

A review on: "A Beautiful Mind: A Biography of John Forbes Nash Jr." by Sylvia Nasar

Simon and Schuster, pp. 459, \$25.00

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In October 1994, several days after the Swedish Academy of Science announced that the Nobel Prize in Economics would be awarded to "Dr. John Nash, 66, a resident of Princeton, New Jersey," a reception was held in his honor at the coffee lounge of the legendary mathematics department of Princeton University. The room was about half full. There were mathematicians, students, a small number of economics professors, a few university administrators and perhaps a token photographer. At the time, the sum total of Nash's formal affiliation with the university was having a computer account there.

The ceremony was somewhat late in starting, and lasted no more than a minute or two. Someone raised his glass in a toast but no complimentary speeches were made. The guest of honor said nothing. As the last glass was drained, an embarrassing silence reigned. Nash stood alone in the middle of the room. No one approached him. He walked over to the refreshment table, where I also happened to be standing. "The cookies are better than usual today," he remarked to his incredulous guests.

Nash was one of three laureates who won the Nobel prize that year for their contribution to non-cooperative game theory: a series of concepts and mathematical models that attribute absolute rationality to all "players" in strategic situations. Early game theory was set out by von Neumann and Morgenstern (both from Princeton, incidentally) in a monumental work published during World War II. For 25 years it remained a marginal theory in the realm of mathematics. Only in the 1970s did it infiltrate economics and augur one of its greatest intellectual breakthroughs. By the early 1980s, game theory was taught routinely in economics departments around the world. Every student of economics knew what "Nash's equilibrium" was - but no one had ever heard of an economist by the name of Nash.

As an economics student in the 1970s, I also assumed that whoever Nash was, he had died long ago. In fact, he was only in his forties at the time, and his contribution to economics was packed into three papers - all of 30 pages - published before he was 25! So central was his work to economic theory that under normal circumstances he would have won the Nobel Prize then and there. But Nash was first and foremost a mathematician. His greatest achievement - solving what was believed to be one of the most complex problems in the sphere of geometry - predated his 30th birthday.

At 31, however, Nash fell prey to what he describes as "mental disturbances." For 25 years, he moved "from scientific rationality into the delusional thinking characteristic of persons who are psychiatrically diagnosed as schizophrenic or paranoid schizophrenic." The arrogant genius, the eccentric math professor who at 21 offered Einstein a theory postulating the shrinking of the universe and won accolades in Fortune magazine as one of the brightest young stars in the field of mathematics, became a sick and lonely man.

For Sylvia Nasar, the Nobel Prize in Economics was just a routine annual event. As a senior economics reporter for The New York Times with close contacts in the academic world, she was sent to cover the awards ceremony every year. Reporting on the contributions of Nobel Prize laureates, journalists tend to sound ridiculous. Nasar, on the other hand, has always managed to describe their scientific work in a credible and intelligent manner. Her report in 1994 was even more special. She was the only journalist who understood that the awarding of the prize that year was not just an academic event but a human event. Several weeks after the winners were announced, Nasar published a long, poignant piece about Nash in The New York Times, which deviated from standard policy and ran the article on the first two pages of the financial section (it appears on the Internet at: http://www.psych.helsinki.fi/~janne/mood/John_Nash.html).

Nasar describes Nash during three phases of his life: as a young, handsome genius; as a victim of mental illness haunting the idyllic Princeton campus; and as a recovered scientist who returns to active research and wins the Nobel Prize. The decision of the Nobel committee articulated the academic world's appreciation of game theory; Nasar articulated the human dimension: the awarding of the prize to a "mad genius." The success of Nasar's article prompted the writing of the book. Simon and Schuster, recognizing the enormous commercial potential of such a book, made it possible for Nasar to take a two-year leave of absence and devote herself to writing.

"A Beautiful Mind" is the product of meticulous research. A dedicated and talented journalist, Nasar scoured the country to collect data, taking advantage of her personal charm to unlock closeted secrets. She delved into psychiatry books and read biographies of mathematicians and other geniuses to better understand the workings of Nash's mind. Nash himself refused to cooperate, but Nasar was assisted by his ex-wife, Alicia, who despite their divorce in the 1960s, continues to live with him and tend to his needs. Alicia's reasons for collaborating with Nasar are not clear. Perhaps it was exciting to meet a famous journalist, or perhaps she thought it would be helpful in some way to their son, who has inherited both his father's mathematical skills and his mental illness.

Why wouldn't Nash cooperate with Nasar? Was it only his fear of embarrassing disclosures? Nash is known as a man of strong principles. Asked to compose a short biography in honor of winning the Nobel Prize - a piece of writing which is no less fascinating than Nasar's book - Nash explains that he deliberately omits "details of truly personal type" (see <http://nobel.sdsc.edu/laureates/economy-1994-2autobio.html>). I myself heard him say on several occasions that the only biography worthy of him was one which concentrated on his scientific and intellectual achievements, but that such a book could not be written because he had not yet completed his work.

Nasar burrows pitilessly into Nash's private life. She describes his symptoms, his medical diagnoses, the horrifying treatments he underwent. She carefully drops hints about his sexual preferences, and describes in detail his relationship with a woman with whom he has fathered an "illegitimate" child. Few of Nash's acquaintances knew about this child before the book was published. Nasar exploits journalistic freedom to the hilt, as long as she is sure of the facts.

John Milnor, one of the leading mathematicians of our times, has attacked Nasar's book

as a “drastic violation of privacy.” There is no one to protect him. Nash himself has found it difficult to read the book, which he says he “borrowed from Alicia.” Does such exposure serve a worthy purpose? Does it help in any way to solve the human riddle, or is it simply upper-class gossip for those who are not interested in movie stars?

Nasar has a great deal of sympathy for Alicia and dedicates the book to her. She sees her as a tragic victim of circumstances: a beautiful, brilliant young woman who has spent her whole life caring for a mentally disturbed husband and a no less problematic child, her fight for survival made even more difficult because it is fought on the fringes of the condescending and uncaring Princeton society. Nasar calls Alicia “Alicia” and Nash - “Nash.” She is only partially sympathetic towards him, as if he has a beautiful mind, but not a pure soul.

Anyone looking for a layman’s explanation of game theory in this book will be disappointed. Nasar deserves to be commended for not trying to do what she ought not to do. One of the reasons game theory has been such a success is that it uses everyday concepts in an intriguing way. Yet the relationship between this theory and reality is not simple at all. Attempts at a popular description of game theory do more harm than good precisely because the words are so familiar. Nasar rightly keeps her distance. The applications of game theory are controversial and quite complicated. Readers would have a hard time understanding from one short chapter how mathematical models can help to describe human behavior in complex strategic situations. It is more likely that they would delude themselves into thinking that mathematics can predict a competitor’s moves.

The story of mad genius fascinates us, maybe because it reinforces the awe we feel in the face of the mysteries of the human brain or portrays the fragility of the human condition at its most extreme. We are both mesmerized and afraid of mad genius. Perhaps we, like Nash, feel that mad geniuses are closer to other worlds. The borderline between highly original thinking and madness is not at all clear, and Nasar’s book dwells on this. While Nash was ill, he was searching for meaning beyond the everyday, for order and rationality in places where we do not ordinarily look. But Nash’s preoccupation was not any stranger than those who search for codes in the Bible, destiny in the stars, character traits in coffee grounds or hidden meaning in gematria. Maybe it wasn’t even much different than what many scientists do when they look for laws in a sea of random data. Nash, it seems, was doing just that, but in a more obsessive, unusual way.

Yet Nasar is sympathetic towards those who have Nash committed to a mental hospital although he never posed a danger to anyone. Hospitalization against a person’s will may be justified if there is fear of suicide. But all around us are people who scale mountains, drink too much alcohol and drive like maniacs - people whose actions are no less suicidal than Nash’s, but whom we would never think of locking up in an institution. Nash, incidentally, sees his period of “irrationality” as a period of “dream-like delusional hypotheses.” He describes his return to “rational thinking in the style that is characteristic of scientists” as a process that “is not entirely a matter of joy...One aspect of this is that rationality of thought imposes a limit on a person’s concept of his relation to the cosmos.”

Nasar has written a book that is ripe for Hollywood. The film industry has already offered Nash an enormous sum of money for permission to make a movie based on his life. Nash,

who lives extremely modestly near the train station at Princeton, together with Alicia and a very sick son, has refused. Now 70, he is still engaged in the love of his life: research. In his wonderfully incisive way of saying what he means, candidly, briefly and to the point, Nash writes in his bio: “Statistically it would seem improbable that any mathematician or scientist, at the age of 66, would be able, through continued research efforts, to add much to his or her previous achievements. However, I have hopes of being able to achieve something of value through my current studies or with any new ideas that come in the future.”

Without meaning to, Nash has succeeded in achieving something no less valuable than the solution to a difficult mathematical problem. He has won the Nobel Prize despite the grave hesitation of the Swedish jury to award a prize to someone who may “embarrass the king,” and despite the fact that the academic world has deliberately withheld honor that would have been his if not for his illness. In giving Nash the prize, the Swedish committee has recognized that mental illness should not detract from a person’s rights in the same way that gender, race or emotional health should not keep us from recognizing intellectual ability. This is the message of Nasar’s book and this is John Nash’s human victory.