

**SYMMETRY:
PERCEPTION, REPRESENTATION AND COGNITION IN DESIGN.**

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For Design, Symmetry is an operation of higher isotopic synthesis and, as a result, it is one of the most widely used design operations. Since its origin, it has been known as a concept linked to regularity which has been used to keep order, a way to skirt chaos, monstrosity, and shapelessness. History has it that symmetry was patently used or hidden, denied or reconsidered, but has always been present in design processes.

Even though Geometry deals with forms only from an entitative viewpoint, it was generally used to explain the structure of symmetry. Designers, however, have conceptual and practical needs: to compare and establish relationships between forms and, to select and combine them.

Graphic languages such as *Monge System and Perspective*, traditionally used for designing, 'only' account for quantifying or qualifying space. They do not allow for conceptualizing or specifically working on *pure design* operations, i.e, on form-related decisions such as selection and combination that will enable an architectural or graphic space which will acquire analogic consistency through traditional graphic systems of representation.

TSD graphic language resulting from the *Theory of Spatial Delimitation* systematizes all possibilities of selection and combination of flat and volumetric forms. It establishes necessary and sufficient *morphic and tactic dimensions* to account for all *possible relationships of selection and combination* (Caesar Jannello "fundaments pour..." in **Semiotic Theory and Practice**, 483-496, Berlin: Mouton, 1988-, Claudio Guerri "Architectural Design .. " in **The Semiotic Web 1987**, 3 89-419, Berlin: Mouton, 1988). It demonstrates that symmetry operations are a specific convergence of *morphic and tactic dimensions*; and that given any two forms, all derived symmetry variables can be determined *a priori*.

In this presentation, we will use our proprietary CA-TSD software (Computer Aided TSD) which will allow for fast verification of what's stated, including Architecture, Graphic Design and Ail examples.