

ADVERTIMENT. La consulta d'aquesta tesi queda condicionada a l'acceptació de les següents condicions d'ús: La difusió d'aquesta tesi per mitjà del servei TDX (www.tesisenxarxa.net) ha estat autoritzada pels titulars dels drets de propietat intel·lectual únicament per a usos privats emmarcats en activitats d'investigació i docència. No s'autoritza la seva reproducció amb finalitats de lucre ni la seva difusió i posada a disposició des d'un lloc aliè al servei TDX. No s'autoritza la presentació del seu contingut en una finestra o marc aliè a TDX (framing). Aquesta reserva de drets afecta tant al resum de presentació de la tesi com als seus continguts. En la utilització o cita de parts de la tesi és obligat indicar el nom de la persona autora.

ADVERTENCIA. La consulta de esta tesis queda condicionada a la aceptación de las siguientes condiciones de uso: La difusión de esta tesis por medio del servicio TDR (www.tesisenred.net) ha sido autorizada por los titulares de los derechos de propiedad intelectual únicamente para usos privados enmarcados en actividades de investigación y docencia. No se autoriza su reproducción con finalidades de lucro ni su difusión y puesta a disposición desde un sitio ajeno al servicio TDR. No se autoriza la presentación de su contenido en una ventana o marco ajeno a TDR (framing). Esta reserva de derechos afecta tanto al resumen de presentación de la tesis como a sus contenidos. En la utilización o cita de partes de la tesis es obligado indicar el nombre de la persona autora.

WARNING. On having consulted this thesis you're accepting the following use conditions: Spreading this thesis by the TDX (www.tesisenxarxa.net) service has been authorized by the titular of the intellectual property rights only for private uses placed in investigation and teaching activities. Reproduction with lucrative aims is not authorized neither its spreading and availability from a site foreign to the TDX service. Introducing its content in a window or frame foreign to the TDX service is not authorized (framing). This rights affect to the presentation summary of the thesis as well as to its contents. In the using or citation of parts of the thesis it's obliged to indicate the name of the author

Ioanna Spanou

MAPPING ATMOSPHERE

Rehearsals on rural mediterranean landscapes

Cover page:

A cartographical interpretation of atmosphere(s)

Inside cover page:

A cartographical interpretation of atmosphere(s)

PhD – June 2014

Universidad Polit cnica de Catalu a

Departamento de Urbanismo y Ordenaci3n del Territorio

PhD Director: PhD Maria Goula

Fig. 120:
The Murtra channel, the division between western and the central delta.
The points refer to the three unique points of connection between the two over the Murtra channel.



3.3. CASE STUDY II: the agricultural park of the Llobregat river

The agricultural park of Llobregat river is located at the metropolitan area of Barcelona, occupying a surface of 2.938 ha on the alluvial plain of the delta of the Llobregat river, or more precisely what is left of it unoccupied by the major trans-urban road infrastructures, the Barcelona airport and the expansion of the surrounding urban nuclei. Limited at the northeast by the river, and on the south and northwest by a rosary of urban nuclei and urbanizations, this agricultural land has been declared as "agricultural park" at 1998, marking a nodal point to its long history: this territory has been traditionally the major supplier of fruits and vegetables for the city of Barcelona and still is today the major and unfortunately the only agricultural land left in its immediate surroundings. This singular condition exposes the park to major forces for its transformation, not all of them sharing the same objectives: its declaration as a park was clearly promoted by the will of maintaining it as a productive agricultural landscape while developing its values. On the other hand, it is subject of constant speculations, with its surface clearly fragmented, as the necessary infrastructures needed for this metropolis to work find in its surface the necessary ground for their development.

This land is of an undoubted extraordinary cultural value: it reveals the domestication of what used to be an immense marshland and its transformation to productive land, through the use of Llobregat's river water for irrigation and energy supply to both Barcelona and its surrounding nuclei but also through the extraction of fresh water from its easily accessible water table. Remains of its past are still observable in the area: sparse wetlands, a parallel to the sea stripe of immobilized dunes through pines plantations, whose origin, artificial or natural is still a theme of open discussion^[126], canalized streams and rivers. The geographical distribution of these elements seems to divide the park into two differentiated landscapes: the central delta, along the river and incorporating part of the municipalities of Sant Boi and Prat, and the western delta, incorporating part of the municipalities of Viladecans, Gavà and Castelldefells. There is no clear definition of the limits between these two landscape units; nonetheless, their differentiation seems to be also subject to the antic social structures (Valverde 1997). This distinction, although not deliberately, has also emerged in the analysis. The Murtra channel functions as a barrier that doesn't permit the crossing between the two deltas. The analysis, although covering initially the entire area of the agricultural park, focuses mainly in the western delta.

[126] See: VALVERDE, A. "Evolución histórica, origen y significación de la pineda litoral del delta del Llobregat, I (siglos XVI-XIX)". *Spartina*, 1997-1998, vol. 3: 63-101, AVAILABLE AT: http://www.portadelta.cat/revista_spartina/3_6.pdf



Fig. 121: Ortophoto of the park, its relation with the airport and the city of Barcelona



Fig. 122: Hydrographic structure



Fig. 124: Altimetry



Fig. 123: Plots



Fig. 125: Highways, roads, paths

Fig. 126:
Historic map of the delta, dating back to 1889.
Available at: <http://www.gavamar.com/ES/index1.php?ruta=http://www.gavamar.com/ES/origen.htm>

Fig. 127:
Series of views of the limits of the park: the forested dunes

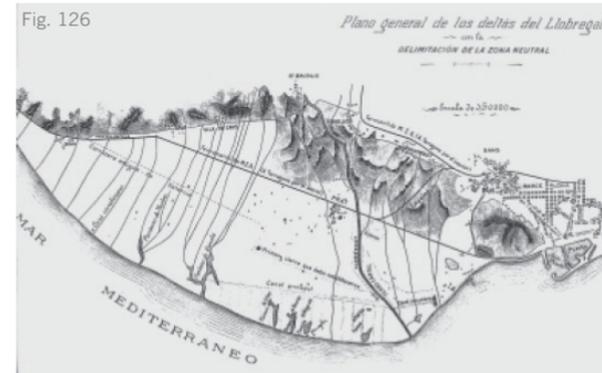


Fig. 128:
Localization of the forested dunes and sparse wetlands



Fig. 129: Crossed densities

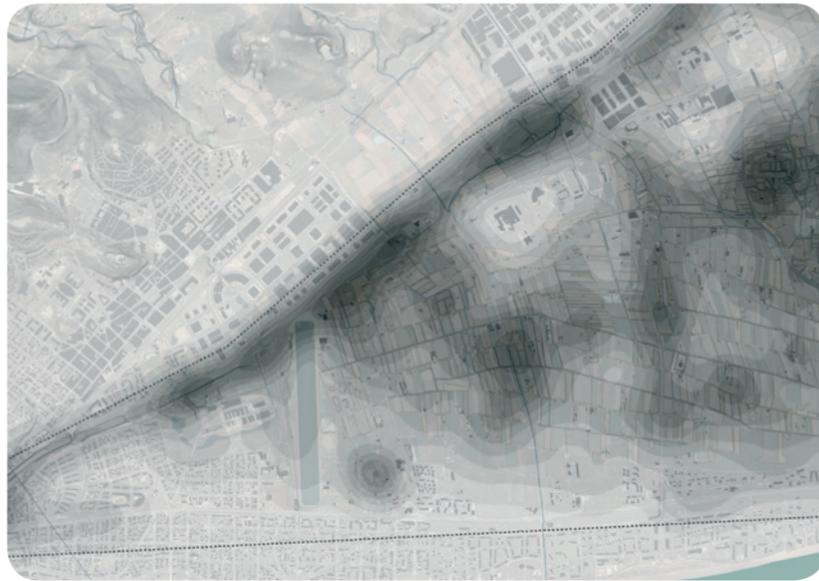
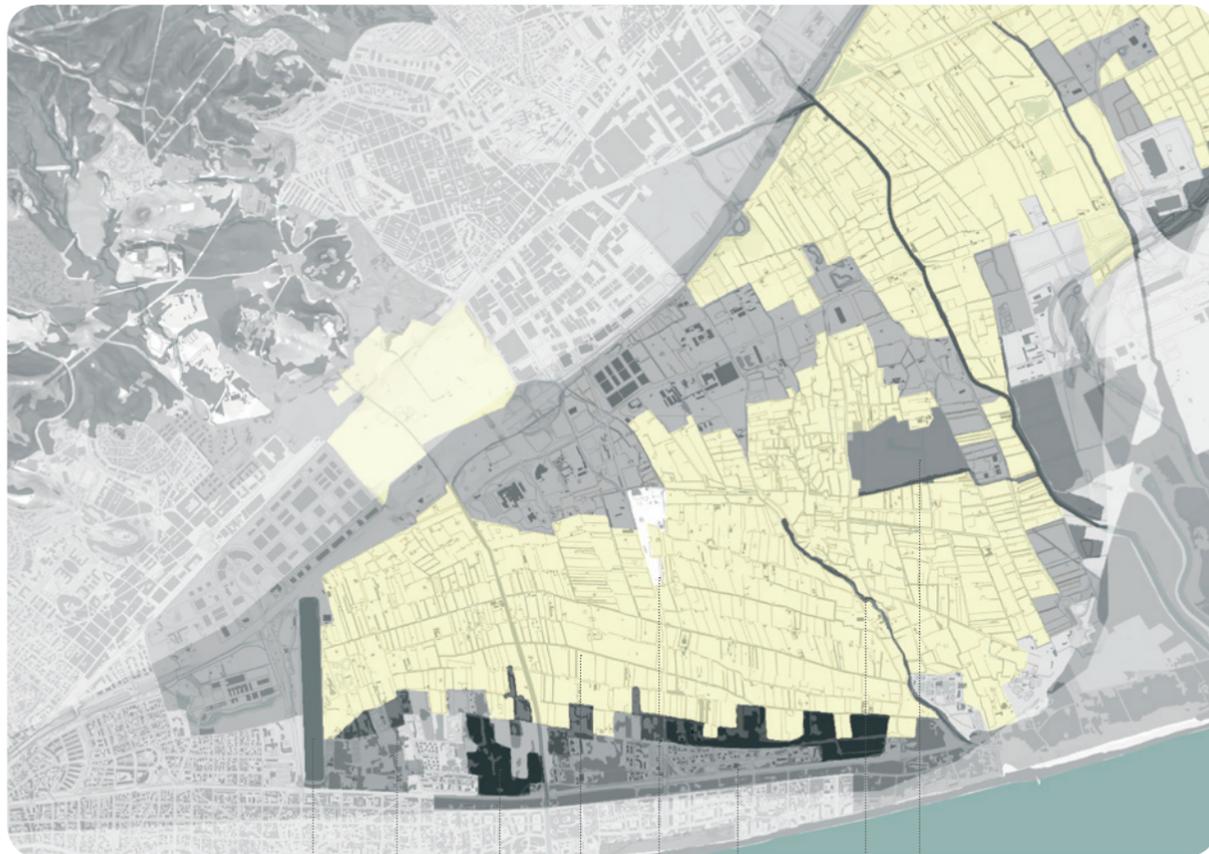


Fig. 130: Reclassification of the habitats



- 2. Poplars
- 3. Herbaceous
- 4. Reedbeds
- 5. Abandoned plots
- 6. Fresh water channel
- 7. Urbanizations with important presence of vegetation (Pines)
- 8. Nurseries
- 1. Forested Dunes

The cartographic essay of morphological complexity, following the same process as in the previous case study, reveals areas of maximum intensity situated along the archeological dunes and at the areas of a higher density of hydrographic and plot patterns. The areas of minimum density on the other hand correspond to the core of the agricultural land where the plot and hydrographic pattern seem to share a far more legible, orderly and sharp definition.

Nonetheless, the definition does not permit an accurate distinction between areas of an homogeneous density. The resulting layer reveals limits in shape of edges of a variable depth conceived as frontiers of mutual influence between different patterns of atmosphere. This closer observation of the resulting layer indicates a possible conclusion of a considerable methodological interest: areas of an homogeneous density function simultaneously as "local" areas but also as enveloping horizons of the rest of the local areas: They form simultaneously integral entities while forming part, visually, logically and physically part of the rest of the "local" parts. It is also suggested that these frontiers result as a far more prominent element in the resulting cartography, at least more than the "interior" areas which through a more conventional analysis would have been initially identified as landscape "units".

A careful insight in the mapping of these interacting frontiers could trace a possible path towards the interpretation of a structural pattern of relations that defines a "global" pattern of atmosphere:

Fig. 131: Complexity layer

[127] The use of the visibility studies through which the visual perception can be introduced in the cartography. A generic visibility study provides us with the visual field perceptible from a specific view point. The Arc view software permits a quick and precise elaboration of the visibility studies: based on the tridimensional digital terrain model, the detail of the results and the analogy with the perceptible reality in situ depend on the information introduced in the digital terrain model: for example, and apart from the basic layer of topography, vegetated visual barriers, buildings or other elements that might delimit the view have been introduced.



Fig. 132: Frontiers

One of the main reasons that frontiers correspond to areas of maximum complexity is the fact that they permit a simultaneous view of differentiated patterns of atmosphere. The visibility studies¹²⁷ elaborated along the paths crossing two of the most sharply defined detected frontiers prove this intuition.

Nonetheless, and as shown in the resulting layers, although both frontiers permit a visual control towards multiple atmospheric patterns, and also towards the distant horizons, they differ in the manner they do so:





Fig. 133: Frontiers

Fig. 134: Visibility study along the path at the outskirts of the first frontier: the forested dunes: fragmented views towards the adjacent pattern and the horizons



The first one is essentially fragmented, characterized by a strong and variable rhythm oscillating constantly between the view of the involving pattern of the dunes and the agricultural one. The second one refers to a constant and compact visual field of a homogeneous character: the first visual field is always occupied by the agricultural pattern. Rhythm is not the only differentiating factor; also the morphological quality of the visual fields is distinctive:

The first frontier offers partial and elongated viewsheds of an accentuated directionality of the visual flow, while the second one is characterized by a round-shaped compact visual field that offers in one act of view a clear perception of the surrounding pattern as a logical whole.

What is more, the morphology of the limits of the visual fields, where the gaze is fixed and framed is completely distant in each case:

In the first frontier limits are hard to trace, characterized by an ambiguous depth empowered partly from the distinctive qualities of the forested dunes pattern in which we are situated: The undulating topography and the grouping of trees configure a fragmented visual field towards the interior of the "forest", whilst the views towards the agricultural pattern, shorts in duration and elongated are densely compressed, oscillating constantly between the view towards agriculture, distant horizons and the involving forest.

In the second frontier on the contrary, views are prolonged towards invariable perceptual horizons.

Fig. 135: Visibility study along the closest path to the second frontier: the Murtra channel compact views towards the adjacent pattern and the horizons



Fig. 136: Degree of visual exposure: the forested dunes



The difference of the morphological configuration of the frontiers is structural at this point. In the first frontier the two adjacent atmospheric patterns intermingle whilst in the second one they share a more confronted relation. Nonetheless, a simple diagram of the morphologies of the two frontiers would suffice in order to explain their structural difference: in the first case the diagram detects a complex edge with parts of each pattern penetrating the other, while the second one refers to a line. The morphological complexity of the first one is obviously higher to the second one. A parallelism could also be conducted with the definition of frontiers, their complexity and value, as defined by landscape ecology (Forman 1995), recognized in the study of the urban (Alexander 2003)¹²⁸ but also in the analysis of the landscape image as visual organizational structures for their landscapes of reference, as visual planes that contribute to difference, that is to the enrichment of the visual image (Goula 2007:275).

Fig. 137: Degree of visual exposure: the Murtra channel



What can the analysis of landscape from the point of view of the atmosphere add to this recognition of frontiers as points of significant complexity and value?

Atmosphere differs between the two frontiers not because their morphological configuration is simply different. The intensity of atmosphere essentially varies depending on our "standing in specific points of view" in and through these frontiers. Frontiers thus although of similar maximum complexities, form areas of differentiated atmospheric intensity not based on the multiplicity of information they provide but essentially based on the manner that the affordances and the spatial patterns of containment of the pattern that supports perception situates the body in space:

Fig. 138: Views from the path along the forested dunes

Fig. 139: Views along the closest path of the Murtra channel



In the first frontier movement is supported in the outskirts of the forested dunes, whose specific configuration of smooth topographic elevations and depressions beneath the strong verticality of the pines, planted in varied densities offering a semi natural effect of forest in a sequence of intermingled clearings and dense masses, situate the body towards the agricultural pattern and the distant horizons in an dense orchestrated rhythm. Dense perceptual information thus is available all along the movement through the frontier, relations are perceived as complex not only towards the agricultural pattern, but through a dense spatial situation and a dense synchronic view to the agricultural pattern as delimited by the dunes pattern and the distant horizon.

In the second frontier nonetheless the situation, as far as the embodied experience is concerned, is different. The configuration of the pattern as experienced through its adjacent path is at least less intense or more subject to visual rather than embodied criteria. Perceptual attention is more likely placed on the gaze towards the surrounding pattern, difficult to be conceived as involving the body. We see agriculture, we perceive its geometry and its structure through the irrigation channels, we move through it but although the presence of water is indirectly evoked through the dense presence of reedbeds, it is impossible to identify it as a clear point of reference: the relation with the channel is punctual, momentary and although intense it hardly informs the embodied memory of the place as a distinguished element. A certain paradox then arises: this frontier results as a product of the cartographical essay, nonetheless its effects to embodied perception do not function as a frontier:

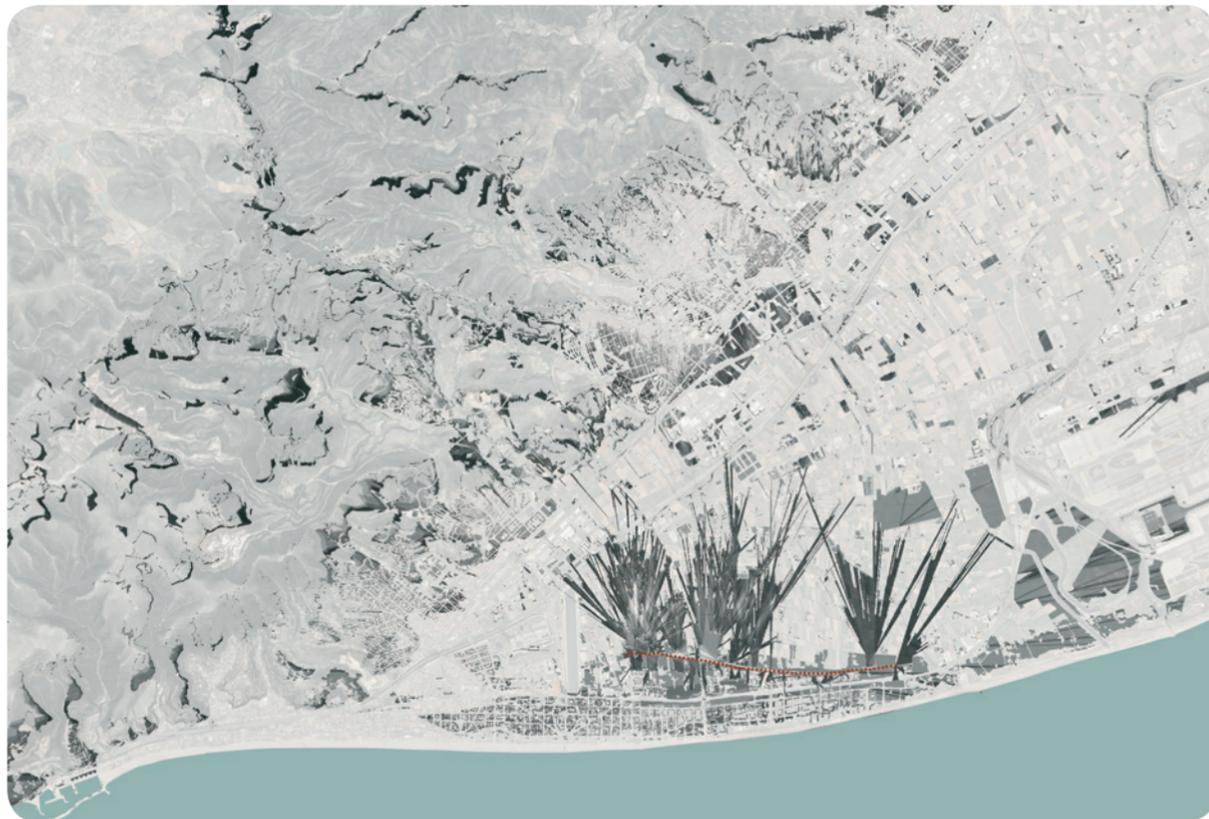
Its objective qualities as compared with that of the dunes pattern are essentially different: information is presented to us at one glance. The legibility offered in this particular pattern towards the surrounding landscape is clearly contrasted with the complexity of the dunes pattern. And this structural difference has a direct effect on the intensity perceived through the embodied experience of the frontier.

[128] Boundaries, and especially thick boundaries with substance, can play a role in helping the goodness of a center, or in strengthening a center. This happens because, if two systems are interacting, the boundary condition is often turbulent or a source of possible confusion. When the boundary zone itself has dimension, it can then take on an "in between" structure, which mitigates or smoothes out the potential interacting processes in the inner and outer zones. Familiar examples are to be seen in the very thick boundary around a living cell (which contains so much vital functionality), in the edge ecology between a forest and a lake, or in the corona of the sun which mitigates the interactions of the sun's interior and the processes taking place further out in the near vacuum beyond. The boundary plays a huge role in the effect and behavior of any system made of other systems, since the system will literally be riddled with such boundary layers and boundary zones. Although one cannot say that every center must have a boundary of this kind, it is certainly one of the ways in which a living center gets its stability and strength, and capacity to interact with other systems. Not surprisingly, then, a transformation which gives a given entity such a boundary zone—not a very difficult kind of transformation to induce mechanically as part of any developmental process—is likely to create a niche for desirable effects. The transformation which preserves and enhances structure, by introducing boundaries, is likely to bring with it a variety of positive effects. (Alexander 2003)

Fig. 140: Degree of visual exposure along the path close to the murtra channel: a compact immediate visual field and a persistent image towards a panoramic view of the enveloping horizons



Fig. 141: Degree of visual exposure along the path of the forested dunes: intense and rhythmic views towards the adjacent agricultural pattern and the horizons



Intensity thus arises when frontiers do not to merely construct a visual narrative of the landscape but configure a dense spatial meaning where patterns as differentiated structures of relations are crossed. In the process of identification of the intensity of the atmospheric patterns, their spatial embodied experience becomes an equal agent of these patterns, interacting and constructing relations with the rest of the elements that constitute their structure.

The comparison between the two frontiers points toward the definition of the concept of intensity as depending on the manner that basic affordances (in this case visual and physical accessibility) and spatial patterns of containment situate the body in space. As we have seen, there is a critical difference between the two frontiers: in the first one, the body is situated within an atmospheric pattern of maximum complexity whilst it shares a rhythm of visual and physical contact with the adjacent one. In the second one, although the body is situated also within a pattern of high coherence the contact with the adjacent and more complex one has no rhythm, the relation is more likely defined as constant backdrop. The atmospheric qualities of the first frontier are denser because they involve the body into a net of complex spatial information. Information walking through these pine forested dunes is evoked, not presented as is in the case of the second frontier. We are situated in a complex situation, forming part of it, whilst we have a rhythmical contact with the "exterior".

We could thus suppose that partially the intensity of the atmosphere depends on the intensification of the bodily interaction with atmospheric patterns of the landscape. This intensification relies in the fact that occurs an extension of the typical affordances offered by both patterns crossed at the frontier: the spatio-temporal experiences are experienced as enveloping the body within a field of apparent influences and what is more, influences whose cause comes out from distinct and somehow contrasted landscapes: dunes and agriculture on the one hand, agriculture and the water channel on the other. Now, the less visual and more "embodied" is the experience the more intense is the atmosphere and what is more, it seems that the denser is the spatial schema of containment more intense is the atmosphere experienced:

The morphology of the atmospheric pattern becomes crucial at this point as it configures the specificity of the spatial patterns of containment: we are not only located in or out, we are not simply contained, but we are situated in a very specific manner based on the analogies of our "body" with those of the space enveloping us. Atmosphere inserts us thus to a very precise mode of experience and arises from the manner that the spatial embodied experience is supported by the configuration of the involving pattern. The sense emerging from this configuration contributes to the creation of a definite atmosphere, through the precise way in which it affects the embodied perception of the frontier.

The materiality of the limits that structure the perceptual fields is in this point critical. It seems that at least in the case of the first frontier the limits are experienced as thresholds, of a specific materiality sense that permits qualities as semi-transparency empowered by the overlapping of sequential layers of varied transparencies that emphasize the sense of profundity seem to provoke a specific atmospheric mode. Effects produced by light, as in the case of the first frontier intensify the sense produced by the penetrating light in a clearing with a specific effect: the body is contained in space as emphatically present. Qualities as semi-transparency or the augmented sense of profundity, increase the perceived complexity, relations are constantly suggested and a perceptual attention is needed as legibility is often hindered and the distinction between figure-ground is often difficult to trace.

Fig. 142: Forested dunes

Fig. 143: The crossing of the path with the Murtra channel

Fig. 144: Overlapping of the two visibility studies



Fig. 142



Fig. 143

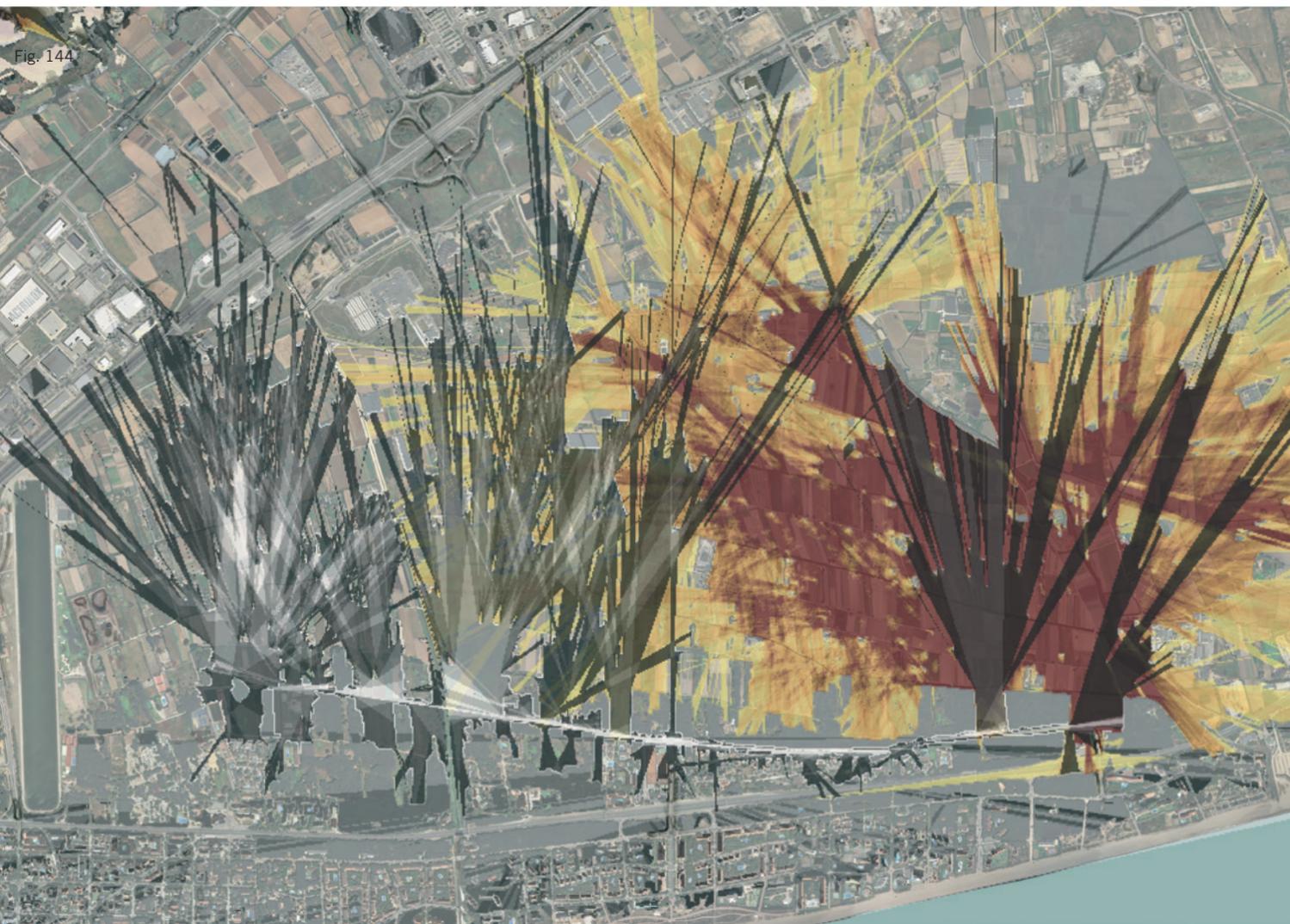


Fig. 144

A gradual intensity of atmosphere then arises at this particular situation, when meaning is evoked rather than presented. The idea of evoking rather than defining "closed" meanings seems thus central in this discussion. We find at this point a possible association with the concept of involvement in terms of complexity and mystery as defined by Kaplan. Nonetheless, the complexity is not based on the quantity of the information perceived but on the sense expressed through the materiality. Mystery on the other hand is triggered by the multiplicity of the associations evoked from the materiality applied as also from the spatial configuration of space as related to the body of the observer and to the context of the site. A specific sense of involvement might thus be activated as a product of an augmented complexity of the spatial embodied experience.

Fig. 145: View along the path of the forested dunes towards the interior



Fig. 146: View of the interior



Frontiers and interiors: their relation with atmosphere

Frontiers function potentially as perceptual attractors, condensing within them an augmented amount and richness of information. If we were to adapt the definition of metaphor as proposed by Lakoff and Johnson (Lakoff, Johnson 1999), atmosphere seems to emerge in means of a spatial metaphor, through the cross mapping between initially separate domains of meaning:

Metaphor conceptualized as a matter of projections and mappings across different domains in the actual structuring of our experience (and not just in our reflection on already existing structures) (Lakoff, Johnson 1999), and its essence as understanding and experiencing one kind of thing in terms of another, helps us conceive three separate domains of meaning, emerging in shape of three differentiated forms in the frontiers analyzed: the first corresponds to the pattern that supports our "point of view", the visually and physically reachable patterns from this particular point of view and the site's enveloping distant horizons.

This constant crossing between different although adjacent or visually connected domains of meaning permit multiple associations to be evoked through the precise manner that the body is contained in space. Eventually multiple metaphors are suggested through a constant oscillation of meaning between all three spatial domains. What is more, the crossing between patterns ¹²⁹, expands their sense. In the case of the first frontier, the forested dunes are metaphorically projected to the realm of a "wild" nature, as experimented through a specific experiential mode: through a domesticated nature, agriculture. And agriculture exemplifies a "domesticated" place accessible through a "seemingly" wild environment. What is more, they are both situated in a very specific common context, as it is defined by the enveloping distant horizon.

This crossing evokes multiple metaphorical associations through the precise manner that the body is contained in space. It is at this point when the spatial metaphor between the three differentiated domains of meaning, might reach its maximum effect: atmosphere seems to be more intense when this crossing permits the expansion of the typical affordances and spatial sense, simultaneously of the site, of its context and of the distant horizons: these multiple associations function as generators of a constant variability of the perceptual sense, revealing something of the specificity of this landscape. It is no longer a patchwork of differentiated moments of atmosphere; it is thus a collage formed through these moments able of communicating a very specific meaning.

Fig. 147



[129] Sometimes the application of an external model manages to reverse the spatial meaning of the primary existing pattern of the site...I am referring to the project of the atrium of CCCB in the center of Barcelona, where the glass façade of one of the four limits of the atrium is extended over the height of the other three delimiting walls, permitting the reflection and re-presentation of the skyline of Barcelona in the interior of the atrium. In this manner, and through the use of the mirror, the original spatial meaning of this interior atrium, as in any atrium, to absolutely isolate from the exterior is completely altered. Spatial meaning is thus not only expanded but simultaneously emphasized and presented "anew and again". With one gesture of design the meaning is instantaneously confirmed and tensed. Perception is twofold alerted, first through the contact with the manipulation of the original pattern and secondly with its revised interpretation...

Fig. 148: Collage: impressions of the path along the forested dunes frontier

The sense of the atmosphere constructed in these frontiers is not depending on the possible metaphorical associations made possible through the spatial synchrony between contrasted moments of atmosphere. In the case of the first frontier for example, we don't feel the atmosphere because we understand that space works as referring to a domesticated forest. We feel the atmosphere as being **in** a domesticated forest. Atmosphere is constructed and maintained through the precise manner that the pattern language situates the body in space while permitting a constant folding and unfolding of the perception from the local point of view to the "external" references of the site, literal and metaphorical.





Fig. 149:
View along the path of the forested dunes
towards the interior

[130] We approach the concept of liminality drawing upon Erika Fischer Lichte (2008) and her theoretical approach to the art of performance:

...atmosphere contributes considerably to the bringing forth of spatiality. Because of and through the atmosphere, which the space and the things seem to emanate – including the smells which they give off and the sounds they let ring out –, the things and the space appear to the subject who enters it as present in an even emphatical sense. Not only that they present themselves in their so-called primary and secondary qualities; moreover, in the atmosphere, they even invade the body of the perceiving subject – what, most of all, is to be experienced with light, smells and sounds. For the spectator is not confronted with the atmosphere, is not distanced from it; rather he is surrounded by it, he immerses into it. (Fischer Lichte 2008:6)

According Fischer Lichte this emphatical sense of presence, is defined by an **oscillation of the perception between focusing on the phenomenon as self-referential and on the associations which it might trigger**. This continuous shifting between the attention at the phenomena and the associations triggered is not the only oscillation occurring. The attention at the phenomena as self-referential intercalates with moments that the observer's attention is focused on the performance as a symbolic form. At the moment that the attention shifts from one mode to other a discontinuity occurs, leading the spectator into a suspended sense of instability or in other words into a state of liminality:

Such an oscillation of the perception between focusing on the phenomenon as self-referential and on the associations, which it might trigger, I will call the order of presence. From it I distinguish quite another kind of perception and meaning production, namely the order of representation. To perceive the actor's body in its bodily being-in-the-world lays the foundation for the order of presence. To perceive it as a sign for a dramatic figure or another symbolic order establishes the order of representation. It demands to relate any perceived element to the dramatic figure or the symbolic order, respectively. While the first order produces meaning as the phenomenal being of the perceived – what does not exclude that such a meaning is able to evoke other meanings that are not directly linked to the perceived phenomena like in a chain of associations – the second order brings forth meanings which, in their sum total, constitute the dramatic figure or another symbolic order. During a performance our perception oscillates between both orders of perception. The moment it shifts from one to the other, a rupture comes up, a discontinuity happens. A state of instability comes into being. It places the perceiving subject between the two orders, transfers him into a state betwixt and between, into a state of liminality. (Fischer Lichte 2008:9)

This state of liminality and constant shift between the two orders of perception *draws the attention of the perceiving subject to the process of perception as well as to its particular dynamics. In the moment of shift, the process of perception itself becomes conspicuous, this way, conscious and in itself object of perception.* (Fischer Lichte 2008:10) According Fischer Lichte, this provokes transformations of the body's physiological, affective, energetic and motor states, but also actually in it realized changes of status like those from the status of a spectator to that of an actor or the building up of a community between actors and spectators or only among the spectators. (Fischer Lichte 2008:12)

Performance as event drives us to think on the potentiality of the concept of liminality for the conceptualization of atmosphere.

Performance as event drives us to think on the potentiality of the concept of liminality for the conceptualization of atmosphere.

[131] Recovering at this point the distinction made between emotion and feeling by Antonio Damasio (1994), the interaction between the self and the phenomena is interpreted not only in terms of positive or negative affordances but also in terms of emotions through the system of facts that are triggered by atmosphere. These emotions are generating a sequence of actions, orienting the subject towards specific composite perceptions and providing with a particular feeling. The results of this sequence of actions might refer to the feelings felt during our encounter with atmosphere. The feelings of these emotions are the composite perceptions that come from the bodily state during an emotion and it is this perception that provides us with a particular feeling. Thus, on one hand frontiers orchestrate the activators of atmosphere, now conceptualized as systems of facts that lead to specific emotions while on the other hand the resultant feelings depend highly on the personal perception of these emotions by each observer.

It could be suggested that a certain sense of liminality¹³⁰ is eventually produced as the phenomena are conceived simultaneously as self-referential and related to the multiple references evoked by the spatial embodied experience. The spatial configuration of the pattern retains the perceptual attention to a conscious here and now through the mode in which it contains the body in terms of the affordances, the rhythm of the visual field and the sense derived from its particular morphology. But it simultaneously undertakes the task of evoking multiple associations through the precise manner that its sense exemplifies the mapping across the atmosphere felt in differentiated experiential moments.

On the other hand, the feeling of mystery also arouses due to the multiplicity of metaphorical associations that this frontier potentiates, activating the emergence of meaning not as a closed entity but as open-ended interpretations triggered by the embodied experience.

We could assume that this embodied complexity and sensed mystery involve the body beyond the first stage of pre-reflective state of consciousness into a conscious "here and now"¹³¹. This is where potentially another level of atmosphere emerges, this of conceiving the global structure of atmosphere reflexively. Although along the frontier the crossing between atmospheric patterns is perceived mainly at the level of the sign, these signs are reflexively interpreted as forming part of a now conceivable dense whole, whose specificity is defined through a particular mode of experience as defined in the frontiers.

Frontiers as metaphorical exemplifications of the "global" pattern of atmosphere.

Frontiers seem to represent the "insignia" of the global pattern of atmosphere, functioning as metaphorical exemplifications of this "global" pattern, containing something of its essence, putting forward and accentuating some of its structural characteristics, while they approach to its "total" image depending on the degree of analogy or metaphor that their description pretends to achieve: as a metaphor both frontiers and their integral patterns talk about domesticated natures. Nonetheless, the specificity is revealed when metaphor approaches analogy: frontiers offer an insight on how nature has been domesticated and more deeply on how this domestication has acquired so variable forms in the landscape and most importantly how these are specifically interweaved and bodily experienced in space.

If the cartography of the atmosphere in the case of the first case study draws mainly from a selective incorporation of theoretical references that try to illuminate the structural hues that activate atmosphere, in the second case study the observation of the resulting cartographic essays enhance a possible expansion of the variables of landscape analysis in a more synthetic and theoretical level: Although the importance of frontiers in landscape analysis as areas of dense meaning has already being acknowledged (Goula 2007), my proposal affirms their significance and expands the interest in frontiers as the primary tool for the identification and the cartographic interpretation of the embodied meaning in the landscape.

Fig. 150: View of the western pattern: the persistent horizons

Interiors

The following question then arises: If frontiers function as metaphorical exemplifications of the global structure of atmosphere, what do the "interior" atmospheres, formed by areas of a more or less homogeneous complexity, stand for?

When we move at a certain distance from the direct influence of the frontiers, patterns seem to acquire a more firm, stable character. Frontiers now function as horizons, shadowed by the presence of the surrounding distant horizons of the predominant geographical elements while the first visual field is prevailed by its principal reference to the principal program it hosts: agriculture. Sensation points towards being in an immense plateau, where orientation depends from the presence of the mountain and the vegetation along the rivers. On the other hand, presence inside the forested dunes seems to be conquered by the intensity of the morphological and material qualities of the pattern, without being able of visually "mapping" this pattern in its context as visual relations as scarce.

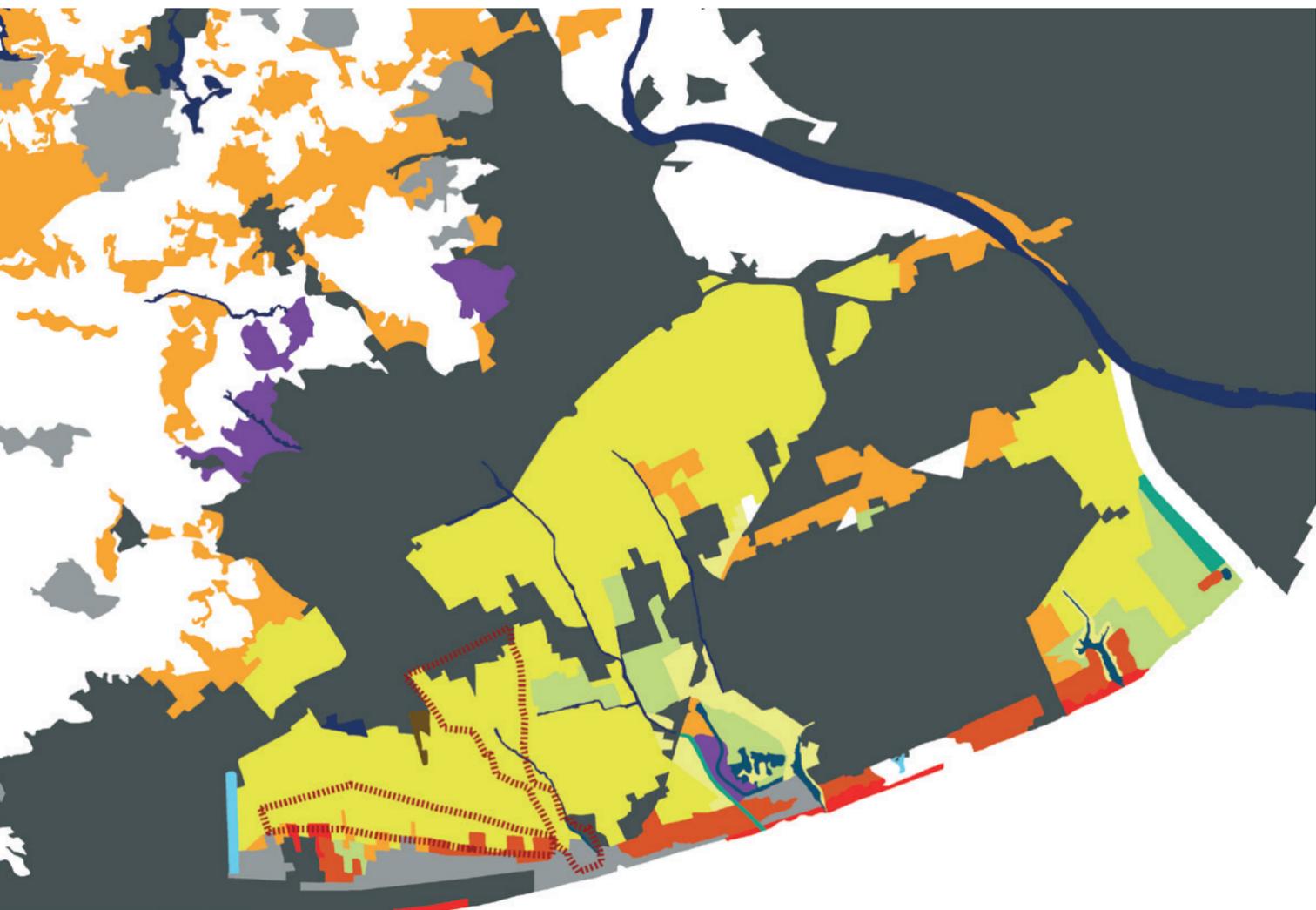
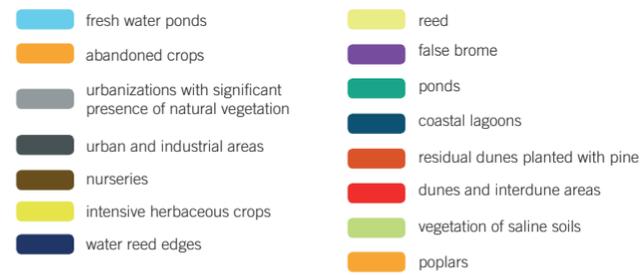


Fig. 151: Diagram of the three interiors: the forested dunes and the two agricultural patterns



The argument so far has placed the emphasis on the manner that patterns are rendered not legible but experienced through the spatial configuration of the embodied experience. Spatial configuration on the other hand has not yet incorporated variables referring to the program realized in each pattern. Nonetheless, now it might be the point where certain reflection on program might be relevant. It seems that atmosphere does not arise from program and overt function. Atmosphere might contribute to “sense”: In other words, it contributes to the way in which the program is qualified by the manner in which it has been “constructed” into a site. Where we have a conventional program, agriculture for example, what atmosphere constitutes is an added sense. Where we have no conventional program, as in the forested dunes, there is additional mediation. However might be the case, atmosphere is still subject to the precise manner that patterns situate the body in space and to the specific quality and configuration of the complexity perceived. The argument will be pursued through closer examination of the three existing “interior” patterns of atmosphere present in this landscape. The first two are mainly agricultural patterns, while the third one refers to the interior landscape of the forested dunes, with the objective of identifying some of the factors that affect their atmospheric intensity:

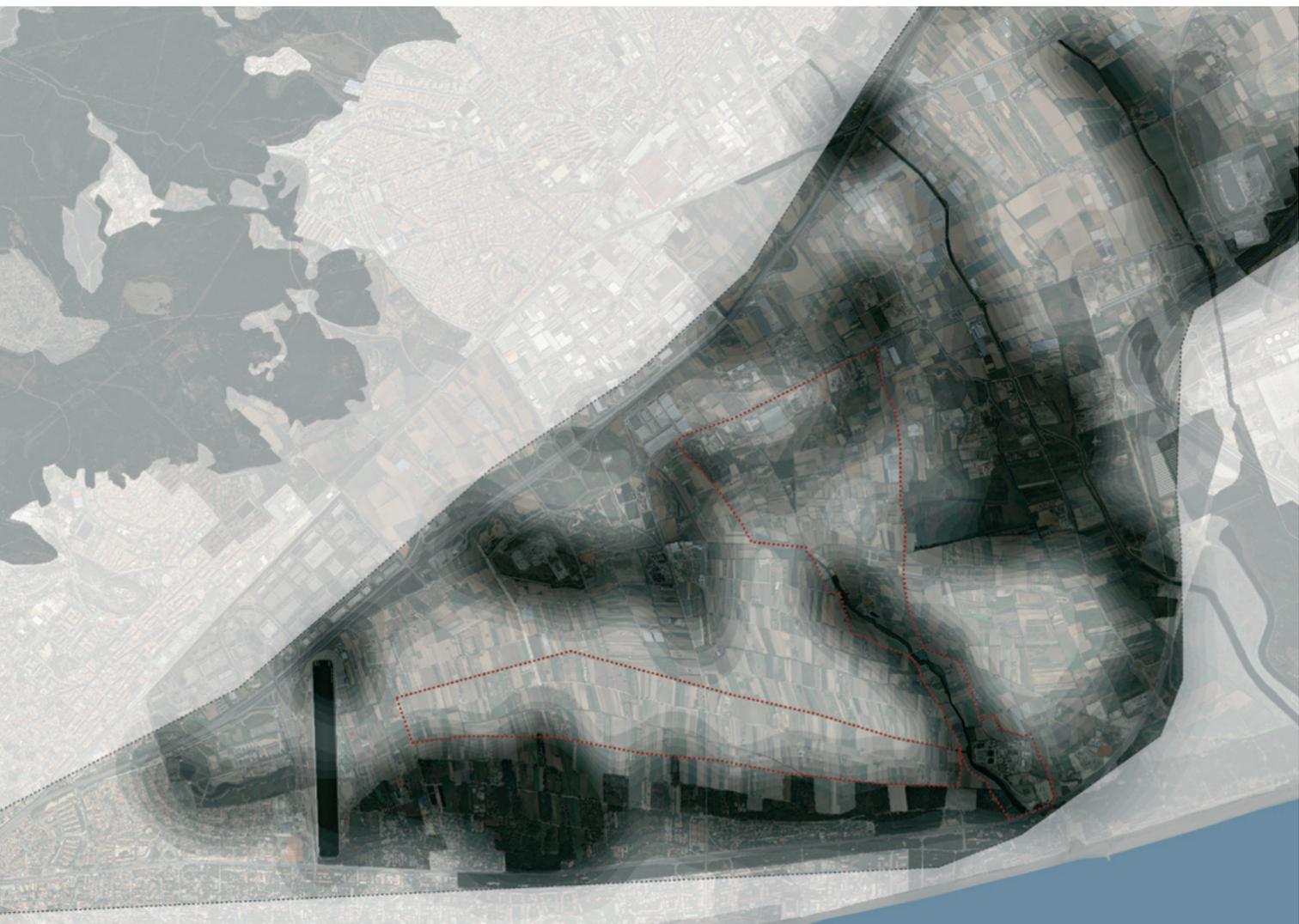
Fig. 152: Habitats database and the localization of the two agricultural patterns



Conventional program: agricultural patterns

By taking a closer look to the labels of the habitats data base, we note that both agricultural patterns refer to the same label: no differences are available as to reach any conclusion as far the structural differences of their atmospheric qualities are concerned. This should not be a surprise: layers are thematic, and only refer to one variable of information: They offer partial views and refer to "generic" landscapes. They essentially function as references to a "global" spatial meaning of agriculture land: on the other hand, the cartographic essays of atmosphere refer to their sense, that is to the precise manner that "global" and potentially transpatial meanings are ascribed into space, and thus potentially revealing something of its specificity. It seems thus that in the case of the cartographic identification of atmosphere sense prevails reference: the intensity of the atmosphere depends on a perceptual attention that conceives experience as self-referential without the need of referring to "external references" in order to justify its meaning: although it might refer to a generic label, and even evoke certain symbolic interpretations it does not depend on them.

Fig. 153: Complexity layer and the localization of the two agricultural patterns

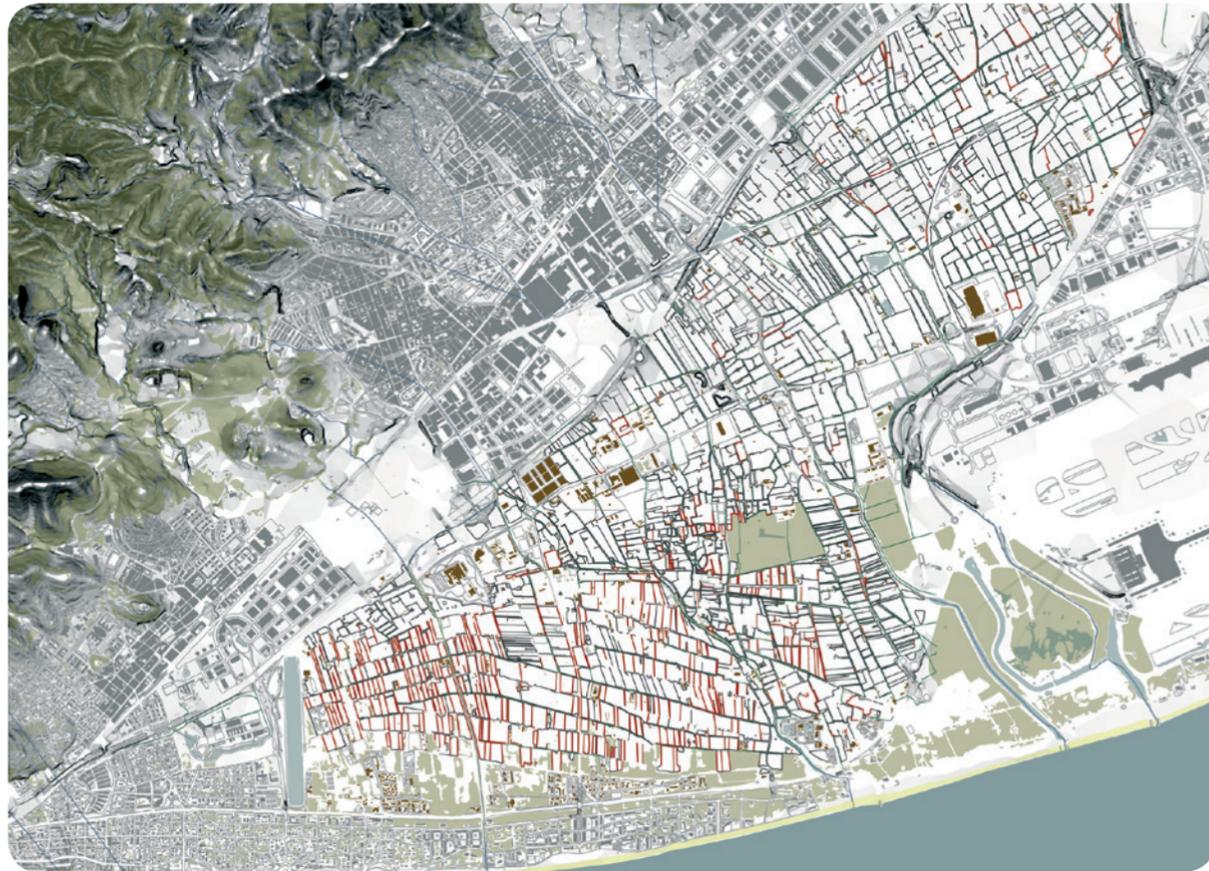


The analysis of the differentiated agricultural patterns reveals the presence of variable degree of legibility.

High legibility is referring to a high degree of order represented by a homogeneous distributional rhythm and orientation of the plot patterns and their distribution in relation to the main irrigation channels. As exemplified by the case of the western pattern, all plots share a similar orientation (160°-190°), an approximately same size, perceivable along the main flows of movement. This tensing of the geometry towards an almost perfectly ordered distributional pattern reaches a maximum degree of legibility and coherence. In parallel, distant horizons, in form of the mountains, rivers and their corresponding vegetation and the surrounding frontiers share definitely the same compactness and steadiness through movement. Atmosphere seems to depend highly on criteria of order and on the specific form of the spatial container: this pattern is elongated, with two clearly identifiable longitudinal limits, the mountain and the forested dunes. It is a pattern of maximum orientation quality, due to the predominant presence of the horizons, although not particularly so in its interior area: the plain of agriculture is always dotted by punctual vegetation in form of singular trees and punctual forested masses that capture the attention although momentarily. The presence of any element that might presuppose the significant presence of structures, far from those corresponding to an intensive agricultural use, hardly can be found. It is a pattern that stretches coherence to a maximum degree, defined thus as a sharp pattern, emerging from a structure of relations formed between elements whose particular configuration makes a constant legible reference to their principal encompassing label that is agriculture.

On the other hand, higher complexity in the complexity layer refers to a lower immediate legibility of the relation between the pattern and its label: it essentially refers to the tensing of the structural reference of the original pattern, as it is crossed through differentiated materialities. As it is exemplified by the second agricultural pattern, along the eastern side of the Murtra channel, signs of "nature", represented by the vegetation along the irrigation channels, are constantly interweaved in considerable proportions with the agricultural plots. Plots no longer share the same orientation, and hardly the same size. An added complexity is thus perceived as it is harder to trace a certain order among the vegetated channels and the seemingly confusing distribution of the plots. The attention is oriented towards variable and overlapping perceptual modes as they are defined by two equally present references: that is agriculture and "nature".

Fig. 154: Plots in the western agricultural pattern vary from 160-190 degrees



Morphological criteria of complexity deriving from nature, represented by a seemingly lack of geometrical order invade the configuration of the agricultural plots and vice versa: natural vegetation is "semi-canalized" along the irrigation channels, influenced by an apparent longitudinal logic derived from the agricultural use. What is more, the vicinity of the surrounding frontier of the crossing channel and the enclaves of abandoned land occupied by semi natural humid habitats accentuate the above sensation. These are hybrid patterns, exemplifying multiple references and more interestingly, their crossing in space but also in time. They reveal something proper to the specificity of space in spatio-temporal terms: A certain historic depth is presented to us, as they insinuate the presence of the antique wetlands, but also their transformation in time through agriculture. This pattern has a particular atmospheric intensity, although less sharp than in the case of the anterior example.

"Interiors" as exemplifications of "archetypal" landscape patterns

This short comparison between these two different agricultural patterns permits to sketch a possible conclusion in terms of the relation between the reference of these patterns, agriculture, and their embodied sense: patterns seem to function as exemplifications of their references. If we were to adapt the terminology of Hillier and Hanson (1984) to uses for which it was not originally intended, atmosphere re-spatializes at the local level descriptions retrieved at the global level that are inherently abstract and potentially transpatial. This re-spatialization is not merely a matter of looking at an overall morphology from a particular point of view. Rather, it is a matter of looking at an overall morphology from within a particular perceptual and experiential motivation.

In the case of interiors hosting a defined and recognizable activity, as agriculture is, it seems that atmosphere might contribute to "sense": More specifically, what atmosphere constitutes is an added sense to program and function. In other words, it contributes to the way in which the program is qualified by the manner in which it has been "constructed" into a site. This observation leads to the suggestion that interiors function as exemplifications of global and potentially transpatial landscape patterns in a specific spatiotemporal geographical context, evoking through the embodied experience, rather than concretizing potentially transpatial meaning into a concrete situation.

Fig. 155: Visibility study across the pattern: compact enveloping field and constant view towards the enclosing horizons



Fig. 156: Collage: impressions for the interior of the forested dunes



Unconventional program: the forested dunes

The case of the forested dunes is more complex as no direct reference, neither to program or established use can be detected. They are archeological dunes planted with pines, in order to detain the dunes from moving and eventually occupying the adjacent agricultural terrains. Nowadays these spaces receive an intermittent spontaneous public use, especially on weekends. During the rest of the week, people scarcely use this space, mainly for hiking, taking dogs for a walk, or just crossing it rapidly.

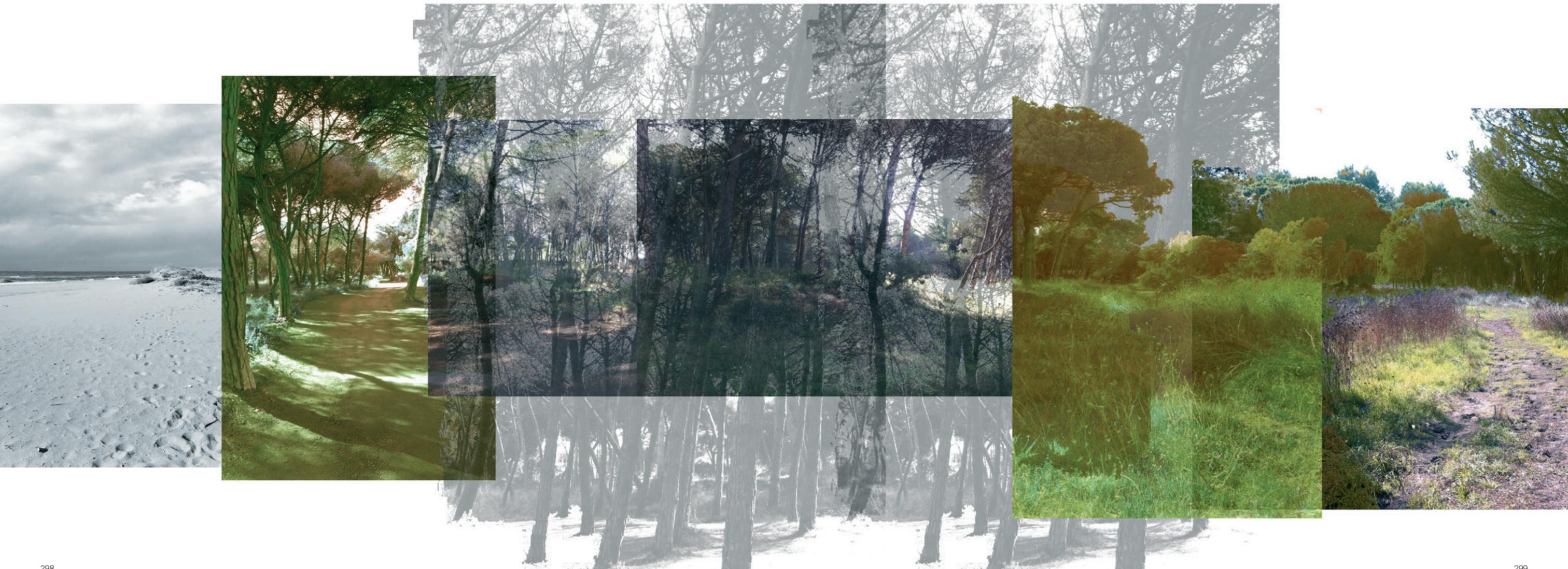
There is something extremely interesting in this place that seems to welcome with such comfort these changes of intensity of use: an impossible mapping of coherence occurs through the multiplicity and the disparity between the different materialities that construct this place. If we accept forest as the primary reference, then its clearings don't make a logical sense: they are occupied by topographic depressions covered by dense vegetation. Clearings in this forest are not accessible. On the contrary, accessibility is easier underneath the forested masses of pines, as their substratum is configured by sandy undulations, not permitting the expected development of shrubs that hinder movement. What is more, dunes refer to the sea, that although known that it is to be found in a close distance, urbanization has formed a strong barrier making it almost impossible to detect neither the physical nor the logical proximity of the coast to this site. References remote in spatio-temporal terms are crossed into this unique pattern: Similarly to the case of the complex agricultural pattern, the crossing of systems that seemingly refer to clearly differentiated references or labels, as the dunes, the forest and the agriculture is, reveal the specificity of this landscape not only in terms of its actual spatial configuration but also in terms of its historic depth: dunes are vestiges of the past, and as agriculture did with the adjacent wetlands, these dunes have been domesticated through an another kind of imported nature: the pines forest.

The intensity of the atmosphere of this resulting pattern is depending on neither of its references, but to this precise mapping of meaning across its multiple references, equally in time as in space.

Fig. 157: Collage: impressions for the interior of the forested dunes

Drawing once again from the definition of metaphor by Lakoff and Johnson as: as a matter of projections and mappings across different domains in the actual structuring of our experience (and not just in our reflection on already existing structures), we might suppose that atmosphere in this case arises when the projections and mappings across different domains of meaning produce a new metaphor and not simply a reflection on already existing structures.

Where we have no conventional function, an additional mediation is thus needed: The analysis suggests that these "interiors", functioning as exceptions, potentially function in a parallel manner with frontiers, as they are not dominated by direct reference neither to program nor to function. Atmosphere in these cases arises in form of a new spatial metaphor, constructed through the mapping of meaning across its multiple references; nonetheless, their particular atmospheric emphasis depends still on the precise manner that these are evoked and interrelated through the embodied experience.



CARTOGRAPHICAL INTERPRETATIONS



**DIAGRAMMATIC DISPLAY OF THE
CONCEPTS AND ARGUMENTS
IN REGARD TO ATMOSPHERE**

AN ALTERNATIVE FOR THE APPROACH OF THE EMBODIED IN THE CARTOGRAPHIC ANALYSIS OF THE TERRITORY

A
T
M
O
S
P
H
E
R
E
L
A
N
D
S
C
A
P
E

PROPOSE A WORKING DEFINITION FOR ATMOSPHERE AS A VEHICLE FOR ITS CARTOGRAPHIC INTERPRETATION

CARTOGRAPHIC INTERPRETATIONS

T
O
O
L
S

REFERENCES: THEORIES AND TECHNIQUES
PERSONAL CARTOGRAPHIC ESSAYS

SITUATED PERSPECTIVE OF PERCEPTION AND COGNITION
RELATION: COGNITION-FEELINGS
THE METAPHORICAL STRUCTURE OF COGNITION

to guide the externalization of atmosphere in another medium (cartography) and thus make it available to discussion: **localize atmosphere**

ITS REPRODUCTION: **INSIGNIA, GESTURE**
ITS CONSTRUCTION: SUBJECT TO MATERIAL CONSTRUCTION AND FORMAL CONFIGURATION
IT BELONGS TO THE **IN-BETWEEN** SUBJECT AND ENVIRONMENT
ITS DESCRIPTIONS ARE ALWAYS **PARTIAL**
LINKS WITH **FIRST IMPRESSION AND FEELINGS**
IT IS NOT LOCALIZABLE
ATMOSPHERE RESISTS **DEFINITION**

THEORY

CARTOGRAPHY

ANALYSIS FOLLOWS PLANNING (AND DESIGN) IN TERMS OF: **SCALE, VALUE AND METHOD OF MAPPING: DISCREET MAPPING**
GIS: THE TOOL BY EXCELLENCE: A GUARANTEE OF OBJECTIVITY
MAP AS ANALOGY OR METAPHOR
THE "SENSE" OF THE TERRITORY IS NOT MAPPED, IT IS REPRESENTED...

METAPHORICAL EXEMPLIFICATION
SEARCH FOR **SHARED PATTERNS THAT STRUCTURE PERCEPTION**
THE APPROACHES TO LANDSCAPE ALWAYS ARE

WHAT THE ALTERNATIVE MIGHT BE?
ACCEPTING GIS AS A TOOL
MAP AS AN ANALOGY OF A METAPHOR
WORK AT THE SCALE OF THE TERRITORY

ATMOSPHERE AS A SPATIALLY SITUATED PATTERN
related with the objective properties of the environment that metaphorically exemplify structures of feeling

THREE LEVELS

PRE-REFLECTIVE
AFFORDANCES
POTENTIALITIES OF ACTION

PRE-REFLECTIVE
COMPLEXITY, MYSTERY, COHERENCE AND LEGIBILITY

FRONTIER BETWEEN PRE-REFLECTIVE AND REFLECTIVE
SPATIAL METAPHOR
SPATIAL PATTERNS OF CONTAINMENT
IMAGE SCHEMAS AND THEIR METAPHORICAL
EXTENSIONS AND PROJECTIONS
metaphor as: *understanding and experiencing one kind of thing in terms of another*

CARTOGRAPHICALLY INTERPRETED AS:

ACTIVATORS OF ATMOSPHERE

Affordances: **POTENTIALITIES OF ACTION: ACCESIBILITY/VISIBILITY**
Spatial patterns of containment:
TOPOGRAPHY/ Morphological interpretation of the habitats
An initial approach to morphological, **VISUAL COMPLEXITY**:
Densities of presence
RHYTHM IN SPACE
RHYTHM IN TIME

A CARTOGRAPHICAL INTERPRETATION OF ATMOSPHERE (S)

ACTIVATING ARGUMENTS ON:

A dense mapping of the landscape revealing the specificity of the site and the embodied complexity of the patterns of relations that form the structure of this landscape. It can express dynamics, processes, interpretations and phenomena that cartographically exemplify patterns of the embodied spatial experience of the landscape. Cartography conceived as a semantically dense system, not subject to discursive symbolism.

THE POTENTIAL OF AN INTER-SCALE APPROACH

Relation global-local: The local is a matter of looking at an overall morphology from within a particular perceptual and experiential motivation. Seen in this way, the local is not primarily a part of a whole that is to be explored through movement and mapped as a pattern of relations. It constitutes open ended "ways of seeing" over and above partial views.
Narrative: Given the strong differentiation of atmospheric moments and given the manner in which, at successive thresholds, the structure of each motivates the perception of the next, we could imagine the global pattern as a collage of multiple, dynamic sequences of variable narrative charges, according to the sequence that one visits the site, pointing to the synthetic reconstruction of successive but different structures of atmosphere encountered along the paths of movement.

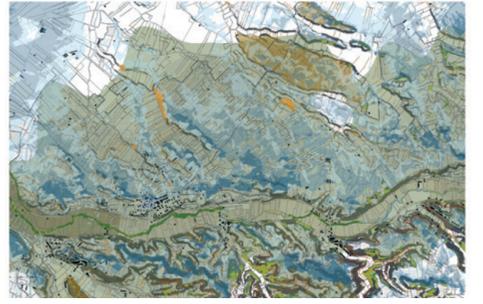
AND ON THE POSSIBILITY OF MAPPING THE MORPHOLOGICAL COMPLEXITY:

ACTIVATING THOUGHTS ON:

Synthetic representation of the patterns of atmosphere: The interpretation focuses on the landscape in terms of the degree of the morphological complexity of the spatial patterns of atmosphere. The layer covers the entire surface of the territory in form of a dense representation, differentiated from the up til now discreet morphological analysis of the elements that configure the patterns of atmosphere.

A potential criteria for design: Placing attention on how an intervention could be carried out according to its effects on the degree of morphological complexity, rather than defining if an intervention should or not should not be carried out in a specific area

using GIS, minimum number of databases, highlighting the essentiality of the habitats database and in a scale of work proper to the scale of regional planning, the three levels in the first case study are:



further explored in the second case study

AS A FILTER FOR THE MAPPING OF DIFFERENTIATED ATMOSPHERIC INTENSITIES MAINLY CLASSIFIED IN **FRONTIERS AND INTERIORS**
Relation of frontiers and interiors with atmosphere
Frontiers are indicators of places of maximum intensity in terms of the complexity and mystery components, functioning as metaphorical exemplifications of the "global" structure of atmosphere, while the interior areas defined by these frontiers encompass patterns of variable intensity more subject to terms of coherence and legibility, functioning as exemplifications of their reference.
And pointing towards frontiers as the primary object and product of analysis

BIBLIOGRAPHY

- A** ABRAMS J, HALL P (eds), 2006, *Else/Where: Mapping — New Cartographies of Networks and Territories*, University of Minnesota Design Institute
- ADORNO T H, 1997, *Aesthetic Theory*, Minneapolis: University of Minnesota Press
- ALBERTSEN N, 2012, “Gesturing Atmospheres”, in *Proceedings Ambiances in action / Ambiances en acte(s) - International Congress on Ambiances*, Montreal : Canada, 2012
- ALEXANDER C; ISHIKAWA S; SILVERSTEIN M; JACOBSON M, FIKSDAHL-KING I; ANGEL S, 1977, *A Pattern Language*, New York: Oxford University Press
- ALEXANDER C, 2003, “New concepts in complexity theory”, available at: <http://www.katarxis3.com/SCIENTIFIC%20INTRODUCTION.pdf>
- ALEXANDER C, 1979, *The timeless way of building*, Oxford University Press
- AMIR S; GIDALIZON E, 1990, “Expert based Method for the Evaluation of Visual Absorption Capacity of the Landscape”, in *Journal of Environmental Management*, 30, pp. 251-163
- ANDERSON B, 2009, “Affective atmospheres”, in *Emotion, Space and Society Journal 2* (2009), pp. 77–81
- APPLETON J, 1975, *The Experience of Landscape*, London & New York: Wiley
- ARNHEIM R, 1986, “Wilhelm Worringer on Abstraction and Empathy”, in *New essays on the psychology of art*, Berkeley: University of California Press, pp. 50-62
- ARTHUR L.M; DANIEL T.C; BOSTER R.S, 1977, “Scenic assessment: an overview”, in *Landscape Planning*, 4, pp. 109-129.
- B** BACHELARD G, 1969, *The Poetics of Space*, Boston: Beacon Press
- BARBA R, 1995, “Argumentos en el proyecto de paisaje”, in *Revista Geometría 20. Monografías de Arquitectura y Urbanismo*, p.8
- BELL S, 2004, *Elements of visual design in the landscape*, Spon Press, London
- BELLMUNT J; GOULA M; SPANOU I, 2008, “An essay of the landscape guidelines of two landscape units: Secans de Belianes, Lèrida l d’Ondara and Plana de l’Alt Camp del Camp de Tarragona”, *Catalogue of the 5th European Landscape Biennale, Rosa Barba Prize, Storm and Stress*, 2008
- BENJAMIN W ,2003, “*The work of art in the Age of its Technical Reproducibility*”, translated by Edmund Jephcott, in *Walter Benjamin, Selected Writings*, vol.4, Cambridge Mass. and London 2003, p.269.

- B** BLAU E, "The Third Project", in OLAFUR E, *Your Chance Encounter*. Concept by Olafur Eliasson, Andreas Koch, and Caroline Eggel. Exhibition catalogue. Baden: Lars Muller Publishers; Kanazawa: 21st Century Museum of Contemporary Art, 2010: no page numbers
- BÖHME G, 1993a, "The Space of Bodily Presence and Space as a Medium of Representation", in HARD M; LOSCH A; VERDICCHIO D (ed.), 2003, Online publication of the international conference held in Darmstadt, Germany, March 22-24, 2002: Transforming Spaces. The Topological Turn in Technology studies. Available at: www.ifs.tu-darmstadt.de/gradkoll/Publicationen/transformingspaces.html
- BÖHME G, 1993b, "Atmosphere as the Fundamental Concept of a New Aesthetics", in *Thesis Eleven* 1993: 36: 113, downloaded from <http://the.sagepub.com> on September 5, 2007
- BÖHME G, 2013, "The art of the stage set as a paradigm for an aesthetics of atmospheres", *Ambiances* [En ligne], Redécouvertes, mis en ligne le 10 février 2013, consulté le 11 juillet 2013. URL : <http://ambiances.revues.org/315>
- BORCH C, 2011, "Foamy Business: On the Organizational Politics of Atmospheres", in Schinkel W& Noordeggraaf-Eelens L (eds), *In Medias Res: Peter Sloterdijk's Spherological Poetics of Being*, Amsterdam: Amsterdam University Press B.V., pp. 29-42
- BREDO E, 1994, "Cognitivism, situated cognition, and deweyian pragmatism", in *Proceedings of the Fiftieth Annual Meeting of the Philosophy of Education Society University of Virginia*
- BRENNAN T, 2004, *The Transmission of Affect*, United States: Cornell University Press
- BROWN G; RAYMOND C, "The relationship between place attachment and landscape values: Toward mapping place attachment", en *Applied Geography* 27, 2007, pp. 89-111
- BOURASSA S, "Toward a Theory of Landscape Aesthetics", in *Landscape and Urban Planning*, vol. 15, nos. 3-4 (1988), pp. 241-252
- BUHYOFF G.J; MILLER P.A; ROACH J.W; ZHOU D; FULLER L.G, 1994, "A Methodology for Landscape Visual Assessments" in *AI Applications*, 8, pp. 1-13
- C** CASEY E. S, 2009, *Getting Back into Place*, Bloomington: Indiana University Press.
- CHANDLER T, 2010, *Reading Atmospheres: Ecological Aesthetics and Virgil's Eclogues*, Australia: Monash University
- CHARITOS D, SPANOU I, 2003, "Towards defining the "atmosphere" and spatial meaning of virtual environments", In Ascott R (ed), 2003, *Engineering Nature: Art Consciousness in the Post-Biological Era*, Intellect Books, Bristol, UK: (2006). Originally presented at the Consciousness Reframed Conference, pp. 145-152, illus.
- CHARLESWORTH W.R, 1976, "Human intelligence as adaptation: An ethological approach", in L.B. Resnick, (ed) *The nature of intelligence*, p. 147-168. Erlbaum, Hillsdale, N.J
- CLANCEY W, 2008, Scientific Antecedents of Situated Cognition, in Robbins P; Aydede M (eds.), *Cambridge Handbook of Situated Cognition*. Cambridge University Press, NY, pp. 11-34, 2008
- CROFTS R.S; COOKE R.U, 1974, "Landscape Evaluation: A comparison of techniques", in Occasional Papers, no 25, Department of Geography, University College London
- CROFTS R.S; COOKE R.U, 1974, "Landscape Evaluation: A comparison of techniques", in Occasional Papers, no 25, Department of Geography, University College London
- D** DAMASIO A.R, 1994, *Descartes' Error*, G.P. Putnam's Sons, New York
- DANIEL T.C; VINING J, 1983, "Methodological Issues in the Assessment of Landscape Quality", in Altman I; Wohwill J (eds) *Behaviour and the Natural Environment*, Plenum Press, pp. 39-83
- DAVIES C, 1999, "Landscape, Earth, Body, Being, Space, and Time in the Immersive Virtual Environments Osmose and Ephémère", in Malloy J (ed), 1999, *Women in New Media*, Boston: MIT Press
- DEACON H, 2013, "The Safeguarding of Intangible Heritage values under the World Heritage Convention: Auschwitz, Hiroshima and Robben Island", DRAFT PAPER, available at: http://www.academia.edu/376665/The_Safeguarding_of_Intangible_Heritage_values_under_the_World_Heritage_Convention_Auschwitz_Hiroshima_and_Robben_Island
- DEBORD G, 1955, "Introduction to a Critique of Urban Geography", *Les Lèvres Nues* #6 (September 1955), Translated by Ken Knabb
- DESROCHES D, 2012, "La politique comme création d'ambiances | Politics as the creation of ambiances", editorial note at www.ambiances.net, Edito N°50, available at <http://www.ambiances.net/editorials-of-the-network.html>
- DEWEY J, 1958, *Experience and Nature*, NY: Dover Publications
- DEWEY J, 2005, *Art as Experience*, Penguin, New York
- DEWEY J, 1896, "The Reflex Arc Concept in Psychology", in *Psychological Review* 3: 357-370, available at: http://www.brocku.ca/MeadProject/Dewey/Dewey_1896.html
- D** DOWNS R.M, 1981, "Maps and Metaphors", in *Professional Geographer* 33(3), pp. 287-293
- DUFRENNE M, 1973. [1953] *The Phenomenology of Aesthetic Experience* (Casey, E., Anderson, A. Domingo, W., Jacobson, L., Trans.), Northwestern University Press, Evanston
- E** EADE J, 1997, *Living the Global City: Globalization as a Local Process*, London: Routledge
- EHRENZWEIG A, 1973, *The Hidden Order of Art*, Frogmore, St. Albans: Paladin, pp. 284
- ELIASSON O, 2009, "Your Engagement has Consequences", in Ridgway E (ed), *Experiment Marathon: Serpentine Gallery*, Reykjavik: Reykjavik Art Museum, pp. 18-21
- ELGIN C, 2011, "Making Manifest: The Role of Exemplification in the Sciences and the Arts", in *Seventh Principia International Symposium, The Philosophy of Nelson Goodman*, Florianópolis, Brazil - August 15-18, 2011
- F** FISCHER W. O, 2007, "Atmospheres – Architectural Spaces between Critical Reading and Immersive Presence" in: *Field – free journal for architecture*, Issue 1: Architecture and Indeterminacy, Sheffield University, School of Architecture, pp. 24-41
- FISCHER L. E, 2008, *The Transformative Power of Performance: A New Aesthetics*, NY: Routledge
- FORMAN R, 1995, *Landmosaics, The Ecology of Landscapes and Regions*, Cambridge University Press
- FREGE G, 1999, "On sense and reference", in Baghramian M (ed), *Modern Philosophy of Language*, Washington DC: Counterpoint
- FUNCHE 2005, "Against Gravity: Bettina Funche Talks with Peter Sloterdijk", in *Artforum International* II, no5 (February/March 2005), pp. 27-29
- G** GARBARINI F, ADENZATO M, 2004, "At the root of embodied cognition: Cognitive sciencemeets neurophysiology", *Brain and Cognition* 56, pp. 100-106
- GIBSON J. J, 1986, *The Ecological Approach to Visual Perception*, Lawrence Erlbaum Associates, London
- GIDDENS A, 1991, *Modernity and Self-Identity: Self and Society in the Late Modern Age*, Stanford: Stanford University Press
- GOMBRICH E, 2000, *Art and Illusion: A Study in the Psychology of Pictorial Representation*, Princeton: Princeton University Press
- GOODMAN N, 1976, *Languages of art*, Cambridge: Hackett Publishing Company
- GOODMAN N; ELGIN C, 1988, *Reconceptions in Philosophy and Other Arts and Sciences*, Cambridge: Hackett Publishing Company
- GOULA M, 2007, *Los otros paisajes: lecturas de la imagen variable*, (Tesis doctoral), Barcelona: Universidad Politècnica de Catalunya, Departamento de Urbanismo y Ordenación del Territorio, No publicada.
- H** HAUPTMANN D; NEIDICH W (eds), 2010, *Cognitive Architecture: From Bio-politics to Noo-politics ; Architecture & Mind in the Age of Communication and Information*, Rotterdam: 010 Publishers
- HARDY-VALLÉE B; PAYETTE N, 2008, "Beyond the brain: embodied, situated and distributed cognition", in Hardy-Vallée B; Payette N (eds), *Beyond the brain: embodied, situated and distributed cognition*, Newcastle: Cambridge Scholars Publishing
- HEIDEGER M, 1951, *Being and Time*, trans. by John Macquarrie and Edward Robinson (London: SCM Press, 1962); re-translated by Joan Stambaugh (Albany: State University of New York Press, 1996)
- HILLIER B, HANSON J, 1984, *The Social Logic of Space*, Cambridge: Cambridge University Press
- I**
- J** JESS P; MASSEY D, 1995, "The contestation of place", in Massey D; Jess P (eds), *A Place in the World? Places, Cultures and Globalization*, Oxford: Open University/Oxford University Press, pp. 133-174
- JOHNSON M, 1987, *The Body in the Mind*, Chicago: University of Chicago Press
- K** KAPLAN R; KAPLAN S, 1989, *The experience of nature: A psychological perspective*, Cambridge: Cambridge University Press
- KAPLAN S, 1979, "Perception and Landscape: Conceptions and Misconceptions", Submitted to the *National Conference on Applied Techniques for Analysis and Management of the Visual Resource*, Incline Village, Nevada, April 23-25, 1979

- K** KOTLER P, 1973, "Atmospherics as a marketing tool", in *Journal of retailing*, Volume 49, Number 4 Winter 1973-1974
- KURGAN L, 2013, *Close up at a distance, Mapping, Technology and Politics*, New York: Zone Books
- L** LAKOFF G, 2012, "Explaining Embodied Cognition Results", in *Topics in Cognitive Science*, 4, pp. 773–785
- LAKOFF G; JOHNSON M, 1999, *Philosophy in the flesh*, New York: Basic Books
- LAKOFF G; JOHNSON M, 1980, *Metaphors we live by*, Chicago: University of Chicago Press
- LAKOFF G; JOHNSON M, 1980, *The body in the mind*, Chicago: University of Chicago Press
- LANGER S.K, 1977, *Feeling and Form*, New Jersey: Prentice Hall
- LANGER S.K, 1942, *Philosophy in a New Key: A Study in the Symbolism of Reason, Rite, and Art*, Cambridge: Harvard University Press
- LANGER S.K, 1985, "Discursive and presentational forms", in INNIS R (ed), *Introduction to Semiotics: An introductory Anthology*, Bloomington: Indiana University Press, pp 87-107
- LATOUB B, 'Atmosphère, Atmosphère', (P-104) « Atmosphere, Atmosphere », an entry for the catalog of Olaf Eliasson, New Tate Gallery, 2003
- LAVE J, 1988, *Cognition in Practice*, Cambridge, UK: Cambridge University Press
- LEATHERBARROW D, MOSTAFAVI M (eds), 1993, *On Weathering: The Life of Buildings in Time*, Cambridge: The MIT Press
- LYNCH K, 1960, *The Image of the City*, Cambridge: MIT Press
- LYNCH K, 1972, *What time is this place*, Cambridge: MIT Press
- M** MALLGRAVE H, IKONOMOU E, 1994, *Empathy, Form and Space, Problems in German Aesthetics, 1873-1893*, Santa Monica: The Getty Center for the history of art and the humanities
- MASSEY D, "The conceptualization of place", in Massey D; Jess P (eds), 1995, *A Place in the World? Places, Cultures and Globalization*, Oxford: Open University/Oxford University Press, pp. 45–77
- MASSEY D, 1994, *Space, Place and Gender*, Cambridge: Polity
- MATA R, 2006, "Un concepto de paisaje para la gestión sostenible del territorio", in *El paisaje y la gestión del territorio criterios paisajísticos en la ordenación del territorio y el urbanismo*, Diputació de Barcelona-Universidad Internacional Menéndez Pelayo, Barcelona, pp. 199- 239
- MAY S, 2003, "Meteorologica", in MAY S (ed), *Olafur Eliasson: The Weather Project*, Exhibition catalogue, London: Tate Publishing
- MCHARG I.L, 2000, *Proyectar con la naturaleza*, Barcelona: Editorial Gustavo Gili
- MERLEAU-PONTY M., 1962 [1945], *Phenomenologie de la Perception*, trans. Smith, Colin, *Phenomenology of perception*, London: Routledge and Kegan Paul
- MEYER E, 2008, "Sustaining beauty. The performance of appearance. A manifesto in three parts", in: *Journal of Landscape Architecture*, Spring 2008, pp. 6-25
- MEYER E, 2000, "The Post-Earth Day Conundrum: Translating Environmental Values into Landscape Design", in Conan M (ed), *Environmentalism in Landscape Architecture*, Washington D.C: Dumbarton Oaks Research Library and Collection
- MEYROWITZ J, 1985, *No Sense of Place: The Impact of Electronic Media on Social Behavior*, New York: Oxford University Press
- MONTAGU A, 1971, *Touching: The Human Significance of the Skin*, New York: Harper & Row
- MONTASELL J, 2010, "El Parque Agrario del Baix Llobregat. Un paisaje cultural", in Sabaté J (ed), 2010, *Territorio, proyecto, patrimonio*, Laboratorio internacional de paisajes culturales, Barcelona: Barcelona Digital, pp. 35-44
- MORSE E, 2009, "Something in the air", in *Frieze magazine*, issue 127, Nov-Dec 2009, London
- MORANTZ A, 2001, "Artist Landon Mackenzie retraces the landscapes charted by early explorers and cartographers", in *Canadian Geographic*, November – December 2001
- Morton T, 2007, *Ecology without Nature: Rethinking Environmental Aesthetics*, Cambridge, Mass.: Harvard University Press
- N** NOGUÉ I FONT J; SALA I MARTÍ PERE; DEPARTAMENT DE POLÍTICA TERRITORIAL I OBRES PÚBLIQUES (eds.), 2010, *Catàleg de paisatge. Les Terres de Lleida*. Barcelona: Generalitat de Catalunya. Departament de Política Territorial i Obres Públiques
- NOHL W, 2001, "Sustainable landscape use and aesthetic perception—preliminary reflections on future landscape aesthetics", in *Landscape and Urban Planning*, 54,1, pp.223-237
- O** ORIAN G.H; HEERWAGEN J.H, 1992, "Evolved Responses to Landscapes", in BARKOW J et al (eds), *The Adapted Mind*, New York: Oxford University Press
- ORIAN G, 1998, "An Evolutionary Perspective on Aesthetics", in *Journal of Psychology of Aesthetics, Creativity and the Arts, Bulletin of Psychology & the Arts Sample Issue Evolution, Creativity, and Aesthetics*, University of Washington
- OSWALD F; BACCINI P, 2003, *Netzstadt: Designing the Urban*, Basel: Birkhäuser
- ORSONI M, 1998, "Point of view: A question of atmosphere", in *Vis a Vis International*, Paris: ALA Productions, pp. 9-11
- P** PALLASMAA J, 2011, "Space, place and atmosphere – peripheral perception in architectural experience", available at: GHOST 13, conference
- PARSONS R, DANIEL T. C, 2002, "Good looking: in defense of scenic landscape aesthetics", in *Landscape and Urban Planning* 60, 43–56
- PEARSON M, SHANKS M, 2001, *Theatre/Archaeology*, Routledge, pp. 64-65
- PRESTON J, 2008, In the Mi(d)st Of. *Archit Design*, 78: 6–11. doi: 10.1002/ad.666
- Q** QUARTIER K; CHRISTIAANS H; VAN CLEEMPOEL K, 2008, "Retail design: Lighting as an atmospheric tool, creating experiences which influence consumers' mood and behavior in commercial spaces", in *Undisciplines/ Proceedings of the Design Research Society Conference 2008*, Sheffield, UK. July 2008. Available from Sheffield Hallam University Research Archive (SHURA) at: <http://shura.shu.ac.uk/496/>
- R** RELPH E, 1976, *Place and placelessness*, London: Pion
- RIGBY K, 2011, "Gernot's Böhme Ecological Aesthetics of Atmosphere" in GOODBODY A; RIGBY K (eds), 2011, *Ecocritical Theory: New European Approaches*, Charlottesville: University of Virginia Press
- ROBERTSON R, 1992, "Globalization. Time-Space and Homogeneity-Heterogeneity", en FEATHERSTON M; LASH S; ROBERTSON R (comp.), 1995, *Global Modernities*, Sage, London; New Delhi, Thousand Oaks
- ROBERTSON R; KHONDKER H.H., 1998, "Discourses of globalization: Prilimiraly considerations", en *International Sociology*, 13, 1, March, pp. 25-40
- S** SABATÉ J, 2004, "El Pla Especial del Parc Agrari del Baix Llobregat", in *Patrimoni i projecte territorial: Colònies, Sèquia de Manresa i Delta del Llobregat*, Barcelona: Espai Blau, pp. 45-62
- SABATÉ J, 2000, "El Parc Agrari del Baix Llobregat", in *Revista de Debats Territorials* 8, pp. 251-282
- SCHMITZ H; OWEN MÜLLAN R; SLABY J, 2011, "Emotions outside the box —the new phenomenology of feeling and corporeality", in *Phenomenology and the Cognitive Sciences Journal*, Volume 10, Issue 2, pp. 241-259, (published online 8 February 2011 with open access at Springerlink.com).
- SCHULZ C, 1980, *Genius loci, towards a phenomenology of architecture*, London: Academy Editions
- SEAMON D, 2010, "Merleau-Ponty, Perception, and Environmental Embodiment: Implications for Architectural and Environmental Studies", chapter prepared for McCann R; Locke M. P (eds), *Carnal Echoes: Merleau-Ponty and the Flesh of Architecture*, forthcoming, available at: <http://www.academia.edu/>
- SLOTTERDIJK P, 2004, *Sphären III*, Frankfurt/Main: Suhrkamp
- SOMOL R; WHITING S, 2002, "Notes around the Doppler effect", in S. Saunders W (ed), *The New Architectural Pragmatism: A Harvard Design Magazine Reader*, Minneapolis: University of Minnesota Press, pp. 72-77
- SPANOU I; CHARITOS D, 2003, "Towards defining the "atmosphere" and spatial meaning of virtual environments", in ASCOTT R (ed), 2006, *Engineering Nature: Art Consciousness in the Post-Biological Era*, Bristol, UK: Intellect Books, pp. 145-152 Originally presented at the *Consciousness Reframed Conference*, 2003
- SPIRN WHISTON A, 2000, "Ian McHarg, Landscape Architecture, and Environmentalism: Ideas and Methods in Context", in Conan M (ed), 2000, *Environmentalism in Landscape Architecture*, Washington D.C: Dumbarton Oaks Research Library and Collection
- STEINITZ C, 2008, "On scale and complexity and the needs for spatial analysis", in *Proceedings of the Conference at the CS National Centre for Geographic Information*, Cambridge MA, 2008
- T** TATAKI K, 2010, "Embodied knowing: the tacit dimension in Johnson and Lakoff, and Merleau-Ponty", in *Tradition&Discovery: The Polanyi Society Periodical*, 36:2, 2010, pp. 26-39
- TILLEY C, 2008, *Body and Image: Explorations in Landscape Phenomenology: 2*, Walnut Creek, CA: Left Coast Press

- T** UNIVERSIDAD POLITÉCNICA DE CATALUÑA, MASSACHUSETTS INSTITUTE OF TECHNOLOGY (eds), 2001, *Designing the Llobregat Corridor: cultural landscape and regional development*, Barcelona: Universitat Politècnica de Catalunya
- U** ULRICH R.S, 1983, “Aesthetic and affective response to natural environment”, en ALTMAN I; WOHLWILL J.F (eds), 1983, *Behavior and the natural environment*, New York: Plenum Press, pp. 85–125
- V** VALVERDE A, 1997, “Evolución histórica, origen y significación de la pineda litoral del delta del Llobregat, I (siglos XVI-XIX)”, *Spartina*, 1997-1998, vol. 3, pp. 63-101
 VARELA A. H; THOMPSON E; ROSCH E, 1991, *The Embodied Mind: Cognitive Science and Human Experience*, Cambridge, MA: MIT Press
 Vischer, Robert. “On the Optical Sense of Form: a Contribution to Aesthetics” in Mallgrave and Ikonomou, pp. 89-123
 VOGELS I, 2008, “Atmosphere Metrics :a tool to quantify perceived atmosphere”, in Augoyard F(ed.), *Faire une ambiance*, Grenoble (Fr), 10-12 septembre 2008 [en ligne]. Grenoble: Cresson. 6 p. Ambiances.net, <http://ambiances.grenoble.cnrs.fr/index.php/fr/colloques/193-atmosphere-metrics-a-tool-to-quantify-perceived-atmosphere> (Consulté le 26/01/2014)
- W** WASCHER D.M. (ed), 2005, *European Landscape Character Areas – Typologies, Cartography and Indicators for the Assessment of Sustainable Landscapes*. Final Project Report as deliverable from the EU’s Accompanying Measure project European Landscape Character Assessment Initiative (ELCAI), funded under the 5th Framework Programme on Energy, Environment and Sustainable Development (4.2.2), x + 150 pp.
 WIGLEY M, 1998, “The Architecture of Atmosphere”, in *Daidalos* 68, 1998
 WIGLEY M; ELIASSON O; BIRNBAUM D, 2006, “The hegemony of TiO2: A Discussion on the Colour White; A Conversation between Mark Wigley, Olafur Eliasson and Daniel Birnbaum”, in ELIASSON O, *Your Engagement has Consequences; On the Relativity of Your Reality*. Edited by Studio Olafur Eliasson. Baden: Lars Müller Publishers, pp. 241-251
 WILLIAMS R, 1966, *Culture and Society*, London: Penguin
 WILLIAMS R, 1976, *Keywords*, London: Fontana
 WITTGENSTEIN L, 1921, *Tractatus Logico-Philosophicus*, translated by Charles Kay Ogden, Routledge, 1990
 WÖLFFLIN H, 1886, “Prolegomena to a psychology of architecture”, in Mallgrave Ikonomou, pp. 149-87

X

Y

- Z** ZUMTHOR P, 1988, “A way of looking at things”, In ZUMTHOR P, 2010, *Thinking Architecture*, Basel: Birkhäuser, pp. 9-26
 ZUMTHOR P, 2006, *Atmospheres – Architectural Environments – Surrounding Objects*, Basel: Birkhäuser

REFERENCE DOCUMENTS

Council of Europe, European Landscape Convention, 2000, Florence, available at: <http://conventions.coe.int/Treaty/Commun/QueVoulezVous.asp?NT=176&CM=8&CL=ENG>

Observatori del Paisatge, Generalitat de Catalunya, 2005, Prototipus de Catàleg de Paisatge, Bases conceptuals, metodològiques i procedimentals per a l’elaboració dels Catàlegs del Paisatge de Catalunya, Olot i Barcelona

Landscape Character Assessment Guidance for England and Scotland, 2002, prepared on behalf of the The Countryside Agency and Scottish Natural Heritage by Carys Swanwick, Department of Landscape, University of Sheffield and Land Use Consultants, available at: <http://publications.naturalengland.org.uk/publication/2671754?category=31019>

WEBSITES

<http://umanitoba.ca/architecture/atmosphere/>
<http://www.sensorystudies.org/events-of-note/understanding-atmospheres-culture-materiality-and-the-texture-of-the-in-between/>
<http://www.ambiances.net/congresses/>
<http://www.cresson.archi.fr/PUBLI/pubCOLLOQUE/AMBIANCE2008-communications.htm>
http://www.elsewheremapping.com/2006/11/palpate_urbanism.html
<http://www.ambiances.net/elsewhere-online.html>
<http://www.cartophonies.fr/>
<http://www.lavilledessens.net/>
<http://www.ecouterparis.net/>
<http://smellandthecity.wordpress.com/>
<http://immersence.com>
<http://waterfrontseattle.org/design/plans.aspx>
<http://tldb.blogspot.com.es/2008/11/loedel-reserve-as-therapeutic.html>

INTERVIEWS

“Antonio Damasio: El origen de los sentimientos”. Interview published in Executive Excellence nº85 oct11

“Take your time: A Conversation. Olafur Eliasson and Robert Irwin.” Conversation published in Take Your Time: Olafur Eliasson. 2007.

INTERVIEW: Architect James Corner On NYC’s High Line Park, by Jill Fehrenbacher, 03/18/14. Published in: <http://inhabitat.com/interview-architect-james-corner-on-the-design-of-high-line/>