CHISENHALE INTERVIEWS: NICHOLAS MANGAN

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Ancient Lights
3 July - 30 August 2015

Katie Guggenheim: *The first of the two films that form your new work,* Ancient Lights, *is a loop of a coin spinning in perpetual motion. Further cycles and cyclical systems occur in the second film and in the way that you've conceived of the installation as a kind of closed circuit, powered by an off-grid system. What interests you in these different kinds of systems and cycles?*

Nicholas Mangan: I've been thinking about the cycles in terms of transformations of the sun's energy and how that operates on two levels. One is transformation of the suns' energy through the weather, photosynthesis and the production of fossil fuels. Then there is this other transformation that I've been interested in, which is the idea that the sun's radiant energy somehow directly affects the human psyche, so when there is more activity on the sun humans synchronise with that, causing certain events to happen.

There is a constant flow of energy that is produced by the sun in the same way that there is always a constant flow in economy. There is a theory that increased solar radiation activity might affect people's behaviour and cause them to make different choices, in, for example, the way that they anticipate the stock market. And then, of course, changes in the weather cycle affect levels of food production leading to fluctuations in the wholesale price of commodities. There are these two different types of cycles that are somehow synchronised but also pulsing and flowing in different rhythms.

KG: *It's interesting that you talk about this flow of energy in terms of economy. We've been thinking a lot about economy in terms of efficiency in the way that the energy is circulating in the exhibition and balancing input and output very carefully. But the motif of the spinning coin is literally currency. There is this constant shifting between macro and micro: the solar system to the off-grid system at Chisenhale that powers the projectors, the spinning coin to the global circulation of capital.*

NM: Yes, totally. I don't know if I have found the right word, but I was thinking that the spinning coin piece is almost like a metronome, like the sun's heartbeat, setting the rhythm for the show. It's not like the coin is just spinning in one spot. It dances around… in a cyclical, a rhythmical, predictable way, but there are also contingencies in that.

KG: *The coin in the film is a Mexican ten-peso piece. You travelled to Mexico City during your research for this work. What did you do there?*

NM: I was really interested in the idea of trying to film the sun moving across the city, to play on this idea of the sun's perpetual movement and then it rained everyday I was there. But then I realised that everything that I wanted to talk about in that was already bound up in the Mexican ten-peso coin.

KG: *It's illustrating thermodynamic equilibrium...*

NM: It is, but it's also unnatural because what the coin is doing is negating heat death, which is inevitable in a thermodynamic understanding of energy. The first law is that energy cannot be created or destroyed, but in the second law energy can become unavailable and therefore it can lead to entropy, which is the element of disorder in the system. So it's almost like the coin is stuck between those two laws.

KG: *The coin depicts the Aztec sunstone, which governed the cycles of the Aztec calendar.*

NM: The sunstone was also central to the Aztec's belief that sacrifice was necessary for human life to continue; that without sacrifice the world would stop. I guess I was trying to think about how this related to a very contemporary idea of energy, which is that although energy is always flowing it's not perpetual. If you want energy you have to pay for it: there has to be a loss. At the moment we have the batteries full of sun, but those batteries are going to drain out, there's not an infinite bank. And I like that it's a calculated risk, it's like a gamble with the weather. This idea of surplus and loss is something that Georges Bataille talks a lot about in his idea of a 'general economy'; that the sun gives without ever receiving but then once that has been distributed over the surface of the earth it turns into excess and surplus and the equation becomes very complicated.

Thermodynamics is also interesting because it was first articulated and understood around the time of the first industrial revolution, so it was really important for the modern world because it meant they were able to understand how to make the most use out of work and force. And so, it's interesting because now we are entering another period of revolution, that is, by necessity, because of the fact that we need to change the way that we use the world's resources.

A while ago, I asked myself, does the world weigh more or less after all the things that have been made were made and all the things that have been destroyed were destroyed? It is the same situation with energy, it has to go somewhere, it has to be spent or lost, and I guess that's how I come back to this relationship between economics and energy. They both flow, but they are both subject to certain interferences or oscillations.

KG: *They're both exchanged and so subject to negotiation?*

NM: Yes, like currency and current.

KG: *Is there a relation here to your use of moving image and the language of film?*

NM: It's a way to explore thermodynamics and entropy through cinematic time, which flows forward. And even without the material of film itself, using digital video, this idea is still located in that logic of understanding chronological time. That's why I used moving image to explore the coin as a kind of sculptural idea. There's this beautiful film by Yoko Ono called *One* (1966) where she strikes a match, and it's filmed in slow motion until the match burns out. If this match already burned out and then it came alight again and returned to being a match we would know that's not the way that energy flows because energy goes from hot bodies to cold bodies.

It was an important decision at the very beginning to use moving image for this work because it was dealing with energy and light. I am really interested in the history of Structuralist and Materialist cinema but I want to make that kind of enquiry now, with the technology available now.

KG: *The work uses contemporary technology then but it still addresses the relationship between the two fundamental elements of cinema: movement and light.*

NM: Yes, exactly. I mean, even though it's recorded on a digital sensor it's still light. The beautiful thing about film is that it somehow records light. That's also why I was interested in the tree rings, which feature in the second film. It was about looking at tree readings to find evidence of solar cycles, but what also fascinated me is the idea that those trees are also a physical recording of the sun's presence and energy.

KG: *You've really played on the resemblance of the tree rings to a vinyl record, which gives this feeling of being able to replay time in the same way you do with a record or a film.*

NM: Yes, that's essentially what the researchers in the dendrochronology lab do. Dendrochronology is the study of tree rings and they're look at tree readings and correlate them with historical events because they record time. When making this work I was also thinking about the films *Vertigo* (Alfred Hitchcock, 1958) and *La Jetée* (Chris Marker, 1962), which both explore these ideas. There's this other film that I've used a section from, *The End of August at the Hotel Ozone* (Jan Schmidt, 1966), where this women points on the tree and says 'This is where the apocalypse happened'. But we're receiving an event of the sun sitting here talking in the park right now and I am interested in these micro events as well.

KG: *While you were making this work you travelled to a centre for studying tree rings in Arizona…*

NM: I was interested in filming the actual trees that were used to try and identify the 11-year solar cycle. It was like trying to find a specific record in an archive. Trees absorb carbon and that's how you can do carbon dating. That's what Dendrochronology ended up being used for, but it came about because A. E. Douglass was really obsessed with trying to find solar cycles. A lot of people disagree about whether he actually found any evidence or not, but if he hadn't had this obsession we wouldn't have Dendrochronology. It's all about the energy from the sun that's stored in that wood.

KG: *The second film seems to me to be about different ways of looking at the sun, through these records and material traces. Looking at the sun is the one thing we never do directly. The sun is impossible to see and, at the same time, the only way that we can see at all.*

NM: Looking at the sun is a sacrifice of vision. But then there have always been people who have attempted it, like this guy Heinrich Schwabe who was a German atronomer in the 1840s who actually started counting every sunspot. Since then every one has been counted, now there are satellites that are out in space monitoring the sun's every movement.

KG: *Could you explain a bit more about sunspots and their significance?*

NM: They're electromagnetic storms on the surface of the sun that appear as a dark spot, where you get a colder patch. As a result of that you get these coronal ejections of plasma that shoot out and send out radiant light, which is what heats the earth's atmosphere. That's why they monitor it everyday, because they're strong enough to knock out entire electricity grids and telecommunications systems.

KG: *How does this happen? Are the solar spots a concentration of energy or the opposite, therefore causing a displacement of energy?*

NM: Sunspots are black because they're colder. And then around the edge of the sunspot, you get this intensified energy that triggers solar flares. Within the 11-year cycle there's an increase in activity going in one direction on the sun, and then for the next 11 years it happens in the opposite direction. It's amazing that something so amorphous actually has a very logical behaviour.

KG: *I guess it's a kind of ecosystem, so it's in equilibrium. Could you explain a bit more about the 11-year solar cycle and when people first started tracking this through recording sunspots?*

NM: Galileo was the first person to see one through a telescope, but the Chinese used to look at them through pieces of jade, so that they didn't hurt their eyes. I'm particularly interested in Alexander Chizhevsky who was a

Russian biophysicist who was looking at correlating the sunspot maximums with periods of revolution, mass migration, and war. He believed that solar radiation was capable of affecting the psyche of the masses; that the sun was triggering something in the human population. But then there was a flipside of that, and there have been other people who have related solar maximums to periods of recession and decline.

KG: *We've talked a bit about the sculptural quality of film as a record of light and the movement of time but I wanted to ask you about how you've made the energy, the electricity that's powering the show, into something sculptural. How every piece of equipment, every length of cable, every part of the system that supports the projected image has become a sculptural element in the work.*

NM: The most important aspect to me is that we are taking this energy from the sun, turning light into energy, and then turning that energy back into light again through the projectors. So it's like spending light, like burning the daylight. It's important to show that functioning. The work is about a particular type of transformation that the viewer participates in, or is privy to, even if you can't see the solar panels you know that batteries are in there and that lights are on, so you are experiencing the transformation taking place, it's not that you are being told about this thing that happened, it's there. That's also why I felt that I didn't need a narration to explain the context in the second film. I felt that would describe a transformation rather than producing a transformative effect on the viewer.

KG: *The soundtrack that you've made is a really important element in the work. It makes it a very physical experience for the viewer and enables the installation to occupy the space in an interesting way.*

NM: Only one of the films has sound but when I was making the other film I had to think about how the sound would come in over the top at certain points. At first I was thinking of the coin film, which is the silent one, as the main part of the work and the second film as a way to contextualise it but now the relationship is much more fluid. The ideas and the sounds loop into the rhythm.

KG: *Several of your previous works have occupied this intersection of film and sculpture.*

NM: This work follows on quite directly from a previous project, *Progress in Action* (2013), which dealt with a very specific historical situation on the Pacific Island of Bougainville. The international mining company, Rio Tinto, put a huge copper mine in their back yard, essentially without asking. Eventually the islanders got fed up, and they closed down the mine and as a result the mainland, in cahoots with Rio Tinto, forced them into exile on the island. There was no fuel or food coming to the island, so they started using coconuts as a form of energy. I was interested in the idea of human agency

directing the flow of energy and matter in a way to cause a kind of social transformation. I used 100% coconut to run a diesel generator that powered the film I made, so the very material at the centre of this social situation was what enabled the moving images.

KG: *But there's something really interesting in this appropriation of this exotic symbol as a form of power, in terms of energy, and therefore political power.*

NM: Yes, coconuts are always seen as a kind of Pacific Islander joke but they were used as a weapon. And I also guess that's why, in a very logical way, I came to thinking about the sun. We need to expend a huge amount of resources and energy to extract the energy from coconuts, which is less efficient than drawing it directly from the sun. I haven't really quite worked out how to verbalise it, but I'm into this idea of systems of balance and equilibrium between certain forces... like the idea that solar energy is free but to make the batteries you need to mine certain materials, and so on. I sometimes wonder if there will always be this impossible equation. I'm sure that a physicist would be able to answer that straight away but I think, as a sculptural problem, it's really interesting

KG: *You've called the work* Ancient Lights. *What does that refer to?*

NM: It comes from an 18th century law, which is based upon this idea of the right to light. Simply, if you have had natural sunlight coming through your window for more than 20 years no one is allowed to construct a building that will block it. I like the way that somehow that's what we are doing at Chisenhale: bringing ancient light into the space. All sunlight is essentially part of a continual, ancient light. The sun doesn't get turned off at the end of the day.

I'm really interested in the idea of a right to light in the sense of a right to the sun as a resource. People are choosing to go off the grid because it's their right to have that light. Especially in Australia, where people are trying to go off the grid, and the government is trying to stop them because they own all the coal stations plants and they want to make money out of burning coal. The prime minister of Australia, Tony Abbott, said that coal was good for humanity last year.

KG: *The right to light becomes a right to energy and a right to power.*

NM: Exactly, and agency. In the UK, there is this idea that the sun is a very rare commodity. So to establish a law to allow the right to that is a more poetic way of talking to the bigger issues of the project, or to give it some kind of site-specific anchoring. There is also, of course, the humorous idea of trying to make a solar powered show in London. But the fact is that you can do it.

Nicholas Mangan interviewd by Katie Guggenheim, Exhibitions and Events, Curator, Chisenhale Gallery, June 2015. Chisenhale Interviews, *series editor, Polly Staple, Director, Chisenhale Gallery.*