Implify
AtlanticHow the Idea of a 'Normal'Person Got Invented

The notion that there is a "normal" height or a "normal" salary is a relatively new one, and it's had a profound effect on how people think about each other and themselves.



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Adolphe Quetelet was born in Belgium in 1796. At age 23 he received the first

doctorate in mathematics ever awarded by the University of Ghent. Smart and hungry for recognition, he wanted to make a name for himself like one of his heroes, Sir Isaac Newton. Quetelet marveled at the way Newton uncovered hidden laws governing the operation of the universe, extracting orderly principles out of the chaos of matter and time. Quetelet felt that his best chance for a similar achievement was in astronomy, the leading scientific discipline of his time.

In the early 19th century, the most prominent scientific minds turned their attention to the heavens, and the greatest symbol of a nation's scientific status was the possession of a telescopic observatory. Belgium, however, did not have one. In 1823, Quetelet somehow managed to convince the Dutch government that ruled Belgium to shell out the exorbitant sum needed to build an observatory in Brussels, and very soon Quetelet was appointed to its top position, the director of the observatory. As the lengthy construction proceeded, Quetelet embarked on a series of visits to observatories throughout Europe to learn the latest observational methods. It seemed he had perfectly positioned himself to make an enviable run at scientific acclaim—but then, in 1830, just as he was wrapping up his tour of Europe, Quetelet received bad news: Belgium had plunged into revolution. The Brussels observatory was occupied by rebel troops.

Quetelet had no idea how long the revolution would last, or whether the new government would support the completion of the observatory—or if it would even allow him to continue as Belgium's head astronomer. It would prove to be a turning point in his life—and in the way society conceived of individuals.

Previously, Quetelet never cared much about politics or the complexities of interpersonal dynamics. He was solely focused on astronomy. He believed he could keep his distance from any social commotion, which he viewed as

irrelevant to his lofty scientific endeavors. But when revolution erupted in his own backyard, affecting his observatory, human social behavior suddenly became very personal. Quetelet found himself longing for a stable government that passed sensible laws and policies that would prevent the sort of social chaos that had derailed his career plans—and that seemed to keep leading to upheaval all around Europe. There was just one glaring problem: Modern society seemed utterly unpredictable. Human behavior did not appear to follow any discernible rules, just like the universe had seemed so indecipherable before Isaac Newton.

As he contemplated the revolution that had put an end to his professional ambitions, Quetelet was struck with inspiration: Might it be possible to develop a science for managing society? He had spent his life learning how to identify hidden patterns in the heavens. Couldn't he use the same science to find hidden patterns in the apparent chaos of social behavior? Quetelet set himself a new goal. He would apply the methods of astronomy to the study of people. He would become the Isaac Newton of social physics.

Fortunately for Quetelet, his decision to study social behavior came during a propitious moment in history. Europe was awash in the first wave of "big data" in history. As nations started developing large-scale bureaucracies and militaries in the early 19th century, they began tabulating and publishing huge amounts of data about their citizenry, such as the number of births and deaths each month, the number of criminals incarcerated each year, and the number of incidences of disease in each city. This was the inception of modern data collection, but nobody knew how to usefully interpret this hodgepodge of numbers. Most scientists of the time believed that human data was far too messy to analyze—until Quetelet decided to apply the mathematics of astronomy.

It was not Quetelet's arithmetic that was history-making—it was his answer to a simple-seeming question: What does an average actually mean?

Quetelet knew that one common task for any 18th-century astronomer was to measure the speed of celestial objects. This task was accomplished by recording the length of time it took an object such as a planet, comet, or star to pass between two parallel lines etched onto the telescope glass. For example, if an astronomer wanted to calculate the speed of Saturn and make predictions about where it would appear in the future, he would start his pocket watch when he observed Saturn touch the first line, then stop the watch when it touched the second line.

Astronomers quickly discovered this technique suffered from one major problem: If 10 astronomers each attempted to measure the speed of the same object, they often obtained 10 different measurements. If multiple observations resulted in multiple outcomes, how could scientists decide which one to use? Eventually, astronomers adopted an ingenious solution that was originally known as the "method of averages": All the individual measurements were combined together into a single average measurement, which, according to the advocates of the method, more accurately estimated the true value of the measurement in question than any single observation.

When Quetelet ventured to establish a social science, his most pivotal decision was borrowing astronomy's method of averages and applying it to people. His decision would lead to a revolution in the way society thought of the individual. ***

In the early 1840s, Quetelet analyzed a data set published in an Edinburgh medical journal that listed the chest circumference, in inches, of 5,738 Scottish soldiers. This was one of the most important, if uncelebrated, studies of human beings in the annals of science. Quetelet added together each of the measurements, then divided the sum by the total number of soldiers. The result came out to just over 39 ³/₄ inches—the average chest circumference of a Scottish soldier. This number represented one of the very first times a scientist had calculated the average of any human feature. But it was not Quetelet's arithmetic that was history-making—it was his answer to a rather simple-seeming question: What, precisely, did this average actually mean?

It seems like the answer would be obvious, but it's not actually clear what the significance of average size is. Is it a rough guide to the size of normal human beings? An estimate of the size of a randomly selected person? Or is there some kind of deeper fundamental meaning behind the number? Quetelet's own interpretation—the first scientific interpretation of a human average—was, not surprisingly, conceived out of concepts from astronomical observation.

Astronomers believed that every individual measurement of a celestial object (such as one scientist's measurement of the speed of Saturn) always contained some amount of error, yet the amount of aggregate error across a group of individual measurements (such as many different scientists' measurements of the speed of Saturn, or many different measurements by a single scientist) could be minimized by using the average measurement. In fact, a celebrated proof by the mathematician Carl Gauss appeared to demonstrate that an average measurement was as close to a measurement's true value (such as the true speed of Saturn) as one could ever hope to get. Quetelet applied the same thinking to his interpretation of human averages: He declared that the individual person was synonymous with error, while the average person represented the true human being.

Quetelet's thinking imposed welcome order on a growing body of data while also validating humanity's urge to stereotype.

After Quetelet calculated the average chest circumference of Scottish soldiers, he concluded that each individual soldier's chest size represented an instance of naturally occurring "error," whereas the average chest size represented the size of the "true" soldier—a perfectly formed soldier free from any physical blemishes or disruptions, as nature intended a soldier to be.

Quetelet followed the same line of reasoning with regard to humanity as a whole, claiming that every one of us is a flawed copy of some kind of cosmic template for human beings. Quetelet dubbed this template the "Average Man." Today, of course, someone described as "average" is implied to be inferior or lacking. But for Quetelet, the Average Man was perfection itself, an ideal that Nature aspired to, free from error. He declared that the greatest men in history were closest to the Average Man of their place and time.

Eager to unmask the secret face of the Average Man, Quetelet began to compute the average of every human attribute he could get data on. He calculated average

stature, average weight, and average complexion. He calculated the average age couples got married and the average age people died. He calculated average annual births, average number of people in poverty, average annual incidents of crime, average types of crimes, the average amount of education, and even average annual suicide rates. He invented the Quetelet Index—today known as the body mass index, or BMI—and calculated men's and women's average BMIs to identify average health. Each of these average values, claimed Quetelet, represented the hidden qualities of the Average Man.

As much as Quetelet admired the Average Man, he held an equal amount of antipathy toward those unfortunate individuals who deviated from the average. "Everything differing from the Average Man's proportions and condition, would constitute deformity and disease," Quetelet asserted. "Everything found dissimilar, not only as regarded proportion or form, but as exceeding the observed limits, would constitute a Monstrosity." He also pronounced, "If an individual at any given epoch of society possessed all the qualities of the Average Man he would represent all that is great, good, or beautiful."

Though today an average person isn't thought to embody perfection, it is presumed that an average person is a prototypical representative of a group—a type. There is a powerful tendency in the human mind to imagine that all members of a group—such as "lawyers," "the homeless," or "Mexicans"—act according to a set of shared characteristics, and Quetelet's research endowed this impulse with a scientific justification that quickly became a cornerstone of the social sciences. Ever since Quetelet introduced the idea of the Average Man, scientists have delineated the characteristics of a seemingly endless number of types, such as "Type-A personalities," "neurotic types," "micro-managers," and "leader types," arguing that useful predictions could be made about any given individual member of a group simply by knowing the traits of the average member—the group's type.

Since Quetelet's concept of the Average Man seemed to impose welcome order on the accelerating jumble of human statistics while simultaneously validating people's natural urge to stereotype others, it's little wonder his ideas spread as they did.

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Today, the idea of averages is taken for granted. They form part of the hum of daily media. As I write this, the day's *New York Times* reports the average amount of student debt, the average number of viewers of prime-time television, and the average salary of physicians. But each time Quetelet unveiled a new average, the public was astonished. For example, Quetelet showed that the average rate of suicide was relatively stable from year to year. While this would hardly be startling news these days, in the 1830s suicide was seen as a highly irrational private decision that could not possibly conform to any deeper pattern. Instead, Quetelet showed that suicides occurred with reliable and consistent regularity. And not only that: He claimed that the stability of the occurrences indicated that everyone possesses an average propensity toward suicide.

Scholars and thinkers in every field hailed Quetelet as a genius for uncovering the hidden laws governing society. Florence Nightingale adopted his ideas in nursing, declaring that the Average Man embodied "God's Will." Karl Marx drew on Quetelet's ideas to develop his theory of Communism, announcing that the Average Man proved the existence of historical determinism. The physicist James Maxwell was inspired by Quetelet's mathematics to formulate the classical theory of gas mechanics. The physician John Snow used Quetelet's ideas to fight cholera in London, marking the start of the field of public health. Wilhelm Wundt, the father of experimental psychology, read Quetelet and proclaimed, "It can be stated without exaggeration that more psychology can be learned from statistical averages than from all philosophers, except Aristotle."

Quetelet's invention of the Average Man marked the moment when the average became normal, the individual became error, and stereotypes were validated with the imprint of science. These assumptions would eventually prompt generations of parents to worry if their child did not develop according to the average milestones, and cause almost everyone to feel anxiety when their health, social life, or career deviated too far from the average.

This article has been adapted from Todd Rose's book, The End of Average: How We Succeed in a World That Values Sameness.

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