

• Modelling the architectural model

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The purpose of my paper is to shed light on the use of models in architecture. It is commonly known that architects, since antiquity, use models in order to visually render their two dimensional sketches and give life to the projects they intend to carry out. It is also commonly known that up to this day architects, designers, curators, etc. are harnessing a model as a first step before materializing their ideas in reality. A model, therefore, functions as a surrogate to the real world, as a representation, or to put it in other words – a model is an artifact with the help of which architects enhance their abstract vision; it is a means to mediate between the numerous plans sketched on paper and the real outcome building in reality. The question I want to raise has not to do with the manifold historical aspects of the model, much as I want to put emphasis on its ontological status as a sign vehicle in architecture.

Three sources nourish my paper. The

first is my obsessive drive to deal with the question of representation and possible worlds in philosophy on which I will elaborate later on, the second¹ is my brother's book, published in Hebrew on the history and functions of the architectural model, and the third source which made me interested on the subject, is a documentary film on Frank Gehry, produced by Sydney Pollak in 2006, which includes a scene showing Gehry debating with his assistant Craig Webb, as to the effects of a model they are trying to put up. In a nutshell I want to put forward the question what is a model all about, and why do architects can not do without it.



https://www.youtube.com/watch?v=57_1

AFXUTro

Frank Gehry and Craig Webb (1:25 minute)

¹ Blich Bilu, 2021, *On the architectural model*, Resling publishing (in Hebrew)

In order to answer this question let me put forward one of the well established and much debated issue in the philosophy of logic. My aim at the end of the road is to convince you that architects, knowingly or unknowingly, use what is known as 'possible world logic' recently formulated in contrast or as a criticism to the classic logic created by the ancient Greek philosophers, advocated mainly by Aristotle.

Classical Logic vs. Modal Logic

Logic was 'invented' by the Greek Philosophers as a new way of thinking in contrast to the Mythological approach to reality. The main aim of the first logicians was to base reality and explicate it on firm, fixed and commonsense principles vis-à-vis the mythological trends which explained daily life on emotive non-human, supernatural, legendary stories inspired by belief and not by factual evidences. Logic on the other hand, as one of the many branches of philosophy, strived to put an end to the mythological approach, basing its reasoning on systematical thinking, reflecting empirical and probable evidence. Now, I do not intend to elaborate on Logic as such, but let us not forget that Aristotle and his friends were the first to put an end to the unreliable mythological thinking, opening the road to many disciplines we are familiar with in the sciences, in mathematics etc. Logic is around us; we all use logic in our daily speech – our language is substantiated on logical assumptions without which we would not be able to talk coherently on the world out there.

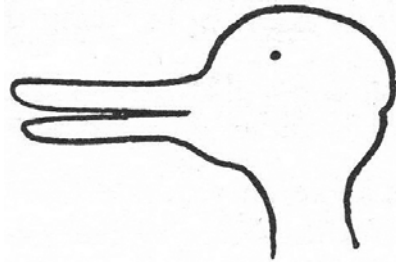
Classical logic is based on a simple principle – If-Then, i.e.: if we assume x

therefore y is true or untrue. These two rigid operators are the main tools of the logician, and yet it also renders his conviction that reality as such also abides to these two operators. In ancient Greece it was commonly said that highly educated people would not dare to challenge logic, and those that would, will be forced and broken by its principles.² The underlying reason for this strange idea is that the Greeks believed that one could not express ideas without using logical thinking. Yet, one should remember that logic does not create ideas or ideologies; logic is a key to test the validity of our expressions and no more. Classical logic is a framework, no more no less. That is why some Greek philosophers challenged logic – such as Zeno and others, who were aware of the limited scope of logic, especially when it comes to explain paradoxical issues which create cognitive dissonance between logical thinking and what is actually said or expressed. One well known example, drafted much later than Zeno, is described in the New Testament, known as the letter from Paul to Titus – the liar paradox (Titus 1:10-13), in which one of the citizens of Crete says that all Cretans are liars ("Cretans are always liars, evil beasts, lazy gluttons"). Now, is he telling the truth or is he a liar as the rest of his fellow Crete citizens who, as said, are liars. Logicians are empty handed facing this paradox because logical thinking could not solve it, as it does not stand to the test of reality and therefore paradoxes are considered by classical logic as gedankenexperiment – a nice and vivid experimental thinking and not part and parcel of logical thinking.

2 Luce, A. A., 1975, *Logic*, The English U. press, p. 1

This brings me to my main point. As a consequence of the limits of classical logic, recent philosophers have come to the idea of establishing a new logic, commonly known as the 'logic of possible worlds'. In a roundabout way this new logic stems from Aristotle's idea expressed in his Poetics – the book his students published after his death, in which he discusses the main principles of the arts. One of these principles says: "evident from what has been said, that it is not the function of the poet to relate what has happened, but what may happen – what is possible according to the laws of probability or necessity" (poetics IX 1451) – in other words: artists according to Aristotle are not obliged to facts nor to historical events as they occurred; on the contrary – the artist is free to fly with his imagination towards possible new territories, i.e.: to possible worlds even if their connection to reality is scarce and weak. It seems that the same Aristotle when he talks on the arts, he is 180 degrees opposed to what he said in his book on logic, and this brings me to my main point. Whereas classical logic relied on a tight connection between reality and logic, some new philosophers in the second half of the 20th century, brought to the open an approach which took into account the possibility of talking on the same object from different points of view` i.e.: from different world versions. The new logic – also known as modal logic is based on the principle of relativism (world versions) which states that under context x an object z has certain affinities and qualities, whereas on another context y it has totally different qualities. For example, wood is one of the essential qualities of Trees, but on the same token wood is also an essential quality of Furnitures. Moreover,

one can see an x as a y, whereas someone else would see it as a z. Wittgenstein³ has demonstrated it with the help of the Jastrow



Jastrow Image – duck-rabbit

image of the famous duck-rabbit, which exemplifies the idea that the meaning of a word or a sentence depends on the context it is embedded in. Expressions like 'possibility' or 'necessarily' are modal locutions, that is to say, they render the fact that what we say is true to the conditions of the expression, given another or an alternative context, the meaning of the expression would be totally different.

Architects as Modal Logic experts

Now let us go back to the architectural model. The work of the architect has two main phases: the one is the architectural plan which specifies portions of the building from a horizontal point of view looking down from above, illustrating its architectural or engineering specifications by graphic conventions of representation and scale to be deciphered by the builders. The second phase of the architectural work is the

³ Wittgenstein, L., 1963, *Philosophical Investigations*, Oxford U. press. P. 194e

model. A model by definition is a physical representation of a structure – built to study aspects of an architectural design or to communicate design ideas. Depending on the purpose, models can be made from a variety of materials, including blocks, paper, and wood, and at a variety of scales. Now if we return to the Frank Ghery example, it is obvious from the short scene with his assistant Craig Webb, that Ghery plays a try and error game – for a moment he adds some elements and a moment later he omits them saying that they are not funny enough, not in their place, distorted, and not stupid, etc. He can play around with the model because a model is a possible world vehicle; a play he would not be able (and would not dare) to perform with a designed plan addressed to the builders, which specifies measures, materials, quantities etc.

The designed plan is the logic of the architectural idea – it abides to conventional principles, whereas the model can be seen in the vain of modal logic allowing the architect to twist it as much as he wants, to amuse himself with never ending alternatives infinitum. Or as Ghery says – we go back and forth between the planning and the model, and if the model does not work, the planning stays on the floor. In other words, the model though a vital element in visualizing the outcome planning, is a sign vehicle, with the help of which the architect can put endless changes, new approaches, imagined scales, alternative materials, etc. etc. leaving aside the engineering constraints, the environmental problems, or even the consumer's demands. The model is the architect's toy, and he allows himself to play with it as much as he wants, and at the end, throw it away.

Another nice example is the case of John Wood and Paul Harrison, two English artists, who have done lots of performances together. In an exhibition in Basel Swiss, they have exhibited 'some things are undesigned' in which they showed models of buildings, streets, parking lots, etc. which could not and would not be built, and hardly if ever be designed as a blue print materializing a concrete building or an urban designed environment. And yet, we can learn something interesting and deep from these undesigned models which has to do with the work of the architect and the modal logician, both are present on the same playground of try and error, of necessity and possibility alike.

<https://www.youtube.com/watch?v=USKcBoPsEfM>



John Wood & Paul Harrison 'some things are undesigned'

John Wood and Paul Harrison challenge the conventional understanding of architecture only to teach us that the sky is the limit; that with the use of models one expands minds, imaginations, abilities and desires. Their work in the mentioned exhibition, and in many other works, is a serious joke, an incompatible and paradoxical explication of our

environment, our means of communication and elements of design. At their service stands ready to help the modal logician who, knowingly or unknowingly, theoretically supports their imagined fictive worlds. It seems to me correct to say summarizing my paper that architects can not deny the important use of models as a means to extend their imagination and their professional abilities beyond the drawing table and its conventional rules of proper building. To sum up my paper, let me say that one could not escape from theorizing or philosophizing our material world, and the case of the architectural model, is a good example for that conviction one could hardly deny.