

# Java Man

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How caffeine created the modern world.

by Malcolm Gladwell

**1** ■ The original Coca-Cola was a late-nineteenth-century concoction known as Pemberton's French Wine Coca, a mixture of alcohol, the caffeine-rich kola nut, and coca, the raw ingredient of cocaine. In the face of social pressure, first the wine and then the coca were removed, leaving the more banal modern beverage in its place: carbonated, caffeinated sugar water with less kick to it than a cup of coffee. But is that the way we think of Coke? Not at all. In the nineteen-thirties, a commercial artist named Haddon Sundblom had the bright idea of posing a portly retired friend of his in a red Santa Claus suit with a Coke in his hand, and plastering the image on billboards and advertisements across the country. Coke, magically, was reborn as caffeine for children, caffeine without any of the weighty adult connotations of coffee and tea. It was, as the ads with Sundblom's Santa put it, "the pause that refreshes." It added life. It could teach the world to sing.

One of the things that have always made drugs so powerful is their cultural adaptability, their way of acquiring meanings beyond their pharmacology. We think of marijuana, for example, as a drug of lethargy, of disaffection. But in Colombia, the historian David T. Courtwright points out in "Forces of Habit" (Harvard; \$24.95), "peasants boast that cannabis helps them to quita el cansancio or reduce fatigue; increase their fuerza and ánimo, force and spirit; and become incansable, tireless."

In Germany right after the Second World War, cigarettes briefly and suddenly became the equivalent of crack cocaine. "Up to a point, the majority of the habitual smokers preferred to do without food even under extreme conditions of nutrition rather than to forgo tobacco," according to one account of the period. "Many housewives... bartered fat and sugar for cigarettes."



The original Haddon Sundblom advertisement.

Even a drug as demonized as opium has been seen in a more favorable light. In the eighteen-thirties, Franklin Delano Roosevelt's grandfather Warren Delano II made the family fortune exporting the drug to China, and Delano was able to sugarcoat his activities so plausibly that no one ever accused his grandson of being the scion of a drug lord. And yet, as Bennett Alan Weinberg and Bonnie K. Bealer remind us in their marvellous new book "The World of Caffeine" (Routledge; \$27.50), there is no drug quite as effortlessly adaptable as caffeine, the Zelig of chemical stimulants.

***At one moment, in one form, it is the drug of choice of café intellectuals and artists; in another, of housewives; in another, of Zen monks; and, in yet another, of children enthralled by a fat man who slides down chimneys. King Gustav III, who ruled Sweden in the latter half of the eighteenth century, was so convinced of the particular perils of coffee over all other forms of caffeine that he devised an elaborate experiment:***

A convicted murderer was sentenced to drink cup after cup of coffee until he died, with another murderer sentenced to a lifetime of tea drinking, as a control. (Unfortunately, the two doctors in charge of the study died before anyone else did; then Gustav was murdered; and finally the tea drinker died, at eighty-three, of old age--leaving the original murderer alone with his espresso, and leaving coffee's supposed toxicity in some doubt.)

Later, the various forms of caffeine began to be divided up along sociological lines. Wolfgang Schivelbusch, in his book "Tastes of Paradise," argues that, in the eighteenth century, coffee symbolized the rising middle classes, whereas its great caffeinated rival in those years: cocoa, or, as it was known at the time, chocolate, was the drink of the aristocracy.

"Goethe, who used art as a means to lift himself out of his middle class background into the aristocracy, and who as a member of a courtly society maintained a sense of aristocratic calm even in the midst of immense productivity, made a cult of chocolate, and avoided coffee," Schivelbusch writes. "Balzac, who despite his sentimental allegiance to the monarchy, lived and labored for the literary marketplace and for it alone, became one of the most excessive coffee-drinkers in history.

Here we see two fundamentally different working styles and means of stimulation: fundamentally different psychologies and physiologies." Today, of course, the chief cultural distinction is between coffee and tea, which, according to a list drawn up by Weinberg and Bealer, have come to represent almost entirely opposite sensibilities.

Coffee Aspect Tea Aspect  
Male Female  
Boisterous Decorous  
Indulgence Temperance  
Hardheaded Romantic  
Topology Geometry  
Heidegger Carnap  
Beethoven Mozart  
Libertarian Statist  
Promiscuous Pure

That the American Revolution began with the symbolic rejection of tea in Boston Harbor, in other words, makes perfect sense. Real revolutionaries would naturally prefer coffee. By contrast, the freedom fighters of Canada, a hundred years later, were most definitely tea drinkers. And where was Canada's autonomy won? Not on the blood-soaked fields of Lexington and Concord but in the genteel drawing rooms of Westminster, over a nice cup of Darjeeling and small, triangular cucumber sandwiches.

**2.** All this is a bit puzzling. We don't fetishize the difference between salmon eaters and tuna eaters, or people who like their eggs sunny-side up and those who like them scrambled. So why invest so much importance in the way people prefer their caffeine? A cup of coffee has somewhere between a hundred and two hundred and fifty milligrams; black tea brewed for four minutes has between forty and a hundred milligrams. But the disparity disappears if you consider that many tea drinkers drink from a pot, and have more than one cup. Caffeine is caffeine. "The more it is pondered," Weinberg and Bealer write, "the more paradoxical this duality within the culture of caffeine appears. After all, both coffee and tea are aromatic infusions of vegetable matter, served hot or cold in similar quantities; both are often mixed

with cream or sugar; both are universally available in virtually any grocery or restaurant in civilized society; and both contain the identical psychoactive alkaloid stimulant, caffeine."

It would seem to make more sense to draw distinctions based on the way caffeine is metabolized rather than on the way it is served. Caffeine, whether it is in coffee or tea or a soft drink, moves easily from the stomach and intestines into the bloodstream, and from there to the organs, and before long has penetrated almost every cell of the body. This is the reason that caffeine is such a wonderful stimulant. Most substances can't cross the blood-brain barrier, which is the body's defensive mechanism, preventing viruses or toxins from entering the central nervous system. Caffeine does so easily. Within an hour or so, it reaches its peak concentration in the brain, and there it does a number of things--principally, blocking the action of adenosine, the neuromodulator that makes you sleepy, lowers your blood pressure, and slows down your heartbeat. Then, as quickly as it builds up in your brain and tissues, caffeine is gone--which is why it's so safe. (Caffeine in ordinary quantities has never been conclusively linked to serious illness.) But how quickly it washes away differs dramatically from person to person.

A two-hundred-pound man who drinks a cup of coffee with a hundred milligrams of caffeine will have a maximum caffeine concentration of one milligram per kilogram of body weight. A hundred-pound woman having the same cup of coffee will reach a caffeine concentration of two milligrams per kilogram of body weight, or twice as high. In addition, when women are on the Pill, the rate at which they clear caffeine from their bodies slows considerably. (Some of the side effects experienced by women on the Pill may in fact be caffeine jitters caused by their sudden inability to tolerate as much coffee as they could before.) Pregnancy reduces a woman's ability to process caffeine still further. The half-life of caffeine in an adult is roughly three and a half hours. In a pregnant woman, it's eighteen hours. (Even a four-month-old child processes caffeine more efficiently.) An average man and woman sitting down for a cup of coffee are thus not pharmaceutical equals: in effect, the woman is under the influence of a vastly more powerful drug. Given these differences, you'd think that, instead of contrasting the caffeine cultures of tea and coffee, we'd contrast the caffeine cultures of men and women.

**3.** But we don't, and with good reason. To parse caffeine along gender lines does not do justice to its capacity to insinuate itself into every aspect of our lives, not merely to influence culture but even to create it. Take coffee's reputation as the "thinker's" drink. This dates from eight-

teenth-century Europe, where coffeehouses played a major role in the egalitarian, inclusionary spirit that was then sweeping the continent. They sprang up first in London, so alarming Charles II that in 1676 he tried to ban them. It didn't work. By 1700, there were hundreds of coffeehouses in London, their subversive spirit best captured by a couplet from a comedy of the period: "In a coffeehouse just now among the rabble / I bluntly asked, which is the treason table." The movement then spread to Paris, and by the end of the eighteenth century coffeehouses numbered in the hundreds--most famously, the Café de la Régence, near the Palais Royal, which counted among its customers Robespierre, Napoleon, Voltaire, Victor Hugo, Théophile Gautier, Rousseau, and the Duke of Richelieu.

Previously, when men had gathered together to talk in public places, they had done so in bars, which drew from specific socioeconomic niches and, because of the alcohol they served, created a specific kind of talk. The new coffeehouses, by contrast, drew from many different classes and trades, and they served a stimulant, not a depressant. "It is not extravagant to claim that it was in these gathering spots that the art of conversation became the basis of a new literary style and that a new ideal of general education in letters was born," Weinberg and Bealer write.

It is worth noting, as well, that in the original coffeehouses nearly everyone smoked, and nicotine also has a distinctive physiological effect. It moderates mood and extends attention, and, more important, it doubles the rate of caffeine metabolism: it allows you to drink twice as much coffee as you could otherwise. In other words, the original coffeehouse was a place where men of all types could sit all day; the tobacco they smoked made it possible to drink coffee all day; and the coffee they drank inspired them to talk all day. Out of this came the Enlightenment. (The next time we so perfectly married pharmacology and place, we got Joan Baez.)

In time, caffeine moved from the café to the home. In America, coffee triumphed because of the country's proximity to the new Caribbean and Latin American coffee plantations, and the fact that throughout the nineteenth century duties were negligible. Beginning in the eighteen-twenties, Courtwright tells us, Brazil "unleashed a flood of slave-produced coffee. American per capita consumption, three pounds per year in 1830, rose to eight pounds by 1859."

What this flood of caffeine did, according to Weinberg and Bealer, was to abet the process of industrialization--to help "large numbers of people to coordinate their work schedules by giving them the energy to start work at a given

time and continue it as long as necessary." Until the eighteenth century, it must be remembered, many Westerners drank beer almost continuously, even beginning their day with something called "beer soup." (Bealer and Weinberg helpfully provide the following eighteenth-century German recipe: "Heat the beer in a saucepan; in a separate small pot beat a couple of eggs. Add a chunk of butter to the hot beer. Stir in some cool beer to cool it, then pour over the eggs. Add a bit of salt, and finally mix all the ingredients together, whisking it well to keep it from curdling.") Now they began each day with a strong cup of coffee. One way to explain the industrial revolution is as the inevitable consequence of a world where people suddenly preferred being jittery to being drunk. In the modern world, there was no other way to keep up. That's what Edison meant when he said that genius was ninety-nine per cent perspiration and one per cent inspiration. In the old paradigm, working with your mind had been associated with leisure. It was only the poor who worked hard. (The quintessential pre-industrial narrative of inspiration belonged to Archimedes, who made his discovery, let's not forget, while taking a bath.) But Edison was saying that the old class distinctions no longer held true--that in the industrialized world there was as much toil associated with the life of the mind as there had once been with the travails of the body.

In the twentieth century, the professions transformed themselves accordingly: medicine turned the residency process into an ordeal of sleeplessness, the legal profession borrowed a page from the manufacturing floor and made its practitioners fill out time cards like union men. Intellectual heroics became a matter of endurance. "The pace of computation was hectic," James Gleick writes of the Manhattan Project in "Genius," his biography of the physicist Richard Feynman. "Feynman's day began at 8:30 and ended fifteen hours later. Sometimes he could not leave the computing center at all. He worked through for thirty-one hours once and the next day found that an error minutes after he went to bed had stalled the whole team. The routine allowed just a few breaks." Did Feynman's achievements reflect a greater natural talent than his less productive forebears had? Or did he just drink a lot more coffee?

Paul Hoffman, in "The Man Who Loved Only Numbers," writes of the legendary twentieth-century mathematician Paul Erdős that "he put in nineteen-hour days, keeping himself fortified with 10 to 20 milligrams of Benzedrine or Ritalin, strong espresso and caffeine tablets. 'A mathematician,' Erdős was fond of saying, 'is a machine for turning coffee

into theorems.'" Once, a friend bet Erdős five hundred dollars that he could not quit amphetamines for a month. Erdős took the bet and won, but, during his time of abstinence, he found himself incapable of doing any serious work. "You've set mathematics back a month," he told his friend when he collected, and immediately returned to his pills.

Erdős's unadulterated self was less real and less familiar to him than his adulterated self, and that is a condition that holds, more or less, for the rest of society as well. Part of what it means to be human in the modern age is that we have come to construct our emotional and cognitive states not merely from the inside out--with thought and intention--but from the outside in, with chemical additives. The modern personality is, in this sense, a synthetic creation: skillfully regulated and medicated and dosed with caffeine so that we can always be awake and alert and focussed when we need to be. On a bet, no doubt, we could walk away from caffeine if we had to. But what would be the point? The lawyers wouldn't make their billable hours. The young doctors would fall behind in their training. The physicists might still be stuck out in the New Mexico desert. We'd set the world back a month.



4. ■ That the modern personality is synthetic is, of course, a disquieting notion. When we talk of synthetic personality--or of constructing new selves through chemical means--we think of hard drugs, not caffeine. Timothy Leary used to make such claims about LSD, and the reason his revolution never took flight was that most of us found the concept of tuning in, turning on, and dropping out to be a bit creepy. Here was this shaman, this visionary--and yet, if his consciousness was so great, why was he so intent on altering it? More important, what exactly were we supposed to be tuning in to? We were given hints, with psychedelic colors and deep readings of "Lucy in the Sky with Diamonds," but that was never enough. If we are to re-create ourselves, we would like to know what we will become.

Caffeine is the best and most useful of our drugs because in every one of its forms it can answer that question precisely. It is a stimulant that blocks the action of adenosine, and comes in a multitude of guises, each with a ready-made story attached, a mixture of history and superstition and whimsy which infuses the daily ritual of adenosine blocking with meaning and purpose. Put caffeine in a red can and it

becomes refreshing fun. Brew it in a teapot and it becomes romantic and decorous. Extract it from little brown beans and, magically, it is hardheaded and potent. "There was a little known Russian émigré, Trotsky by name, who during World War I was in the habit of playing chess in Vienna's Café Central every evening," Bealer and Weinberg write, in one of the book's many fascinating café yarns:

A typical Russian refugee, who talked too much but seemed utterly harmless, indeed, a pathetic figure in the eyes of the Viennese. One day in 1917 an official of the Austrian Foreign Ministry rushed into the minister's room, panting and excited, and told his chief, "Your excellency . . . Your excellency . . . Revolution has broken out in Russia." The minister, less excitable and less credulous than his official, rejected such a wild claim and retorted calmly, "Go away . . . Russia is not a land where revolutions break out. Besides, who on earth would make a revolution in Russia? Perhaps Herr Trotsky from the Café Central?"

The minister should have known better. Give a man enough coffee and he's capable of anything.