



Organizing Architectural Atmospheres: Reconfiguring Form and Space as Chromatic Data

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ABSTRACT

The article outlines an alternative type of digital drawing technique for architecture called chromatic mapping. This new procedural drawing technique redefines the theoretical frameworks of digital design practice by manipulating the formal and spatial capacities of data captured in the image. The ensuing discursive and practical changes to architectural design practice deliberately leverage the ability of image-based software to gather, collate and modify real-world data. The pixel is central to chromatic mapping because it is the medium that translates form and space into color. This alternative definition of form as visual data contests the orthodoxy that only the line can delineate form and reactivates the issues surrounding the role of the image in architectural production. While maintaining digital architecture's ambition to reduce the procedural and formal consequences of postmodern semiotics, this new drawing technique recalibrates the part images play in architectural production by activating image data to foreground drawings that simulate architecture's atmospheric qualities.

KEYWORDS

Brightness, Color, Diagrams, Figured, Geometry, Materiality, Pictorial, Representation, Toolset, Topological

INTRODUCTION

After twenty-five years, the 'digital turn' in architecture has only produced two new types of architectural drawing: Greg Lynn's animated diagram and algorithmic scripts. There are many reasons why these new modes of representation failed to alter how architects draw. The idiosyncratic nature of Lynn's animated diagram did much to prevent it from gaining broader disciplinary traction. In contrast, the specialized knowledge involved in scripting form has ensured that algorithmic processes remain a marginal architectural practice. In both cases, the development of new disciplinary modes of representation has been frustrated by the issues around attaining the unique skill sets required to draw digitally.

Several institutions have demonstrated that it is pedagogically possible to overcome the technical issues presented by the drawing digitally. Therefore, the formal ossification of digital architecture that comes from the lack of innovation in digital drawing methods is more than an issue of technical proficiency. The inability to extend architectural representation reflects a decision on the disciplinary merit of the toolset. It is important to note that the procedurally abstract character of the digital drawing allows architectural objects to evolve and emerge in the act of drawing. (Lynn, 1999) This emergent characteristic owes much to the fact that many digital processes appropriated software

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developed for other disciplines. The appropriation of software disrupts architecture's established modes of representation by delaying the ability to illustrate the final object. Formal production, forced to work outside disciplinary conventions, rejects a version of disciplinary proficiency based on the skillful composition of tectonic elements. The decision to underplay the merits of the digital toolset does more than register a loss of faith in abstract design processes. It also signals a reaction against the loss of authorship that accompanies formal proficiency. For many, the loss of control that comes with displacing architecture's entrenched modes of representation is too high a price to pay.

Image-based software extends the possibilities of drawing digitally through new generative drawing techniques. These techniques, which appropriate image-processing software, define form and formal analysis through color rather than lines. These techniques envisage an alternative digital design practice that rejects the discursive alignment of the abstraction found in the animated diagram and algorithms with Deleuze's "anti-representational" theories. (Gibbs, 2010) Significantly, processing and manipulating visual data in this way extends architecture's representational techniques, revises the formal potential of architecture and alters the theoretical basis of digital discourse itself.

The introduction of the term chromatic mapping describes the vital differences offered by an image-based digital drawing practice. Using the software Fiji, the paper will demonstrate how this image-based mapping technique provides alternative procedural mechanisms that furnish digital drawings which are not just concerned with the diagrammatic and abstract (Schindelin et al., 2012). Chromatic mapping, which sees mapping as a viable digital design method, reintroduces the need to involve multiple-representational spaces of translation. The move from form to color and back to form leverages a set of translational opportunities without needing to 'represent' an authentic, legitimate type of form or for a drawing to be a single space that both produces and then presents final architectural objects.

The examination of the unique architectural opportunities offered by chromatic mapping uses two related modes of comparative analysis. The first exploits the translational opportunities of the mapping process by exploring the similarities between architectural and pictorial drawing practice. This analysis of drawing practice recognizes that architectural drawings and pictorial representation provide formal, or figured, images of actual objects. The second mode of comparative analysis articulates how chromatic mapping constructs alternative theoretical, procedural and formal outcomes as a consequence of the shift from analog to digital mediums. The value of this second mode of comparison is that it explores how image-based digital techniques free the architectural drawing from the prescriptions and injunctions that come with the conventions of pictorial formalism.

CONTEMPORARY ARCHITECTURAL DIGITAL PRACTICES

Pictorial Representation in Art and Architecture

Categorizing Pictorial Representation

It is essential to acknowledge the crudeness associated with equating the pictorial practices found in art and architecture. There are also risks in constructing an overarching comparative analysis that universalizes disciplinary knowledge. The largest risk with generalizing work across disciplines ignores subtle but significant deviations between the two types of practice. In this instance, however, a targeted comparative analysis can be used without needing to confront the problems posed by universalizing knowledge across disciplines. Specifically, the common desire to index the world makes it possible to undertake a categorical analysis of pictorial practice across art and architecture. In effect, the common desire to furnish faithful representations of reality mitigate the differences produced by the distinctive social, cultural and economic roles played by each practice. The focus on the intention governing the choice of representational form not only makes it possible to compare pictorial images across disciplines. It also provides a comparative basis to assess the type of representation used to present form and the techniques used to produce these images.

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