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# Fluid Visualisation and Sound Matters (Vienna, 6 Jul 2017)

Vienna, Jul 06, 2017

Univ.-Prof. Dr. Ingeborg Reichle

Symposium: Fluid Visualisation and Sound Matters: Bridging Art, Science, and Visualisation

July 6, 2017

Venue: Angewandte Innovation Lab (AIL), University of Applied Arts, Franz-Josefs-Kai 3, 1010 Vienna, Austria

Programme:

14:00-14:15
Welcome
Gerald Bast
Rector, University of Applied Arts Vienna

14:15–14:30
Fluid Visualisation and Sound Matters
Ingeborg Reichle
Department of Media Theory, University of Applied Arts Vienna

14:30–15:00
From Liquid to Solid and Back
Reiner Maria Matysik
Department of Design, University of Art and Design, Halle (Saale)

15:00–15:30
The Sea Around Us
Pinar Yoldas
Penny W. Stamps School of Art and Design, University of Michigan, Ann Arbor

15:30–16:00
Aquatocene — Subaquatic Quest for Serenity
Robertina Šebjani?
Artist, Ljubljana

16:00–16:15 Coffee Break

16:15–16:45

Life in Plankton: Study Methods and Diversity
Thomas Schwaha
Department of Integrative Zoology, University of Vienna

16:45–17:15
From Images to Models: Using 3D Imaging Techniques for Generating Accurate Models of Microscopic Animals
Stephan Handschuh
VetCore Facility for Research, University of Veterinary Medicine Vienna

17:15–17:45
NOISE AQUARIUM Visualisation
Martina Fröschl and Alfred Vendl
Department of Digital Art, University of Applied Arts Vienna and
Department of Digital Art (Science Visualization Lab), University of Applied Arts Vienna

17:45–18:00 Coffee Break

18:00–19:00 Keynote
Minding the Macro-Micro BioMe
Victoria Vesna
Director, UCLA Art Sci Center, Department of Design Media Arts, University of California, Los Angeles, and Visiting Professor at the universities of Tsukuba and Linz

Concept:

The symposium will bring together artists, scientists, and experts working in the field of scientific visualisation and visual effects to develop a cross-disciplinary understanding of how art and science contribute to raising awareness of the current massive ecological crisis of marine ecologies and identify a suitable epistemological framing for this global challenge. Overfishing, pollution, acidification, and rising temperatures due to climate change are the main factors that have been putting tremendous stress on marine ecologies for decades. The oceans cover up to 70% of the Earth's surface, 97% of the world's water is saltwater, 2% is fresh water in the form of ice, and the remaining 1% is drinking water.

With plastics and plasticisers as well as noise pollution in the
oceans, we now have relatively new, emerging phenomena that defy the regulatory definitions of pollution. Accurate definitions are lacking also because modern waste, like plastic pollution, is fundamentally different from its predecessors. The sciences involved in tracking, analysing, and understanding the ecological crisis of marine ecologies face severe epistemological problems, because the methods used hitherto are failing: The emerging phenomena are both novel and occurring on an unprecedented global scale. The entire extent to which plastics and plasticisers are floating in the oceans and seas is not visible to the naked eye because a great deal floats below the surface in the form of microparticles. Plastics are not biodegradable, but they are gradually broken down into smaller and smaller particles in the ocean through wave action and intense irradiation from sunlight. Marine organisms confuse these microplastics with plankton; this means that plastics (and the toxins they contain) are increasingly entering the food chain, irretriev-

ably and irreversibly. Around 70 % of plastic waste deposited in the oceans sinks to the sea floor, but in 1997 scientists observed for the first time that an enormous amount of tiny plastic particles were collecting on the surface of the water in the vortexes of ocean currents, also known as gyres. The discovery of the so-called Great Pacific Garbage Patch made it clear that millions of tons of plastic garbage are drifting in the oceans. Since the discovery of high concentrations of microplastics in other gyres as well, it can no longer be denied that a new ecosystem has emerged in which artificial and natural aspects are inseparably connected.

The symposium will provide a spectrum of artists' responses to the current transformation of our oceans at the dawning of the Plasticene age, a human-made system in which the natural and the artificial are no longer distinguishable and speculative biologies evolve. Collaborative projects will be presented that identify unnatural noise in the oceans as a further environmental issue, especially the effect of noise on microscopic organisms such as plankton, for example. Noise Aquarium — a project which seeks to raise attention about the current loss of marine biodiversity introduces a collection of accurate 3D models as a resource for scientific and artistic research. Another artistic project Aquatocene — Subaquatic Quest for Serenity will present the efforts to make recordings using hydrophones in different locations around the globe. Underwater noise has an impact on a great number of marine life forms, which depend on the sub-aquatic sonic environment to survive. Despite the availability of popular aquatic sounds, there is hardly any awareness that the underwater soundscape is as rich as the one heard by terrestrial creatures above water.

The symposium presents aesthetically powerful art projects that seek to reach out to and inform a global audience about plastic pollution and noise pollution in the oceans and will demonstrate how current modes of scientific visualisation are able to address underestimated (and invisible) effects on our marine ecologies, with the aim to foster positive changes in consumer habits. The symposium will also launch an exchange between the University of Applied Arts Vienna's Department of Media Theory and the Science Visualization Lab of the Department of Digital Art and Faculty of Design at the University of Art and Design, Halle (Saale), Germany (Burg Giebichenstein Kunsthochschule Halle), which will also involve the Department of Design Media Arts, University of California, Los Angeles, USA, and the University of Art and Design Linz, Austria.