

Introduction

Michele Emmer

*Imagine all the people
Sharing all the world*

John Lennon

Imagine mathematics, imagine with the help of mathematics, imagine new worlds, new geometries, new forms. Imagine building mathematical models that make it possible to manage our world better, imagine solving great problems, imagine new problems never before thought of, imagine music, art, poetry, literature, architecture, theatre and cinema with mathematics. Imagine the unpredictable and sometimes irrational applications of mathematics in all areas of human endeavour.

Imagination and mathematics, imagination and culture, culture and mathematics. For some years now the world of mathematics has penetrated deeply into human culture, perhaps more deeply than ever before, even more than in the Renaissance. In theatre, stories of mathematicians are staged; in cinema Oscars are won by films about mathematicians; all over the world museums and science centres dedicated to mathematics are multiplying. Journals have been founded for relationships between mathematics and contemporary art and architecture. Exhibitions are mounted to present mathematics, art and mathematics, and images related to the world of mathematics.

This third volume of the series begins with the connections between art and mathematics including the papers of L. D. Henderson, E. Barisoni, U. Bottazzini, M. Rottman and M. Emmer. All the papers are connected to the large exhibition on Art and Math entitled “Visible Harmonies” that was to take place at the MART in Italy during 2013, and was cancelled a few weeks before the opening. An article by J. P. Bourgignon is dedicated to the exhibition he organized in Paris in 2013 on math and modern Art. The volume includes an homage to Benoit Mandelbrot by N. Samuel and G. A. Losa. Very interesting the connections between math,

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architecture and design are addressed in the papers by G. Legendre, E. Fiorelli and others, and A. Giuliani.

An interesting part is dedicated to the connections between math, computer science and theatre with the papers by C. Bardainne and A. Mondot.

All topics are treated in a rigorous but captivating way, detailed but full of evocations. An all-embracing look at the world of mathematics and culture.