

EGYPTIAN CHEMISTRY - A VIDEO INSTALLATION ON EGYPT’S WATER ECOLOGIES BY URSULA BIEMANN EXHIBITED IN VENICE BIENNALE 2013 - MALDIVES’ PAVILLION

The nocturnal scenery in Aswan is eerie. Under the clear desert sky, the daunting concrete structure of the High Dam looks like a spaceship which has crashed into the river valley. Driven deep into the ground and partially submerged, it backs up the water coming from Ethiopia. The Aswan High Dam is a time barrier. It changed the floods, the seasons, the crops and the species. Its planetary positioning is one of discontinuity. KIMA, the nitrate factory designed to compensate for at least part of the disruption, sits right next to the dam, admixing its own little composition to the Nile. A few hours further out into the desert, a vast New Valley project stretches out under the heat which sucks water from Lake Nasser for tests in the production of crops new to the region. Egypt is one large chemical experiment catalyzed by water engineering. Water is a coalescing agent in land-use politics, crop cycles, nitrate industries, soil composition, farmers' collectives, oxidants, irrigation technologies, and hydropower. These entities, in their tactical multiplicity and variable dynamism, constitute a significant part of Egyptian reality.

In Egypt's extreme hydrography, entirely dependent on the Nile, it is easy to make out water's political potential to materialize national and societal visions. Egyptians have a long history of building large-scale engineering projects, such as dams, canal systems and land reclamation projects, to alter the distribution of water and other resources across space and time among entire communities and ecosystems. These hydro-engineering works are solid manifestations of how governments recruit nature into national social service and hence embody distinct environmental paradigms. On all accounts, in this hydraulic civilization, water could be examined through the lens of different regimes of water governance, as a history of taming and resource providing. However, imaginative research and the inscrutable reality that only fieldwork can unravel took my video project in a whole new direction. The venture, originally based in critical social theory, mutated into hybrid ecology elicited by sustained social, technological and natural interactions.

RESEARCH METHODS AND AESTHETIC PRACTICE

Egyptian Chemistry does not give much consideration to the power brokers behind the paradigm shift from the hydraulic state model of the 19th century to a neoliberal market model of water management. Such a focused critical pursuit never leaves much room for generative thinking. More attention is directed towards the encounter with human catalysts during these explorations and the coincidental plots that fieldwork creates, each ready to combine and react, and to be narrated upon. There are scattered notes and lengthy recordings of the meetings with water and desert experts reporting on the chemical immanence of Egypt. More surprisingly, the procedure also included the taking of actual water samples along the Nile and in the Delta wetlands. In artistic research, it is often more rewarding to direct only partial attention to the narrowly defined object, while leaving ample brain-space to roam into the wide. This *modus operandi* favors a state of divided attention granting the freedom to mentally relax in all directions. In this open research mode, one is disposed to not merely define the findings but to create new and unlikely coalescences with semi-conscious affects and ideas floating around the mind at the time. These concepts are combined with other material and immaterial things in the surroundings all of which merge into a shared narrative matrix. The water samplings are the momentary cut of a social ecology, a temporary expression of this specific material-mental configuration. They are of fleeting value. For *Egyptian Chemistry*, these moments are recorded on video as raw data. It is important not to format this loose cognitive fabric too quickly by assigning purpose to every aspect and by bringing each moment into a structural form. This kind of research is geared towards unhinging thought patterns, rather than reaffirming them. To enter bio- and geochemistry it is necessary to generate thought forms that are conducive to the perception of immaterial, energetic and fluid phenomenon. What is the analysis of water chemistry without taking into account the sticky, saturated air hovering above the reddish salt fields, the humming emitted by the high voltage power lines in the sky, the dark oil-soaked sands swelling up to the ankles when filming the nocturnal refineries



Egyptian Chemistry, installation at Neuer Kunstverein Berlin n.b.k., 2013

in the Delta Lakes, the foul smell of the KIMA effluent draining nitrate into the crystal clear upper Nile or the chanting of the crowds crossing the Qasr al-Nil Bridge to Tahrir Square?

Complementing the video recording with the taking of material probes amplifies and complicates the performative understanding of reality in my work. It demonstrates a shift from epistemological questions of how we know things to ontological ones of how reality comes into being, engaging a metaphysical inquiry. Thus, a new set of analytical instruments is needed. If we take quantum physics into consideration, it is no longer assumed that we are dealing with a pre-existing world whose observables already possess real values that can be recorded and interpreted. Rather it is the questions, choices, movements, equipment and directed observations that generate a specific material reality of which the artist/scientist is a part. There is no outside, no standing by. With regards to image making, this would suggest

that video recording is not representing but generating reality. Fieldwork is central to this whole project for it grounds the research in time and space, making it utterly present on the plane of physical existence. It is an ontic event of something coming into being, rather than simply an epistemic event of knowing about it.

There is a certain absurdity involved in trying to locate and define the qualities of a particular place in running water. One can only hope to get an approximate and unstable test result where facts become visible after the data have already changed. Generally, though, this rigorous sort of scientific examination by means of a measuring instrument is the most focused advertence one can grant any object under investigation. And, as a gesture of earnest civil concern for water quality, there is a certain merit in using this acutely focused attention. The focus is less on the degree of water pollution than on the care brought to knowing the current water state.



Water Samples, Egyptian Chemistry, Ursula Biemann, 2012

Egyptian Chemistry does not mingle explicitly with the political upheaval, the street battles and the heated debates. The project exercises itself in acquiescing the harmless. It turns to less forceful, but equally transformative developments: the plurality of dynamic processes of water and soil chemistry fully dedicated to recompose the physicality of the territory from within. In T.J. Demos' words, the project delivers an archeology of the revolution. It inserts an imaginary tube camera into the subsoil and its liquids, interrogating its microsystems and the larger force fields that activate them. The project engages Egypt on the molecular level, provoking, capturing and sampling instances of materialization. *Egyptian Chemistry* moves the boundaries towards the inside, into the innermost dimensions of a composite reality.

Besides an aquatic analysis, *Egyptian Chemistry* assembles knowledge from multiple sources from atmospheric physics to hydraulic modeling, peasant activism, metaphysics and agro-ecology, and proliferates them into an epistemological fabric. As coordinating principal, it deploys metachemistry as a theory that explains the transformation of matter in its molecular structure. As a constitutive force for material and biological existence, chemistry is in everything. On this deep compositional level, the size or political status of each entity is irrelevant to inducing far-reaching change.

CHEMICAL TRANSFORMATION OF EGYPT

Parallel valleys and their artificial food production have manufactured a world in which science is programmed to overcome the limits of nature. Agro-industries resort to this remote arid land, miles away from the lush and sociable Nile Valley, to grow seedless grapes to satisfy the European appetite for foods outside their season. In *Toshka*, as in other colossal land reclamation projects across Egypt, sterile lands are turned into field labs for testing new ways of being human. Bacteria cultivated in chicken excrement on military-owned mega poultry farms make this aseptic terrain an altruistic host for germination. The circular water sprinklers finally turn desert dust into soggy fertility. It will be years until wheat will grow in this hostile climate.

Egypt's topography is changing. Not only in its strategic expansion of arable land but also in deeper layers underground. Extended irrigation draws heavily on the subterranean aquifers, causing the Nile Delta to sink at the rate of a centimeter a year. Rising sea levels will predictably aggravate this hazardous development. One of the more futuristic land reclamation ventures, still in its planning phase, is pioneering integrated seawater agriculture. *New Nile Co* manufactures fertile seawater landscapes near desert coasts for salt harvesting, fish and seafood aquacultures, and algae

plantations for cattle feed and biofuel. Set up in El Gouna on the Red Sea, the project is masterminded by atmospheric physicist Carl Hodges. Besides versatile food production from halophytes (salt tolerant plants), the project proactively builds up biomass with fast growing mangroves to compensate for dwindling ground. The project reintroduces sustainable cycles for the recovery of water, energy, and materials. Before getting tamed by engineers, the Nile was more generous and democratic. With every high flood it evenly spread its fertilizing mud over the entire Nile Valley. With the imposition of hydraulic structures, fertilizers became chemical and infused market dynamics through the political mechanisms of agricultural subsidies. In short, the natural event became a matter of the social sphere. It is these pivotal sites where natural and social processes intertwine that are of interest to my current considerations.

Humans are not the only ones who use the force of the Nile. A few decades ago, the Anopheles mosquito entered Egypt from the South. The blood-

borne parasites took advantage of the new irrigation works that helped them bridge long distance flights. They came with the dams, canals and stagnant waters and brought malaria down the Nile valley. If we see past human-centric visions, we have to acknowledge that indeed humans have used the force of the Nile, but so have lazy fish, suspended pollutants, ammonium nitrate, cement factories, insects, and wheat crops. The Nile has to be thought of as a hybrid interactive system that has always been at once organic, technological and social.

With the insertion of the High Dam into the watercourse, the ecology of the Nile has inevitably changed. Fish migration, formerly circulating from Ethiopia through the Mediterranean into the Atlantic and back, is interrupted by the monumental architecture. High quality species which favoured fast running waters have disappeared, instead the large lazy Tilapia is thriving. The hydraulic regime of the Nile had been altered much earlier by a series of barrages built a hundred years ago. Barrages hold back part of the water and reduce the velocity of flow. The occasional rapid high flows used to flush the Nile bed, cleaning it from all kinds of pollutants. Once the barrages were in place, these pollutants started to accumulate year after year in the 'settling tanks' created by the water gates. The deposition of organic pollutants gradually changes the water chemistry. They turn into bio-chemical combat units infecting pools and reaching the land through the millions of irrigation canals. All these changes reconfigure Egypt on a molecular level. The hydraulic regime of the Nile could be deliberately changed, not so the biological, organic and chemical composition of the water.

The entanglements described in all of these narratives imply forces generated by a combination of natural, technological and social processes that bring about new realities. Altered water chemistry transforms soil quality and entire agro-ecologies, interacting with land management, peasants' desires, urbanization processes and food supply chains. It infiltrates the human sphere through multiple venues and illicit channels. All of these components neither line up in a causal chain of reactions, nor are they subject solely to an economic paradigm. They synthesize into dynamic interactive clusters, into hybrid ecologies equipped with agency, in which global organizations, desert developers and tiny pollutants unfold equally effective actions. Agency here is cut loose from its traditional humanist orbit. The project is not only critical epistemology, it is also to be understood as elementary analysis of how Egypt's reality constitutes itself. *Egyptian Chemistry* captures the turbulent instances of physical and epistemic change in its molecular structure, in its kinetic moment and crafts these elementary fragments into a planetary narration that alludes to the earth as a mighty chemical body, a place where the crackling noise of the forming and breaking of molecular bonds can be heard at all times.

End Notes

¹⁹ Timothy Mitchel, Rule of Expert - Egypt, Techno-Politics, Modernity, University of California Press, 2002, 19-21. Chapter 3 - Can the Mosquito Speak? gives an exquisite account of the intense entanglement of the Nile river, the Anopheles mosquitos, sugar peasants, war casualties of WW2, the provision of quinine and the salpeter mines in the Atacama Desert in Northern Chile.