Sensorium: THE VOICE OF THE WORLD OCEAN

A Vision
A New Kind of Art
A New Kind of Science

The Center for the Study of the Force Majeure
There is a belief to be abandoned as too costly.
It is the belief that the life web can ruthlessly be exploited and landscapes can be exhausted polluted from aquifer to topsoil then revived if or when profitable.
It is the belief in extraction squared that leads to extraction cubed.
We are seeing a globally legalized Force Majeure.
Pay attention to the extreme cost of extreme belief.

To understand the idea of the Sensorium concept as performed by Newton Harrison watch the video: https://youtu.be/3VFFpt9JshQ

To gain an impression of the AlloSphere’s technical means of translating it look at: https://youtu.be/lHTQ4zYk8m4
The Center for the Study of the Force Majeure was founded by Newton and Helen Harrison in 2007. It is a freestanding education and research center based at the University of California at Santa Cruz that brings together artists and scientists in diverse disciplines to design and catalyze the development of ecosystem-adaptation projects in critical regions around the world to respond to system regeneration climate change being a major stressor.

Therefore, we work at the scale at which issues present, using a focus on “pre-emptive planning”, i.e. strategies that forestall, adapt to or mitigate the challenges emerging over the next 50–100 years.

Force Majeure, the legal term embedded in the name, when framed ecologically refers to the uncontrolled impact of human-accelerated global warming and whole-systems stress produced by the vast industrial processes of extraction, production, and CO₂ generation.

For the past 200 years ‘free’ fossil carbon has allowed us as a species to separate ourselves from nature and the global web that supports all life on the planet. That same fossil carbon has given rise to a series of systems, in agriculture, forestry, urban development, transportation, technology and overall social organization that rely on that energy along with an enormous intellectual apparatus designed to rationalize our reckless behavior. The sheer scale of this transformation has impoverished all other global processes. We are on the edge of system collapse across almost every measurable axis. As artists, our response to the crisis we face is to honor the web and find ways to bring humans back into the natural systems of which we are a part. We address this imminent collapse by intentionally reintroducing complexity to systems impoverished by the inexorable simplifications demanded by modern industrial practice. We seek to provoke action and engagement that counters business as usual, to catalyze new thinking and reshape the inevitable social, political and economic responses towards bringing balance, and health, back into the web of life. By new thinking, acting, being, we mean reinventing our processes of culture-making, in a way, that gives back as much or more to the Lifeweb as we take.
Sensorium – the Voice of the World Ocean
A Vision – A New Kind of Art – A New Kind of Science

“I began the Sensorium work investigating what science has done and not done, and recognized that pure research, the kind that led to everything from the discovery of gravity to the complexities of quantum physics, rarely happens. In science today, monies and the desires of funders rule. This has resulted in a situation where responses to ocean degeneration are always behind the curve of oceanic degradation, i.e. pollution, acidification, deoxygenation, dramatic reduction of species – problems proceed at a greater pace than regenerative efforts possibly can. Sensorium gets ahead of this curve in the way it free associates, improvises, and then, through unexpected juxtapositions, comes up with resolutions, and above all, imagery, visualizations, and solutions not presently able to be visualized and theorized upon. Ultimately leading to a regenerated, heat impacted ocean, where what has been taken from it is less than it requires for its own well-being to self evolve through time.”

(Newton Harrison)

Sensorium is a physically high presence, immersive, interactive space with total surround imagery. It invites the participants to “walk the World Ocean,” interact with it, ask it questions, listen to its voiced response, hear its challenges and discover fresh new insights for ocean recovery solutions to the stresses placed on it, in particular those stresses well published during the last 100 years.

It is designed as a deeply felt experience, and a whole systems solution laboratory that evokes creativity in students, general audiences and scientists alike. Of great importance is its outreach to policy makers. Its interactive floor and walls are powered by sophisticated Artificial Intelligence tools. The construction and aesthetic presence generated by Sensorium is performative in nature and evocative of the kind of revelatory feelings that can emerge as its space expresses cathedral-like properties.

In fact, Sensorium blends research work with the aesthetic experience. It is the latest in scientific, ecological, biological, economic thinking and precise measurements with the intention of directing the imagination back towards a rejoining with the Lifeweb.

It is informative even to the point that there will be questions asked of it for which there is no answer. The voice of the World Ocean is then enabled to visualize an array of answers from which a synthesis can be derived. Sensorium functions in the conceptual space that everyday humanity functions in. It is a space that operates between the far seeing of the telescope and the micro-visualizations available in a microscope.
Sensorium is a poly-disciplinary, polycultural, poly-aesthetic, poly-scientific global communication system. The profound hope is for Sensorium to answer a multitude of questions of great variety and in depth: questions the scientists would ask, the social scientists, the humanists, the everyday people, even children with the voice of the ocean answering in response as well as acting as interpreter, information source, and conversational participant. The long-term intention of this work is to generate the possibility and avenues of approach for human communities large and small to become niches in the Web of Life itself.

Sensorium is both a work of art and of science that sets out to synthesize the survival problems that the world ocean faces in our emerging heat shocked future. The history of artistic creation suggests an alternative pathway to learning and discovery, one that relies on intuition, on the power of free association, and the value of shifting perspectives and paradigms. These insights have powered artists to be architects of invention and transformation since before recorded history. The scientific discoveries of Leonardo along with the engineering marvels of his fellow Renaissance masters only underscore the value gained by integrating creative insights to more rationalized forms of inquiry. We believe that new and creative answers to questions regarding the ocean’s ability to regenerate and return to ecological well-being will emerge from integrating core artistic concepts and creative strategies with current scientific resources and modeling, generating a new synthesis that builds on the strengths of the underlying science and the perspective of the artistic experience, and these thoughts underpin the design and then the work of Sensorium.

The work is conceived by Eco-Art Pioneer, Emeritus Professor Newton Harrison UCSD & Research Professor UCSC, and developed with the Center for the Study of the Force Majeure, located at the University of California Santa Cruz, Distinguished Professor JoAnn Kuchera-Morin Ph.D., Director, The AlloSphere @ UCSB, Juliano Calil Ph.D., Virtual Planet Technologies, Center for Force Majeure Co-Director Joshua Harrison, Kai Reschke and Petra Kruse Ph.D. (Members of Board of Directors of CFM and European Center for the Force Majeure).
Helen Mayer Harrison and Newton Harrison have been working for the past fifty years on systemic environmental problems such as topsoil degeneration, planetary warming, atmospheric imbalance, forest and oceanic degeneration as subject matter in artmaking, their work is acknowledged as foundational to the rapidly growing eco-art movement. Sensorium is the most recent effort in addressing the ongoing degeneration of our world ocean’s life web. It is an example of what is meant by counterforce, referring to the book by the Harrisons entitled *The Time of the Force Ma- jeure – After 45 Years Counterforce is on the Horizon*.

Sensorium proposes a form of expression that references the whole systems knowing that our ancestors practiced as their everyday survival motif and that has now faded to a whisper in everyday western life.

Newton Harrison explains this as follows:

“I start imagining myself not in the now but as living a tribal life, one hundred thousand years ago standing in the high grasses with the open canopy forest from which I emerge close by. The grasses are tall, but I can see above them. A hundred yards away the tall grasses wave in a manner that signals a large animal is present. A tail is then seen and instantly the image of a tiger comes to mind as one of my human visual talents is to create a whole from seeing or hearing a part. If the wind is blowing away from me, then I need not flee. If the wind is blowing from me towards the tiger, then flight takes over as the tiger would smell me. At the same time, my personal sensorium is picking up sound, wind, growth in many forms while registering places to escape and hide, all at once and all together. In fact, I am having a whole system’s fight or flight response to a clear and present danger. The survival principle at work is scanning which led to this nearly instant unrationalized holistic response. I believe that this kind of seeing and this kind of survival training for the human sensorium has been so minimalized by modern life that large system scanning, and improvisational response has ceased being an environmental survival strategy in contributing to safety in everyday life.”

Such talent has now devolved, with notable exceptions, to what can be derived from the computer screen experience. This human loss seems to be catastrophic for the life web of the planet because decision-making, still mainly Cartesian in nature, is mostly made part by part in a fragmented, environmentally disassociated manner, this is to say, fixing the world as a mechanism. This is typical for much present-day research which instead of seeing and acting on what is happening all over and all at once tend to focus on mending single issues. Even though
the ancient's historic perception was local, our perception in this very complex now must become global. Retrieving and evolving our original scanning skills is the requirement if we are to successfully respond to the complex problems operating all at once due in good part to planetary heat shock.

Sensorium, as a consequence, is a proposal for an intervention that is mostly digital expression of how we can in modern world terms go about reestablishing whole systems seeing decision-making and above all action. The intention is to bring back to everyday experiencing whole systems' scanning as a commonly used, once natural practice, particularly useful both in scientific research and everyday life. Toward this end, we are in the process of designing a new kind of instrument. The instrumentality we have in mind sees in the now and is supported by how science explains just how much of our brains are committed to processing visual information.

We repeat that a great deal of restorative oceanic work is in a one-at-a-time problem-solving format. Whether we are looking at the loss of coral reefs, dead spots, heat pollution, fish farming pollution, acidification, ocean rise and plastics removal. Obviously, this list is much longer.

The research format we refer to in problem solving is reflexive in nature and addresses one system problem at a time whereas the immersive work we propose by combining art and science opens space of mind for a new approach useful for new and valuable oceanic narratives to emerge.
For instance, the voice of the ocean will tell us where present sanctuaries exist—which are few—and where the majority of the sanctuaries may need to exist. This makes a new transoceanic pattern visible when this question is asked of Sensorium. Another imperative question to answer could begin with the oceanic nurseries that exist in the ocean—the mangrove swamps, the oceanographic wetlands occurring in estuaries, the coral reefs, and many others. When all are protected, two things happen. The transoceanic life is enhanced and protected, fisheries are re-expanded, and biodiversity is protected. Thus, the World Ocean’s voice has the power to instruct, to propose and to let the questioner—in this example an oceanographer—make clear the benefits of such action as well as the catastrophic outcomes if no action is taken at all. In other words, a new and healing narrative for the World Ocean will automatically be offered by transaction with Sensorium.

Sensorium is designed to cultivate collective-collaborative problem-solving from a whole systems perspective visualizing oceanic issues in such a way that information groups and clusters all at once, inviting holistic perception and synthesis type problem-solving. Seeing the whole system of oceans in this way, where one might walk from the Pacific and find oneself in the Baltic Sea and discover the voice that speaks for the Baltic ocean, would have other requirements for its well-being. For instance, for the land-based pollution this might even mean inland purification systems as well as generating new wetlands. If the question would be ocean rise then the coastline would appear and thereafter whatever height was required to gain an understanding of how drastic the upward movement of people would be with the rising of waters, how difficult the upward movement of infrastructure would be, how difficult for food production the loss of land would be. As one understands that there are five oceans, one also understands that one ocean can teach all other oceans. If one however were standing only on the Atlantic coast of France or England, the questions might arise about what the weather would be like and the ocean currents if the Gulf Stream current stopped as so many signs now indicate. Thus, the power of Sensorium would also be its ability to focus ocean by ocean as well as looking at the whole.

We use collage as both a practice and a metaphor for engaging with complex systems—another way of understanding this work is that we are building a flexible transformative collage/assemblage that integrates information from a wide range of sources. It is designed to deliver insights, imagery and relations that would not otherwise be visible therefore revealing new directions for research to take.
Seeable therefore knowable thereby opening new space of mind

Sensorium has the power to express relationships not previously as fundamental to a healthy oceanic life web as imperative simultaneously visualizing plastics and its elimination from the food chain while simultaneously revealing an unexpected resolution to global shipping pollution all at once and all together often requiring transdisciplinary efforts by many and become niches setting tribal life support patterns in place for long term survival.

Sensorium permits multisystem scanning and seeing simultaneously similar to the wastewater devoted not necessary to see in their across and become setting visual life support patterns in place for long term survival Sensorium is a specialization design such that neural complex complex problems. All are dead all together often requiring transcendental efforts by many

 SENSORIUM:  THE BEGINNING A PARTIAL SKETCH
 Complex in solving but imperative in the doing Need resolution at their source of creation Long-term solutions require all pollution sources agro-farming in particular first become productive living zone or even a candidate for sanctuary. When this happens sensorium first maps the worst of places making clear that with oxygen depletion from the overproduction of algae as the death cause. SENSORIUM:  OCEAN NURSERIES AND PATTERNS RECOGNITION

The invisible beneficiary is land-based life and oceanic well being guaranteed and with the beginning of life protected collectively protecting nurseries makes the beginnings of most oceanic life and oceanic sanctuary pattern is conjoined and cojoins in an ongoing foundational source the most endangered of places and worst of places and nurseries wherein dead zones oceanic sanctuary pattern this complex. This envisioning further indicates that an oceanic sanctuary pattern and revitalized dead zones

SENSORIUM:  DEAD ZONES TRANSFORMATION

Coastal wetlands and estuaries are nurseries and spawning areas wherein are completed and developed as sanctuaries, SENSORIUM can then visualize a transoceanic life support system. With protected areas setting to protect the beginnings of most oceanic life Collectively prospecting sanctuary systems for a valuable new pattern discovery

 SENSORIUM:  EXPRESSES A GLOBAL WETLAND PATTERN

Sensorium reveals a transoceanic pattern for wetland restoration. Land-based and fish-based wetland purification systems are created. Wherein dead zones the work of plants and spices the most endangered of plants.

 SENSORIUM:  PLASTICS AND THE OCEAN'S LIFE WEB

Sensorium visualizes the value of the reduction of plastic production possible. The beneficiaries are all oceanic and land-based life particularly the human food chain. Calling for recyclable alternatives dealing with plastic pollution on site. Sensorium's pattern visualization process updates time that sources connections. These diverse rhythms of oceans life are mostly local places all calling for sanctuary When seen through the mangrove bands the results of initiatives coastal wetlands estuaries nurseries and spawning areas wherein are completed and developed as sanctuaries SENSORIUM can then visualize a transoceanic life support system. With protected areas setting to protect the beginnings of most oceanic life Collectively prospecting sanctuary systems for a valuable new pattern discovery

 SENSORIUM:  EXPRESSES A GLOBAL WETLAND PATTERN

Sensorium reveals a transoceanic pattern for wetland restoration. Land-based and fish-based wetland purification systems are created. Wherein dead zones the work of plants and spices the most endangered of plants.

 SENSORIUM:  EXPRESSES A GLOBAL WETLAND PATTERN

Sensorium reveals a transoceanic pattern for wetland restoration. Land-based and fish-based wetland purification systems are created. Wherein dead zones the work of plants and spices the most endangered of plants.

 SENSORIUM:  EXPRESSES A GLOBAL WETLAND PATTERN

Sensorium reveals a transoceanic pattern for wetland restoration. Land-based and fish-based wetland purification systems are created. Wherein dead zones the work of plants and spices the most endangered of plants.
The Sensorium

Sensorium starts as a haptic, fully immersive environment. The majority of elements of the space are “live” and interactive. The floor, the walls and the ceiling are designed to respond to location, pressure, touch, movement, and voice as technology permits.

Sensorium will be both a physical location with permanent and travelling versions as well as a globally accessible digital platform. It is a repeatable structure, both as a work of art in a physical space and as a software/hardware system. Individuals ranging from scientists to schoolchildren are in a place where they can “ask” the world ocean questions as simple as “where are you hurting” and as complex as what the impact of specific kinds of changes to sea chemistry might reveal.

Sensorium is designed to be multi-lingual, meant in terms not only of world languages, but also registers or sub-languages as spoken by specialists in their field. Storytelling integrating non-traditional and first peoples’ voices and using poetic language, including embracing metaphors, such as “only a fool picks a fight with the ocean” or “every place is the story of its own becoming” will extend the limits of artificial intelligence.

Sensorium’s connection to the public at large, the exterior voice, is an open access web-based portal. It provides a way for other (new) information and voices to get incorporated into Sensorium’s data network/feed system; therefore it provides an easily accessible window into Sensorium; it provides a voice for Sensorium to “speak as if it were the world ocean” to outside communities. The goal for the source data is to provide state of the art real time ocean sensing and monitoring information and feedback on as many elements of ocean health as we can incorporate (university research and research libraries, governmental, non-profit and community sources). The system needs to be able to “harmonize” data from many sources and be flexible enough to adapt to new data and new sources, learning as it develops. Also, part of Sensorium’s consideration would be dramatically expressing the powerful need for generating global ocean governance that could enforce a whole system rule of law penalizing polluters. Ultimately, visualizations that come out of Sensorium work would express a “what to do about it” and what it might cost, and what the cost would be of not doing it. Rewards from a regenerated ocean would be profound and in the long-term exceed costs.

In the largest sense the Sensorium structure would also be applicable to an island such as Britain or large land masses such as the Mississippi drainage basin or Europe as a peninsula.
But, of even greater importance we see Sensorium as a generalized pre-emptive planning environment/laboratory where oceanographic problems—mostly of human creation—can be seen, acted upon after their interconnectivity is understood all at once and all together. Of particular interest is how oceanic stressors transact with one another, and where solutions can be sought out that are not models at all, or bits and pieces of larger problems, but real-world large systems solutions. The intention here is for the scientific, governmental, cultural and industrial communities to be able to visualize the ocean as a whole and to do so in each other’s presence. Thereafter to make decisions on how to connect disparate parts and how to make decisions for oceanic well-being. Sensorium automatically generates transdisciplinary outcomes. It tunes itself to whole systems seeing, thinking and being, in this case with the world ocean as beneficiary.

Sensorium: The Team
Our team encompasses a remarkable range of experience in the arts, in ocean science, and in communicating complex science through visualized interactive individual experiences. Inspired by the 50-year arc of Newton (and his late wife Helen’s) work in applying ecological principles in response to challenges ranging from transforming marine aquaculture to revising the master plan for the province of Holland, the collaboration coordinated by Center for Force Majeure Co-Director Joshua Harrison brings together JoAnn Kuchera-Morin’s artistic/scientific research in building the multidimensional AlloSphere instrument, Juliano Calil’s research in oceanographic visualization and adapting A.I. techniques to ocean science, and our European partners Kai Reschke’s and Petra Kruse’s extensive background in large-scale exhibition development and design. This breadth of skills and expertise is critical to developing a vehicle to, quite literally, give the ocean a voice.

Sensorium: Planning, Design and Implementation
Our current models and predictions are only as good insofar as society can use art as a portal of imagination for purposeful communication. Partially funded by a research grant from Irwin and Joan Jacobs, we have already begun to create this immersive installation which will evolve into a scientific complex-system model, facilitating research on the world ocean that will integrate many different dimensions of data simultaneously and all at once. The key insights of collage and assemblage, insights gained from the seemingly arbitrary association of apparently unconnected objects together, applied to information, will become the focal point for the construction of our narrative. Superimposing the concept of spatiotemporal structure in this unique interactive simulation, one will be able to perform what-if scenarios and virtual experimentation, changing various parameters of the model, such as the oxygen levels, salinity, and acidity, to name a few dimensions of the complex system we will be constructing. The benefits of this approach could be monumental.
A project as complex as the Sensorium will require several years, partners, and a team of collaborators from a range of disciplines to realize.

Phase I: Conceptualization, Partnership Development, Initial Design (2022/23)
- Content Planning
- Coordination with scientific partners & institutional collaborators
- Design of Immersive Virtual Environment
- Architectural engineering
- Preparation of database connections
- Hardware acquisition and testing
- Architectural engineering

Phase II: Design and implementation of a Sensorium prototype (launched by 2024)
This proof-of-concept prototype is itself a work of art. Its creation in collaboration with oceanographers, scientists, policy planners et al. will allow the development of research protocols, data streams, and visual modeling critical to buttressing the content essential to giving Sensorium its oceanic “voice”, as well as preliminary artificial intelligence pathways that will eventually integrate with AlloSphere technology.

The prototype will be unveiled as a part of Pacific Standard Time, which features a 50-year retrospective of Newton and Helen Harrison’s ecological art, opening in five California institutions.

Phase III: Launching of a European version of the Sensorium prototype (2024)

Phase IV: Final version of Sensorium launched as permanent installations in at least two venues, one in the US and one in the EU (Germany)
and the waters will rise slowly at the boundary at the edge redrawing that boundary continually moment by moment all over altogether all at once

It is a graceful drawing and redrawing this response to the millennium of the making of fire

and as the waters rise slowly in the red sea the dead sea the caspian the north the baltic and the black the ocean gyres will redraw themselves as will the currents and tides

and over time this rising tide will gracefully flow up every river that once flowed down to the sea and each fresh water tongue will withdraw before the advance of the salt

and the tropics will become uninhabitable and the far north will become temperate and corn rice wheat and beans plantain manioc and yams and all the grains and starchy roots known and unknown named and unnamed will have to go elsewhere than now and most life known and unknown named and unnamed will have to go elsewhere than now as vast parts of the eastern seaboard of north america and parts of europe near the north sea and south america near the amazon and china in the east and russia in the north india in the northeast and other bits of asia africa polynesia melanesis australia and even japan will join the growing sea

We owe special thanks to
Irwin and Joan Jacobs and the Metabolic Studio of the Annenberg Foundation
for supporting the Sensorium Project

Published by The Center for the Study of the Force Majeure
Edited and designed by Kai Reschke & Petra Kruse

© 2022 The Center for the Study of the Force Majeure,
Harrison Studio, authors, artists, and photographers
Cover Illustration Friedel Anderson, No Land in Sight, 2011

For more and comprehensive information see
www.centerforforcemajeure.org
www.theharrisonstudio.net
For Newton Harrison’s performance see
https://youtu.be/IWeRlx4pMdE

and read the book by Helen Mayer Harrison and Newton Harrison:
The Time of the Force Majeure. After 45 Years – Counterforce is on the Horizon
ISBN 978-3-7913-5549-8
Prestel Publishing · 900 Broadway, Suite 603 · New York, NY 10003
www.prestel.com

A digital version of the book may be downloaded at
https://drive.google.com/file/d/11a-Cx3REB47NsH_8cCEwwQCtmk_4fQa6/view?usp=sharing

Sensorium renderings by the Allosphere group at UC Santa Barbara