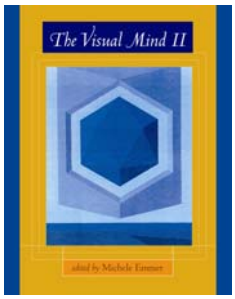
The Visual Mind II / Michele Emmer.—(Leonardo).—Cambridge, MA: The MIT Press, May 2005.—699 p.: ill.—ISBN 0-262-05076-5 (cl., alk. paper): $49.95.



How does one express the intersection between an elegant and beautiful equation that describes the surface of the smallest soap bubble and the grace and appeal of Max Bill's *Endless Ribbon*? Michele Emmer and twenty-nine scholars and artists of international reputation tackle the problem in this volume. Superficially, art and mathematics do not relate: art seems to be grounded in emotion, while mathematics seems much more abstract. The truth, however, is that mathematicians often view solutions to their problems in visual terms, but do not always go as far as realizing the answer in physical forms. Artists, on the other hand, may use mathematics to achieve the evolution of a concept.

Art historians and aestheticians will find the present volume of interest for articles such as Giuseppa Di Cristina's analysis and praise for Frank Gehry's Guggenheim Museum in Bilbao and Roberto Giunti's application of bio-mathematical models to understanding the works of Paul Klee. Readers who seek confirmation of the connection between famous theories and major art movements, however, will be disappointed in Linda Dalrymple Henderson's chapter that punches holes in the relationship between the theory of relativity and cubism that cropped up in New York in the 1940s. She states flatly that the myth emerged to satisfy American viewers who "seemed to require explanation and justification for what they saw."

The chapters in which artists explain how they conceived forms and gave them shape are mostly rewarding reading. Ronald Brown's understanding of John Robinson's symbolic sculptures and Brent Collins writing on his own work provided relief from the hyper-intellectualizing efforts of others; they consisted mostly of photographs that stood on their own with little explanation of their origins.

The two chapters that investigate the intersection between mathematics and cinema represent a logical expansion from the 1993 volume of the same title. Anyone with only a nodding acquaintance with mathematics can vicariously enjoy the excitement and rapture that an abstract scientist may feel during the process of discovery as depicted in *A Beautiful Mind* or *Good Will Hunting* and relate it to the development of a work of art. Peter Greenaway's discussion of organizing principles in his practice of filmmaking exposes the reader to his more objective and abstract approach to an artistic discipline that usually attempts to relate a story in a narrative.

Once again, the pattern seeking models of mathematics may be of help to those studying non-Western art. Paulus Gerdes explains some techniques he used to study geometric ideas in African cultures, and Tibor Tarnai and Koji Miyazaki's study of circle packing (a configuration of circles with a specified pattern of tangencies) represents a seminal study on the origins of culturally significant shapes in Japan and possibly other Buddhist art.

Emmer's book explains an intersection of excitement that may be felt by mathematicians and artists alike. It also illustrates principles that some artists and art historians have applied to the study of their own work and the works of others. But, what does the volume offer to the mathematicians? Perhaps it is the insight that both disciplines are not so far apart and that creative efforts are not always emotionally inspired but sometimes rationally conceived.

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