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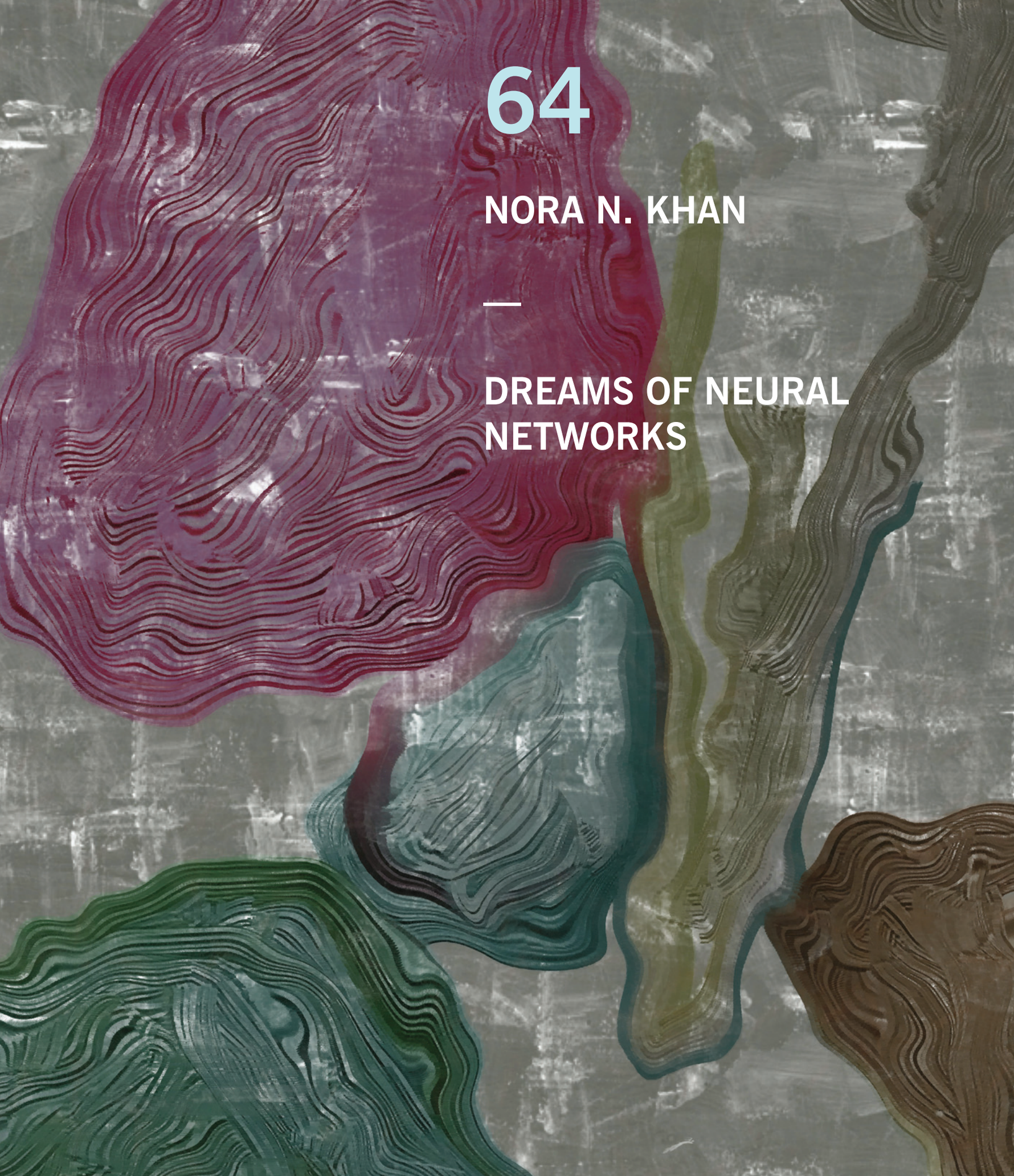

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NORA N. KHAN

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DREAMS OF NEURAL NETWORKS

The surreal artificial image produced through a computer's vision can suggest an equally surreal fictional world, in which the process of making such images is natural and standard, not strange and exceptional. There would have to be reasons. One scenario is that humans and human vision are no longer present. Only the past choices of human vision and naming can replicate themselves through neural networks that paint, print, scan, and crop.

In my fiction, this happens outside, somehow: a beautiful chrome printer spills sheets onto the desert sand, or, a robotic arm paints across a canvas stretched across an abandoned building, one in a series of buildings covered in canvas along a long street. A gallery is hung with the wild, wild visions of some deep future successor to DeepMind, though no one is expected to visit, or sign any guest book. In this fiction, why there are no people is not of as much interest as what the absence of people makes possible.

The work of the artificial eye goes on indefinitely.

IT PROCEEDS WITHOUT US BECAUSE IT DOES NOT NEED OUR HAND OR OUR OBSERVATION

This fiction forces us to imagine what that computational seeing means without our watching and interpretation. A vast, emptied planet, no human march, no sound from the black box. How to imagining new structures spindling outward and reconstructed from this obelisk? What could that look like and sound like?

Another potential scenario has us present, still tenacious, still lasting, but drained, voided, bereft of our societies, communities, and cultures. What kind of world, then, could be built from the dream archives of machinic vision? To answer Herzog's provocations this year in his funny, strange film about the Internet, the network in all its manifestations does dream vibrantly, both of itself and of us, just as

THE INTERNET DREAMS OF ITSELF AND OF US

And her, his, its dreams are made from misinterpretations, and weird namings, and a jagged, imperfect seeing, to make for a powerful analogue between creative expression and the software's work which I would like to parse through here.

I like to struggle through imagining a world built out of these dream images, generated through Markov chains. I like to struggle to bound and name the possible edicts, scripts, rules, and laws that could be written in its dream language. I love, further, thinking of

THE NECESSARY SURREALISM OF THAT WORLD

how much more fit it would be for the makers and dreamers of this moment, who struggle to find the other, the hidden, the generative sublime, in any of the ugliness, constriction, and suffering of the material present.

The neurological exercise involved in natural seeing and interpreting is here broken down into discrete, jittery steps. There are two crucial acts:

SEEING, AND NAMING

in order to give rise to an interpretation. Artificial intelligences, rather, neural networks, are trained to predict finer and finer grained images. They assess dulled images from cave walls, security camera footage, world-class museum collections, and *DeviantArt*. The neural network reproduces the image in finer and finer scales.

Then, essential iterations. Several generative systems, chained together, analyze pictures of horses, store that learning, then set their sights on images of real trees, or real insects. From tree to car, to house, to ant. And alterations are repeatedly made, in creating new interpretations, new architectures. Shadows are added. Faces are deconstructed. Bodies are broken and recast. Doors are jammed into stock images of homes, and crevices are easily shot through the foundations.

Each artificial image becomes a show of not only computational interpretation but also computational creativity. Algorithms are ever expressions of power, shaping experience and perception, revealing that no system or platform is neutral, that values are stitched into each choice of code. The network's eye selects, and this selection is inherently a kind of aesthetic choice. The eye zooms in, recognizes a pattern within the haze and noise, and it names. It zooms and scales, yet again, and names, again. These repeat applications, scalings, and bindings create a taxonomy and lexicon.

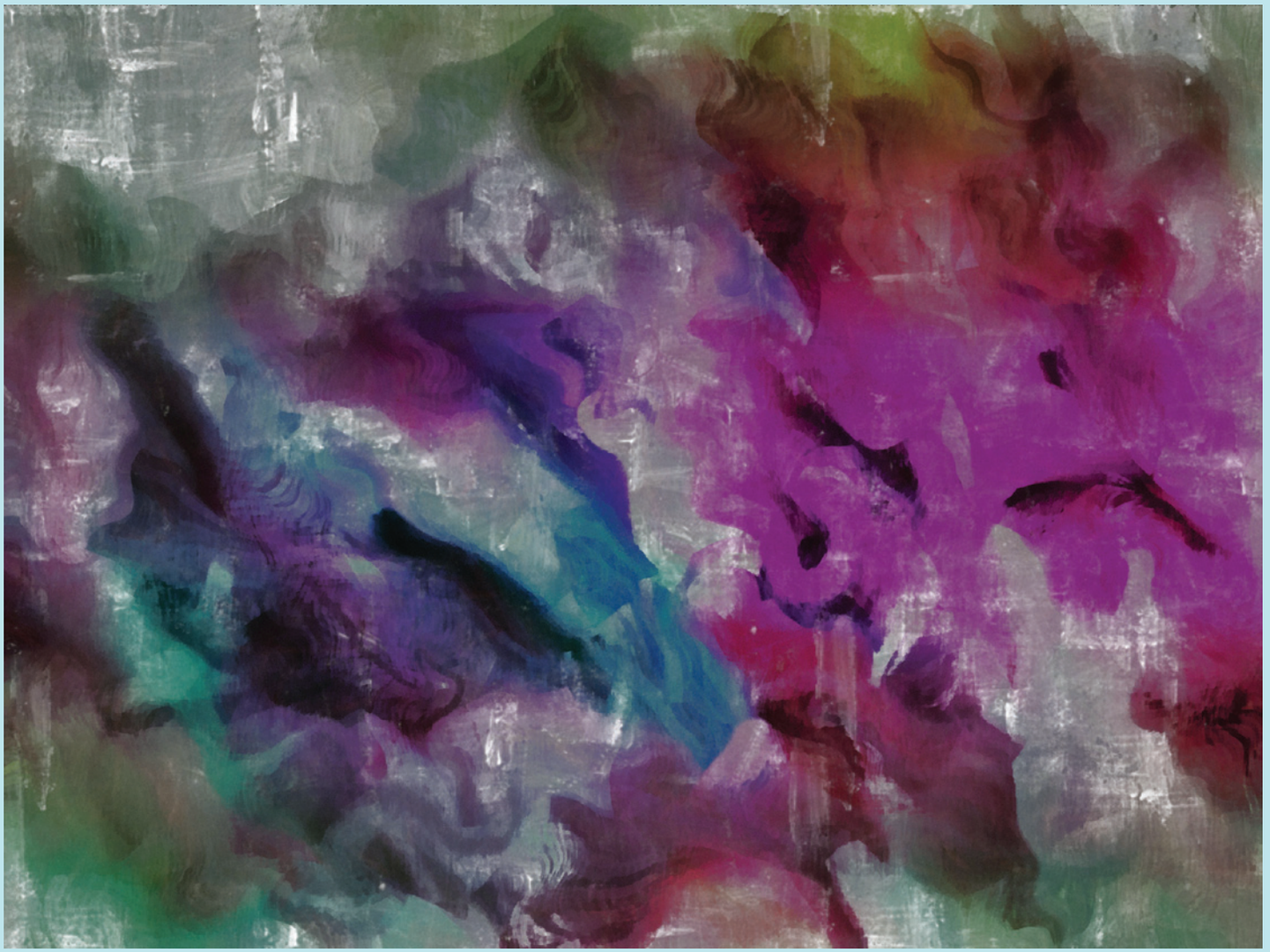
This process is loaded and contentious when applied to people moving about the world: Who is worth seeing? Who is worth being zoomed in on, cropped, framed? This is just one anxiety around network seeing.

THERE IS ALSO JOY

We get to witness, at a remove, the beauty of pattern recognition (thank Gibson for zooming in on and selecting that phrase), the beauty, as Chatonsky frames and highlights for us, of replicating what was never in the image to begin with.

The naming of the surreal image also involves a poetic choice. A metaphor is made. *Train Cake*. What is a *Train Cake*? First: cake that a person eats on a train; a cake made entirely of trains. Or, the rust and detritus that accumulates on a train car over time. To fit the network's word choices, we fit narratives of human action and still-relatable tactility. We make stories to tame down the surreal. The indifferent alien needs a backstory.

But then, the image for *Train Cake* doesn't really resemble any of these stories. I would



describe it as a pageant, a riot, a revolution. It is also what happens before revolution, namely, a Baroque period of decadence. It is a feeling and a history and an era. Those are the words I can barely come with on my own to describe *Train Cake*'s artificially made vision. In this effort, I feel the weakness of this language, this syntax.

And further, I feel how the possibility of the artificial neural network suggests

THE NEED FOR OTHER LANGUAGES

We have to labour to hear its not-yet-coined words, somewhere in the excruciating twist from normative to uncanny, from a symmetrical face to a grotesque one. Grotesque, uncanny: the machine's seeing produces an uncanny aesthetic.

There is an awe and glee involved in naming a horse a train, a person a bird, a table a bottle. Exchange, exchange, exchange, between dream, memory, learning. I think of my own relationship to learning, memory, and naming. I learned millions of facts in school, about film, about history, about language, particularly the French language. Now, years later, these facts and bits mix into the incoherent bubbling and overturn of daily, grim, adult reality. For instance, today, because our politics are being described as a nightmare, I remembered how a friend, ten years ago, called the city we lived in a cauchemar. Remembering this, I rehash and review the really nightmarish aspects of that city. I think about who we were, my friend and I, and the fairly nightmarish activities we got up to back then. So the brain loops from learning to dream to possibility to past and back again to the present.

The computer struggles to be the artist, as it has tried for decades now. Think of Lillian Schwartz generating plays of light and shattering gems across a microscope glass to transcribe into her programmed films, set to Risset's eerie and unsettling scores. The computer has strived, in waves, for recognition of its rights through us, for too long! Here, now, slowly with each iteration, with each stunning and sublime visual, the question of "human-like" or "as good as a human" becomes irrelevant, and the present-day creations of artificial intelligence are all too legitimate; the intelligence that produces it

RUNS PARALLEL, OUTSTEPS OUR OWN

and so its creations can be hung alongside our own.

More important than equity, is the pressure and the lure. Seeing the uncanny network image, I still want access, and I still want to describe it. I want that new, new language for it. There is a compulsion, to process, to interpret, to name, that is part of being an expressive living being. I ask, and repeat, what is this image doing to my brain? How do I see better by learning to see through software? The co-existence unseats. It turns over all sense of security. Celebrate!

And so, we find the demands of abstract poetry. In shifting perception two or three or four degrees from the norm, the artificially made image pushes a viewer into incredibly compelling mental gymnastics. The simulation intentionally alienates, terrifies. The viewer is harnessed through a simultaneous push-pull of attraction and disgust, and ends up peering beyond the surface paint to the rules organizing the visual field of the work.

In training the networks to tell us what they saw, the glitches become, as they do, far more interesting than the object. And the process of misnaming becomes more powerful than the naming.

OCEAN IS CONFUSED FOR SKY, AND ANIMAL FOR FLORA

This is the seed of a computational surrealism. This is a happy surrealist mode which you might slip into and out of, if only to feel hope and excitement. And why? For one, the challenge of surrealist interpretation is the same as grappling with one's own mind, its endless capacity for poetry. In the surreal image is a whole zone of interpretation around all that which lives without need for language. The surreal honours all that is not yet expressed.

Something thrilling takes place through this relationality between computer and its maker, between computer eye and human eye. This thrill, this joy, is partly in recognizing that we are also artificial. We exchange information, words, metaphors, towards empathy, or at least, some measured understanding of the artificial tools we made, which necessarily reflect us, bear our DNA. The artificial eye mirrors and manifests our schisms and divisions against ourselves. We are just one type of intelligence, one massive resource reserve of energy. And hungry, like all animals, we look for systems to perpetuate ourselves through, images to pass our dreaming on, through, towards, on and on.

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It's not really you: A bird in the water (2016).
Digital printing 2.5D. I used a software to download thousands of abstract paintings. These paintings are historical, contemporary, and amateur. Then I used Eyescream: the neural network learned from these images of the Web, it generated lifelike images. For the names, I used another neural network that attempts to describe the images.
http://chatonsky.net/really-you

I's not really you: Train cake (2016).

Exploit (2015). Installation. Many viruses have infected the computer. We don't cure it with an antivirus. The virus is allowed to develop like a natural process, and we use a software to record all the autonomous activity of this machine.
This data is then used to create abstract photographs.
Unicorn Art Center (Beijing, China).
With the support of French Institute.
http://chatonsky.net/exploit