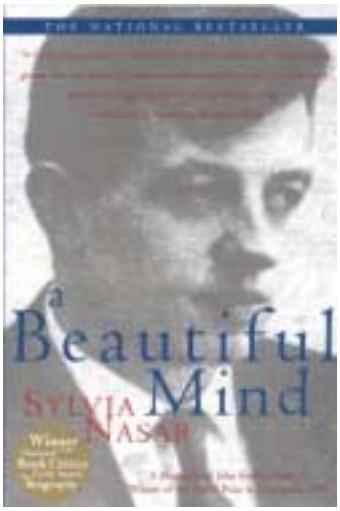
A Beautiful Mind

By Sylvia Nasar
Simon & Schuster 1998



"There was never a genius without a tincture of madness," Aristotle wrote. In A *Beautiful Mind*, Sylvia Nasar, journalist and economics correspondent for the *New York Times*, chronicles the life of John Forbes Nash Jr., mathematical genius and winner of the Nobel Prize in economics in 1994. Nasar's award-winning biography is the basis of a major motion picture starring Russell Crowe.

Aristotle's assertion is well taken here because John Forbes Nash is among the famous artists, scientists, and mathematical geniuses who suffered from mental illness. In Nasar's telling, Nash possesses the same vices and virtues as the hero in a Greek tragedy. Unlike the mythical hero, however, Nash miraculously transcends his weakness, even after falling into the depths of schizophrenia.

Born in 1928 in Bluefield, West Virginia, Nash's early years foreshadowed the human suffering and human greatness that would be his destiny. In her reflections on childhood, Nash's sister, Martha, recalls: "Johnny was always different. . . I wasn't too keen on showing off my somewhat odd brother." Labeled an underachiever by his teachers, Nash was considered socially awkward and immature. Complaints about his illegible handwriting, his incessant talking, and "his sloppiness dogged him right through the end of high school."

Despite his bizarre behavior, Nash began showing signs of mathematical talent in the fourth grade. "The teacher told [his mother] that Johnny couldn't do the work, but it was obvious to [her] that he had merely found his own ways of solving problems." At the age of 13, Nash got his "first glimpse of real mathematics" when he read E.T. Bell's *Men of Mathematics* (1937).

In 1948, Nash entered Princeton, where he developed into one of the most talented and creative mathematicians, and where he wrote the dissertation on game theory that would win him the Nobel more than 40 years later.

Invented by John von Neumann in the 1920s, game theory is an attempt to "construct a systematic theory of rational human behavior by focusing on games as simple settings for the exercise of human rationality." Von Neumann was the first to provide a complete mathematical description of a game and to prove a fundamental result, the "min-max theorem."

Although Nash established mathematical principles for game theory, his work "did not inspire much interest or respect among the mathematical elite" at the time. It wasn't until the late 1970s that theorists began using game theory in areas of trade, industrial organization, and public finance. By the late 1980s, with models from game theory dominating many aspects of economics, Nash's name appeared "in the titles of dozens of articles in leading economics journals."

Nasar presents the details of Nash's career at the RAND think tank and MIT and his tragic collapse into a delusional state, which left him "feeling privy to cosmic, even divine insights" for years. Nash's amazing remission from schizophrenia enabled him to receive the distinction he'd coveted before the onset of his illness.

Caught up in the great magnitude of events surrounding Nash's life, a reader is likely to experience a range of emotion, including awe of the vulnerability of the human psyche. Nasar successfully combines the history and drama necessary for a compelling biography.

—Angie Moore

The Kingdom of Infinite Number
By Bryan Bunch
W.H. Freeman 2001

Caesar conquered seven kingdoms. The third was the Kingdom of Infinite Number.

The author states that "the various genera of numbers can be considered as forming a kingdom, not unlike those that classify the species of the living world."

Actuaries should enjoy this book about numbers. One humorous paragraph describes the experience of Augustus De Morgan (1806-1871), the First Professor of Mathematics at University College in London, and the first president of the London Mathematics Society.

In conversation with an actuary about the chances that at the end of a given time a certain proportion of a group of people would be alive, De Morgan quoted the formula for this calculation, which involves pi. De Morgan interpolated into the discussion the geometric meaning of pi as the ratio of the circumference of a circle to its diameter.

The actuary was astounded at this revelation: "My dear friend," he exclaimed, "that must be a delusion. What can a circle have to do with the number of people alive at the end of a given time?"

There are many other enlightening examples between the covers of this book.

—Don Sondergeld