The Anexact: Delimitating Operations in the work of Sejima and Nishizawa

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ABSTRACT

The notion of the "anexact" is introduced as a conceptual framework for the study of the generative systems operating in a set of recurring formal families in the work of Kazuyo Sejima and Ryue Nishizawa. Those formal families are, on the one hand, oriented towards the demarcation of a physical territory and, on the other hand, articulated as continuous, closed lines that describe boundaries whose shapes are not defined by means of abstract, idealised geometries (i.e. circles, arcs or squares). In order to methodologically approach the analysis of the development, intentions and outcomes of the geometric operations deployed by Sejima and Nishizawa as part of their design process, the theoretical works of Paul Klee and Wassily Kandinsky concerning the nature of line and its spatial value are used as a supporting scaffold. Finally, their geometric operations are assimilated to Deleuze and Guattari's notion of "territory" as a modality of spatial demarcation that is simultaneously anexact and rigorous.

The notion of the anexact in relation to the generation of the architectural form constitutes one of the most valuable contributions of the discipline to theoretical discourse in the last two decades. The anexact has been related to the figure of Greg Lynn, who developed the concept as an operational framework necessary for the description of complex three-dimensional figures by means of digital technologies (Lynn, 1993). It is useful, however, to explore the field of operation of the anexact in the two-dimensional space of architectural drawing on which practices are sustained that – as in the case of Kazuyo Sejima and Ryue Nishizawa – do not maintain explicit relationship with the use of digital media.

The anexact was originally introduced by Edmund Husserl in his article of 1936, "The origin of Geometry", and would be analysed in great detail by Jacques Derrida in his introduction to Husserl's text. The anexact is shown through vague morphological types, that would generate a mainly descriptive science, based on the observation of objects perceived as a whole (Derrida, 1978). Starting from the basis established by the works of Husserl and Derrida, Greg Lynn has enunciated a distinction among exact, inexact and anexact geometries which has particular relevance when analysing geometries of an architectural nature.

According to this distinction, we define exact geometries as those that can be reduced to fixed mathematical systems, being able, therefore, to be reproduced with total precision. Inexact geometries, however, do not have the necessary rigour and precision to be measured and, therefore, our capacity to reproduce them is limited. Finally, anexact geometries are those that, being irreducible to concrete points and dimensions, are indeed rigorous as they can be determined with precision (that is, they can be measured and therefore efficiently reproduced).

While the exact would make room for reproducible geometries because they are idealized – and therefore abstract (circle, square, and so on) – the anexact is that which can be determined and measured with precision, but it is diverted from the idealized form (Lynn, 1993). The particularity of the anexact lies in the fact that its geometry is developed in the "actual space" of what is directly perceived and not in an abstract space. Besides, the anexact would be the result of the action of determined forces on the matter – which is but another way of enunciating that the anexact is necessarily associated to the material field (Umemoto & Reiser, 2006, pp. 145-146).

Architecture tends to use unrepeatable and universally transferable geometries, so that particularities and differences are understood as variations within a universal language of proportions, expressed through types (Lynn, 1993). What we generally understand by

proportional bodies is inevitably associated to the geometric exactitude, and, therefore, to the notion of exact coined by Husserl. This abstract and idealized approximation to proportion, harmony and the internal balance is used to annul the notion of difference and make any object oscillate towards the average represented by a type from which – in theory – it would emanate. In front of this model, based on the elimination of differential nuances and the convergence towards an abstract geometric ideal, the anexact becomes relevant for the architectural discipline as it allows precisely to value the expressive possibilities of such differential nuances as articulating elements of the project (Lynn, 1993). Anexact architecture suggests a sensitivity of a contextual nature, distant from the imposition of geometric patterns, and articulated through the direct experience of its occupants.

Why is the theoretical notion of the anexact relevant when analysing the work of Sejima and Nishizawa? If we take into consideration the whole of their project practice, it is easy to confirm that plant drawing is one of the fundamental pillars of the same, so much so that plant projection is proposed as the main system for the generation of spatial organizations. The aim of the following paragraphs is to show that plant drawing is, in the case of Sejima and Nishizawa, a fundamentally anexact practice, that builds architectural operations from the delimitation and foundation of territories.

The images accompanying this text correspond to the plants of various projects done by Kazuyo Sejima and Ryue Nishizawa, either individually or

as a professional association under the name SANAA. After a first look we can detect a common characteristic to all of them: The outline of every plant has definite edges, based on simple geometric figures and mainly curved lines. A second inspection allows us to detect that the outline delimiting each plant seems to describe figures that are "almost" circular or "almost" oval-shaped, but they do not exactly correspond to any conventionally established geometric figure. Unlike figures such as the circle or the oval, these figures cannot be described by means of a simple mathematic formula. In those plants made of a set of figures (or only one more complex figure) we can fix our attention on isolated sections of its outline. We can then perceive that these sections are "almost" circular arcs or stretches "almost" straight, that nevertheless, continue to resist being classified within the exact categories of "circular arc" or "straight line".

If we make a new movement of approximation on these outlines we will be able to establish an observation criterion very similar to the one used within the conceptual framework of differential calculus. This criterion of observation would suppose analysing the outline as a body formed by a multiplicity of very small fragments. In addition, it would suppose analysing each of these fragments not in relation to the line as a whole, but rather in relation to its continuity regarding the fragments next to it. We can imagine an operation of continuous display of the form, organized by means of a differential development – and therefore local – of each of the sections that form it.

In the examples given here we can detect how the differential sections forming the final outline do correspond exactly to established geometries: A multiplicity of circular arcs and straight lines are progressively assembled establishing local relationships of tangency between adjacent sectors, so that, considering as a whole, the resulting outline is formed – the one that defines and delimits each of the plants. Therefore, this outline is not a line of lines, a multiplicity that our sight recognizes as a unique and strong line, but whose internal organization criterion takes it away from the ideal established by the abstract catalogue of geometric figures that we regularly use.

In this conceptual framework we can observe variations in the methodology used to trace the outline or border line of each plant. On the one hand, examples such as the one of the Multipurpose Complex in Onishi, take us to a group of points that serve as centres for multiple circular arcs of different diameters, always tangent two by two, to build the bordering form desired. Another methodological approximation may be appreciated in the project of the square to access Kumamoto Station, in which the cover form is set in an orthogonal square, a sort of local space of coordinates regarding which the necessary points are organized to trace the outline.

Finally, we can also refer to a system of self-referential generation of the line, in which each differential fragment does not use more external reference for its development than the criterion of tangency with the fragment preceding it. An example of this strategy is the project for the Lumière Pavilion in Amsterdam.

In any of the three cases, each one of these development strategies of the outline may be understood as a set of auxiliary structures that, like a virtual scaffolding, allow the construction of the main line form.

If we increase the order of magnitude of our observation so as to analyse the outline figure or figures of each project in relation to some of the recurrent formal categories in the work of Sejima and Nishizawa, we could speak about a classification around three families. The first one would be formed by figures that approximate the circle as a pure geometric form, with hardly any appreciable traits in its development. The second would involve all the elements developed from repeating alternating concave and convex sectors, orbiting around a central area. The result of these operations would resemble a sort of abstraction of the forms of some leaves and flowers. Finally, the third family would be supported on the distribution of a field of objects, which would establish relationships of proximity or distance, either involving or opening external spaces, or capturing parts of them. The individual form of each of these objects might correspond to any of the two previous families.

Thus, our first classification is set in a micro area, centred on criteria of local development; and the second, in a macro area, centred on criteria of formal comparison of closed figures. The dialogue between these two systems of intervention produces a positive productive tension, enabling a very wide development of project solutions as from a relatively low number of work variables.

We can now fix our attention on two particular aspects of each of these classifications. On the one hand, the generating criteria of the micro scale – regarding the articulation of the border line as the outline of the plant – and, on the other, the spatial effects of the territorial scale derived from such modality of articulation. If we first fix our attention on the micro scale, we can observe that the "border line", the object of our interest, is widely reminiscent of the notion of "point in movement" (Klee, 1948). For Klee, this line would not be but a point that: "jumps over itself and makes a dimensional space radiate" (Deleuze & Guattari, 1988, p. 319).

This idea complements the consideration of the line as organized exclusively around the notion of measure, since all of its properties (length, angle, length of radius and focal distance) are measurable (Klee, 1948). The overlapping of these criteria becomes relevant when observing the plant drawing of Sejima and Nishizawa, which appear formed by a multiplicity of measured lines, tangent two by two with total continuity. The lines drawn by Sejima and Nishizawa close over themselves to produce closed figures and describe, with this, a non-orthogonal space that is developed on a horizontal plan and has two main areas: inside and outside.

In this sense, we can place the work of Sejima and Nishizawa in parallel with the reflexions of Wassily Kandinsky regarding the variables that control the progressive development of the line as well as the composition and space effects displayed by such line. If the form of the line is the material result of a series of tension and direction forces,

the tension would constitute an internal characteristic of the straight line, while in the case of a curved line, the scenery of tensions would be modelled by external directional forces (Kandinsky, 1979).

Kandinsky considers that, when drawing a closed line, we are actually building a plan. This allows reflecting on the inexhaustible variation possibilities in plans formed by curved lines, pointing out that these always retain a certain degree of relationship with the circle as they have "circular tensions" in themselves. Likewise, a complex curve might also have geometric parts of a circle, either as free parts or as combinations of the former (Kandinsky, 1979).

In spite of the cultural and time distance separating Kandinsky's reflexions from the project practice of Sejima and Nishizawa, these become assimilable to the notions of "delimitating lines" and "differential joining of the segments" previously mentioned. The "almost" geometric forms that we find in the plants of Sejima y Nishizawa seem to be developed from a local negotiation – that is, developed on the scale of its segments – between interior tensions (derived from criteria of topological continuity and geometric tangency).

It is interesting to observe some variations in the development and behaviour of the line proposed by Kandinsky, which may be extrapolated to the area of operations suggested in this text. The first of these variations would refer to the variable "thickening of the line", as a sort of line intensifier, so that the delimiting outline would be qualified

in different ways along its length.

The second variation would correspond to the relationship established between two curved lines that are drawn as interlaced, leading to local areas of intensification and reinforcement, or to the articulation of rhythmic patterns. Lastly, the third variation would develop in the area of closed lines as elements forming plans, operating on the relationship established between different superimposed plans. Kandinsky assimilates the lower plan to the pictorial "base plan", and pays attention to the relationships between the edges of the same and those of the upper plan. Thus, the areas of variation of the space enclosed between the borders of both plans would be articulated from the tensions, distensions, nuances and reinforcement (Kandinsky, 1979).

If exact geometry is a means of convergence towards an abstract and idealized model, the anexact is open towards modalities of relationships analogous to those described by Klee and Kandinsky. This geometric model is the model of the "nomad science" described by Deleuze and Guattari, and illustrated by means of the figure of the master builder of gothic cathedrals: someone who delimits an area and defines the interior and exterior borders of the building, drawing them directly, like blueprints, on the floor plan (Deleuze & Guattari, 1988). The work of this constructor is not less rigorous than the one performed by means of scale plans, but, nevertheless, his proceedings refuse idealized geometric models and have a dynamic nature as when drawing it, the limiting trace is progressively defining itself.

This action of progressive definition of an outline is the one that organizes what we call territory, understood through the actions of "acting on" and "extracting from" a determined area. A territory is built with aspects or portions of the environment, organizing the components from the directional to the dimensional (Deleuze & Guattari, 1988). In the work of Sejima and Nishizawa, the line drawn on the plant is an action of rhythmical character (and therefore of dimensional character) with the capacity to delimit the inside and the outside of a territory. The geometric definition of the display of this line organizes a border – describable and therefore reproducible – within the material field on which it is applied.

Sejima and Nishizawa propose, like Kandinsky, a proto-geometry – anexact but rigorous – that avoids essential figures in favour of transformations of the same: a geometry that Deleuze and Guattari would qualify as diffuse and fluent from which emerges a sort of determination of materiality (1988). The curved lines drawn by Sejima and Nishizawa intend to be "rounds" and not "circles", diffuse problematic elements and not essences. Instead of using the abstraction of a pattern superimposed on the floor plan, the plants of Sejima and Nishizawa seem to found territories from the fluent tension between the movement of its occupants and demands of the context in which they are inserted. m

REFERENCES

DELEUZE, G., & GUATTARI, F. (1988). *Mil mesetas. Capitalismo y esquizofrenia*. Valencia: Pre-Textos.

DERRIDA, J. (1978). *Introduction to the Origin of Geometry*. Stony Brook, NY: Nicolas Hays.

KANDINSKY, W. (1979). *Point and Line to Plane*. New York: Dover.

KLEE, P. (1948). *On Modern Art*. London: Faber and Faber.

LYNN, G. (1993). Multiplicitous and in-organic bodies. *Architectural Design, 63*(11/12), 30–37.

UMEMOTO, N., & REISER, J. (2006). *Atlas of Novel Tectonics*. New York: Princeton Architectural Press.