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Dark Space

Ambient production and the problematisation of the subject-object relationship

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Abstract. *The history of habitat production is that of the blurring of the polarisation between subject and object. Challenging such bold differentiation not only has been questioned in the philosophical field, but has also led to new understandings of contemporary architectural space. It might lead in many cases to an ambient understanding of habitats, and also to ambiguous categories relating ambiance and self. Two key concepts will be reviewed for that matter. An ambient-object would stand for the dissolution of the object within its medium, while an ambient-subject would correspond to the bodily and psychological affection of ambiances through assimilation.*

Keywords: *ambiance, dissolution, assimilation, subject, object, hyperobject*

The history of habitat production is that of the blurring of the polarisation between subject and object. Challenging such bold differentiation not only has been questioned in the philosophical field, but has also led to new understandings of contemporary architectural space. It might lead in many cases to an ambient understanding of habitats, and also to ambiguous categories relating ambiance and self. Two key concepts will be reviewed for that matter. An ambient-object would stand for the dissolution of the object within its medium; an ambient-subject would correspond to the bodily and psychological affection of ambiances through assimilation.

Dissolution

Nowadays the role of the architectural object has changed dramatically, to an extent that sometimes its very identity and the way we experience it have been redefined as ambient. Ambient-objects can be speculated as the new corporeal entity we inhabit. The 'Five points of Architecture' (Le Corbusier, 1926) should not be interpreted any more as the generic structure where components are implemented, but a structure where multiple effects emanate, clouding a space around it where users are trapped. Hungarian architect Nicolas Schöffer developed these ideas in his book *La ville cybernétique* (1972), exploring an architecture based in the relationship between ideas, objects and effects. For him objects have an exclusively intermediary role, giving way to effects, where the true agency of architecture lies. He explored what he called 'non-objects' the same way Böhme (2001) used the term 'semi-objects'. Both terms refer to a mid state of things where their capacity to expand

into their medium transform them into something else. Such entities destabilise the distinction between object and subject, environment and inhabitant, exciting a shared medium: *ambiance*. Böhme would describe this process with the term 'ecstasies of things'. For him, *ambiance* production is the creation of conditions for a phenomenon to happen, not the fabrication of an object. He called these creators of conditions 'generators' or 'condensators'. As Kipnis (1997) puts it, condensators come out of themselves in a *cosmetic explosion*. Cosmetics transcend ornamentation in an autonomous erotic camouflage that sublimates the object's skin 'as fields, as blush or shadow or highlight, as aura or air'.

Based upon the conflict between the two aforementioned architectural components, a definition of architecture can be proposed: *architecture is the production of ambient effects*. The conflicts between the two (structure and effects emanating from it) have influenced the ever weight-lighting; anti-gravitational and performative drives of modern architecture, finally leading to a contemporary state of atmospheric convergence of structure and effect. What we recognise as simple objects are on its way to progressively turn into a hyper complex atomised entities. A rough genealogy of such particular self-deprecating objects would begin with all kinds of effect machines built at the 18th century: from ambient-probing artifacts such as the Gocchi d'aqua rainbow-producing fountains to the first examples of visual music instruments; from the Smoke Machine by Étienne-Jules Marey (1901) to the Cloud Chamber discovered in the fifties... and finally the modernist experimentation of light-space modulators: from Moholy-Nagy's Light-Space Modulator (1922-1930) to the Ricoh Pavillion (1970) by N. Sekkei.

Ambient Intelligence (AI) is the technology that has taken this process further. Sensors interact with space, and they do so autonomously: not in search of a specific human response, but in search of other objects, like a space probe travelling indefinitely across outer space, pulsing with information. 'Now objects perceive me', Paul Klee wrote in his diaries. In a mutual subjectivation, we look at the walls and the walls look back to us with their cameras and sensors. Architecture sees everything.

Sensor units organise in networks of all kinds. Let's imagine for a moment we are floating in space, contemplating the Earth. We could see it surrounded by a swarm of particles, debris and satellites. Entering into earth's atmosphere, we would occasionally penetrate through a cloud of wireless sensing particles that monitor air conditions. Over the water surface, a network of more than 3.000 floating sensors is scattered around the oceans (the Argo project, the first civilian use of military sensor networks) registering data of the upper strata of the ocean's water. Resuming our travel, we are now inland. In the coastal woods, we observe another sensor network monitoring its ambient conditions, like the one at San Jacinto Mountains in California. We stroll the city streets now. We are surrounded by a myriad of network systems that control and coordinate its proper functioning. Finally, sitting in a lab, we watch through a microscope and see in detail one of those tiny sensors called 'motes', as in a mote of dust... This imaginary travel illustrates how sensor networks represent a big leap towards the production of active ambiances. As it is the case in the development of atmospheric technologies, military engineering is responsible also for the awakening of sensing networks dedicated to control and surveillance tasks. In Sloterdijk terms, the same way the inception of air design consisted in using air as a toxic weapon, sensing ambiances begun as a military project of atmospheric surveillance. They are warrants not only of the compatibility of life with atmospheric

conditions (chemical, biological, energetic, etc.) but also an omnipresent environment-surveillance device.

Active units distributed in space are a new form of spatial densification where air is occupied with components that expand its properties. Ambiance shifts from *res extensa*, the ether bristled by exuberant energies, to the incarnation of *res cogitans*, an atomised space where every active unit acquires specific features. This is the basis for a new architectural format: an atomised space where structure is organised in components so small that virtually coincide with space itself. Structure and effect are about to finally converge.

In the last years of the 20th century, nanotechnology specialist Storrs Hall surprised everyone with a new kind of atmo-material. The same way fog is a paradigm for atmospheric architecture, Hall used the concept *Utility Fog* to speculate with a swarm of nano-robots (called 'foglets') that could adopt any material configuration. Each foglet featured twelve telescopic arms, corresponding to the twelve sides of a 10-micron dodecahedron. Unlike common fog, the components of this artificial mist did not float in the air, but formed a mesh thanks to its elongated connectors (Hall, 1996). If all units rest with maximum separation, the fog would be invisible. If they'd concentrate, they would be visible. Any intermediate state could be reached. Any material effect and change of state could be achieved. Utility fog is a scientifically plausible meta-material, a programmable continuum offering the possibility of an intelligent space. Although such 'absolute material' is a scientific theoretical proposal, it actually is a key reference for today's wireless sensor network development. For example, projects Smart Dust (Berkeley University) and Smart Sand (MIT) consist in tiny autonomous sensing units able to distribute in space and interact with it. Thanks to the progress of miniaturisation technology, natural atmospheric materials such as fog, dust, sand (and their mechanical doppelgangers) will actually turn into fully artificial and autonomous ambiances. Now let's recall Moore's law: the integration density of silicon-based technologies doubles every 18 months. After being confirmed for more than four decades, an integral ambient impregnation with technology seems far from unreasonable. Therefore AI development will mark the limit of ambiance manipulation in a not so distant future, adding up another layer to the anthropotechnics that triggered the geological time marked by the manipulation of our medium and the terraforming of Earth (Morton, 2014, pp. 1-8).

Sensing atmospheres form a collaborating milieu of which we can only perceive local effects. Such 'hyperobjects', as named by T. Morton (2013), distribute extensively in diverse scales in time and space. A field of fossil fuel extraction or the sum of all nuclear residues or the Argo network belongs to this category. As we'll see, hyperobjects relate directly to ambiance production. L. Bryant (2010) describes them in precise immersive terms: 'Hyperobjects are (...) like our experience of a pool while swimming. Everywhere we are submersed within the pool; everywhere the cool water caresses our body as we move through it, yet we are nonetheless independent of the water. We produce effects in the water like diffraction patterns, causing it to ripple in particular ways, and (water) produces effects in us, causing our skin to get goose bumps'.

Like the water on the swimmer's skin, hyperobjects inevitably adhere to us. They leave a mark without us noticing, a feature that Morton calls 'viscosity', what other authors call 'involuntary assimilation' or 'summersion'. We feel the rain cold drops in

our faces, but this is only a local manifestation of some entity that is impossible to see as a whole (namely global warming). We do feel the buzz of a presence sensor when entering a building, but it is only a local manifestation of a vast smart sensor network covering the entire city.

Assimilation

From the phenomenological point of view, ambiance production could radically change our relation to whatever is around us. The implementation of sensing ambiances could be useful and even emancipating, but also devalue our perception of things as we know them. When designing intelligent environments, some authors claim the necessity of 'providing new sensorial points of contact between us and our medium' (Verbücken, 2006). In an article that inquires the ethical implications of ambient intelligence, computer science specialist A. Araya presents them as potential attempts to eliminate the 'otherness' of certain aspects of the world by means of the penetration with computational technology in our habitats. And, what is more important, without us noticing it. Therefore, the absence of exteriority would imply a generalized process of technological involuntary assimilation. Ambient wise, it would abolish the differentiation between humans and his surroundings: 'By this weaving of extensions of ourselves into the surroundings, significant parts of the environment lose important aspects of their otherness and the environment as a whole tends to become more and more a subservient "artifact." In this sense, "the surrounding world has almost disappeared" (Araya, 1995). Likewise, Morton (2013) challenges the notion of "environment" itself, dismissing it as an anthropomorphised concept that fictitiously allows us to think outside the network of objects and their interrelations. "Environments" cannot be outlined like a background where foreground species and things manifest, because all its components form a vast mesh of relations with no possible hierarchy. The more we know about those relations, the more difficult is to conceive an independent medium. There is no "container" where discreet realities exist, nothing beyond or behind the interrelated set of objects.

Likewise, "nature" is a highly complex anthropocenic production where it is progressively difficult to know what is not derived from human action. Ambiance production makes progressively more difficult to differentiate ambiances from dwellers. Ambiances might turn into predatorial open-ended mediums: we are engulfed in them and are not able to distinguish their limits. Our lives unfold within the vast network of object relationships and reciprocal effects. Ambiances (understood here as hyperobjects) put us in a total interiority where we navigate through a plethora of seducing effects. Dissolution leads to assimilation: "With utility fog", Hall (1996) writes, "the physical world is mind". Thus ambiance production not only affects the extracorporeal space but the corporeal one too. Any object dwells in the interaction between these two spaces. When properly metabolised, ambiances physiologically affect their dwellers.

Reciprocal medium-subject fagocitation has been studied in diverse fields. The psychophysiology of darkness is one of them. We've all experienced darkness. Inside a dark room we confound ourselves with the shadows, left alone with our thoughts. In total absence of light we feel blind.

For Maurice Merleau-Ponty (1945) light space is penetrated by dark space. In it, "our perceptive being, cut off from its world, evolves a spatiality without things". Dark

space “is not an object before me; it enwraps me and infiltrates through all my senses, stifling my recollections and almost destroying my personal identity”. Later in this passage the author recalls French psychiatrist Eugène Minkowsky (1933): “(night) is pure depth without foreground or background, without surfaces and without any distance separating it from me”. He finds a productive, positive, side to darkness. It has a “more material” side than her bright twin. Darkness “touches me directly, envelops me, embraces me, even penetrates me, completely, passes through me, so that one could almost say that while the ego is permeable by darkness it is not permeable by light”. Dark space is a live entity, “like an opaque and unlimited sphere wherein all the radii are the same, all having the same character of depth. And this depth remains black and mysterious”. Night is a totalising interior. For the psychiatrist, schizophrenia patients describe their experiences as the simultaneousness of their surroundings with another obscure space that moves across it, intersecting it, stretching out and growing infinitely: “the air is still there, the air between the objects in the room, but the objects in themselves are not there.”

Both Minkowski and Merleau-Ponty are mentioned in a text that Caillois wrote specifically on dark space. *Mimicry and legendary psychastenia* (1935) relates certain psychopathologies with animal mimetic mechanisms, describing the way personal identity dissolves with its surroundings in magic, mimicry, night space or schizophrenia. Caillois gives spatial assimilation a new point of view, namely a process of spatial generalization. Interior (psychological) and exterior space (atmosphere) can no longer be distinguished. Again following Minkowski, for those who suffer a crisis of legendary psychastenia “space constitutes a will to devour. Space chases, entraps and digests the in a huge process of phagocytosis. Then, it ultimately takes their place” (Caillois, 1935). Likewise, mimicry is also a kind of spatial temptation, a vanishing act between the animated and the inanimate. When an insect mimics its surroundings, it is not no longer the reference center. It suffers a state of generalised similarity. It is what C. Bishop (2005) defines as mimetic engulfment in the context of art practice. Here an eclipse of the viewer takes place, a kind of spatial hypnosis. The idea of the subject as central and stable entity is problematised. The sense of presence in space is finally fragmented and consumed.

Spatial assimilation might also happen also in atmospheres that have been intentionally manipulated. There are many examples of it in contemporary architecture and installation art: pavilions that use water mist as immersive medium; light and oxygen-infused spaces that mimic certain atmospheric national identities; guerrilla rave-like installations that combine surround sound, stroboscopic and pulsing light to induce hallucinatory perceptual experiences; cloud-objects floating inside the gallery space. Ritualised and spectral spaces where almost complete darkness, mist, smoke or other chemical substances destabilise the perception of the self. Primordial soups containing alternate worlds. Intoxicating fogs, Art fogs, color fogs, edible fogs, utility fogs, spectacular fogs... Even security fogs, military-designed instantaneous sensory-deprivation atmospheres. Forms of negative air design that seek a sudden immersion within a super-saturated ambient where is no longer possible to relate with our medium. Designed perceptive mediations that defer our capacity to perceive and navigate our medium. Some examples of security-based atmospheres meet such conditions : The Smoke Cloak, where presence sensors are used to stop burglars by projecting high-density fog inside the rooms they might be

operating. Foam Security by Sandia National Laboratories, a so-called 'non-lethal weapon' designed to expand in a degree of 400:1 to respond individual or crowd actions (Scott, Goolsby, 1999) in prisons or institutional buildings to avoid plundering or vandalising.

Dark spaces are based in the disappearance of physical limits between space and inhabitation, living and multiple totalities that links reality with every one of us. While affective differentiation allows us to be aware of the existence of an atmosphere, dark space is the absence of such discrepancy. Dissolving objects and assimilating subjects are finally merged in a single medium. Dark spaces are hyperobjects that shatter the distinction between subject and object. They are ungraspable, since we find ourselves in their interior, of which individuals subjectivize diverse entities, all objects human and not human.

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