

**POLITICS OF  
MEASUREMENT**

# POLITICS OF MEASUREMENT

Dialogue between Chihiro Minato and Sophie Houdart

11 December 2013, Kunstraum, Leuphana University, Lüneburg

## 1. From Houdart to Minato

SOPHIE HOUDART: I have a few comments and questions. One of the maps depicting the danger of radioactivity, which illustrates how Chernobyl is now a standard of measurement, was interesting: One disaster becomes a normative entry-point for measuring another. There are a lot of links between Chernobyl and Fukushima, and some of the measurement tools used at Fukushima actually originated at Chernobyl, which is also linked to Hiroshima regarding the radioactivity. It is important to understand how these maps are made, not only from data in Japan but everywhere. My presentation goes back in the history of science and representation in order to grasp what hides in these schematic lines of drawings. Although this series of lines looks very informational, one should ask the questions: How can a line become a container? Is there any idea of a frontier in these maps, in the drawings you showed? There is the map, and then you talked about the blocks, the concrete wave breakers. Before the beginning of the workshop, you told me that in some parts of Japan people are about to get their view of the landscape blocked. They won't be able to see or hear the sea anymore. It's a frontier, and Japan is then no longer an island open to the sea. The country will be like an enclosed room. What will it look like?

CHIIHIRO MINATO: The most spectacular news is that a big earthquake will hit the Tokyo Metropolitan Area directly in four years, with a probability between 40 and 70%. This means you should not buy any real estate the next four years. This is the kind of news you find both in electronic mass media and in the newspapers, and this ultimately supports construction of the massive concrete blocks. The danger of an imminent earthquake does not only cover the east coast of Tokyo, but all the southwest of Japan. I went to the south of Kyoto, and what we found in the coast was something that the authorities make in small bays: the construction of a wall, 5.9 metres in height. It is the end of the perception there. You do not see, and you do not hear anymore. You even don't know if there is a sea behind the wall or not. In such an environment, how do you know where to go when a big wave comes? If this is the result of the classical perspective, a kind of mathematical rationalisation of space, it cuts a space into two worlds. One is the world calculated and schematised, the other is the world of your perception. It is hard to live in both worlds at the same time.

Responding to your second question, the line in the map is created through such a mathematical schema. What we do not know, and what we really want to know, is not how serious the accident is or the level of it. The only thing Hiroshima left us in that sense was data on low radiation. But what happened in Hiroshima? We still do not know. We cannot say whether the low level of radiation was harmful for the population or not. But nonetheless the population at the other side of the hill, outside the "dangerous" zone, is still suffering severely from post-radiation diseases. At Fukushima the same schematics of radiation were used. I propose paying attention to the model of entanglement by British archeologist Ian Hodder, together with the Duchamp line. In his book, *Entangled: An Archeology of the Relationship between Human and Things*, Hodder discusses the co-constitution of humans and things by exploring the notion of entanglement. He embraces its asymmetrical relationship, or what he calls "a darker side to the entanglements" of human existence between social life and material things, in order to add a perspective of particularity on existing thing theories (Hodder, 2012). For Duchamp one metre is not always the same length. Thus a metre could be understood as something like an entanglement. A measuring project aims at seeking a counter concept of measurement, in which entanglement could be an interesting subject.

SH: That's very interesting, because it is also related not only to aesthetic theories, but also to most physical theories, like the plural-universe or multi-universe theories. It reminds me of the Japanese novelist Haruki Murakami and his recent book, *1Q84*, where the two protagonists cross a line and enter another world – a world with two moons – parallel to this one. You cannot be in both worlds at the same time; either you see one moon or you see two moons. Your comment reminds me of this story. I have another question: You explained how farmers, for example sake producers, use perceptive tools to measure and to organise their world. I heard that right after a tsunami, if you want to have a solid prediction of an impending disaster, you should just follow the monks, because they have this sensibility to what vibrations are in the air and which are in the earth. Are these two anecdotes, in your view, linked to animism – the traditional religion in Japan? In animism you can attribute energies to objects such as trees or rocks, but also to phenomena, such as winds, air and so forth. Would it be related, or is this too culturalistic?

CM: We can brand this kind of belief and sensibility passed on through centuries as part of animism. The ancient poetry on the stone stairs was marking an event on site. Sometimes the words say: "Don't build any house on specific days." The village is very small, and there were no casualties during the last tsunami. But how was it before the writings, more than 3,000 years ago? This is too far back for any material to preserve the poetry; just the way of living and the way of believing remains. I was very excited to learn about the lacquer-coated thread from the archeologist. From ancient times, lacquer has been used for preservation. That is, they wanted to keep the thread for a long time, even protect it from water. Why? Presumably, this thread is more than just a thread. Today we only have the term animism for this kind of long-term memory or sensitivity.

A1: I am interested in this archaeology. Does this mean the ancient Japanese in the Jomon era knew where to escape to?

CM: Obviously, we can only base our assessment on what is left today, as earthquakes or tsunamis have shifted and washed much away over thousands of years. One thing is clear and proven: the Shinto shrines dating after the 15th/16th century were constructed on top of the Jomon archaeological site.

The architects of the shrines built according to the outline of the archaeological site we see today. When we trace the shrines and the Jomon site in Fukushima, we find the original coastline before the 19th century, where so many boats were found after March 11, 2011. This indicates that the land was not land before the 19th century. In animistic thinking, you could say, that the boats carry on the memory of the seascape and the exact coastline of the past. Sometimes the original coast is ten kilometres inland, and close to this old coastline one or two shrines are always to be found.

MY: It's quite interesting to interpret the disaster through the eyes of archaeology. It makes the invisible visible and opens up alternative views on what we see in the contemporary landscape. A stunning part of the current scenery is that everybody carries a Geiger counter to constantly measure. Such emotional scenes present the helpless conditions of dysfunctional measurement. At one level, the act of measuring transforms itself into an act of mediation, like repeating a mantra, just to follow the rule and the habitual. At another level, this represents an extension of bureaucracy – a further intrusion into everyday life. Therefore, the hype of measuring produces complicated bio-politics. Under such complicated circumstances, how do you see the role of images? Many photos and videos were produced, but two critical issues have been raised – the impossibility of representation and the consumption of the images. It has been claimed that they cannot represent any of the situations fully and even lack the power to spark our imagination.

CM: Radioactivity is clearly invisible. That's why it is important to take photos on site, with the Geiger counter in them. For at least six months it was like a daily ritual. When we met friends in Fukushima, we asked, "have you measured?" instead of, "how are you?" The art of photography changed a lot after March 11th in the Fukushima region. Many of the images that I have presented are landscapes which you cannot visit anymore. This summer, the scenery inside the 10-km zone is turning especially beautiful, as no humans live there anymore. The humans returned the area to the original inhabitants, the animals – wild horses, monkeys and deer.

SH: Peter Galison, an American historian of science, is working on a project about dark tourism in wild nature – precisely in areas abandoned due to nuclear tests. People go and look for real nature in places where, basically, the air is really contaminated. It is a very strange modernist experience.

## 2. From Minato to Houdart

CM: You already published a book on the comportment of Japanese scientists in the laboratory studying fruit flies, and you recently studied lab research on the super collider of CERN (The European Organisation for Nuclear Research). Based on the comportment of the group of humans you have observed, how do they conceive or conceptualise nature through their activities? What kind of special knowledge have the farmers working their rice fields produced since 11 March?

SH: In order to answer your questions, I need to explain my previous research and contextualise it first. I did extensive fieldwork during my PhD in a Japanese laboratory of genetics. Scientists were working on the *Drosophila*, small fruit flies traditionally used in genetics. This project was about how people do science in Japan, where the conception of nature is traditionally different from the one in Europe. This is not the same story that I presented today. Actually one big missing part of the story is about air, atmosphere, and wind instruments in Japan. My doctoral research was really focused on how they produce knowledge in Japan and then present it in an international context. The other project is more recent fieldwork at the Large Hadron Collider (LHC) in Switzerland, which is the biggest experimental device used in particle physics, to learn more about the cosmos and the Big Bang. My aim in this fieldwork is not to follow physicists and their theory of particles, but to observe the daily work of the hundreds of people who take care of this huge machine, most significantly the link between the machine and the ground. I followed the process of recording all the slight movements of the machine in order to observe a physical signal. At one point, I also began following people working at the environment department for CERN. And this is where I was when the Fukushima disaster happened. As that kind of particle-physics device can produce radioactivity, it is monitored. As we walked from one monitoring station to another, the technician on duty told me that we were able to observe the radiation from Fukushima from there. This gives us an understanding of the disaster. It doesn't concern only Japan, but in Geneva, all the recording and monitoring machines used actually recorded the heightened radioactivity in the air. The technician quoted Antoine Lavoisier, the 18th century chemist, and kept telling me, "Nothing gets lost in the air, everything transforms itself."

In these two projects, my work was to understand how people get to know about things and how people attain knowledge about very small, invisible components.

One of the main differences between the scientists and the organic farmers is that the farmers don't possess abstract knowledge: They enter into radioactivity and all kinds of radioactive stuff very pragmatically. They have learned more and more about it, but have neither a scientific nor an engineering background. This gives them a kind of freedom to produce alternative knowledge about what radioactivity is. Furthermore, I'm very struck by the fact that they attain very subtle knowledge about what radioactivity is and how it behaves.

CM: Another question is about Alexander von Humboldt, a geographer and a great explorer of knowledge at the beginning of the 19th century. Humboldt and Amié Bonpland, a French botanist and his companion on the entire expedition, intensively travelled in South and Central America from 1799, and arrived in Ecuador in 1802. About twenty years ago, I did a project around the equator, where I visited one of the first antique seismometers, which is still in working condition at the Quito Astronomical Observatory in Ecuador. Humboldt was a scientist who believed in such scientific measurements and instruments, but, simultaneously, he was a good artist who fully used his perception during his long journey. Do you still find such a mix between artistic and scientific point of views in contemporary laboratory research?

SH: Yes, very much in seismology. Some seismologists employ the Aristotelian view of the world, in which the cosmos is something chaotic that resists numbers, predictions, et cetera. They portray themselves as having a really small existence compared to the scale of the universe, and they are very humbled by the knowledge they carry. They use their sensitivity to a great extent. The notion of the laboratory where scientists only work with numbers and rational methods immediately dissolves when you enter any laboratory. This is very different to the experts, who are the ones in charge of translating what happens in laboratories. In the lab, a lot of things happen, but the technicians might not understand them fully, like in the case of the particle-physics device. They watch the particles and say, "... they crashed", "we don't know", "maybe it's not a good day for the particles ..."

It doesn't sound like science to most of us. It's the experts who transform the observations into knowledge. This is very different, but I assume that, in every laboratory, this is what is fascinating about science in practice.

A1: Yes, I was very interested in the fact that there was a link between the eudiometer and Jeremy Bentham's panopticon. I understand it as: if you control the air, whether the air is clean enough or not, you can control the social mechanism of the inmates. How does the eudiometer work – is it mechanical?

SH: I don't know the exact workings of the eudiometer. It was used by Bentham, but I don't know to what extent the eudiometer was used in prisons. I think there were experiments at one point, where they organised collections of air and went to different spots – very natural and very critical ones like cemeteries, prisons and so forth. They tried to compare and purify the air. This was the basic philosophy of the device, even for Priestley. It's not the translation of Bentham, who used the device in his own way. His idea was that air has virtue and that by altering the air we can influence virtue.

As Humboldt went from site to site collecting air samples he realised that a single life wouldn't suffice to make all the recordings. He believed that citizens should be personally equipped to make their own recording of the places they go on a daily basis. And that's why in the 1770s you would find the eudiometer in regular shops in London and people were encouraged to use it, because they believed it worked. The eudiometer got a lot of public attention because of the extensive air pollution in the city. People were really eager to learn how to deal with their environment.

A2: Around 1850, the canalisation and the water closet, or flush toilet, were introduced throughout London. That removed the stench, but not cholera, which people originally thought was carried by air. Three decades later, Robert Koch discovered that it came from bacteria, which are also an invisible, but biological organism carried by water and food.

SH: The eudiometer had a very short life because the scientific argument behind it claimed the existence of a gas called phlogiston. Around the 1780s, it was shown that the phlogiston didn't exist and oxygen was discovered.

All the ideas had to be changed. Despite its short life, the history of recording air and the related devices continued into the beginning of the 19th century, and there are plenty of books concerning the polluted fog of London, though these books mostly deal with the devices and filters used on chimneys. It's about the air you breathe, hygiene and health, and not so much about virtue any more.

CM: The drawing by Tim Ingold might be a reference to the Chinese character for wind, and many different variations of this sign were used in ancient China. The idea is that something is partially in the air, and that the air contains virtue and you can have a dialogue with air. In Japan, this notion is understood as animism. Animism is not a belief in what we see, but the timeless knowledge of establishing a relationship between things and humans.

MY: Sophie's presentation pointed out the gap between the notion of what mechanical objectivity is and what precise accuracy and judgment is. In their book *Objectivity*, Daston, Lorraine, and Galison state that a process of constructing objectivity reflects a certain desirability and a distinct will of the subject/researcher, meaning that objectivity and subjectivity are mutually defined and shaped in tandem. I wonder if you find any differences in the role of scientific objectivity, especially when the scale of measurement is very tiny and invisible or, conversely, very big but still invisible. The second question is: Why are you interested in art in your research activities? What kind of accuracy can art provide in comparison with mechanical objectivity?

SH: I think that objectivity is challenged somehow when applied to objects or situations that one can't see, because one can't commensurate them with human scales, since they are either too small or too big. It is as if invisible objects, precisely because of this problem of scale, make room for, or even require imagination in order to be grasped. Therefore, my interest in art lies in its power of imagination.

MY: One could say that scientific objectivity coincides with subjectivity, and there are different understandings of accuracy and preciseness. The relationship between objectivity, accuracy and preciseness is not fixed, but negotiable. It therefore needs to be investigated in detail every time to rearticulate a space of imaginaries, since "nothing is lost and all is in the invisible".

## Artist and Author Biographies

*Patricia T. Clough:* Professor of Sociology and Women's Studies at the Graduate Center and Queens College of the City University of New York. Her publications include *Autoaffection: Unconscious Thought in the Age of Teletechnology* and, as editor, *The Affective Turn: Theorizing the Social*, and *Beyond Biopolitics*. Forthcoming is *The User Unconscious: Affect, Media and Measure* (University of Minnesota Press, forthcoming March 2018). Clough's work draws on theoretical traditions concerned with technology, affect, unconscious processes, political economy and experimental methods of research and presentation. She also is a practicing psychoanalyst in NYC.

*Helmut Draxler:* Art historian, cultural theorist, and curator. Based in Berlin, he currently holds a position as Professor for Art Theory at the University of Applied Arts in Vienna. He has published extensively on the theory and practice of contemporary art. From 1992 to 1995, he was Director of the Kunstverein in Munich. His recent research projects include a "Theory of Splitting" and a "Philosophy of Flemish Painting". His current publications are: *Abdrift des Wollens. Eine Theorie der Vermittlung*, Vienna (Turia + Kant) 2016, *Exhibition as Social Intervention*. 'Culture in Action' 1993, London (Afterall Books Exhibition Histories), 2014, (with Joshua Decker), *Theorien der Passivität*, Munich (Fink) 2013 (with Kathrin Busch), *Ein kritischer Modus? Die Form der Theorie und der Inhalt der Kunst*, Vienna (Schlebrügge) 2013 (with Tanja Widmann).

*Sophie Houdart:* Research Director at the French Center for Scientific Research (CNRS) and member of the Laboratory of Ethnology and Comparative Sociology. Trained in social anthropology, her focus is on various practices within the field of innovation studies, in the realm of science as well as art, especially in Japan.

She is the author of several books, including *Kuma Kengo. An Unconventional Monograph* (ed. Donner Lieu, 2009), dedicated to the studio practice of the famous Japanese architect; and *Humains, non humains. Comment repeupler les sciences sociales* (with O. Thiery, La Découverte, 2011) or *Les Incommensurables* (Zones Sensibles 2015), which portraits the Large Hadron Collider at CERN.

*Chihiro Minato:* Artist, writer, founding member of the Institute for Art Anthropology, currently head of the Information Design Department at Tama Art University. He was an artistic director for the Aichi Triennale 2016 and has curated various international exhibitions, including the Japanese Pavilion at the Venice Biennale 2007. His latest works since 2011 include *Distance/Continuity* (Nantes, France) *Gourd Museum* (12th Taipei Biennale) *Peace meets Art* (Hiroshima Prefectural Museum), *Shiori project* (Heidelberg), *Thinking Landscapes* (Ulaan Bator, Mongolia).

*Matt Mullican:* Artist and Professor of Visual Art, Art Academy Hamburg (HFBK). Mullican deals with questions of perception of reality, fiction and the imaginary, and the possibilities of its representation. Mullican's work has been widely exhibited both internationally and nationally since the early 1970s, at venues including Haus der Kunst, Munich, Stedelijk Museum Amsterdam, Museum of Contemporary Art, Los Angeles, Museum of Modern Art, New York, and many others.

*Lucy Powell:* Artist based in Berlin. Her interest lies in navigating the wonders and horrors of living through the Capitalocene and the Sixth Extinction, while the body of evidence of consciousness and intelligence in all life forms amasses. In 2011, she co-founded the Satellite Salon, a forum for facilitating art-science conversations and collaborations.

She studied Fine Art at Wimbledon School of Art and Liverpool John Moores University. Her recent exhibitions include: *On the Edge*, Tieranatomisches Museum, Berlin; *Screening Nature*, Whitechapel Gallery, London, *The Animal Gaze Returned*, SIA, Sheffield / John Cass Gallery, Metropolitan University, London; *The Worldly House*, Documenta 13, Kassel; *Shooting Nature*, Oberhausen Kurzfilmtag, and others.

*Oxana Timofeeva:* Senior lecturer on contemporary philosophy at the European University in St. Petersburg, a senior research fellow at the Institute of Philosophy at the Russian Academy of Science (Moscow), a member of the artistic collective Chto Delat? (What is to be done?), a deputy editor of the journal *Stasis*, and the author of the books *History of Animals: An Essay on Negativity, Immanence, and Freedom* (Maastricht, 2012), and *Introduction to the Erotic Philosophy of Georges Bataille* (in Russian, Moscow, 2009).

*Miya Yoshida:* Researcher and curator based in Berlin, who engages internationally with different forms of art projects based on her artistic research. She obtained her PhD from Malmö Art Academy, Lund University in 2007 and worked as a postdoctoral researcher at Leuphana University, Lüneburg (2012–14) Her recent curatorial projects are *World in Your Hand* (Kunsthau Dresden, 2010), *Labour of Love, Revisited* (Arko Art Museum, Seoul, 2011), *Amateurism!* (Heidelberger Kunstverein, 2012), *Sharing as Caring* (Heidelberger Kunstverein, 2012–16, 2018–).

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*Exercises in Measurement*

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