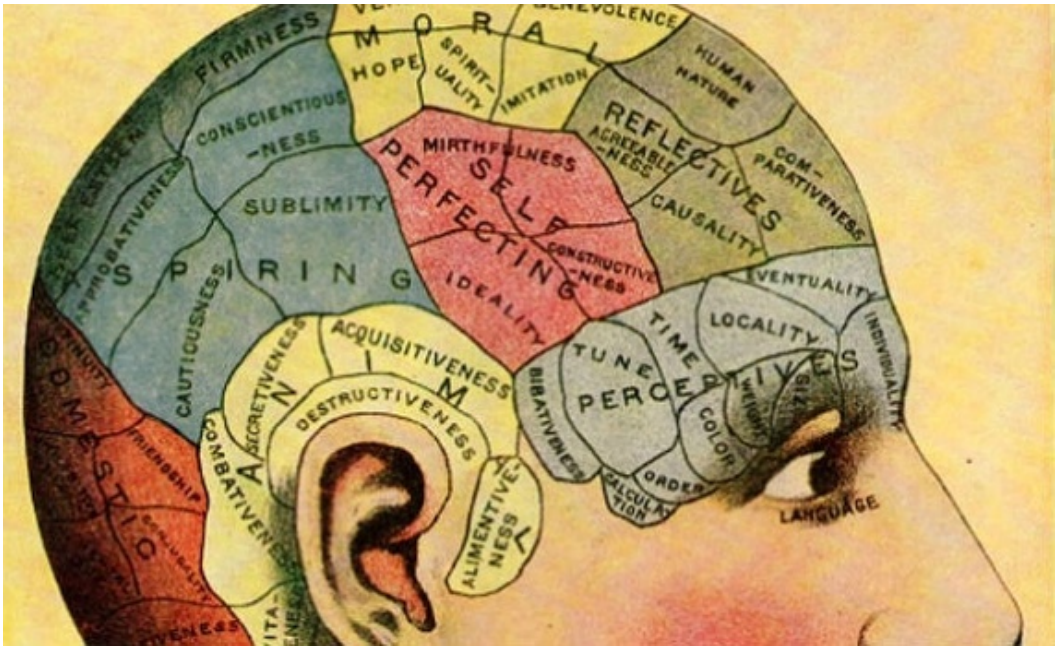
The Shape of Your Head and the Shape of Your Mind

By Erika Janik



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To anyone who has ever shaved his or her head and been horrified by the lumps and dents hidden beneath, the idea that those bumps said anything about a person's character might be unsettling. But for millions of Americans in the 19th century, phrenology provided comfort and insight, a way to know and understand behavior and personality with seemingly scientific precision.

Why do we act the way we do? What determines the patterns of our behavior? How can we be better people? Every generation seeks answers to these questions, and in the mid-19th century, phrenology provided one incredibly popular and influential explanation.

Physician Franz Joseph Gall first developed his theories on the anatomy and function of the brain in 18th-century Vienna, where Sigmund Freud would later foster another science of the mind, psychoanalysis, beginning in the late 19th century. Gall grew fascinated by the physical structure of the body as a medical student. As a physician, he became a skilled anatomist who learned to dissect the brain to show the origins and pathways of cranial nerves.

Gall's initial question came from something he'd observed in childhood: classmates who excelled at memorization also tended to have large protruding eyes. Theorizing about the connection, Gall suggested that the part of the brain located behind the eyes must be associated with verbal memory. This anecdotal observation and his later anatomical work on the structure of the brain led Gall to formulate his new science of the mind.

Gall conceived of the brain not as a single organ but as a mosaic of specialized parts that each

governed a particular mental or emotional function. The size and development of each area, which Gall called faculties, implied a greater or lesser disposition toward the trait. These faculties included everything from reproduction to affection, vanity, and musical ability. Through his study, Gall came to believe that the shape of the brain matched the shape of the skull that encased it, so studying the bumps and indentations of the skull could reveal the function and character of the brain beneath. Later phrenologists came to believe that people could strengthen their positive brain organs. Like weightlifting builds muscle, the brain was an organ to be exercised.

While phrenology became very popular in Europe, it found its most devoted audience in the United States. One reason phrenology attracted so many followers was that it seemed to provide the toolbox for the American dream. All classes of society found much to admire in phrenology. The upper classes liked it because it reassured them that the social hierarchy that placed them on top was "natural"; the emerging middle class and working classes liked it because its meritocratic message confirmed their hope of advancement through personal striving and self-improvement.

Fig. 31.—Typical Heads of Men suited for Domestic Life.

Fig. 32.—Typical Heads of Women unsuited for Domestic Li

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Phrenology seemed to provide what the strict Calvinist religion of Puritanical America had not: a way to better what God gave you, empowering individuals to help shape their own future, and making man the master of his own mind. Moreover, phrenology also became commercialized in the United States, in large part due to the efforts of the Fowler family.

The Fowler brothers, Lorenzo Niles and Orson Squire, turned their interest in phrenology into a substantial business based in New York City in the 1830s. The eldest brother, Orson Squire Fowler, hadn't set out to be a phrenologist. The son of a farmer and church deacon from upstate New York, Orson first pursued the ministry but found his true calling in phrenology. He began to lecture on the topic to his classmates at Amherst College in Massachusetts and offered head readings for two cents each. His enthusiasm soon infected his younger brother, Lorenzo, along with the rest of the family, including younger sister Charlotte; her husband, Samuel Wells; and Lorenzo's wife, Lydia Folger. After graduation, the brothers put aside their plans for a life in the church for another kind of missionary work.

The Fowlers translated phrenology into a doctrine of perfectionism, a set plan designed to create a perfect social and moral system. Their version of phrenology attempted to bring together all the strands of science capable of improving the mind or benefiting mankind, which they believed would herald a new and better world. And like all true-blooded 19th century American entrepreneurs, they also just happened to sell the phrenological gear and accessories needed to make this happen.

After her marriage to Lorenzo Fowler in 1844, Lydia Folger began lecturing on phrenology, physiology, anatomy, and hygiene to largely female audiences. Having a female phrenologist on board was a tremendous boon to the Fowlers' business, as many women were uncomfortable attending lectures on health given by men. In 1849, when she was only 27 years old, Lydia enrolled in the newly-established Central Medical College of Syracuse and Rochester, New York.

The curriculum of Central Medical College, an "eclectic" medical school, consisted of plant remedies, diet, and hygiene. Lydia received her medical degree a year later, only the second woman in the United States to do so (the first, Elizabeth Blackwell, graduated from New York's Geneva Medical College in 1849). In 1850, she became principal of the "female department" at her alma mater, becoming the first female professor of medicine in the United States. She also established her own medical practice in New York City, specializing in the health of women and children, while continuing to write and lecture on phrenology with her husband.

Many women practiced phrenology, though fewer became recognized leaders like Lydia than in other forms of alternative medicine. In part, this was because phrenology lacked organizational structure and cohesion. Phrenology was largely an individual pursuit. There was no national phrenological association, and most patients had a one-time encounter with a phrenologist rather than an ongoing relationship. Most phrenologists supported women's rights, adopting the phrenological view of women as full human beings endowed with the same human potential as men.

Many phrenologists used the science to argue for the mental equality of the sexes while others found evidence of particular strength in faculties traditionally associated with women like morality, benevolence, and religiosity. Female phrenologists like Lydia and Charlotte Fowler examined and lectured before audiences of women almost exclusively. The same was true in nearly all medical fields, regular or alternative, as modesty and social propriety tended to keep women and men separated, particularly when it came to the human body. But while it was rare for a woman phrenologist to give a head reading to a man, female patients could and did receive readings from practitioners of either sex.

In 1838, the Fowlers began publishing the *American Phrenological Journal*, which quickly became one of the most widely read magazines in the nation and remained in circulation until 1911. They also published a library's worth of inexpensive books on health and reform topics. These publications advised readers on the best daily regimens of diet, work, and play for proper mental functioning. Others, many penned by Lydia, offered advice on marriage and on conceiving and raising children.

The national obsession with head size and shape also infected daily conversation. Many modern phrases trace their roots to phrenology, including "highbrow" and "lowbrow," "well rounded," and "shrink" (as in "shrinking" certain undesirable qualities). "Getting your head examined" also has phrenological roots. Though generally considered an insult today, in the past, it was just what most people wanted. By the mid-19th century, the Fowlers' publications could be found all over the country, and phrenological ideas had become a part of everyday conversation.

Still, the field had many skeptics. From its earliest days in Europe, phrenology faced plenty of criticism, mostly from doctors, scientists, religious leaders, and politicians. The Austrian government

ordered Gall to stop lecturing in 1801 for fear that his talks would cause people to "lose their heads" and become materialists, believing only in the truths written on their skulls rather than those of God. Gall soon fled Vienna for France, but there, too, he faced a backlash that threatened his credibility.

French scientist Marie-Jean-Pierre Flourens became one of Gall's most powerful adversaries. Flourens systematically tested Gall's theories on animals, removing portions of the brains of dogs, rabbits, and birds to examine how the remaining sections functioned. His experiments led him to conclude that Gall was wrong: that the brain acted as a whole unit and not as discrete parts. Damage to one area caused other parts to take over and perform the same function. He published his findings in two explosive exposes.

In Washington, D.C., Professor Thomas Sewell also rejected phrenology as a method for understanding the brain. He argued that brain injuries rarely affected bodily function in the way predicted by phrenology. Moreover, Sewell argued that the brain couldn't possibly be measured from the skull alone. Harvard professor Oliver Wendell Holmes took a similar line of criticism. He compared the skull to a safe that enclosed contents—the brain—unknowable from the outside:

> The walls of the head are double, with a great air-chamber between them, over the smallest and most closely crowded "organs." Can you tell how much money there is in a safe, which also has thick double walls, by kneading its knobs with your fingers? So when a man fumbles about my forehead, and talks about the organs of Individuality, Size, etc., I trust him as much as I should if he felt the outside of my strongbox and told me that there was a five-dollar or a ten-dollar bill under this or that particular rivet.

Holmes did not state outright that phrenology was wrong, but rather that there was no way to prove that it was right either, which made its status as a true science questionable.

By the 20th century, phrenology had mostly lost its scientific authority and much of its popular appeal. A few diehards, among them the children and grandchildren of the Fowlers, still practiced. The progress of medical science offered new and better tools for understanding the brain. To many Americans, phrenology now seemed old-fashioned and ridiculous.

That's not to say that the phrenologists hadn't gotten some things right. Gall placed the brain at the center of all cognitive and emotional functions at a time when some physicians still located some of the "passions" elsewhere, such as the heart and liver. From his work in comparative anatomy, Gall knew that the nervous systems in many lower animals consisted essentially of a spinal cord without much of a brain. More sophisticated animals, however, had larger, more developed brains, particularly the cerebral cortex. From these observations, Gall suggested that the cortex must be the highest-functioning part of the nervous system and that more sophisticated animals developed larger brains. This view of the nervous system was relatively new at the time, as most contemporary anatomists thought of the spinal cord as simply the "tail" of the brain.

Gall was also the first to make the strong case for the possibility of brain function emerging from spatial organization. Although Flourens's findings and smear campaign worked to marginalize Gall in scientific circles, localization resurfaced again and again throughout the 19th century. In 1861, French surgeon and anthropologist Paul Broca showed that damage to one area of the brain can make a person unable to speak coherently without affecting the ability to understand others. His findings seemed to vindicate the brain localization idea behind phrenology, but because phrenology had fallen into such disrepute, Broca was careful to draw distinctions between his work and Gall's.

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Later in the 19th century, British neurologist David Ferrier created maps of the motor and sensory functions in the cerebral cortex that owed a clear debt to phrenology. More recently, in 2002, scientists in the Brain Mapping Division at the University of California, Los Angeles, announced the creation of a "large-scale computational brain atlas" to "visualize" brain structure and function, and to store "information on individual variations in the brain structure and their inheritability." Gall could have made a similar announcement two centuries earlier, though with far more primitive tools.

The 19th-century fascination with the brain isn't all that far removed from our modern obsession with the mind. We have once again elevated the brain to cultish status, celebrating and perhaps even aggrandizing its power and purpose to shape the world and ourselves. Many of us continue to hope, as the phrenologists did, that mapping the brain will reveal the secrets of human nature that, once known, will allow for personal improvement and transformation.

Popular neuroscience seems to suggest that concentrated efforts to improve the brain will make us smarter, faster, and more efficient, and maybe even lead to perfection. Headlines and book titles like *Super Brain Power*, *Brainfit*, *Use Your Brain to Change Your Age, Coaching with the Brain in Mind,* and *Rewire Your Brain for Love* scream that the key to life—a better job, better health, better love, better children, better looks—is the brain, no matter the improvement sought and regardless of how little we actually know about how the brain works. It's the phrenology of the 21st century, and Americans are as ravenous for it today as they were in the 19th century.

This post is adapted from *Marketplace of the Marvelous: The Strange Origin of Modern Medicine*.