

Somatic gestures in mixed reality/virtual reality immersive choreographies

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Recent danceworks created by DAP-Lab feature immersive mixed-reality environments or *metakimospheres*, offering multi-sensorial and intimate spatiotemporal experiences. Dancers and audiences enter into a deeper awareness of what we consider a form of somatic and tactile choreography. In my presentation, approaches to intra-active flows between human and technical beings (digital transmissions/feedback) are examined through attention to gestural choreographies in a biosensorial framework. At the same time, if the framework is considered an engineered atmosphere or environment, its affects and resonances need to be studied in order to articulate the processes that conjoin bodies, materials, and technologies in the becoming of sensory embodiment. The notion of becoming is necessarily contingent on the relational, dynamic and metastable states of the atmosphere.



Fig. 1 *Metakimosphere no. 3*. Vision-impaired/blind audience members interact with performers in the environment. DAP-Lab, Artaud Performance Center, 2016 © DAP-Lab

Metakimospheres are kinetic atmospheres staged for visitors that pass through them, listen to

them and feel them, unconsciously, attentively, distractedly, blindly, kinaesthetically. Performers are also present and embedded in the kimospheres, exploring the tactile and sonic interfaces, as well as the visual moisture, that animate the growth, slowness, scale and direction, the breath of their movement, their gauzeous entanglement. Some of the performers wear sensors built into their costumes or attached to their bodies. Their behaviors are sensorialized, yet the emergent immersive choreographies are not focused on control-based mapping of data derived from body-worn sensors or biosensors but are always already entangled with spatialized stimulations.¹ The intra-actions between human and technical systems are not preprogrammed or determined.

These stimulations interconnect vibrations of the body with vibrations of the world, creating an intermingling which is of course also related to energy (and electrical) tangencies and transductions. The performers are conductors, and I mean this in a double sense of guiding visitors through the “score” of the *metakimosphere*, as well as engaging visitors through totemic sounding objects and conductive costumes. The visitors can touch these conductive fabrics and become aware of the sonic ripples, the noises that emanate from porous membranes.



¹ Kathleen Stewart argues that “the senses sharpen on the surface of things taking form. They pick up texture and density as they move in and through bodies and spaces, rhythms and tempi, possibilities likely or not. They establish trajectories that shroud and punctuate the significance of sounds, textures, and movements” (“Atmospheric Attunements,” *Society and Space* 29:3 (2011): 448).

Fig. 2 *Metakimosphere no. 1*, intra-active graphic projections tracking motion from performers inside white fabric architecture, DAP-Lab, Artaud Performance Center, London 2015 © DAP-Lab

The performers' incubating presence is felt and their transceiving role can be grasped when one realizes their costumes are sensorized and signal-generating. What distinguishes our work from other advanced research in music technology or dance technology/somatic practices is our focus on both the atmospheric architecture and what we call the "tactile narratives" that can evolve in temporal relationships between wearable performance and mediated environments.² The performers in the *metakimospheres* are a part of the real-time engineering of the atmosphere, especially of the sound that emanates (in localized intimate circumstances as well as through the spatialized and dispersed sonic gestures).

The dancers do not always invite looking, as their role is not necessarily one to be looked at. When they offer their costumes to be touched or hand one of the sonic objects to a visitor to invite listening to its electro-acoustic sound, the materials or objects also act, transmit, vibrate and resonate. Yet their bodily presence, and what I imagine to be the *expanded choreographic*, is affecting the body of the architecture in-between or beyond the thereness (*meta* referring to such "between" and "beyond" notions of presence/atmospheric space) – in the duration and circulation of space-time. The architecture's thereness can also be a wave, a flutter, touching bodies; there are suspended elements in the architecture that have movement capacities and can react to motion in proximal space. In the first two prototypes of the *metakimosphere*, the dancers' motion or stillness animates the elastic veil-like gauze draperies that are suspended from the ceiling and slouch down on the floor. In turn, they are also animated by the behavior of the pro-active, dynamic and interactive architecture (for example the *{/S}caring-ami* polypropylene prototype created by Hyperbody [TU Delft] for *metakimosphere no. 2*, featuring a computationally generated origami pattern based surface with integrated lighting, motion capture and robotic actuation based on proximity-sensing).

In the expanded choreographic there is no real stillness, not even when there is only breath. Breath not only moves space – inhaling/exhaling, expanding/contracting – but also is audible. In all *metakimosphere* installations the biophysical, etheric sound is amplified. The elemental thereness of the environmental atmosphere includes the audience as experiencers who are "inside" the atmosphere, and the atmosphere is in them. *Meta*: through them. Both, so to speak,

² For a discussion of such biorelational frameworks, see also Teoma Jackson Naccarato and John MacCallum, "From representation to relationality: bodies, biosensors and mediated environments," *Journal of Dance & Somatic Practices* 8:1 (2016), 57-72.

reciprocally make up the materialities of the interaction merger. There is black porous gauze on the perimeter, and soft white veil net inside, and these insides-outsides – or “interskins” as Haein Song, one of our dancers, called them – are housed inside a darkened gallery space (circa 10 by 12 meters wide). This first envelope, for a test performance in London (March 2015), was small and intimate. The second envelope was a huge auditorium in the Medialab Prado (Madrid, July 2015), and here the perimeters expanded as an architectural skin with its own properties and behaviors. The third installment was multilayered and a more complex dynamic spherical environment that included separate enclosures for intimate listening.³ This *kimosphere* featured various sonorous qualities and vibratory intensities, voices, intonations and choral elements, a meta-language structured like music and gestural, tonal extrapolations in rhythm and timbre: the somatic here expanding outward into a spatial acoustic instrument or “polytope” (Xenakis).

This choreography and the dancers’ (and the system’s) gestures envelop spectators physically in the particular kinetic atmosphere or directly solicit and engage it as part of its very functioning. In the future version of this presentation, the signal processes, audio-visual interactions and tactile dimensions of the wearables created for the *kimospheres* will continue to be examined, in order to raise questions about what we mean by embodied, embedded, durational and attentionally rich environments (augmented reality/virtual reality) that can act as new conceptual frameworks for cognitive and biological/technological processes.

Furthermore, the notion of immersion will also be scrutinized in order to draw attention to interactive and participatory potentials of dance environments that allow visitors to have concrete tactile and auditory experiences while at the same time being challenged into somatic (inner) bodily sensations afforded by the new kinetics of VR. The DAP-lab is currently exploring narratives that can be composed through choreographic process derived from biophysical data (registering intimate bodily states of arousal, excitation, listening, breathing, moving etc) in conjunction with interface architects and fashion designers rescripting the data mathematically to generate wearable objects with 3D printers and as avatars inside virtual worlds that are accessed through (HIVE) goggles. We plan to use “choreographic objects” (miniature 3D printed

³ The German philosopher Peter Sloterdijk [2004] has devised a philosophy of *spheres* and *envelopes* which contributes to the current interest in atmospheres, much as Andreas Philippopoulos-Mihalopoulos’s critical study of “lawscapes” as atmospheres draws attention to embodied social and political norms in the conflict between bodies “moved by a desire to occupy the same space at the same time” (2015: 179). For the latter, see *Spatial Justice: Body, Lawscape, Atmosphere*, London: Routledge; for the former, see *Sphären III – Schäume* [partial translation: Peter Sloterdijk, *Terror from the Air*, trans. Amy Patton & Steve Corcoran, Los Angeles: Semiotext(e), 2009]. For the tactile narratives, see Johannes Birringer, “Kimospheres, or Shamans in the Blind Country,” *Performance Paradigm* 12. Available online: <http://performanceparadigm.net/index.php/journal/article/view/176>.

creatures) that become scaled-up avatars in immersive virtual landscapes where they can be encountered to develop sensorial dramaturgies.

The next instalment, *metakimosphere no. 4*, therefore combines two atmospheres, a real architectural space and a virtual (computational) space, both actuated through the same tactile narrative. The crucial aspect for us is the immersant's sensory participation: the resonances of the real and the virtual spaces are to be rhythmically entwined, and the occurrent gestures are envisioned to become reciprocal – pushing the kinaesthetic into a perceptual virtuality (VR) that so far is largely contained in the visual (the ergonomic challenges with virtual reality headsets are well known: the more powerful headsets must be tethered by thick cables to computers or consoles, which can tangle up immersants' legs when these rigs occlude their view of the real world). The kinematic, then, is the challenge for a social VR choreography which does not insulate/isolate the immersant but allow for an expanded (virtual) synaesthetic perspective and embodiment.



Fig. 3 *Metakimosphere no. 3*. Elisabeth Sutherland performing in NailFeathersDress. Garment design by Michèle Danjoux. DAP-Lab, Artaud Performance Center, 2016 © DAP-Lab

This will require a process where the virtualizing instrument is not perceived as an enclosure-object or prosthesis but as a wearable that becomes a part of the body as a metamorphic changeable and emerging process and hyperobject. Given the precarious experience of a technological body or technical being that is mutable and relational, movement becomes a vector

of affect. The immersant can enact, or fail to enact, specific bodily gestures or movements, and there is no correct way of executing a particular movement but only actualized potentials derived from resonant (narrative) stimulation. Performances in such augmented reality can let movement emerge from the rhythm of sound, vibration, graphics and light produced by the machinic.



Fig. 4 *Metakimosphere no. 3*. Hongye Deng and visitor performing with soundobjects (left), Vanessa Michielon in OrigamiDress (right). Design by Michèle Danjoux. DAP-Lab, Artaud Performance Center, 2016 © DAP-Lab

Thus, the way the somatic is performed, compromised, interpreted or created anew is crafted by the performer, the instrument and the relational context. The objective is to explore a certain level of entrainment which enables movement and sensual intensity to arise. If the immersant's intentions are constrained, in regard to physical performance or kinaesthetic experience, it is still vital to come to a realization of the biorelational feedback, the continual flow and fluid relations between the enacting self, the coupling with technical system and atmospheric environment. The embodiment in augmented/virtual reality, I propose, is always subject to such a mingled or torn multiplicity, a hybrid octopus-like creature that must push its limits further.

References

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