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LEONARDO ELECTRONIC ALMANAC

VOL 17 NO 1 A collection of articles, reviews and opinion pieces that discuss and analyze the complexity of mixing things together as a process that is not necessarily undertaken in an orderly and organized manner. Wide open opportunity to discuss issues in interdisciplinary education; art, science and technology interactions; personal artistic practices; history of re-combinatory practices; hybridizations between old and new media; cultural creolization; curatorial studies and more.

Contributions from

Frieder Nake, Stelarc, Paul Catanese

and other important cultural operators.

MISH

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RESIDUAL IMAGES WITHIN SILVER ATOMISM

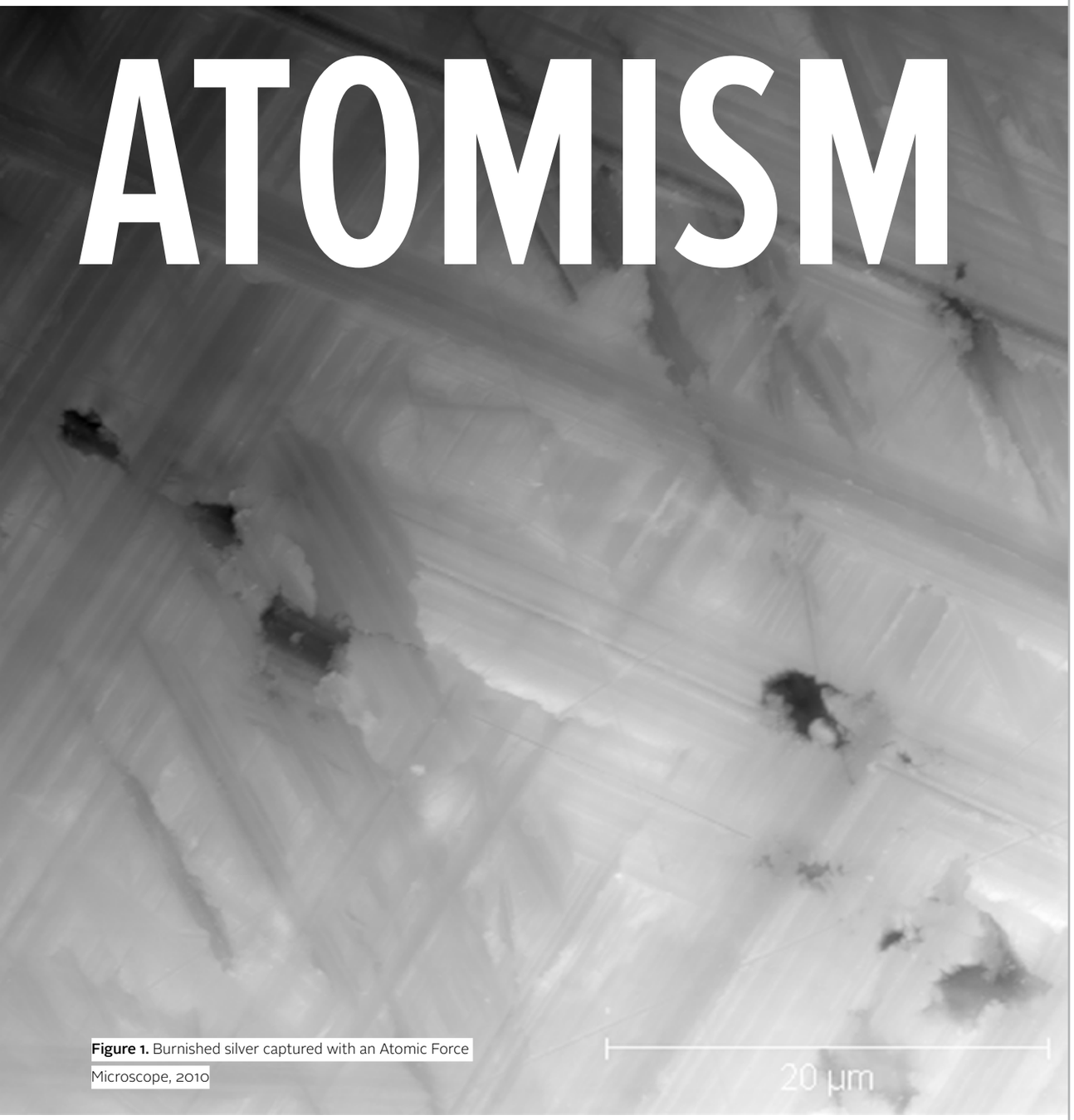

Figure 1. Burnished silver captured with an Atomic Force Microscope, 2010

by

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In this short article I want to present the thinking, processes and references that I am currently researching in my practice. This research connects to my early work that stems from an interest in residual spaces, subconscious meanings and the objectification of the world via perspectival space.

This latest work entitled "Atomism" (refers to the theoretical approach that reduces things down to their independent elementary components) focuses on pattern and randomness as a network for becoming. The work will explore human perception in the recognition of patterns that emerge from randomness.

Katherine Hayles suggests "seeing randomness not simply as the lack of pattern but as the creative ground from which pattern can emerge." [1]

The emergence of pattern from randomness allows for the world to be "seen" as more than it "appears". Potential insignificant realizations can be explored with greater freedom. The recognition of patterns embodying presence from randomness is not to be understood as an isolated act but linked to a holistic environmental system or ecology.

In "Atomism" a post biological human perception of the world created through a machinic interpretation of data is part analogue and part digital. Historically a presence created out of pattern can be seen now in contrast to the computer where pattern replaces presence. [2] These perceptual experiences [3] are still defined by a perspectival objectification of the world. What complicates the recognition of presence or pattern from randomness is the perspectival point of view. The point of view separates the seer from what is seen or felt. Hayles point's out when linking pattern to presence in the non-material space of the computer that 'cyberspace defines a regime of representation within which pattern is the essential reality, presence an optical illusion. [4]

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Silver will be the selected substrate researched at a nano level for structural and metaphorical reasons exploring its potential for reflection, refraction, pattern and randomness.

I was initially interested in Silver for it properties to act as a mirror, based around its role in the objectification of the world through renaissance perspective. Fillipo Brunelleschi used polished silver is his 1425 peephole device that was credited with the birth of perspective. In the device the polished silver was used to replace the sky in his painting of the baptistery. As Brunelleschi's biographer Marinetti points out, after having witnessed the device, "where the sky had to be represented, that is to say, where the buildings of the painting were free thus the clouds seen in the silver are carried along by the wind as it blows." [5] The need for perspective to deal with nature was not necessary for Brunelleschi. Therefore the residual image of the sky reflected in silver of Brunelleschi's painting became by default the perspectival way of perceiving and objectifying nature.

> *The silver is also a mirror, in this case a mirror that captures what perspective cannot. Thus even what is in excess of perspective's vanishing point is brought into its hegemonic screen. Retrospectively, we might today see in the burnished silver the harbinger of virtual reality and of photography; though, of course, this is exactly Lacan's point about the psychology of the mirror and, by inference, of perspective itself. Brunelleschi's demonstration established a new spatiality, which inaugurated the hegemony of the virtual over the actual. Perspectival space was the new real.* [6]

The perspectival space was made real partly through the reflective qualities of Silver mirroring nature to the viewer. The creation of Brunelleschi's illusion in the peephole device is part of a genealogy with the first camera and the various viewing devices. The camera obscura, stereoscopic viewing device, Phantascope, Telescope, and the Kinematoscope are all examples of a form of scopophilia.

Secondly the connection is in the material quality of Silver. Silver when dissolved in nitric acid and processed was seen to turn black and grey when exposed to light. The relationship of Silver to pattern and randomness in the history of art is evident through photography with the emergence of an image from the reactions of photons hitting each grain in the film stock.

In looking at the grain I was drawn to the work of George-Pierre Seurat around 1884. In these paintings and preparatory drawings we can see the concepts of becoming and presence are worked through an array of coloured dots of paint and graphite textures forming patterns that coalesce in the eye. Seurat's paintings point to a time where matter was unstable, highlighting "the atomic movements at the deep structure of nature." [7] The paintings construct the window through which the distance between us and the world of atoms is calibrated to give the world presence. What can be seen in Seurat's work is resonant here with the *clinamen* where the independent swerve of atoms are working in a void that takes place beyond our perception.

Seurat based many of his experiments in colour on the findings of French chemist Michel Eugène Chevreul. Chevreul was instrumental in identifying the effects of colours proximity to one another in his work on the restoration of tapestries. He noticed that the colours in the tightly gridded space of the tapestry affected each others value so colours needed to be mixed against their surrounding to determine the correct colour value. In Seurat's painting ("A Sunday on La Grande Jatte", 1884–1886) the forms emerge from the chaos that is presented by a border of chaos that surrounds the image.

These contextual and conceptual processes are manifesting in my research via initially scanning polished silver to explore its atomic pattern and to discover if anything is lost in the process of reflection at a nano level. Dr Thomas Becker from the Nanochemistry Research Institute, Curtin University gathered data using the Scanning Tunneling and the Atomic Force Microscopes of silver samples to form the basis for the pattern/randomness visualization. The silver was initially burnished and scanned, then heated to give the sample a smooth surface needed for detailed scanning with an Atomic Force Microscope.

"Atomism" will be developed as an art installation in partnership with Kevin Raxworthy. The installation will use vision-tracking software to identify where the user is looking on the projected visualised silver data gathered from the AFM. The viewers' gaze will activate semi autonomous atoms demonstrating a cloud like swarm intelligence. The cloud will form the basis for the viewer to perceive a potential 'thing' from an interaction with the atoms. In a similar manner, the photons stimulating the atoms in the polished silver of Brunelleschi's peephole experiment were absorbed and then instantly repelled giving the viewer an experience of random patterns of clouds.

The work "Atomism" is to be reflective, evolutionary as the data is processed and remediated forming an intimate nano experience for the viewer. ■

REFERENCES AND NOTES

1. N. Katherine Hayles, "How We Became Posthuman: Virtual Bodies," in *Cybernetics, Literature, and Informatics* (Chicago: The University of Chicago Press, 1999), 286.
2. Ibid., 36.
3. Jens Hauser in his paper "Still, Living: Staging the Ephemeral between Nature Morte and Art Involving Biotechnology" defines that remediation in the name of the real is split between two contrasting areas of investigation, Immediacy and hypermediacy.
4. N. Katherine Hayles, "How We Became Posthuman: Virtual Bodies," in *Cybernetics, Literature, and Informatics* (Chicago: The University of Chicago Press, 1999), 36.
5. Antonio Manetti, *The Life of Brunelleschi* (University Park: The Pennsylvania State University Press, 1970), 44.
6. Paul Thomas, *Reconfiguring Space* (Saarbrücken: VDM Verlag Dr. Mueller e.K., 2009), 36.
7. Colin Milburn, "Tactical Atomism," in *Art in the Age of Nanotechnology*, ed. Vashti Innes-Brown, Chris Malcolm, and Pauline Williams (Perth: Curtin University Press, 2010), 6–18.

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photograph Murat Germen, *Muta-morphosis #79*, İstanbul, 150 x 85 cm, 2011, 7 editions + 2 AP, courtesy of C.A.M. gallery.