

Conclusion

Time is the key

First of all, it is necessary to make a few considerations about the depth and extent of the research and about the conclusions that have arisen from that research. In order to draw an evolutionary pattern, that could, supposedly be applied to any kind of evolution, it was necessary to gather a general basis of information about different levels of evolution. As a matter of fact, the research started as an attempt to establish a third element onto the formula form-function, after the intuition that there might be a strong cultural non functional component built over years in the shape and functioning of a product or design in general.

Later, the historians and anthropologists took me gradually to realize that the reason why design evolves in this particular way is connected to an even more primordial logic. It started as a research on history and anthropology, and from a study on human cultural evolution, it became a inquiry on biological evolution placing human cultural evolution as a declension of these principles. In the end, the biologists took me to investigate the mathematical and physical very core of evolution, a process that started aeons before the emergence of life.

It was thrilling to realize in every step of the research, that there was always confirmation, never contradiction, the suppositions became gradually a simpler logic and the evolutionary model built itself with the input of areas not commonly related, always following the formula proposed. Sure, I'm not a biologist and definitively not a physician, so the practical part of the research was relied on more experienced and more capable hands. Some books like *Geni*, *Popoli e Lingue* and *Microcosmo*, in particular played a remarkable role on this endeavor, without which it would be probably impossible to even start approaching the argument of evolution, being the first one, a scientific and humanistic analysis of the roots of human occupation, society and development, and the second, a profound, thorough and yet accessible source about the biological evolution, from the first organic matter till the development of societies and the future of human kind. The relevance of this research fortunately, and hopefully, grew along with the range of study. As we

Conclusion

look back to all important evolutionary advances we had, and the long term tendencies of design and the entire evolution that happened since the big bang, we start appreciating a different aspect of design that goes beyond our aesthetic taste or our personal realization. We start to see products as part of something bigger, a flux.

“Everything flows, nothing stands still”

Plato in Cratylus, and Diogenes Laërtius
Lives of the Philosophers Book IX, section 8

The research, as any other scientific inquiry, needed, more than generalizations, simplifications. I tried to keep personal considerations in the hypothesis level and ground any conclusion in material information, but still, evidently, some information might have been overlooked. It is a first attempt to establish a formula for the evolution and more precisely, the evolution of design, not a final sublime piece of work.

The result of the research and the development of the model are a methodological initiative, intended not just to comprehend philosophically the profound connection among our evolution and every other evolutionary process, but rather, to understand what is design and how to design consciously, not an artifact, but an evolutionary moment. We as biological beings just can't help it creating in a biological manner, tinkering and testing ourselves and our creations as in any other biological evolution.

Seems like, sometimes we humans are so deeply immerse in our technical and cultural mash, so close to the issue, that our nearsightedness doesn't allow us to understand the structure of our own existence. Humans as intuitively designing creatures are born and grow to be in a world where the interaction with objects is in a barely biological level, as if we could not avoid building and modifying our surroundings. The tricky component of this amazing condition is our very incapacity do deal with our own emotional drive, obscuring the knowledge of facts that should be absolutely clear for us. The reason of this

Conclusion

phenomenon, other than our narrow mind and stupidity is in the root of our animality. It looks like we are constantly fighting against our nature, trying to become more and more rational while in ourselves there is an uncontrollable urge to evolve organically. It's a delicate balance between freely creating and rationally selecting, Our task is not just to evolve, it is to evolve increasingly less spontaneously and more rationally, co-evolving along with the huge chain of ancestors and descendents, our evolutionary relatives, expanding without destroying, go ahead without depleting what lies behind us. There is an enormous challenge ahead of us, humans are the ones responsible for making the transitions from biological to post-biological.

"Proprio come il regno vegetale si sviluppò lentamente da quello minerale (...) l'animale sopraggiunse dopo il vegetale, così ora, in quest'ultimissimo periodo, è spuntato un regno interamente nuovo, di cui noi, finora, abbiamo visto quelli che un giorno saranno considerati i prototipi antediluviani della razza."

"Just as the plant Kingdom grew slowly from mineral (...) the animal arose supported by the vegetal kingdom, so now, in this latest period, it's emerged a Kingdom entirely new, which we so far, have seen just those who one day will be considered the pre-diluvium prototypes of the race."

Lynn Margulis
Microcosmo
1991
p. 274

The first most important ascertainment is the comprehension of the logic of the evolution of certain characteristics and concepts on design as a progressive mutation. A good example observed during the inquiry was the evolution or organicity in Design. Centuries, we poor dull humans oblivious of how deep this input could be, got inspired by nature applying ornaments and embellishments in artifacts, slowly, we realized that the natural biological inspiration could go beyond ornaments, it could shape the very structure of an object. One day,

Conclusion

hopefully, we will realize that the biological and organic input could help us to design the functioning of artifacts. The second important conclusion is the applicability of the model as a method. The idea of analyzing products not just as a piece of physical matter composed by aesthetic appearance and function, but instead as a system with genetic information that we partially understand and notice changes our perception of the possibilities of design. The more rational we understand that fact the more able we are to manage and control Design. Artifacts have an incredible feasibility to mutate and the more we understand this fact the better and faster we transform them. Evidently, as systems grow in complexity, editability gets increasingly limited, but there is still no possible comparison with the biological evolution's slowness.

(...) gli scienziati tendono a chiamare "superiori" gli organismi che combinano le grandi dimensioni, i tassi di riproduzione rampanti, i cambiamenti rapidi e una comparsa recente sulla scena evolutiva. (...) secondo questo cumulo di criteri, le macchine sono da un punto di vista evolutivo, ancora più "progredite" di noi. Modificano la loro forma a una velocità di gran lunga superiore a quella di qualsiasi animale, ne sono testimoni le automobili, il telefono, le fotocopiatrici o il personal computer. Sono inoltre in grado di sopravvivere in ambienti dalle caratteristiche estreme, più di quanto non facciamo l'uomo e gli altri animali.

(...) scientists tend to call "superiors" bodies that combine large proportions and climbing reproduction rates, the rapid change and a recent appearance on the scene evolutionary. (...) According to this set of criteria, the machines are from an evolutionary point of view, even more "Advanced" than us. Modifying their shape at a speed rate far superior to any animal, witness automobiles, telephones, copiers or personal computer. They are also able to survive in extreme environments, much more than humans and other animals.

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