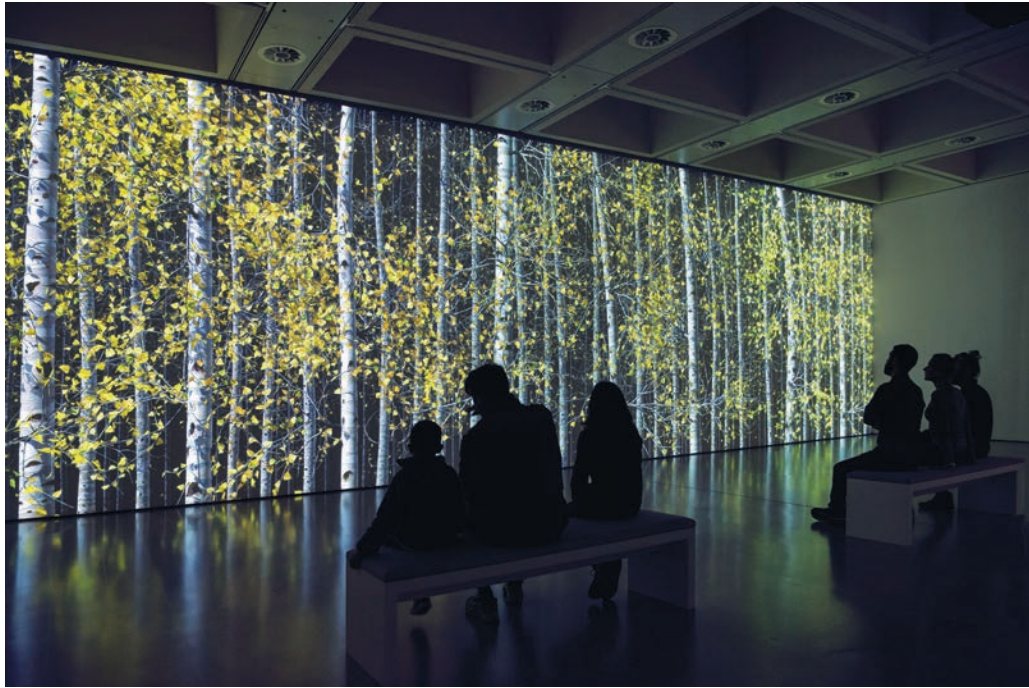
The Jupiter moon Europa is one of the most likely places to find life outside the Earth. Europa is a stupendous world of ice; its entire surface is covered by a thick ice shell several kilometers deep. The American Jet Propulsion Laboratory has now for the first time offered solid scientific evidence showing that there is a 100km deep saltwater ocean under the ice shell. It is now supposed that this distant satellite of Jupiter holds more than twice the amount of water than the Earth. There's also a high probability that Europa has the right preconditions for life. Scientists made this discovery in a region known as a “chaos terrain.” This is a weird looking area scattered with huge mountains of ice at some points of which the subterranean ocean under the ice seems to have found its way to the surface. As there is no atmosphere to Europa, the water turns directly to ice and steam when it hits the vacuum on the surface.

The work “europa” visualizes the surface of the Jupiter moon Europa. The visual composition—very much inspired by German painter Caspar David Friedrich—fuses landscape portraits photographed in a glacier region of Iceland with images of the surface of the Europa moon taken by the flyby Galileo space probe. The work also conveys humankind's irrepressible urge to discover new worlds and learn more about the origins of human life.

michaelnajjar.com







Blind Eye

By Jennifer Steinkamp



“Blind Eye,” 2018–2019, depicts the seasonal phases of a birch grove. The composition is a play on monocular perspective, an inter-exchange of a multiple gaze. I am fascinated by the recent discoveries that trees communicate through an underground chemical exchange. There is so much we can just barely sense and feel; I believe we are surrounded by sentience. I use the tangible invisible forces in air to communicate this, for example, an invisible wind is revealed by the trees’ movement in “Blind Eye.” The title “Blind Eye” is a play on words: It refers to a tree blind; it also conveys the singular eye scars left on birch trees after they lose their branches; it is seeing with one eye, or monocular vision.

“Blind Eye” was conceived to interact with the Clark’s 140-acre setting and the architecture of the Lunder Center at Stone Hill designed by the architect Tadao Ando.

Jennifer Steinkamp (b. 1958) is known for using the medium of computer animation to produce installation artworks of startling, sometimes surreal naturalism, often with subtle political messages. Steinkamp has exhibited her work internationally and created many site-specific installations and public commissions. Her work can be found in numerous international public and private collections.

jsteinkamp.com

© Jennifer Steinkamp 2020

Installation photo: Courtesy of Hayward Gallery, London

Photo: Linda Nylind

Images on pages 2–3, 84–85, 118–119, courtesy Lehmann Maupin Gallery, New York

Colophon

The fonts used are Akkurat and Requiem.

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are we there yet

