A Symphony Beneath the Bone

A Braided Creative Nonfiction Essay

In the sterile brightness of the operating room, consciousness pulses gently beneath my gaze. I am dressed all in blue, eager to observe and learn as I watch the operating staff jump into action. The patient is wheeled in, still conscious. The Aesthetician inserted a central catheter into the patient's internal jugular vein. The nurses helpered the Aesthetician with the patient, setting up various vasopressor support, and Central Venous pressure monitoring. The patient laid bare. Her head was laid to rest inside a horseshoe cradle, her hair shaved completely, with a slight smell of CHG eminating from her. The surgeon approaches, and scores the scalp. He makes a precise incision on the patient's temple. A tool, resembling a paint scraper, separates skin, cartilage, and fascia from skull, fibers beneath resisting like Velcro being torn apart. The surgeon's movements were methodical, and careful, for he knew that beneath his fingers lies a universe of neurons, hidden for now by bone.

The drill whirrs, a sharp mechanical cry echoing through sterile silence. Dust blooms, and with it, a smell permeates the room—formaldehyde mingled with something primal, unsettling. In the well ventilated operating room, the dust danced, and spun, unpredictable, shining in the light. It's whitish hue was haunting, like a miner who is drilling for iron, the act reminds me that human's, despite their complex design, are simply creatures of the earth, made from the same atoms, elements, and molecules as everything else in this world, alive or not. The smell of the bone dust crept its way behind my surgical mask, and penetrated the depths of my olfactory centers. The smell resembled burning hair mixed with the smell of charred meat, and formaldehyde, the friction of the drill vaporizes organic material, turning the proteins, marrow remnants and collagen all into aerosolized components, creating the distinctly haunting, and nauseaeating smell that would imprint itself permanently on my memory as the surgeon penetrates the skull's parietal section. The bone yields, opening like a fragile lid over the soft interior.

Greyish-white dura mater envelopes the darker, pulsing mass beneath—the brain itself. It moves rhythmically, steady, like a quiet heartbeat. Blood vessels stretch across its surface, an intricate network more complex than any human highway system. Beneath this elaborate vascular web lies a clear, undeniable pathology—a large, pale meningioma the size of two golf balls pressing insistently against delicate tissue, tethered stubbornly to the dura.

The patient's brain pulses visibly, vulnerable and exposed. Inside that pulsating tissue, housed within billions of interconnected neurons quietly firing, exists an entire identity—dreams, memories, fears, motivations—encoded in cells communicating in a silent, ongoing symphony we recognize as consciousness.

Ontology defines a being as the fundamental essence of existence, categorizing reality into neat divisions—mainly particulars and universals, concrete and

abstract entities. Particulars are singular, irreplaceable entities, like the patient on the table, with unique qualities only she can and will have. Universals are broader, non-unique qualities like health, pain, identity, or even consciousness itself.

Yet ontology itself falters when we witness a consciousness laid bare, temporarily suspended but never permanently extinguished. Where does consciousness fall between particular and universal? Is it concrete, grounded in tangible neurons? Or abstract, an intangible essence? These distinctions blur underneath the scalpel of the surgeon, and under the intrusive fluorescent lights illuminating human vulnerability in all its profound physical and existential fragility, leaving no crevice to be unseen.

Neuroscience attempts to unravel the intricate relationship between the physical organ—the brain—and the intangible experience we call thought, emotion, identity, and perception. Neuroscience aims to define the patterns that emerge and give rise to our existence, our experiences, and our perceptions. But, in the operating room, I witness neuroscience's questions enacted in stark, uncompromising detail. How does a physical anomaly, a tumor pressing against delicate neural tissue, alter intangible realms of personality, memory, emotion, and self-awareness? Do the particular cells that are influenced by her condition give rise to the key aspects of her existence or are they deeper? Ultimately, the answer is elusive. As I stand there, questioning, I am reminded, that the quintessential aspect of questioning, is knowing that you do not have all the answers.

Neuroscientists understand consciousness as emerging from neuronal interactions. Electrical signals firing in rhythmic patterns produce what we experience as thought and awareness. Electrochemical pulses dispatch neurotransmitters at astonishing speeds, leaping synaptic gaps, transferring information seamlessly. Yet even science's meticulous precision struggles with subjective experience's elusive mystery. How do tangible, measurable interactions yield intangible thought?

The neurosurgeon is calm, collected, juxtaposed to the heavy metal music playing from a Bluetooth speaker, creating a surreal backdrop to the meticulous dissection of a human brain. He beckons me closer, sensing my interest, yet my apprehension and fear of interfering with this delicate procedure. Leaning gently towards the cavity of her skull, he directs me methodically through the anatomical regions—frontal lobe, temporal gyri, the insular cortex—as they are delicately navigated. He explains why he is removing the areas he is. He highlights the demarcation of healthy neuronal tissue, and that of the meningioma. He highlighted the corpus callosum, explaining that while it is vital in the communication between the two hemispheres, it is one of the most resilent neuronal structures in terms of surgical manipulation.

As he speaks to me, teaching me new things, I cannot help but notice how this open brain pulses softly beneath skilled fingers. The tumor, now fully exposed,

appears disturbingly beautiful in its destructive presence. Calmly, the surgeon asks for the cauterizer. He begins detaching the meningioma. The sizzling of burning tissue fills the room, smoky tendrils rising from cauterized vessels. Acrid odor, sharp and nauseating, mixes with the metallic scent of blood and bone dust.

I hold my breath instinctively, but to no avail. The smell of burning flesh and neurons penetrates through masks, gloves, memory. This smell, just like the bone dust, has forever implanted itself into the crevices of my memory.

Ontology classifies reality into substances, properties, relations, and states of affairs. Substance is the brain itself, concrete and tangible. Properties are its grey-pink hue, its soft texture. Relations emerge from neurons linking, communicating continuously to produce states of affairs like consciousness and self-awareness. Standing above the patient, though, viewing the fragility of the brain, and the fragility of human consciousness, the limits of these categories become painfully clear. They fail profoundly to explain how subjective experience arises from mere physical matter. The patient is before me, she is real and there, but she is both not there. The experience of this surgery will never be accessible to her, despite her having physically expeirenced it. Consciousness is manipulated in this process, and despite both of experiencing the same event, I am the only one with these memories.

Consciousness resists ontology's neat classifications. It defies definitions and encapsulation, spilling over boundaries set by philosophers determined to categorize existence. Consciousness transcends clear lines we draw between matter and thought, biology and identity, substance and essence.

Another prone patient's spine lays before me, clean, glistening. Anesthetized and utterly vulnerable, The surgeon meticulously exposed vertebrae, carefully cleaning away damaged bone. Gleaming starkly white beneath bright surgical lamps, the spine's intricate structure was fully visible. Using specialized metallic instruments, damaged ligaments and bone were cleanly removed, eliminating spinal stenosis—a painful compression narrowing vital nerve pathways. L4-L5 laminae come away like hinged doors, revealing the cauda equina flattened by arthritic bone. Electrodes were threaded methodically into muscles and nerves throughout his body, measuring electrical potentials and nerve function. This intricate living map of nerves, branching softly from the spinal cord, carried critical signals vital for sensation, movement, perception, and identity. Witnessing this exposed neural network, sensing its breathtaking fragility, emphasized profoundly the interplay between structure and subjective experience. Damaged vertebrae had disrupted neural signals, triggering profound pain and significant loss of function in the patient's left leg. Neuroscience had illuminated precisely how these physical changes altered experiences such as pain, sensation, movement. Yet this understanding provided little comfort for me against the profound subjective agony experienced by the patient before surgery.

Ontology searches endlessly for precise boundaries between mind and matter. Both surgeries—spinal and cranial—blurred such distinctions entirely. If identity and consciousness rely so crucially on neurons and nerves' physical integrity, is consciousness purely biological, or might it exist independently as ontology's abstract object, intangible and eternal, merely temporarily housed within silk like tissues?

The neurosurgeon's hands moved gracefully, precisely. Freed, the tumor rested inertly inside a sterile container. He explained that it would be sent to pathology for identification and classification. Pathology will determine if the tumor is likely to metastasize, and if the demarcations are correct. He delicately inspected the surgical site, carefully ensuring removal of every trace of cancerous cells. He methodically packed the cavity with surgical compression material, sealed the dura mater, placed a drainage tube, and covered the skull defect temporarily with a titanium plate, gently suturing the skin closed around the drainage apparatus.

Beneath it all, consciousness resumed its hidden rhythms, invisible again beneath skin, metal, and artificial structure—soon to be fully restored by bone. Yet something subtle lingered: the patient's consciousness would forever bear the mark of physical change.

Neuroscience teaches us that identity is fragile, a warm symphony played upon neural circuits. Ontology reminds us that identity transcends mere physicality, existing also within intangible realms of ideas, self-awareness, and abstract understanding.

Standing in that operating room, witnessing intimately the silk-like structures housing a patient's consciousness, I was reminded powerfully that understanding consciousness requires embracing ambiguity. Consciousness is simultaneously physical and abstract, universal and particular, concrete yet immeasurably elusive.

Even after leaving the hospital, washing my hands obsessively, chlorhexidine slipping between my fingers, the smell of burnt tissue and bone dust lingered—persistent reminders of how closely physicality binds to identity and consciousness. Walking to the staff elevator I picture the patient's of today hidden beneath their bandages. The craniotomoy patient, somewhere inside that titanium patched vault the first syllable of tomorrorw's greeting is already rehearsing, neurons reheating like filaments in an old, incadescent bulb. The lumbar decompression patient, deep in the dorsal horn a new highway has been opened and relieved, the possibility of sand between toes, the ability to walk again without pain, to enjoy the life he once lived, are no longer theoretical, but are within tangible reach. Both lives have nudged back toward themselves. If identity can be detoured by a tumour, or a calcified facet, and rerouted by diamond burr, then where, precisely, does the self reside? As the operating room's sterile brightness faded into memory, questions remained pulsing gently in my subconscious: Are we merely physical beings, neurons firing rhythmically in biochemical harmony, or is consciousness fundamentally something more pro-

found—something ontology valiantly seeks, neuroscience aggressively investigates, yet both continue, ultimately, to struggle to fully define? If thoughts are only ions crossing membranes, why does a scent, a stimuli, bring tears, or emotions of nostalgia decades later? If memories can disappear with a millimetre-wide stroke, who, or what, was the I that loved, feared, and grieved the day prior? If consciousness is an emergent choir of cells, who conducts them when the choir falls out of tune, and who applauds when the harmony returns?

I used to beleive neuroscience and philosophy circled different altars, but the operating room has laid bare the truth and shown that they chant the same refrain: "Here is mystery made flesh - handle with wonder and fragility." Perhaps the point then, is not to trap consciousness in a lattice of definitions but to guard the fragile tissue that lets mystery speak. Each incision becomes an act of faith that the song is worth preserving even when we can't name its composer. The smell finally faded by the next morning, yet its lesson lingers: We are neither merely bodies nor merely minds, but a rough duet of spark and meat, singing to anyone willing to lean close enough to hear.