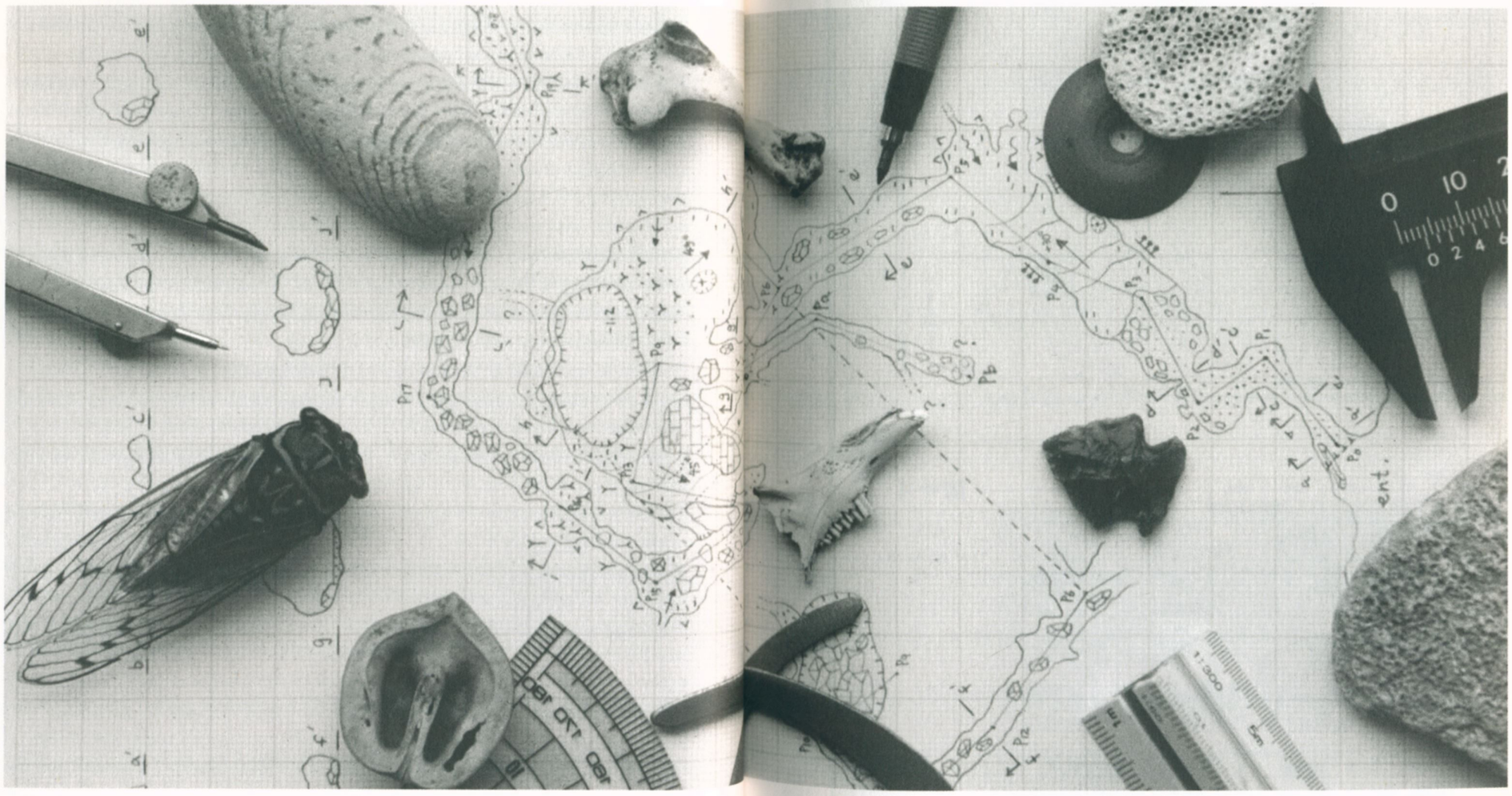
# TOWARDS (IM)MEASURABILITY of ART and LIFE

Published by
Archive Books

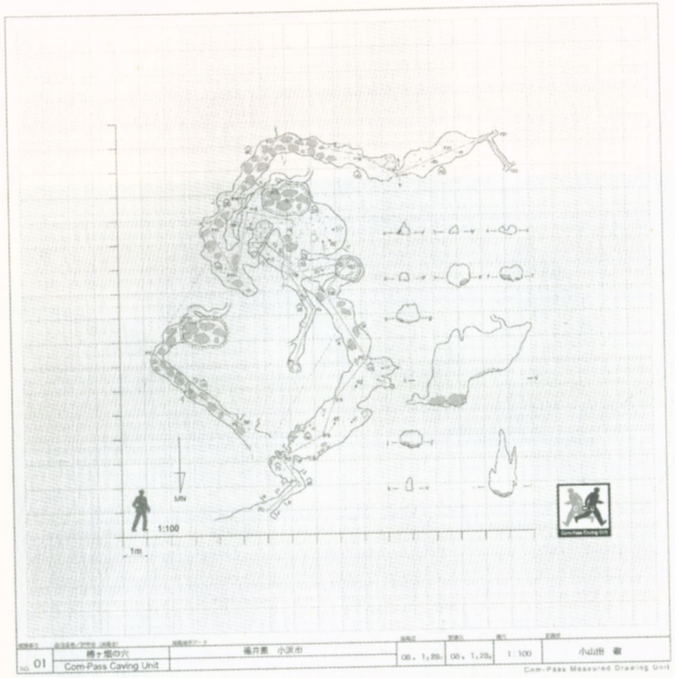
Written and edited by
Miya Yoshida

# CONTENTS

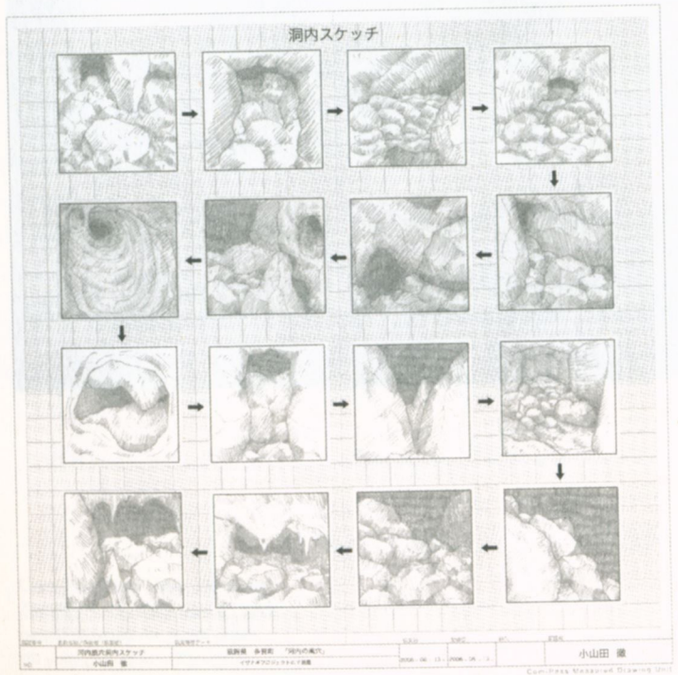
# *Dance of Accuracies*

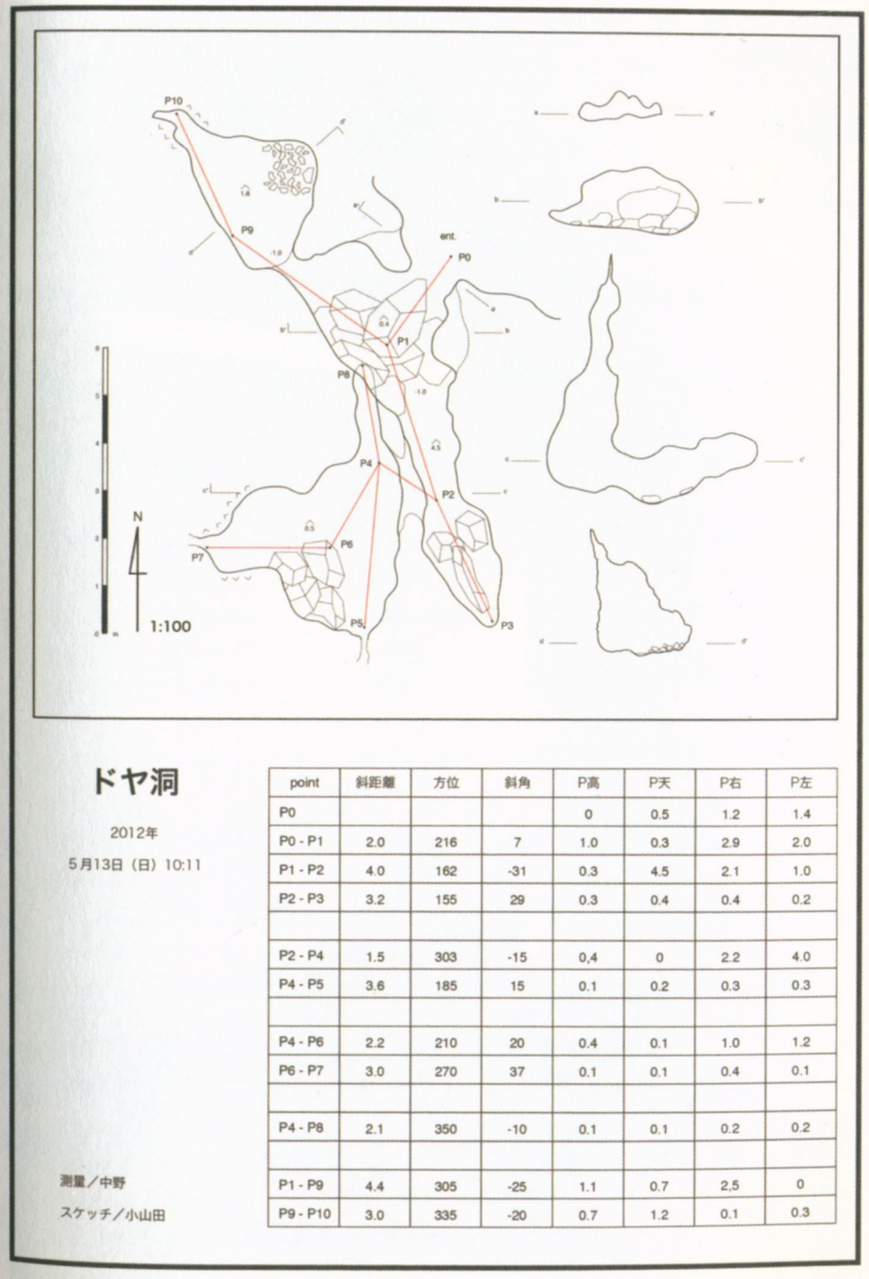


Com-Pass Cave Unit, *The Act of Looking/Survey Map* (detail) 2008, pencil drawing on graph paper, 30 x 30 cm, photo: Katsuhiro Ichikawa © Toru Koyamada




Com-Pass Cave Unit,
*The Act of Looking/*
*Survey Map*, 2006,
pencil drawing on
graph paper, 30 x 30 cm
© Toru Koyamada




## ドヤ洞

2012年

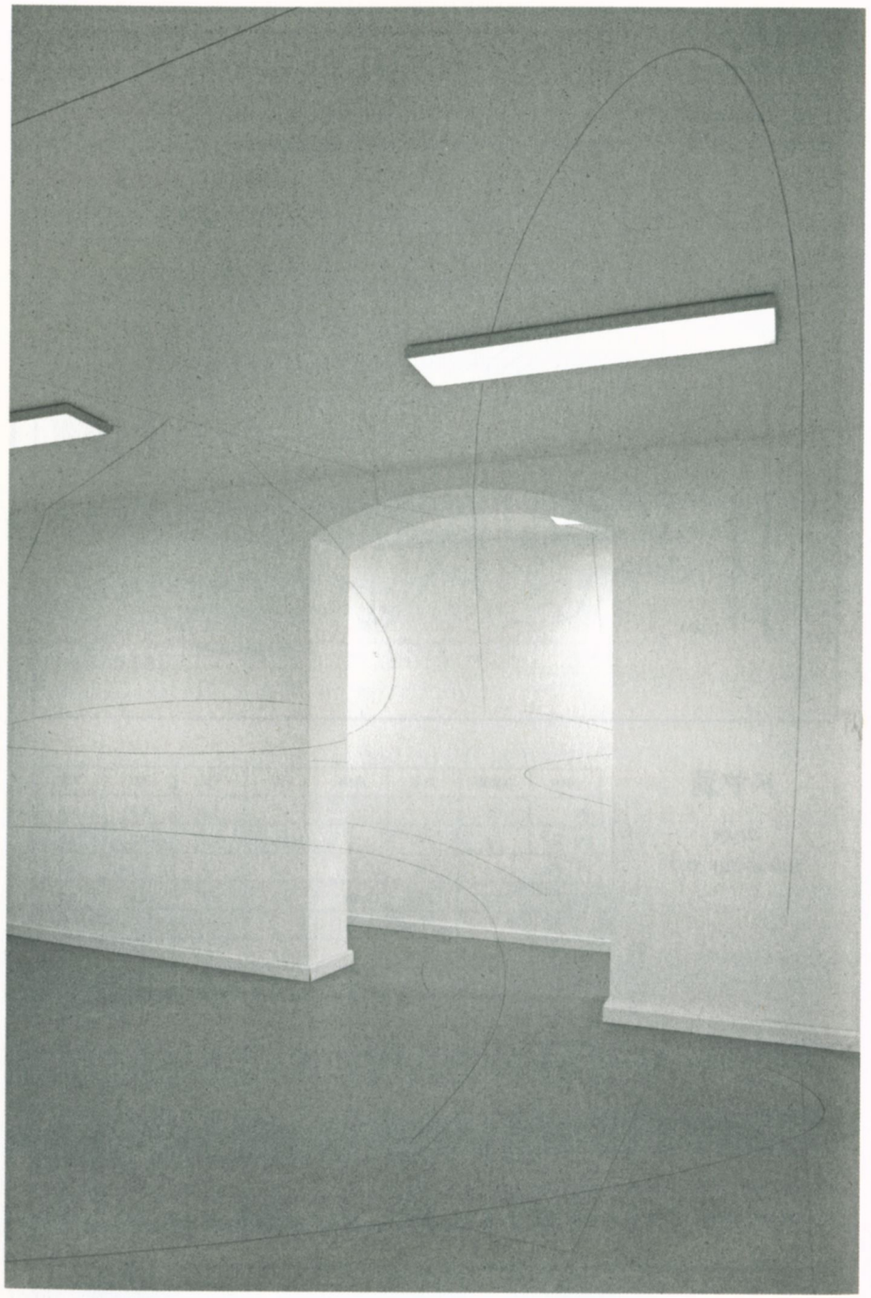
5月13日（日）10:11

| point | 斜距離 | 方位 | 斜角 | P高 | P天 | P右 | P左 |
|---|---|---|---|---|---|---|---|
| P0 | | | | 0 | 0.5 | 1.2 | 1.4 |
| P0 - P1 | 2.0 | 216 | 7 | 1.0 | 0.3 | 2.9 | 2.0 |
| P1 - P2 | 4.0 | 162 | -31 | 0.3 | 4.5 | 2.1 | 1.0 |
| P2 - P3 | 3.2 | 155 | 29 | 0.3 | 0.4 | 0.4 | 0.2 |
| | | | | | | | |
| P2 - P4 | 1.5 | 303 | -15 | 0,4 | 0 | 2.2 | 4.0 |
| P4 - P5 | 3.6 | 185 | 15 | 0.1 | 0.2 | 0.3 | 0.3 |
| | | | | | | | |
| P4 - P6 | 2.2 | 210 | 20 | 0.4 | 0.1 | 1.0 | 1.2 |
| P6 - P7 | 3.0 | 270 | 37 | 0.1 | 0.1 | 0.4 | 0.1 |
| | | | | | | | |
| P4 - P8 | 2.1 | 350 | -10 | 0.1 | 0.1 | 0.2 | 0.2 |
| | | | | | | | |
| P1 - P9 | 4.4 | 305 | -25 | 1.1 | 0.7 | 2.5 | 0 |
| P9 - P10 | 3.0 | 335 | -20 | 0.7 | 1.2 | 0.1 | 0.3 |

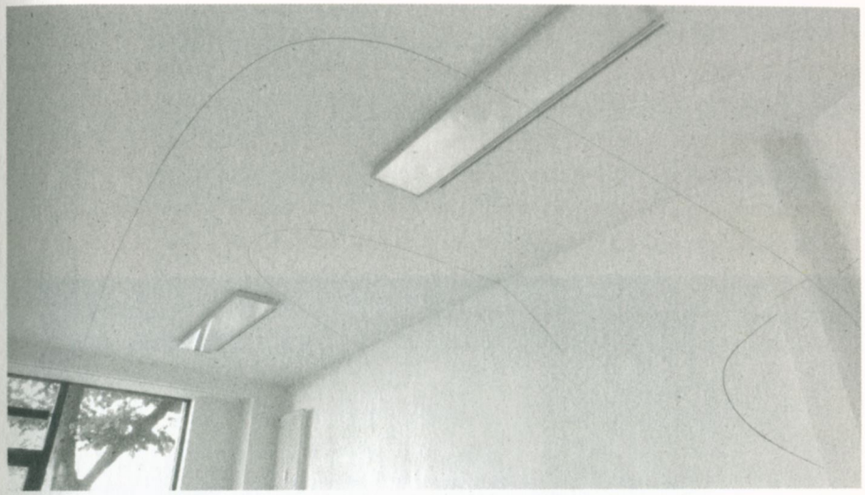
測量／中野

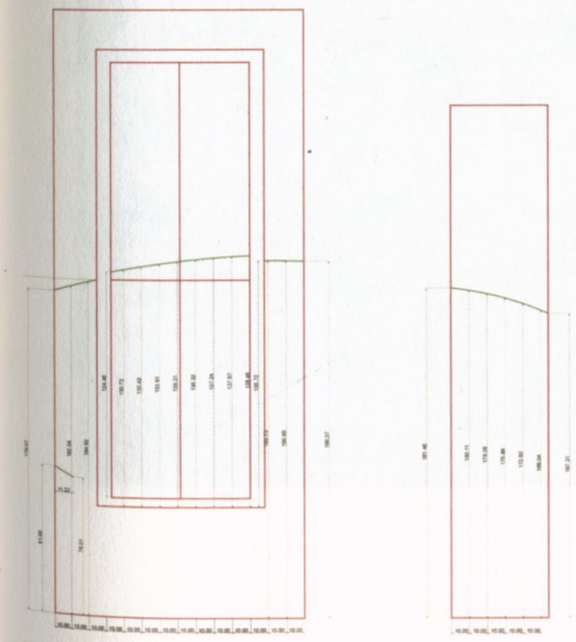
スケッチ／小山田

Com-Pass Cave Unit, *Doya Do*,
*The Act of Looking: Survey Map*,
2012, pencil drawing on graph paper
30 x 30 cm © Toru Koyamada



Asako Tokitsu, *Incidence Inside*, 2016, *Fourteen lines, fourteen viewpoints*, 2016, site-specific installation, O&O DEPOT, Berlin, charcoal, crayon directly on wall, photo © Dmitri Lavrow



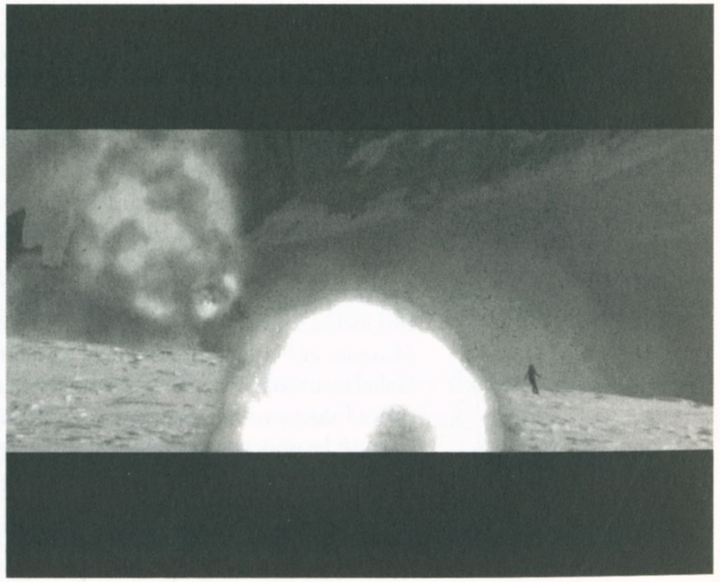


Asako Tokitsu, *Incidence Inside*, 2016, details of measuring and drawing a line that cannot be calculated by computation, photo © Dmitri Lavrow

Digital modelling & rendering by Steve Gödickmeier, René Kobel ©Asako Tokitsu

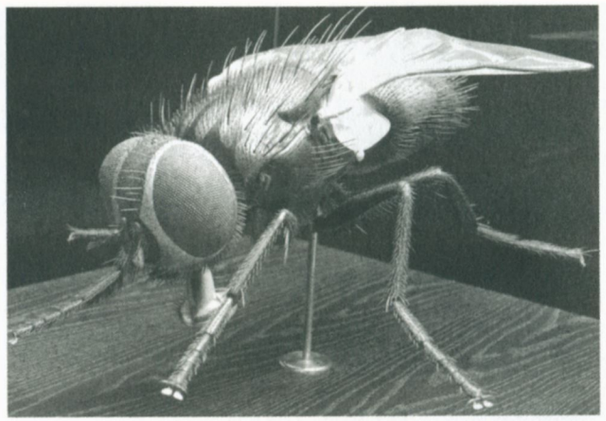
Over the last thirty years, Asako Tokitsu has been working site-specifically on spatial relationships of lines. The artist realises that some lines are not calculable, which is why she combines both calculable and incalculable lines in her installations. As part of the group exhibition *Listening to Lines* (Ginza Maison Hermès, Tokyo, 24 April – 5 May 2015), she reflects on her experience working with assistants, which led to unexpected results in her installation. Her assistants were commissioned to draw a line high up on one wall of the exhibition space, while the artist supervised them while sitting on the floor, in order to be able to have a view the entire wall. After working together for a while, the assistants' hands and the artist's brain started to synchronise, as Tokitsu recalls. This synchronisation filtered out all unnecessary factors and created a line that is very sophisticated; these are "better" lines than the ones she herself or a computer could have calculated. They are "better" in that they appear to be more complex in their morphology, while seeming to be more spontaneous and "natural" at the same time. In other words, the synchronisation of two (or more) subjectivities opens up a shared platform of measurement and precision. (From a conversation with Tokitsu, 30 July 2016, at O&O Depo Gallery, Berlin)


Toru Koyamada (in collaboration with Dr. Kiyoshi Naruse), *Diversity Maniacs*, 2011, mixed-media installation, 80 x 60 x 17 cm © Toru Koyamada



Julien Prévieux, *Post-post-production*, 2014, SD video, 120 min.

Julien Prévieux completely rebuilds the eponymous episode of the James Bond series: Each plan is embellished with additional special effects, including explosions, fires, avalanches, or smoke. Smoke and fire are added in an exaggerated way and pop up here and there. The spectacularising of the visual effects transcends narration and transforms the film into a generator of instant pleasures. Corresponding to the logic of "technological progress" and "improvement of quality", Prévieux extends the production chain by means of a mimetic posture. This consequently changes the means and the meaning of accuracy in measuring. Here, accuracy is no longer the result of calculation or a precise rendering of reality. The construction of measurement is organised around sensory perception, and exactitude is actively constructed by the aesthetics of (Hollywood) image industries, which cross the border between reality and "realities" (of over-production). The speed of calculation is continuously increasing, and so is the power to alter images – as is visible in high frame-rate photography and pixel clouds, the frequent practice of manipulating images or the use of modelling techniques. *Post-post production* indicates a point at which measurement in the production of images implodes.



"At first, it didn't seem so strange to me that a fly would fly around upside down if he felt like it, because although I had never seen such behavior, science teaches us, that that is no reason to reject out-of-hand what our own senses tell us no matter how out of the ordinary. (...) Later, (...) I realized that there were some practical difficulties. If flies were to take flight with their mouths down or on their backs, they could escape from anywhere due to their well-proven agility, but when imprisoned, a pitcher or even a glass box could disturb this natural behavior or could even hasten their death. Of the 10-15 days of his life, I wondered how many remained for this poor little creature – which was right now floating legs up in a state of pure bliss just two inches from my face? I knew that if I notified the Museum of Natural History, they would send some Galician armed with a net which might cause a horrible splat of my incredible discovery. (...) In less than an hour (It must be understood that the life of a fly passes with incredible speed if compared to my human life). I decided that the only solution was to reduce little by little the dimensions of my room until the fly and I would be confined to the smallest possible space."

Julio Cortázar (1914–1984), *The Witness*, 1965, translated by Thomas Christensen, San Francisco, 1998

Alfred Keller, *Fly*, 1932
© Hwa Ja Götz, Museum für Naturkunde Berlin

# Dance of Accuracies

"Through structure comes an apparent chance."
—Channa Horwitz

*Acts of Looking: Survey Map* is a series of documentations resulting from a survey study of caves on the periphery of Kyoto – conducted by a group of cultural workers who call themselves the Com-Pass Cave Unit. The study starts by having cave divers make precise measurements; this eventually results in a report in the form of a map that is a pictorial rendering of the caves they have examined, but also details scientific regulations and rules applied in speleological measurement. Closer scrutiny of the drawings of caves enables viewers to trace the different movements and actions of the cave divers – walking, crawling, measuring, and recording in darkness at over twenty locations, using various tools and working in a team.[22] Finding their direction by means of a compass, they use a clinometer to calculate the angle of incline and distance between two spots. In addition, they also use a laser or normal measuring tape for distance, height extremes, relative distance to the surrounding walls above, below, left, and right; to draw a map on site, they use a generic pencil with a protractor (a graduator) and a triangle. They also take note of shapes, specific conditions, and topographical details, and of whatever else they might find in the course of their passage through the caves. The draftsperson, a member of the survey team, analyses the data collected and converts them into two-dimensions through applying geometrical calculus. Weeks sometimes elapse between the date of the survey and the date of the drawing.

In *Survey Map*, a plan with cross-sections is given the most space. It shows the shapes of passages and constructs a side view (long–profile or projection) in order to give viewers an idea of the different levels of the cave and how they are connected. The hand-drawn images show that the appearance of the sections continually changes. The overview of the cave is shaped like an unidentifiable organism. The pencil lines are sensitive and look fragile, it immediately becomes

[22] The measuring process is always conducted by a team of cave divers. The final drawing of a cave provides essential information including the number and name of each cave, the area name, grade, credits (team members' full name and jobs during the session), survey date(s), draftsperson and date, scale bar, direction (of True North and Magnetic North) of instrument calibration. Ken Grimes, *Cave Mapping – Sketching details – A guide to producing a useful cave map*, ASF Cave Survey and Mapping Standards Commission (2000).

evident that their level of detail – the measured numbers, the short notes attached, et cetera – requires a high level of concentration. By means of common symbols and signs, the map gives more concrete information about surface features, navigational data, rigging, and special features such as stairs, additional paths, excavations, et cetera. All the amazing details of the cave are expressed by a synthesis of dots, outlines, numbers, signs, and symbols. The complexity of the space shaped over thousands of years is compressed onto the scale of a sheet of graph paper.

Surveying caves requires great effort, but still it is not easy to prove the accuracy of survey maps, at least not in any tangible way. This may sometimes depend on the equipment and conditions,[23] and sometimes on how the teamwork of the cave divers and the draftsperson functions. After long struggles in the darkness underground, mis-measurement and mis-recordings can occur without anyone being aware of them, but it is not easy to find or detect such errors. According to the BCRA (British Cave Research Association), accuracy is evaluated based on a combination of six grades (for a cave line) and four classes (for a passage). A grade is roughly divided by the facts of measurement, the quality of the equipment, and the realisation of geometric precision in the real conditions of the cave, while class is about the site of the recording – how precisely the divers can locate the recording point.[24] A grade for the position where the measurement takes place is described +,- (more or less) within a limited range. Computer technology, portable devices, and software have recently been developed to meet these challenges. For example, a lightweight 3D laser scanner is available to measure spaces more efficiently and to generate a high-resolution 3D map consisting of billions of points. Here, the accuracy is based on the idea of a centre (dot) defined by geometry, even though the additional notes regarding grade, amusingly, speak of the necessity of "trained experience" in using the device as well as of "follow(ing) the spirit of the definition and not just go(ing) by the letter". Geometrical thinking identifies the location as an intersection within the grid, which also grasps spatial relations through linking and correlating other dots. This thinking is oriented towards the dot as an absolute unit. In this sense, the dot represents accuracy in this type of measurement work.

[23] It is interesting that the basic actions that comprise cave surveys have fundamentally not changed over the course of the last 250 years. According to the British Cave Research Association, the use of magnetic survey methods is registered as "high grade", meaning it employs a high degree of accuracy. On-going development of topographic measuring devices and software is taking place, but is still incomplete or flawed by systematic or random errors, et cetera – at least when compared to other technologies.

[24] http://bcra.org.uk/surveying/



Meanwhile, if we take another look at *Survey Map*, despite the aim of being as "objective" as possible through following the set of speleological rules mentioned, the character, personal interests, and degrees of enthusiasm of the draftspeople can still be distinguished in and in between the subtle lines. While *Survey Map* satisfies the criterion of accuracy in a scientific sense, it also embraces various personal modes of accuracy. Here, the question is not about being more or less accurate. It is rather a different type of accuracy – accuracy in the sense of whether something really exists, or not, which is similar to the mode of the digital; accuracy is also not gradually developed in a process of drawing. Accuracy includes the imaginary spaces of "as if" and "as if it is". It is bound to the subjectivity of the speleologists and the draftsperson as enacted in the physical action of cave diving and drawing, and per se also has to include their respective reflections and intuitions. Here, we find an intuitive understanding of the environment without an analysis of the details. Such accuracy does not adhere to any centres, or follow intersections of lines. Accuracy is not confined to the ultimately immeasurable mental image of a dot; it lies, if at all, in an all-encompassing darkness. Cave surveys are part of a tradition of scientific drawings, which are apprehended and drawn by a special draftsperson, or sometimes by scientists themselves in order to documents the object of research. However, in the conditions in caves, the only centre available to the measuring mind is subjectivity, a subjectivity that moves, intra-acts, transforms, and mutates. In this sense, accuracy in the sense of measuring what is real does not have to respect the boundaries between the objective and the subjective, the real and the imaginary; it therefore expands the understanding of (in)accuracy.

The accuracies of the sense of the real combined with the accumulation of scientific units of measurement can form a strong magnet that opens up very different perceptions. It may be even more striking to observe this within the context of science, rather than within the context of art, perhaps because of the double pleasure of scientific and artistic accuracies. Accuracy in the sense of the real needs a frame so as to limit the field of view – so as to allow it to emerge in the first place. It can be a matter (a frame, an image, a box), a substance, a body, a perception, or, more conceptually speaking, a system, an institution, et cetera. In *Survey Map*, the setting as a whole – the system on which the survey is based, including the rules and medium of cartography (grids on graph paper, size of the paper, pencil, et cetera) – functions as framework and actually as a sort of frame: framework, because it is a structure and system of drawing, and a sort of frame since it brings particular limitations such as the rules, timeframe, and space of drawings. But it is not a frame that needs to be resisted or that might primarily represent limitations. It is obvious that the draftsperson/artist enjoys the progress of going

from "free" actions to drawing based on a set of scientific rules. Two approaches to pursuing the two accuracies are there from the beginning, always juxtaposed with each other, coexisting in parallel. As results, both accuracies appear in the same image: one is the accuracy in measuring reality through adhering to the grammar of geometry and the rules of speleology; the other is the accuracy in measuring the sense of the real that emerges from something very personal – the mind, body, and history of the draftsperson/artist him/herself. The former leads to a dot, the latter remains in a ubiquitous space.

A different, but still comparable attitude towards the use value of scientific "hard data" is turned into an observable event in the collaboration of an artist and a scientist: There is a similar sense of humour and a relish for playing with the logic of measurement in *Diversity Maniacs* (2011) by Toru Koyamada (in collaboration with Kiyoshi Naruse, biologist). It invites the audience to closely contemplate the faces of tiny fish and the differences between them in small details – using magnifying glasses installed in front of glass laboratory vessels sitting on an historical Edo-period wooden shelf. "Just as no two human faces are the same, this is also true for the *medaka*!" says Dr. Kiyoshi Naruse, an ichthyologist – who is also Koyamada's collaborator in this project and is researching the genome of *medaka* (Oryzia), a tiny, only 3.5-centimetre-long species of fish that lives in sweet water habitats in Japan. The intimate knowledge that the scientist collects by observing the *medaka* makes it very clear that he has great admiration for the details of the diversity of individuals. In spite of their apparent uniformity and commonness, his approach makes it possible to measure the individual "being", to not only trace and report it, but to also perceive and construct it with the eyes of an aficionado. After intensively observing the fish again and again, it is, frankly speaking, not that easy to recognise the individuality that Dr. Naruse talks about so passionately. Is his heightened sensory perception real, or is it surreal? One may assume that, over the many hours and days of observing and accompanying the fish, he must gain an understanding of each fish that is based not only on appearance but also on their movement, behaviour, character, et cetera. This is what the eyes of a "maniac" (as Koyamada says) are able to perceive. His huge amount of knowledge may ultimately also make it possible for us to one day see and measure the differences between the fishes' faces. The extremely subjective measurement practiced by the scientist opens up another terrain of measurement, which differs from mechanical and automatic modes of measurement and draws an ambivalent borderline between the real and the imaginary. This is the fascination of *Diversity Maniacs*, whose accuracy is located beyond measurability.



Koyamada met Dr. Naruse as his assigned scientific partner in an "art-meets-science" type of exhibition project, and initially had a hard time figuring out what the point of his contribution – the fish observatory – actually was. After recognising the epistemological logic of this configuration, he became enthusiastic about its potentially "maniacal" quality and deepened the dialogue, up to the point at which he decided that it would make sense to present his findings in another – art-related – context, so as to introduce the notion of complexity in acts of observation as well as explicitly position it against certain abusive forms of abstracting life by means of standardisations of measuring. In other words, with *Diversity Maniacs*, Koyamada and Naruse present the praxis of a "defamiliarisation of the familiar". Naruse "defamiliarises" the generalised species classification *medaka* – the most familiar fish in Japanese culture – by confronting species with the individual, and, certainly not least, by projecting an animistic perspective on specific, individualising traits of their faces. To Koyamada, this state of not-knowing seems to hold great potential for any kind of new discovery. For him, it is accompanied by open-mindedness, which is not only an "extra", but also an absolute requirement for any imaginable advancement of knowledge – and, in a number of ways, it is also a parameter for the description of "measurement from the inside". He gives a context to Naruse's alternative understanding of measurement to thus highlight its conceptual precision. Here again, two different praxes of measurements meet and open up an opportunity to present themselves. Another example of double accuracies that indicates the ubiquity of measurement in a more directly perceivable way in comparison to art works that I introduced in the previous sections. The slight patina of the chosen format of display for this recontextualisation suggests that the artist is interested in the history of genetic research and has considered the "timeless" quality of this situation after experiencing the limits of measurement that can only be apprehended from the outside. Accordingly, the precision of measurement can be made apparent by the context; in the end, both need to be cultivated: the ubiquitous inner space as well as the space outside the body.

this is an oxymoron.

MAH.. Just referring to the unit of measurement being computed of subjectivity