ABSTRACT

Three Virtues for Guiding Surgical Practice

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In this work, three virtues, proper pride, compassion, and practical wisdom, are assessed in their functionality for surgeons. It is technically possible to perform surgery without having virtues, but virtues allow for a surgeon and their patient to flourish. Proper pride is the knowledge of the extent of a surgeon's skills and their ability to use their knowledge for the benefit of others. Proper pride is defined by Aristotle, an ancient Greek philosopher, and the cases handled by John Hunter, the first modern surgeon, are examined. Compassion is cosuffering with a patient and making treatment plans that better the patient and their quality of life. Compassion is defined by Edmund Pellegrino, a physician and medical ethicist, and the work of Henry Marsh, a British neurosurgeon, is studied. Practical wisdom is the deliberation that leads to the best possible plan for the patient based on the knowledge, virtues, and experience of a surgeon. Practical wisdom is defined by Aristotle, and the experience of Atul Gawande, a general surgeon in Massachusetts, is analyzed. These three virtues provide the parameters that push a surgeon to take decisions that benefit their patient and better their relationship with their patient, causing both the surgeon and their patient to thrive.

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THREE VIRTUES FOR GUIDING SURGICAL PRACTICE

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INTRODUCTION

The craft of surgery is bettered by the presence of virtuous individuals. Surgery can be executed with only medical knowledge, but, for surgery to be executed well, virtues are needed. The virtues of proper pride, compassion, and practical wisdom allow for surgeons to flourish in their craft by providing parameters that ensure that the surgeon is both facilitating a healthy surgeon-patient relationship and only performing surgeries that are necessary.

It could be argued that, since surgeons are also physicians, defining virtues separately and specifically for surgeons is unnecessary. This could not be further from the truth, as surgeons, by the nature of their profession, are given more access to a patient physically via the operations they perform on the patient's body. For some surgeries, the patient may also be unconscious, which requires even more trust in their surgeon. With the increased vulnerability of the patient and the increased power of a surgeon in the surgeon-patient relationship in comparison to the physician-patient relationship, a surgeon would need to be held to a high ethical standard for the safety of the patient. A surgeon with the virtues of proper pride, compassion, and practical wisdom holds themselves to this high standard and protects their patient from harm, facilitating a harmonious surgeon-patient relationship.

There are many sources and works detailing virtue ethics for physicians and for general medical practice. The most notable of these is the work of Dr. Edmund

Pellegrino, who was both an ethicist and a physician. He defines and expounds on medical virtue ethics both in a Christian and non-Christian viewpoint. Pellegrino also has works analyzing the physician-patient relationship and the meaning of medicine and humanism. However, his work in medical virtue ethics is particular to the work of physicians, and, though this is applicable in a general sense, it does not delve into the technicalities of surgical practice and the higher power differential between a patient and their surgeon compared to a patient and their physician. Surgery is a medical profession in which a surgeon "inflicts pain upon a patient for the patient's own good", as said by Christian J. Vercler, a surgeon and clinical assistant professor at the University of Michigan.[1] Surgery by the nature of its practice differs from the work of a physician, though both have the same end of patient well-being and health. The difference in its practice causes a change in the way the virtues are used.

Each decision made by a surgeon is dependent on whether a surgery will be a benefit to the patient than a harm; in other words, whether a surgery is necessary, considering the risks that every surgery poses on the patient. The nature of the surgeon-patient relationship requires the patient to trust the surgeon with their health and body in a very literal sense.[2] Vercler examines the need for virtue ethics in surgery, surgical uncertainty, patient-surgeon relationships and in caring for the dying. This work extends the work of Vercler regarding surgical virtue ethics by providing analysis of the demonstration of three specific virtues that are applicable to the practice of surgery.

[1] Vercler, "Surgical Ethics: Surgical Virtue and More," 47.

[2] Vercler, 45.

Methodology

In each chapter, a virtue is defined by a virtue ethicist, put into the context of surgery, and then analyzed in the work of current surgeons or surgeons of the past. Practical wisdom and proper pride are defined by Aristotle, and compassion is defined by Pellegrino. After the definition of each virtue, a biography or memoir from a surgeon is chosen for analysis of the defined virtue. Each biography or memoir provides surgical cases and descriptions of the handling of the case by the surgeon. This then leads to a conclusion about whether the virtue is demonstrated in each specific case and the effects of having the virtue.

An important note is that each chapter does not determine whether a surgeon is a good or bad person or surgeon overall. It will only examine and evaluate the exercise and impacts of the defined virtue in each encounter the surgeon has with a specific patient. For proper pride, the patient cases come from the biography of John Hunter, the father of modern surgery, called *The Knife Man: Blood, Body Snatching, and the Birth of Modern Surgery.* For compassion, patient cases come from the experience of Henry Marsh, a British neurosurgeon, in his memoir entitled, *Do No Harm: Stories of Life, Death, and Brain Surgery.* For practical wisdom, the memoir, *Complications*, by Atul Gawande provides cases for analysis. A conclusion on the morality of each surgeon is not drawn in any of the chapters; only their use of a virtue is studied.

Providing examples of virtues being used in the daily life of a surgeon is a way to understand the virtue in action and its advantages in a non-ideal setting, which is a mirror of life. This type of analysis makes the virtue transition from theory into practice and emphasizes the importance of the virtue. In his book, *Ethics in the Conflict of Modernity*,

ethicist Alasdair MacIntyre examines the usage of narratives and stories in understanding ethics. He argues that "stories and theses about rule-following and rule-breaking, about achieving and failing to achieve goods, have to be understood together or not at all."[3] Additionally, MacIntyre notes that using stories for practical guidance without a reference to rules is also a danger.[4] For proper analysis of the usage of an ethical guideline, there must be both a narrative and an ethical boundary. Thus, in this thesis, the virtues are treated as the rules or parameters that morally guide the behavior of a surgeon, and the stories from their experience are used as practical examples of either adhering or not adhering to the virtue.

The three virtues chosen- proper pride, compassion, and practical wisdom- are encompassing of what is needed in the total assessment of each patient for the surgeon. Proper pride, the virtue of first chapter, makes sure that a surgeon only acts within their knowledge base and is not overestimating or underestimating their ability. Compassion, the virtue of the second chapter, helps the surgeon to understand their patient's life and connect to their patient, helping the surgeon to prioritize the patient. Practical wisdom, the virtue of the third chapter, helps the surgeon deliberate the best treatment plan or procedure for their patient using their knowledge, virtues, and experience. These three virtues help to safeguard the surgeon from hurting their patient. The virtues defined in this work positively guide the decision-making process and the behavior of the surgeon towards their patient, bettering the harmony and thus the trust between the patient and their surgeon.

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[3] MacIntyre, *Ethics In The Conflicts of Modernity: An Essay on Desire, Practical Reasoning, and Narrative,* 236.

[4] MacIntyre, 236-237.

CHAPTER ONE

Proper Pride

The focus of this chapter the virtue of proper pride, as defined by Aristotle and its application to surgeons and their practice today. In this chapter, proper pride is the knowledge of the fullness of a surgeon's ability, the performance of tasks that the surgeon is equipped for, and the usage of surgeon's ability for the betterment of their patients. Additionally, proper pride is the balance between an excess of undue humility and arrogance; arrogance in a surgeon can lead to ill-advised operations and a prioritization of one's own interest and learning, while undue humility can lead to indecision and inaction. Proper pride is the surgeon being cognizant of both their skills and limits, which allows them to undertake procedures that they are well-equipped for, thus protecting their patients from harm.

To analyze the application of proper pride, the life of John Hunter is examined. John Hunter was an 18th century surgeon and anatomist who not only created novel surgical procedures and anatomical preparations but also demonstrated the usage of the scientific method in his practice of surgery. The instances in his life that are analyzed are his work as an anatomist both at the beginning and end of his life, his service as a British Army Surgeon, and the first surgeries in his surgical career. These experiences are examples of Hunter demonstrating excesses of proper pride, which harmed some of his patients, and a balance of proper pride, which benefited his other patients.

The Virtue of Pride

In Book II of Nicomachean Ethics, Aristotle is the first to define "proper pride" as the balance between "undue humility" and "empty vanity."[5] This virtue is about grand honors; grand honors being those that are for fame or recognition. Those who are excessively humble do not deem themselves as worthy or capable. This mentality then leads to the person robbing themselves of honor and tasks due to their perceived unworthiness. Colloquially, this would translate to the idea of having poor self-esteem or an inferiority complex. On the opposite end of the spectrum, there is "empty vanity." A person who exhibits this excess is unable to think about others, recognize their faults, praise others, and only attends to matters that can give them honor. Today, this would be called arrogance.

Aristotle uses the Greek word, *megalopsuchia*, which Ross translates as "proper pride," for the virtue specified in this chapter. Proper pride can be thought of as related to self-esteem, as indicated by Cullyer, a classicist. She, then, goes further to say that "self-esteem engenders a sense of ambitiousness," which entails "seeking out opportunities for virtuous action and grabbing them when they are presented."[6] Using this premise, ambition is understood to be the result of the virtue of proper pride, which is the mean between "undue humility" and "empty vanity." To act with the virtue of proper pride, ambition is practiced. Ambition allows for individuals to know the fullness of their potential and find and undertake the tasks that they are worthy of. Thus, demonstrating

[5] Aristotle, *Nicomachean Ethics*, 1957, 1107b.

[6] Cullyer, "The Social Virtues (NE Iv)," 144.

ambition in one's actions indicates the presence and continued possession of the virtue of proper pride.

For the context of the analysis in this chapter, the boundary between arrogance, which is a grand illusion of oneself, and an excess of humility, which is self-doubt to the point of inaction, is proper pride, the knowledge and confidence in a person's abilities. A person with proper pride holds themself to a high standard of behavior and practice. It is the ability to act well in pursuit of their own interests without having the intent to harm others. A person should also be able to perform their work and pursue their interests while also protecting themselves and others from potential harm. Pride involves not only constant effort but a constant balance, as this virtue has a spectrum.

Arrogance can be seen as the embodiment of self-absorption, leading to the prioritization of oneself over all else. A person's interests become an obsession and the only issue of importance in their life. This is not healthy for the individual mentally, but it also reduces life and community down to a means to an end. The community around them provides what a person needs to fuel their obsession in some fashion. The surroundings in their totality become an instrument for their purposes. An arrogant surgeon would choose to operate not only because of their overestimation of their abilities but also because succeeding through a risky surgery would glorify themselves. Although the surgeon is not worthy completing a particular surgical task, in their arrogance, the surgeon will choose to operate. On the other hand, if a surgeon possesses an excess of humility, they will be unable to operate or even choose to operate, regardless of the level of difficulty of the case presented, due to their poor opinion of their abilities. Both excesses lead to the detriment of the patient and the practice of surgery.

The surgeon must be able to think about their patient and make decisions for the well-being of the patient. If the surgeon thinks of how to better the health of their patient, they also act in favor of their own work. They have upheld standards to their work and to the way they give care. If surgeons are caught up in their own insecurities or have an overconfidence in their ability to save patients, they may not be able to make the correct decisions. In an attempt to save the patient's life at all costs and with an overestimation of their skills, the overconfident surgeon might choose to operate. If the patient does not survive or has further complications, this then means that the surgeon has put both the patient and their ability to continue practicing medicine at risk. Thus, arrogance is not the standard for medicine that individual healthcare professionals should have. The surgeon must be able to objectively decide if a patient can undergo a procedure and live well afterwards, which is rooted in care for the patient rather than the abilities and risks taken by the surgeon. The surgeon should always prioritize the quality of life of their patient. Not harming the patient should not be the standard for surgery; a surgeon could still make decisions that are detrimental to their patient, but the patient might fortunately survive. The intention alone to try a technique, though it might harm the patient, exposes a lack of virtue as well as a lack of self-awareness. The standard that individual surgeons should uphold is proper pride- the ability to both think of others, hold themselves to a high standard, and acknowledge the reality of their skills.

This idea of pride can be extended into the initial stages of studying medicine. Studying medicine and health hinges on the balance between gaining knowledge and honing skills while not harming the patient. This virtue is not inborn but is part of constant work and keeping of the balance between the two means. Truly practicing

proper pride would entail giving care to all patients without a regard to what is beneficial to the surgeon or the interests of the surgeon with the knowledge and acceptance of the capabilities of the surgeon.

The Biographical Analysis of the Virtue of Proper Pride

In the late 1700s, there was a surgeon named John Hunter. Before the analysis of this historical figure can begin, there are a few key differences in the culture of medicine and medical education at the time that must be noted. Firstly, surgeons were often barbers and were frowned upon. The modern esteem of surgery was nonexistent when Hunter began his pursuit of science and medicine. Surgeons were seen as sacrilegious for their practice, mainly due to the distain held by the people. Physicians, however, were esteemed. While they would advise bloodletting, the physician would never be the one to cut the body, instead a barber or surgeon would do this task in the days before 1745, which is when the split between surgeons and barbers occurred in England by an act from Parliament.[7] Secondly, death rates were extraordinarily high due to pollution, unclean food and water, the lack of hygiene, and the prevalence of disease carrying organisms, like rats, flies, fleas, etc. Thirdly, people were more likely to pursue home remedies and the advice of quacks to get well. Surgeons were seen as the last attempt to become well when every other option was exhausted. Under such conditions, John Hunter began his study and practice of medicine.[8] As he grew in his career as a notable surgeon with commendable results for curing illnesses, the field of surgery also rose in its prominence and recognition. In 1800, the Royal College of Surgeons was established, and surgeons

[7] Aggarwal, "The Evolving Relationship between Surgery and Medicine," 121.

[8] Moore, *The Knife Man: Blood, Body Snatching, and Birth of Modern Surgery*, 19–23.

and physicians were both addressed as medical doctors; the distain for surgery also declined over the course of Hunter's lifetime.[9]

John Hunter was born in 1728 and grew up in a poor Scottish family. His brother, William, left the family when John was twelve years old to pursue a better life in London. He became an obstetrician. John asked to work under his brother and pursue medicine due to his lack of employment at the time.[10] John would do the work that his brother did not do. Although William taught him how to make anatomical preparations, William would refer bodies to John for dissection; essentially, John became the barber to William's role of a physician and lecturer for William's medical school in London.[11] When William started a medical school in London, he would use the anatomical preparations that John had made to show the students the intricacies of the human body. William had promised those who registered and paid their tuition to his medical school that they would receive a body to dissect and learn anatomy from.[12] John was designated as the one who would rob graves to get the corpses to fulfill his brother's promise to his students.[13]

This practice of robbing graves was the one of the only ways that people could get bodies to study. This does not excuse the immorality of such practices, especially considering the value that people put into their loved ones' graves. These bodies were stolen to be dissected and either discarded or stained and stored as future medical

[9] Aggarwal, "The Evolving Relationship between Surgery and Medicine," 121.

[10] Moore, *The Knife Man: Blood, Body Snatching, and Birth of Modern Surgery*, 13–15.

[11] Moore, 22–29.

[12] Moore, 27–28.

[13] Moore, 33.

references. The government did allow for dissections, but the bodies must be those of criminals. However, there was a limited number of criminals. Thus, Hunter and his contemporaries turned to the act of stealing bodies, despite the laws, fines, and repercussions they could face if caught. Understandably, the public feared their bodies or the bodies of their kin being disassembled in the same way that criminals were at the time.[14] The amount of medical information that this period provided is insurmountable and has aided the progression of medical education. However, this practice was highly unethical and was inexcusable.

Both brothers demonstrated a clear arrogance in their practice of stealing bodies and making samples. The brothers in their pursuit for knowledge and money had disregarded ethical practices and used people as a means to an end. The preparations they procured were for their individual glory and for people to admire and laud them for. They did not have respect for the human body that they were striving to understand. Additionally, they did not see that their behavior and methods were wrong. This practice of theirs continued for years, even when there were laws and fines places against the practice of robbing graves. The brothers went so far as to view these anatomical preparations as prizes, with William stealing one from John.[15] They valued their own obsessive interests more than why they were studying the human body. For them, the study of medicine was primarily a means to make money and to satisfy their own curiosities regarding anatomy rather than for the betterment of those suffering in their

[14] Moore, 34–41.

[15] Moore, 193.

time. They had arrogance in their own work and, due to this, they prioritized the methods that they used for their work over their community.

Similarly, in the latter decades of Hunter's life, a case in which Hunter overflowed in arrogance is when he desperately tried to obtain the body of Charles Bryne, the Irish giant advertised to the public as 8 foot and 2 inches. Although his true height was 7 foot 8 inches, he was made into a public spectacle that attracted large flocks of people. Hunter obsessively wanted this man's skeleton, and he had initially planned to show the body and charge people to see his ever-increasing collection of preparations. He made an accurate assessment that Bryne would not live long due to the complications that his height brought to his body, as the man appeared sickly. Hunter tried to buy Bryne's body from Bryne while he was alive, only to receive Bryne's shock and rejection. Bryne went to so far as to request his body to be put into the sea, so that Hunter and anatomists like him would not be able to get his body. His last wishes were not honored. Hunter waited and closely watched until this man passed away. When he did, the people who kept his body charged a high price to sell the body to Hunter, who could not afford their fees and decided to steal the body. He then dissected the body secretly and added it to his collection, but he could not charge people to see it now. It would incriminate him, and, given his public obsession with Bryne's body, there were speculations immediately after the disappearance of Bryne's corpse.[16]

This case shows two clear facts: one, Hunter had a perverse, neurotic addiction to increasing his collection of preparations of human oddities; and two, Hunter did not know any bounds to his methods in procuring what he wanted. This accurately reveals the

[16] Moore, 199–215.

highest form of arrogance, as others' wishes were ignored, others became tools, and his own interests outweighed all else. He was a slave to his growing collection and his unquenchable thirst for tangible knowledge. His arrogance in his abilities to anatomize and immortalize specimens as prizes was what compelled him to fulfill his own wishes and learning. The people around him who were ill became objects that he viewed as future preparations for people to stare at and for displaying his glory; he did not care for their welfare, though only a few years earlier he practiced as a surgeon healing people.

Though it can be argued that Hunter provided information and increased our medical knowledge, it must also be acknowledged that his methods were unethical, especially near the end of his life where he mainly procured preparations. For modern surgeons to see him as an inspiration would be detrimental to the practice of medicine, as surgeons might operate for the same causes- to witness pathology first-hand or due to an overconfidence in their abilities. Such surgeons could choose to operate though they are out of their depth and could cause permanent damage to a patient, who has trusted them to deliver proper care. Expanding knowledge of the body is vital, but medical professionals should not forget the motivation behind learning about the body- to aid humanity.

When he became a slave to his curiosities, Hunter lost himself in his own arrogance, the excess vice of proper pride. He no longer saw people as part of his community but as an object for academic study. Hunter was no longer motivated by curing illnesses but by immortalizing both healthy and afflicted organs, muscles, and skeletons, as evidenced by his hunt for Bryne's body and his grave-robbing. He was also obsessed with increasing his praises, glory, and wealth. The value of his collection was

the ultimate in Hunter's career. He wanted people to see it for years, even after his death, which did happen, but the costs that others were forced to pay cannot be condoned. This period of Hunter's life should not be the inspiration for any surgeon. There is a perversion to Hunter's study. He had shifted completely into selfishness promoted by his grandiose sense of self. Surgeons following this example from Hunter would be acting to please themselves and their desires. Those desires could be for knowledge, like Hunter, or it could be a desire for fame, fortune, power, etc. Complex pathologies and difficult cases would become a means to glorify themselves, even if the risk the patient faces is high. Abuses of their role as a surgeon would be in favor of their own interests, whatever those interests might be.

Proper pride can be practiced in a period in one's life and not in another; the life of John Hunter is a perfect example. Though Hunter did not exhibit proper pride in the case of his deeds for his brother's medical school or in increasing the amount of his preparations, he accomplished his craft with proper pride when he operated on a coachman suffering from an aneurysm in his popliteal artery, an artery in the knee. Such injuries were an occupational hazard for a coachman due to the constant pressure from their leather riding boots, which were worn when driving a coach. Treatments, then, were to either amputate the entire leg above the knee or allow for the aneurysm to burst, subsequently bleed out, and die. The cabbie decided to take the risk of trusting the then-famous Hunter to operate on him. Hunter was known for his surgical genius- the approaches he took to surgery and the techniques he invented not only succeeded but made him famous with the high society of London, including King George III. He had a

cohort of students that would hang onto his teachings and novel surgeries.[17] Hunter would even teach his gaggle of students that a surgery must not be performed unless absolutely necessary; a sentiment held by surgeons today as well. He also stated that a surgeon, if in the patient's situation, should be willing to undergo the very procedure that he recommends to the patient. Otherwise, the surgeon should not recommend the procedure.[18]

For the coachman's operation, Hunter proposed tying the artery north of the aneurysm, which would be the femoral artery. He had hypothesized that "collateral circulation" would occur, which is the idea that blood would find an alternate route to nourish the entire leg or limb and not die.[19] He tested this proposed method in multiple animals before he would perform his new technique on the coachman. When he was certain of the science behind his method, he operated on the cabbie and was met with great success- the patient was whole, healthy, and able to continue to drive around London and keep his occupation. If a procedure failed, Hunter would have then autopsied the body to see the cause, and then he would have rectified his methods. Then, he would have once again tested his methods on animals before he operated on another patient.[20] He was not using his patients as test subjects or as a means for him to study the body. He genuinely tried to only operate on his patient when he was sure of his method working through his experimentation on animals. Although this is not considered ideal in modern times, given the information available during Hunter's time, this was the best approach to

[17] Moore, 1–11.

[18] Hunter, *The Complete Works of John Hunter, F. R. S*, 1:313.

[19] Moore, *The Knife Man: Blood, Body Snatching, and Birth of Modern Surgery*, 1–11.

[20] Moore, 1–11.

trying new surgical techniques. This demonstrated a usage of the virtue of proper pride, as he was not only actively checking on his abilities and improving them, but he also refused to operate on humans without testing his methods to ensure that they were scientifically sound. He had a balanced sense of proper pride in his skills.

Although it can be said that harming animals is unethical, Hunter does so to cure patients who have no other option or hope to survive with a good quality of life, like the cabbie, who would have lost either his ability to earn a living if he had agreed to have his leg amputated or his life if his aneurysm burst. Hunter did not take a risk with the cabbie's life to save him. He had studied, was aware of what he was doing, how it would work, and had tested his methods before risking the life of the cabbie. All his actions in this scenario reveal his possession of the virtue of proper pride — his awareness of his own abilities and his duty to the cabbie who was dependent upon his judgement and skill.

Similarly, Hunter acted with proper pride when he was enlisted as a surgeon for the British Army from October 1760 to February 1763, during a time now known as the Seven Years War. At this time, surgeons, who enlisted to serve as a surgeon for the army, would receive the right to practice surgery as a civilian following their discharge, which was Hunter's sole motivation for joining. His brother's influence may have been used to secure his appointment as staff surgeon under Robert Adair, the army's deputy surgeon general.[2] The conditions aboard ship for the sick were abysmal. The ships were filled with patients, packed closely together. The high filth led to infections in the soldiers and their open wounds; maggots also infested in sores. Hunter and the other surgeons worked on these ships, treating both the soldiers injured on land that were brought to them and the sailors who fought on ships in the sea. Hunter had to work incessantly to try

to save the men — pulling out bullets, amputating limbs, bandaging wounds, etc. Without anesthesia, amputations led to death due to shock. Digging around for bullets led to death via blood loss. If a soldier survived such surgeries, he then ran the high risk of death via sepsis or internal infections (sterile techniques were unknown at this time). The dead were buried at sea quickly and in large numbers.[21]

Taking note of all these different factors, Hunter took an unconventional approach by giving opium generously, operating as little as possible, practicing bloodletting as frugally as possible, and allowing for natural healing to take place. In the periods of his life where he taught students and practiced surgery, he continued to recommend that the route of operating should be taken only if absolutely necessary and that the body should be allowed to heal itself. He noted that the soldiers rarely survived surgeries, particularly surgeries to extract bullets. Additionally, unlike his colleagues and common medical thought in his time, Hunter, after seeing the effect infections had on his patients, viewed infections as a failure rather than a stage on the path to recovery. Based on his observations, Hunter altered and corrected his approach to treating each soldier brought to him.[22]

A specific case that he revealed to his fellow surgeons as evidence for his methods was that of five French soldiers, who all had been shot but hid in an abandoned farmhouse for four days until they had been found. These men survived their gunshot wounds without surgery, which means that the bullets in their bodies were not extracted. Their bodies simply healed with time and with the bullets still inside them. All five

[21] Moore, 89–95.

[22] Moore, 89–95.

survived while the British soldiers, who were constantly operated on to extract bullets, were dying. Hunter took note of this, used it as his evidence, and tried to convince his colleagues to use his new methods in their treatment of the soldiers as well.[23]

Then, Hunter practiced these methods on the British soldiers. In one case, he operated due to the bone being fractured in multiple places; he cleaned the wound and removed the splinters of bone but left the bullet instead of digging for it. The soldier survived, though he did have a period of infection. Then, for the next soldier, he did not operate, as he did not notice the presence of multiple fractures. He continued with this method and saved many soldiers; the other surgeons then took note of his methods as well due to his positive results. He also noticed that amputation should not be conducted immediately, but only after the patient is moved to a more stable environment, which was also met with more success than the procedure of the time.[24]

Hunter practiced proper pride in this case because, instead of continuing failed practices, he observed, identified the errors, and corrected his methods, even if they were not standard practices yet or in agreement with medical thought in his time. Then, he fully embraced these new methods to save more soldiers and gave his knowledge to his fellow colleagues, whether they heeded his words is another matter in and of itself. Hunter did better the system, and eventually his successes were acknowledged, resulting in his promotion to chief surgeon. Hunter was able to learn in this case, but his study was to help the soldiers survive. He also did not view the soldiers as test cases. They were people he needed to keep alive in what ways that he could. Also, he realized that, many

[23] Moore, 93–94.

[24] Moore, 92–93.

times for the patient to survive, the best course of action was to not operate and to wait.[25] These decisions reveal his ability, in this situation, to keep a balance between his own interest in success and learning with saving the lives of the soldiers.

Thus, when Hunter had the goal to save lives and to study the human body, he practiced the virtue of proper pride. He valued his own work as well as the survival of his patients, as shown in the case of the cabbie and the soldiers. He still served his love for learning, but he was not arrogant by prioritizing his studies and successes. Hunter knew his skill levels and where he was lacking. He then would get the knowledge he needed by hypothesizing, observing, and testing, and, subsequently, he would try a new practice on the patient, believing that his methods would succeed. If he was met with failure, then he would autopsy, observe once more, and rectify his techniques. This scientific method reveals a balanced pride as he is constantly aware of his ability as well as constantly seeking to improve. Hunter did not sacrifice or use his patients; he tried to increase his knowledge to increase the patient's survival, learn, and to improve his own skill.

This method followed by Hunter is a positive model for surgeons to follow now in their study of the human body. Observing physical conditions, practicing and testing techniques, and rectifying mistakes should be the way to study medicine as it shows a balanced sense of the virtue of proper pride. A surgeon would have constant awareness of their abilities and the value of each action they make when both choosing to operate and operating on a patient. These actions are signs of a surgeon with proper pride — both practicing medicine well and maintaining the balance between satisfying their love for knowledge and making the best decisions for the patient. Additionally, Hunter's advice to

[25] Moore, 93.

operate only when necessary is a lesson stressed in surgical training today. This would be another note that surgeons could follow from Hunter's example of exemplifying proper pride.

Balanced pride in a surgeon particularly acts as a safeguard from acting maliciously. It ensures that the surgeon makes choices that are for the best of the patient and keeps a standard for their care. This virtue must also be continuously practiced. As seen with Hunter, it is possible to behave with this virtue in some instances and not in others in one's life. Hunter had periods in his life where he did not demonstrate the virtue and others in which he did. Being cognizant of this virtue can act as a check on a surgeon's work. If a surgeon is not obsessed with their own self-interests, then the surgeon is aware of not only their craft but of the condition of their patient, both when there is a positive or negative outcome. Similarly, if the surgeon is full of self-doubt, then they cannot continue to make tough decisions for each patient's situation because of their insecurity in their abilities. An inability to act due to a crippling excess of humility is equally harmful as choosing to operate with overconfidence in own's skill; both can heavily cost the patient. Thus, the virtue of proper pride, is one of the three most vital virtues for surgeons to possess, as it holds a surgeon in check of their skills, interests, and responsibilities toward their patients.

CHAPTER TWO

Compassion

The virtue of this chapter is compassion, as defined by the physician and virtue ethicist Dr. Edmund Pellegrino. According to Pellegrino, compassion is cosuffering with a patient.[26] A compassionate surgeon understands their patient and makes decisions regarding their treatment while being concerned and respectful, regardless of the outcome of a procedure. For a surgeon, compassion helps to maintain a surgeon's humanity, as revealed by Dr. Henry Marsh, a neurosurgeon who wrote the memoir *Do No Harm*.[27] Compassion is the ability to understand a patient and make decisions that are considered good for the patient in each stage of their treatment. Compassion is the ability of the surgeon to understand not only their patient's medical ailment, but also the life their patient leads, which, in turn, informs their decision about whether a surgery is necessary and helps the patient trust the surgeon.

The Virtue of Compassion

According to Pellegrino, a physician does not "apply cognitive data from medical literature to the particular patient by reason of a catalog" or "cook-book" of symptoms. [28] "Rather, a good physician cosuffers with the patient."[29] Medicine is an applied science;

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[26] Pellegrino and Thomasma, *The Virtues in Medical Practice*, 79.

[27] Marsh, *Do No Harm: Stories of Life, Death, and Brain Surgery*, Preface, XIX.

[28] Pellegrino and Thomasma, *The Virtues in Medical Practice*, 79.

[29] Pellegrino and Thomasma, *The Virtues in Medical Practice*, 79.

thus, it has a dependence the virtues as well as knowledge. Pellegrino defines compassion by its etymological roots in Latin with *com* meaning together and *pati* meaning to suffer.[30] He also uses Oxford English Dictionary's definition of compassion as "suffering together with another, participation in suffering, fellow-feeling."[31] Compassion is to feel the pain and troubles of another person. It is also a part of the physician-patient relationship due to both the personal nature of the patient's suffering, trust in the physician, and the physician's involvement in bettering the health of the patient. Surgeons are trusted with the same kind of personal information from their patients as a physician. However, a patient is more vulnerable with a surgeon than with a physician, as they trust their bodies to a surgeon while under anesthesia or unconscious. If a surgeon has compassion, then they make decisions considering what the patient is suffering from and the circumstances in the patient's daily life, which ensures that undergoing surgery is not only medically advisable but also in the patient's best interest.

Pellegrino differentiates compassion from mercy, empathy, sympathy, and pity; values that are often misconstrued to be similar to compassion. For Pellegrino, mercy is a value that implies that a superior person is being lenient to an inferior person, which is not accurate for a physician-patient relationship. The patient trusts in the physician's duty to help.[32] The physician is not supposed to spare the patient but to do what is best for the patient's interests. Empathy "enables one to enter the emotional world of the other person," and sympathy is "concerned with sharing of feelings and a sense of fellowship

[30] Pellegrino and Thomasma, 79.

[31] Pellegrino and Thomasma, 79.

[32] Pellegrino and Thomasma, 81–82.

with other humans."[33] Both sympathy and empathy are involved in compassion, but, on their own, they do not cover the full extent of what compassion is, which is cosuffering with someone. Sympathy allows for people to connect to other people, and empathy causes understanding of the other person's situation, both are the beginning steps for cosuffering. Lastly, pity has "historical connotations of condescension" and is "based on a notion of inequality."[34] A physician cannot act out of pity for their patient because it encourages a paternalistic quality, which is not what the physician-patient relationship should be based on. Pity and mercy are the furthest from compassion because both emphasize a false sense of patient inferiority, and empathy and sympathy are involved but are not synonyms for compassion.

Pellegrino defines compassion as a virtue; therefore, he asserts that there is both an intellectual and a moral component. The moral component is necessary because a physician cannot make a patient whole without understanding their patient's illness and life. If a physician is callous or apathetic, then they violate their patient's value, feelings, and trust in the physician. This then disrupts the physician-patient relationship.[35] The entirety of the moral component of compassion is applicable to surgeons. Surgeons must continue to be respectful and concerned with how their patient is doing because their relationship with the patient depends on their harmony. To neglect a patient once a procedure goes well would violate the patient's trust in their surgeon and would negatively impact the surgeon's relationship with their patient. Now, the surgeon should

[33] Pellegrino and Thomasma, 82.

[34] Pellegrino and Thomasma, 82.

[35] Pellegrino and Thomasma, 80.

still be compassionate, even if the patient does not want to be cared for because the care the surgeon shows betters the surgeon's practice of their craft. The surgeon being more connected to their patient helps them to make better decisions regarding their patient because they want the patient to do well. The patient trusts the surgeon to be involved in their healing after a surgery, and a compassionate surgeon would understand their feelings before, during, and after a surgery, aiding in the surgeon's ability to respond to the needs of their patients.

The intellectual component of compassion pertains to the "disposition habitually to comprehend, assess, and weigh the uniqueness of this patient's predicament of illness" with the goal of reaching the end of healing and what is good for the patient, not only medically but in context to their daily life.[36] A physician must decide what is objectively good by not allowing their own biases to affect the decisions they make while also centering their treatment to the specifics of each individual patient.[37] This objectivity and intellectual understanding of the patient aids surgeons in their decision to operate and the decisions they make during an operation. The surgeon must constantly assess what is the best plan for their patient considering the particulars of the life their patient leads and the effects a procedure might have on them.

Pellegrino views compassion as a virtue with a mean; an excess of compassion or identifying too much with the patient leads to inaction, a loss of objectivity, an imposition of the physician's values onto the patient, or the physician choosing a treatment that they

[36] Pellegrino and Thomasma, 80-81.

[37] Pellegrino and Thomasma, 81.

would want.[38] A deficiency in compassion would inevitably lead to apathy and callousness toward the patient, violating the patient's trust in the physician. A surgeon is fallible to having an excess or deficiency in compassion.

The ideal physician-patient relationship depends on the trust that the patient puts in the physician and on the physician's duty to help. With this definition of the physician-patient relationship, compassion becomes a necessary virtue, as it ensures that the physician is focused on what is best for the patient and encourages the trust the patient has. Surgeons must also focus on having the virtue of compassion, as compassion plays a role in the surgeon's decision to operate as well. A surgeon would use the intellectual component of compassion to decide if an operation is advisable based on their understanding of the patient's illness and the patient's life, and a surgeon would use the moral component of compassion to act in a manner that is concerned and respectful, thus not impeding on the patient's sense of value as a person. Virtues, like compassion, are not possessed and must be continually strived for in daily practice. A compassionate surgeon does what is the best for their patient without having their own biases or values being placed onto their patient.

A Biographical Analysis of Compassion

For the analysis of the demonstration of compassion, I will review Dr. Henry Marsh's memoir, *Do No Harm*, which details his career as a neurosurgeon. Dr. Marsh was a consultant neurosurgeon from 1987 to his retirement at Atkinson Morley's or St. George's hospital in London and has been a Fellow of the Royal College of Surgeons

[38] Pellegrino and Thomasma, 81.

since 1984. His memoir provides several examples of when he was compassionate as well as a few in which he demonstrated an excess or deficiency in this virtue.

A case in which Marsh had a deficiency in compassion was when he was treating a middle-aged man admitted to the emergency ward with a myocardial infarction, otherwise known as a heart attack. Marsh ran an EKG, electrocardiogram, on him and decided that it seemed "normal enough" and "reassured him."[39] The patient was still anxious and urgently insisted that something was wrong, but Marsh was "keen to get back to bed" and left him.[40] Before he had even left the hall, the patient stopped breathing and lost consciousness, and Marsh and a few colleagues tried unsuccessfully to restart his heart. Later while looking at the patient's EKG, a colleague told Marsh that there were clear signs of a ventricular tachycardia — an abnormal heart rhythm, and he noted that Marsh should have called for him earlier.[41] Marsh did not connect with this patient; he did not understand his patient and neither did he want to. He prioritized his sleep over his patient, who was clearly anxious and cognizant of the fact that something was seriously wrong. Although needing sleep is an understandable human need, it does not deter from the fact that Marsh did not cosuffer with his patient. Perhaps if Marsh had felt the patient's distress, he would have tried to get a second opinion or stay with the patient longer and try to find other symptoms — actions that are signs of having compassion as they show care and understanding. Marsh left while his patient was still pleading with him, which is a fact that shows that he lacked compassion for this specific individual.

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[39] Marsh, *Do No Harm: Stories of Life, Death, and Brain Surgery*, 82.

[40] Marsh, 82.

[41] Marsh, 83.

An instance in which Marsh displayed an excess of compassion is when the hospital was facing a man who crashed his bike without a helmet and severely injured his brain. While presenting this case to the group of medical professionals, his brain scans were examined, and his brain had suffered from multiple abnormalities. The man's skull had fractured, pushed into his brain, and his frontal lobe was destroyed. One of the medical professionals present had wished that the patient would not survive, which many concurred with, considering how severely disabled he would be and how much he would not be able to do. However, the family wanted an operation done.[42] Marsh was outraged because would be "'left hopelessly disabled, without language and probably with horrible personality change as well. If we don't operate he'll die quickly and peacefully.'"[43] Marsh went further to describe how correctly describing what would happen after the operation to the family would aid in them choosing not to operate, but the decision had been made by the family to have the operation done after another neurosurgeon had spoken to them. There are many ethical nuances in this case, but, for this chapter, the focus is on Marsh's response to this case. Marsh was highly upset and angry; he noted that deciding to operate was easier than conversing with the family about their loved one's death.[44]

Whether Marsh was correct in his analysis of the situation with the family and this patient or justified in his anger is not the issue under analysis; his overly emotional response due to his excess of compassion is what is analyzed in this case. He identified

[42] Marsh, 121–23.

[43] Marsh, 123.

[44] Marsh, 124–25.

too closely with this patient, as demonstrated by his anger that was not easily dissipated and lingered throughout his day filled with other patients to care for. He was also pushing for what he would want during the team's discussion when the family had already made their decision. Marsh had lost his objectivity when reviewing this patient and analyzing the situation. The decision to operate was not his but the family's, and the family had already made their decision. He did understand what the patient would have to undergo but perhaps to an excessive extent. He had put his own biases and views onto his interpretation and reaction to this case. Regardless of what was the correct decision for this patient's case, Marsh reacted with his emotions and without objectivity, a clear excess in compassion. This excess of compassion impacted the rest of his workday, which included taking care of other patients. His emotional state could have led to misjudgments and had to the potential to harm others; Marsh would need a clear mind and objectivity for the other patients he needed to treat that day.

In another case, Marsh was compassionate when he cosuffered with a pregnant woman, who needed to have a brain tumor removed near her optic nerve which was causing her partial blindness. Marsh had planned everything out with full consideration for what was best for both his patient and her baby. His plan was to remove the tumor and have an obstetrician deliver her baby via Caesarian section while she was unconscious under the same anesthetic. While operating, he chose to cut into her in a way that would heal nicely and would not disfigure her considering that she was young.[45] After revealing her tumor, he made the decision to not allow his junior trainee to complete the operation, explaining that, with the baby and her severely deficient eyesight,

[45] Marsh, 48–54.

it was "not really a training case."[46] Marsh continually checked on the patient's progress and was anxious about her blindness after her anesthesia wore off. Both the tumor removal and the delivery of her baby went smoothly; her sight was restored fully, and the child was completely healthy.[47] In this case, Marsh was fully interested in what was best for his patient. He anticipated what his patient would need in the entirety of this case, as shown in all the decisions he made while operating and the plan he had to safely deliver her baby and remove her tumor before he even started her surgery. Marsh felt a moral obligation to do right by this patient and objectively made decisions that would potentially yield the best result for his patient with her best interests in mind, which shows that he demonstrated both the moral and intellectual components of compassion, as defined by Pellegrino.

A case that showed Marsh's understanding relationship with his patients is the astrocytoma of David H, as Marsh calls him in his memoir. An astrocytoma is a type of cancer that would most often progress into a more fatal cancer called a glioblastoma, which was almost always uncurable, regardless of what the oncologists or neurosurgeons do. At most, they could try to increase the lifespan of a patient, which is what Marsh tried to do for David. He understood David's life well, noting how he was an athletic father in his thirties at the time they first found his cancer due to a fit he had. Marsh had hoped that the first surgery would cure him, but, three years later, the cancer returned. The next few years, David would have two operations followed by chemotherapy and radiotherapy. When David came back, Marsh knew David would not have long. He loathed having to

[46] Marsh, 55.

[47] Marsh, 60.

have this somber conversation with David, which would be hard on both of them. Then, he considered how, if he were in David's place, Marsh would "appreciate a visit from the surgeon in whom [he had] put [his] hope for so many years," and he went to the hospital to see David.[48] After telling David that he was upholding his promise to always be honest with him, Marsh explained that, even if he operated, David would not have more than a few months. Marsh spoke only a little, noting that he "must overcome his urge to talk and talk to fill the sad silence."[49] Although he could not cure David, his wife was grateful that he came to see them and made the decision to transition David into comfort care until he passed, as Marsh advised. Marsh felt true sadness and regret as he left and thought about how this man would leave a young widow and children.[50] Marsh felt the emotions that his patient did from the frustration with his cancer, his helplessness at not being able to recover, and the grief from what he would have to leave behind. Marsh understood David's life and connected to what he had to live for while also being able to objectively advise decisions that were the most beneficial for David. Because of Marsh's compassion, he had a relationship with this patient that was able to last harmoniously throughout the years although he could not fully cure David; his patient trusted him and valued him, and Marsh cared for David until the end.

Marsh's view of his patients was also seen in how he viewed the treatment of a patient after an operation went well. Marsh describes how he saw one of his brain tumor patients alert, sitting up, and responding well, and Marsh encouraged him on how well he

[48] Marsh, 149.

[49] Marsh, 152.

[50] Marsh, 147–53.

was doing. He believed that "a patient should be congratulated for their surviving just as much as the surgeons should be congratulated for doing their job well."[51] When an operation goes poorly or has complications, it might be easier for the surgeon to be concerned and invested, but Marsh's response after a surgery goes well was also to be concerned and invested. He was fully involved with his patients both when they were doing well and when they were doing poorly. This is evidence of his compassion, as he seeks not only physical well-being for his patients but also to encourage them and walk with them through their path to health.

There are many other instances where Marsh was compassionate and considered his patient above all else. He was honest to his patients, even when it was difficult for him to do so and listened to their struggles. Marsh made a sincere effort to understand the life that each of his patients led and tried to preserve their quality of life. His compassion was not based in mercy, as he did not consider himself to be superior to his patients and instead saw that his value was based in his patient's value.[52] He also did not pity his patients; he grieved with them. His relationships with his patients were harmonious because of his compassion. There are cases where he did not have compassion or was excessive in his compassion, and there are cases where patients were angry with him and blamed him for the outcome. When all is said and done, medicine is not perfect and relies on imperfect people, as unfortunate and painful as that may be. Compassion is beneficial to the surgeon as it preserves their own humanity and ensures that they can continue to do what their obligation is as a surgeon. In some of his cases, Marsh sets an example for

[51] Marsh, 46.

[52] Marsh, 43.

what a compassionate surgeon looks like and the impact that having compassion can have on patients and their families.

CHAPTER THREE

Practical Wisdom

The virtue of this chapter is practical wisdom from Book VI of Aristotle's *Nicomachean Ethics*. "Practical wisdom" is the translation of the Greek word *phronesis*. This virtue differs from the virtues of proper pride and compassion because it is an intellectual virtue, whereas proper pride and compassion are moral virtues. This chapter uses Dr. Atul Gawande's *Complications* to analyze the virtue of practical wisdom. Gawande is both a general and endocrine surgeon at Brigham and Women's Hospital in Boston, Massachusetts. This memoir details his experience as a general surgery resident where he performs surgeries and studies under other surgeons at the hospital. The deliberation and thought process concerning each patient and the procedures are all examples of where practical wisdom is utilized. Practical wisdom is important for surgeons to make the proper judgment call while they treat patients. Practical wisdom is a foundational intellectual virtue that connects a surgeon's virtues, theoretical knowledge, and experience together, yielding the best decisions a surgeon could possibly make with respect to the individual circumstances of each patient.

The Virtue of Practical Wisdom

Practical wisdom is an intellectual virtue, which means that it is born out of thought and reason. For Aristotle, actions can only be deemed as good through having both reason and character acting together. [53] Intellect must have a purpose or aim to yield

[53] Aristotle, *Nicomachean Ethics*, 1957, 1140a24-1140b19.

good actions. It is not knowledge in the scientific sense or art, for those are different intellectual virtues defined by Aristotle. Practical wisdom is the highest intellectual virtue, as it is the standard to judge living a good life. Aristotle asserts that people who are practically wise "can see what is good for themselves and what is good for men [sic] in general."[54] A person with practical wisdom is "able to deliberate about what is good and expedient for himself…about what sorts of thing conduce to the good life in general."[55] However, it must be noted that one cannot be practically wise without having moral virtues. If the aim of practical wisdom is to choose actions that are good for both oneself and people in general, then one cannot determine what is good without the moral virtues.[56] Thus, practical wisdom is the way a person can deliberate and choose good actions as well as stay balanced in each of the moral virtues, which have vices if there is an excess or deficiency in a virtue as defined with proper pride previously.

Additionally, practical wisdom does not have a mean as it is an intellectual virtue. It does not have a deficiency or an excess that is malevolent. A person uses and obtains practical wisdom as they gain experience in their life or in their specific craft.[57] Since practical wisdom is for choosing well, then to not choose well in a particular instance would be to not be practically wise on that occasion. However, that occasion is an experience that would help a person choose wisely in another similar event. According to Aristotle, acquiring practical wisdom is accomplished through experience because practical wisdom does not depend on knowledge. Thus, Aristotle asserts that a "young

[54] Aristotle, 1140a24-1140b19.

[55] Aristotle, 1140a24-1140b19.

[56] Aristotle, 1140a24-1140b19.

[57] Aristotle, 1142a12–21.

man of practical wisdom cannot be found" due to their lack of experience in life.[58] This is reasonable considering that practical wisdom involves judging well with daily occurrences and learning how to choose actions that are in line with one's virtues and with one's knowledge.

A person can have good character, but without having practical wisdom, there is no link to living virtuously. Practical wisdom is how a person would judge how to act well in a given situation and in accordance with the moral virtues. Without the ability to judge well, possessing the moral virtues is not useful. In the same way, having all knowledge but not knowing how to deliberate well would also be useless. Knowledge of the sciences and the possession of skills does not necessarily lead to good action, as determining the correct action requires using practical wisdom.

With this idea in mind, the relevance of practical wisdom to the work of a surgeon is imperative because it enables a surgeon to deliberate and choose actions that are good for both themselves and their patient. If a surgeon has the moral virtues, then the surgeon, with both scientific knowledge and knowledge of their skill, will be able to advise the path forward for the patient by using their practical wisdom. Practical wisdom goes beyond having knowledge and the moral virtues; it is how a surgeon would use their knowledge and their virtues to choose and act well.

Surgeons look at what is a good, responsible action to take for the illness presented by the patient. For example, a surgeon should not try to do a procedure that they are not well-versed in, and the surgeon should know whether they should take the responsibility and risk of such cases. There are many different types of illnesses and

[58] Aristotle, 1142a12–21.

procedures. Additionally, each patient can vary in their health. The surgeon would also have the added responsibility of accounting for the actions of the entire team during a procedure. The surgeon should avoid malpractice both for the well-being of their patient and for their ability to continue practicing responsibly. A surgeon who is practically wise would both decide the best treatment for their patient and whether they can handle the task based on their knowledge and prior experience. Surgeons use their practical wisdom in every choice that they make — from deciding on the procedure, to the techniques they use during a procedure, and to their post-operation follow up appointments. The nature of their craft demands constant assessment of each patient at every stage, and this constant assessment relies on the practical wisdom of the surgeon.

Not every positive outcome in surgery is due solely to a surgeon's practical wisdom. Moreover, there are cases in which a surgeon encounters poor outcomes even though they have chosen well, and there are cases where a practically unwise surgeon has positive outcomes. Complications can arise because treatment plans often vary according to the individual patient. Factors like lifestyle, dieting habits, sleep patterns, mental health issues, and occupation can all effect a patient's health and be the cause for a difficulty. Each patient and each illness has the potential to be unique. There are highly regular procedures, like tissue repairs, but there can be other health issues that can cause an unforeseen turn of events. A surgeon can make decisions that are practically wise and still have complications arise due to the differences in each individuals' body coupled with the fact that medicine is an applied science that relies on people, who are prone to human error. Using all the information provided about the patient, their virtues, their medical theory, and their experience, surgeons make decisions on which treatment plan

will be the most effective for each individual patient. A surgeon who follows this approach is practically wise.

With the understanding that practical wisdom is obtained though experience, the need for long surgical residencies, typically between five to seven years, is logical. To practice choosing and assessing patients well in a surgical specialty requires experience, which is gained through years in residency under the guidance of attendings. By the end of residency, a surgical resident should have sufficient practice with using their practical wisdom combined with their knowledge to be able to practice surgery well without needing supervision. Practical wisdom is not synonymous with medical knowledge. Instead, it is particularly the ability to choose the best procedure for the patient rather than to complete any operation that could be applicable to the patient's situation. This virtue causes the surgeon to choose the course of action with the greatest benefit to the patient.

The Biographical Analysis of the Virtue of Practical Wisdom

Atul Gawande is a general surgeon at Brigham and Women's Hospital in Boston, Massachusetts where he completed his residency. Gawande is currently the Assistant Administrator for Global Health under the Biden administration. He also teaches at Harvard University and works at Brigham and Women's Hospital. After his residency, he wrote his memoir, *Complications*, which contains Gawande's patient encounters that I analyze in this chapter. Since this memoir covers his residency experience, there are instances where his lack of and usage of practical wisdom are evident. There are also

certain points where he may have made a practically wise decision but had issues that led to difficulties.

Fresh out of medical school, the first standard procedure that Gawande narrates is the first of his career: to insert an intravenous central line into a heart patient. Gawande watched the attending surgeon complete the task and noted all steps he would have to take. However, when it was his turn, he forgot to check the patient's platelet count, place a towel, and keep an extra syringe. He tried twice to get the syringe into the correct vein but was unable to. His supervising attending then completed the procedure swiftly.[59] Gawande notes that this procedure seemed technically simple to him in theory, but his hands "were not experienced hands," which led to his mistakes while attempting this skill. [60] His second attempt on a different patient was not successful either, and another senior resident had to take over; however, on this attempt, he remembered to check the patient's platelet count, grab a towel, and an extra syringe. His third attempt on another patient was also unsuccessful and had to be completed by another medical professional. On his next attempt on another patient, Gawande had succeeded.[61]

This series of attempts at this one procedure revealed both Gawande's lack of practical wisdom and his attending's demonstration of practical wisdom. Both Gawande and his attending had the same level of education and theoretical knowledge. The difference between the two was their experience, which was also the difference between Gawande's failure and his attending's success. This does not mean that Gawande could

[59] Gawande, *Complications*, 13–15.

[60] Gawande, 13.

[61] Gawande, 18–21.

not do the procedure. It means that he did not have the understanding that the task required to complete it successfully at the time of his first attempt. His knowledge did not change across all of his attempts. It was still the same theory he had learned in medical school. The only difference is that with each attempt, his experience increased, thereby increasing his practical wisdom. In the final case, he had enough experience to physically complete all the steps of the procedure. His judgement for where the vein was and where his syringe was relative to the vein was better in this last case because of his experience. Thus, his theory and his experience, learning from his previous failed attempts, resulted in a practically wise decision that led to a successful procedure. This is the reason why surgeons need a residency to learn. When Gawande failed, his supervisors completed the task, helping the patient. In contrast to Gawande, his attending used her practical wisdom in judging when to step in and when to allow Gawande to try. The attending sought what was good for both Gawande's education and the patient's health. Gawande had the opportunity to gain experience, but the patient's well-being was not at risk because of the supervision he had. This series of patient cases is an apt example of how practical wisdom effects the work of a surgeon. As a surgeon's experience and familiarity with a procedure increases, the surgeon can make practically wise judgments about how to complete the task. As seen, practical wisdom is not theory or knowledge; it is the ability to make wise choices, and experience helps a surgeon to be practically wise.

The next learning curve for Gawande occurred when an emergency patient was brought in. The emergency attending supervising on this night was not a surgeon, but he oversaw the emergency response team. Gawande made the call to intubate the patient, which the attending wanted to do. However, the attending did not have much experience

with intubation. The attending tried orally intubating 3 times, and each time the patient's oxygen saturation levels dropped to 60% from 90%. The optimal level is above 95%. Gawande would have to cut her throat to get the tube in; however, he had never led this procedure and had never seen it in an emergency setting. He notes that he "should have called Dr. Ball [the supervising general surgery attending] for backup" or "asked [the attending] to wait until [he] had help nearby."[62] The situation became worse, as the patient's airway became blocked from the multiple attempts. The surgery had to be started immediately before 4 minutes passed. After this time frame, her brain health would permanently deteriorate from the lack of oxygen. Then, Gawande made his next mistake: he cut horizontally instead of vertically, causing him to nick a vein and fill the area with blood. He could no longer see where he needed to break cartilage to put in the endotracheal tube. When an anesthesiologist and Dr. Ball arrived, three of the four minutes had passed, and even Dr. Ball could not see to put in the tube. They had to try to orally intubate for the fourth time. Then, with skill that baffled Gawande, the anesthesiologist managed to get a pediatric endotracheal tube past her vocal cords, and her oxygen saturation reached 97%. When the patient woke up, she was fully functioning mentally and did not have brain damage.[63]

Some of the decisions in handling this emergency case were practically wise while others were not. The choice to intubate was wise due to the patient's low oxygen level. The following decision to have the emergency attending intubate when he was not experienced was unwise. This was out of Gawande's control, as he was not the lead in

[62] Gawande, 51.

[63] Gawande, 51–61.

this team. The next error was Gawande cutting horizontally, a mistake that he "should have known at least from [his] reading."[64] Experience would have aided Gawande in recalling the correct method to complete the task of endotracheal intubation. Another issue was that he should have called Dr. Ball as soon as he realized that they were having trouble opening the patient's airway. This last issue cannot be solely blamed on not having experience. Gawande knew that he lacked the expertise to handle this case, and yet he proceeded.[65] This error would most likely be attributed to a lack in the moral virtues as well as a lapse in judgement, as Gawande overestimated his ability. The particular moral virtues he was deficient in was proper pride, as he was overconfident in his skill. This case showed the value of the moral virtues to practical wisdom. Gawande knew his medical theory, the limit of his experience and abilities, and proceeded anyway. He chose poorly because of his excess in proper pride. He made unwise decisions that did not seek what was good for the team and the patient. Dr. Ball, as his surgery attending, took responsibility for all the mistakes in this case. As an attending, all the mistakes that the team makes are the responsibility of the attending, even if the attending was not present. In retrospect, Gawande pointed out how the disaster could have been avoided.[66] He gained experience that contributed to his practical wisdom from this situation, although it came at a high cost.

Surgeons can demonstrate practical wisdom even when poor outcomes are experienced, as is the case with a man Gawande calls Mr. Jolly. He came in with an

[64] Gawande, 61.

[65] Gawande, 61.

[66] Gawande, 73.

infected wound in his leg but, while at the hospital, suffered from congestive heart failure. He was moved to the ICU, intubated, and put on a ventilator. His health greatly improved after a change in his heart medication and the addition of a diuretic. Gawande checked on him and noted how well he was doing. Less than two hours later, Mr. Jolly suddenly became unresponsive. Gawande intubated him again, and he had someone call the attending surgeon and check the lab results from the morning. Gawande ran through the possible issues and found nothing conclusive. Mr. Jolly's X-ray was also normal. Mr. Jolly died, and Gawande and his attending surgeon attributed his death to a pulmonary embolism due to a surplus of vitamin K administered by the ICU physician to fix his slow blood clotting. Gawande also berated this physician for their choice to fix the vitamin K concentration, something that Gawande deemed negligible based on the rest of Mr. Jolly's health. Once they received permission from Mr. Jolly's wife to perform an autopsy, they found that he had died from an aortic aneurysm and not from a pulmonary embolism as they had presumed. Gawande went back to apologize to the ICU physician and to find where they had gone wrong in their treatment plan for this patient. He found that he could faintly see the swollen aorta in the old X-rays, but both he and the radiologists had missed it. He also noted that, even if the team had seen the swollen aorta, they could not fix it until after treating his heart failure and infection, which would have been too late as well. Additionally, Mr. Jolly's most recent X-ray from that morning was clear and did not show his aortic aneurysm.[67]

Everyone in this situation made choices that were supported by practical wisdom, based in their virtues, experience and knowledge, and was for the good of the patient and

[67] Gawande, 194–97.

the team. Gawande did not overestimate his abilities in this emergency; he called his attending surgeon for assistance. From the data the team had available in the patient's X-rays, they could not find the aneurysm, and, considering that they found it after his autopsy, Gawande seeing the aneurysm in the earlier of the two X-rays could be due to hindsight bias. Also, the aneurysm was not apparent in the patient's final X-ray. The surgeons could not be expected to diagnose what they did not see in their data on Mr. Jolly. The ICU physician made an appropriate call to administer vitamin K. The patient was still not saved, but it was not due to a lack of practical wisdom, moral virtues, or experience. It was due to complications in the patient's health. This case proves that there are instances in which practical wisdom can be used and yet a good outcome is not achieved due to the variations in each patient.

The final medical case that Gawande presents is of a 23-year-old girl named Eleanor, who Gawande correctly diagnosed as having necrotizing fasciitis, a flesh-eating bacteria impervious to antibiotics, which had been administered to the patient with no results. Gawande had first thought the patient had cellulitis, which was common. Gawande called the general surgeon on call and gave him diagnosis of cellulitis but mentioned that he also thought that it could be necrotizing fasciitis. They would not know until they got a biopsy analyzed by a pathologist. After obtaining consent, they opened Eleanor for surgery and took a biopsy. Depending on how far the bacteria had eaten her soft tissues, she could be facing an amputation, and, when the necrotizing fasciitis was confirmed and her left leg was opened further, they found large portions of decaying flesh all the way up to her left thigh. However, Gawande and the general surgeon saved her leg by conducting a total of 5 surgeries to remove all the bacteria and by using an

oxygen pressure chamber (increasing the oxygen available would help her immune system fight the bacteria). Gawande mentioned that he had only brought up the uncommon diagnosis of necrotizing fasciitis because of a 58-year-old patient he had a few weeks before who had died of necrotizing fasciitis despite several surgeries. His organs failed one by one even after they had removed great amount of diseased tissues. This type of bacteria had to be caught early to save to the patient. Because of Gawande's experience, he was able to propose a diagnosis that saved the young patient's ability to walk.[68]

Although Gawande had initially diagnosed cellulitis, the failing antibiotics pointed toward necrotizing fasciitis, which was what Gawande considered next, though it had a very low likelihood. Then, the medical team received confirmational data through the biopsy results. When the antibiotics failed and the surgeons started deliberating between the symptoms of both cellulitis and necrotizing fasciitis, they made a practically wise decision. As they received more information and data, they changed their diagnosis and looked for solutions that would be the best for the patient. After the pathologist confirmed the diagnosis, the surgeons sought to save the young patient's leg and her quality of life. All these decisions were in line with a surgeon having and demonstrating practical wisdom.

This case reveals another issue in medicine that causes uncertainty; some diseases can look like other diseases. Not only are misdiagnoses possible, but they must be rectified quickly to save patients. When physical symptoms match two different diseases, the surgeon cannot be called practically unwise for diagnosing what is most frequently

[68] Gawande, 228–47.

seen in their patient population.[69] Their experience and the data naturally direct them to diagnose what is the most common initially. In fact, their decision to go with what is most probable is wise. It is wise to change their diagnosis only after receiving data that conflicts with their initial diagnosis. This is what a practically wise and morally excellent surgeon would do: adapt and plan for the best outcome possible for the patient, even in changing circumstances.

Despite his years of education and years of training, Gawande asserts in his memoir that "medicine's ground state is uncertainty."[70] There are many results that cannot be explained, both good and bad. A surgeon can correctly assess a patient's health and devise a treatment plan, but the patient's health could improve or deteriorate. There are also times where surgeons fail due to unwise decisions or a failure in their moral virtues. The most a surgeon can do is be practically wise in their decisions and plan wisely both for the patient and the team they are leading. Practical wisdom plans and adapts for the best potential outcome for everyone involved and learns when failures are encountered.

[69] Gawande, 233–34.

[70] Gawande, 229.

CONCLUSION

The virtues of proper pride, compassion, and practical wisdom help a surgeon flourish in their craft. A surgeon with these virtues is ensured that they are acting within their knowledge base and for the betterment of their patients. Proper pride enables a surgeon to adequately gauge their level of surgical proficiency and their ability to aid their patient. Compassion ensures that a surgeon can understand their patient's medical condition and the impact a surgery would have on their daily life as well as facilitate a harmonious surgeon-patient relationship. Practical wisdom enables the surgeon to discern the best course of action for each individual patient based on their knowledge, virtues, and experiences. These three virtues do not enable a surgeon to technically operate, but they can better the surgeon's practice of their craft and their relationships with each patient. Though it is possible for a surgeon to operate without having these virtues, a surgeon can thrive with their usage of these virtues and choose and perform procedures well.

With the mistrust in medical professionals and the complaints that people have with their healthcare today, demonstration of these virtues can better these problems and promote a healthier space for both medical practitioners and their patients.[71] Surgeons practicing these virtues will not only lower the number of complaints but will also ensure that a high quality of care is given to each patient. The virtues of proper pride, compassion, and practical wisdom provide an ideological solution to the complaints

[71] Pellegrino and Thomasma, *The Virtues in Medical Practice*, 128.

against surgery today and have practical advantages. Surgery is an applied science that can benefit from having virtue ethics guide it toward the most positive path possible. Emphasizing and learning about the virtues can aid in bettering the practice of surgery, which can lead to practical benefits for both surgeons and patients alike.

Currently, there is an increase in robot-assisted surgeries to treat many conditions in the Unites States and Europe due to the increased precision, fewer complications, quicker recovery, and decreased pain and blood loss.[72] In all robotic surgery cases, however, a surgeon is somewhere in the line of control over the robot. Because of autonomous robots, there are supposed benefits that people are arguing for, like decreasing the amount of time a surgeon spends in residency and increasing access to more complex procedures.[73] Increasing access should be encouraged, and perhaps robots would also decrease the cost of procedures; however, a surgeon's residency is an ethical training.[74] A residency teaches a surgeon about how to perform surgery but also when to perform surgery. Deciding when to perform a surgery is in part an ethical issue, which a robot would not be able to analyze. In addition to not being able to complete the human aspects of the surgeon-patient relationship, like connecting, comforting, reassuring, and informing a patient, a robot would also not be able to decide whether a patient truly needs surgery and will survive the risks. A robot would also not be able to draw upon prior experience to make surgical judgments, and a robot would not be able to handle the anatomical and physiological particulars of each individual patient, "such as when a

[72] Mayo Clinic Staff, "Robotic Surgery."

[73] Svoboda, "Your Robot Surgeon Will See You Now."

[74] Charles Bosk, *Forgive and Remember: Managing Medical Failure* (University of Chicago Press, 2003), 190, quoted in Christian J. Vercler, "Surgical Ethics: Surgical Virtue and More," 45.

blood vessel is in a different place than expected."[75]Another issue with using robots to perform surgeries, even if the robot is given artificial intelligence, is that the patient would be giving power over their body to a machine, instead of a human, which means there is not a surgeon-patient relationship, which would be unsettling to patients.[76] Although there are fewer risks and increased precision with robotic surgeries, the human aspect of medicine demands that there is also emotional care given to the patient, as medicine tries to give health to a patient, which includes physical, mental, and emotional well-being. After a surgery, a patient requires follow-up appointments to check on their recovery and see if there are any other issues or complications, which would require a surgeon with virtues. A virtuous surgeon has the potential to intellectually and morally assess a patient before, after, and during a surgery; a robot would not be able to fulfill these demands of surgical practice and its complications, although it can complete the technical component. A surgeon must be involved, especially in controlling robots in surgery, to communicate with and care for the patient and to handle surgical and anatomical decisions during an operation.

Even if the future of surgery involves increasing the usage of robots in completing procedures, a surgeon must be present during the operation to handle any complications that arise but also to assess and inform the patient. Robots can increase the accessibility of complex procedures for poor communities and reduce costs overall but must be controlled by a surgeon to protect patients and every aspect of the patient's health. A confident, compassionate, practically wise surgeon excels at their work through their

[75] Svoboda, "Your Robot Surgeon Will See You Now."

[76] Svoboda.

virtuous decisions and cares for all aspects of their patient's well-being, which fulfills the demands of medicine beyond being able to technically complete a surgical procedure.

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