The Notion of Scale and Charles S. Peirce’s Categories

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In a 1990 work entitled “Le Processus interprétatif” (The Interpretative Process) and subtitled “Introduction à la semiotique de C. S. Peirce” (Introduction to C. S. Peirce’s Semiotics) which I consider to be eminently pedagogical and of a welcome clarity with respect to its treatment of Peirce’s semiotics — of which we cannot say that it is an easy theory —, the author Nicole Everaert-Desmet devoted a few pages to architecturology.1 Using the concepts for signs that are characteristic of Peircean semiotics, the author examined, inter alia, the concepts of architecturological scales which I had identified at a time when I was carrying out an empirical study of polisemy in the term scale.2

Nicole Everaert-Desmet maintains that architecturology — which according to her is too influenced by a Saussurean binarism — should find the means to move on to a more Peircean vision and, consequently, triadic view of the sign. It is the author’s view that such a change would help to advance the interpretation given by architecturology on the facts concerning architecture.

In that chapter (practically a concluding one) the author closes as follows:

In conclusion, Philippe Boudon’s definition of the concept of space — as a means for the utilisation of references in conception or perception — seems to us quite relevant not because it would be specific to architecture but because it introduces us to the general dynamics of an unlimited semiosis. According to Philippe Boudon an architecture takes on meaning through the space of reference with which it is put in relation; namely, the scale. The meaning of a sign, Peirce tells us, is the sign in which it can be translated, it is the interpretant.

After having considered that the examples examined by the author were actually more related to perception than to conception, which architecturology has deliberately ascribed to itself as object of research, I became caught up in the game and began, in turn, to re-examine architectural facts — but focusing instead on the facts of conception — in the light of Peircean semiotics. I would like to try and give you an account of this work in progress, as the time allotted will permit. Because if we were to take the number of architecturological scales — term that I shall explain shortly — which amount to twenty and multiply it by the number of Peircean signs, i.e. ten, we would end up with two hundred
cases to be studied. So, on this occasion, I cannot cover such
ground in an exhaustive manner although I have already
done so elsewhere and although it is precisely its exhaust-
tivity that makes it of interest to me. I shall select a few illu-
strations only.

In parallel to the above work, the connection to be estab-
lished appeared sufficiently meaningful to incite me to delve
into the question of a Peircean approach not only to the archi-
tecturological scales themselves — and I shall come to that —
but also to the unfolding of their constituent operations —
i. e. reference, segmentation, dimensioning — as well as to the
facts of measurement.°

One last word to conclude these introductory remarks:
all the matters discussed here concern the space of conception
of architecture that I distinguish from architectural or built
space. Though both give rise to semiotic processes, I shall
be dealing only with the first of these spaces from the view-
point of architecturology.° It is one thing for architecture to
be an object of meaning pertaining to reception once it has
been conceived and realized; but meaning is also at play in
the process of conception and it refers back to those opera-
tions through which the architect thinks out architectural space.

I am aware that I must now get to the crux of the matter
by taking a few concrete examples. Here, I have chosen to
approach the issue through one case, the one dealing with
the neighbouring scale.

The case of the neighbouring scale
Nicole Everaert-Desmet writes about the neighbouring scale
and clarifies the notion in a simple manner for those who
are not familiar with it. I quote: "Let there be a building X
(= R, real space) we create an image of this X (= O, repre-
sented space) through a reference to the neighbouring build-
ings Y (= space of reference)°

In Peircean terms X, here, is representamen, image of X is
OBJECT and Y — it is taken for granted — is interpretant.

Of course, I fully agree with this analysis through which
we understand for example, how the neighbouring build-
ings of the CNIT in Paris have changed either the scale — as
the architect would put it — or if you wish, the image, as
Everaert-Desmet says.°

For me, I saw the building actually get smaller!

With respect to the phenomenon of perception we can surmise that the architect who designs a building takes per-
ception into account in the course of conception and that he
represents the perception to himself by anticipating the
process (the degree of accuracy or inaccuracy matters little
since that is not what is at stake here).

It is nonetheless true that the neighbouring scale, if implic-
ated in the conception, and with or without anticipation of the
perception, is not a lone actor, exceptions included. For
there is a complex articulation being woven between this
scale and other scales as I would like to try to show with
respect to the Nordic Bank of Helsinki by the architect
Alvar Aalto.

The case of the Nordic Bank of Helsinki
This very classical case is apparently simple: a major choice
was made by the architect in terms of conception. He decided
to connect the height of this building with the height of
the two neighbours by descending from the higher to the lower
level through a kind of broken pattern which — let it be said
in passing — is characteristic of Aalto’s aesthetics (we are
familiar with the recurrence of those kinds of broken patterns
in his work).

This example presents itself as a obvious case of neigh-
bouring scale, a scale from which other architectures that
one might have in mind, differ. The latter came on the scene
without particular consideration for the context and were
referred to by architects as an “architecture du Plouf” (“Splash
Architecture”).

But can we say that in such a case “we have an image of
the building in relation to its neighbours”? Possibly yes, as is
the case for any building situated between its neighbours.
The fact remains that what is taking place here, through the
strict alignment of two heights is of a different order, of the
order of conception. Every building is perceived in relation
to the presence of its neighbours. But in this case something
more is taking place. Namely, a voluntarily meaningful opera-
tion through which the building’s designer makes a decision
on heights. Here we move from consideration of the archi-
tectural space to consideration of the space of conception.

The problem for me here is not to make a value judge-
ment on a contextual or non-contextual architecture as a
form of critical assessment. Nor is it a question of under-
taking a semiotic analysis of meanings as they relate to each
other. Such an analysis — while totally valid — would place
itself within the architectural space as we perceive it, whereas
the intention of architecturology is, as I have said, to bring about a displacement in the space of conception.

In this space of conception, a number of operations will take place giving rise, at the end of a given process, to a constructable architectural object which at this stage, by definition, does not yet exist. And it is necessary to recognize that here the architect undertakes complex "operations", the complexity of which requires that we stop and reflect on them a bit.

To begin with, the architect is going to articulate numerous scales: a scale of model (in Alvar Aalto's production the broken pattern is practically a model); an economic scale, where the occupiable space will depend on the acceptance or not of the architect's proposed broken pattern by the client; possibly, a functional scale, which deals with the commensurate reduction in floor area as compared with those floors that are full sized. I might recall that a scale is defined as the relevance of the measurement; the preceding three are examples of it.

It is out of the question to account here for the entire process of conception since it would entail carrying out a study of a given or several designers. My preceding remarks should be convincing enough for one to realize that the neighboring scale cannot be reduced to a simple and single decision operation for a stair-step form, to give it a name.

In addition to the articulation of a multiplicity of scales, the idea of which commands attention, it is necessary to say also that the term "neighboring scale" is complex in itself because it refers to a number of things.

Firstly, there is reference to the street, which implies a scale decision (to take another example of such a "reference", the Arche de la Defense "refers itself", intentionally or not, to the historic axis to the east of the arch, from the west of Paris on the very same axis).

Also at stake, we have a segmentation of the architectural object into different parts, either vertical (at least two) or horizontal (at least two). Two take an example — another Alvar Aalto building —, the MIT dormitories in Cambridge (USA) involve such a segmentation between one side oriented towards the Charles River and one side oriented towards the MIT campus.

Lastly, to speak of a neighboring scale corresponds to observing an operation of dimensioning; the building is well measured on both sides by its neighbours. Three diagrams allow us to distinguish these three aspects of neighboring scale thus described.

This brief analysis shows that we encounter here the major architectural concepts of reference, segmentation, and dimensioning as a means by which to specify more precisely the particular situation under which a given scale may be present. Our case corresponds to the neighboring scale. The above operations have been described elsewhere.7
And it is precisely at this stage that the Peircean categories for signs can intervene in a timely manner.

**Architecturological triad and Peirce’s categories**

Leaving the example of the building we have just examined, we can consider that, generally speaking, the word “scale”, as used in everyday language, may be applied to any of the above operations.

I can speak of a necessary or unnecessary policy for a single currency “on a European scale”. Thus, I apply my remark to Europe, *I refer it to Europe*. But taking Europe into consideration I may include the ten, twelve, seven, or twenty-five member units... and thereby segment the object down into another given scale. I can also consider the *dimensions* of a given phenomenon such as unemployment or the quantity of mad cows in the European territory. In such a case we have a quantitative operation at play, a measurement operation, a taking of *dimensions*... We see how the use of the word “scale” applies to three distinct types of operations.

Let us now transfer the word scale to an area with a more restricted utilization and let us come back to the field of architecture and of its conception. We find operations such as scale adjustment or giving scale, which refer themselves respectively to problems of *segmentation* and *referencing*: “adjust to X” (in the case of the Aalto building we examined scaling it to the neighbourhood) means referring the conception of the building to its neighbours, whereas "to give it scale" means in this case to dimension the building according to the height of its neighbours. In fact, the reference could have been completely different and might have corresponded to a common colour or to the repetition of an identical pattern, or even to a given material, etc. in order for the operation to take place... Things can be clarified formally if we say that to scale-adjust pre-supposes *referring* and *segmenting* attributes which are related to attributes in y, and, lastly, specifying these attributes -reference, segmentation, dimensioning, with respect to the terminology that we have proposed, to deal with measurement questions as regards architectural conception (Unfortunately I cannot be more explicit on that here).

I found the possible coincidence between the Peircean triad and what we could call the architecturological triad - reference, segmentation, dimensioning - to be illuminating enough to justify my undertaking a systematic examination of the possibility of establishing a correspondence between the twenty architecturological scales and the ten Peircean categories for signs (as opposed to the Peircean triad, since we know that, with the triad things get even more complex). I cannot give you a full account here, but I could provide you with a list of the results as they affect the neighbouring scale.

**“Neighbouring Scale” and C. S. Peirce’s categories for signs**

1.1.1 *Rhetoric iconic qualisign*

A feeling of homogeneity for the general skyline of a row of houses in a street, a village, a city; a generally integrated project with respect to its neighbourhood – a feeling of harmony between a building and its surroundings; a “contextual” impression.

2.1.1 *Rhetoric iconic sinsign*

A reuse of the form, of the colour(s) of neighbouring building(s).

2.2.1 *Rhetoric indexical sinsign*

A reuse of a ridge height or of a string-course or of any
other attribute arising from the contiguity, without interpretation.

2.2.2 Dicent indexial sign
A string-course/ridge line at the same height as the adjacent building, with the whole being interpreted as an entity - The building becoming a sign for the surroundings with which it is related.

3.1.1 Rhematic iconic legisign
A "type" of houses proceeding from an environment - An identifiable "zone" through a vague feeling.

3.2.1 Rhematic indexial legisign
A compulsory building height in relation to the corresponding height of its neighbours - an outline, a design linking the heights and horizontals of a building to those of its neighbours.

3.2.2 Dicent indexial legisign
A part or an aspect of a building indicating a relation with a neighbouring building - a building outline intended to give an identity to an entity such as a street, a square, etc.

3.3.1 Rhematic symbolic legisign
A word indicating a relation of proximity, "outline", "skyline", "context" ...

3.3.2 Dicent symbolic legisign
The formulation of an outline rule, an idem word relating to a particular case.

3.3.3 Argumental symbolic legisign
A) Abduction - Building height interpreted as emanating from an intention relative to the surrounding area (The Nordic Bank interpreted as emanating from a deliberate intention by Aalto);
B) Induction - Formulation of a building outline rule (The Nordic Bank as proceeding from a self-imposed rule by Aalto);
C) Deduction - Design decision arising from an imposed neighbourhood rule or self-imposed by the designer (Management of the consequences of the Nordic Bank's general plan: cascade-effect relations with the economic scale, the functional scale, the scale of model).

"Scale" and Peircean triad
I shall come now to the architecturological concept of scale from the point of view of its most general definition. I have defined the concept of architecturological scale as relevance of measurement. Here again it is possible to undertake a Peircean reading of the three major characteristics of scale. Subsequently, we will be able to clarify considerably what is at stake in this notion by noting in the respective corners of a triangle the three words indicating what is diversely implied in the polysemic use of the term.

The three words involved are grandness, measurement, and relevance. Allow me to explain.

The first term, grandness, is referred to in Merleau Ponty's expression "grandness before the measurement". He devotes a dense and challenging page to the notion and that effort leads me to consider that the relation sometimes established between phenomenology and phaneroscopy though subject to our taking some precautions, could explain why it is the phenomenologist who provides us the expression of that which refers us back to firstness. In fact, another phenomenologist before his time - and here, I am referring to Kant had eloquently pointed out the difference between what he called aesthetic and mathematical measure. We can say that Saint Peter's in Rome "is grand", before we measure it or discover its measurements.

Grandness before the measurement, this "before" is a perfect expression of grandness. The measurement comes in only secondly, once it has, in of itself, put a first and a second in relation to each other; something measured and an instrument of measurement. The measurement then belongs to the order of secondness. Let us note that it is a pure fact. This does not imply the idea of relevance; here I do mean idea; in other words, it means that we move on to thirdness. Whether the number of windows of a building is or is not equal to the number of cigarettes that I have in my pocket, it (the number) remains a fact independent of our knowing whether it is shrewd or not, relevant or not to measure the number of windows utilising the individual units inside my pack of cigarettes. Relevance appears then as the third characteristic which interprets the measurement, or, thinks it out, we might add. To measure a table in fractions of light-years or in microns is not relevant at all. Asking a joiner to make a table whose length is expressed in centimeters is probably relevant; however, if the joiner happens to be more of a carpenter and works with an axe or, instead happens to be a cabinet maker who works meticulously with a chisel, I might decide to vary the relevance of the measurement through which my order will pass, being more precise in one case, less precise in the other.
Thus with respect to measurements it is quite enlightening to distinguish three levels: that which belongs to firstness, in which case we could speak of aesthetic measurement—grandness; that which belongs to secondness, in which case we would speak of a quantitative measurement, that is the measurement in its most actual meaning as it relates one instrument of measurement to a measured object; and lastly, that which belongs to thirdness, in which case we would speak of the relevance of the measurement, namely, all that which is commonly referred to under the term scale; that is, a just, an adequate measurement, a measurement that is thought out and intelligent.

To conclude, according to the present hypothesis, the words "grandness", "measurement", "relevance" can be noted respectively in the three corners of a triangle to represent individually the three Peircean categories of firstness, secondness, and thirdness. In my view we thus clarify substantially the inherent complexity present in an otherwise rather imprecise use of the term scale.  

I believe that distinguishing the space of reference from scale, which is the relevant operation rendering the space of reference active in conception, brings us closer to the possible understanding of meaning within the space of conception, from the perspective of what the signs effectuate as opposed to what they are. And, this is why I intend to pursue work on the closer association between architecturology and Peircean semiotics. What I have referred to as the space of conception, to distinguish it from architectural space, which is the finished product of work in architecture, belongs indeed to the realm of the pragmatic since it corresponds to the space where architecture is done.

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Notes


3. As a prerequisite to becoming research director, Philippe Deshayes attempted a particularly interesting systematization of what had originally constituted an empirical inventory of such facts.

4. It goes without saying that we are not denying that architecture may convey sense in its constructed state, or in its designed state, in the finished buildings; moreover, it is such a state that serves as a starting point for a potential semiosis. It is perception precisely, or, more generally, reception that enters, inter alia, into play here: one might even dare advance that without perception there is no meaning. Nevertheless, the basic architecturo-logical idea that the building is the representation-of-a-project-that-has-preceded-it and without which it would not exist leads inevitably to allowing meaning, or at least a portion of it, to be reconstructed in conception—even if it is normal for meaning to be established still *a posteriori* in an endless semiosis once the building has been built. The pragmatic side of Peircean semiotics allows it to shift the facts of meaning of built architectural space towards what I have called the space of conception. Thus, regardless of whatever meaning may find place in the finished building—a task that I shall leave for others to discuss—it is true also that meaning lodges itself in the work of conception itself and that it is worthy of our study.


6. Which comes down to the same since there can be no image without scale.


8. Merleau-Ponty, "Le visible et l'invisible".


10. Here we have a patent example of the pragmatic aspect of architecturology in the sense of Peirce’s pragmatism: the sign operates.