Introduction

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Air is information

Air supplies human and non-human life forms with vital oxygen and provides non-stop access to data necessary for sustaining life. But because air already played an important role in communication processes long before human life existed, taking an anthropocentric perspective when considering air would be extremely limiting.[1] Furthermore, on a local and global level, air as medium of communication becomes information in its own right. For all life forms it then holds good that living in and through air equals processing information; wind carries messages of desire and danger that plants and animals exchange along with data such as those electromagnetic waves, sound waves and natural radiation that are produced by organic and non-organic elements of the environment but are not directed to a specific addressee. In this long history of airborne data, mobile electronic technologies, albeit a very recent phenomenon, are doubtlessly overwhelming human-machine contributions to this archaic system of communicating which, through them, has not become obsolete, but rather immensely enriched. Human users constantly develop new ways of using air in order to emit, receive (extract) and process information that is already circulating around us. Like all other air users, we contribute to the atmosphere through the vital respiratory cycle, but unlike nonhuman users, we saturate air with electronic data, shaping the air space not only on a physical, but also on the mental level.

We consider our right to breathe as a basic human right, one identical with the right to live. Yet, our access to air is restricted, manipulated, and politicised. Air has become increasingly commercialised, controlled, noisy and abundant with desirable and less than desirable information. Everyday life certainly keeps us conscious of air and its qualities as news services inform about 'friendly air', 'air space violations', 'air vulnerable to terrorist attacks', 'airborne viruses spread by migrating birds' and the like. Our attention is usually divided between air necessary for life-sustaining respiration – the matter of immediate biological survival – and air conceptualised as space. For us, so far, there is no other living space but that of air; therefore life, air, and space are inseparable. However, our living space is divided into specifically defined zones including private and public spaces that are usually established by architectural structures and, beyond

1
See Lynn Margulis, *Symbiotic planet: a new look at evolution*, London, Orion Publishing Group, 1998.

these zones – the 'open air'. But, as Steven Connor points out in 'Building breathing space' (in this volume), 'what we know as the 'open air' is in fact no such thing. It is heterogeneous, spasmodic, tremulous, given to crisis. It is characterised by turbid swirls, gusts and clusterings, grots, hotspots, pockets and epochs, sudden saltations as well as sluggish dissipations. The outside air is never uniform, but hysterically zoned and striated'. Air as subject of politics and economics is carefully divided and delineated as regional air with its microclimate (for which you may pay tax), national air claimed as a territory, and global air, which you may ponder when you hear about greenhouse gas emissions or most likely while using wireless global communication services. All these categories – the air zones – are carefully established to serve various specific purposes, and they undeniably contribute to one atmosphere. This unity becomes particularly noticeable through global communication systems and can cause distress in times of potential danger, as in cases of moving radioactive clouds or infected migratory birds that communicate diseases. At times like these especially, we consciously and continuously monitor the air, to different degrees and by various means, processing some data with the utmost attention, while a significant part of what happens remains on a completely unconscious level.

'If life indeed became data, what are the new forms that will help us make sense of it?', Lev Manovich inquires. In his diagnosis, the shift from modernism to *informationalism* is manifested in the move from form to information flows, which evokes yet another observation, a shift from empty air – a void – to air saturated with data flows. Manovich further observes that 'architects, along with artists, can take the next logical step to consider the "invisible" space of electronic data flows as substance rather than just a void'.[2] Consequently, if the living-breathing process is a communicative one, air is information to which some of the most contemporary art phenomena give visual form. To exemplify these shifts I propose to look at some such instances.

In 1960 Yves Klein made the famous photograph *Leap into the void* that shows him jumping off the roof into the air.[3] This radical gesture, albeit in a different version, was repeated in his installation *Void room* drawing viewers into a room filled with air but considered to be a void. But what was once a void room for Klein, would now be perceived as space saturated with data in a constant flow. Analogically, a leap into the void becomes a jump into the dynamic pool of information. As Manovich maintains, 'art has the unique license to portray human subjectivity – including its fundamental new dimension of being "immersed in data"'.[4] In 2000 the same radical gesture of jumping/falling off a roof, is

Yves Klein, *Leap into the void*, 1960, rue Gentil-Bernard, Fontenay-aux-Roses.

Yves Klein in the *Void room* (*Raum der Leere*), Museum Hans Lange, Krefeld, 1961.

2
Lev Manovich, 'The poetics of augmented space: learning from Prada' <http://www.manovich.net>.

3
'A leap into the void' is also the title of J.L. Godard's article (1958) on J. Becker's film *Montparnasse 19*. Although the latter is about Modigliani, it has been acknowledged that Godard in his review makes references to the two painters Nicolas de Staël and Yves Klein. De Staël, whose work influenced Godard – especially visible in *Breathless* – threw himself from a window in 1955. As Godard noticed: 'for he who leaps into the void owes no explanation to those who watch'.

4
<http://www.manovich.net>

Tom Tom jumping off the roof in the Wim Wenders film *The Million Dollar Hotel*.

referred to as 'going aerial', as one of the residents of the Hotel calls it, in the Wim Wenders film *The Million Dollar Hotel*. In short, the shift from modernism to *informationalism* is expressed in the move from the 'leap into the void' to 'going aerial'. The latter case enables us to receive and transmit airborne data that were previously non-accessible due to lack of technology and, more importantly, due to lack of awareness of air – or, in Irigaryan terms, because of 'forgetting air'.

This relatively unconstrained flow of data in the physical air space works as inspiration for the radical *ungrounding* of bodies and objects, understood both metaphorically and physically. But the fascination with lightness and the fantasy of becoming weightless, 'the wild passion of letting yourself be transported by wind, by burning heat and by cold space',[5] as Serres once observed, has also changed in specificity along with the move away from modernism. This new ungrounding force is not a matter of simply denying the physicality of the body or applying some mysterious counter-gravity void effect. It is rather a matter of a new approach to the world – as Italo Calvino suggests, a way of 'look[ing] at the world from a different perspective, with a different logic and with fresh methods of cognition and verification'.[6] It is not, of course, that the physicality of the gravitational pull can now be overcome. Izzy, the main character in Wenders' film, unlike Klein, goes into the air but instead of disappearing into the abstract void (like Klein), passes straight through and ends up dead on the ground. Paul Virilio rightly notices that falling is not a metaphor. Even air itself does not escape the force of gravity and revolves with the planet as do human and nonhuman animals, plants and all non-organic matter. As a consequence, one of the crucial principles of traditional Western *geo-logy* is verticality – a verticality derived from the omnipresent experience of falling. But air that is pulled by gravity does not fall the way solid objects do – the objects are defined as forms whereas air always remains formless. As objects fall to(ward) the ground, they fall through air but are unaffected by it. As such, the invisible and traceless air does not really play a role in the cultural economy of falling. Virilio points out that falling is our primary and most common experience; he perceives even walking as a process of falling from one leg to the other. This physical motion of falling, so strictly determined by the force of gravity, has its extension in a specific 'spirit of gravity' that shapes the way we mentally construct our world and selves.[7] Even the moral order is sensitive to gravity in that the core of Christian belief is based on the Fall, which marks the beginning of our existence in the world as recorded in the story of Genesis. The first woman and man 'fall

5
Michel Serres, *Angels: a modern myth*, Paris, New York, Flammarion, 1995, p. 252.

6
Italo Calvino, *Six memos for the next millennium*, London, Vintage, 1996, p. 7.

7
Virilio – unlike Nietzsche, who declared 'I am enemy to the Spirit of Gravity: and truly, the mortal enemy, archenemy, born enemy!' – seems to acknowledge and accept this 'mental force of gravity'.

into reality', Virilio points out, and their corporeality is an actual fall as well.[8] Hence, 'the movement of falling is global, gravity is everywhere'.[9] It would be almost impossible to overestimate how deeply the notions of gravity, and of verticality as well, have influenced culture as it has evolved on the Earth's surface. We live on a specific planet with a specific force of gravity that shapes the conditions of our existence; in other conditions 'life would have been completely different, our vision of the world would have been completely different'.[10] Virilio seems to share these ideas with Maurice Merleau Ponty and Edmund Husserl, who posit that we are all 'terrestrial beings' experiencing the Earth by our corporeality as some kind of primary relation. John Rajchman in his comments on Husserl's *geo-logy* writes that 'the Earth, in its "original" meaning, doesn't move at all; it is still in an absolute way, prior to all relative rest or motion. It is as if we carry the Earthground around with us wherever we go and whatever we do. For even when all the parts of our body are in motion, our flesh remains tied to it; our incarnation supposes it'.[11]

Klein's jump is a radical gesture because, in spite of the physical grounding forces and metaphysical forgetting of air, the man does not fall; he is pulled by the void.[12] Izzy's fall may seem radical because, despite the saturation of air with data, the digitalisation of life and space, the body that falls off a rooftop still crushes into the sidewalk in a most real and messy way. But there is another aspect of going aerial, which is perhaps the 'third jump' from the rooftop, and it is worth discussing it here. This 'third jump' has a well-known predecessor too: Aaron Siskind, who in the late 1950s and early 1960s produced a series of photographs entitled *Terrors and pleasures of levitation*. Doing away with a religious context that necessarily denies the body, but unlike Virilio and the phenomenological tradition, Siskind noticed the pleasurable aspect of being ungrounded. With him, the feeling of vertigo evoked by radical choreography such as levitation, is not of the vertical kind as described by Virilio and derived from falling, but rather of the entirely different one conceptually developed by Roger Caillois. For Caillois the sensation of vertigo offers the pleasure of abandoning old points of reference, or even finding oneself in a situation of lacking any stable point of reference altogether. As Caillois writes, vertigo 'consists of an attempt to momentarily destroy the stability of perception and inflict a kind of voluptuous panic upon an otherwise lucid mind. In all cases, it is a question of surrendering to a kind of spasm, seizure, or shock'.[13] Yet, for Caillois knowledge about 'unimportant' games offers important clues about basic cultural patterns of human behaviour of which the game of vertigo is not only a pleasurable

8
Virilio, 'Gravitational space' in *Traces of dance, drawings and notations of choreographers*, ed. Laurence Louppe, Editions Dis Voir, Paris, 1994, p. 44.

9
Virilio, op. cit., p. 52.

10
Virilio, op. cit., p. 52.

11
John Rajchman, *Constructions*, MIT Press, Cambridge Mass, London, 1998, p. 44.

12
It is significant that it was only in 1996 that Pierre Yves Clouin made a photograph of a man crashing to a sidewalk with the inscription: 'Yves Klein comes to rest June 6, 1962'. The latter is the date of Klein's death.

Le 6 juin 1962, Yves Klein se pose.

13
Roger Caillois, *Man, play, and games*, trans. Meyer Barash, The Free Press, New York, 1961, p. 23.

Aaron Siskind, from the series *Terrors and pleasures of levitation*, 1953.

sensation of disorientation but also of loss of self which 'one produces in oneself'.[14] This loss, however, in the contemporary context seems to be rather the end of well-defined but stiff form and the opening up of the possibility of becoming.

For Tom Tom, the character to 'go aerial' in *The Million Dollar Hotel* soon after Izzy, it is not the inevitable collision with the ground that matters, but the time he spends in the air. He is inspired as he actually goes with the flow of life and experiences the pleasurable discovery of true 'ungrounding'. This unique and fleeting moment makes Tom Tom see himself and his lively urban context in a way he never could have before. Tom Tom's trajectory, his total physical and emotional motility, allows him to see and feel with unprecedented and unexpected lucidity. This realisation of the promise of lightness – of being in air space and being like air – offers another level of perception and an alternative way of cognition that requires a significant shift in world view. Tom Tom's movement in the air, as a cognitive experience, despite the physicality of its fall, does not follow the predictable trajectory towards a certain mental destination; neither the pull of destination, as the pull of gravity inducing the dialectics (up/down) of vertical movement, nor the pull of the void are at work here. As Rajchman puts it, 'ungrounded movement is then the movement that is no longer bound to move from one fixed point to another but rather traces its own unbounded space through the trajectories or paths that it takes'.[15] And, yet, to go aerial means to gain suddenly full access to all the data that have always been around but were invisible and unprocessed. This intense experience provides Tom Tom with a glimpse of a dynamic perspective, multiplicity of selves, mobile points of reference, all at work simultaneously. His jump makes him experience air as filled with highly congested and overwhelming information.

Going aerial: air, art, architecture is a collection of visual and verbal materials on strategies of using air which have been developed in recent years by artists, designers, and architects, and commented on by cultural historians, philosophers, art critics and curators. The title emphasises the dynamic aspect of air and the increasing awareness of air as information space in which we actively participate on many levels. In this volume I do not really intend to provide an answer to the question of what air is – this has been thoroughly discussed in the context of the elements; I am rather concerned with investigating how air works and what it does. *Going aerial* consists of three parts entitled *Breathtaking, Air conditioning* and *Living aloft*. On a certain level they all blend because living is inseparable from breathing the air, which is always already conditioned. However, through their subtle

14 Caillois, op. cit., p. 12.

15 Rajchman, op. cit., p. 85.

specificities, each part can be considered individually. This collection does not offer a comprehensive aerial view of the subject, but prefers a participatory method. It is the result of my effort to look into coinciding individual attempts made by artists, architects and theoreticians to deal with air as information and material carrier, as conductor and catalyst of communication processes. The art works presented in this volume vary considerably in their formal aspects, which is absolutely symptomatic of the way we use air by our bodies and body extensions – ranging from machines, robots, site-specific sculptures, nomadic inflatables, bubbles, ambiances, atmospheres, to imaginary projects, futuristic and anticipatory. Some of the art works presented in the book are partially but literally made of air, which means, as Steven Connor notes, 'to be parted and permeated by what passes through it. It is to become a medium, a membrane, rather than a reservoir or resting place'.[16]

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<http://www.bbk.ac.uk/english/skc/atmospheres.htm>

The first section, entitled *Breath-taking*, focuses on the breathing process that is synonymous with information flows and communication practices. The omnipresence of air calls for a variety of access points such as airports, aerials and transmitters to pick up, generate, and process surrounding streams of data. Our body functions as the most archaic and the most basic of all human-related airports. It controls air flowing through the airways connecting external environment with alveoli, keeping balance between breaths, and if necessary, using protective reflexes such as coughs and sneezes to expel bad air. Breathing gives us a constant update on environmental conditions as real-time data processing. We can neither make up for missed air nor store up air for later, and we can hold our breath for a mere 1–2 minutes on average (or up to 8 minutes if you are a skin diving champion). Breathing must flow constantly and steadily; both hyperventilation and lack of air have severe consequences on perceptive abilities and are serious hazards to life. We become particularly aware of the breathing process pursuing meditation or practicing sports of which scuba diving is a good example.[17] In scuba diving, breathing influences the body movement in space. Respiration is loud and the exhaled air leaves the diver's body through its extension and forms bubbles that make the volume of the air used visible and point to the shortest way back to the aerial environment. The quantity of air compressed and stored in the tank is translated into a figure shown on a gage. We become aware of our body's location from the way we breathe not only when diving deep, but also climbing high – you never forget the first time that you climb as high as five thousand metres above sea level.

17
Spacewalking in a certain way gives a similar experience; therefore future astronauts train underwater.

Not all air that enters the body is used in the vital process of gas exchange. The alveolar dead space, the volume of inspired air not used for gas exchange along with 'used' air, serves another very important purpose. It is necessary in the vocal communication process as speech production requires specific amounts of exhaled air depending on the intended intensity of the produced sound. The presentation of *Bable.lab* by Nikolaus Gansterer and Constantin Luser, which launches the first chapter, brings up the complexity of speech-breath relations in an artwork set up as a 'test' designed for multiple air users cum interlocutors. The result is a recorded image of a dynamic space of information emission represented as speech bubbles 'in a constant battle to gain temporary "air sovereignty"'. The shared air space is also a space of exchange of what Sabrina Raaf calls 'unseen cultures' – actually the oral flora of our breaths. Her work *Breath cultures* shows how in conversation we exchange not only ideas but also biological material specific to the person and the moment of exhalation. But even exhaled air is really never 'used up' and useless since the waste of the human and non-human animals respiratory cycles is useful for plants. This symbiotic relation is monitored and translated by a small robot *Grower* also designed by Raaf. Sensitive to the carbon dioxide levels in the air this machine reads and translates data into a drawing that resembles spears of grass. Here the plant's growth is simulated and exists only as a stream of data picked up from the air and processed in the form of a drawing painted on the wall of an exhibition space. Constant communication between the involuntarily breathing bodies of the visitors in the exhibition space together with the data processing machine establishes a hybrid connection of the organic and the inorganic elements that simulate the living processes of yet another entity – the plant. Similarly, breathing as a function of a form of life-as-it-could-be is given visual and aural representation in Andrea Ackerman's computer animation entitled *Rose breathing*. The undulating rose exists as a result of a fusion of technology and nature; distinguishing between alive and not alive is no longer relevant. Thus, according to systematic definition, life is self-organising and self-producing (*autopoietic*), which does not exclude cellular automata, neural networks, artificial intelligence, and artificial life.

Easy access to information, mobile and wireless communication systems based on radio and infrared transmission are highly in demand and increasingly popular. We expect to be able to access information from anywhere at any time – sometimes accepting to lose some of the less prominent, but still important, informative elements inherent to unmediated conversation.

Christa Sommerer and Laurent Mignonneau designed a *Mobile feelings* device that establishes wireless communication of heartbeat and breath that is usually entirely lacking in cell technology. The speaker's breath is transformed into a light wind produced by a micro-ventilator. Although such 'dry' breath is deprived of the individual traces of oral flora, unlike the unmediated breath researched by Raaf, tactile experience of breath provides 'stronger connection and sense of presence between remote users'. Tactility is a characteristic of breath not often registered in situations other than intimate, although the force of inspiration and expiration is often used in everyday life, but not really considered as significant on any larger scale and in a broader context.

Scott Snibbe's interactive sculptures from the *Breath series* direct our focus to the impact of the individual respiratory activity, translating and reflecting it back to the observer or translocating it and transforming to a greater extent. Human breath becomes the air-wind of the environment positing a question about the existence of such a distinction in the first place. What, then, is really individual in the flow of a single breath? Marcia Tanner in her commentary on Snibbe's work notices that his *Mirror* is also an 'analogue for the magnified impacts of even our smallest actions on our environment' which, perhaps, makes breathing the most ecstatic aspect of the realm of the mundane, as our bodily airports are always in touch with something as large-scale as the atmosphere. This openness prevents bodies from defining their boundaries and assuming final shapes.[18] As Luce Irigaray notes: 'To live – to breathe: to become – to change/alter. An appearing that is always different within an air that continuously offers itself as other. And at a tempo of transformation that is too quick for reason, consciousness, and for any means man can master. At least in his present mode of presence. The animal that is ecstatic to himself'.[19]

The changing pattern of breathing is perceived not only as information about the general physical condition of the animal and human body but also about the emotional state, or even, in the case of human beings, about spiritual development. Georgios T. Halkias in his article 'Between breaths' considers respiratory-related beliefs and techniques that are closely associated with religious, philosophical and medical concerns and practices observed in cross-cultural perspective. The power of breathing that reveals itself in the universally known practices such as praying or blowing sacred instruments is particularly elevated in Indian and Indo-Tibetan Buddhism. Moreover, as Halkias observes, the 'experience of breathing signifies primarily a meeting with ultimate reality: when one trains with breath one becomes conscious of

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In reference to the Deleuzean concept of indefinite body Rajchman writes: 'One might speak of a principle of the indefiniteness of the body: each of us has *a* body in this indefinite sense, each of us is *an* anybody or is capable of becoming anybody. The indefiniteness of corporeal being is thus impersonal yet quite singular; to have *a* body, to be able to become anybody, is in fact what is most *peculiar* to each of us, even though it never reduces to anything particular about us.' Op. cit., p. 88.

19
Luce Irigaray, *The forgetting of air in Martin Heidegger*, trans. Mary Beth Mader, University of Texas Press, Austin, 1999, p. 164.

the Self (*atman*), or penetrates into the very essence of life and the cosmic elements, or last, between breaths may come to recognise a subtle sensibility noted in the heart that transcends it all'. Our bodily and mental existence is conditioned by the necessity of breathing, by the rhythm of breathing that influences perception and is always correlated with our emotional shape and by the anticipation of the last breath. In the calm states of mind in the stable and favourable environmental conditions or in the spasmodic gasps of rage, orgasm or a high altitude environment, we breathe for our lives whatever forms they may assume.

Air conditioning, the second part of this book, is concerned with air that is synonymous with the living space. Conditioning air also means augmenting, enhancing or just creatively using physical living spaces. Agriculture, urban planning, architecture, interior design, electronic technologies, and the like all condition air according to human politics and economics. And yet air space is conditioned by factors not really controlled by humans such as weather, the day and night cycle, cosmic radiation, and so on.[20] The 'invisible' data can be monitored and translated into visual, sonic, tactile or olfactory information. But air conditioning also means creating mental atmospheres that can be friendly, hostile, spiritual, exciting, boring, and so on, which is actually as important as the healthy amount of oxygen in the air. Our body and its extensions, such as mobile devices we constantly carry with us, monitor the air, searching for the optimal conditions for receiving and transmitting data.

This chapter explores the relations between bodies and spaces, architecture-as-software, air exchange between buildings and the outside environment, how spaces respond to the air users, how buildings open and close, the way they breathe or can suddenly turn into clouds of dust. The artworks presented in this chapter are high-tech and low-tech augmented spaces, flexible bubbles, inflatables as well as conceptual projects of curious air conditioning devices and fantastic architecture.

Lev Manovich observes that 'architects now have the opportunity to think of the material architecture they are normally preoccupied with, and the new immaterial architecture of information flows within the physical structure, as one whole', or in other words, 'the design of electronically augmented space can be approached as an architectural problem'.[21] Usman Haque's work provides an excellent example of this in his concept of 'architecture-as-software', which is 'an architecture that can only exist in time, an architecture that is a choreography of sensations, an architecture that both changes over time and responds to

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In some ways the weather (climate) is influenced by humans; for instance global warming is a result of human activities that change the composition of the atmosphere.

21
Lev Manovich, 'The poetics of augmented space: learning from Prada' <http://www.manovich.net>

changes in time'. Similar to Manovich's augmented space, Haque's architecture is thought of as software programming that operates within the existing hardware structure made of traditional building materials of high endurance and little flexibility. Here air is designed to carry aromas and sounds, to be penetrated by light and effected by the electromagnetic fields – all necessarily contributing to our living environments. As Haque suggests, this 'soft architecture' operates as the 'open source' system that encourages the users of the space to abandon their passive roles and to take the opportunity and liberty to design-condition their own living spaces. Haque discusses four examples of his own architecture-as-software projects developed in recent years. *Scents of space* is an interactive olfactory system generating 'zones of fragrance' with dynamic borders that allows the visitors who move in this space to create *smellscapes* and aromas specific to the very moment and location. The air space is the info space filled with data processed by body and computer. This piece makes one realise that odours proper and pheromones – airborne chemicals – still play a significant role in communication processes despite the degradation of olfactory perception that is a consequence of the high status of sight and, more recently, of mobile technologies. In the urban environment, smells are controlled and often deceptive but still, to some degree, play a role in understanding a space. *Haunt*, another piece by Haque, draws attention to the subjective perception of space and in particular to the space evoking the uncomfortable feeling produced by means of 'humidity, temperatures and particular electromagnetic and sonic frequencies that parapsychologists have associated with haunted spaces'. *Sky ear*, another project concerned with wireless communication, draws specific attention to the omnipresent electromagnetic fields created by mobile phone technology, which, although invisible to the eye, are recognised and very well mapped in our living spaces. Again, *Sky ear* makes us realise that air space is certainly not a void; on the contrary, it is saturated with data in constant circulation to which we contribute by making mobile phone calls and sending text messages. But to what degree our space is congested with data remains debatable. Manovich argues that 'GPS, wireless location services, surveillance technologies, and other augmented space technologies all define data space – if not in practice than at least in their imagination – as a continuous field completely extending over and filling in all of physical space'. He adds: 'it is important, however, that in practice data spaces are almost never continuous: surveillance cameras reach some spaces but not others, wireless signal is stronger in some areas and non-existent in others, and so on'.[22]

[22] Manovich, loc. cit.

For those tired of data congestion *Floatables*, designed by Haque, would provide instant relief. These curious imaginary devices serve as antidotes or rather protective shields to data-saturated urban environment and express a desire for anaesthesia, for a blind spot extended to all senses. *Floatables* provide niches of data-free space created for temporary indulgence in truly private space. Their protective invisible shields allow, at last, Serres's and Klein's dreams to come true, and experience the state of being untouchable, invisible, disappearing.

What is the locus and the status of private spaces within public space? Can we translate private space and public spaces into private and public access to data? As wireless community networks become increasingly popular, leaving free access points for others gradually becomes part of a new etiquette. Conversely, air resplendent with information invites ambiguous practices such as wardriving, warwalking, warbiking – efforts aimed at detecting and using unprotected wireless networks. But parasitical use of 'air-borne resources' is not limited to practices requiring prosthetic electronic mobile devices and has its low-tech versions. Michael Rakowitz's *paraSITE* challenges the free use of the hot air that is a thermal contribution to the public 'sphere' of air. His parasitical, inflatable shelters for the homeless make use of hot air that is 'exhaled' by the air conditioning systems of buildings. This thermal quality of 'used' air, considered a waste in the first place, curiously remains unimportant as long as nobody makes use of it. Otherwise, this very air becomes an object of social and political concern. Although *paraSITE* does not provide an ultimate solution for the homeless, it gives a visible form to the hopeless politics of air conditioning of the urban environment shared by those with and without homes. *Rise*, another work by Rakowitz, explores the use of smells in designing space. For this olfactory piece Rakowitz transported a *smellscape* of a bakery to the gallery space giving the (visual) art space a new 'topography'. Air, conditioned by the bakery located in the same building some floors below, allowed the visitor to relate, at least to some degree, to other functions of the building. It became apparent that neighbourhoods tend to be networks – the Chinese bakery located in Chinatown conditions the gallery space located in the same building. The third work by Rakowitz, *Climate control*, also deals with how the art gallery relates to the exterior. This piece is an ironic comment on the poor thermal conditioning of air, which in the case of the gallery space affects not only people but also artworks. *Climate control* machine-monster installed in PS1 in New York City completely engulfed the gallery room, becoming a totally self-referential system fusing thermal qualities of the

indoor and outdoor climate purposefully 'wasting' heat to make the interior filled with more user-friendly air.

Weather, one of the air conditioning factors least controlled by humans, cannot be managed or even immediately influenced; accordingly, it is heavily monitored by radars, satellites, weather stations, and so on. Weather conditions are translated to flows of data and processed into visual representations, which allow the weather forecasts to be constantly updated and sent to mobile phones, desktops, and TV screens. Steve Heimbecker's *Pod* (*Wind array cascade machine*) offers a translation of a weather factor. It simulates the motion of a field of grain evoked by the 'wind that carries within it, all of the vibrational, spatial, and temporal architecture of its travels'. For this piece data are collected from the 'open air' and translated by computer and used to represent wind by means of light in the gallery space. While the atmosphere on earth remains an incontrollable vast mass of air, the 'indoor atmosphere' can be influenced. François Perrin is interested in designing 'indoor weather'. His 'air architecture' work *Climate 1*, similar to Haque's 'architecture-as-software', is built with humidity, odour, heat, light, air flux and 'activated in the already existing building'. But unlike Haque, who is designing experimental and often extremely conditioned spaces (e.g. *Haunt*), Perrin is interested in creating optimal climatic conditions that are applied to gallery, private and work spaces. *Weather station*, another example of his 'air architecture', serves as a prototype for the environment which is built on the basis of selecting particular climatic conditions such as heat, rain, pollution, and uses them to achieve the desired microclimate. Finally, *Weather garden* investigates this aspect of the space that is actively formed, or rather performed, by people living in it. Perrin calls it the 'inverted architecture' or 'a garden of air' exploring perception of the non-visual realm.

Luce Irigaray maintains that 'air does not show itself. As such, it escapes appearing as (a) being. It allows itself to be forgotten even by the perceptual ability of the nose. Except in cases where human activity has fabricated the air to begin with'.[23] Ann Veronica Janssens' mist sculptures conceptually overlap with Haque's architecture-as-software and Perrin's 'air architecture', but unlike their pieces, hers explore air visually. Using mist Janssens 'fabricates the air', bringing invisibility into the realm of the visible where dense and odourless fog offers the solution for the eyes trying to observe air. In the text about Janssens' mist sculptures Hans Theys focuses on volatility, the temporal character and the spectators' direct and necessary involvement in these works. The latter aspect he emphasises by allowing

23
Irigaray, op.cit., p. 14.

numerous voices of those who had a chance to experience the mist sculpture to share their observations with the author. Even though 'everybody has an idea about what mist is', as one of the visitors states, the perception of the space of the sculpture varies. For one person 'the things and the space seemed to become intangible'; for somebody else, the sculpture gives the impression of adding 'a sort of pigment to the air'. Jarosław Kozakiewicz also uses mist in his utopian piece *Cloud maker* which is a building employing a defence mechanism similar to that of an octopus, but modified for the air environment. The building puffs clouds of vapour to obscure the view, which invites people to hide or run away. But a building, unlike the octopus, cannot easily change location and so, paradoxically, the ephemeral and amorphous cloud veiling gives the monumental architectural structure the sense of fragility. Besides, this cloud may be also taken for smoke that has long ago lost its positive connotation in the urban environment. It is no longer a lively sign of human dwelling, but rather a symptom of disaster. Smoke as a signal, which traditionally offered a very limited form of communication, now seems to hint at danger. Steve Connor in his text 'Building breathing space' points out that *pyrophobia* always grows as buildings and urban spaces expand. The deadly spectacle of buildings consumed by fire may take form of a fireworks explosion, but unlike this ancient entertainment, it leaves clouds of choking smoke and dust. As Connor notes, 'when a building is turned to dust, blown to smithereens, the walls and the air sealed within them violently collide and collapse, to create a compound, particulate air full of dust, a dust full of air'.

Oxygen towers, buildings designed by Kozakiewicz that so far exist only as computer animations and models, are meant to provide the optimal breathing conditions within urban environment. In Connor's terms, they are a built 'breathing space' par excellence serving and supporting us whose urban breathing environment becomes more and more polluted, asthmatic and deployed of oxygen. As 'buildings are said to be like bodies', the *Oxygen towers,* formally inspired by the tree-like shape of trachea and our respiratory dependence on the green world, look like lungs. Similarly, Dominik Lejman's *Breathing cathedral* recalls the well-established connection between bodies and buildings; it is a visual simulation of the respiration process of the monumental rib cage of a Gothic cathedral. Yehuda Safran, referring to Lejman's piece in his text 'The dome and the spirit', maintains that 'it is never easy to breathe under a Gothic curved-rib ceiling. With one's body hemmed in, we become so narrow and tall, being drawn inexorably towards impossible altitudes – an infi-

nite well beyond the thin voile we call our body, house of bones, our finite breath – our lung in its rib cage no longer has room in which it can move freely'. Breathing then is ecstatic in the sense that it allows us to participate in something bigger than ourselves. It keeps us necessarily open to what is more than we can confront, perhaps more than we can process. However, this sequence of infinite openings and closings of rib cages, or perhaps individual breaths, may extend in all possible modes and directions bringing up the idea of Leibniz's world where 'each portion of matter may be conceived as like a garden full of plants and like a pond full of fish. But each branch of every plant, each member of every animal, each drop of its liquid parts is also some such garden or pond'.[24] Therefore, our own breath is always a part of some greater exhale as much as it contains infinite sequences of other breaths, or rather, countless breaths of others.

24
Leibniz, *The monadology* (1714), section 67.

An abysmal aspect of breathing architecture is also explored by Pablo Reinoso, but his inflatables, creating mirror illusory infinity, are actually enclosed spaces that resemble air bubbles. As Laurie Hurwitz points out, 'the inside is magical: you're plunged into an abyss, a shimmering, silvery pool of light; the floating, detached head, drowning in the distance, is actually your own reflection in a mirror'. *Le cabinet du dr. Lacan*, *La parole* and *L'observé* are specifically air conditioned interiors with a restricted access; as freestanding structures they can also be viewed from the outside. Although the perspectives of the (inside) users of these spaces and the (outside) viewers are very different, the experience of a certain tension is the same for both because, as Hurwitz notices, these 'inflatables create a sense of uneasiness, putting the viewer on permanent alert, as if to await the moment they might leak, deflate, or explode'. People within the bubbles participate in the double airborne communication process, they breathe 'the same' air and as speech conducts emotions, perhaps they create extreme (air) conditions for themselves.

'It's hard not to freak out while you're in midair. You just have to stay committed', instructs Timmy Reyes, O'Neill Surf Team rider.[25] Gravity is indeed one of the major air conditioning factors not only holding the atmosphere tightly around the planet but also determining the way we think. It gets special attention in the third part of this book entitled *Living aloft,* which is concerned with attempts to deny the pull of gravity, to overcome the primacy of the up/down direction, to explore microgravity environments as well as new possibilities of movement. All this is symptomatic of a 'new geo-logy'[26] leading from predictable verticality to Caillois' multidirectional vertigo, and giving evidence

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<http://www.ehow.com/how_12909_aerial-shortboard.html>

26
The term 'new geo-logy' has been borrowed from John Rajchman, op. cit., p. 51.

of a radical change in the perception of aerial movement and the spatial arrangement of bodies and objects. But is this shift really possible just as a 'matter of the priorities' we choose? John Rajchman inquires, 'can we put ungrounding first, analysing the relations between grounds and forms, grounds and identities, in terms of the potential for free ungrounded movement that is always virtual in them?'[27] *Living aloft* consists of the materials that suggest this radical shift is already taking place, as is evident in numerous recent art practices.

27
John Rajchman, op. cit., p. 89.

The significance of 'putting ungrounding first', of enabling us to live aloft, cannot be overestimated because, as I already discussed, traditional Western culture focused mainly on solids and has been obsessed with falling, reducing air to nothing more than a direction in space defined by gravity-induced vertical movement. Michel Serres, who situates the economy of rising and falling within the pictorial tradition of seraphs, states this clearly: 'for us to imitate these perfect seraphic upliftings … inevitably also involves descents and eventual falls, as delayed or retarded as may be …'.[28] But since such trajectories are predictable and the movement controlled, the 'new-geological' choreographies and spatial locations obey a different logic. Raaf's series of photographic works, *Test people,* apparently provides a test for our own mental ability to shift priorities regarding spatial trajectories of body locations. This imaginary world, with the exception of some humans who seem to have the capacity to control gravity, looks identical to our world of the everyday. But the unconstrained spatial movement of bodies (of the 'test people') reveals the awkwardness of the gravity-based architecture of our customary domestic environments. As Raaf points out, 'testing the environments, interiors, possible tensions, difficulties, impossibilities' may lead 'to vacating spaces due to their incompatibility to the new capacities of the people'. Just as the 'test people' who impose their extraordinary abilities stretch our expectations of the routine choreographies performed in our mundane habitats, some highly technologically enhanced environments impose their conditions on 'regular' bodies. For some time now, people have indeed inhabited microgravity environments, living literally 'up in the air'.

28
Michel Serres, *Angels: a modern myth*, Paris, New York, Flammarion, 1995, p. 216.

Advocating the importance of the lunar and orbital perspective on Earth, Virilio – who is fascinated with astronauts (not with angels, as Serres is), and particularly with the Apollo 11 mission – is not willing to renounce the principle of vertical falling, even when he talks about travelling into space. Curiously, for this type of movement he developed the term 'falling upwards'. Buckminster Fuller, on the other hand, fighting such convictions, com-

plained about the oversimplification demonstrated by a 'not so enlightened public'. He recalled that 'the President of the United States, as most typical of society's geometrical illiteracy, congratulated the 1968 Christmastime astronauts for going up, to, around the Moon and back down to Earth.' Fuller's disappointment went much further when he added that 'even scientists still think they 'see' the Sun 'going down' at twilight. And everybody goes on thinking and talking up and down unreality'.[29] The vertical trap is omnipresent and the pull of gravity affects our minds as much as our bodies. Thus Virilio sees the possibility of reaching orbital speed and escaping gravity as a rather disturbing experience of losing the stability of the ground in its physical and mental aspect. 'Reverse vertigo', as he calls it, 'may well force us to change the way we think about the landscape and about the human environment', but most of all, it is a source of distress.[30]

Nevertheless, such attitudes are certainly no longer evident among contemporary artists and critics working with and in the microgravity environment. In contrast to Virilio, Annick Bureaud takes an entirely different perspective on the matter, writing about freedom from gravity and weightlessness experienced as joyfulness. For her, weightlessness shapes our perception not only in the physical way but also intellectually, conceptually, and emotionally. She analyses work of such renowned microgravity artists as Kitsou Dubois, Frank Pietronigro, Pierre Comte, Arthur Woods and Takuro Osaka. Away from the atmosphere, we can still survive if inhabiting a space station or space ship bubble of air (which is one of the most highly data congested living spaces), where truly ungrounded movements are as usual and necessary as the process of breathing. Yet the condition of weightlessness, which does not suppress gravity but cancels its effects, being in many ways similar to Siskind's imaginary state of levitation, may evoke the feeling of (non-vertical) vertigo. For Caillois, vertigo-inducing machines were roller coasters and spinning wheels of the theme park amusement variety. For us the ultimate vertigo machines would be more likely space shuttles, space stations and planes in parabolic flight producing a microgravity environment that allows all solids and liquids to be in the air in constant flow rather than constant fall.[31] And yet, as Caillois suggests, 'it is the whole body which must submit to such treatment' to achieve the effect of vertigo, and the vertigo may equally well induce a feeling of play and an overwhelming 'refusal of the rest of reality', as a feeling of sudden panic. Frank Pietronigro is convinced that the experience of microgravity offers a chance for a radically altered perception of one's body and space: 'My body experienced a literal physical expansion in liberation from the

29
Buckminster Fuller, 'Vertical is to live, horizontal is to die', *Your private sky: discourse R. Buckminster Fuller*, ed. Joachim Krausse, Claude Lichtenstein, Baden, Lars Müller, 2001, p. 285.

30
Paul Virilio, *Open sky*, trans. Julie Rose, London, New York, Verso, 1997, p. 2.

31
But as Judith Palmer notices: 'Weightlessness is essential freefall. The moon, our hundreds of man-made satellites, the international space station and the astronauts living upon it, are all in a state of freefall, but instead of falling vertically downwards the centre of the earth, drawn by earth's gravitational pull; they are falling on a curved course (or orbit) around the earth.' J. Palmer, 'Achieving levity,' in *Zerogravity: a cultural user's guide*, ed. Nicola Triscott and Rob La Frenais, London, The Arts Catalyst, 2005, p. 26.

constrictions of gravity. I believe that the boundaries of my body were in fact expanding at all corporeal levels of existence, including the subatomic. It is my hypothesis that literal, physiological expansion prompted my sense of an ex-pansion of consciousness. I felt chills at the diffusion of what appeared to be my external boundaries as I floated in weightlessness. My feelings of physical expansion in weightlessness helped fracture my sense of containment within my body's external boundary … I became breathless while experiencing a sense of awe during those next few timeless moments … My point of view was never fixed but constantly shifting and changing'.[32]

Unlike Virilio and the traditional phenomenological *geo-logy* of air, which claims that gravity is a primary source of our identity as terrestrials, that is, 'men and women of the earth's gravity, not of the moon's gravity or of who knows what other planet's gravity',[33] Rajchman calls for a 'new geo-logy' where the earth is no longer seen as what anchors or grounds us, but as what releases in the midst of our multiple material manners of being other light, dynamic spaces'.[34] Tomas Saraceno's works from the *Air-port-city* family share these 'new geo-logical' convictions as they are utopian projects of habitats that float in the air. Some of these cloud like structures fluently changing form are capable of fusing and joining each other in their cirrocumulus nature and continuous mobility. Such habitats contest not only Virilio's concept of identity, but also, as Saraceno declares, political, social, cultural, and military restrictions of today. Earthly gravitational and arboreal order no longer subordinates the habitat which is, at least partly, made out of air and moving in the air. Once graviotropism is gone, no roots constrain movement and routes are not limited to the vertical axes, as in the case of *Flying gardens*, or other *Air-port-city* family members. These inflatable structures accommodate air plants (*tillandsia* species) that do not require soil to grow but take all the necessary nutrients directly from the air: water brought by humidity, nitrogen produced by lightning. Almost unrestricted access to air encourages migration of plants, animals, and people, and as Saraceno remarks, it is a dream possibility for any 'biotype to lift off and fly around the world on solar energy'. A smaller spatial habitat is required for *artbots*, designed by MxHz, which are actually *airbots* as well. They dwell in the air mimicking a swarm of insects or a flock of birds moving individually but maintaining internal communication. The latest version (the third generation) of *artbots* is used in performances entitled *Thoughts go by air,* which demonstrate how the flying *artbots* react to environmental conditions, signal their trajectory and produce sound. The ambition of MxHz is 'to build a mobile, responsive,

32 <http://www.pietronigro.com/space/o8a.htm>

33 Virilio, op. cit., p. 39.

34 Virilio, op. cit., p. 50.

behavioural, environmentally conscious, and essentially audio-visually perceiving, artificial species able to create (maybe for the first time in history) a responsible art for all humans, animals and machine'.

But are we already, perhaps, in a position to say that what was once an unavoidable gravitational identity for all corporeal forms is no longer relevant in a highly mobilised world of information flows, and must give way to a fully embodied but aerial or even inspirational identity? This conspiratorial (co-breathing) condition, where 'inspiration is identical with conspiracy' (as Ruud Kaulingfreks and René ten Bos observe) is no longer limited to the human world. Finally it seems to cross the boundaries and increase our post-anthropocentric awareness, which perhaps will help us think about animals and plants not only in terms of their immobilising weight or graviotropism (and therefore inertia), but rather as other users sharing the same dynamic air space with us. 'The person who is inspired meets some sort of otherness, be it a person, a sound, a landscape or whatever, and allows themselves to flow with the gust which this otherness generates', Ruud Kaulingfreks and René ten Bos maintain in their text 'Inspiration and togetherness'. Inspiration, then, is a condition of life, and the inspirational relationships are the very basic forms of togetherness which 'are doomed to die without pneumatic technologies breathing in new air'. This new relationship is viewed in terms of opening up compatibility rather than tightening competition, and it may concern not only living organisms such as humans and nonhuman life forms but also, in some sense, dynamic spaces and flexible architectural structures. Therefore the experience provided by Saraceno's installation *On-air*, of allowing visitors to the gallery to be suspended in the air of the breathing building, is an inspiring example. 513 m^3 of inhaled air can lift up and 'release you from the earth and bind you to the others'.