

# Old Materials/New Materialism

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## Fluidities

Embracing the fluidity of the understanding of life – this is how Bartaku, an artist-researcher currently based in Finland, introduces his process-based, collaborative work that is situated somewhere in the regions of cognitive ecology, neurobiology, energy, consciousness studies and philosophies of knowing. Moving across such arenas might be dizzying, yet there are also sensory media: sound, light, and rhythm as implied by the photograph of Bartaku's installation of *Aronia Overture* (see Fig. 1), inside the space of an old smelly martial arts studio. And while it remains silent here, the photograph of the installation animates and moves me in other ways, conjuring a spectrogram of music such as the one of Iannis Xenakis's *Metastasis* which I found looking for designs and spatial scores (*Raumpartituren*)<sup>1</sup> of the composer's polytopes and diatopes.

Collaborating with architect Le Corbusier on the Philips Pavilion (1958 Brussels Worldfair), Xenakis used his work *Metastasis*, based on the designs and mathematical proportions given by Le Corbusier's *Modulor*, in order to compose the micro- and macrostructures. His sketch was in graphic notation looking more like a blueprint than a musical score, displaying graphs of mass motion and glissandi that float like structural beams of the piece, with pitch on one axis and time on the other. The overall structure and the control of elements, such as the massive glissandi, culminated in the idea of the hyperbolic paraboloids which were built into the pavilion. Xenakis' scrupulously detailed work on rhythm became crucial for the designing of the undulating panes of the façade. When I look at the diagrams, I see rhythms of fascia-like lines and cyanobacteria filaments reflecting the laminar

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1 The spectrogram is here: <https://www.youtube.com/watch?v=n2O8bMIEijg>. The term *Raumpartitur* (German for "spatial score") struck my attention during a workshop at Festspielhaus Hellerau (Dresden) where we examined Adolphe Appia's modernist ideas for "active light" and modular, processual scenography. Penelope Wehrli had staged her *camera orfeo* installation there in 2008 (CYNETart festival), calling it an *auto-choreographische Raumpartitur* (<https://vimeo.com/140767884>). See Wehrli 2010.

structure of stromatolites, fossilized 2.5 billion years ago into sedimented rock. I can also imagine animated trilobites, with legs, limbs like antennae – appendages construing a lively exoskeleton. Less old, I remember seeing a 130-million-year-old fossil of a bird with featherlike traces, the creature etched into rock as if caught dancing. Paleo matter like scores – physical evidence of the life activities and movements of now vanished organisms. Trace fossils, for example, include tracks, trails, burrows, feeding marks, and resting marks, an implied social choreography of an ancient creature that dragged its tail in mud. Upper Paleolithic graphics include physical transmissions – so-called flutings in the landscape of caves – to the limestone walls, biophysical stuff becoming geophysical matter.

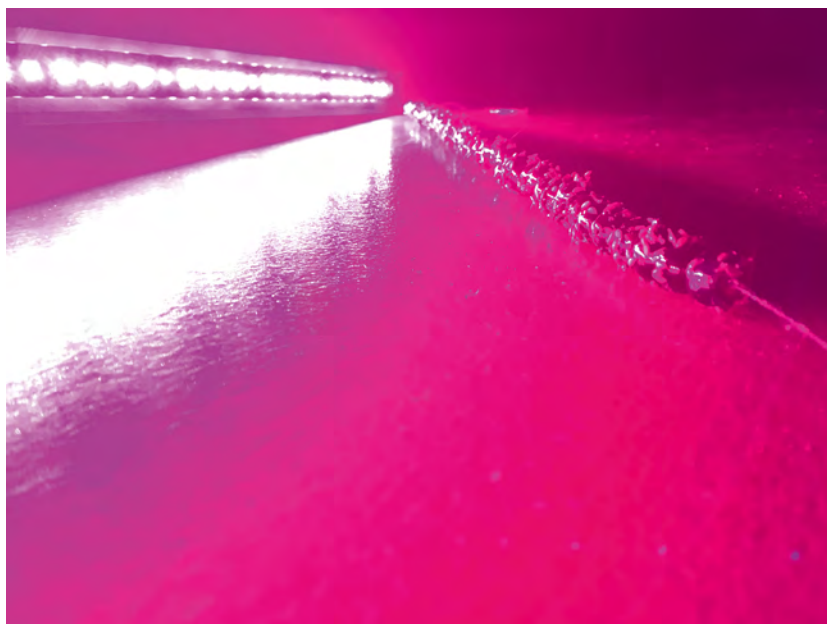


Fig. 1: Bartaku, Aronia Overture: From berryjuice-dried air pipes and tongues to seeds, installation view, *Symposium Tanz der Dinge/Things that dance*, Karlsruhe, 2018. © Bartaku.

Le Corbusier, for his part, had replied to the commission from Philips by suggesting he would not make a pavilion but an electronic poem, rather a vessel containing the poem – with light, color image, rhythm and sound joined together in an organic synthesis. Such assemblages – and spatial scores such as the diagram for *Diatope de Beaubourg* (1977) for instance – are significant phenomena within a longer history (over the last 150 years) of theater-architectural concepts for spatialized light and sound scenographies reflected today both in physical-immersive environments of site specific art and artificial landscapes of Virtual Reality.

Bartaku's work is also a sonic work, a vessel poem inspired by the Aronia Melanocarpa: we hear recorded voices interpreting (“voicing cognition”) the astringent black chokeberry in a choral manner, the berry animating the voices. The choric materiality of the installation, in all its mysterious and refracting obliqueness, is heightened affectively by the harsh vocals that hit us as we walk around the space.<sup>2</sup> We feel the work viscerally, it flows through our bodies, muscles and tendons, it bounces off the walls of the underground studio, it tears us, and it also “cooks” us, so to speak (there is a steaming pot in the corner on a hot plate). This fluid is lignin for our roots and stems: thus the vitalist impact of the installation also echoed through my bodily memory of an *arborescent movement* class I took years ago, its deep listening focus on skeletal bone nodes in the feet still fresh in memory.<sup>3</sup>

## Thing-Power and Somatechnics

Probing current developments in somatechnics, critical theories of embodiment, and the so-called new materialism, and locating some links to what I tried to introduce here as the “extended choreographic” and “kimospheric”, it helps to pair *Aronia Overture* with other manifestations that highlight movement of machinic objects or apparatuses interinvolving the organic, inorganic, animate, inanimate, and the real, virtual (dichotomies now considered useless).

Dance theory and scholarship have glanced at objects and (post-Marxist) materialist thinking; however, material agency and the call of things rarely receive the attention that choreographers, dancers, and cultural/ritual performance practices do. Provocative connections between bacteria, fungi, trees, berries, rocks, plant fossils, coal formation, engines, automation, labor history and dance may also have been missed out by the vital materialist (inspired by Deleuze and Guattari's *Mille plateaux*) and neomaterialist theories (associated with the writings of Karen Barad, Rosi Braidotti, Manuel DeLanda, Jane Bennett), or neglected a little bit by the abstract conceptual emphases of posthumanist philosophy and object-oriented ontology (Graham Harman, Levi Bryant, Ian Bogost, Timothy Morton), the beautifully abbreviated OOO approximating the pornographic imaginary.

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2 See Bartaku's artist pages in this volume for a fuller introduction to his entanglements with Aronia Melanocarpa.

3 The class was taught by Australian philosopher Antonia Pont at the 2009 International Association of Philosophy and Literature Conference, “Double Edges: rhetorics-rhizomes-regions,” in London. For her thoughts on the “tree body” and the “deconstruction of bone,” see Pont 2012.

4 This refers mainly to performative installations and choreographic objects. See Birringer 2018 and 2019. With my ensemble (DAP-Lab) I began to build *metakimospheres* in 2015, the first two installations exhibited in London and Madrid.

The call of things, as Jane Bennett has formulated “thing power” in her well-known book *Vibrant Matter*, actually reminds us of the interdependence in what she consistently refers to as *assemblages*. There is no such thing as “object” or “subject” from a matter-perspective. Things are never entirely passive or stable, they/ we are crystallizations of processes, thus everything is in process, constantly undergoing transformation, and constantly undergoing modification. Proposing to dissolve the binary between subject and object, Bennett demonstrates how her enchanted assemblage of glove, pollen, dead rat, plastic cap, and wood (now so well known that they are being parodied) can all be “actants” having the capacity to “animate, to act, to produce effects dramatic and subtle” (Bennett 2010: 6). Things are alive because of their capacities to create difference in the world, to have effects in other words, and to co-design the web of interrelationships of which they are a part. Humans are not autonomous subjects, as they are themselves composed of a complex web of active bodies and materials. Chokeberries write vocal music performed by singers. Composers collect mushrooms and explore dynamic stochastic synthesis. Dynamic stochastic synthesis generates sound to which something or someone dances. Plants move or are pressed against pages: the wonderful book *Specimen medico-practico-botanicum* by Balthasar Johannes Buchwald (Copenhagen 1721) is like a tasty choreographic *raumpartitur*. Its real botanical specimens, plants and herbs seem to hover on the paper; they are lyrically described with brief annotations in several languages, regarding their taxonomy and potential healing power, such as the “Hirschkraut – je länger je lieber – bittersüß” (1721: 38).

Elsewhere Bennett suggests that: “My ‘own’ body is material and yet this vital materiality is not fully or exclusively human. My flesh is populated and constituted by different swarms of foreigners [...] we are, rather, an array of bodies, many different kinds of them in a nested set of microbiomes” (2010: 112-13). Her concept of distributive agency, following Bruno Latour, of course invites metamorphic speculation on competencies, performances, and animating morphisms. Perhaps there are no “old materials” anymore, only living processes, except that in a paleontological sense there still are paleo media – fossilized rock, sedimentary geological layers, majestic old trees, ancient calamites having become coal, glacial lakes, material landscapes.

Taking a closer historical look at material somatechnics in *Dancing Machines: Choreographies of the Age of Mechanical Reproduction* (2003), Felicia McCarren’s formidable study of the close connection between dance and evolving cinematic technology gives evidence of many convergences of movement and machines during the industrialization of images in the modern era. Her critical focus on early machine culture (and Taylorist optimization of labor in the work place) situates “performance” and animated images within the context of work-science, the economization of movement designed to increase worker output and to distill the movements of the body to an energy-efficient productivity. Machines to mus-

cles, muscles to machines, energies flowing through the somatic body, machines transmitting behavioral technique. In the exhibition *Life in Stone* at the Houston Museum of Natural Science, stone grinders working on agate are depicted in old photographs showing them at their arduous tasks of grinding and polishing, performing the labor in awkward belly-down positions, supported by so-called loop-tilting devices. The wooden support for the operators' bodies were worn smooth by years of use.

In her chapters on "Economy of Gesture" and "Choreocinema," McCarren (2003) explores how the preoccupation with movement implicated dance in the field of work-science and the development of early cinematic technologies, pointing at Étienne-Jules Marey's time-motion movement studies using sequential chronophotography. She also unearths an illuminating poster from 1896 advertising the then-new technology of the cinema: a Loïe Fuller-esque dancer figure spreads her voluminous skirts providing a surface for the projected image of a train. Fuller's own innovative electric performances – with light projected onto her whirling fabrics in *Serpentine Dance* – are early prototypes of "wearables" (and wearable technology) needing to be recuperated when we discuss today's smart clothing and interaction design for intelligent textiles. Her light performances were also early prototypes of moving-light instruments at work today, acting in many areas of the creative industries but also in aerospace engineering, bioluminescence tech applications to medicine, biology, the food industry, etc.

McCarren's account of how cinematic precursors made the visual analysis of micro-components of movement possible reminds me of the adoption of motion capture technology for digital dance I experienced in my lab around 2001, when computational mapping of gestures allowed breaking movement down into bits of assimilable and manipulable data. Mocap systems soon became linked to visual synchronization, animation, game design, various algorithmic and AI implementations of software – choreographies of data displays that can exhibit derivative or autonomous behaviors. In synergistic environments, as I have seen them developed for example by Daniel Bisig and Pablo Palacio's *STOCOS* projects, physical and virtual characteristics are interrelated via simulations of natural phenomena. The space is populated by natural and artificial entities whose mutual perception and engagement alternate between different forms of autonomy and dependency.<sup>5</sup> Both the neuroscientific context of analyzing sensorimotor activity, providing new phantoms of movement through visualization techniques such as functional

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5 I worked with interaction designer Daniel Bisig and choreographer Pablo Palacio during the *METABODY* project (2014-17), a European collaboration coordinated by Jaime del Val (Reverso), with primary partners including DAP-Lab, Hyperbody, STEIM, InfoMus Lab, Stocos, Palindrome, K-Danse, and Trans-Media-Akademie Hellerau. We also met Brisa MP in one of the Madrid workshops where she presented her robots. See Bisig/Palacio 2012, Birringer 2017.

magnetic resonance imaging (fMRI scans), and the various figure animation tools (LifeForms, Maya, 3D Studio Max, Character Studio, etc), real-time interactive software (Max/Msp, PD, Isadora) and 3D virtual reality software (Unity, Unreal Engine, Metashape, Touchdesigner, etc) induced members of my DAP-Lab to look back at older movement-sensitive machines and perceptual techniques as they are now also scrutinized by media-archaeology studies. We worked with data engines but were also drawn to older analogue devices. Scenographically, our interest in kinetic atmospheres implies collaboration with organic or industrial materials such as soil, peat, branches, fabrics, polypropylene, wood, glass – *oldnew* materials.

From the archaeological or paleontological imaginaries (looking at tiny shards to speculate on what they belonged to; searching for fossils and climbing down into caves for speleological encounters with limestone and karst features, stalagmites, stalactites) to the designed “choreographic object” in process – this is the looping stretch with which I want to conclude this brief chapter.

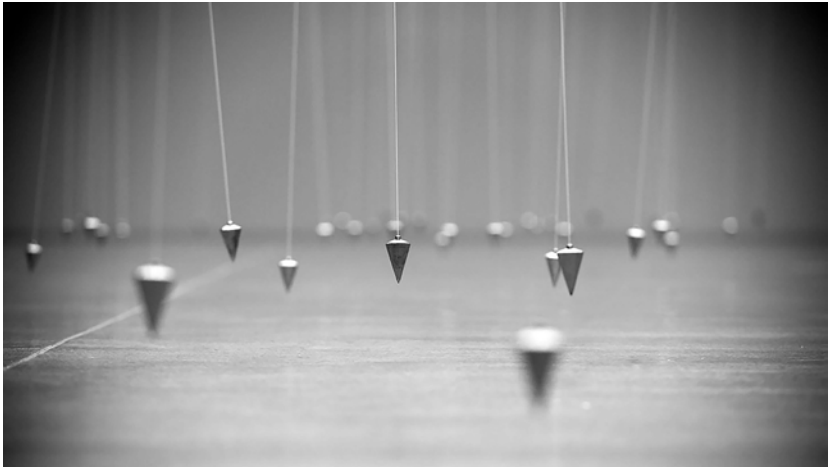


Fig. 2: William Forsythe, *Everywhere and Nowhere at the Same Time*, choreographic object, Brighton Festival, Old Municipal Market, 2014. Videostill.

## Metashapes

What about agency, then? What can objects/subjects determine or influence in the process? I turn to choreographic objects now, and mention William Forsythe's *Everywhere and Nowhere at the Same Time*, the multimedia project *Imagen de Caracas* created by Jacobo Borges and Josefina Jordan for the 400th anniversary of the founding of Caracas in 1667; and Heiner Goebbels' installation *Stifters Dinge*. I could have also chosen other objects, for example Bob Rauschenberg and Billy

Klüver's *9 Evenings of Theatre and Engineering* (1966) or Hélio Oiticica's *Penetráveis* of the late 1960s. But Forsythe is a good conduit for offering audiences interactivity; his question – “Is it possible for choreography to generate autonomous expressions of its principles, a choreographic object, without the body?” (Forsythe 2008: 5) – made immediate sense when I became entangled in *Fact of Matter*, his participatory installation proffering visitors to climb through a very large number of gymnastic rings hanging from straps at different heights (I climbed in *Move: Choreographing You* at London's Hayward Gallery, 2010). Yet it was “choreography's principles” in the sense in which a wall challenges a mountain climber. This became clearer in *Everywhere and Nowhere at the Same Time*, placed in a derelict industrial hall during the 2014 Brighton Festival, where workmen installed hundreds of plumb bobs suspended from grids, delicate pendulums swinging in timed sequences – a kinetic maze machine obliging those daring to enter to perform exceedingly difficult, intricate side steps and strides. The spatio-temporal operation of the machine follows physical/mathematical principles, the pendulums swing at different speeds, with gradients of gravitational force affecting statistical probabilities of the motility and how a human performer might become entangled when pivoting the wrong way.



Fig. 3: Jacobo Borges, *Imagen de Caracas*, 1967. Photo: *Contesting Modernity: Informalism in Venezuela, 1955–1975*, exhibition catalogue, Museum of Fine Arts Houston.

The probabilistic swingflow of the pendulum machine with its stark geometric contours and its powerful moving silhouette, made me think of *Imagen de Caracas*

with its many shadowy silhouettes – of the audience milling around – thrown against the surrounding film and graphic projections. Borges and Jordan (with writer Adriano González León and architect Juan Pedro Posani) constructed a pavilion as a temporary public intervention, setting in motion a highly dissonant, pluralist and chaotic anti-aesthetic vessel, with images as material ruptures – documentary footage and photographs charting the violent history of the city or, more broadly, of the country since the colonial period. Eight 33 mm films were projected onto panels and floating kinetic objects suspended in the architectural compound – the whole a vast provocative *dérive*.

What is striking here is the manner in which media become elemental matter, a concatenation of forces in an expanded sense also of a political economy and urban landscape (the compound was closed down by the government shortly after the premiere). The projections of colonial violence mattered, disturbed, and had seismic energy. *Stifters Dinge*, on the other hand, gestures back to a dissolute romanticism, with the expressivity of a machinic assemblage transmitting multifarious energies without actors, dancers, or musicians present. We hear this performing scenery, its pumping sounds and groans, its broken poetry of voices, at the end even glimpsing a page of Stifter's handwriting (from the facsimile of *Mappe meines Urgroßvaters*) projected onto the watery surface, slowly dissolving over time, having lost all solidity just as the "prepared" voices have now vanished. Stifter is an "atmospheric" choreographer, notorious for his animated evocations of forest and mountain, flora and fauna, geological formations and meteorological conditions – nature's materiality and even brutality. When entering the cavernous Ambika P3 hall (a former concrete-testing facility) in London, an "un-guided tour" provides an opportunity to walk around the huge machine set with its stones, metal, barren tree trunks, prepared pianos, water reservoirs, rain, fog, ice and hidden voices which seem to spread out over the entire ground floor of the warehouse. From a raked platform with seats for the performance, we look at three large flat basins constructed in front of the five upright pianos at the back, naked instruments revealing their interior strings.



Fig. 4: *Stifters Dinge*, by Heiner Goebbels, 2008. © 2012 An Artangel commission.  
Photo: Mario del Curto.

The beautiful post-human set resonates through a wide register of impressions of time, history, location, landscape, art and politics, memory, autobiography, ethnographic field recordings, contours of aural and sensorial materiality, instruments, noise and music, harmonies and disharmonies that are exchanged or coincide, impacting (choreographing) my experience of all this, the phenomenological reality of a possible world or worlds, not tied to logic but expanding our entire sense of what a logic (causation of events, sequential narrative, action) might be or might have been.

What is this entropic landscape, this non-site, this tomb for divers? If we were to look at *Stifters Dinge* as a scientific experiment, would small environmental changes in the landscape cause the process to become extinct, would the peculiar sampled voices and recitations, transposed and distorted and detached from bodies, gradually lose their semantic meaning (and their accents) completely and fade, breathless, into mechanical logarithms – conjugated with different temperatures – of recorded but inexplicable sonic sources, sound and EVP phenomena from a distant past? Have the ecological catastrophes, possibly evoked in Stifter's narrative, already taken place and we merely project human causes to things that move, like the stone that is pulled across stone, a small seismic event without known consequences? Goebbels' machine is hardly non-human and yet heavily neomaterialist. The choreographic is a machining architecture: we tend to its sounding and its movement through the phase-shifts as it plays out its contra-

puntal effects and dynamic force relationships. The withdrawal of “real” bodies, like the apparent decaying sequences of voices and projected landscapes, generates something like dream time – a relative theatrical entropy which carries on directly from discrete to continuous distributions, evoking an infinite set of probabilities. *Stifters Dinge* is a *slow* interactive installation, in the sense that the plasticity of its animated objects folds into a continuously renewed dance of expansive virtual behavior, untouchable remembrances, subvisible microscopic structures, the physics of sensate environments, multisonorous rhythms, noises and forces. It does not require our immediate response. It performs our moving into the indescribable thing we do not know.

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