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Interscalar Fluidity Fascinations

Alberto T. Estévez

The history of art and architecture is actually the history of **human fascination**, spread from one to another (Estévez, 2005). And on the other hand, **fluidity,** as an abstract concept, and due to people's associative and metaphorical capacity, has been one of the eternal mirrors of inspiration in art and architecture (Estévez, 2014). Meanwhile, if any authentic, singular and specific specialty has the architect's profile in a unique way, it is the domain of scale, the **interscalar** ability, which can create anything “from a spoon to a city” (Estévez, 2016). This has now expanded to create from DNA and a bit to an entire planet, either biological and/or digital. **Interscalar fluidity fascinations** that we could verify according to a specific conceptual and chronological line, from Brunelleschi, through Alberti, to Borromini, and the computational design simulations facilitated by the computational technologies of the beginning of the third decade of the twenty-first century that we are in already.

And there has always been the human fascination for fluidity. From the first time, humanity was attracted by the flow of water in a torrent, of fire and its smoke, of the air pushing the clouds: the fluidity of complex forms, in continuous and changing movement, ordered in a harmonic relationship with a specific physical-chemical morphogenetic law. As fluid and genetic, it is the law that acts in the same way in living beings. Fluid and evolving throughout the "flow of time." The idea of fluidity can be extrapolated to other areas, like the flow of ideas in our brain or history, the flow of space in modern architecture, the flow of interscalarity, whether in physical or virtual realities. Verbal fluency, writing fluency, reading fluency...

However, the human impulse to reproduce such fluidity by its hand was partly thwarted. Well, the fluidity of the three-dimensional reality perceived by the human being can hardly be represented in a flat two-dimensionality. And so, it was for humanity for millennia, except for some ersatz traceable through Greek and Roman authors. Until Filippo Brunelleschi discovered (or invented: now avoiding the discussion on such a difference), around the year 1413 (King, 2002), something that later would seem obvious, the law of perspective: “he paid a lot of attention to perspective, which was then badly executed because of many errors that were made; he spent many hours, until he found a method (...) by means of lines that intersect at one point, which was something truly very ingenious and useful in the art of painting” (Vasari, 1550).

The rapid assimilation and diffusion of such a method express the enthusiasm with which it was received and followed. Finally, there were some objective rules, "mathematical," "parametric," to scale and composing in two dimensions the fluid illusion of three dimensions:

"having to write about painting in these brief comments, the author will start from mathematicians, to make clear understanding of every point that leads to the aim of this article. Having understood this, what is painting essence will be explained thoroughly, following the same principles of nature", as Leon Battista Alberti said (1540). To such an extent that, after explaining in detail the laws of perspective, he concluded by saying that "I assure you that whoever does not know with all accuracy and knowledge everything we have said will never be able to reach the degree of perfection that is required" (Alberti, 1540). Thus, becoming the simple initial fascination in an urgent need.

Then, the enthusiasm that existed in the Renaissance arose again multiplied later in the Baroque, when seeing this augmented reality to the possibility of introducing optical tricks, thanks to the deepening of the knowledge of such objective rules of perspective composition as would be the case of the built *trompe l'oeil* that Francesco Borromini created in the Palazzo Spada in Rome (1632-53), precisely in collaboration with a "mathematician," Giovanni Maria da Bitonto. Proving that Rudolf Wittkower was wrong when he considered "the concept of the Spada colonnade (...) of a marginal interest (...) in Borromini's work. To emphasize its meaning too much (...) related to optical illusion, is completely misguided" (Wittkower, 2007). More to the contrary! For Wittkower adopted the point of view of the cold art historian, who without ever really having been within the anxious skin of a creator, is unable to fully understand the passionate fascination that moves them, how they really think, seduced as if by enchantment, to develop their intentions in response or in line with the dazzles that enraptured them. Of course, others earlier in the Renaissance and Mannerism, such as Donato Bramante or Andrea Palladio, also used illusionistic principles in their architecture, but with very different purposes. More for an Apollonian compositional correction than for a Dionysian spectacle.

And so on until reaching the gates of the digital world. Until my own fascination when in 1985 I came across Fortran IV. With the possibilities of representing those lines that are indebted to the laws of perspective, but by writing letters and numbers. Of course, it took me time to write sheets and sheets in that "prehistoric" programming language, to conclude with a primitive perspective of my first built house, roughly traced by those machines of then. But we were amazed at this novelty, the computer graphic representation of architecture!

No different from the enthusiasm experienced today, 35 years later, in the face of formal systems based on augmented perspective, in the face of the shape of projects based on simulations such as swarm intelligence, structural simulation, and material simulation in relation to the temperature of the environment, forms related to environmental optimizations, etc., as presented in the installation designed for Palazzo Bembo, directed by Pablo Lorenzo-Eiroa, on the occasion of the Venice Biennale of this year 2021. It remains in common, throughout more than 500 years even now, that mathematical objectivity in representation, that infallible security that is acquired in representation based on such systems, and that fascination that appears in each of the steps taken forward in the development of such possibilities. First optical, and now today, also buildable. Therefore, immersive, whether it be

virtually or physically. All this allows the freedom of interscalar fluidity that guides precisely what is specific to each system rigorously and accurately.

But what is really deep about it should be emphasized. And that which were commented on up to here are not just systems or tools of representation: above all, they are systems or tools of primordial conception. Therefore, this evolution of the conception of architecture also marks a reading of the fluid evolution of thought, of society, of the times. It is only thanks to a greater knowledge of the laws of perspective that, fascinated, as "from within," Borromini is allowed to conceive, think, and create the built *trompe l'oeil* of Palazzo Spada. As only "from wilth," the new possibilities of digital technology can be conceived, thought, and created what is designed for the Palazzo Bembo on the occasion of the 2021 Venice Biennale. Neither creation could be conceived or thought, or therefore be created before its own time. Thus, literally, they remain as sons of their time, debtors of their respective *Zeitgeist*.

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