in London's shadows. "Dirty, muddled and old London" (and perhaps, as Wole Soyinka has suggested, too tolerant London) may face a future more violent than the past this book describes so vividly.

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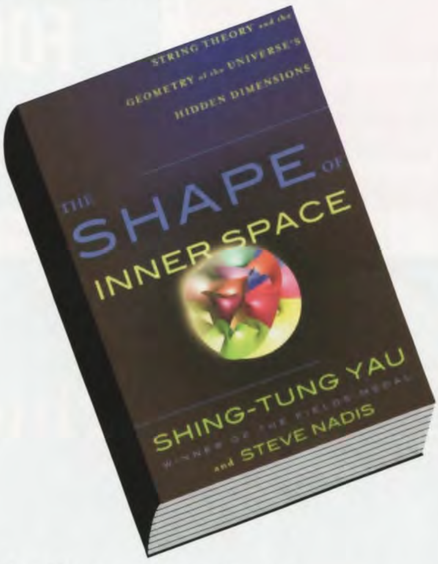

The Shape of Inner Space
By Shin-Tung Yau and Steve Nadis
Perseus Books
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With the assistance of science writer Steve Nadis, renowned mathematician Shin-Tung Yau, one of the main players in some of the most important recent advances in complex geometry, aims to bring a fascinating subject to life.

Yau is responsible for the proof of the Calabi conjecture that gave birth to Calabi-Yau (CY) manifolds. Normally such an achievement would be enough to count as a success story in mathematics. However, CY manifolds made an unexpected central appearance in string theory and remained there, thus acquiring a notoriety that would spread beyond the fields of both physics and mathematics.

At the heart of this book, which is aimed mainly at literate laymen, is Yau's scientific autobiography. Along the way, it offers a review of many of the ideas, both physical and mathematical, underlying string theory, and its interplay with modern mathematics and theoretical physics. It is an interesting testimony to the impressive cross-fertilisation that has taken place in the past 30 years. The central idea that forms the backbone of the book is the role of mathematics as a key tool in understanding physics and, in particular, the central part geometry plays in physics.

The Shape of Inner Space relates the situation in mathematics leading to the Calabi conjecture and the timeline of Yau's attempts to prove the conjecture, which was the feat that brought him the Fields Medal, mathematics' highest honour. This is interlaced with descriptions of string theory, the leading candidate for providing a quantum theory of gravity. Although it has not yet achieved what its proponents thought it would, string theory has provided a highly complex and remarkable tool to address quantum gravity, which remains beyond our full understanding despite decades of study. String theory has proved to be a treasure trove for modern mathematics; indeed, almost half of the Fields medals in the past two decades were given in recognition of mathematical advances related in one way or another to string theory.

Although this is not the first book to describe the ins and outs of string theory and its interplay with mathematics (Brian Greene's 1999 book *The Elegant Universe: Superstrings, Hidden Dimensions, and the Quest for the Ultimate Theory* also examines these issues), *The Shape of Inner Space* is unique in telling the tale from the point of view of the mathematician who has been at the centre of it, and gives a clearer picture of the mathematics side of the story.

Moreover, it is a very well-written book, and one that scientifically minded laymen will find easy to follow. It explains simply the many mathematical terms that emerge from this wide arena of science, provides a timeline of events that specialists will find useful, quotes most of the important scientists who contributed to these advancements, and offers an enjoyable reading experience.

It is strongly recommended to those seeking a first-hand, simply explained account of one of the most fascinating evolutions in modern science, whose impact in mathematics is significant and enduring, and whose impact in physics may be forthcoming.

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