

Fooled By Randomness

Part I

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SOLON'S WARNING

Skewness, Asymmetry, Induction

Croesus, King of Lydia, was considered the richest man of his time. To this day Romance languages use the expression “rich as Croesus” to describe a person of excessive wealth. He was said to be visited by Solon, the Greek legislator known for his dignity, reserve, upright morals, humility, frugality, wisdom, intelligence, and courage. Solon did not display the smallest surprise at the wealth and splendor surrounding his host, nor the tiniest admiration for their owner. Croesus was so irked by the manifest lack of impression on the part of this illustrious visitor that he attempted to extract from him some acknowledgment. He asked him if he had known a happier man than him. Solon cited the life of a man who led a noble existence and died while in battle. Prodded for more, he gave similar examples of heroic but terminated lives, until Croesus, irate, asked him point-blank if he was not to be considered the happiest man of all. Solon answered: “The observation of the numerous misfortunes that attend all conditions forbids us to grow insolent upon our present enjoyments, or to admire a man’s happiness that may yet, in course of time, suffer change. For the uncertain future has yet to come, with all variety of future; and him only to whom the divinity has [guaranteed] continued happiness until the end we may call happy.”

The modern equivalent has been no less eloquently voiced by the baseball coach Yogi Berra, who seems to have translated Solon’s outburst from the pure Attic Greek into no less pure Brooklyn English with “it ain’t over until it’s over,” or, in a less dignified manner, with “it ain’t over until the fat lady sings.” In addition, aside from his use of the vernacular, the Yogi Berra quote presents an advantage of being true, while the meeting between Croesus and Solon was one of those historical facts that benefited from the imagination of the chroniclers, as it was chronologically impossible for the two men to have been in the same location.

Part I is concerned with the degree to which a situation may yet, in the course of time, suffer change. For we can be tricked by situations involving mostly the activities of the goddess Fortuna—Jupiter’s firstborn daughter. Solon was wise enough to get the following point; that which came with the help of luck could be taken away by luck (and often rapidly and unexpectedly at that). The flipside, which deserves to be considered as well (in fact it is even more of our concern), is that things that come with little help from luck are more resistant to randomness. Solon also had the intuition of a problem that has obsessed science for the past three centuries. It is called the problem of induction. I call it in this book the black swan or the rare event. Solon even understood another linked problem, which I call the skewness issue; it does not matter how frequently something succeeds if failure is too costly to bear.

Yet the story of Croesus has another twist. Having lost a battle to the redoubtable Persian king Cyrus, he was about to be burned alive when he called Solon’s name and shouted (something like) “Solon, you were right” (again this is legend). Cyrus asked about the nature of such unusual invocations, and he told him about Solon’s warning. This impressed Cyrus so much that he decided to spare Croesus’ life, as he reflected on the possibilities as far as his own fate was concerned. People were thoughtful at that time.