

**WHAT DO WE FOLLOW
WHEN WE FOLLOW A
RULE?**

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Abstract. After my “Genetic Architectures” studies (the current Biodigital Architecture Master Program), and after several years of architectural practice, I turned to philosophy – and in especially to its analytical current – and its relation to the architectural process. And then, I was surprised to realise how much some philosophical concepts – that I was studying – are echoed in various preoccupations of the biodigital “movement” in architecture. That’s why, for the third time, I propose to create – or to highlight – the link between the concepts worked out by philosophers and the ways of solving certain design problem by architects, especially those interested in biodigital methods. This time – after considering the notion of diagram and the notion of digitalization – I propose to lean over the concept of rule. What is a rule? How does it work? Asking such questions led me to affirm a double role of rules: prescriptive and constative. It is prescriptive because they describe objects to be created. It may be constative because they often contain – in a very synthetic form – some existing states or some already stabilized elements of design projects. Thus, my proposal consists in establishing a dialogue between logical questions and biodigital processes in architecture, taking the notion of rule as an example.

Keywords. Philosophy, rule, architectural process, bio-learning.

CAUSE or REASON?

To open the investigation on the notion of *rule* and the way it operates in an architectural process, it is useful to question first the nature of its authority. The French philosopher Jean-Pierre Cometti proposes – before starting any discussion about the rule – to make a distinction between a *cause* and a *reason* (Cometti, 2011, p.16). In other words, we should understand first how the rule determines the results of its application. Once a rule is applied, are its results fixed and inevitable? The distinction between a *cause* and a *reason*, remarks J.-P. Cometti, coincides with the distinction between a *law* and a *rule*. The almost synonymous use of the latter two terms is “a source of confusion” (Cometti, 2011, p.25). The term *law* – thinking about the laws of nature can be very instructive here – is linked to the idea that something “*must* happen in such and such a case, that is to say when such and such a condition is realized” (Cometti, 2011, pp.25-26). We can think here about two trains which move at the same speed, but in the one opposite directions: “the violence of the clash will be proportional to the sum of their respective speeds according to the Newtonian law of the composition of speeds” (Cometti, 2011, p.26). The relationship between the conditions and their effects is here of *causal* nature. Thus, a causal relationship implies something inevitable, something that cannot be avoid once the cause has appeared. It is not true for a *non-causal* relationship. Saying for example: “if [...] one day[...] I have children, they will bear my name” (Cometti, 2011, p. 26) does not imply the automatic realization of this declaration at the moment of birth of a child. The difference between a *cause* and a *reason* – and therefore between a *law* and a *rule* – is that the first is more related to *prediction*, while the second – to *prescription*.

We will, therefore, associate the *rule* rather with the *reason* than with the *law*, rather with *prescription* than with *prediction*. But: is the rule *only* prescriptive? Can it be also – at least initially – a *description* of an existing state? Architecture, and in a particular

architecture inspired by nature, give us some arguments to affirm this dual role of the rule. For example, the designs of Alberto T. Estevez, based on the analysis of the dragonfly’s wing, seem to confirm this observation. The *rule* of the design project is – first of all – a description, or a synthesis (carried out by the designer through his aims) of how a dragonfly’s wing is built (see Fig.1).



Figures 1 and 2. Left, the photo of a dragonfly’s wing and the corresponding architectural design based on the study of nature [© Alberto T. Estévez - image origin: Alberto T. Estévez, *Biodigital Architecture & Genetics: Writings 2*, iBAG-UIC Barcelona, Barcelona, 2021]. Right, the Wittgenstein’s table [redrawn by J.Morawska after the L. Wittgenstein’s *Blue and Brown Book*].

PREScription or STATEment?

To deepen the analysis of this double face of the rule – oscillating between *prescription* and *observation* – we can return to philosophy. An example given by Ludwig Wittgenstein, in the context of his investigation of the *rule* (Wittgenstein, 1958/1996, p.161) is particularly suggestive. He asks: “What do we call rule?”, and to sketch an answer he provides a table shown in Fig. 2:

Imagine that a person *A* shows the table to a person *B* and asks him to move according to some given schemes, for example: *aacaddd*, *cada*, *acaa* etc. The table here constitutes the rule (or the set of rules) which designates some elements of reality, *i.e.*, the movements of people. It has therefore a *prescriptive* role.

Then L. Wittgenstein proposes to imagine an “opposite” situation. Someone stays with a tribe (whose habits are unknown for him) and observes a number of repetitive movements. When attempting to describe those movements, he creates a table identical to the one presented in Fig. 2. Now, the table, without any modification in its appearance or in its way of describing movements, changes its role in a significant way. It is used to describe, explain and make clear an observed phenomenon. In this way, we affirm its *constative* role.

What do we discover through the example of L. Wittgenstein’s table? First, that the *prescriptive* and *constative* roles of the rule can be a matter of circumstances. Secondly, that the rule – in both cases – constitutes always the simplification of the reality that it describes, regardless of whether this reality is prior or subsequent to the said rule. Thus, just like L. Wittgenstein’s table, a protocol linking an object of nature and an architectural design appears as a *reduction* (or simplification) of a much richer, more complex and changing piece of reality. It is through the *selection* of the characteristics to be taken in account that the rule becomes operational and thus produces a new piece of reality.



Figures 3 and 4. Left, the photo of a cut of *Datura Ferox* (x2000) and the design of Multifunctional Building based on Voronoi diagrams [© Alberto T. Estévez - image origin: Alberto T. Estévez, *Biodigital Architecture & Genetics: Writings 2*, iBAG-UIC Barcelona, Barcelona, 2021.]. Right, Antoni Gaudí, Casa Batlló [image origin: TOimages, stock.adobe.com].

EXPLICIT or IMPLICIT?

Let's take again the example of the L. Wittgenstein's table. Imagine that the game with the table – between the person *A* and the person *B* – has been going on for some time, and the person *B* needs less and less to look at the table to perform movements, until the moment when he completely forgets about the table (Wittgenstein, 1958/1996, p.163). Is the *rule* that he doesn't need anymore? No, the rule is still present – because it is still applied – it is the need to evoke it, or simply the awareness of the rule, which disappears. Thus, the *explicit* or *implicit* nature of the rule appears above all as an issue of training. The rule itself can remain unchanged.

Such considerations bring new insight into a number of nature-inspired creations. Antoni Gaudí's fish scales, for example, seem to be an almost literal representation of the fish scales that can be encountered in nature (see Fig. 4). Does it mean the absence of a protocol, and therefore of the rule of translation from nature to architecture? No, it would be rather a certain training required to see them "as true" which makes the protocol, or a part of it, implicit.

What does it mean to follow a rule? This question, posed in the context of biodigital architecture research, opens the door to a large number of possible investigations aimed at clarifying and explaining the methods of work, regardless of they are already in place or in progress.

"*Cause or reason?*": this question can be above all a tool to decide whether what we are following is indeed a *rule*? "*Prescription or statement?*" this question indicates both the duality and the fusion of these two roles in one rule: here the biodigital architecture has as much to offer to philosophy as philosophy can offer to architecture. "*Explicit or implicit?*": this question highlights the progressive disappearance of (possibly) each rule (which can become "obvious") and consequently opens the way to the search of rules where we no longer see them.

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