

Einstein, Picasso: Space, Time and the Beauty That Causes Havoc

By Aurthur I. Miller Basic Books, 2001. 356 pages. ISBN: 0-465-01859-9

Modern art always raised certain questions in my mind, which to my amazement matched the thought process of some of my scientist friends. Some of their exact quotes were “useless,” “nails and iron become high art when the art world says they are,” and “why do people pursue art at all?” To be honest my attitude towards art was somewhat in unison with theirs. The question that most plagued me was about abstraction in art. What do we mean by abstract art? Moreover, why do certain combination of shapes and colors fascinate us? As far as science is concerned, I knew no physicist who could explain to me in simple words the implication of the relativity theory. I took that as my inability to understand physics. However, when Einstein became *Time Magazine’s* person of the century leaving Gandhi in the “runners up” position I was confused. No person I knew could explain Einstein’s achievement, but they more or less understood the Gandhian philosophy. This ignorance generated a deep curiosity in me. The book *Einstein, Picasso: Space, Time and the Beauty That Causes Havoc* by Aurthur I. Miller satisfied this curiosity and replaced it, at the very least, with an equivalent amount of interest. Thus, I think for the general reader, who is in the quandary of whether art and science are two exclusive streams of creative expression and who believes that “science is superior to art” this book is a must read.

This book explores the lives and minds of two great geniuses of the twentieth century whose work changed the underlying assumptions people have been living with for ages (at least until the end of the nineteenth century). These paradigm shifters were, as obvious from the title, Einstein for science and Picasso for arts. The author draws a parallel between Einstein and Picasso in pursuit of a common model for the creative genius. Comparing two such personalities or rather depicting their similarities in thinking is no easy job. Picasso had difficulty doing even elementary calculations and the chances of his exposure to the philosophical works of Schopenhauer and Kant are minimal. On the other hand, Einstein topped his class in mathematics and he was well acquainted with the works of these and many other contemporary philosophers. One way to approach this problem is to imagine a conversation between Einstein and Picasso and then scrutinize the clash of geniuses. Steve Martin’s play “Picasso at the Lapin agile” portrays of Einstein and Picasso meeting in a bar and attempts to create such a clash of personalities. This is all imagination, because there is no evidence whatsoever that these two persons ever met, and such explorations tend to be biased.

The book by Miller, on the contrary, is a systematic accu-

mulation of facts. Miller reaches a conclusion regarding these facts only after presenting the evidence for and against it. He considered the lives of Einstein and Picasso as two parallel lines with some points on these lines being remarkably identical. These two parallel lines of science and art meet (in a non-Euclidian sense) at mathematics. In other words, Miller points out that the origin of both cubism and the theory of relativity can be found in a popular science book called *La Science et l’hypothèse* by Henri Poincare, a leader in French mathematical physics. Miller reaches this conclusion by alternating chapters on Einstein and Picasso.

In chapters two and three, he attempts to make the reader visualize the “*fin de siècle mood*” that existed in art and science during the early twentieth century and how it influenced the lives of these two geniuses. He tries to uncover the factors that made Einstein and Picasso harbingers of the “modern” science and art. These two chapters focus more on the lives than on the minds of Picasso and Einstein and are succinct biographies of them. While going through the chapters the reader feels that these two relatively different personalities had at least one thing in common – their attitude towards the prevailing positivistic milieu. The intelligentsia of the early nineteenth century fervently believed in what they saw but did not “look” beyond that. On the contrary, according to Miller, the commonality between Picasso and Einstein is that they wanted to establish the fact that what one sees and believes as real is not the true reality-there is more to it. In exploring this Kantian notion of reality, they had to face extremes of poverty and criticism from fellow painters or scientists. Miller very nicely portrays this similarity in these two chapters.

In the next part of the book, the reader finds Miller traveling on the road of Picasso’s mind seeking answers as to how the latent creativity in Picasso unfolded to its full glory. For this purpose he chose to use one of Picasso’s most famous paintings as an example - *Les Femmes d’Alger (O. J. R. M.)*. If one wonders why Miller preferred this cubist painting to the others, he offers, “the complete geometrisation of art was achieved through this painting.” In these two chapters, he gives a detailed description of cubism and the factors that influenced Picasso to generate this art form. To the general reader, some parts may seem a bit too abstract (e.g., the non-Euclidian geometry and fourth dimension part). However, Miller establishes with great evidence that geometry was certainly one of the roots of cubism and may be the most important one. This is in contrast to most art historians who believe the roots of this painting lie in the works of Cezanne and African art.

Einstein, Picasso: Space, Time and the Beauty That Causes Havoc

The way Miller handles this controversy is really wonderful. He presents the evidence and counterevidence to the reader and guides them to his conclusion. In fact, he makes the reader visualize how Maurice Princet, a friend of Picasso with keen interest in mathematics, made the members of *la bande a Picasso* (the 'intellectual circle' or the group of avant-gardes lead by Picasso) aware of the concept of space that Poincare proposed in his book *Science et hypothese*. I agree with Miller: If one reads Poincare's book, the chapter on space and geometry contains these lines, "in the same way we draw the perspective of a three dimensional figure on a plane, so we can draw that of a four dimensional figure on a canvas of three or two dimensions." One cannot be more explicit than that, and if Princet exposed Picasso to this book, the notion that Miller tries to put forward is likely to be correct. After going through every crevice of Picasso's mind searching for the reason behind the creation of *Les Demoiselles d'Avignon*, he next moves on to a chapter that acts as the bridge between the worlds of science and arts. This brief chapter, needless to say, has Poincare as the central character.

After crossing this bridge, Miller starts to peregrinate on the road of Einstein's mind asking how he discovered the theory of relativity. He addresses this issue in a more lucid manner than in the previous chapters on how or why Picasso invented cubism. In this part, he explains the experiments with elegant metaphors and proceeds by raising questions and then providing the answers. In most cases, these questions are already present in the reader's mind. To me, these two chapters are the strongest part of this book. This is not surprising since Miller is more of a historian of science than art. Indeed, his previous books dealt with the relativity theory and Henri Poincare. Miller made this chapter appropriate for the reader with knowledge of elementary physics. This, I should emphasize, is quite in contrast with the chapters on Picasso, which could have been explained much more simply.

Miller concludes this book with an attempt to establish a model for creative genius with Einstein and Picasso as the "experimental subjects." Miller suggests that the

genius in arts and science use the same strategies for creative expression. I disagree; the strategies might be similar but are not identical. For the scientist creativity results mostly from a conscious thought process, while for the artist it is mostly the unconscious thought process. Indeed, according to Semir Zeki, a professor in Neurobiology who seeks a connection between artistic creativity and the brain, "artists are...neurologists who unknowingly study the brain with techniques unique to them." Sections on conscious and unconscious thought in this chapter resonates this idea. Miller discusses the conscious thought process behind Einstein's genius in more depth than Picasso's and it is the reverse for the unconscious thought process. However, I appreciate Miller's attempt towards a unified model for creativity. One view is to treat the creative process as qualitatively different from day to day thinking that involves a leap through an illumination or creative spark. The other view is that creative expressions are the outcome of ordinary thinking, only quantitatively different from everyday thinking. He tries to stitch together the two opposing views on the nature of the creative process. Nevertheless, I believe that creativity is an individual and non-replicable process. Miller tries to generalize creativity, and while I disagree with his view, he provides sufficient detail so that each reader may judge for him or herself.

To summarize, this book has an appropriate title which resonates with what is inside: a documentary of two "offenders" of the intellectual beliefs of the early nineteenth century namely Picasso and Einstein. It does not fall into the categories of popular science or art. Rather, it is a revelation for the reader who is inclined towards either art or science. Miller unified these two disciplines with sound logic and lucid language yet leaving space for the reader to think. This book is a major contribution attempting to put two worlds together as one.

Rajarshi Ghosh

Department of Developmental and Molecular Biology
Albert Einstein College of Medicine
Bronx, New York 10461