THE DISPLACEMENT OF ARCHITECTURE IN POSTDIGITAL HUMANITIES: NEOANALOGUE INDEXES, SYNTAXES AND CONFIGURATIONS

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the analysis becomes engaged in the path of transference —
and for us it is the index that this has taken place[1]

RETHINKING THE INDEX

With the above words, forty years ago, the French psychoanalyst and literary theorist Jacques Lacan introduces the stylistic figure of the *Index* in his *Écrits*, a personal manifesto for a metonymic tool to structure and limit the psychoanalytic field. The *Index* as a rather common figure both in linguistics as in arts and humanities is often made of contextual traces suggestive of some metadata descriptions — the exponents of the referents in the lacanic perspective — to help us access and process the information. It thus tends to point towards something that is in fact absent. For example, visual similarities allow the inference of a category, a rectangular shape on the map of a site allows the existence of a building to be deduced, while the sorting of words along a numerical order is an index of a list.

Over the years that followed the *Écrits*, scholars have often argued that the condition of a «transmissive» idea of the indexical thought in the analysis of a complex topic is thus one of employing internally visualized images as opposed to the more possessive

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[1] LACAN, 2001.

character of approaching the topic as made of finite elements. For many years, it was believed that during the process of the analysis, people arrive to comprehension and conclusions with the help of internal cognitive maps operating as, more or less, physical maps by unfolding finitely arranged data. However, the explanation of this system seems to be inadequate. Approaching the issue rather psychoanalytically, Lacan asserts, it is more like a personal index filled with bits of knowledge, images, references (a link to a previously experienced image, a past setting, a memory of an event), and pathways of meanings. Today, it has become rather clear through the contemporary neurological and psychological approaches[2] to consciousness that when someone is faced with the task of analyzing group data, the brain attempts to assemble a network of relationships reflected from those elements. It's a task of producing a kind of internal «map» but through a more complex mechanism by which the brain provides continuity between traces and metadata descriptions[3].

Lacan believed that, once we have mastered the Index as the secret of the task of analyzing a topic, we may be close to understanding how the disembodied experience of viewing the topic relates to mental and psychic engagement according to our subjective sensations. In the light of the above, if we want to determine the index of the word «façade», for instance, represented by its notational signifiers, we are referring to the idea of reshaping the value of the dialectic of our desire with the internally visualized categories of conception of what a façade is made of or stands for. In a way, the reflective[4] opinion one has for the image of a city, this imaginary constructed form that for Christine Boyer is also our sense of the real, is an intangible index of phenomenological parts (memories, desires and experiences). Yet if we want to develop an application illustrating galleries of «façades», most obviously, the visual will dominate, but in a very particular manner. One that displaces the linguistic and imaginary traces while projecting them in the operational framework of the act of designing a gallery. One cannot analyze the topic without the suggestive metadata descriptions of what a «façade» is, or at least one cannot avoid being engaged in a path of resurfacing the notational exponents of the referents for the word «façade».

Similarly, in a very perceptive text approaching the idea of presence in media archaeology, Vivian Sobchack has argued that the path is not simply a theoretical or interpretative discourse that used to be psychoanalysis' monopoly. Instead, it relates an operative practice and knowledge emerging from the symptoms of the visual inputs. She approaches transference as a «rely of metonymic and material fragments or traces of the past through time to the "here and now"» to pinpoint the «performative act of knowing

[2] In this regard see EBERHARD, 2008.
[3] EBERHARD, 2008; HENDRIX, 2006.
[4] See in particular *The City of Collective Memory.* BOYER, 1996.

which focus on "what is done" rather than on what is represented»[5]. Yet she tries to bridge the gap between re-presenting[6] the past within the humanities and the idea of an integration of thought transference by means of the digital. The focus on the «what is done» reflects her intention to investigate the operative practice of the underlying processes mentioned previously as an enhancement of human cognition and knowledge acquisition. The latter is the hybrid cognitive condition of the indexical function that is part human, part machine, whereby inspecting and challenging the order things are «represented», in realized, imagined or schematized cases, be a performative act of revealing and making present information. This condition, inspired from Sobchack's essay, strikes me as particularly relevant to my effort of humanizing the postdigital[7] index, however disputed and uncanny for digital architectural research the initial psychoanalytic input might have been.

It is precisely this awareness of a hybrid character in the mode of knowing through the digital that depth to the path is added as a kind of identifying these influential concepts of the ordering able to produce meaning and thus, according to Sobchack, presence. Indeed, beyond the analytic techniques that the lacanic index revealed, information sorting and retrieval of the displaced materiality of an object is itself already a synthetic activity that emerges from the individual «readings» of its traces. Human interpretation of the indexical elements is a fundamental part of the picture but is nevertheless the half part of it. The underling processes behind the indexical logic become even more complex when try to explain the two key technocultural phenomena of the postdigital era: the network and the visual aspects of a topic (Fig. 1). How can a list, a repertory, which is a structural tool of ordering the plethora of details of a complex topic, imply a network thinking that allows for the transference to occur? How can its visual character suggest the narrative patterning of its metadata descriptions after all?

[5] HUHTAMO, 2011: 324.

[6] SOBCHACK *apud* HUHTAMO, 2011, attributes her conclusions to Eelco Runia's idea of «presence» defined as «*the unrepresented way the past is present in the present*» and as being at least as important as «meaning» itself.

[7] On the term *postdigital*, see more at CRAMER, 2014.

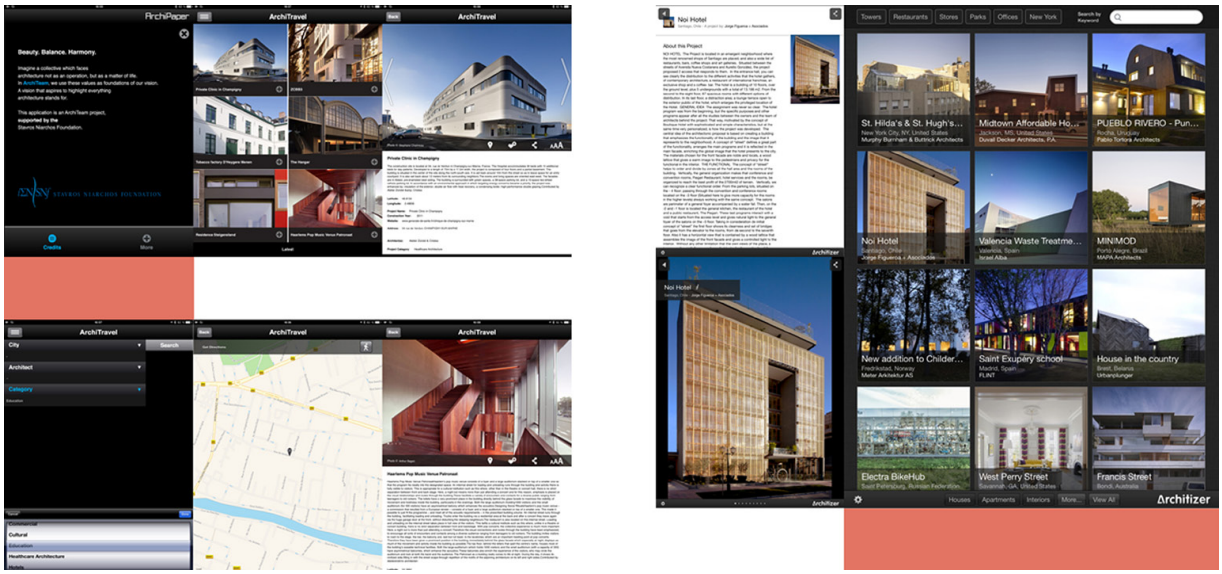

Fig. 1. ArchiPaper (left) and Architizer (right) are just two of the most visited online architecture indexes
Source: archipaper.com, architizer.com

ON CONFIGURATIONS

The answer that the lacanic conception of the index proposes to such questions becomes foundational for the displacement of architecture in postdigital humanities: that in a humanistic approach to the subject of coded and displayed architecture and in a similar humanistic understanding of Web 3.0, digital indexes are in fact *configurations*. And indexing architecture is about re-configuring architecture. A useful way to consider the quality of this dimension is the study of the definition of the term as it is used by space syntax theory. According to Bill Hillier[8], configuration is defined not simply as connections, but as relations that take into account other relations. In a sense, this means that positioning architecture in postdigital humanities is not about building the chronologically next infrastructure in the studying of projects through digital repositories. We cannot limit media technology to static snapshots of buildings and public spaces but should try to expand the notional frame of the archive to include the sets of interaction and interrelations produced by the medium specificity itself.

In what follows, I will explore a tentative path for the displacement to occur: by defining the idea of exhibiting architecture through the Web 3.0 not as a static repository but as a platform for interactive narratives, my intention is to bring forth those user/machine relations that need other relations in order to become communicative — I call this the configurational dimension of the index[9]. That is, I propose to expand its

[8] The term *configuration* is central to the syntactic conception of space as developed by Bill Hillier. It is used here in the same sense, considering the *Index* as adopting a similar complex sytem of relations as the physical space itself. For more, see HILLIER, 1998.

[9] This dimention has been discussed and developed further during a public conversation in the context of the DRS2014 Conference. The conversation was focused around the postdoctoral research on the Digital Index of Architecture

lacanic limits from something which simply allows us to arrange the individual parts that furnish the signifiers of a presentation to a tool for the translation of the parts into elements and features with interrelated meaning — being the latter a traditional concern of the humanities. This approach draws from a recent work in digital indexes of architecture in the light of their humanistic engagements with media technologies.

DomesIndex[10], the first major effort to exhibit the contemporary Greek architecture in a narrative mode of tracing objects' fragmented connections with their interior knowledge and thought process, is reviewed as a tool for mapping controversies both within its exhibited projects and through their network of information. Once we recognize its «indexical» characteristics as forming underlying networks of meaning linking the displaced, but absent, objects with their sorted traces, a wide range of visual languages produced by digital tools that map patterns of information — from text mining to graph analysis — can be used to resurface the complex configurational logic behind the online exhibition of architecture. To outline some of the implications that the digital index receives from the humanistic engagements with media technologies, I will briefly describe the above-mentioned case study and explain the reasons it was selected at this stage to illustrate emerged aspects from the displacement of architecture.

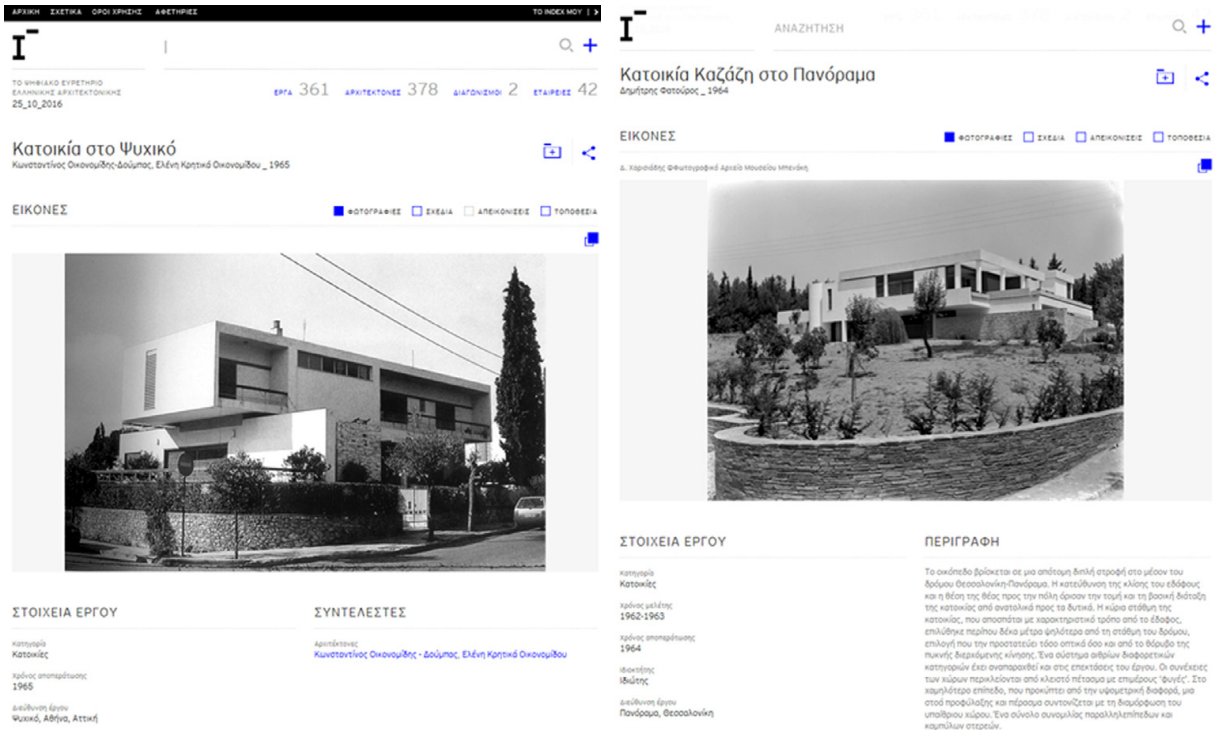

Fig. 2. *DomesIndex* is analyzed based on two key technocultural phenomena of the postdigital era: the network and the visual aspects of its index. Source: domesindex.com

with invited speakers. It was held on Monday, 16th of June 2014 at Umeå Arts Campus, UID, Östra Strandgatan 30, Umeå, Sweden. (Topic: *A Configurative Approach to Digital Imaginaries Design: Rethinking the Index*).

[10] MANIS *et al.*, 2012.

BACKGROUND OF THE CASE STUDY

DomesIndex is the largest online hosting platform for architecture in Greece, launched in 2012 to make Greek architecture digitally indexed, archived and accessible for everyone. It is a response to the rise of a specific kind of digital culture aiming at a time-critical understanding of architectural production. Looking at this issue, the platform proposes that the year of each project's completion is a central categorical characteristic for the indexical logic, along with the name of the architect(s). In this sense, the year, accompanying the thumbnail image in a titled form, somehow accompanies the principles each building era transmits. Starting from 1937, with the Ioanna Loverdou House by Georgios Kontoleon and Dimitris Pikionis' Experimental School at Thessaloniki, the sample of projects stored on the *DomesIndex* platform seems to index the insistence on the importance of the relation between the displaced object (building, complex or landscape) and the displaced context (time period, setting or school of thought) (Fig. 2). The browsing experience offers opportunities for the online user to retrieve updated information not only for contemporary projects but also from rather influential works of past periods. This way, the index attempts to establish the primacy of a background layer (context) in relation to a foreground one (image) but also to knowledge dissemination.

DomesIndex is not another showcase; it unfolds in digital space critical key projects from Greek architecture alongside of its communicative, storing, sorting and retrieving functioning and its meaning as a narrative collection in immaterial space. In its home page, the visual material is organized in a canonical grid-structured manner without significant variations over the sequence of its listed works. By clicking on the selected project, the user can generate its narrative plot in two axes: a chronical X-axis representing project's position on the timeline and a Y-axis enriched with visual (photos, plans, representations and maps) and textual material (description and individual data like metric information or related publications).

At this point, *DomesIndex* was selected for two reasons. First, it includes a wide variety of selected by a scientific committee projects and presented with the greatest possible integrity of data and visual material. Second, it employs a rather interesting methodological structure by using a navigation plot that is dynamically configured according to the designer or the chronological position of the project on the indexed timeline. The graphic layout, a timeline of key-projects, and the consistency on an equal visual representation (the projects are initially displayed in the exact same way) and the lack of other distracting elements since the registered annual subscriptions make possible for the platform to avoid any rolling commercial advertisements are related through the grid structure on a comprehensible plot in the shape of indexed time-relevant architectural positions.

The observation approach reviewed *DomesIndex* in two ways: graphically to understand the indexical visual elements as clusters of chronologically interlinked

architectural «styles» (nodes) and relationally to inquire the ordering of the underlying signs and meanings (network). Based on the information extracted from these approaches, the effort is focused on inquiring the linear nature of the foreground net--work — in the sense defined by Freeman and regarding the sequential centralities of each thumbnail image determined by reference to any of its structural attributes, like its degree, its betweenness or its closeness[11] — showing that its nature is not linear. These later characteristics of network's centrality can be identified by a simple navigation through the home page of the platform. Similar to Freeman's viewpoint, the home page of the index appears at first sight as linear and compact to the degree that the reading distances between sequential pairs of its listed thumbnails are strictly linear, short and fixed. Moreover, it is clear that a specific data (construction year) is more central than other data (design concepts, thoughts, notations and ideas) (Fig. 3). While *DomesIndex* uses the year distance as the basic relation between the indexical logic and a navigation encouragement strategy, the study postulates instead an integrated configuration of the immaterial museum based on the strength of projects' internal concepts that are textually documented and identified within the network. Applying this method of paying attention to those aspects of the displayed architecture especially relevant for humanities as well, like the formulative syntax and semantic reasoning, the study shows its ability to critically inquire the aforementioned displacement in postdigital humanities as a general method of preserving architecture's interiority in digital indexes.

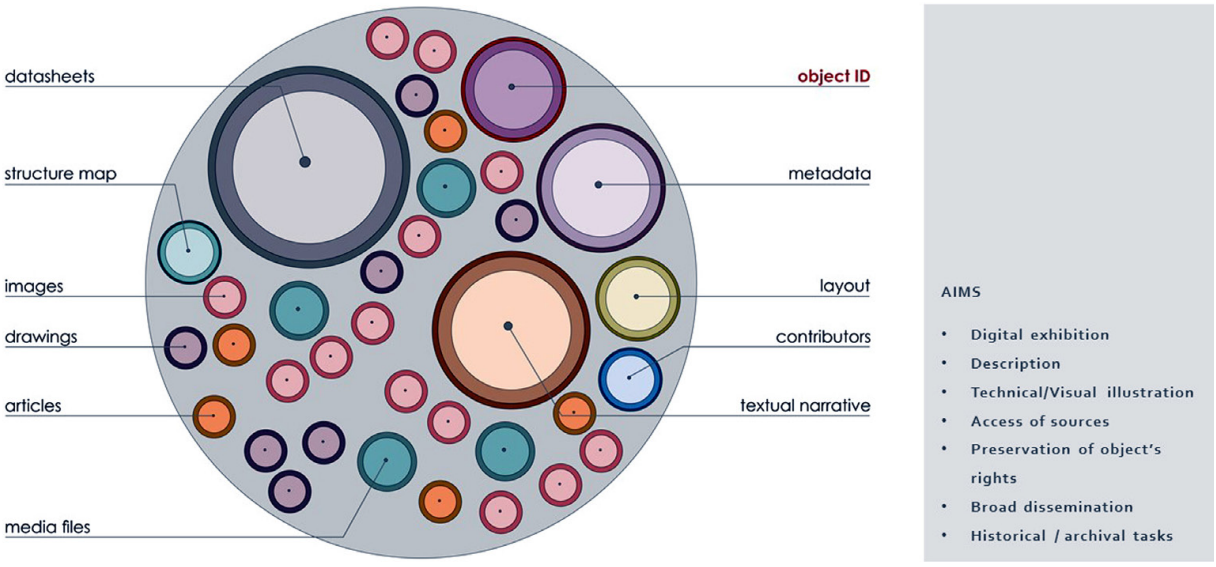

Fig. 3. The «architecture» of the digital exhibition object in *DomesIndex*: aims and its encapsulated characteristics after the digitization process

[11] See FREEMAN, 1978: 226.

TRANSLATING DISPLAY DATA INTO NETWORKS

The last decades, we witness a deliberate shift from the traditional conception of architectural process as an analog handcraft premise to one in which its thinking can be digitally intellectualized by processing and configuring n-dimensional data, distributed and partitioned by a relatively new kind of semiotic system. This computational ubiquity influenced not only the information-seeking behavior by allowing the registered data to act as intermediaries between the analysis and understanding of the object, but also the cognitive dimension of performing such behavior. The theories of space which has grown out of this ubiquity, like Hillier and Hanson's space syntax evolution[12] of the 1980's and its related approaches of the last decade, propose that architecture and its affiliated fields studying the environment participate in the computational turn by collating or juxtaposing their underlying network forms.

Based on geospatial parameters digitally available and encoded into mathematical algorithms, space syntax keeps introducing until today methods for spatial and architectural network analysis that allow us to visualize readable graphs from — the previously — intangible dimensions, like space's interactive organizational cultures, behavioral and moving patterns, or significances and cognitive effects[13] of sets of concepts like centrality, connectivity, relatedness and aggregation of flow data. The idea behind these related approaches that overcome the strictly analytic nature of the orthodox space syntax theory is that except from the technical sense of drawing lines, storing spatial information, computing distances and surfaces that are always remaining analog actions demanding the intention and participation of the architect-user, the digitized connections to thinking, reading and writing about architecture are generating significant scripted semiotic systems.

The use of syntactic approaches to better understand digital landscapes and inquire their projected narrative backgrounds is not new. The fundamental space syntax concept that configuration is the driving force behind the operation of space didn't take long to find corresponding adaptations in uncovering the even more elusive idea of the virtual space. In *The Virtual Tate*[14], for instance, we see that when users or expert designers appear as avatars entering virtual environments digitally encoded in conventional CAD form, they tend to render the incoming elements — such as geometrical and volumetric data — into syntactic structures that influence their movements and behavior. According

[12] The identification of the configurational and network structural properties in our enviroment along with its geospatial quantitative metrics are fundamental propositions in space syntax theory. See HILLIER & HANSON, 1984.

[13] Space syntax literature has responded to the cognitive factors identified by the neuroscience research community and proposed strategies for integrating multidisciplinary components. Alternative pathways beyond the hermeneutic readings of the 1980's have been quested by several researchers, including Hillier himself. See HILLIER & LIDA, 2005; PEPONIS *et al.*, 2008.

[14] Space syntax studies from late 90's argue for similar methods of simulating the form of buildings using virtual reality as a tool to link ways in which people navigate and respond to their geometric layout. See BATTY *et al.*, 1998.

to Batty, Conroy and Hillier[15], the effects of the digital content can — to an extend — be transferred to the real while the way agents behave in simulated environments reflect syntactic values of virtual relations and configurations. In another case, in *Instrumenting the City*, O'Neill *et al.* draw again on established space syntax methods to understand the city as a «system encompassing physical and digital forms and their relationships with people's behaviors»[16]. Digital interaction spaces, which are created by devices, computer features or wireless networks, they argue, are integral parts of a contemporary augmented urban form and we can study them by inquiring the configurational description of the data-transmission position of each digital node in relation to others. In this sense, the dual form of the physical space already proposed by Hillier, that of a foreground network of linked nodes, and a background network of spatial relations — considered as edges of this network — in which the foreground network is embedded[17], appears to be a common characteristic of the digital landscape as well (Fig. 4).

In this effort so far, the study of the digital Index of Architecture which grows out of the perspective of the postdigital humanities can argue for a number of common strategies with Hillier's duality. The study of the city as a physical index of topological and geometric factors interacting with user's situated position and bodily presence inside the urban fabric to generate the necessary for the spatial experience information related, for example, to navigation or memory-formulation, sustain this duality traced in Hillier's view. It preserves this dual characteristic while it collapses the traditional metric approaches and releases urban space from its function as a mere container, a stereotyped view of its Euclidean tradition. A second common trait that this effort identifies is the tendency of the syntactic properties of the dual pattern to preserve the foreground/background relation; while in urban space they preserve the possibility of an interiority in the interaction of the foreground network of linked centers as nodes and a background network into which the former is inserted, similarly the digital indexical approach attempts to incorporate both. The third trait we can identify relates the intellectual development of both space syntax and digital humanities theory.

[15] BATTY *et al.*, 1998.
[16] See O'NEILL *et al.*, 2006: 315.
[17] See HILLIER, 2002.

Fig. 4. The «architecture» of navigation networks in *DomesIndex*: visual illustration of the interaction of relationships of an object with another object that generate its dynamic network

In our effort to explore the semantic structure of the foreground and background networks of the case study, *DomesIndex* was analyzed based on the organization of its layouts (visual and textual) and the taxonomy of the concepts they communicate within their structure. Such aspects tend to affect the cognitive skills they cultivate to the user. We can say that the higher the number of concepts to which the central categorical concept of each project is related, the more complex the cognitive processes through which the influences of the postdigital humanities operate are to be cultivated. In such an analysis, there are syntactic correlates in the networks that connect the user with the machine, fostering a level of interaction between images, navigation acts, experiences and the coded text. Although the abovementioned Greek example dominates throughout this chapter as a major case study, and mostly for methodological purposes, the

proposed postdigital humanistic approach is rather generic and can find application in similar syntactic studies of other digital indexes as well.

LAYOUT ORGANIZATION

In order to inquire the relationships between nodes of the foreground network, both quantitatively and qualitatively, we start by identifying within *DomesIndex* a typical indexical dataset in which the listed projects can be defined taxonomically in terms of the concepts they communicate. This can be described by considering a snapshot of the main page illustrating the chronological list of works as presented to each visitor of the webpage. With reference to the position of the main concept they communicate (in this example we will use the concept «use») in the network, we can identify aspects like dominant navigation paths, degrees of centralities in the layout and relatedness of other concepts amongst the listed projects. One observable aspect of this dataset is that the historical ordering — as well as other categorical listings mentioned so far — is essentially linear with an equal visual presentation of each displayed object. With a dominant 222x120 pixels image and a laconic associative textual structure of key-data reference for each project, a logical foreground network is developed. However, below the fixed visual argumentation, there is more to be said (Fig. 5).

The need to scroll down in order for the user to gain access to more works reveals a pattern. The recognition of its geometric logic, significant for the cognitive dimension of every indexical experience, unfolds towards visual communication in three stages — dimensionally, in continuity and mono-directionally. The visual dominant aspect of the equal dimensioning and distances kept inside the grid-like indexing system enables us to glimpse how the user consigns the gestalt experience to a predetermined computational navigation. This has the effect that it is rather unlikely for the observer to explore the index in a «significant visual impact» or «specific feature-driven» pathway. Understanding the static grid layout to be the guiding mechanism between the navigation and the choice-making possibilities of the observer who stops and chooses to access the linked executable code that will introduce him/her further with the project, we can see that *DomesIndex's* dimensional aspect lacks this variation in the centrality of the projected thumbnail material that can cultivate alternative readings. Probabilistically, we can say that the dimensionality of the layout can enhance interpretive weight based on the way dimensions reflect different degrees of centrality for the visual nodes-thumbnails.

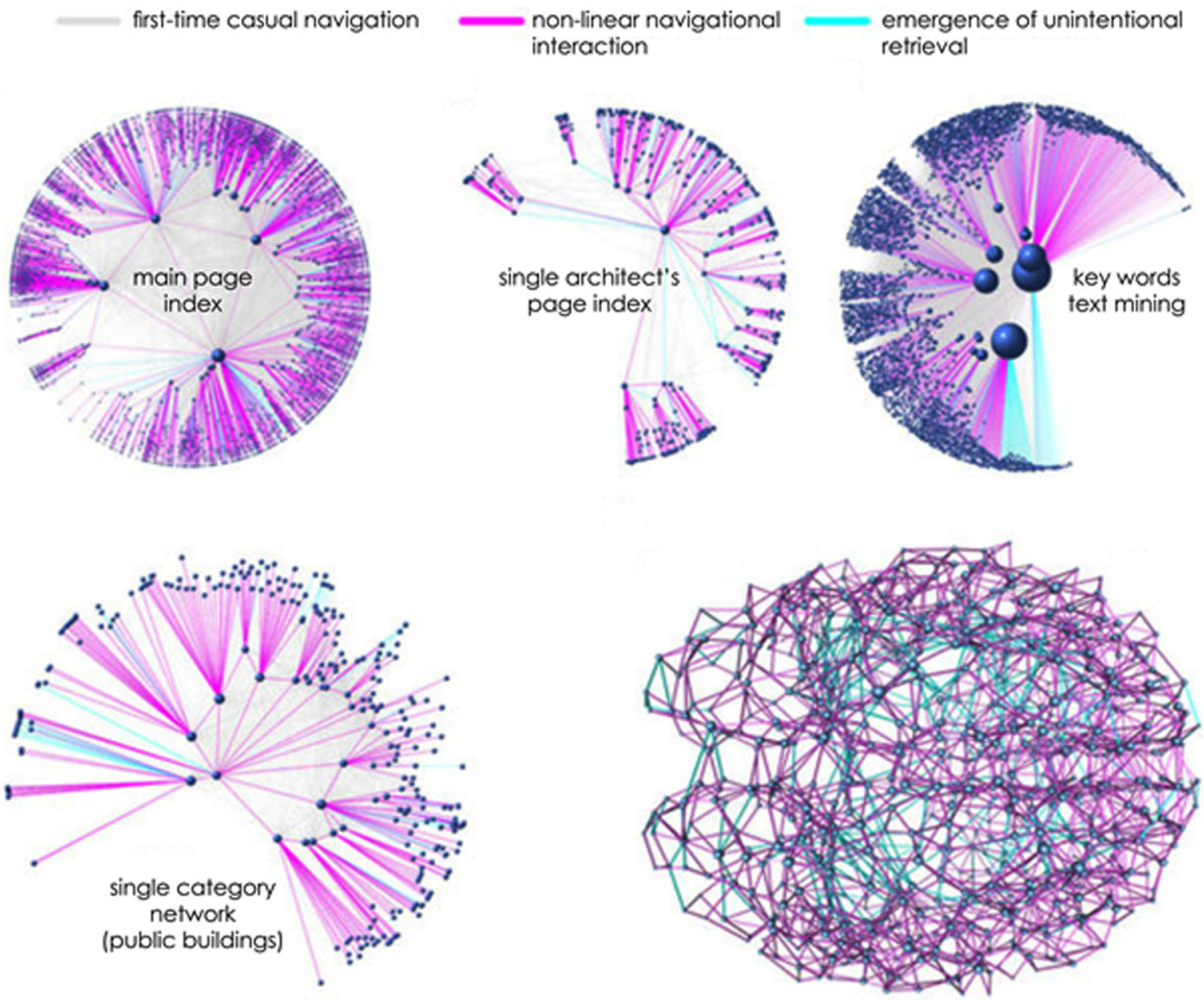

Fig. 5. Artistic representation of cognitive information development based on route finding in *DomesIndex*

The visual might also contain and present an affirmative or constructible digital narrative — an indexed story made out of linear chapters to be accessed in a continuum or in a dynamic way in which the user constructs his/her own version. The observation approach of the *DomesIndex* example showed that the navigation experience could reflect both cases. First, when the shorting enables the historically evolved architectural objects to tell their story, the navigation path tends to coincide with a long continuous line transcending one project after the other. We can say then that the story of the historically indexed objects can hardly support individually inlaid points that can encourage shorter «imperfect» navigation lines based on user's preferences. And it does not permit, as well, the fragmentation of such interpretative moves as the insertion along the timeline, for example, of projects with similar conceptual initiatives but from different historic context. The canonical exhibition grids unfolding the story along timelines tend to form subsequent clusters of architectural styles and «isms» identified by a number of stylistic agents or morphological characteristics. These patterns are unlikely to occur by chance. Based on the assessment of the dominant navigation paths followed while the

user browses *DomesIndex*, it becomes apparent that a probabilistic geometry resurfaces. With these visually dominant patterns, the personalization and adaptivity aspects of the postdigital index collapse into graphically defined «logical orderings». This is rather problematic in what we have called *studia humanitatis* of the index, one that characterizes the displacement of internal aspects of the objects to be adapted by personal constructs and according to identified significances and meanings (Fig. 6).

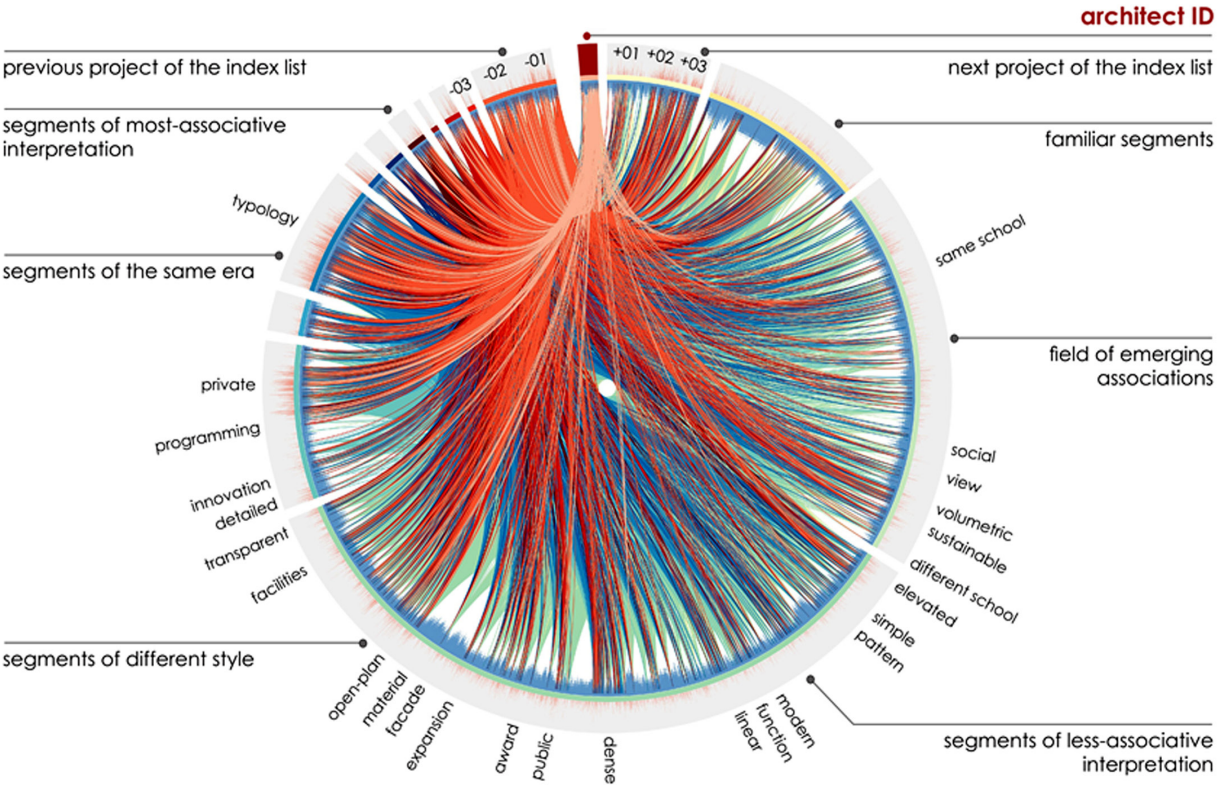

Fig. 6. Artistic representation of segmental bridging amongst project navigation in *DomesIndex*
Segmentally relevant projects of the index are displayed by connecting lines among the most and less associative interpretations made during the navigation process

TOWARDS A NEOANALOGUE INDEXICAL LOGIC

From the analysis of the *DomesIndex* case study, we came to understand that postdigital online indexes are projected networks that have directions, nodes and pathways. Their graphic layouts are not meant to have a mono-directional reading. Just as spatial networks can each time be visited differently regarding their approaching direction, the foreground computational one can be viewed in different directions and with a varying degree of predetermined order and pre-structured information sequence. Their generative interaction with the user shifts their characteristics from postdigital to rather neoanalogue ones. As Roel Popping[18] notes, drawing from Freeman's conception of network centrality, the user of such *neoanalogue* landscapes can learn by navigation through the

[18] See POPPING, 2000.

dispersion of centralities of the distinct objects without direct reference to a central fixed, linear and predetermined strategy (Fig. 7).

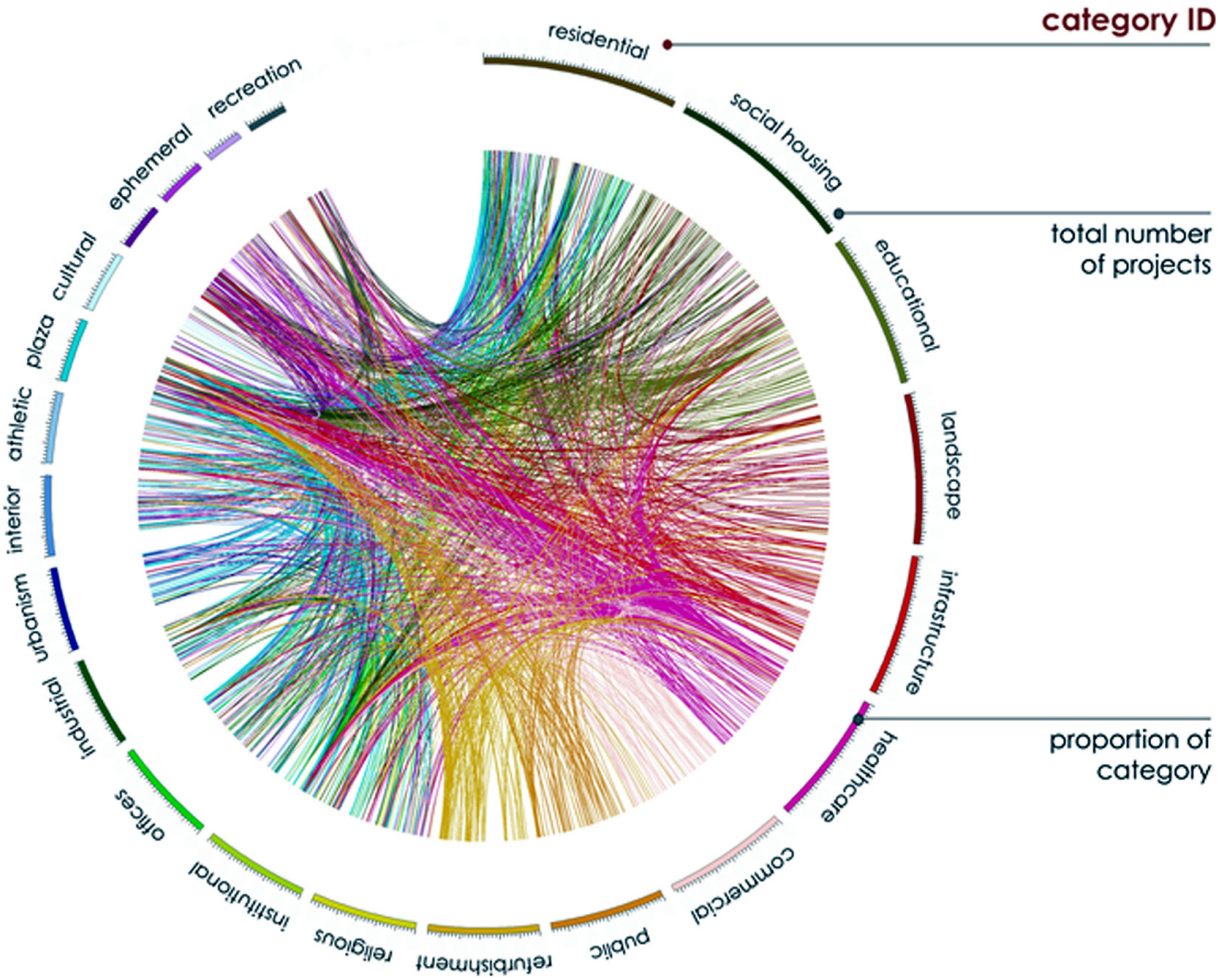

Fig. 7. Artistic representation of the best sequence similarities among categories of projects in *DomesIndex* displayed by connecting lines between sequentially accessed objects

Exploring the neoanalogue indexical logic while resorting on Carley's taxonomy of concepts[19] in networks as «a classification scheme by simultaneously 'typing' concepts and providing a framework within which the evolution of concepts, and hence knowledge, relative to a specific task can be analyzed»[20], we can say more in terms of the *DomesIndex* showcase. Its foreground organization was found to be further complicated by the links created between the concepts of the background textual support and the ability of architecture to communicate its formulative narrative, learned ideas and design intentions. Its indexical layout is framed by notes of transmitted knowledge provided either by the editor of the page or the architect him/herself. Thus, by selecting the

[19] See CARLEY, 1997.
[20] See CARLEY, 1997: 87.

desired thumbnail, an executable code visually illustrates the textual version of object's architectural and spatial background displaced within the underlying organizational network. Finally, despite of the highly variable contextual information of the accompanying texts of the dataset, we traced a common, in other indexes as well, principle: that the cybernetic text is concerned with patterns of information beyond the descriptive and the literal; in fact, the graphic layout was found to be heavily based on its patterned projected information, as opposed to random textual support or under-image labeling of the archival indexes of the past.

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