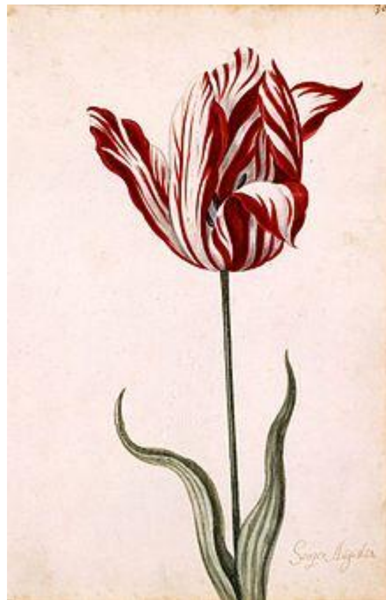
Source: Michael Pollan, *The Botany of Desire: A Plant's Eye View of the World* (New York: Random House, 2001), p. 63, 79-89, 94-95, 103-105.

Tulipomania

Never before or since has a flower—*a flower!*—taken a star turn on history's main stage as it did in Holland between 1634 and 1637. All that remains of this episode, a speculative frenzy that sucked people at every level of society into its whorl, is a neologism—"tulipomania"—that's not had to be dusted off in all the centuries since, and a historical puzzle. Why there?—in that stolid, parsimonious, Calvinist nation. Why then?—at a time of general prosperity. And why this particular flower?—cool, scentless, and somewhat aloof, the tulip is one of the least Dionysian of flowers, far more likely to elicit admiration than excite passion.

… Semper Augustus was the intricately feathered red-and-white tulip one bulb of which changed hands for ten thousand guilders at the height of the main, a sum that at the time would have bought one of the grandest canal houses in Amsterdam. Semper Augustus is gone from nature, though I have seen paintings of it (the Dutch would commission portraits of venerable tulips they couldn't afford to buy), and beside a Semper Augustus a modern tulip looks like a toy. …



Anonymous 17th c. watercolor of the Semper Augustus.

No tulip appears in the flower-crowded borders of medieval tapestries, nor is the flower ever mentioned in the early "herbals"—the Old World encyclopedias of the world's known plants and their uses. The fierceness of the passion that the tulip unleashed in Holland in the seventeenth century (and to a less extent in France and England) may have had something to do with the flower's novelty in the West and the suddenness of its appearance. It is the youngest of our canonical flowers, the rose being the oldest.

Ogier Ghislain de Busbecq, ambassador of the Austrian Hapsburgs to the court of Süleyman the Magnificent in Constantinople, claimed to have introduced the tulip to Europe, sending a consignment of bulbs west from Constantinople soon after he arrived there in 1554. (The word *tulip* is a corruption of the Turkish word for "turban.") The fact that the tulip's first official trip west took it from one court to another—that it was a flower favored by royalty—may also have contributed to its quick ascendancy, for court fashions have always been especially catching.

The tulip's is not a case where a plant had to travel the world before its virtues could be recognized at home: by the time of Busbecq's consignment, the tulip already had its own cult of admirers in the East, who had taken the flower a considerable distance from its form in the wild. There, it typically appears as a short, pretty, cheerful flower, a frank, open-faced, six-petaled star, often with a dramatic splotch of contrasting color at the base. Species tulips in Turkey typically come in red, less commonly in white or yellow. The Ottoman Turks had discovered that these wild tulips were great changelings, freely hybridizing (though it takes seven years before a tulip grown from seed flowers and shows its new colors) but also subject to mutations that produced spontaneous and wondrous

changes in form and color. The tulip's mutability was taken as a sign that nature cherished this flower above all others. In his 1597 herbal, John Gerard says of the tulip that "nature seems to plaie more with this flower, than with any other that I do know."

The tulip's genetic variability has in fact given nature—or, more precisely, natural selection—a great deal to play with. From among the chance mutations thrown out by a flower, nature preserves the rare ones that confer some advantage—brighter color, more perfect symmetry, whatever. For millions of years such features were selected, in effect, by the tulip's pollinators—that is, insects—until the Turks came along and began to cast their own votes. (The Turks did not learn to make deliberate crosses till the 1600s; the novel tulips they prized were said simply to have "occurred.") Darwin called such a process artificial, as opposed to natural, selection …

In the environment of the Ottoman Empire the best way for a tulip to get ahead was to have absurdly long petals drawn to a point fine as a needle. In drawings, paintings, and ceramics (the only place the Turks' ideal of tulip beauty survives; the human environment is an unstable one), these elongated blooms look as though they'd been stretched to the limit by a glassblower. The metaphor of choice for this form of tulip petal was the dagger. A successful Ottoman tulip also had to be pure in color and have smooth-edged petals held closely enough together to hid the anthers within, and it could never be "doubled"—have a superabundance of petals, in the way of a hybrid rose. Thought these last traits are not uncommon in species tulips, attenuated petals are virtually unknown in the wild, which suggests that the Ottoman ideal of tulip beauty—elegant, sharp, and masculine—was freakish and hard-won and conferred no advantage in nature. …

For a time in the eighteenth century the bulbs of tulips that matched the Turkish ideal traded in Constantinople for quantities of gold. This was during the reign of Sultan Ahmed III, from 1703 to 1730, a period known to Turkish historians as the *lale devri*, or Tulip Era. The sultan was ruled by his passion for the flower, so much so that he imported bulbs by the millions from Holland, where the Dutch, after the passing of their own tulipomania, had become masters of large-scale bulb production. The extravagance of the sultan's annual tulip festivals ultimately proved his downfall; the conspicuous waste of national treasure helped fire the revolt that ended his rule.

Each spring for a period of weeks the imperial gardens were filled with prize tulips (Turkish, Dutch, Iranian), all of them shown to their best advantage. Tulips whose petals had flexed too wide were held shut with fine threads hand-tied. Most of the bulbs had been grown in place, but these were supplemented by thousands of cut stems held in glass bottles; the scale of the display was further compounded by mirrors placed strategically around the garden. Each variety was marked with a label made from silver filigree. In place of every fourth flower a candle, its wick trimmed to tulip height, was set into the ground. Songbirds in gilded cages supplied the music, and hundreds of giant tortoises carrying candles on their backs lumbered through the gardens, further illuminating the display. All the guests were required to dress in colors that flattered those of the tulips. At the appointed moment a cannon sounded, the doors to the harem were flung open, and the sultan's mistresses stepped into the garden led by eunuchs bearing torches. The whole scene was repeated every night for as long as the tulips were in bloom, for as long as Sultan Ahmed managed to cling to his throne.

A theft lies behind the rise of the tulip in Holland. One of the recipients of the first tulips to arrive in Europe was Carolus Clusius, a cosmopolitan plantsman who played a seminal role in the distribution of newly discovered plants through Europe. Bulbs were his specialty, and Clusius is credited with the introduction, or spread of fritillarias, irises, hyacinths, anemones, ranunculi, narcissi, and lilies. The tulips came into Clusius's hands because he was director of the Imperial Botanical Garden in Vienna. When he moved to Leiden to establish a new physic garden in 1593, he took some of the bulbs with him

According to Anna Pavord's history of the tulip, the flower was already growing, with little fanfare, in at least one Leiden garden by the time of Clusius's arrival. But Clusius was so ostentatiously possessive of his rare tulips that he made the Dutch covet them, with disastrous consequences for his collection. In the words of one contemporary account, "No one could procure them, not even for money. [So] plans were made by which the best and most of his plants were stolen by night whereupon he lost courage and the desire to continue their cultivation; but those who had stolen the tulips lost no time in increasing them by sowing the seeds, and by this means the seventeen provinces were well stocked."

Two things about this story are noteworthy. The first is that the stolen tulips were propagated by seed. Tulips … do not come true from seed—their offspring bear little resemblance to their parents. What this means is that, given the flower's inherent variability, the seventeen provinces of Holland would have been "stocked" with an extraordinary array of differently shaped and colored tulips. This promiscuous seeding of tulips may well have been

the source of much of the astounding variety the Dutch managed to coax from the flower, a botanical treasure that became a point of national pride in the seventeenth century. Holland's tulips were mentioned in the same breath as its invincible navy and unparalleled republican liberties.

The second noteworthy point about the story is that it puts a theft at the source of Holland's long, illustrious, and ignominious relationship with the tulip. (This was not the first or last time a theft attended the appearance of a new plant; the potato might never have prospered in France if not for a similar theft from the royal gardens of Louis XVI.) …

The modern tulip has become such a cheap and ubiquitous commodity that it's hard for us to recover a sense of the glamour that once surrounded the flower. That glamour surely had something to do with its roots in the Orient—Anna Pavord speaks of the "intoxicating aura of the infidels" that surrounded the tulip. There was, too, the preciousness of the early tulips, the supply of which could be increased only very slowly through offsets, a quick of biology that kept supply well behind demand. In France in 1608, a miller exchanged his mill for a bulb of Mère Brune. Around the same time a bridegroom accepted a single tulip as the whole of his dowry—happily, we are told; the variety became known as "Mariage de ma fille."

Yet tulipomania in France and England never reached the pitch it would in Holland. How can the mad embrace of these particular people and this particular flower be explained?

For good reason, the Dutch have never been content to accept nature as they found it. Lacking in conventional charms and variety, the landscape of the Low Countries is spectacularly flat, monotonous, and swampy. "An universall quagmire" is how one Englishman described the place; "the buttock of the world." What beauty there is in the Netherlands is largely the result of human effort: the dikes and canals built to drain the land, the windmills erected to interrupt the unbroken sweep of wind across it. In his famous essay on tulipomania, "The Bitter Smell of Tulips," the poet Zbigniew Herbert suggests that the "monotony of the Dutch landscape gave rise to dreams of multifarious, colorful, and unusual flora."

Such dreams could be indulged as never before in seventeenth-century Holland, as Dutch traders and plant explorers returned home with a parade of exotic new plant species. Botany became a national pastime, followed as closely and avidly as we follow sports today. This was a nation, and a time, in which a botanical treatise could become a best-seller and a planstman like Clusius a celebrity.

Land in Holland being so scarce and expensive, Dutch gardens were miniatures, measured in square feet rather than acres and frequently augmented with mirrors. The Dutch thought of their gardens as jewel boxes, and in such a space even a single flower—and especially one as erect, singular, and strikingly colored as a tulip—could make a powerful statement.

To make such statements—about one's sophistication, about one's wealth—has always been one of the reasons people plant gardens. In the seventeenth century the Dutch were the richest people in Europe and, as the historian Simon Schama shows in *The Embarrassment of Riches*, their Calvinist faith did not keep them from indulging in the pleasures of conspicuous display. The exoticism and expense of tulips certainly recommended them for this purpose, but so did the fact that, among flowers, the tulip is one of the most extravagantly useless. Up until the Renaissance, most of the flowers in cultivation had been useful as well as beautiful; they were sources of medicine, perfume, or even food. In the West flowers have often come under attack from various Puritans, and what has always saved them has been their practical uses. It was utility, not beauty, that earned the rose and lily, the peony and all the rest a spot in the gardens of monks and Shakers and colonial Americans who would otherwise have had nothing to do with them.

When the tulip first arrived in Europe, people set about fashioning some utilitarian purpose for it. The Germans boiled and sugared the bulbs and, unconvincingly, declared them a delicacy; the English tried serving them up with oil and vinegar. Pharmacists proposed the tulip as a remedy for flatulence. None of these uses caught on, however. "The tulip remained itself," Herbert writes, "the poetry of Nature to which vulgar utilitarianism is foreign." The tulip was a thing of beauty, no more, no less.

If the tulip's useless beauty suited the Dutch taste for display, it also meshed with the age's humanism, which was striving to put some breathing space between art and religion. Unlike the rose or the lily, say, the tulip had not yet been enlisted as a Christian symbol (though tulipomania would eventually change that); to paint a vase of tulips was to delve into the wonders of nature rather than into the storehouse of iconography.

I also think the particular character of the tulip's beauty made it a good match for the Dutch temperament. Generally bereft of scent, the tulip is the coolest of floral characters. In fact, the Dutch counted the tulip's lack of scent as a virtue, a proof of the flower's chasteness and moderation. Petals curving inward to hide its sexual organs,

the tulip is an introvert among flowers. It is also somewhat aloof—one bloom per stem, one stem per plant. "The tulip allows us to admire it," Herbert observes, "but does not awaken violent emotions, desire, jealousy or erotic fevers." …

One crucial element of the beauty of the tulip that intoxicated the Dutch, the Turks, the French, and the English has been lost to us. To them the tulip was a magic flower because it was prone to spontaneous and brilliant eruptions of color. In a planting of a hundred tulips, one of them might be so possessed, opening to reveal the white or yellow ground of its petals painted, as if by the finest brush and steadiest hand, with intricate feathers or flames of a vividly contrasting hue. When this happened, the tulip was said to have "broken," and if a tulip broke in a particularly striking manner—if the flames of the applied color reached clear to the petal's lip, say, and its pigment was brilliant and pure and its pattern symmetrical—the owner of that bulb had won the lottery. For the offsets of that bulb would inherit its pattern and hues and command a fantastic price. The fact that broken tulips for some unknown reason produced fewer and smaller offsets than ordinary tulips drove their prices still higher. Semper Augustus was the most famous such break.

The closest we have to a broken tulip today is the group known as the Rembrandts—so named because Rembrandt painted some of the most admired breaks of his time. But these latter-day tulips, with their heavy patterning of one or more contrasting colors, look clumsy by comparison, as if painted in haste with a thick brush. …

Anna Pavord recounts the extraordinary lengths to which Dutch growers would go to make their tulips break, sometimes borrowing their techniques from alchemists, who faced what must have seemed a comparable challenge. Over the earth above a bed planted with white tulips, gardeners would liberally sprinkle paint powders of the desired hue, on the theory that rainwater would wash the color down to the roots, where it would be taken up by the bulb. Charlatans sold recipes believed to produce the magic color breaks; pigeon droppings were thought to be an effective agent, as was plaster dust taken from the walls of old houses. Unlike the alchemists, whose attempts to change base metals into gold reliably failed, now and then the would-be tulip changers would be rewarded with a good break, inspiring everybody to redouble their efforts.

What the Dutch could not have known was that a virus was responsible for the magic of the broken tulip, a fact that, as soon as it was discovered, doomed the beauty it had made possible. The color of a tulip actually consists of two pigments working in concert—a base color that is always yellow or white and a second, laid-on color called an anthocyanin; the mix of these two hues determines the unitary color we see. The virus works by partially and irregularly suppressing the anthocyanin, thereby allowing a portion of the underlying color to show through. It wasn't until the 1920s, after the invention of the electron microscope, that scientists discovered the virus was being spread from tulip to tulip by *Myzus persicae*, the peach potato aphid. Peach trees were a common feature of seventeenth-century gardens.

By the 1920s the Dutch regarded their tulips as commodities to trade rather than jewels to display, and since the virus weakened the bulbs it infected (the reason the offsets of broken tulips were so small and few in number), Dutch growers set about ridding their fields of infection. Color breaks, when they did occur, were promptly destroyed, and a certain peculiar manifestation of natural beauty abruptly lost its claims on human affection.

… it's important to remember that what ended in Holland in madness began with the desire for beauty in a place where, it seemed to many, beauty was in comparatively short supply. This was also a country, remember, where everyone, regardless of social class, dressed remarkably alike, in the sartorial equivalent of a monotone. Color in this gray Calvinist land must have struck the eye with unimaginable force—and the color of tulips was like no color anyone had ever laid eyes on before: saturated, brilliant, more intense than that of any other flower.

The story of the Semper Augustus, the most celebrated and expensive tulip for most of the seventeenth century, is a remind that beauty did in fact underwrite the mania—that, at least in Holland in the 1630s, pork bellies could never have substituted for tulips. The consensus was that Semper Augustus was the most beautiful flower in the world, a masterpiece. "The color is white, with Carmine on a blue base, and with an unbroken flame right to the top," Nicolaes van Wassenaer wrote in 1624 after seeing the tulip in the garden of one Dr. Adriaen Pauw. "Never did a Florist see one more beautiful than this." There were only a dozen or so specimens in existence—and Dr. Pauw owned nearly all of them. This passionate tulip fancier (who was a director of the new East India Company) grew them on his estate in Heemstede, near Haarlem, where he had deployed an elaborate mirrored gazebo in his garden to multiply the effect of his precious blooms. Through the 1620s, Dr. Pauw was bombarded with wildly escalating offers to sell his Semper Augustus bulbs, but he would not part with them at any price. That

refusal—which at least one historian credits with igniting the mania—was grounded in the fact that, as Wassenaer tells us, this connoisseur judged the pleasure of looking at a Semper Augustus far superior to any profit.

…

The bubble logic driving tulipomania has since acquired a name: "the greater fool theory." Although by any conventional measure it is folly to pay thousands for a tulip bulb (or for that matter an Internet stock), as long as there is an even greater fool out there willing to pay even more, doing so is the most logical thing in the world. By 1636 the taverns were crowded with such people, and as long as Holland remained home to an expanding population of greater fools—people blinded by their desire for instant wealth—the truly foolish act would have been to abstain from the tulip trade.[1]

Even so, there was more to the *windhandel* than mere wind. For the tulip craze marked the birth of a real business—the Dutch bulb trade—that would long outlast the mania. (The same could be said of our own Internet bubble: beneath the froth of speculation is a new and important industry.) According to Joseph Schumpeter, it is not at all unusual for the birth of a new business to be attended by a speculative bubble as capital rushes in, dazzled by the young industry's wildly exaggerated promise.

Every bubble sooner or later must burst—the carnival that was permanent would spell the end of the social order. In Holland the crash came in the winter of 1637, for reasons that remain elusive. But with real tulips about to come out of the ground, paper trades and futures contracts would soon have to be settled—real money would soon have to be exchanged for real bulbs—and the market grew jittery.

On February 2, 1637, the florists of Haarlem gathered as usual to auction bulbs in one of the tavern colleges. A florist sought to begin the bidding at 1,250 guilders for a quantity of tulips—Switsers, in one account. Finding no takers, he tried again at 1,100, then 1,000 … and all at once every man in the room—men who days before had themselves paid comparable sums for comparable tulips—understood that the weather had changed. Haarlem was the capital of the bulb trade, and the news that there were no buyers to be found there ricocheted across the country. Within days tulip bulbs were unsellable at any price. In all of Holland a greater fool was no longer to be found.

In the aftermath, many Dutch blamed the flower for their folly, as if the tulips themselves had, like the siren, lured otherwise sensible men to their ruin. Broadsides excoriating the tulipomania became best-sellers: *The Fall of the Great Garden-Whore, the Villain-Goddess Flora; Flora's Fool's Cap, or Scenes from the Remarkable Year 1637 when one Fool hatched another, the Idle Rich lost their wealth and the Wise lost their senses; Charge Against the Pagan and Turkish Tulip-Bulbs.* (Flora was, of course, the Roman goddess of flowers, who was a prostitute famous for bankrupting her lovers.)

[1] It might also be that, for some of the Calvinist Dutch, financial abandon offered a way to atone for what they felt was the shame of their wealth, the embarrassment of their riches: they were trading their filthy lucre for the pristine beauty of a flower.