

# Preface

I have always had a fascination with the “Infinite.” In my college years, I got a Ph.D. in the area of mathematics that studies the infinite, known as *set theory*. And, at the age of 16, I began a lifelong practice of meditation, which opened the door to the subjective experience of the “Infinite”—a sense of the unbounded, unlimited depths of my own awareness.

All through my life, as I pursued studies and gathered experience in both of these domains, I had the feeling that these two approaches to the Infinite were studying the same fundamental reality. In fact, in my own mathematics research, I began to discover ways to interpret the ancient wisdom in the context of modern mathematics so that it could potentially suggest solutions to modern mathematics problems. Some of these discoveries, which eventually appeared in the literature, came from just such an approach.

Seeing that the ancient approach could be used to address issues even at the frontier of mathematical research, I started to realize that many deep mathematical gems would be accessible even to the nonexpert when the ancient wisdom is included as an integral part of the study of the Infinite, and I began work on designing a course of study for the non-expert.

It was at this time that I had the good fortune of meeting a Chinese man who introduced himself as “Dr. Wu.” I found that his credentials were similar to mine, but his own training was in the traditional Taoist way. He had had quite profound experiences of the *Tao*, which, as he explained to me, is truly the same as the Infinite that I had experienced. And he had discovered many profound parallels to the field of mathematics in his own research.

In our discussions, I found Dr. Wu’s Taoist approach irresistible. His mind flowed effortlessly between great mathematical insight and the profound intuitive wisdom of the Taoist sages of ancient times. For him, the two subjects were one. He would speak with such clarity but at the same time with such gentleness and humility.

Many good things came from my association with Dr. Wu, including numerous insights into the Taoist approach to ancient wisdom and a love of the Chinese language. But what was most valuable for me in our time together is more difficult to describe. Dr. Wu *lived* the *Tao*. The Infinite had manifested in his life not just in mathematics and ancient scriptures, but in the very way he thought, spoke, and acted in the world. This manner of his was a steady source of inspiration in those days.

In our meetings together, we developed my ideas for a course of study to their completion. The course would introduce students to ancient wisdom, pointing to a path to the Infinite within and organically bringing into view Its inherent qualities and dynamics; and that would, at the same, time gently introduce the mathematics of the infinite, showing how the same principles appear to be at work in both the ancient and modern approaches, and how studies in both areas

naturally evolve together.

This book is a presentation of our work together. It is laid out as a course taught by Dr. Wu himself. The book captures, I believe, the personality and teaching style of Dr. Wu, but at the same time includes in its presentation the many insights that led to my own discoveries over the years. The style of the book is a dialogue between Dr. Wu and his directed reading student, Paul Crandall. Paul is perhaps a younger version of me, just starting out on his “Infinity” journey. He asks the questions anyone might naturally ask, and succeeds and fails as anyone might, as the teachings gradually unfold.

The story that is told in this volume is basically true. The characters represent people I have known—teachers, colleagues, students, friends. The conversations and events you find here all took place in some context or other in my own long “journey into the Infinite,” but all of these have been organized into this particular sequence of lessons to provide a kind of home study course for readers.

As the author, I would naturally encourage readers of any sort of background to read the book without any concern about pre-requisite knowledge in mathematics or in “mystical” matters. Earlier versions of this work were used as the main text for a course for college freshmen who were seeking an “easy way” to meet their mathematics requirement; these students had very little background in either of these tracks, but nearly everyone in the class did well and found the new ideas and approaches refreshing, and, in some cases, life-changing.

A good approach for any reader is to go through the lessons and, if some portion of a lesson seems too technical or too demanding in some other way, just skip ahead. Sections of the book that really do require additional expertise, mathematically or otherwise, are labeled “Technical Moments” (and occasionally, “Philosophical Moments”); these sections can always be safely skipped. One other recommendation for readers is to always try the exercises provided at the end of each lesson. There are many different kinds of exercises, and they are organized according to level of difficulty; answers are provided in the second volume, which also contains a variety of supplementary material.

The work here would not have been possible without all the training I have received from my many mentors. On the mathematical side, I have had the honor to work with many of the best and most accomplished set theorists of our time. On the side of “ancient wisdom,” my practice of meditation—Transcendental Meditation—comes from the teachings of Maharishi Mahesh Yogi, and everything worthwhile that I have come to know in the field of ancient Vedic wisdom has come from his teaching, through lectures, books, and other means. My understanding of the connections between the ancient wisdom and modern mathematics began in my student years as an undergraduate at Maharishi International University (MIU) (renamed later as Maharishi University of Management). Under Maharishi’s supervision, the mathematics faculty at MIU discovered many profound connections between the Infinite (as I am referring to it) according to the ancient Vedic wisdom and modern mathematics, and these connections were communicated in their mathematics courses. As I pursued graduate work in mathematics, I continued my association with the MIU professors and eventually joined the mathematics faculty myself in the 1990s. Many of the lessons in this book begin with insights from the courses I took—and later taught—at MIU. Finally, I owe my insights concerning the ancient wisdom of China, particularly concerning the Tao, primarily to Dr. Wu and the subsequent research that he inspired.