Immersive Dance and Virtual Realities

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We move in slow-motion,
creeping inch-by-inch through the milk-light
beneath brown bulbs of the tamarind.
We raft over the

crack

gap

gulf

of millennia

Clinging to weed and log:

We, the dauntless
We, the night-wanderers
We, the moonlit acrobats

("Red Ghosts/Shadows of the Dawn," *kimosphere no. 4*)

Immersion is the term that has gained much currency in recent years, but I believe its history is one dominated by an ocular emphasis – visuality and visual stimulation also being of main importance in the world of computer gaming's POV. At the same time, one ought not to forget the manual dexterity and physical reflexes the gamer, the ability to focus. The poetry lines quoted in the epigraph are from a game that can be "played" at a computer screen (while the player is listening to a recitation of the poem and scrolls the cursor along the lines), but this game is set up as but one station in a larger theatrical architecture in which the real and the virtual merge, with the virtual complementing the real in a nearly tangible way as these realities are layered on top of and within each other. The layering invites and proposes

different experiences for each audience member, creating a sense of their own emerging views as they constructs a narrative.

To a certain extent, the poetry of the game is also an allegory, as it evokes the notion of slow time or slow space, which was pertinent for the temporally extenuated experience we had devised for the theatrical environment of *kimosphere no. 4/Horlà*. In the following I will therefore not touch upon games as such, or VR technology for that matter, but propose to explore an expanded, multi-sensorial sense of playful immersion that my research, and my work as a choreographer, has sought to uncover through theatrical and architectural design.
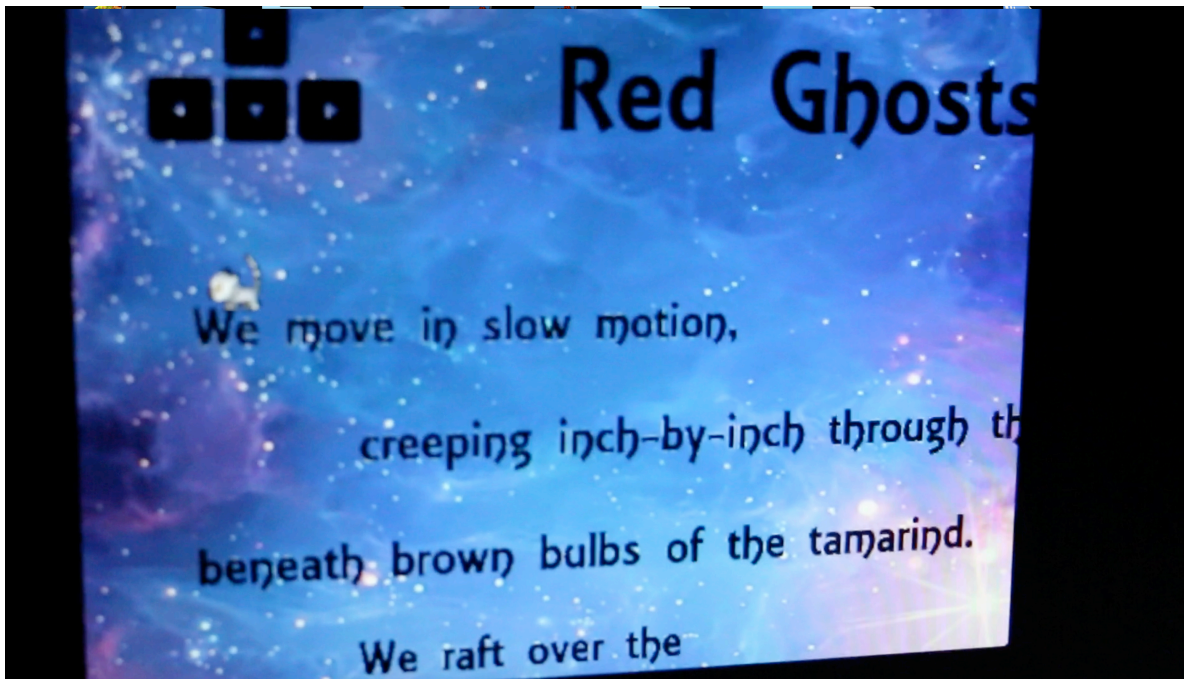
Fig. 1. "Red Ghosts/Shadows of the Dawn," video game, *kimosphere no.4/Horlà* installation, Artaud Performance Centre, London, 2017. © DAP-Lab

Nevertheless, I will give attention to the role of the virtual and of wearable VR heasdsets inside this design scenography, questioning their role and whether their inclusion was a good idea in the last instalment (in 2017) of the *metakimosphere* series. Perhaps writing about it here will help me to focus new questions or invite your responses; perhaps you have already found different solutions to what I would basically consider an isolating, insulating experience within what, in the terms of theatre, is a social and often a ritual-communal event. The isolating experience in question is the game at the computer screen, and the wearing of the VR-headset (goggles wired to a computer) or the lighter cardboard 3D headsets (with

inserted iPhone) provided for our installation audiences. They were invited to wander around a large-scale audio-visual and tactile landscape that I initially called "Red Ghosts/Shadows of the Dawn," the ghosts in question being the eight speakers, set upon tall stands, of an 8-channel sound installation. The nature of the tactile aural territory I shall explain below. Then there are the little ghosts of the Malagasy lemurs, the moonlit acrobats, that one of our stories about slow evolutionary history brings up. The sound and the tactile materials move these kinetic stories, disseminate them around the architecture of the whole, with voices, electronic sounds, echoes, processed natural sounds, distorted crackles and hisses, lights, mists, colors and moving textures, etc. The 8-channel installation, with each speaker shrouded in a mosquito net suspended from the ceiling grid, in fact constitutes a kind a metaphorical forest of ghostly presences (three dancers, wearing masks, are hidden quietly inside this
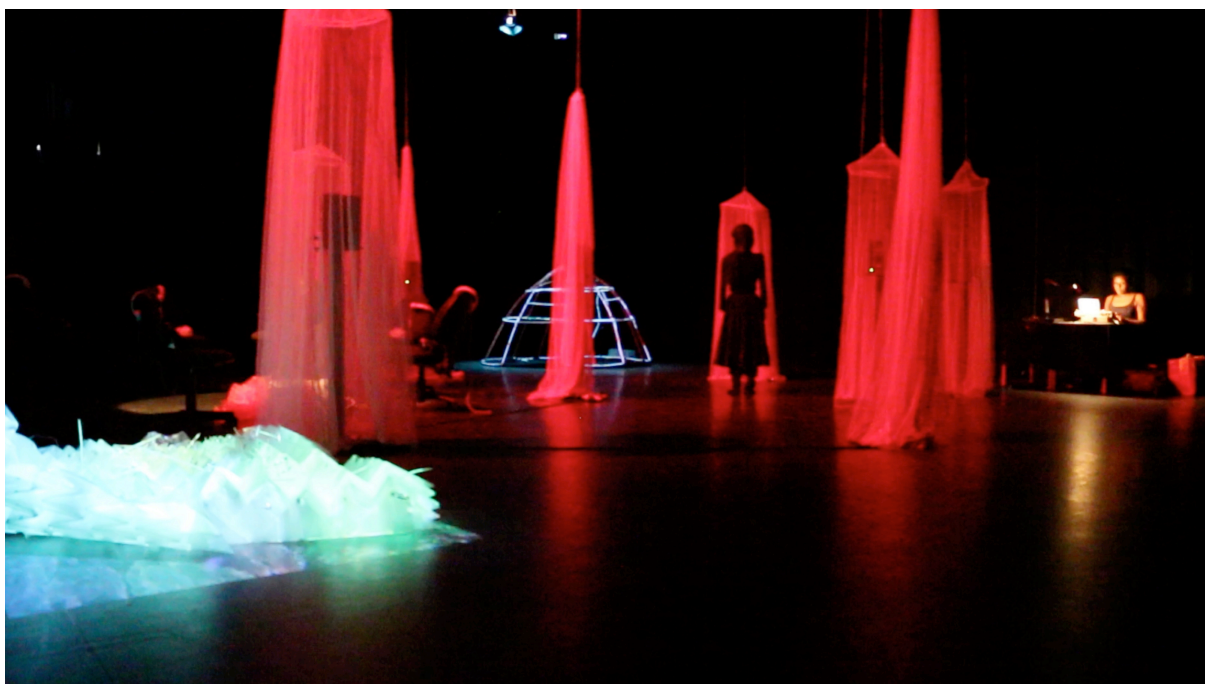

Fig. 2 Dancer Yoko Ishiguro standing still in font of one of the 8 ghost speakers; the coral reef is on the left, and sound artist Sara S. Belle performs in the background right. The skeleton of the Soundsphere is visible in the far back. *metakimosphere no.4/Horlà*, created by DAP-Lab, 2017. Artaud Performance Centre, London © DAP-Lab

environment, still or barely moving), with dense layers of a sound-in-motion that is experienced by visitors while moving around the forest of speakers, the micropolyphanies in fact only audible if they move across and between the nets, listening. The installation also has various stations on the perimeter, such as the VR interfaces just mentioned, as well as an igloo-like Soundsphere where the visitor can crawl inside to explore a GSR biosignal interface (listening to galvanic skin response turned into sound), and a "coral reef" sculpture

where they can lie down and float inside a deep sea film projection that percolates over a synthetic origami architecture.
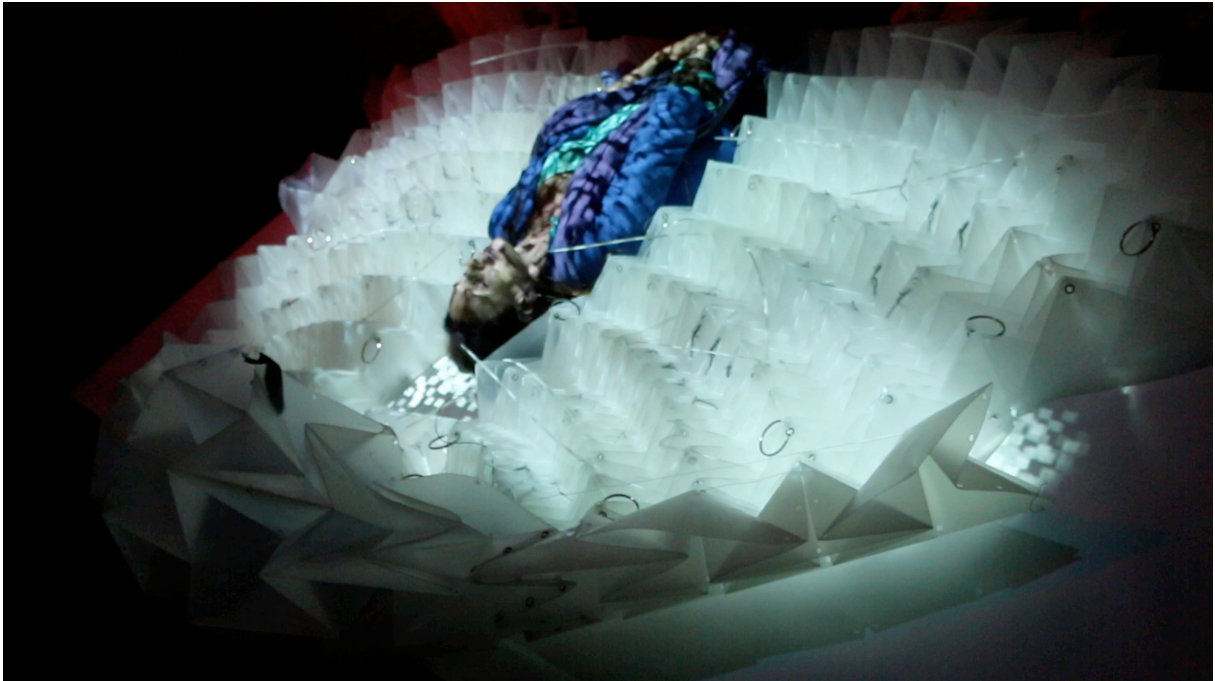

Fig. 3. Visitor floating inside coral reef, *metakimosphere no.4* © DAP-Lab

The ritual-communal aspect of immersion and participatory art is of course an important concern, otherwise there would be no reason to experiment with these forms of interaction. For many years of working in the theatre, it appeared quite satisfactory to create a dance or performance piece on the stage, for an audience to watch from the auditorium. But *atmospheres* of choreographic design suggested a new conceptual approach with which to pursue questions about sensorial immersion which changed the older *dispositif*, asking audiences to step inside and come closer, touch, listen and act in greater intimacy with the unfolding action.[1] Such an approach to immersive dance, emphasizing a stronger kinaesthetic and multi-sensory affective impact on audience perception, has developed concurrently with an altered understanding of *digital embodiment* which has grown over the past decades, countering the so-called dematerialization of the art object, even if fluxus events and happenings, along with more ritual, psychedelic, or politically activist forms of performance had always existed within the vanguard traditions of modern art. The politicized and eroticized psychedelic happenings of the Living Theatre or of Carolee Schneemann's Kinetic Theatre of the 1960s provide an undercurrent for the more formal constraints that our immersive dance installations imply.[2]

Since becoming involved in international co-productions of the European METABODY[3] project after 2013, the new term I have used for our approaches is "kimosphere." Kimospheres (kinetic atmospheres) are living, breathing spaces; not clearly definable, they are felt and perceived like weather. One is corporeally present in them, moving through their *Stimmungen* (the German word *Stimmung*, similar to *Atmosphäre*, implies in its etymological origin also *Stimme*, i.e. voice, an acoustic experience, a tuning), perceiving-listening to the relational, dynamic and metastable states of such atmosphere. The spaces are installed, thus "built" and choreographed for visitors, and they often focus on audio-visual and material-sculptural or fabric configurations. They are also informed by the developments of digital and interactive dance and media – dance that incorporates technologies and associates its compositional ideas with software programming (mathematical and abstract languages). Much of the earlier multimedia work I had created took place on the stage (or, telematically, on screens); thus it was projected for audiences, not designed to be entered by them and touched close up. The touching, in this manner, also closely connects to the listening. Atmospheres are sensed, and if you imagine walking in a forest or an unfamiliar urban territory at night, you will be listening to the atmosphere and the not-seen. You become more succinctly "attuned" to the environment since you are hyper-activating your survival instincts and peripheral senses.

From projection to immersion – this is not necessarily a shift as projections may still remain a part of the installation architecture. 3D film or VR remains a cinematic projection medium, yet it has enhanced its plasticity and the illusion of absorption (of the viewer feeling being inside rather than looking from the outside in). 3D interaction designers emphasize that such absorption – and what our collaborator Doros Polydorou refers to as "the perception of being physically present in a non-physical world" – relies on the *plausibility illusion,* namely that you are not only using your body to perceive in the way you normally do, but that the environment believably responds to your actions to make you think it is real.[4] DAP-Lab's research on formative and wearable space, on a mediated and yet highly visceral environment that is not constructed in a stable form but evolves through movement, now provides the basis on which I propose to look at current ideas and practices of immersion-dance, perhaps also questioning those notions of plausibility. Movement, in this sense, can also include the motion of light and graphic projection, the diffusion of sound waves, energy fields, color

fields, edgespaces and anomalies, and various forms of embedded *motion sensing* which result in reactions (in the environment).

This idea of the choreographic suggests a technologically infused dance or, rather, a material-sensory practice filtered through fashion and expanded sculpture. Movement and fashion design for our wearables are understood by DAP-Lab to be choreographic as well as architectural, examining how costumes are *immersive* and what concepts of the *wearable* allow – for example a double wearabilty, both of our specially designed garments and yet along with the wearability of space – the choreography of architectural scores.[5] The sensorial environments that I describe are also sometimes refered to as "choreographic objects" (e.g. the installations by William Forsythe), but in our case it is more pertinent to think of the fluidity of atmospheres rather than objects. What is meant by atmospheres of dance will be explained below.

Early in 2015, the DAP-Lab began to collaborate with one of the Hyperbody architecture teams from TU Delft, before joining them for the Metabody project exhibition of METATOPE (MediaLab Prado, July 2015). The architects arrived first and worked on installing their *{/S}caring-ami* prototype; then performance interactions with three dancers, with several new costumes and audiophonic object-instruments designed by Michèle Danjoux, co-director of DAP, and developed with the dancers and Metabody partners (Marije Baalman, Nicoló Merendino, and Marcello Lussana), could get under way. Along with our sound and graphic interface artists (Jonathan Reus, Chris Bishop), the DAP ensemble rehearsed a choreographic response to the *{/S}caring-ami* prototype created by Hyperbody. The interactions described below were part of a larger installation parcours, involving many of the Metabody partners.

Evoking a parcours implies that the audience was not static or seated: they were to move and engage. How do we imagine an audience to engage choreographic design and become immersed? As I already proposed, ideas of participation can be traced back to known traditions of live art/installation art, e.g. to happenings, site-specific performances, situationist and environmental art, processual theatre, interactive media art, invisible theatre (Boal), rituals, social works, etc. This also means that "immersion" is not a new concept. However, there is a considerable vogue of immersive theatre today that has captured the attention of audiences and is discussed in the critical discourse, with several new books appearing that

theorize participation. A promenade performance that is often mentioned is Punchdrunk's *Sleep No More,* recently transferred from London for an extended run in New York City. Site-specific, ritual-based and immersive performances are probably known in all cultures and could be traced back to various phenomena in sacred, indigenous, spiritist and shamanic performances, while contemporary interactive and "relational" aesthetics tend to favor the secular happenings that are now probably part and parcel of the "experience economy."[6]

But what forms of participation are envisioned by moving, liquid architectures? Is immersion something that needs to be guided and facilitated? Are narratives necessary? How playful are rituals, and how ritualistic are games? What if we assume audiences already always are "emancipated" (as Rancière has argued).[7] They can decide for themselves and will not need my recipe. But I want to examine such instruction to experience further below. Audiences, I assume, sense the mood of a space or social situation they enter, without instruction. There is a tacit knowledge and common understanding, for example, how to negotiate space when we enter a train compartment, a restaurant, a bank or a mosque. Architect Juhani Pallasmaa suggests that we project our emotions "onto abstract symbolic structures," and that felt atmospheres emphasize "a sustained being in a situation" or an internalized projection or *introjection* (an interiority that implies peripheral perception and also a sensation of where we are in that space – what dancers train to advance their proprioception).[8] Such introjections work intuitively, even if moods, if they are generated by design, can of course function in a manipulative manner. We can think of some of Pina Bausch's dance-theatre productions that use organic materials, such as water, grass, rocks, sand, etc. Wetness, the splashing of water or the strong odor of rotting peat can seep into the audience's apprehension.

The choreographic, as I understand it, enters the atmospherics of architecture as much as the latter may rely on movement-through. It extends experience of space or place through bodily movement, gesture, and orientation, affective scales of the sensorial – the visual, auditory and especially tactile introjections worn into the body (incorporated), taken from the atmospheric environment and its resonances. Costumes here become crucial as they are worn on the skin, thus connecting intimately to the body and room temperature (the weather), and the wearer's balance, stability, sense of gravity, weight, and orientation (the whole proprioceptive experience). Clothes are protective and also revealing, firm (closed) or loose, adorning or encumbering. The choreographic, in this sense, tends to focus on performer experience and how such experience can be articulated and attenuated for an audience inside this weather.

And are audiences not forewarned about weather? Would they come to an event that was not forecast in some manner?

The immediate experience is emergent, unpredictable, depending on many factors affecting self-awareness and what is today often refered to as *agency*. Architectures and spatial arrangements can be highly charged, and thus possess agency too. They are not transparent but enactive forms and materials, they have properties. In analogy to some of the software patch environments I work with, settings, screens or filters act as "actors." Interactive controllers are actuators, sensors sense movements and behaviors of human bodies, spatial infrastructures house nested feedback systems. In the 1980s, we spoke of "dilation" – the actor's physical motion expanded space-time experience. Today we see the impact of the new materialism on the thinking about the liveness of objects, and the agency of entities formerly considered passive objects, inanimate things, inert matter. The immersive kimospheres, as we understand them, are agential, vibrant, and mobilizing – and yet one needs to look closely at what they mobilize and how they mobilize (in a dramaturgical sense of a temporal event that invites visitors to enter, and eventually leave, a multifarious art exhibition of the kind we had in Madrid or in London).

The METATOPE Parcours demands a more careful exploration of how kimospheres (with objects in space, visual projections, wearable artifacts, interviews and demonstrations, architectural structures, habitats, soundings and physical performances) afford various possibilities of visitor engagement, for an audience of abled and disabled persons (Metabody concretely targets a very diverse range of audiences, and also organizes workshops for "metamovers" – inclusionary labs with new expressive technologies, such a Palindrome's Motion Composer software which transforms movement into music, for persons with disabilities). In these brief reflections I look back at METATOPE and the 2017 *kimosphere no. 4*, raising questions about participatory gestures, the inclusion and instruction of the audience, the dramaturgical methods offered to them for accepting or declining the invitation to act.

There were numerous installation-performances taking place during the last four days of the 2015 METATOPE. The house was open between 4:30 pm and 9 pm, with repeated run throughs of three or four groups of audiences coming in, then leaving before the next group. Audiences were gathered at the entrance, undergoing a first initiation to the Parcours through

the *Illegible Affects* installation, demonstrated by Jaime del Val. In this demo del Val shows how non-verbal gesture-movement – captured by a Kinect camera and run through computational models and automated real-time EyesWeb software analysis (InfoMus) – could be interpreted differently by diverse actors, depending on gender and sexuality, age, cultural background, social class or education, perhaps only by way of diverse perception, camera angle, etc, and thus exceed interpretation and legibility.

The lights in the large installation space were then turned off, creating another kind of "illegibility" or indiscernibility of the space itself. And as the doors opened, Dieter Vandoren handed out his *Lampyridae* – sound-light artifacts that looked like conch-like shells – inviting the audience to become carriers and carers of these touchable objects. As the entering group now already had a task, participation in the interactional space was deliberately initiated. I wonder how the framing of the entrance – with *Illegible Affects* (research developed by several partners including InfoMus Team, K.Danse, Reverso, Stocos, Marcello Lussana) – provoked ideas to the audience about movement and data capture, recognizable patterns, notions of affect, emotion and play. But I assume the introduction, which was done verbally and also through non-verbal gestures of course, prepared them for multisensorial experiences in the space. *Non-verbal communication* was one of the guiding principles of the artistic processes of shaping the space and the materials. Spoken language perhaps ought to have been omitted altogether, but would the visitors have understood any of the ideas about "Illegible Affects"?

The skin is a deep surface: it connects us to the atmosphere (inside and outside). Illegibility and immersion are perhaps consonant ideas: a kinetic atmosphere is not something you read or perceive, as an object of perception, but something permeable that you *perceive in*. It is skin-deep and tactile, and it always becomes intermingled, intracorporeal and intraspatial.[9] The non-verbal parcours in Madrid involved two interrelated sides, or two halves of the space, a large section of small tents that housed projections and installations, on the right side, with Jaime del Val's metakinespheres at the bottom end of the large hall. On the left side were the architectural installations by Hyperbody, including an array of STEIM's soft speakers suspended from the ceiling, and near the entrance was a soundproof room reserved for the silent *MetaInterview* by Palindrome – interviews with visitors whose eye movement was captured by a vision system responding to the eye-replies through sounds and changes of color inside the small chamber. DAP-Lab's performance took place at the bottom of the left

side, in front of the five-feet tall *{/S}caring-ami* architecture-wall that displayed reactive behavior, towards audiences or performers approaching it, either opening its wings or closing them, while changing its attached LED lights from blue to red and back. Blue, according to the architects, was the more serene, calm state, whereas red indicated a more defensive or aggressive state.

Our dancers engaged the moveable architecture as well as the open space surrounding it, and Vanessa Michielon, in particular, wore an OrigamiDress designed with the same polypropylene material as the architecture-wall, and also wore conductive sensors that allowed her to create a sounding circuit when touching a metal sheet place there by our sound engineer Jonathan Reus. Michèle Danjoux, who created the dress and worked with Reus on the conductive sound experiments, was initially interested in the material sound of the dress as such: through its pleated pattern shape, it began to make popping sounds when the dancer moved, it developed a noisy sonic life, in other words; the performance connected the material continuum between synthetic material and conductive touch closing a circuit and setting off other sounds.

Fig. 4. Vanessa Michielon performing with "OrigamiDress" by Michèle Danjoux, in front of *{/S}caring-ami,* architectural structure by Anisa Nachett, Alessandro Giacomelli, Giulio Mariano, Yizhe Guo, Xiangting Meng (Hyperbody). Azzie McCutcheon moves inside the foreground gauze. © DAP-Lab 2015

During the Madrid performances I was aware of the vision, developed by the Hyperbody architects, for building a pavilion that would become the enclosing skin or bauble for all our interactional works. At this point, I mostly paid attention to the motorized *{/S}caring-ami* wall, observing the interactions between visitors and animated objects, performers, stage managers, and guides. I followed the non-verbal communication, the roles of participants and facilitators, the lighting, the sound modulations, the sequencing of the Parcours. The conclusions I drew helped me to move forward with the creation of new instalments of DAP-Lab's *kimospheres*. The stage management I observed made me think about the autopoiesis and heteronomy of such a large constellation: visitors will not have a preconception about the work, and they may not have an understanding of what "metabody" or "metatope" implies, except that they are asked to enact, touch, carry objects, crawl into tents, perform with kinespheres. They are invited to trigger architectural behaviors, watch dance and projections, avatars and other visitors performing, listen, carry small objects that make sound and emit light. Thus their understanding of the "materials" may come from their manipulation of the materials, their engagement of the space and their sense of agency in initiating a contact, a movement, and a reaction. As so often in interactive work, they will look for causes and effects. Or they will allow wonder, puzzlement, and adventure to guide them nowhere. They will also realize that sometimes they are not left alone, to their own devices, but whirled around, instructed and coerced. (This is an experience that a number of visitors to Punchdrunk's *Sleep No More* have complained about, and that reflects the coercive and shaming side of participatory theatre).[10]

The METATOPE environment as a whole, with its many dimensions, is not a coherent space. Nor do I think convergences can be forced from so many divergent aesthetic practices and their folds and gaps. There was no single narrative or motif, but many, as well as many potential physical and intersubjective engagements. Perhaps there were too many atmospheres, or the overall atmosphere was inconclusive. How can such an environment, created by diverse contributing partners who had not rehearsed the space together, be intelligible and create connection, a "through-line," and also be a place of potential political dissensus, from which to go off outside, instigating urban interventions in the public sphere, as del Val had proposed? If the space or its actors are not meant to be legible but remain amorphous, what complicity with the formless, the indefinite, is expected from audiences?

There are images imprinted in my memory. One is a beautiful and intense contact improvisation that Isabel Valverde enacted with a disabled visitor whom she invited to roll on the floor with her, leaving his wheelchair behind. He had his eyes closed, just followed the moments of shared physicality, and I watched out to protect him from rolling into *{/S}caring-ami,* hurting himself. Then there was a hyperactive facilitator, Salud López, who spun around like a whirling dervish, dragging audience members around and nearly crashing into Hyperbody and DAP-Lab's architectural environment with the conductive metal sheet placed on the floor. Some visitors stumbled in the dark, stepped on and disconnected cables, and made us worry about health and safety, especially as there was no lighting design that could have guided the sequences of actions in the space. Participants reacted well, most of the time, but some also felt forced or indeed puzzled by the architectural behaviors and their intransigence.

This is what I learn from the dance of immersion. Participants will find themselves inspired, moved and sensually seduced by the atmospheres and kinetic objects. They will discover an artistic-sensorial environment strong enough, and suggestive enough to engage them, with all the affective/sensorial relations and non-verbal communications that occurred. Or they will remain reluctant, disconnected. They will hesitate, hold back, remain shy or reluctant. There is no need to be dragged or whirled. Visitors can be left to their own experience modes, their way of recognizing patterns and elaborations. At the same time, participants will inevitably also discover themselves performing actions (or watching something unknown to them) that they will feel compromised by, as they watch themselves making these performances, or as they watch themselves not knowing what they cannot identify. This is also a potential, virtual dimension of such art and its perceptual mass.

A constructive approach would be to ask visitors – afterwards – as well as the actors, to comment on shared perceptions of the choreographic landscape, the screens and the immersive roles that were inhabited. In the case of DAP-Lab's performance response to *{/S}caring-ami,* for example, we faced an unexpected challenge: the motors failed on the second day, after overheating. The animate architecture still emitted sounds (which I amplified) but was without motor force; its wings could no longer rise up and embrace a person approaching. It malfunctioned. Although the architectural vision of the LOOP/environment may never materialize, the shape-shifting dance of conductivities we

explored gave us motivation to test roles, functions and malfunctions, along the dissolving lines between animate and inanimate.

This enabled a much deeper investigation of the kind of tactile ceremonies we hoped to conjure in the next instalments of the *kimospheres* (2016-17). Miri Lee's beakhandspeaker beckoned the way. Her hand becoming a loudspeaker – built by Danjoux with special piezo film called PVDF that has a thin, miniaturized and flexible form – sounded out a shamanic voice that filled the room, "illegible" as it must have been (the recorded chant of the shaman was from Korean kut ritual, given to us by Haein Song). But I intimated that audiences could sense the incantation to a ritual in mixed reality where voice mingles with electronic sound, real fabric stretches across and is extended by digital projection, and breath animates the membranes in-between. For the kut tradition, in fact, such immersion space is always communal and spiritual: the audience as participant community gathers in the place where spiritual and material realms interface (and where the gods and ancestral spirits are invited to join). Such intermingling is perhaps also common in various cultural traditions of the carnival or the Mexican *día de los muertos*. This sense of ritual we decided to explore further in *metakimophere no. 3* and *no. 4*, and in these latest instalments we push the tactile and internal experiences much further.

Figure 5 - Blind audience members touching dancers' costumes during *metakimosphere no.3*, DAP-Lab 2016 © Michèle Danjoux

A special preview night, for example, was arranged for *metakimophere no. 3* (April 2016) inviting an audience of blind and vision-impaired audience to wander through the immersive dance environment. The visitors listened to the garments as dancers moved amongst them, then were invited by the performers to touch the costumes and other sound objects and fabrics in the space and imagine them, while conversing and interpreting the atmosphere into which they had made their forays. The relationality of garments, dancers and objects assumed character, a character of an overall, collective architectural dress becoming the stage, while modules of it functioned in concert with others. Helenna Ren mimicked voices on microphone that she heard coming from the other side (the Soundsphere Object); Azzie McCutcheon and Yoko Ishiguro, the dancers under the suspended white and black gauze, became an alternative embodiment of the *{/S}caring-ami* architecture – the wall was hoisted up into the air, like the sail of a ship – entangling visitors into the gauze as they wondered inside. New sounding costumes designed by Danjoux, such as the NailFeathersDress worn by Elizabeth Sunderland, were tracking the space, creating intimate moments with visitors who heard the nails, and the small amplified noises they generated. Tactile intimacy correlates to distances too, if we remember the theory of proxemics (J.J. Hall), the notion of an animated threshold, where we act forward (aggress) or retreat backward (regress), where we go out of ourselves or into ourselves.

Figure 6 - Elisabeth Sutherland in NailFeathersDress, in front of large stage dress with other dancers cocooned inside, the *{/S}caring-ami* wall high up in the background, *metakimosphere no.3*, DAP-Lab 2016 © DAP

In this connection, we can speak of immersive environments as a choreographic of human animality, of an elemental quality of senses stimulated by what the blind might call the touch of vision, a tactile proprioceptive sensing of moving and listening through a continuum, as if being ensounded in an electromagnetic field of resonances. 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 the conductive costumes Danjoux has created. The visitors can touch these conductive fabrics and become aware of the sonic ripples, the noises that emanate from porous membranes.

The performers' incubating presence is felt and their transceiving role can be grasped when one realizes their costumes are sensortized and signal-generating. What distinguishes our work from other advanced research in music or dance technology and somatic practice is our focus on both the kimospheric architecture and what we call the "tactile narratives" that can evolve in temporal relationships between wearable performance and mediated environments.[11] 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 the "between" and "beyond" of presence/atmospheric space) – in the duration and circulation of space-time. The architecture's thereness can also be a wave, a flutter, a rumor, a bath, a murmur, a swelling, a rippling across, touching bodies. There are suspended elements in the architecture that have movement (and acoustic) capacities and can react to motion and sound waves 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. They in turn are also animated by the behavior of the pro-active, dynamic architecture (e.g. the *{/S}caring-ami* polypropylene prototype created by Hyperbody for *metakimosphere no. 2,* which featured

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 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, reciprocally make up the materialities of the interaction. There is black porous gauze on the perimeter, and soft white veil net inside; these insides-outsides – or "interskins" as Haein Song, one of our dancers, calls them – are housed inside a darkened gallery space. The first envelope, for a test performance in London (March 2015), was small, intimate. The second envelope was the huge auditorium at 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.[12] This *kimosphere* featured various sonorous qualities and vibratory intensities, voices, intonations and choral elements, a meta-language structured like music with gestural, tonal extrapolations in rhythm and timbre. The somatic here expanded outward into a spatial acoustic instrument or "polytope" (Xenakis).

The concept of an "immersive dance" needs to qualified in so far as I notice an increasing reduction of our performers' activities or, rather, a shift towards a different role regarding the interactional and participatory invitations of the kimospheres to the visitors. This became clearer in *metakimosphere no. 4* (2017), where our dancers relinquished dancing altogether. It was the visitors who were invited to move through the parcours, at their leisure, and explore tactile and auditory experiences while at the same time being challenged into somatic (inner) bodily sensations afforded by the new kinetics of VR. With *metakimosphere no. 4,* DAP-Lab for the first time fielded proto-narratives, composed through an 8-channel sound installation (Red Ghost Speakers) and five interface stations that each intertwine aspects of two narratives (*Horlà*, adapted from a short story by Guy de Maupassant; *Shadows of the Dawn*, adapted from a field report on lemurs by primatologist Alison Jolly in Madagascar).

Their exploration is the choreographic process: it includes intimate personal (meditative) resonances derived from the floating "coral reef" and the "Red Ghost" poetry game. There are

two VR interfaces where visitors enter ghostly worlds via goggles. M*etakimosphere no. 4* thus combines two atmospheres, a real architectural space and a virtual (computational) space, both actuated through the same tactile narrative, neither perhaps completely plausible. The critical aspect for us is the immersant's sensory participation: the resonances of real and virtual spaces are to be rhythmically entwined. 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). And perhaps feeding the virtual "play" back to the corporeal, pouring it back into the player's gestural action (see fig.8) even if our playfully physical interface can tangle up immersants' legs when the rigs occlude their view of the real world. The kinematic, then, is

Figure 7 - *Metakimosphere no. 4.* Visitor inside "Lemurs" interface with VIVE goggles, conducted by Doros Polydorou, Artaud Performance Centre, 2017 © DAP-Lab

Figure 8. *Metakimosphere no. 4.* Visitor [left] enacting/embodying what she perceives inside "Lemurs" interface with VIVE goggles, conducted by Doros Polydorou, Artaud Performance Centre, 2017 © DAP-La

the challenge for a social VR choreography which does not insulate/isolate the immersant but allows for an expanded synaesthetic perspective and embodiment where imagined full-body perceptual virtuality feeds back into the kinaesthetic. The momentary insulation from other visitors or friends, during the installation, turned out not to be a problem: everyone seemed patient, waited their turn, observed, and even chatted and commented upon one another's "choreography" of following into the lemurs' forest, trying to catch a glimpse of the moonlit acrobats. A knowledge exchange, right there on the spot.

This requires 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 process and hyperobject. The immersant dances, so to speak, with the instrument. 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: there is no correct way of executing a particular movement but only actualized potentials (virtuals) derived from resonant narrative or kinaesthetic stimulation. "Dancing" in such augmented reality can let movement emerge from the rhythm of sound, vibration, graphics, colors and light produced by the engineered atmosphere, real and 3D digital. It is another kind of dancing, not one we know from the

theatrical stage.

The way the somatic is performed, compromised, interpreted or created anew is crafted by the immersant performer, the instrument and the relational contexture. The aim 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 fluid relations between enacting self, the coupling with technical system and kimospheric environment. The embodiment in such immersive augmented reality, I propose, is always subject to such a mingled or torn multiplicity, an octopus-like creature that must push its limits further. The last version of the *kimosphere* is, on one level, an exploration of light and what is (still) discernible in the dusk when contours begin to dissolve – the light *entre chien et loup*, as French cinematographers call it. This space of the lemurs is perhaps an ideal space for the potential virtual, especially of the not plausible kind.

Notes:

[1] The first experiment by DAP-Lab with the immersive form was created in UKIYO (Moveable Worlds, 2009-2010) when I designed an open space criss-crossed by five *hanamichi* on which the dancers and musicians performed while the audience was free to walk around and across the space in whatever way they liked. Often the visitors came very close, inches away from the dancers who wore specially designed audiophonic costumes and wearables created by Michèle Danjoux, DAP-Lab's art director. For a film excerpt, see: https://youtu.be/g2yfYrlvOLM.

[2] Here I am tempted to use the French term *contrainte,* referring to the deliberate constraints that George Perec and the artists of the OuLiPo (Ouvroir de Littérature Potentielle) used for their compositions, as it associates the virtual (*potentielle*) and also describes well the function of our wearables and costumes in DAP-Lab performances, which are constructed as stimulus and encumbrance that invite/require new and unpredictable movement possibilities. Regarding kinetic theatre and the erotic, the retrospective of Carolee Schneemann's art at Museum für Moderne Kunst Frankfurt ("Kinetic Painting," May 31 – Sept. 24, 2017) gives ample evidence of her radical expansion of "painting" into performative actions that (beginning with *Meat Joy,* in 1964) were highly tactile, plastic, palpably fleshly and also deliriously messy.

[3] METABODY was initiated in Madrid (July 2013) by a collaborative network of arts organizations, research labs and performance companies engaged in a provocative rethinking of perception and movement away from the mechanistic and rationalistic tradition, and thus also the dominant western tradition of visuality or ocularcentrism combined with formal and systemic 'built' environments and protocols that take certain embodiments for granted, towards a (digital) embodiment that puts emergent differentials of bodies and affects in the forefront of its concerns. METABODY was coordinated by Jaime del Val (Asociación Transdisciplinar Reverso) and comprised eleven primary partners including DAP-Lab, STEIM, Palindrome, K-Danse, InfoMus Lab, Stocos, Hyperbody Research Group, and Trans-Media-Akademie Hellerau (http://www.metabody.eu). DAP-Lab wishes to thank partner artists in the METABODY project for the knowledge transfers; we acknowledge the inspiration of the mobile metakinespheres created by Jaime del Val during 2014, especially the

smaller ready-mades brought to the STEIM workshop in December 2014 (and lit during a test rehearsal by Dieter Vandoren). They sparked a series of smaller tests in London early in 2015, then gave way to DAP-Lab's growing interest in pro-active, dynamic and interactive architectures as proposed by Nimish Biloria and Jia Rey Chang (LOOP Pavilion) and the Master students who worked on a computationally generated origami pattern based surface with integrated lighting, motion capture and robotic actuation. The *{/S}caring-ami* team (Anisa Nachett, Alessandro Giacomelli, Giulio Mariano, Yizhe Guo, Xiangting Meng) gave us the polypropylene materials to create new wearables (costumes and sound objects or instruments). Danjoux's ideas for conductive wearables and proximity-sensing performance had evolved from her work with Jonathan Reus during the e-textile lab at STEIM (October 2014), and my scenographic sketches for "kinetic atmospheres" evolved in March 2015 during the first public presentation of *metakimosphere no.1* (with Azzie McCutcheon, Yoko Ishiguro, Helenna Ren performing) in London. The dancers for *metakimosphere no.2* were Vanessa Michielon, Azzie McCutcheon and Miri Lee. Christopher Bishop created the kinect camera interface graphics along with Cameron KcKirdy. The extensive collaborative teams for the recent installations are credited here: <http://people.brunel.ac.uk/dap/metabody.html> and http://people.brunel.ac.uk/dap/kimosphere4.html/. A film excerpt of *no.3* is here: https://www.youtube.com/watch?v=5DdAcv37jmc. *No. 4* is here: https://www.youtube.com/watch?v=kNBnxtRVkT4. Core elements of *kimosphere no. 4* include 8-channel sound design by Sara S. Belle; "Red Ghosts" and "Horlà" cut cup poetry by Emma Filtness; "Shadows of the Dawn" cut up by Johannes Birringer; performance by Yoko Ishiguro, Helenna Ren, Haein Song, and Sara S. Belle; biosignal interface by Claudia Robles-Angel; *Horlà* 3D film by Paul Moody; "Red Ghosts" game by Ashley Rezvani; and coral reef projections by Chris Bishop and J. Birringer.

[4] Doros Polydorou's "Embodiment in Virtual Reality" presentation was made during a Symposium on *Immersion/Presence*, May 27, 2017, preceding the premiere of *kimosphere no. 4/Horlà* at Artaud Performance Centre, Brunel University London. Other provocative ideas of 3D virtual and avataric edgespace and contradictory, intertwined "bodies" in virtual space – where gamesspace worlds begin to break down – are owed to conversations with filmmaker/musician Alan Sondheim, whose recent Second Life pieces were exhibited in "Children of Prometheus" at Furtherfield Gallery, London (July 1 – August 20, 2017).

[5] As to the idea of a *Raumpartitur* or spatial score, a polylingual edition of a beautiful text (with photographs) by architect Wolfgang Meisenheimer (2007) inspired some early research into spatial figurations when in 2008 I worked on a digital oratorio in Brasil with composer Paulo C. Chagas, programming visual mutations based on Francis Bacon's painting of dissolving bodies. Our digital oratorio *Corpo, Carne e Espírito* had its premiere at the FIT-BH Festival, Belo Horizonte (https://www.youtube.com/watch?v=lZwDByPvJ8k). See my essay on the Bacon project: "*Corpo, Carne e Espírito*: Musical Visuality of the Body" (2010). William Forsythe's choreographic objects also provided useful information on installations. The former artistic director of Frankfurt Ballet began to use the term when he created installations proposing movement possibilities of interaction to participant audiences; 'choreographic object' is explained in the catalog for the exhibition *Suspense* (Forsythe 2008). In my own experiments with *Raumpartituren*, I am more directly imaging a close connection between architecture and music, a sensual synaesthetic interweaving of abstracted sounds and textures as we perceive them, for example, in György Ligeti's *Atmosphères*. See also Birringer 2012; Danjoux 2014.

[6] For a fascinating discussion of the shamanic tradition, see Kreuger 2017. For critical commentary on immersive performance, see Bishop 2012; White 2013; Read 2013; for a critique of the experience economy, see Alston 2016.

[7] Cf. Rancière 2009.

[8] Pallasmaa 2014: 20. See also, Böhme 1995, and Zumthor 2006.

[9] For a political and legal argument regarding skin and sensory stimulation, see Philippopoulos-Mihalopoulos's chapter "From Lawscape to Atmosphere" (2015: 107-50).

[10] Regarding the shaming of participant audiences, see Read 2013:182ff.

[11] For a discussion of such biorelational frameworks, see also Naccarato and MacCallum 2016.

[12] Philosopher Peter Sloterdijk 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). See see Sloterdijk 2009.

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