Sample translation from

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The Eventful Life of Franz Joseph Gall (1758–1828)

Introduction

The Fate of a Forgotten Scholar

> *Zeig mir dein Gehirn, und ich sag dir wer du bist (Show me your brain and I will tell you who you are)*
> Oskar Vogt, German neurologist, early twentieth century, date unknown

"When I slid my hand under the back of her head to support her, I felt a large bulge in the neck that was burning hot. I was literally holding in my hands the area of the brain where the procreative urge is localized," the Austrian physician and researcher Franz Joseph Gall told his audience in the hotel Het Wapen van Amsterdam on 12 April 1806. Gall, who was in Amsterdam to give a several-day course on his theory of phrenology, was describing a case. He had been called in to see a woman who had suffered an epileptic attack. The woman was known for her intense erotic impulses, and he believed that the capacity to perpetuate the species, the drive to procreate, was localized in the back of the head. A highly developed procreative urge led to a bulge in the neck, he explained. This implied that a woman dancing with a suitor could make a cautious tactile estimate of how strong that urge was.

Franz Joseph Gall (1758–1828) was a famous man, who received constant invitations from kings and scholars, politicians and artists. For many decades, he influenced not only science, but also the justice system, education, the arts, fashion, and politics. But even though the traces of his ideas are still visible all around us, he has been erased from history and forgotten.

The fate of a forgotten scholar is a sorrowful one. A person who enjoyed fame and attracted admirers slowly sinks away into the quicksand of the accumulated years we call history. Sometimes it happens not because he is no longer important, but simply because the passage of time has covered

him up completely. Another common reason is that the scholar was an ideal match for his own age, claiming things that were a perfect fit for the spirit of the times—but as soon as those times went by, the things he had said no longer seemed so perfect.

Gall talked a lot of nonsense, but he also laid the foundations for what we now call neuroscience. His work lives on in every attempt to localize behavior in particular parts of the brain. With every brain scan, Gall is perched on the edge of the scanner, looking on. It is no exaggeration to say that Franz Joseph Gall brought about a scientific revolution. The intellectual framework that he constructed is foundational to the development of neuropsychology, however bizarre some parts of it may sound. We could say something comparable of Descartes or Newton. But Descartes is not neglected just because he had a ridiculous theory about the pineal gland, and Newton is not relegated to the sidelines because of his lifelong search for a secret code in the Bible or his keen interest in alchemy.

Gall thought people's psychological capacities could be read—or more precisely, felt—from the outsides of their heads, and that was nonsense. But he thought so many other things, too, and much of what he thought was far from nonsensical. For example, he was among the first to claim that mental diseases are diseases of the brain, and he was a tireless champion of reform, both in the treatment of mental disease and in criminal law. He saw tolerance as an essential social principle.

Gall lived in an exciting age, an age in search of new perspectives and possibilities in the wake of the Enlightenment, an age in which science was beginning to win a place for itself but also an age in which the Napoleonic Wars, repression, and censorship nipped many new ideas in the bud. And let us not forget that it was also an age when many more professors had been appointed to fathom the intentions of the divine creator than to fathom the laws of nature. Joseph Gall's Vienna was no exception.

Time has ravaged Gall's reputation, as his name has increasingly become equated with the quagmire known as phrenology. This pseudoscience, derived from Gall's intellectual framework, took on a fraudulent life of its own, especially after Gall's death. That is what dragged Gall's name down, once and for all, to the seamy underworld of the history of science.

[from Chapter 2, "The Journey"]

Gall and the disappearance of Friedrich Schiller's head

In July 1805, after his stay in Halle, Gall arrived in Weimar, where he received a hero's welcome. In the evenings, he measured the skulls of the upper middle class in the privacy of their homes, searching for strengths and weaknesses. Many a magistrate lamented that they would have to start wearing wigs again to conceal their true natures. Gall gave a lecture at court, in the presence of the entire royal family, for which he received a considerable sum and a valuable ring. Again, Gall made a strong impression on women. Charlotte Schiller, Friedrich's wife, described him as interesting, astute, and charmingly straightforward in his utter devotion to science. And not unimportantly, Gall's language was free of "unverständlichen Kunstwörtern" (incomprehensible jargon).

Weimar was one of Germany's main literary centres. Goethe lived there, as did his friend Friedrich Schiller, the poet and painter. So did Christoph Martin Wieland and Johann Gottfried von Herder.

After Schiller's death in 1805, his body was dissected and found to be a battlefield. His heart, lungs, and intestines were in poor shape: "The lungs were inflamed, porridgey, and rotten through and through; the heart had lost practically all its muscle mass; the gall bladder and spleen were unnaturally swollen, the kidneys deformed and in an advanced stage of decomposition." Schiller had died at the age of forty-five, but after seeing his insides, the doctors were amazed he had survived even that long. Like other deceased Weimar luminaries, Schiller was interred in a mausoleum. But a rumor began to circulate that he had been buried in the vault without his head.

From 1826, the rumor swelled: Schiller's skull was said to have been snatched away immediately after his funeral, or even earlier. In March of that year the mayor of Weimar, Carl Leberecht Schwabe, issued quasi-legal instructions to exhume Schiller and find the skull so that it could be preserved for literary posterity. But where was Schiller? The coffins were rotting away, and the decaying corpses were jumbled together in the mausoleum.

For three nights, three laborers and a gravedigger delved through the mud of the vault in Weimar's Jacobsfriedhof, searching for the poet's remains. It was a filthy job; the stench was almost unbearable. On 20 March, the third night, they presented their haul: twenty-three skulls in sacks, which were taken to the mayor's home. He had them arranged on the dining

table in front of them. The question now was, Which was Schiller's? The mayor had no trouble coming up with his answer: the largest one, of course.

In 1883, the anatomist Hermann Welcker looked into the controversy and arrived at the embarrassing conclusion that the skull chosen by the mayor could not possibly be Schiller's. It simply did not match the poet's death mask. In Weimar, this discovery met with a shrug, and the mayor's hand-picked skull stayed where it was, in Schiller's new resting place, which by then had become a site of literary pilgrimage with significant commercial benefits for the city.

In 1911, the official story took another hit. The anatomist August von Froriep identified a different skeleton and a different skull from the collection in the vault as being Schiller's. The competing skull was simply placed in a small coffin next to the poet's.

Since then, the riddle has only been compounded. In 2006, a senior cultural official in Weimar decided it was time to get to the bottom of the mystery of Schiller's remains. Which skull and skeleton were his? Or if none of them were, then where was he? An international panel of forensic experts was formed. This time, they looked to genetics for their answer. On 14 June 2006, a new team, clad in white overalls, descended into the vault. There they opened the coffin with the skull and skeleton from 1826 and the smaller casket beside it, with the skull selected by Froriep. This is when the plot thickened: the small casket was empty. The Froriep skull was found months later, in a coffin belonging to Weimar's ruling family. How it got there remains unclear.

All this was sent for forensic examination in Innsbruck and at the United States military DNA lab in Maryland, while in Jena the remains were studied with imaging techniques. The Froriep skull proved not to belong to Schiller but to a woman, namely Louise von Göchhausen, a lady in waiting to Duchess Anna Amalia of Weimar. No one knows how it ended up there. This left the skull from the 1826 exhumation as the only possibility, and you might well think that would be the end of the matter. But then the story took an even stranger turn: When the results of the DNA analysis arrived from the United States, the genetic material of the exhumed Friedrich Schiller was found to be a complete mismatch with his sister's genes. Was Friedrich not her biological brother? Could he have been an adopted son? It is possible; Duke Charles Eugene (Carl Eugen), in particular, is known to have sired around two hundred children. Could that be why, in a letter to the duke, Schiller addresses him as mein Vater ("my father")?

But here we run into another dead end; Schiller's supposed skull shows no genetic similarity to the duke either. In a still more peculiar twist, Schiller's son and the rest of the Schiller family were also exhumed, and not

one of them was a DNA match for the skull, which we must now conclude belongs to no one in particular—or in any case, not to Friedrich Schiller.

That brings us to our final hypothesis, which no one dared entertain before: perhaps Schiller's skull was stolen and replaced with a different one. But who might have done such a thing? The substitute skull matched Schiller's height and build and had been fitted with seven new teeth. Whoever did that must have possessed anatomical expertise and skill.

After the revelations of 2006, the prime suspect in this historical whodunit was Franz Joseph Gall, who after all was always "on the hunt" for skulls of criminals, the mentally ill, and geniuses. The first two varieties were not hard to come by, but geniuses were much more reluctant to give up their heads to the anatomist.

Yet the trail of Schiller's lost skull led not to Gall, but to Ludwig Friedrich von Froriep. Froriep was a professor of surgery in Halle and Tübingen and the personal physician to the Duke of Württemberg. A firm believer in Gall's theory of phrenology, he had published a book on the subject in 1800. The German historian Ralf Jahn has ventured the hypothesis that it was Von Froriep who stole Schiller's skull and left a different one in its place. With some 1,500 skulls in his collection, he had plenty to choose from. Ludwig von Froriep was present when Schiller was buried and was also involved in the mayor's "expedition" in 1826. Clearly, Schiller's skull must have come into the hands of a passionate collector. Was it Froriep, or was it Gall? As long as the jury is still out, Gall's name will have grisly undertones in Weimar.

[from Chapter 5, "Gall's Dangerous Ideas"]

Something new out of Vienna

Around 1800, it gradually became clear that something unusual was going on in Vienna. A certain Dr. Gall was giving lectures that were creating a buzz. His ideas were said to be new and noteworthy; many people wrote about him, and more and more anatomists visited him in Vienna. It would be no exaggeration to describe Gall's theory as a breaking point in neurological research.

His ideas were clear, logical, and comprehensible. He discussed the possibility of localizing mental functions in the brain and drew connections between brain structure, function, and behavior. He introduced a new, testable, and objective method of studying the human mind. Gall wanted nothing to do with the vague, esoteric theory of vitalism propagated in

Montpellier, and he rejected concepts such as Von Haller's "irritability." He also saw no value in the Romantic notions of body and soul found in the work of the German natural philosophers and accused them of failing to gather factual information. "Isn't it absurd that natural philosophers endorse my theories, not on the basis of experience, but on the basis of natural philosophy?" Gall wrote. He completely rejected concepts such as uniqueness, feeling, unity, and the harmony of the transcendent metaphysical mind, seeing them as mystifying nonsense that was useless to him as an anatomist. The natural philosophers preached the unique unity of the mind, while Gall went in the opposite direction, dividing the mind into functional units. He saw them as hopeless dreamers, looking down in condescension from cloud cuckoo land on plodding experimentalists like him, and he abhorred their ceaseless conjectures, which lacked any basis in objective observations. According to Gall, all they had done was contemplate themselves, and that had not led to one iota of progress.

Gall's vision united brains and behavior, physiology and psychology. He truly believed he had created a comprehensive science of human beings and society, no longer hypothetical and speculative but objective and verifiable. Gall's theory was based on observation in the tradition of the natural sciences, but he was opposed to hypothesis testing through experiment. He saw the formulation of hypotheses as "guesswork," a poor substitute for certainty, and looked down on experimental anatomists such as Albrecht von Haller, Félix Vicq d'Azyr, and Pierre Flourens. Gall thought it impossible to understand the brain by damaging it—like studying speech by cutting out the tongue, he scoffed. The only method he trusted was observation—"soft" yet, in his opinion, unassailable.

Gall built a working bridge between the body and the soul on the basis of testable observations and was the first to associate human traits and capacities with specific parts of the brain. He hoped that this would lay a foundation for understanding human personality. He saw the brain not as the intermediary between body and soul, but as a complex system that controlled a large number of characteristics and behaviors.

By assuming that human traits and capacities are innate and distributed over individuals by chance, Gall was able to explain individual variation in brain structure, development, and behavior. And that had been his objective from the start. But the idea that psychological traits were innate was rejected by many of his contemporaries. The dominant philosophy of empiricism led many people to believe that capacities are not inherent to humans at birth but are gradually developed under the influence of experience. They saw the mind of the newborn as a blank slate (tabula rasa) to be filled over time with experiential data. John Locke, mentioned above, was a major advocate of this empiricist view. Gall disagreed: "Nurture and circumstance are

undoubtedly important, but education without any prior aptitude, an upbringing without anything to be brought up, is nonsensical." In other words, Gall did not deny the importance of experience and "empirical accumulation" in the course of one's life, but he did not see experience as the original source of human nature. He argued that experiences can "write" only on something that was already present through heredity. They cannot add anything to a void; there is little point in writing in the air or on water. Gall saw human development as the result, in large part, of chance biological processes. The structure of the brain, which is fixed (by chance) at birth, interacts with the environment to determine the course of further development. In short, Gall believed in chance plus empiricism. This is a strikingly modern perspective, comparable to the contemporary view of the importance of nature and nurture.

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footnotes omitted for purposes of this sample.