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The contingent city: De-coding the possibilities of the city’s sociospatial metabolism

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De-coding the possibilities of spatial assemblages: a design methodology of topologizing architectural morphology.

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Abstract (150 words) While the continuous flow of events seems to be a given, we still cannot either perceive or design space which is organized and has the capacity to reorganize itself in order to cope with major changes. In this framework, the research aims to establish a *code* for space, as a semantic system that monitors its sociospatial metabolism while at the same time being directly connected to its material reality. In this framework, the research attempts to establish *a design methodology* aiming at *a generative system for architecture and the city*. The material agency of this productive process is described as a bifold process which constantly informs itself, including a *"convergent phase of selection"* and a *"divergent phase of design"* (Spuybroek 2008: 189). The first one focuses on the *code's organization*, introducing Christopher Alexander's 253 Design Patterns (Alexander et al. 1977) as its elementary units in order to postulate on its topological structure as a network of relations between interacting, active parts. In the next phase, while theorizing the *code's structure*, Design Patterns are substituted by their *A-signifying signs* counterparts, mechanisms able to stabilize or destabilize the assemblage and thus allow for its contingency to remain immanent.

Keywords: design patters, code, design methodology, a-signs, affect theory

0. Introduction

While the continuous flow of events - within the assemblage, complexity and dynamics systems theory - seems to be a given, we still cannot perceive or design space that is organized and has the capacity to reorganize itself so as to cope with major changes. This research aims to establish *a code* for space as a semantic system that monitors its sociospatial metabolism and is directly connected to its material reality. In setting the general schema for its ontology, the research disregards the difference between the observable and the non-observable as well as the anthropocentrism this distinction implies (DeLanda 2013). In this context, space is composed of both the *actual* and the *virtual*, "space as is" and "space as it could be", respectively. As they both inform and enhance its identity, form-production is to be explained through a *process ontology format*.

Space, spatial structures and configurations are here theorized as *assemblages* composed of heterogeneous elements - themselves being parts of larger assemblages - that enter into relations with one another while their components' ability to engage is contingent. In this framework, the research attempts to establish a *design methodology aiming at a generative system for architecture*. To elaborate on the "space as it could be" on one hand, is to speculate on the city's tendencies and capacities not yet manifested or exhibited, both a philosophical and mathematical task. To that end, the concept of *the structure of possibility spaces* is introduced to architecture, a philosophical concept equivalent to or close to a mathematical *manifold* (DeLanda 2013). On the other hand, to conceive of space as being able to self re-produce itself is to postulate on its organization as a system able to differentiate over time according to a set of rules (Spuybroek 2008: 190).

As this information is both actual and virtual, the concept of a *code* is introduced as a processing schema. Chapter 01 deals with the *theoretical framework* needed to think about a code for the city, one that uses the reconstruction of Deleuze's world by Manuel DeLanda as a discursive tool to illuminate the subject of architecture while at the same time drawing from assemblage theory and a-signifying semiotics to set the framework for approaching material contingency. Chapters 02 and 03 explore the *code's organization* and introduce Christopher Alexander's 253 Design Patterns (Alexander et al. 1977) as its elementary units. Chapter 02 focuses on Design Patterns and postulates on their relevancy and ontological status to code space. Chapter 03 focuses on the *intensive processes* and *intensive differences* that produce architecture's spaces of possibilities and sorts Design Patterns into four spaces, pointing them as space's four dimensions. Chapters 04 and 05 deal with the *code's structure* as it transforms its elements to become formative. Chapter 04 focuses on the spatial assemblages' *ability to affect and to be affected* as a precondition to their material contingency. In Chapter 05, the code's dimensional areas acquire their affective capacity by means of *substitution of Design Patterns by their a-signs counterparts*, mechanisms able to increase spatial assemblages' material contingency. The code becomes the space of possible states that space can have, a model of form-production processes that directly connects the design of space to its material reality.

1. Theoretical Framework

Over time, the history of ontologies maps the dominant relationships between the *abstract* and its *concrete actuality*, or in Deleuzian terms between the *virtual* and the *actual*. Moving from one level to the other requires some kind of abstraction as the two are not homologous. (Spuybroek 2008: 190) The history of explanatory schemes notes the shift regarding the *type of abstraction* and the *nature of form*: abstraction evolves from reductive to generative while at the same time form moves from rigid models to more elastic ones. According to Lars Spuybroek: 'There have been four ontological abstractions - idea, schema, diagram and code - that match their concrete actualities - respectively, form, reality, assemblage and being.' (Spuybroek 2008: 190) The first two ontological abstractions, Plato's and Kant's, allow only for the replication of form and not for its generation, therefore implying a metaphysical connection between the abstract and the real. Within the generative theories that follow, Deleuze's diagram accepts a *physical relation between the abstract and the real*, their coexistence within the same continuum, a continuum within the real itself. The last abstraction of code and being is considered to be mapping the ultimate *biologizing of design*.

To better grasp what spaces inhabit the virtual and the actual we draw from Deleuze's distinction between *intensive spaces* on one hand, and *extensive and qualitative spaces* on the other (DeLanda 2013: 63). The virtual is inhabited by the former while the actual is composed by the latter. Extensive and qualitative spaces are bounded by natural and artificial extensive boundaries that extend in space up to a limit marked by a frontier. Intensive spaces or zones of intensity are less familiar but equally well-defined spaces. They are bounded by *critical points of change*, whether in temperature, pressure, gravity, density, tension, connectivity and more and define abrupt transitions for the state of natural and artificial objects that inhabit them. "The intensive, the extensive and the qualitative are intricately related: *zones of intensity* are the site of processes which yield as products the great diversity of extensive and qualitative spaces". (Buchanan and Lambert 2005: 81)

The material agency of this productive process, a key to this ontology, is described as a bifold process which constantly informs itself, including a "*convergent phase* of selection" and a "*divergent phase* of design" (Spuybroek 2008: 189). For the *convergent phase*, one to inhabit the virtual domain, a system is organized by gathering information that is relevant and providing its topological structure, one that concentrates on the relations instead of the components. In this phase, code is established including both the procedure and the rules necessary for the information to be processed over time. *In the divergent phase*, the actualization takes place as the code germinates and transforms into actual spatial structures with geometric and qualitative properties. According to Lars Spuybroek, both phases should be machines in themselves able to connect to one another while their division better describes how an organization turns into a structure. These spatial structures are expected to process information over time and therefore produce variations of oneself. To do that they need to remain structurally open beyond the point of their actualization. (Spuybroek 2008: 189)

To define spatial structures as open systems able to reorganize themselves, the research draws from assemblage theory, an approach to dynamic systems analysis that emphasizes on fluidity, mutability, interchangeability of their constituent components, producing evolving systems that interact between each other. This theory has evolved in order to move away from conceptualizing systems as seamless wholes, and provides "the possibility of analyzing both the contingent interactions between parts as well as the emergent properties of the complex whole". (DeLanda 2006: 10) In assemblage theory, a component may be detached from an assemblage and plugged into another where it forms different interactions. Within this framework, spatial assemblages seem to be specific entities that have been produced in a specific timeframe, and although they have operative capacities they are contingently obliged to function the way they operate.

2. The Convergent Phase _ A Machine of Design Patterns

In this framework, within the convergent phase, Christopher Alexander's 253 *Design Patterns are introduced as the code's *basic units of information* and are rearranged into a new 'table' of spatial relationships, through a population - thinking process (DeLanda 2013: 52). Before delving into establishing the code's spaces of possibilities, we shall elaborate further on Design Patterns pointing to their ontological status and their relevancy as the code's elements. To elaborate on that, we postulate that through DP the code is able to simulate t*he processes of representation and self-organization*, necessary for processing information over time. In terms of the *process of representation*, the code has to be able to gather and store information about the environment. 'The structure of the system cannot consist of a random collection of elements; they must have some meaning.

In traditional philosophical terms, the system must somehow 'represent' the information important to its existence' (Cilliers 1998). In that context, Design Patterns as a collection of pre-structured elements describing space have the capacity to be incorporated in the coding scheme. At the same time, their diagrammatic, rule-based structure is important in terms of their topological plasticity, increasing their capacity for transformation. For the *process of self-organization*, the code is expected to develop organized structure and adapt it to cope with the changing environment. To do that, its elements have to be 'fairly unstructured' (Cilliers 1998: 12) so that the relationships between the distributed elements of the system - under the influence of the environment and the history of the system - can be reevaluated in terms of their patterns of communication. As DP are assemblages themselves of both rules and spatial configurations, we hypothesize that their communicational plasticity will be further enhanced through the communicational capacity of their component parts.

We have by now postulated that the 253 Design Patterns will be the code's basic units of information while at the same time their patterns of communication are assumed to be operative at two distinct spaces. The first space is where the 253 design patterns exhibit their interconnections' possibilities as they communicate with other units, with the units' history, and with their environment. The second space relates to each pattern's internal structure where communications between its parts and rules take place, resulting in the pattern's actualization. (Deleuze 1993: 100). In that respect, Design Patterns are introduced onto *a surface in space* attributed solely to their *communicational possibilities*. [Figure 01]

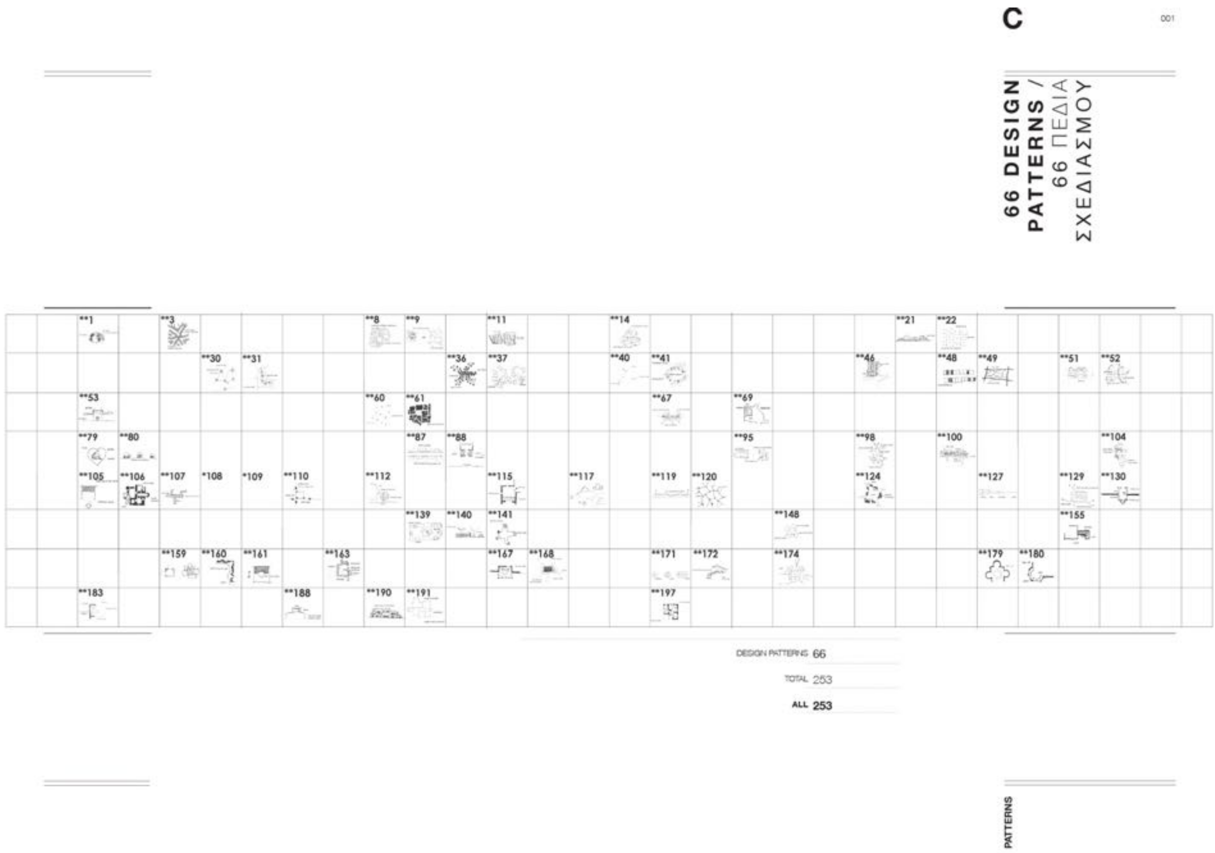

Figure 01 . 66 Design Patterns

On that surface, they are free to assemble and reassemble anew as they use their communication properties, they exhibit their unactualized tendencies and manifest their full range of capacities. This surface is closely related to that of a Riemanian *manifold*, an *N-dimensional surface* or *space* where the number of dimensions may vary while the global embedding system becomes redundant and thus the manifold autonomous. (DeLanda 2013: 5) As the patterns start populating this autonomous surface, the manifold gets activated and energized. In the first part of the population process, Design Patterns are networked in terms of *the intensive processes* that gave rise to them. At the end of the first part of the process, the manifold will have four spaces of possibilities pointing to the city's four dimensions, each inhabited by specific Design Patterns. For the second part, they are interconnected in regards to the *intensive differences* that prompted these processes while each dimensional area. After the second part, each dimensional space will be populated by two contrasting "demes" of Design Patterns, each pointing to *the minima and maxima of their intensive gradient*.

3. The Convergent Phase _ The Code's Organization

In Deleuzian ontology, a species is defined by the morphogenetic process that gave rise to it instead of its essential traits (DeLanda 2013: 2), a principle guiding the first part of the population process. Drawing from dynamical systems theory, we propose a *shift* from 'morphogenetic processes which generate material objects and kinds' (DeLanda 2013: 5) to sociospatial production processes which generate space's material reality. Within the same shift, the dimensions of the manifold are used to represent the relevant ways space may change pointing them as its *intensity zones*, the site where *intensive processes* take place. At the same time, the manifold itself becomes the space of possible states that space can have. To better define and topologically measure space's intensity zones, we map patterns of communication within the full archive of 253 DP by means of networks of interconnected nodes. Each node is used to represent a Design Pattern while a connection between any two such nodes represents some function related to their communication. These networks are controlled by *communication protocols* and set the rules for the *code's organization*. (Passia 2016: 35)

These intensive spaces along with the intensive gradients responsible for their generation are defined in the following six Design Patterns 36, 66, 98, 127, 142, 193. They differ from all others DP in terms of their gradient-like structure as their diagram is a *scale* that maps a spatial relationship defined by a pair of polar terms [opposite in meaning] with specific *scale positions*. These six Design Patterns document the kinds of productive differences that incite form-production processes in the city. Specifically, Design Patterns 66 and 127 define an intensity zone of spatial relations ranging from *interiority to exteriority* in regard to what is public. Patterns 142 and 193 set the intensive boundary within the scale of *integration and separation*. At the same time, pattern 36 sets the limits for what appears to be a zone fostering relations of *concentration and decentralization*. Finally, pattern 98 delimitates an intensive space of spatial configurations aiming at generating circumstances of either *similarity or heterogeneity*. When placed on the manifold's surface, the six gradients start attracting Design Patterns relating to their respective intensity zones while four discrete spaces of possibilities are being generated, four semantic categories. [Figure 02]

interiority Vs exteriority

integration vs separation

concentration Vs decentralization

similarity Vs heterogeneity

In the first part of the population process, a list of *communication protocols* between DP is gradually being established while at the same time the respective topological networks emerge. The intensive spaces of the manifold representing space's four dimensions are the result of each Design Pattern being individuated in terms of the processes responsible for its actualization: the social or spatial relationships they engage in, the design problem they articulate, the context within which they are produced.

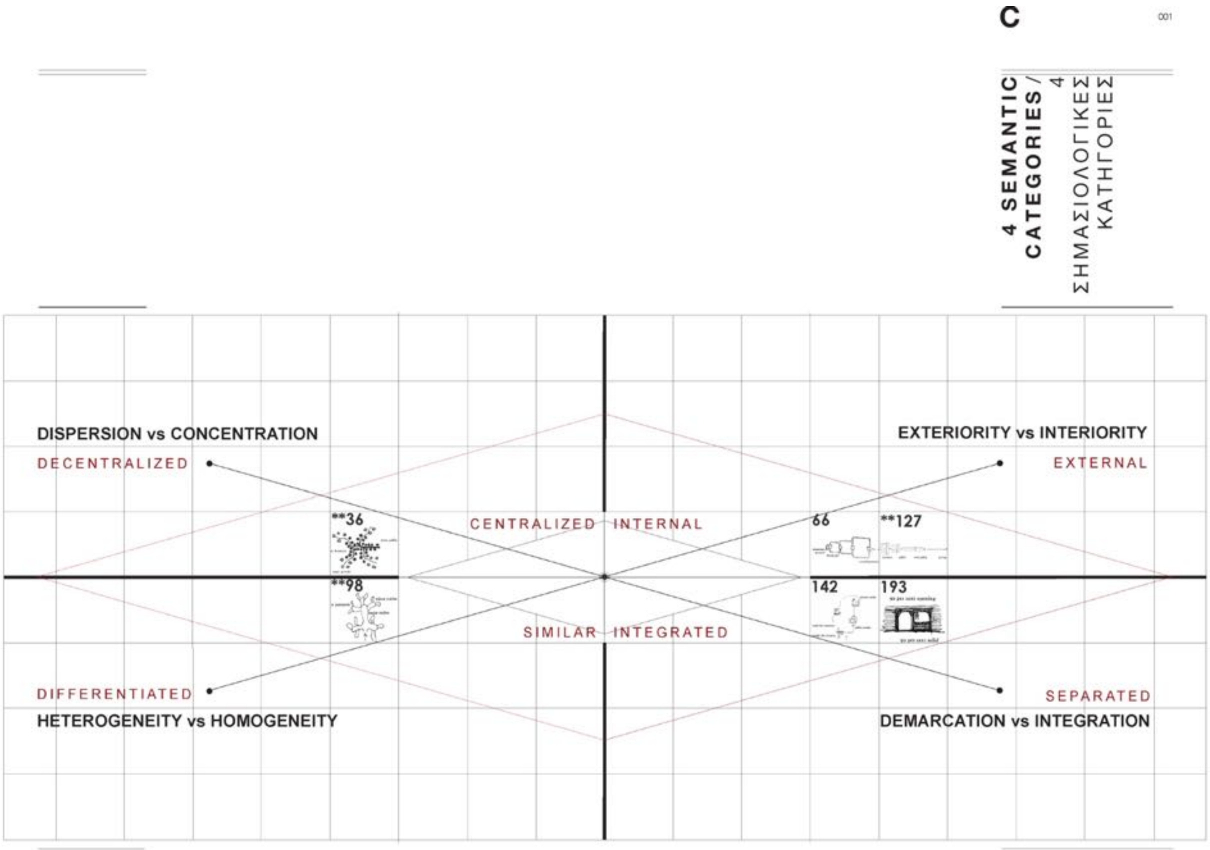

Figure 02. 4 semantic categories with 6 gradients

3.1. Communication protocols_4 and 12-protocols list

Thus, four recurring key concepts within the Design Patterns' archive constitute an initial 4-protocols list: privacy, dispersion, heterogeneity, spatial separation. [Figure 03] These concepts produce four interconnected networks of communication while at the same time four key patterns (Design Patterns 100, 8, 9, 98) take their place on the manifold' s respective areas. Their behavior is that of magnets as they attract new relevant patterns around them, each populating some of the sub-areas of the manifold. The 4-protocols list is enhanced by another 8 new protocols that further broaden the informational substratum of the manifold and better describe the boundaries of their intensive spaces. [Figure 04]

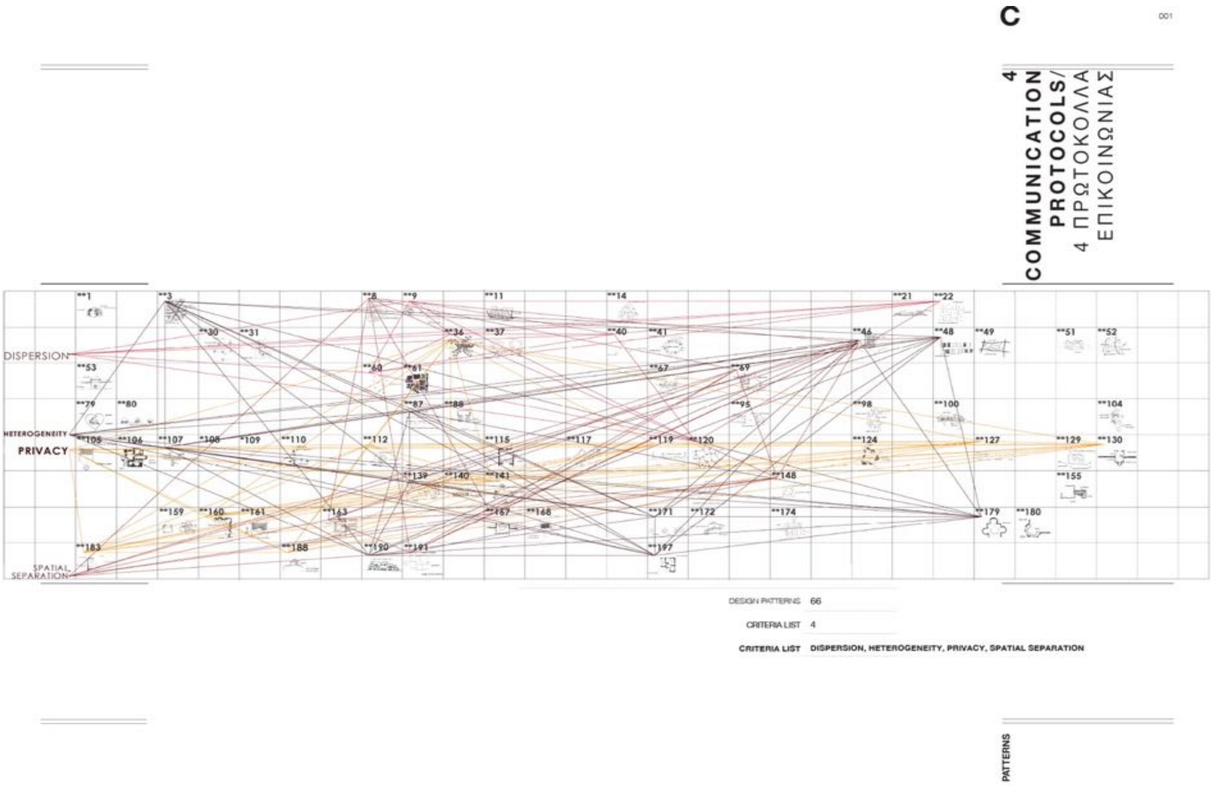

Figure 03. 4 communication protocols

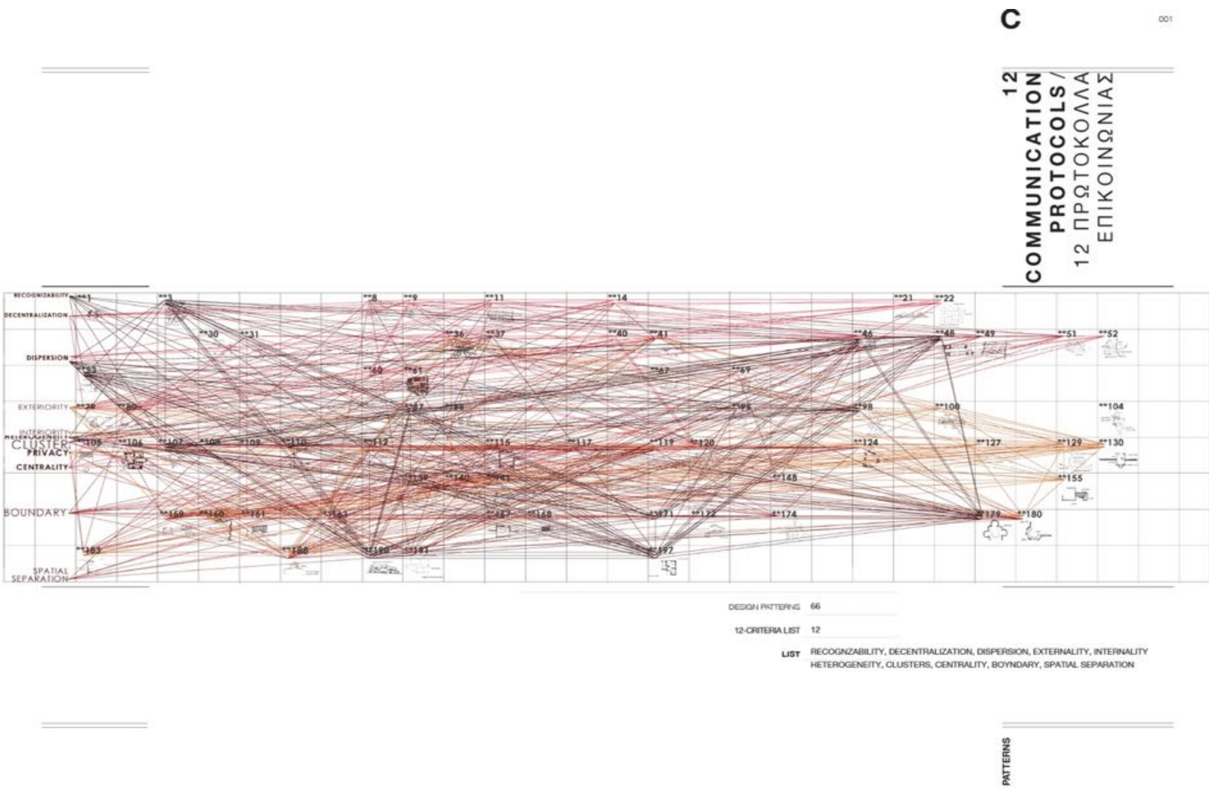

Figure 04. 12 communication protocols

This growing list of protocols organizes new interconnected networks of communication, while at the same time, more significant Design Patterns energize the manifold (Design Patterns 37, 31, 95, 168). Then, the protocol of dispersion appears to be adjacent to those of *decentralization* but also of *centrality*, while heterogeneity seems to be close to both *differentiation* and *recognizability*. The same stands for the protocol of privacy that meets with those of *externality* and *internality*, or the protocol of spatial separation that is closely related to those of *clusters* and *physical boundary*. The new 12-protocols list is populated by concepts both relating and opposing to the initial four, that are also recurrent within the archive and manifest themselves through their respective Design Patterns. These networks, now populating the manifold's space of possibilities are the communicational maps for each dimension. The population process is complete after having assigned all 66 Design Patterns into zones of intensity, space's four dimensions of *Exteriority*, *Cohesion*, *Integration*, and *Differentiation*. [Figure 05]

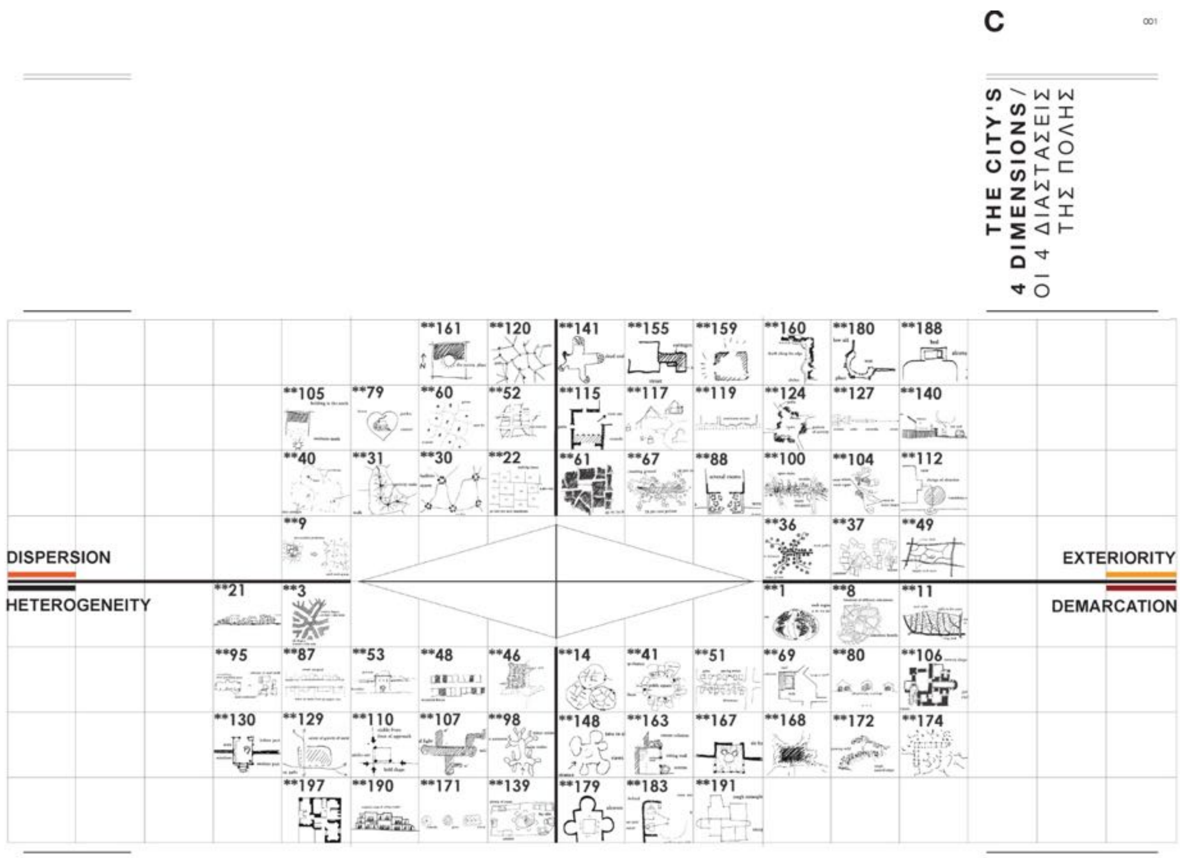

Figure 05. 4 dimensions

3.2. Intensive differences as space's critical points of change

In the second part of the population process, we will take a closer look on each dimensional space and their polarity character trying to establish their internal communicational structure. The notions of *intensive differences* (DeLanda 2013) resurface as the guidelines for this process's second part. As opposing DP are placed on the same areas on the manifold, each area seems to be mapping two extremes of the same spatial relationship e.g. Integration Vs Separation *as the minima and maxima of the dimension of Cohesion*. Each area of the manifold representing a space of possibilities for architectural form is then organized on the basis of continuity between opposites; the space of productive differences that yielded specific Design Patterns as their products. The same guiding principles organize the other three areas of the manifold on the basis of their binary spatial relationships; *Interiority Vs Exteriority, Concentration Vs Decentralization, Similarity Vs Heterogeneity* for the dimensions of Exteriority, Integration and Differentiation, respectively. The informational substratum of each dimension is composed of two contrasting "*demes*" of Design Patterns resulting into two discrete interconnected networks, each setting the *dimension's minima and maxima in the scale of its semantic differentiation*. [Figure 06] These polar patterns are assumed to inhabit two discrete and intensive sub-areas close to the respective poles of each dimension: one towards the origin of space and one towards the periphery inhabited by minima and maxima Design Patterns, respectively. In the city's manifold, each dimension is composed of polar relationships as exhibited by its Design Patterns that map their full gradient. To map each dimension's intensive differences, we postulate there is a semantic scale defined by the dimension's polar patterns with scale positions representing its *critical points of change*. [Figure 07] Through this two-part process, we have assigned four dimensions to our manifold as the code's degrees of freedom and we have established the relevant ways each dimension may change through a set of protocols.

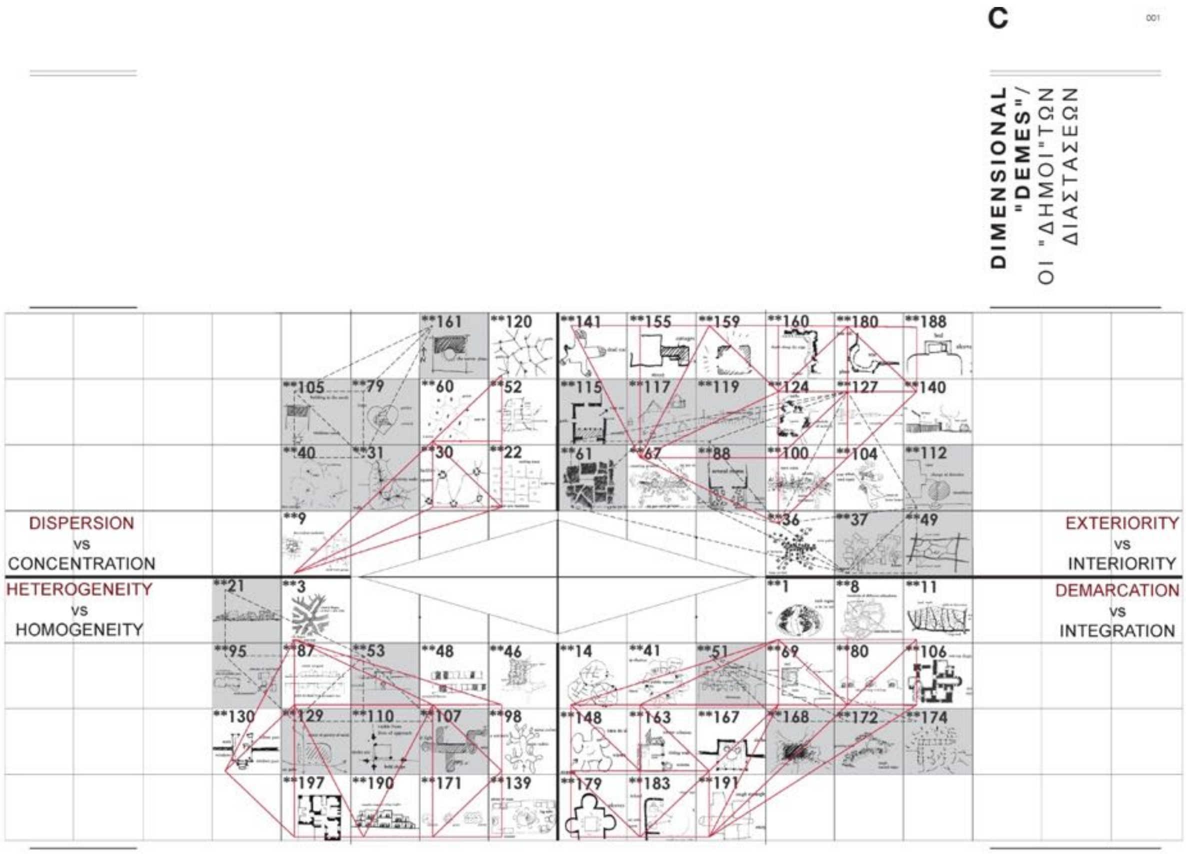

Figure 06. dimensional demes

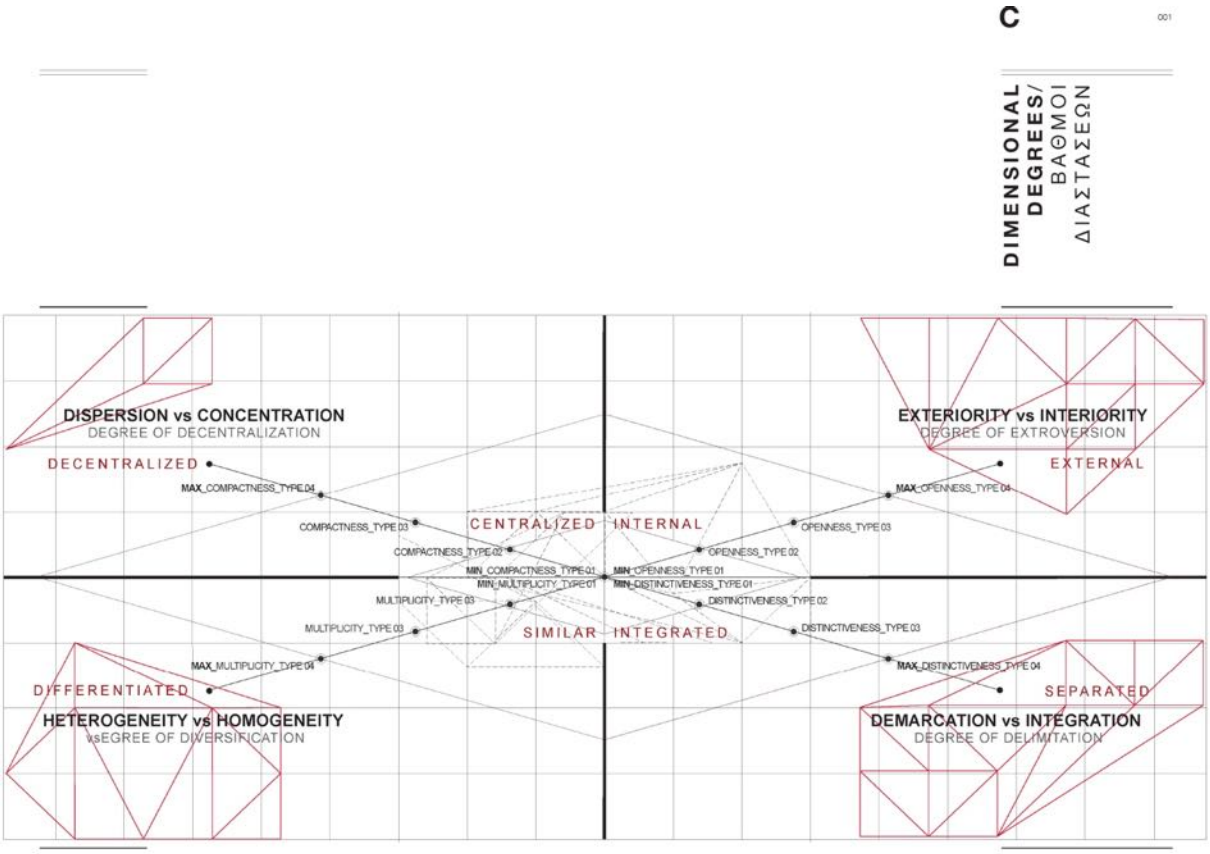

Figure 07. dimensional degrees

4. The Divergent Phase _ A Machine of A-signs

During the convergent phase, Design Patterns have been organized into a *system*, a network of acting and interacting agents that through interaction result in larger-scale patterning effects (Lars Spuybroek: 193). Furthermore, the system can differentiate over time according to *a set of rules*, the agents' communication protocols that continuously organize their dimensions and dimensional degrees. Entering the *divergent phase* and while the code maintains in full its topological organization, it transforms its structure to become formative by replacing its elementary units. To enter the phase of materialization we turn to material structures in order to extract specific *mechanisms* able to interrelate spatial components and thus formulate spatial assemblages. Through Design Patterns we have defined relations between spatial elements through a set of protocols pointing to the dimensional areas they are mostly attracted to as well as their polarity character. We now point to the *affective capacity* these spatial elements and configurations have in order to better define their capacity to assemble and reassemble anew thus allowing for their material contingency. In short, while spatial relations have been defined through communication protocols described by Design Patterns, we now point to the affective capacity of spatial assemblages. This capacity lies in an *excess*, a latent potentiality they contain, not transcendental but immanent in their *pre-subjective* aesthetic power.

In order to analyze and produce spatial assemblages of that kind, we point to their more stable characteristic, their *ability to affect and to be affected*, referred to as *affects*. (Deleuze & Guattari 1987: xvi) Affects are the relations we create with temporary worlds, and by which at the same time we are being created. In mapping the assemblages' affective ability, spatial objects are analyzed in *two axes.* The first axis focuses on the role that the assemblage's components play in order to enter the assemblage, either material or expressive. The second axis records the processes known as *a-signifying signs or a-signs*, (Guattari 1995: 54) which are the triggering mechanisms able to stabilize or destabilize the assemblage and thus allow for its components to assemble anew. These mechanisms are introduced in the spatial object as *intensities* that transform it beyond meaning, beyond fixed or known cognitive procedures. They belong to a molecular level which is populated by modulations, movements, speeds, rhythms, and spasms. (Lazzarato & Melitopoulos 2012: 240) As a-signs cannot be isolated from matter, we thus point to *affects* as the result of the a-signs' capacity to trigger the materialization of one spatial assemblage among many. Theorizing spatial objects as open systems in continual transformation and exchange between its components, affects seems to depict this transformation through "qualities ... as the real world is always a world of effect (events), not quantities". (Kwinter 1998: 60)

A-signs are in this framework the *mechanisms* inherent in spatial objects that allow for the constituent material and expressive parts to perpetually enter into new assemblages. As we have previously mentioned, those spatial structures are theorized as assemblages, that is systems composed of interacting parts. And since all assemblages are parts of larger *assemblages*, their components' ability to engage is *contingent*. (Meillassoux 2012:10). To measure material structures' affective capacity, an *affective mechanisms' index* is created. The index is a map of the affective capacity of spatial configurations at different scales, from design objects to buildings and urban configurations.

5. The Divergent Phase _ The Code's Structure

The *affective mechanisms' index* is composed of approximately 100 a-signs, documented via the analysis of numerous contemporary spatial objects of various scales, including works of art and installations. (Roupas 2016: 63-65) The heuristic mining techniques that were used in order to extract the mechanisms and create this index include but are not limited to the analysis of their descriptive texts, critiques and formal analysis. A-signs are categorized in terms of their aesthetic power to affect and to be affected, themselves material techniques that point directly to the affective capacity of the final design object. Through the index, each a-sign is now connected to specific affects, the material elements it has the capacity to intensify and finally the techniques it uses to that end. Thus, a table for each a-sign is created where the list of affects is noted, along with the paradigms that use the a-sign and an indicative photo. [Figure 08]

Figure 08 . A-signifying signs _ Index Template _ Diagrid

Each a-sign is thus connected - within the premises of this index - with a specific list of affects it triggers and which thoroughly defines it. And vice versa, the same affect is interrelated to the different a-signs that can trigger it. That said we believe that through these mechanisms - a-signs - and the resulting affects we are able to observe design objects as they are allowed to lie in a perpetual state of becoming. Through the affective mechanisms' index [Figure 09], we are now able to analyze and guide the design objects' final form while at the same time establishing the means to measure its contingency.

INDEX/ A-SIGNIFYING SIGNS AFFECTS PROJECTS 002

[A]

	A-SIGNS	AFFECTS	PROJECTS
[001]	AFFILIATIONS [FO] [ST] [SC] [SF]	[AMBIGUOUS] [AMORPHOUS] [AXIALITY] [BLURINESS] [COMPLEXITY] [CONTINGENCY] [DIFFERENTIATED] [DISCON-TINUOUS] [DISSIPATION] [DISJUNCTION] [DIVERSITY] [INSTABILITY] [OPENESS] [TONALITY] [VAGUENESS] [VERTICALITY]	1.EASTREN DESIHM OFFICE_ SLIT HOUSE_SHIGA/-JAPAN_2005 2.KENGO KUMA_Z58 OFFICES_ SANGAI, CHINA_2008
[002]	AMBIGUITY [FO] [ST] [SC] [SU]	[ASYMMETRY][BLURINESS] [COMPLEXITY] [CONTINGENCY] [DEMATERIALISED] [DISCON-TINUOUS] [DISJUNCTION] [DISORIENTATION] [DIVERSI-TY] [FLUIDITY] [INSTABILI-TY] [VAGUENESS]	1.JUN AOKI_LOUIS VUITTON NAGOYA STORE_2004_TOKYO, JAPAN 2.PETER EISENMAN_ HOUSE II_1970_VERMONT, USA
[003]	ANTIGRAVITY [FO] [ST] [SC] [SU]	[DECONSTRUCTION] [DEMATERI-ALISED] [DIFFERENTIATED] [DISCONTINUOUS] [EFFORT-LESS] [INSUBSTANTIALITY] [SCALESS]	1.ATELIER TEKUTO_ MAGRITTE HOUSE_JAPAN_2007
[004]	APPLIED SIGN [FO] [ST] [SC] [SU]	[AFFINITY] [AMBIGUOUS] [COMPLEXITY] [CONTIGENCY] [DIFFERENTIATION] [DISCON-TINOUS] [DISCREPANCY] [DISSIPATION] [DUPLICITY] [MUTATION] [INTSBILITY] [VAGUENESS]	1.TOYO ITO_TAMA ART LIBRARY_JAPAN_2007
[005]	AURAL CONTINUITY [FO] [ST] [SC] [SU]	[AFFINITY] [GRADATION] [FLUIDITY] [INSUBSTANTIALI-TY] [SERIALITY] [TONALITY]	1.TOYO ITO_WHITE U HOUSE_ TOKYO, JAPAN_1976
[006]	AMORPHOUS [FO] [ST] [SC] [SU]	[A-CENTRICITY] [AMBIGUOUS] [ASYMMETRY] [BLURINESS] [DIFFERENTIATED] [DISCON-TINOUS] [GRADATION]	1.KENGO KUMA_HI KAWATANA ONSEN KORYU CENTRE_SHI-MONOSEKI, JAPAN_2009

Figure 09 . Affective Mechanisms' Index _ Extract

As a-signs take their place on the manifold to substitute Design Patterns, they start populating the respective dimensional areas. Using the general categories of *form, structure*, and *surface*, a-signs start to populate code's manifold, taking their place on the dimensional areas that best describe them. In this framework, the dimension of exteriority attracts a-signs on the basis of whether spatial assemblages interact with their context. The a-signs of *[001]_Affiliations [010]_Borrowed Landscapes, [036]_Faciality* and *[079]_Slit Openings* inhabit this dimensional area. The same stands for the dimension of Cohesion composed of a-signs that focus on the materiality and expressiveness of physical boundaries, such as *[011]_Box-Within-Box, [005]_Aural Continuity, [021]_Dematerialization,* or *[100]_Zero Degree*. In the dimension of Integration, a-signs point to how concentrated or decentralized a spatial assemblage's components are, an affect produced by the following a-signs: *[004]_Applied Sign, [024]_Discontinuity, [026]_Disorientation*, and

[037]_Transversality. Finally, within the dimensional area of Differentiation, a-signs aim at creating either homogeneous or heterogeneous spatial assemblages we have enlisted *[013]_Cartesian Grid, [007]_Black Stuff, [015]_Clear Structure Strategy,* and *[022]_Diagrid.* [Figure 10]

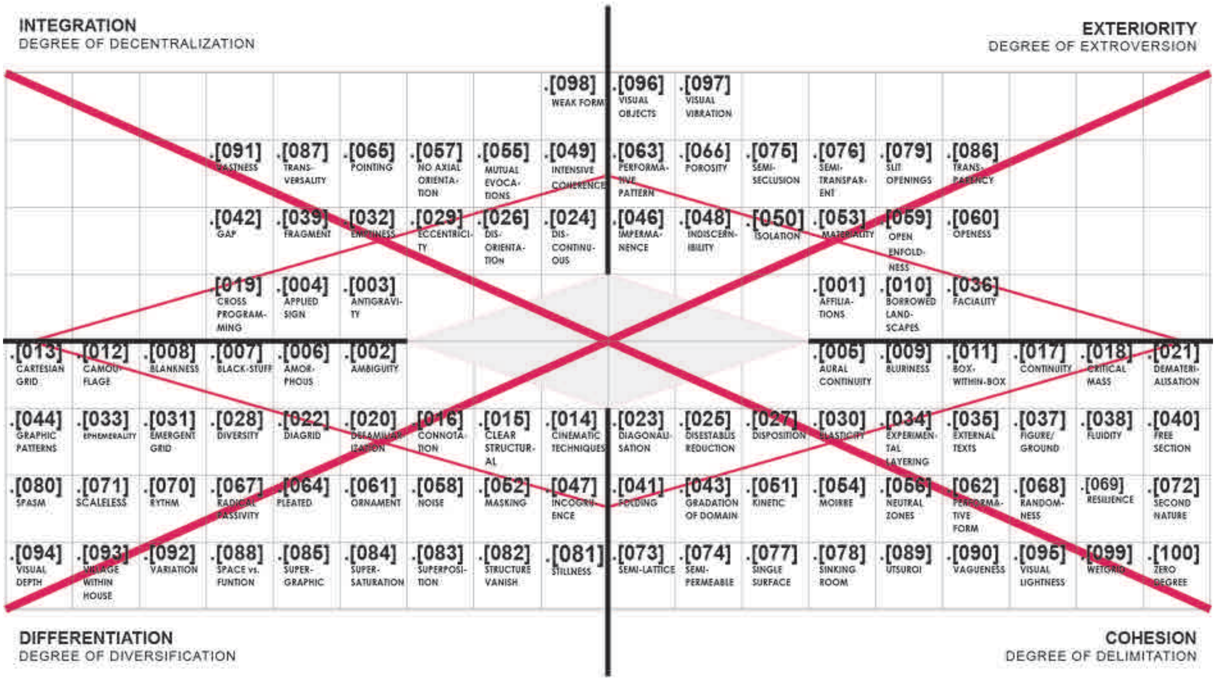

Figure 10 . Code with A-Signs

By replacing Design Patterns with A-signs we introduce affects as material information that is immanent in the spatial object while at the same time they confer no meaning; they only convey some information without semantic content. The affects' ability to merge with the material world without mediation allows them to avoid the realm of representation. With this codification we are able to control the final form of the design object while at the same time establishing the means to measure its continuous transformation as it ceaselessly enters into new assemblages.

6. Conclusions

Through this bifold process, we have defined a number of *attractors* for the code and architectural form: its *four dimensions* as the genera of exteriority, cohesion, integration, and differentiation, and also the *intensive boundaries of their material variation*. During the convergent phase, Design Patterns have been organized into a system, a network of acting and interacting agents that through interaction result in larger-scale patterning effects (Lars Spuybroek: 193). Furthermore, the system can differentiate over time according to a set of rules, the agents' communication protocols that continuously organize their dimensions and dimensional degrees. In the code, we organize for architectural form, the two machines process information through the mobilization of their topologically connected elements thus bridging the virtual and actual space. Transversing from the convergent to the divergent phase, organizations gradually unfold into material structures that have the capacity to be stable but not static thus allowing for material contingency to be theorized, perceived and designed. The code we have organized for the city resembles Deleuze's *abstract machine: 'a map of relations between forces, a map of destiny, or intensity, which proceeds by primary non-localizable relations and at every moment passes through every point, 'or rather in every relation from one point to another".* (Deleuze 2016: 36).

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