Lay Hands

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2023 Akwari Society Essay

In 1543, Dutch physician Andreas Vesalius published "On the fabric of the human body in seven books," its front cover bearing the image of the author laying a hand on an anatomical subject.[1] This "*Fàbrica*" was a renaissance-era touchstone in the history of surgery. Before this work was written, physicians did not carry out dissections in the anatomy theater. This duty belonged to the barber-surgeons, usually laymen without formal medical training. The physician stood across the room, reading and providing instructions from a medical book. The 1543 *Fábrica*, however, depicts Vesalius on its front cover with his hand resting on the dissected body, looking calmly but intently at the viewer. "This is my patient," Vesalius seems to say. Vesalius, standing apart in his time, set forth a unifying theme that would define modern surgery. By closing the distance between the expert and the "subject," Vesalius owned the interventions and the knowledge-gathering that transpired in his operative theater. He restored the role of the physician as the point of contact for expertise in the surgical domain, reclaiming the surgeon's accountability for centuries to come. This treatise will discuss how accountability, a uniquely human virtue, has defined modern surgical practice and will sustain the surgical profession in a future of artificial intelligence and rapid technological advancement.

Historian C.D. O'Malley writes about the *Fábrica*,

> "never before had the structure of the body been so thoroughly discussed with such care for anatomical minutiae and with such effort to integrate the various parts of the structure"[2]

Vesalius, now peerless in his understanding of surgical anatomy, realized he had a new responsibility in the surgical field and left the anatomical theater for the authenticity of bedside medical practice. Gaining acclaim as a clinical surgeon, he often attracted written queries, known as *consilia*, about difficult surgical cases across multiple empires.[3] He employed early surgical techniques in the treatment of missile wounds and drainage of empyema after battlefield injuries, but perhaps his most notable patient was Henry, King of France, whom Vesalius treated after a devastating jousting injury.[4] It could be argued that his Vesalius's knowledge allowed him to ascend to such prominence. Yet this knowledge grew out of Vesalius's accountability. He took the responsibility of the anatomic dissection into his own hands, skillfully depicting and documenting his findings. His contemporaries read his anatomic depictions (perhaps in their personal books post-Gutenberg) and could very well have said "he understands this pathology; he has seen this disease firsthand. We can go to him for answers." Vesalius essentially demonstrated accountability for the notion of accountability in surgery—a *meta*-virtue of sorts. He was ultimately deemed accountable for the king's surgical care.

In the mid-twentieth century, support for the accountable physician post-Gutenberg was now accompanied by justifiable skepticism of medical practitioners post-Nuremberg. Having witnessed authority without accountability and rejecting this arrangement, ethical conversations in medicine again focused on the physician's identity. In 1956, Erving Goffman highlighted how

identities, while proposed by the identified individual, ought to be agreed upon by external parties. He writes "the individual must allow others to complete the image of him which he himself is only allowed to paint certain parts."[5] Thus, a surgeon is only truly a surgeon with a patient's consent. Furthermore, Goffman issues caution that we understand the fundamental aspects of one's identity, not just the titular or symbolic features. He writes, "the important distinction is that between substance and ceremony."[6] The title of "surgeon" or "medical doctor" carries a ceremonial and symbolic weight. However, in practice, these titles signify accountability. We sign our names on an operative note whereby we document every observation, decision and maneuver that took place in the operating room. In doing so, we declare our willingness to stand on a podium, corroborate our dictation, and give an account for not just the role we played in the patient's care, but also the patient's outcome *as such*. While the title of "surgeon" is commonly recognized, the surgeon's attendant duties are bolstered by accountability in patient care.

Without ever seeing our operative notes or attending a morbidity and mortality conference, patients invariably expect accountability from their surgeons. Despite often being surrounded by knowledgeable professionals in a healthcare setting, patients want to know they can look their own surgeon in the eye, ask a specific question and receive an honest answer. During a preoperative clinic visit, patients can appreciate their surgeon's empathy not just for its own sake, but also for its downstream effects in the moral framework of patient care. Our empathy in the preoperative setting accompanies our role as stakeholders in the patient's well-being, as we volunteer to take on certain penalties (emotional, professional, financial, etc) if patients do poorly. By empathizing with a patient, a surgeon demonstrates that she suffers if the patient suffers. We can plausibly say that accountability, fully manifested, aligns with the surgeon's humanity. In essence, what makes us human also makes us good surgeons.

So, what is the significance of the "human" surgeon? In March 2023, Goldman Sachs reported that artificial intelligence (AI) could expose the equivalent of 300 million full-time jobs to automation.[7] Does this labor market threat apply to the physician? Perhaps. In February 2023, ChatGPT, a generative AI program, passed all three subtests of the USMLE board exam.[8] AI programs have deep and extensive working knowledge of medical problems and can answer highly detailed surgical questions. Perhaps programmers could combine AI with robotic capabilities and even empower AI to perform surgeries. However, as AI's capabilities expand, its specific threats to the surgical profession should be evaluated in light of what AI *cannot* do. As surgeons empathize with patients, answer for surgical complications, or grieve with patients' families, we engage in a necessarily human endeavor. We, much like Vesalius, stand at the bedside in a unique position. Insofar as we are accountable for the patient in front of us, we illustrate the unmistakably human image of the surgeon.

References

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