

Nuclear Culture Symposium

Nuclear Culture Workshop and Nuclear Culture on Film 27 & 28 April 2013, The Arts Catalyst, London

Jantine Schröder (University of Antwerp, www.insotec.eu) and Ele Carpenter (Goldsmiths College, <http://nuclear.artscatalyst.org/content/nuclear-culture-workshop>)

General introduction

This symposium was organised by Ele Carpenter, in partnership with the Arts Catalyst¹ and Goldsmiths College, University of London. The symposium was part of the Nuclear Culture curatorial research project by Ele Carpenter, to investigate the potential for developing new artwork in response to the wider questions surrounding the dismantling of nuclear submarines. The question for this type of investigation was raised by the Submarine Dismantling Project Advisory Group (SDP-AG), a diverse group of people (statutory authorities, NGOs and community organizations, academics and now artists) initiated by the UK Ministry of Defence (MoD). The project in general is about inviting artists to consider the aesthetic, conceptual, ethical and cultural concerns of (dismantling) nuclear submarines. This project is of interest to InSOTEC², and vice versa, as, in conjunction with experts in the field, it investigates complex issues of power, visibility, and political representation, as well as having a keen material and conceptual interest in the socio-political history and conceptual nature of nuclear technologies. Whilst there is much research into nuclear technologies, there is little analysis of the cultural and conceptual questions of nuclear materials within the language of visual art. The project aims to bring together scientists, engineers and community activists with artists and ethicists to develop new opportunities for creative practice investigating nuclear culture. The workshop formed part of this broader project, by gathering 30 artists and stakeholders to share and discuss their work. The idea was to bring together different languages and thinking from a common starting point: how to deal with dismantling and existing waste. In the 21st Century the nuclear industry has been increasingly forced to include decommissioning and dismantling into its language and practices. This raises many questions about materiality, ethics, invisibility and representation in the field. The event provided a unique opportunity for mutual learning, to develop an understanding of each other's work, methodologies, languages and concepts. Dissensus was taken as a starting point and complexity as a given, without the intention of reaching a specific conclusion.

¹ The Arts Catalyst commissions art that experimentally and critically engages with science. Its primary focus is commissioning new artists' projects, presented in a range of museums, art galleries and other public spaces in the UK and internationally. Its events and activities bring together people from diverse backgrounds to explore and generate new ideas and alternative perspectives on science and culture (www.artscatalyst.org/about/).

² InSOTEC (International Socio-Technical Challenges for implementing geological disposal) is a three-year research project within the Seventh Euratom Framework Programme (FP7) (www.insotec.eu).

Day 1: Nuclear Culture Workshop

Background

The workshop brought together people engaged in nuclear issues including members of the SDP-AG, academics researching nuclear histories, wastes and cultures from Anthropology, English Studies, History of Technology and the Visual Arts, and visual artists working across film and video, performance, sculpture, public space and digital media. Some of the invited artists had previously made work investigating nuclear issues, whilst others are in the process of researching the field to make new proposals as part of the Nuclear Culture project.

The structure of the workshop enabled everyone to gain an introduction to the key issues and artist's approaches in the morning, and to take part in small roundtable discussions throughout the afternoon. The debates were briefly summarized and discussed at the closing plenary, and further debated over supper.

The overall aim of the workshop was to investigate the knowledge and conditions of the present and to think through responsibilities and cultures of the future. Although the cold-war provides an important part of the historical logic of the nuclear programme, the situation today is very different, with new fault-lines between civil and military use of nuclear science. The nuclear-armed nuclear submarine embodies the military rationale of the cold war combined with ethical dilemmas of both nuclear energy and weapons. But the current decision making about nuclear dismantling, waste storage, transportation and disposal involves the contemporary and future forecasting of complex socio-technical questions through nuclear research, risk analysis and a more holistic investigations of the sociology and culture of the nuclear field.

Nuclear technology today seems to stand for both the failed utopian promises of modernism as well as fresh hope for a carbon-free future. The contradictions that lie at its core have provided a rich source of questioning for artists, scientists, ecologists and activists for many years.

The invention of the nuclear age in the 20th Century emerged from a belief in modernity, that new technologies could solve world problems. In the 1940s splitting the atom seemed to be a solution to world conflict and global energy resources. The belief in harnessing the mysteries of the atom for nuclear weapons and nuclear power has seen unlimited financial expenditure unprecedented in any other field, which enabled it to expand faster than the time it takes work out how to deal with its waste products. Instead of 'keeping the peace' through Mutually Assured Destruction, the nuclear age in the 21st Century has been read as a new scenario of Singularly Assured Destruction. Today the risk of self-harm through accident or environmental disaster, the challenges of nuclear decommissioning and dismantling, and the nuclear site as target, present new hazards at home. The modernist belief in a shiny, clean, controlled, open ended future had a blind spot to ageing, decay and uncontrollability. A large part of nuclear designing today is focussed on how to dismantle nuclear products, objects, craft and facilities as safely and neatly as possible, reducing the radiation dosage to those involved, and providing sealed units of waste for storage and eventually disposal. To dismantle something is an admission of the failure of modernism (an open ended, shiny nuclear future) as well as an admission of physical decay (metal fatigues, it rusts, shortcuts are revealed, foundations are rocked, water seeps, cracks appear). It is a process of coming to terms with both the materiality and the immateriality of the aging nuclear infrastructure. The process of nuclear dismantling is part of the nuclear experiment: it was unplanned and unknown. With its clean design

solution for dismantling, conditioning and isolating waste, the aesthetics of dismantlement are the new form of modernity, but the blind spots are still there. Dismantling focuses on just one isolated task: how to dispose radioactive waste. It does not stray into the wider discussion of whether new waste will be produced. Ethics are simplified by isolating a single technical problem. The modern technology utopia continues: the waste issue is viewed as a technical problem that can be resolved by engineering and technology in a timeless yet controlled manner.

The relationship between time and space is often discussed in relation to art. But recent reflections on time have started to focus on 'Deep Time' or geologic time, a concept which stretches before and after a human perception of time. Although many argue that we should stop producing nuclear waste until we have an agreed method of dealing with it, the problem is already present. Of course geologists and deep space astronomers have always been concerned with deep time, but maybe there is a renewed sense of our fragility on earth as the 21st century gains momentum and the clean-up of the 20th century begins. Geological disposal aims to treat the relationship between time and space by disposing the problem: on a geological level and timescale, there is no problem. But little by little the complexities of the problem unravel, nuances of language are discussed, the physical properties of materials are analysed, perceptions of risk are calibrated. And the solutions for nuclear waste storage become increasingly mythical. Geological disposal facilities would have to last for 100,000 years or more. Humans have never built anything to last and function this long, so the semiotic challenges lie both in the present (how to conceptualize something that is to last forever) and in the future (how to convey the meaning and content of these hazardous sites for future generations).

The set-up of the Nuclear Culture workshop was inspired by the idea of 'antagonistic politics' as developed by Chantal Mouffe.³ The notion of antagonistic politics aims to enable a real democratic discussion where all points of view are brought to the table, rather than smoothed over to create consensus. The concept is reflected in the visual arts, where there is much discussion about the need for a revival of public space, public discourse and democracy through adversarial politics, where ideas can be thoroughly and rigorously argued within the public sphere. The introduction to the Nuclear Culture workshop thus presented 'Art' as a space where tensions exist, where dissensus is always a starting point, where complexity is a given. So the workshop started from a point of dissent between art and science and between pro and anti-nuclear debates and different perceptions of risk, to open up the possibility for a full and frank discussion. To a certain extent the SDP-AG takes this role by inviting a diverse spectrum of stakeholders to contribute to the MoD decision making process for dismantling nuclear submarines. However, the concrete task of clearing up old submarines ironed out some of the differences between the members and their respective cultures, networks and belief systems. At the Nuclear Culture workshop, the constraints of having to reach consensus were lifted and the polarities of beliefs and politics could be discussed through the context of a different discipline. In art there is no drive to simplify or smooth over politics through language, forms of representation, research into the archive, or personal misadventure. Art opens up a space for complex enquiry and an interrogation of the forms of representation where the nature of facts are contested and stories are told. So the workshop was presented as a process of enquiry rather than decision-making, and, apart from an open encouragement for interaction and collaboration, the way in which artists might engage was also left open.

³ <http://www.artandresearch.org.uk/v1n2/mouffe.html>

Whereas science has the tendency to break up and divide issues into smaller parts and manageable bits, arts and humanities tend to focus on the bigger picture. Science tries to reveal simplicity in complexity, whereas philosophy and art try to reveal complexity in simplicity. Scientists for instance tend to see objects as neutral, and attribute the value of use to the value of the user. Art can help us revisit the agency of the object. Lise Autogena for instance investigated whether defence technologies can be turned into communication technologies (“The Sound Mirrors Project”). Can we learn something from an analysis of nuclear artefacts which will change the way in which we look at objects?

In the same spirit, art can also rout into our unconscious understanding of things we have become so accustomed to that we consider them normal and universal. Time for instance is a social construct that has become so familiar to us that we treat it as a given. Thomson and Craighead’s “Flipped Clock” shows a digital clock in which the last digit is flipped, this creates a momentary confusion with regard to our usual relation to time and understanding of temporality (reminding us perhaps of when we were learning to read and grasp time as a child).

Art works can crack issues open, in search for hidden cultural, political echoes in what seems to be neutral, isolated objects or processes (e.g. “From An” by Crowe and Rawlinson, 15 redesigned British citizen application forms). This is specifically relevant for issues that are overloaded with their own symbolism and have thus become ‘contained worlds’. Art can thus also serve as a vehicle to uncover the assumption of neutrality of nuclear language without having to confront it directly with another language (e.g. that of the social sciences), but by using sensual media and experience. By means of art we can also more broadly explore how the fabric of nuclear sits within our culture (tallying with the modern struggle to make the world transparent, predictable, regular, continuous and manageable). For example the way we look at time seems to be ‘out of time’, but in fact is very much located ‘in time’ (our modernist vision on time as something clear cut and controllable, challenged for example by art works that incorporate real time statistics and/or visuals of space-time combinations (e.g. “Horizon” by Thomson and Craighead). This tension is also reflected within radioactive waste, being simultaneously ‘in’ and ‘out’ of time (object vs. radiation, material vs. symbolic, political vs. technical, spent fuel as waste vs. resource, ...).

Art can expand and explore issues that are reluctant to a writing but prone to aesthetics (e.g. deep time, radiation, ...). Art can both alienate what seems familiar (with the effect of creating reflexivity) and familiarize what seems alien (e.g. by not leaving space for detachment but creating a sphere of psychological projection (Lucia Garavaglia⁴) which is for instance done throughout Yelena Popova’s essay films “Unnamed” and “Nuclear Utopia”).

Overview of presentations and discussions

The day started with presentations about diverging opinions about nuclear risk, submarine dismantling and stakeholder consultation, and campaigning against nuclear weapons. The first set of round tables were led by members of the SDP-AG and followed up on questions raised during the morning presentations, about stakeholder consultation, the nature of the nuclear submarine, future ethics and policy, and nuclear language. The second set of roundtables were led by artists and focused on ideas raised through their work. To ensure a level confidentiality Chatham House rules applied to the roundtable discussions, which were noted and summarized by students from

⁴ <http://nuclear.artscatalyst.org/content/body-nuclear>

Goldsmiths MFA Curating. So although the roundtables were led by particular people, the input below is based on the interpretation of the authors of this paper and on impartial notes taken on the day – particular opinions are not attributed to individual participants.⁵

In true agonistic style the day started with a representation of contentious debates over specialist areas of nuclear knowledge, e.g. the debate on low dose effects. Whilst the dangers of radiation are commonly recognized and the radiation protection principle of ‘linear non threshold’ is in place, the effect of low doses is an issue still hotly contested by scientists, environmentalists and health protection agencies. To put it simply – if you believe that low doses do not have an impact on the human body, then there is no reason for a high risk assessment of (potential) limited releases from nuclear facilities (including waste repositories). However, if you believe that there is a possibility that low level radiation does effect the human body, and could have serious repercussions for human health also or especially in the longer term (transgenerational), then you will fight for a high-level risk assessment of all potential releases and exposures.

Non-scientists (i.e. the vast majority of people) struggle to understand the different kinds of research and the way in which facts are presented within these debates. The question of how facts, language, knowledge or information are instrumentalised for one agenda or another occurs as a reflection of how knowledge is socially and politically constructed. These questions and controversies are part of our nuclear culture and impact on how we understand the challenges of radiation risks and what we learn through the process of clearing up radioactive waste. Another illustration of this finding came to the foreground during the roundtable session on ‘Nuclear language’. The discussion started with the need to clarify the way in which certain terms are used inside and outside the nuclear community. There are many examples of confused language in the nuclear industry. In Plymouth dockyard for example, Intermediate Level Waste is referred to as ‘Low Level Waste’ because it is transported within the dockyard on rails on the ground rather than up in the air by crane. This example shows that, although classification standards exist, context related aspects refute a universal application of these standards. At other places, other classification rationales may exist to differentiate between high, intermediate and low level waste. Consequently the genesis, use and status of nuclear language at large was debated. It was discussed how, in nuclear waste management, language is also a political and social tool. Scientific and technological nuclear language can be muddled and can feed into both political and social language. Culturally, it is difficult to find unambiguous language to establish a reliable social norm. The following questions were considered: Is this confusion over language a reason for the lack of public confidence? Is language the servant or the master of our thinking about nuclear risk? Can artists expose the language problem? These questions can be bridged to the roundtable on ‘Forensic Analysis’ of materials which centred around issues of responsibility and risk. The group discussed the difficulty of blame when no one entity is responsible, the complexity of aggregate causation, the balance of risk against cost, and the faith of giving of responsibility to algorithms and machines. These topics complicate the notion of trust while simultaneously necessitating it (knowledge can only develop when trust is placed in and built upon others’ findings). The importance of the involvement of artists to intervene in these processes was discussed, and the necessity for artists, journalists and activists to have as much information as possible so they can reflect these processes in their work for a general audience. This brought up the importance of interdisciplinarity, and the need to ask shared questions together.

⁵ For brevity, not all roundtable discussions are referred to.

Overall, the way we create knowledge, and the statute we attribute to it was a reoccurring theme for reflection. Discussions then focussed not so much on what we know, but on how we know. In light of the modern dominance of scientific knowledge, attention was dedicated to how nuclear science influences our general perception of what knowledge is or should be. For instance the modern translation of uncertainty, complexity and messiness into certainty, simplicity and neatness (isolating and containing, design based calculation, control, ...) was put to question. More broadly, the problematic translation of scientific uncertainties into political and regulatory facts was highlighted: the complex issue of political and legal closure in light of scientific openness. Where can we look for a basis for decision making if we cannot turn to science for decisive answers? Moreover, uncertainty and risk seem to have become conflated with regard to nuclear issues. Is this specific to the topic and why is this the case? In line with Latour, it was pointed out that all understanding requires assumptions, which are always framed but often in a tacit form – assumptions determine outcomes in a blackboxed manner. How can we elicit the illusion of neutrality nuclear language assumes, and how can we open the black boxes of technical devices?

Reference was made to Blanchot's differentiation between understanding (taking things apart, isolating bits that you can grasp) and knowledge (more broader, more holistic, connecting isolated parts of understanding, relating them to the world from which they sprung and in which they will come to function). The 20th century has witnessed an incrementally vast amount of understanding, but an incrementally reverse amount of knowledge, which e.g. explains the development of something incomprehensibly destructive like the atom bomb.

Throughout the second set of round table discussion led by artists, the connection between previous discussions and art was made more directly. A discussion on risk perception and Fukushima started with the way in which radiation cannot be experienced through the senses and the way in which film-makers have sought to 'materialise' radiation through different effects. The roundtable named 'Ovid's Metamorphosis and radiation exposure' explored the controversial nature of mutation and fears of mutancy. The table on 'Nuclear waste storage and semiotics' treated the connection and potential contribution of art to memory preservation related to radioactive waste sites. The idea was launched that the passive safety geological disposal aims for is nevertheless something that needs to be actively maintained, for instance by the creation of a living relay system to which art can meaningfully contribute (e.g. Cécile Massart, "Cover" (work in progress)). The discussion included different understandings of nuclear semiotics for marking nuclear waste sites into the next 100,000 years and the spectrum of deep time. Questions raised included: How does the disposal of nuclear waste challenge our perception of time, of how we envisage the future? How do we embed knowledge in a landscape or a community over generations?

Day 2: Nuclear Culture on Film

The Nuclear Culture on Film day offered a programme of artists' films⁶ and roundtable discussion investigating nuclear culture from the perspective of the 21st Century from nuclear entropy, utopian and dystopian belief systems, questioning scientific certainty, political agency and nuclear proliferation. The films reflect on 1980s feminist experimental film and activism, gritty dramatic satire of the 1990s, and recent video-essay works from 2009 – 2012. Artists narrate their own experience of nuclear environments in Britain, the Urals, Estonia, Ukraine, Japan, France and Canada, travelling back home, to nuclear installations or to sites of disaster to try and capture the invisible or the unimaginable. Investigating the aesthetic implications of radiation reveals the impossibility of capturing an energy that bleaches the images from film and erases the hard drives of digital devices.

In the afternoon a roundtable discussion between Kodwo Eshun and Mark Aerial Waller with Liam Sprod raised many complex issues of how nuclear culture impacts on concepts of time and knowledge, and how radiation is represented within film. Liam Sprod discussed how nuclear knowledge has impacted on notions of time and temporality, the problem of the future in the face of 'end of' narratives, and the threat of nuclear destruction. He proposed that the films articulate how we are already in the time of the disaster: the shift in scientific knowledge – the in-depth knowledge to manipulate the very matter of the world – is the disaster.

Symposium participants asked poignant questions about the nature of representation of scientific knowledge and facts within artists films, and the potential for them to be misleading. This raises wider questions about the different genres of art-film tackling nuclear concerns, from docu-fiction, dramatisation, biographic study, aesthetic formalism, activist gesture, to the use of archives.

The point was made that artworks are more prone to be preserved for the future than other forms of news or information media, and as such have an important role in shaping the archive of human knowledge and analysis. Confusion arises, however, when art-films use the strategies of public information media. Whilst their forms of critique are subtly explored within an arts discourse, this may be less nuanced within a wider public reception. In contrast, works that were explicitly fictional, using a dramatic approach, could perhaps more easily raise political questions without challenging the nature of 'facts' which are always contested within storytelling.

Perhaps unsurprisingly some people found the selection of films very emotive. Unsurprising because nuclear risk is an emotional subject. At the same time there is also a critical distance to be taken in relation to nuclear culture, investigating the way in which it impacts on our experience of time, disaster and knowledge, as Sprod describes.

⁶ The following films were shown: The Otolith Group, *The Radiant* (2012), Mark Aerial Waller, *Interview With a Nuclear Contract Worker* (1999), Mark Aerial Waller, *Glow Boys* (1999), Cécile Massart, 4 moments extracted from video reports at the site of Soulaines (France) (2002), Isao Hashimoto, *A Time-Lapse Map of Every Nuclear Explosion Since 1945* (2003), Yelena Popova, *Unnamed* (2011), Sandra Lahire, *Uranium Hex* (1988), *Your Greenham*, Short films, (2007), Chris Oakley, *Half Life* (2009), Todd Chandler & Jeff Stark, *Let Them Believe* (2010).

Nuclear culture lies somewhere in between the rationalization of science, the emotional response to the unknown consequences of nuclear technologies, the re-presentation of the insensible, and its impact on our understanding of time and knowledge. Much (art)work is yet to be done at this complex intersection.