

Atom, Bit, Coin, Transactional Art Between Sublimation and Reification

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Abstract

A hypothesis about the origin of language and the way we conceive, understand, therefore compute and, ultimately try to control the world (and subsequently make art):

- 1.0 Language was the first way to convert the world of things – objects, ideas and actions - into a world of signs, “coining” the observable as well as the otherwise inconceivable large and complex.
- 1.1 In human history, the first attempt of absolute discretisation of the world into units able to exchange was quantification, *reductio ad transactional unit*: money (calculus, numbers, coins...). It helped defining equivalences, differences and transactions. Thus, converting the world into discreet units comes down to translating the world into something that our brain can understand and measure.
- 2.0 Subsequently, having gained the ability to quantify, measure and abstract, that is to “democratize”¹, (from Democritus who coined “atom”) the application of the concept followed as a unifying and ordering principle for all that is then considered as made of atoms: indivisible particles that constitute the unique substratum of the world.
- 2.1 Naturally, the binary digit came as an extension of these observations as it is the ultimate way to convert the world into data

that can be computed by both natural and artificial brains.

- 2.2 Datafication, describing the conversion of the whole world into data, characterizes the ultimate convergence of discretisation, quantification and language. Dataism is a form of articulated dematerialized reality, and computable immateriality. The discretised world is at the same time an alphabetisation and a grammatization of the world.
- 3.0 Therefore, within the described discretisation process, resides the primitive ambition of the humankind to achieve a definitive neutralisation of the ontological difference of the being by the assumption of its universal convertibility and thus not only evaluate but control the world - the cybernetic² fantasy of mankind, (Cybernetics from *κυβερνήτης* (*cybernētēs*) "steersman, governor".)

Isn't Googol³ the estimate number of particles in the universe?

Working within confines of above described reality – what is art? Some would consider that the purpose of art is *giving a shape to ideas*. Beyond mimesis, art is more often the expression of things that usually reside in our mind: relations, forces, emotions..., elements contradicting the quantifiable discretized. Or so it seems. Started 3

¹ From Democritus who coined “atom.”

² *κυβερνήτης* (*cybernētēs*) "steersman, governor,...

³ 10^{100} , The term was coined in 1920 by 9-year-old Milton Sirota (1911–1981), nephew of U.S. mathematician Edward Kasner. (Bialik, Carl (June 14, 2004)

years ago, *Brain Factory* is an art/research project investigating the consequences and opportunities of the ability of Datafication. In the context of the project - then extended to the contemporary world - we coined the construct *sublimation*, describing the transfer of a real-world item into the digital immaterial realm, and reciprocally the process of converting the immaterial, namely thought, via the process of *reification* into a state of real-world existence. The *Brain factory enacts* this process resulting in a series of artworks that offer the possibility to give a quantifiable shape to human abstractions. This conundrum between the artistic existential ability to confuse and corrupt the quantifiable and the machinic discretised is based on sensing, translation and computing of the brain's activity via a Brain Computer Interface (BCI⁴). The *Brain Factory* installation is comprised of two parts – *Sublimation and Reification*.

Sublimation: In the *Brain factory* installation, a visitor, called *Brain Worker*, is seated in front of a screen, connected to a BCI device reading EEG data – basic brain activity. The factory randomly assigns an abstract human construct, such as Love, Peace or Power to the worker and displays the word on the screen to focus on. The brainworker's brain activity, related to the assigned construct is translated into an emerging, particle driven form on the screen in front of the worker. This is called the *Shape Generator*. At the same time, as the form dynamically emerges from the Shape Generator, the brain assesses its evolution in real time, in an attempt to check its relevance as an expression of the specific suggested human abstraction.

Reification: Once the shape is completed, it becomes possible to assign to it certain physicality. One of the direct translations of such generated shape is 3D printing. It is a way to materialise the concepts. While using a physical material, the materiality is constructed and free of associated narratives that would affect and complicate the translation of the human abstraction. Converting the “projection” into “translation.” Thus while being physical, it is not interpreted through our preconceived valuation of material origin (think of cast gold, carved wood... and their material narratives). If “sublimation” processes the world

into computable Data, “reification” is the opposite action: to make the immaterial material, to convert thought into object. It corresponds to an ancestral aspiration of humankind: to control matter by thought.

The *Brain Factory* installation is more than a station to record the brain worker's reactions, it is an *evolution engine*, a *conceptual ecosystem*. Instead, each worker's cogitation and its resulting shape are based on the previous worker's labour in shaping the same human abstraction. Thus, there is a growing library of interconnected ontologies of forms and thus iterations of increased morphologic resolution of the shape. *Brainfactory* considers thought inspired shapes as living beings with a generative CDNA (ConceptDNA). Each shape is made of a chain of descriptors that evolve according to the natural ecosystem of thought: the human mind and the described iterations and reactions to the preceding brain workers labour resulting in a morphogenesis based on the natural selection process resulting of the series of visitors who inherit the previously defined CDNA. Ultimately, this process narrows down the shape through increase in iteration leading to a more “universal” significance. Thus constituted shapes can be reified or simply considered as the most accurate symbolization of human abstractions: Freedom, Peace, Love, Power...

Returning to the hypothesis 1.1, that quantification, *reductio ad* transactional unit: money (calculus, numbers, coins...) is at the base of the world's discretisation, the shaping process is surprisingly similar to contemporary cryptocurrency's minting process. It confers the resulting “digital object” a unique power of significance. The digital object in itself is, through its ontology, neither sublimation nor reification, yet both at the same time. In terms of quantifiable ownership of human abstraction, the brainworkers can be considered as the last in the chain of authors of the concept-made-form. The shaped abstractions are collected in a database, a distributed ledger based on the Blockchain. Each token becomes the brainworker's own property. He or She can use the digital form to produce objects, artworks, to collect, trade or barter it.

⁴ BCI is using here EEG, Electro encephalography and biofeedback through visual, audio and haptic interfaces.

In the current state of the project, we have reached the next level in the *Brain factory* project, creating *VoV Values of Values*, is a crypto currency made of shaped human values. All at once, the exhibition spectator has become, artist, producer, art dealer, and collector. The observation of the trading process produces a real time monitoring of human Values in their transactional milieu. *VoV* is at the same time a real currency, a critical metaphor of the art production narrative and a dynamic reflection on its founding ontology.

Biographies

Artist, theorist and curator, Maurice Benayoun (MoBen, 莫奔) is a pioneering and prominent figure in the field of New Media Art. MoBen's work freely explores media boundaries; from virtual reality to large-scale public art installations, on a socio-political perspective. His work has been widely awarded (Golden Nica Ars Electronica 1998...) and exhibited in major international museums (2 solo shows at Centre Pompidou Paris), biennials and festivals in 26 different countries. Some of MoBen's major artworks include *The Tunnel under the Atlantic* (VR, 1995), *World Skin a Photo Safari in the Land of War* (VR, 1997), the *Mechanics of Emotions* (2005-2014), and *Cosmopolis* (VR, 2005). Elaborating on the concept of Critical Fusion applied to art in physical or virtual public space, Maurice Benayoun initiated the *Open Sky Project* on the ICC Tower Hong Kong media façade.

With *The Brain Factory* and *Value of Values*, he is now focusing on the morphogenesis of thought, between neuro-design and crypto currency, brain and money.

With a PhD in Art and Art Sciences, MoBen taught from 1984 new media art practice and theory at Paris 1 Pantheon Sorbonne and Paris 8 University. He was Professor and artist in residence at the French National School of Fine Arts (ENSBA). Since 2012, Maurice Benayoun is full Professor at the School of Creative Media, City University of Hong Kong.

Tobias Klein works in the fields of Architecture, Art, Design and interactive Media Installation. His work generates a syncretism of contempo-

rary CAD/CAM technologies with site and culturally specific design narratives, intuitive non-linear design processes, and historical cultural references.

Before joining City University Hong Kong in the role as interdisciplinary Assistant Professor in the School of Creative Media and the architectural department, he was employed at the Architectural Association (2008-2014) and the Royal College of Art, (2007-2010), teaching students at the postgraduate level.

The works of his studio are exhibited international with examples being in the collection of the Antwerp Fashion Museum, the London Science Museum, the V&A, the Science Gallery (Melbourne), the container (Tokyo), the Bellevue Arts Museum, Museum of Moscow and Vancouver and in the permanent collection of China's first 3D Print Museum in Shanghai. He lectures and publishes internationally, recently winning SIGGRAPH 2018's Best Art Paper Award for his research on the translation from traditional to digital Craftsmanship.