

INTRODUCTION: DIAGRAMS AND THE ANTHROPOLOGY OF SPACE

This collection of essays marks a step in defining an area of inquiry that touches on disciplines whose histories carry substantial relations to philosophy. Although one should not expect a single philosophical position to emerge from our work, each of the articles shares an interest in the practice of visual representation and the problems inherent in the translation of one symbolic form to another. Above all, this collection marks the collaborative work of practicing architects, scholars, and theorists who have come to think that the study of visual representation deserves to be approached through more than the interpretation of ready-made objects. From the vantage point of architecture, such an approach emphasizes the cognitive linkages and interactions among visualization, spatial knowledge, and language. If one were to use a metaphor from chemistry, we might say that we have become drawn to the evolution and morphology of shapes just as chemistry has become drawn to understanding the transformations (the half-reactions) that take place in chemical reactions. While multiple disciplines have worked to understand the process involved in the constitution of form, most approached such practice from the vantage point of the interpretive dismantling of something that may be regarded as formally complete. Historical approaches to art and architecture and the formalized aesthetics that usually accompany them provide ample study of completed objects. By contrast, we have approached design as an incremental process that relies in substantial ways on the incremental evolution of shapes, percepts, and concepts engaged as one thinks through diagrams.

We have found our inquiry complemented in substantial ways by cognitive science or perhaps more precisely a cognitive philosophy that has been shaped both by epistemology and phenomenology. Rather than constituting interpretive positions that rely on the study of completed projects, we have become drawn to the ways in which design enables not

simply further ratiocination but further steps within the design process. To draw on another metaphor from chemistry (and this one from early chemistry), we would say that we are less interested in *theoria* than *praxis*. Indeed, such a distinction should hardly be surprising at the beginning of the 21st century, for the human as well as the natural sciences are showing with greater frequency the ways that interpretation also marks action and intervention. Certainly, the digital revolution of the end of the 20th century contributes substantially to a sense that we are no longer reading in the same way. In effect we are experiencing something of the transformation evidenced in the new visual logics that accompanied the invention of printing. Great libraries are hardly warehouses for old book technologies but laboratories for exploring the changing practices of visual representation. Screen technologies bring before us not only a stream of visual imagery through which we think but provide multiple ways of making linkages from one image to another. Instead of identifying targets for textual interpretation, we think of texts as points of departure for building new shapes through the silicon screens on which we think. Within architecture, practice is hardly grounded on the naive aesthetic appreciation of the histrionic structures, or on second-level histrionic structures provided by the freeze-frames of "theory," but on the capacity to transform or morph structures through increasingly sophisticated CAD systems. Certainly even from the vantage point of print culture itself, we are recognizing how our own work in digital visualization was anticipated by the visual technologies of the past.

Our questions may be mapped more precisely with reference to twentieth-century philosophy (Cassirer's symbolic forms, Goodman's world-making, Ricoeur's overlapping narratives, and Lakoff and Johnson's embodied metaphors). Many links (that I will not rehearse here) can be made to work on reading and interpretation as well. Finally, however, the questions posed by these essays should be regarded far less as a conversation with the past or as a response to particular figures than as anthropological reports from our own navigation of liminal space. In the broadest sense, there has been a shared interest not simply in comparative work but in the symbolic translations that take place when one moves from sharing the mental space of a poetic text with others to architectural design. All the essays share an interest in developing strategies for exploring the ways in which text-based cognition of mental space can serve as settings for the projection and construction of space

that becomes physically experienced. One important consequence of our work is a shared experience that such spatial translation does not occur through the random combination of forms in a vague phenomenological setting. Instead, we have found ourselves asking how the phenomenological settings challenge us to see the emergence of a new shape-logic. Peter Galison has referred to shape-logics within phenomena registered by instruments that require the development of different interpretive schema. In a related manner, we find ourselves asking how the emergent shapes within the design process — shapes that are reenacted, reinvented, and reembodied — not only touch intuition but shape logical schemas that guide the phenomenological experience of intuition. How such a logical turn manifests itself through the repeated synthetic operations within design marks an important question to be pursued in subsequent research. Inherent in such research would be an exploration of the ways in which diagram, like metaphor, can be controlled by narrative or can lead to ruptures of the narrative continuum. How shapes such as diagrams work as cognitive vehicles for evolving invention and for shifting between different symbolically constituted worlds becomes explored in each essay.

Although each essay speaks for itself, I would like to anticipate several questions raised by each. John Peponis and his colleagues Iris Lykourioti and Iphigenia Mari trace the unfolding stages of a project that moves from a translation of Lewis Carroll's *Alice in Wonderland* from text to diagram and then to model and structure. As in his previous work on Italo Calvino and architecture, Peponis is interested in exploring the ways the phenomenology of imagined visual space and the abstract spatial structures that sometimes underpin literary construction in the text may be used as a means for exploring architectural space. Aarati Kanekar gives a rich case history of such a symbolic translation through a demonstration of what is learned not merely by studying Terragni's *Danteum* by itself, but more importantly, by comparing its spatial configuration to the cognitive space created by Dante's *Divina commedia*. Paul Gehl looks at the emblematic coding that accompanies early book design and shows how such visual features of early printing are frequently elided or missed by histories of early printing or simply ignored as a consequence of the aesthetic issues that accompany art history. In my article, I consider the heuristic use of diagram within architectural theory and practice and show how a seminar in architecture

used diagrams to explore the mental space created in texts such as Ovid's *Metamorphoses*. My questions are shaped by research in visualization in mathematics as well as my long-standing interest in narrative as a mechanism for order and control. Together the articles demonstrate the ways that practices of visualization interact to construct new media for engaging human experience.

All the articles also come out of the practice of working in settings that require an agility to move quickly between multiple disciplines. It is also significant that not only are multiple disciplines represented in these essays but also varied institutions. Six institutions in particular deserve special recognition for their support of this project. Georgia Tech has provided a productive setting for joint seminars and for an international symposium on Space-Syntax that proved to be a rich occasion for exploring ideas. The National Technical University of Athens has created a flexible setting that has permitted Greek post-graduate students of architecture to situate their work within a truly international context. The University of Cincinnati has provided a setting for extending the inquiry reported here through elective studios; this work, while not directly reported here, has informed our joint explorations. The Newberry Library in Chicago gives ample evidence for being not only one of the world's major research libraries but also one of the major visual laboratories for research into the history of multiple technologies of representation. The University of Pavia hosted the First and Second International Conference on Model-Based Reasoning (1998 and 2001) and created a 2001 session in which early versions of the published papers were delivered. Finally, I would like to recognize Ghent University and Professor Erik Weber for publishing these papers in *Philosophica*. Since institutions have their unique identities through the people that shape them, it is with pleasure that I recognize the importance of my colleagues, Professor Lorenzo Magnani (University of Pavia) and Professor Nancy Nersessian (Georgia Institute of Technology), in encouraging the creation of a session on visual forms at the Pavia conference. Their efforts in building an international community for interdisciplinary work in cognitive science truly represent a significant example in looking to the future. I am indebted to both of them. I would also like to recognize the presence of my colleague and friend John Peponis in the development of the articles. The six institutions represented in the collection manifest an international inquiry that we

hope will be expanded by our readers.

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