Michele Emmer
Marco Abate *Editors*

Imagine Math 8

Dreaming Venice

Springer

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This volume is dedicated to
the Liberty of Ukrainian people.
—Rome, 27 February 2022

Massimiliano Botti, *PI MACHINE Architects*, Paris (February 2022)

Michele Emmer • Marco Abate
Editors

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Cover illustration: M. Paladino, Senza titolo, codice MP P20041 (2020) tecnica mista su tela, 120,00 x 100 cm. Incorniciata misura 104 x 124 cm.

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To
Luca Boschi

To
Olga Filipovna Tcherny
Kostantin Kostantinovic Tcherny
Ekaterina Kostantinova Tcherny
Otto Michalovic Grauding
Tatiana Grauding Emmer

Preface

Imagine all the people
Sharing all the world . . .
John Lennon

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 combining music, art, poetry, literature, architecture, theatre, and cinema with mathematics. Imagine the unpredictable and sometimes counterintuitive 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 to explore the 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.

The volumes in the series *Imagine Math* are intended to help readers grasp how much that is interesting and new is happening in the relationships between mathematics, imagination, and culture.

This eighth volume of *Imagine Math* is different from all the previous ones, including those of the *Mathematics and Culture* series. The reason is very clear: in the last two years the world changed, and we still do not know what the world of tomorrow will look like. Difficult to make predictions. It is difficult to say if and when we will begin to meet and talk to each other again, exchanging ideas and opinions in person. This volume is different because it is not the Proceedings of a conference in Venice since the editions of 2020 and 2021 did not take place. It probably would not be held anymore for many reasons. Years go by not just for people.

This volume has a subtitle *Dreaming Venice*. Venice, the dream city of dreams, that miraculous image of a city on water that resisted for hundreds of years, has

become in the last two years a truly an unreachable dream as Shakespeare said (*The Tempest*):

> We are such stuff as dreams are made on,
> and our little life is rounded with a sleep.

We dreamed of Venice, and not being able to meet in person, we created a new volume in which Venice is present but as a desired dream. Without Venice, this series of meetings that began in 1987 would have made no sense.

Many things tie this book to the previous ones. Once again, this volume too starts like *Imagine Math 7,* with a homage to the Italian artist Mimmo Paladino who created exclusively for the *Venice Conference* and the *Imagine Math 8* volume a new series of ten original and unique works of art dedicated to Piero della Francesca.

A memory of Napoleon could not be missing not only for the anniversary of his death on May 5, 1821, but above all because it is Napoleon, passionate of mathematics, who actually gave life to the *Istituto Veneto di Scienze, Lettere ed Arti* (location of the Venice Conference) as the Emeritus Chancellor Fraschini explains.

An intervention on the protection system of Venice, a very fragile city, could not be missing either, a system that seems to be working well.

Many artists, art historians, designers, and musicians are involved in the new book, among others Linda D. Henderson and Marco Pierini, Claudio Ambrosini, and Davide Amodio. Space also for comics and mathematics in a Disney key. Many applications, from Origami to mathematical models for world hunger. Particular attention to classical and modern architecture, with Tullia Iori.

As usual the topics are treated in a way that is rigorous but captivating, detailed, and full of evocations. This is an all-embracing look at the world of mathematics and culture.

Rome, Italy Michele Emmer
June 16, 2021

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