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Anyone can use a computer with a scanner and printer to emulate a photocopier. But this is neither the smartest nor the most cost-effective way to use a computer.

Mario Carpo

Editorial

Our reality is one in which the digital and perceived reality –rather than physical reality– take on increasing relevance with each passing second. The pandemic has made clear the ways in which the digital world has become a natural part of our day-to-day lives; at the same time, it has shown that we can rapidly adapt to its logics. Since March 2020, Internet use doubled and the use of videocall platforms increased by a factor of 10. Few have reflected on how accustomed we have already become to this in our isolation, to socializing and experiencing the world solely through digital platforms. We'll need more time to determine the full effects on social activities of the increased use of digital tools during this historical period, but the attention we pay to the use of these technologies will doubtlessly increase. This intensified use of social media and collaborative networks will transform the way we understand our disciplines.

The digital revolution is already past us, there has even been a “second digital turn” as we have been using these tools for 30 years. Nevertheless, in many contexts, there has been no major change in ways of building, the definition of the discipline or the mentality of architects, who are still not conscious of this paradigm shift. Many still think that computers are solely an increasingly sophisticated means of representing architecture, in virtual tours that play a production and consumption role, or of calculating the costs and progress on a project better than humans can. This was also thought in the nineties, when digital technologies first began to be used in our disciplines. In the Latin American context, digital products tend to be criticized for their distance from material reality, yet the digital also creates new materials and ways of manipulating existing ones.

Nowadays, we need to reflect on the extent to which digital media help us think distinctly and how they have modified the dynamics with which we create architecture. If one thinks about the design process and an architect's usual work, it becomes easier to understand where the paradigm shift lies. We conceive of their labor as that of drawing blueprints for the construction of a building. Architectonic design is a set of instructions expressed on a sheet of paper. With computer-aided design, even when one uses two-dimensional screens and maintains the logic of Cartesian geometry, any point with three coordinates has all the information necessary to exist in three dimensions, even without an instrument that acts as an intermediary. Though the day on which it becomes feasible by anyone to 3D-print anything more than the smallest pieces still seems far off, the very possibility presages a continuous process of design and production that changes the paradigm under which architects have worked ever since the discipline was first defined in the Renaissance.

All the tools we use when designing change us and influence what we create. Design programs tend to favor certain forms and make others more difficult, and so digitally designed and fabricated objects appear as such. CAD-CAM can be seen as mediators between the designer and the object of design, but they are functionally closer to physical tools such as hammers and chisels than they are to blueprints, and so they leave their mark behind. They're artifacts for designing and doing at the same time, not tools for noting down a set of instructions.

Seen by many as superficial, formalist and irresponsible figures that put forward impossible or expensive architectures, something that is especially wrongheaded in the Latin American context, those architects that advocated for parametric design during the nineties anticipated a digital future that did not come as quickly as the accelerated growth of digital technologies suggested. Though associated with the phenomenon of starchitects, their digital work paradoxically threatens the idea of architectonic authorship and therefore that of the architect as creator, instead favoring community participation in social design. Parametric design is more responsible and economical than that which involves standardized industrial products, as this implies greater savings in terms of materials.

Architects fear losing control over their artistic work. Design with variable parameters invites Internet users –more common than ever due to the pandemic– to collectively participate, intervening in the object as it is developed; its form can be modified at any point of the process right up until its completion. It has therefore been associated with artisanal labor and threatens intellectual authorship. Instead, it creates a collaborative social product, the result of new media that favor the process over the final object.

Computer-aided design will allow for the mass construction of variable, personalized designs. Formal variability and freedom –without implying higher costs– has for some time been a demand of those who were never satisfied with the architecture of identical copies, built in series, whose consequences can be seen in the failed urbanization efforts on the outskirts of our cities. Yet this would not be the work of an individual creator, but many, who will collectively decide the final form based on certain parameters.

Thanks to digital media, we now have a bridge that very evidently connects our disciplines. With parametric design and 3D printing, few would dare suggest that there's no relationship between industrial design and architecture; the same is true for software for analyzing spatial configurations and interconnections, issues which bring together architecture, the landscape and the study of the urban environment.

At the beginning of the twentieth century, only a handful of heroic architects dared rise to the challenge that the industrial revolution implied for design: standardized serial production. At least one century later, it's worth asking why we continue to design this way when the logic of production is being transformed.

Cristina López Uribe