

RECONSTRUCTING IDENTITY: CARLTON BURGAN, PATIENT ZERO IN THE
DEVELOPMENT OF PLASTIC SURGERY, CIVIL WAR THROUGH
WORLD WAR I

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ABSTRACT

Reconstructing Identity: Carlton Burgan, Patient Zero in the Development of Plastic Surgery,
Civil War through World War I

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Plastic surgery has played an integral role in helping people achieve societal expectations of appropriate physical appearance since its inception. Through the story of Carlton Burgan, a Union soldier during the American Civil War, who suffered severe facial trauma by mercury poisoning, this thesis hopes to reconstruct the conversation around plastic surgery's origins as it is influenced by societal standards of the day. Specifically, this thesis argues that the seminal moments leading to plastic surgery being seen as a worthwhile medical specialty was during the Civil War, not World War I as so many scholars have put forth. Violent acts to the body as a method to advance plastic surgery techniques is explored in relation to acceptable physical appearance. Societal beauty standards on the time are posited to be the force behind the development of plastic surgery techniques, not plastic surgeons themselves. Plastic surgery evolved as the United States grew and began to embrace the Second Industrial Revolution's influence on attitudes about beauty, leading to changes in societal beliefs about what is suitable in terms of appearance. This thesis argues that the new science of psychology that emerged in parallel to the Second Industrial Revolution is the main strategy for plastic surgery to be reconstructed as a worthwhile medical specialty. The exploration of plastic surgery procedures of the nose, face and genitalia are discussed due to their importance in constructing societal appearance standards. The thesis concludes with a return to the story of Carlton Burgan and his role as a change agent in medicine.

Keywords: Plastic Surgery, Violence, Carlton Burgan, Societal Expectations, Psychology, American Civil War.

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I never thought I would write another thesis. Carlton Burgan changed my mind. I first met Carlton in my History 505 class in Spring 2020 taught by Dr. Thanayi Jackson. Through my initial exploration for topics, I discovered Carlton and learned about his story. I wrote a paper about Carlton's horrific injury, his decision to have experimental facial reconstruction surgery and his experience of being caught in the middle of a medical revolution as a Union soldier in the Civil War. After the class was over, I realized that I was not done with Carlton's story as I believed that there was more to tell.

A lot happened during my time at Cal Poly and I want to acknowledge those who supported me throughout. First, I cannot express my gratitude and delight in having Dr. Thanayi Jackson as my committee Chair. We had so much fun talking about this project and her support and guidance made this experience amazing for me. I truly believe this project is my best academic work and she was instrumental in changing how I viewed myself as a writer. Thanks to my other committee members, Dr. Matthew Hopper and Dr. Christina Firpo for agreeing to work with me and encouraging me to look at my work as something that is worth sharing beyond Cal Poly. Thanks also to Dr. Andrea Oñate-Madrado for her tremendous support and encouragement in Spring 2022 when I was recovering from an unexpected major surgery. My friends and family provided me with ongoing support and needed humor when life got challenging – you all are the best. My most important thanks go to my wife, Bridget Bogust. From the beginning, she has only encouraged and supported me on this journey. She listened to my ideas about my thesis, pushed me to work hard even when I did not want to and helped me get through way too many illnesses and surgeries with good humor and tremendous grace – I love you always.

Finally, I want to thank Carlton Burgan. Without his story, this thesis would not exist. He was a courageous man and I hope that through my work, his story has been “reconstructed” to demonstrate his importance to history.

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Chapter 1

INTRODUCTION

In October 1862, Carlton Burgan was just beginning his recovery from mercury poisoning that left him with severe facial damage and speech difficulties. He was under the care of Dr. Robert Weir, Assistant Surgeon in the Medical Corps of the United States Army and in charge of the Union General Hospital No. 1 in Frederick, Maryland.¹ Dr. Weir was a graduate of the College of Physicians and Surgeons and practiced at St. Luke's Hospital and New York Hospital.² Dr. Weir was also a pupil and later colleague of Dr. Gurdon Buck. In his *Personal Reminiscences of The New York Hospital*, Dr. Weir wrote about his ongoing relationship with Dr. Buck, who would be put forth as one of the many "fathers" of plastic surgery and how Dr. Buck assisted him at Union General Hospital No.1.³ Through this connection of student to teacher, Dr. Buck met Carlton Burgan. Dr. Weir described how Dr. Buck, while on tour with the United States Sanitary Commission, became interested in a disabled soldier (Carlton Burgan) who had been treated at his regimental camp for an attack of pneumonia, for which he had been provided with large and repeated doses of calomel, creating a "profuse salivation followed rapidly in his condition and as his lung trouble improved, by a rapid gangrene of his mouth."⁴ Prior to the Civil War, calomel, or mercurous chloride, was considered a universal medical treatment but frequently lead to severe gastroenteritis, burning mouth pain, salivation, vomiting, colitis, uremia and if prescribed in high doses, patients' teeth would fall out.⁵ Dr. Weir further described Carlton's case as "when he arrived at the General Hospital we found that the whole left cheek in its entire thickness, from the

¹ Richard B. Stark, "Friendship of Three Giants," *Plastic and Reconstructive Surgery* 40, no. 6 (December 1967): 599.

² Stark, 599.

³ Robert F. Weir, *Personal Reminiscences of the New York Hospital from 1856-1900: Some Civil War Recollections, 1861-1865*, (New York Hospital, 1917): 27.

⁴ Weir, 27.

⁵ Estelle Brodman and Elizabeth B. Carrick, "American Military Medicine in the Mid-Nineteenth Century: The Experience of Alexander H. Hoff, M.D.," *Bulletin of the History of Medicine* 64, no. 1 (1990), 70. The authors focus on the writings of Dr. Alexander H. Hoff, who was a volunteer Civil War surgeon from Albany, New York. The authors comment that Dr. Hoff was in agreement with the decision, but they also write that the American Medical Association had condemned Dr. Hammond's decision. It is likely the Dr. Hoff would likely have fallen into the category of physician practicing "new medicine" as he recommended a new focus on diet and cleanliness and hoped that "rational men would keep good statistics and draw reasonable conclusions from them"

tooth edge of the lower jaw to just below the lower lid, and the from the masseter muscle transversely to and involving the left side of the nose, had been destroyed and was a rotten mess.”⁶ Carlton’s case appealed to Dr. Buck, due to his significant experience in plastic surgery and in remedying severe facial defects. It is speculated that Dr. Buck offered to provide Carlton a series of plastic surgeries to repair his facial damage.⁷

The paragraph above provides a great deal of information about the status of plastic surgery during the American Civil War. In particular, it provides a glimpse into the happenstance style of communication occurring within medicine itself, and plastic surgery in particular. Carlton Burgan’s opportunity for facial reconstructive surgery was a stroke of luck. Had he not been under the care of Dr. Weir, Carlton would have not had a functional face. Why did such a circumstance exist?

This chapter will answer the above question through an overview of the history of plastic surgery. This overview will include discussion of the debates that began as early as 3000 B.C.E. about the definition of plastic surgery and the motives behind the variety of types of surgeries performed. It will also present an in-depth exploration of how war played an important role in the advancement of plastic surgery as part of the medical field and how leading surgeons around the world developed new plastic surgery techniques and technologies as an outcome of wartime needs.

The Origins of Plastic Surgery – It Depends on Who You Ask

One of the many debates surrounding plastic surgery is when it actually began and who created it. One of the most fascinating parts of the development of plastic surgery is how many people claim to have created plastic surgery as a profession as well as creating particular techniques. Beyond the battle of “who did what,” there was (and still is) a fundamental argument

⁶ Weir, 27. It is unclear as to why Dr. Weir states that Carlton’s injuries are to the left side of his face when photographic evidence is clear that the injuries are to the right side of his face.

⁷ Melinda Musil, “Molded by War,” *American’s Civil War* 29, no. 3 (2016): 40. Carlton Burgan was reported to have volunteered for experimental reconstructive facial surgery.

about what it *should be*. Viewpoints surrounding plastic surgery as a “reconstructive” process or one of “aesthetics” will be introduced in this chapter.

Some authors consider plastic surgery as one of the first operative practices created by ancient peoples and that plastic surgery might be one of the oldest operative specialties, exceeded by ophthalmic surgery.⁸ Some have argued that the ancient Egyptians were skilled in plastic surgery techniques while others have put forth that Egyptian plastic surgery skills were limited and focused on simple methods for treating fractured noses and jaws.⁹ The Egyptians were known for creating simple dental prosthetics due to severe tooth decay within the Egyptian population as early as 2500 B.C.E.¹⁰ These early dental prosthetics would foreshadow the dental prosthetics that Carlton Burgan would be provided after his first facial reconstructive surgery and would wear throughout his life.¹¹ Scholars have also argued that the earliest plastic surgery took place around 3000 B.C.E., with the focus on repair of nasal fractures and the first description of pressure dressings in surgery.¹² Other historians have focused on the impact of early Hindu surgeons as originators of plastic surgery. For example, Sushruta Samhita, who was considered to be the “Hippocrates” of Hindu surgery during the sixth or seventh century B.C.E., described two plastic reconstructive surgical methods in detail, one correcting an earlobe deformity and the other for the reconstruction of a damaged nose.¹³ For both surgeries, Sushruta described the process of rotating an adjacent skin flap from the cheek to fill the defect.¹⁴

Hindu surgeons were expected to engage in significant preliminary surgical training with a particular focus on anatomy. Such surgeons developed skilled dexterity and would exceed other nations of their time in operative surgery.¹⁵ In later centuries, they created a surgical

⁸ Blair O. Rogers, “The Historical Evolution of Plastic and Reconstructive Surgery,” In *Nursing Care of the Plastic Surgery Patient* by Donald Wood-Smith and Pauline C. Porowski (St. Louis: C. V. Mosby Co., 1967): 4.

⁹ Rogers, 7.

¹⁰ Rogers, 7.

¹¹ *Transactions of the Medical Society for the State of New York for the Year 1864*, (Albany, New York: Comstock & Cassidy, Printers, 1864), 75.

¹² Frank McDowell, James A. Valone and James B. Brown, “Bibliography and Historical Note on Plastic Surgery of the Nose,” *Plastic and Reconstructive Surgery* 10, no. 3 (1952): 149.

¹³ Rogers, 6.

¹⁴ Rogers, 6.

¹⁵ Rogers, 7.

technique called the “Indian Method” of nasal reconstruction where a flap of skin was taken from the forehead rather than from the adjacent cheek.¹⁶ A similar procedure was performed on Carlton Burgan over a millennium later; the skin from the left side of Carlton’s forehead was used to construct a new right cheek and nostril.¹⁷ In India for at least one millennium, it was considered a rather typical procedure as a facial reconstructive process as it was part of societal expectations of the time to punish certain crimes, such as prostitution, infidelity and theft, by cutting off offenders’ noses.¹⁸

Some authors concluded that Sushruta’s description of his surgeries was the origin of the pedicle flap technique, an transformative process in facial reconstructive plastic surgery.¹⁹ However, Marck, Palyvoda, Bamji and van Wingerden, in their article “The Tubed Pedicle Flap Centennial: Its Concept, Origin, Rise and Fall,” argue that the concept of a pedicle flap occurred in 1497 via the work of Gaspare Tagliacozzi, who used a pedicle flap from an upper arm to reconstruct facial deformities.²⁰ Marck et al. then go on to provide a historical review of the evolution of pedicle flap techniques to what they conclude was the creation of the tubed pedicle flap in 1917 that they consider as the main reconstructive method for large skin defects until the 1970s.²¹ While having much confidence in their belief that the tubed pedicle flap was developed in 1917, Marck et al spend the rest of their article attempting to explain who truly created the technique and argue that it was likely that the four individuals in question (John Law Aymard, Vladimir Filatov, Hugo Ganzer and Harold Gillies) developed the idea independently from one another. They concluded their article by providing solid evidence that Filatov was the creator of

¹⁶ Rogers, 7.

¹⁷ Gurdon Buck, *Contributions to Reparative Surgery: Showing Its Application to the Treatment of Deformities, Produced by Destructive Disease or Injury; Congenital Defects from Arrest or Excess of Development; and Cicatricial Contractions from Burns* (New York: D. Appleton and Company, 1876), 44.

¹⁸ Rogers, 6.

¹⁹ K.S. Goleria, “Pedicle Flaps – A Historical Review,” *Indian Journal of Surgery* 28, no. 4 (April 1966): 247. The author provided a translation of Sushruta’s writings regarding what the author described as the first pedicle flap surgery – “The lobe of the ear, in one without the ear lobule, should be reconstructed from a piece of flesh of the cheek, kept living by its continuity (*to the cheek*) after scarifying (*freshening the edges of the defect*), by one who knows the technique.”

²⁰ Klass W. Marck, Roman Palyvoda, Andrew Bamji and Jan J. van Wingerden, “The Tubed Pedicle Flap Centennial: Its Concept, Origin, Rise and Fall,” *European Journal of Plastic Surgery* 40 (2017), 474.

²¹ Marck, Palyvoda, Bamji and van Wingerden, 474.

the tubed pedicle flap but was not known in English-speaking countries.²² The authors state that the belief that Gillies created the pedicle flap technique was due to his work concentrating on World War I facial war casualties in a single hospital that had a large and well-differentiated staff who could document his efforts. Also, numerous American war surgeons who came for training with Gillies spread his name and his achievements across the Atlantic Ocean.²³ Due to his organizational skills and the effectiveness of World War I bringing together surgeons from all over the world for training, Gillies became much more famous for his advocacy of the tubed pedicle flap than the creator of the flap itself.²⁴ Gillies would probably disagree with the authors' conclusion; he wrote in his 1920 article, "The Tubed Pedicle in Plastic Surgery" that he was the first surgeon to complete a successful pedicle flap operation.²⁵ There was no mention of the work of Sushruta in the Marck et al. review of the origins of the pedicle flap technique.

Yet another "father" of plastic surgery is Paulus Aegineta (A.D. 625-690) as he is considered to have been the main link between Eastern medicine that included the Hindu and Arab schools and the gradually increasing number of Western medical and surgical scholars of the time.²⁶ Aegineta described specific operations and/or treatment for such conditions as nasal and jaw fractures, etc.²⁷ However, Aegineta is also viewed as somewhat of a charlatan as he advocated that facial wrinkles could be avoided by the use of ivory shavings, bruised fish gelatin and male frankincense.²⁸ Soon after Aegineta's death, the period of Greco-Roman medicine and surgery ended.

During the seventh century, the rise of Islam led to the domination of medical theory and practice by Arab surgeons. Specifically, they dispensed with the knife as the main surgical instrument of Greco-Roman times and replaced it with hot cautery tools.²⁹ When southern Spain was part of the Islamic empire, Abu al-Qasim Al-Zahrawi, better known as Albucasis (A.D. 936-

²² Marck, Palyvoda, Bamji and van Wingerden, 477.

²³ Marck, Palyvoda, Bamji and van Wingerden, 477.

²⁴ Marck, Palyvoda, Bamji and van Wingerden, 477.

²⁵ H.D. Gillies, "The Tubed Pedicle in Plastic Surgery," *The Lancet* (August 1920): 320.

²⁶ Rogers, 9.

²⁷ Rogers, 9.

²⁸ Rogers, 9-10.

²⁹ Rogers, 10.

1013), was one of the great innovators of surgery in Córdoba, Spain.³⁰ He wrote a medical encyclopedia, *Al-Tasrif (The Method)* that contained designs of over two hundred surgical instruments, was the first illustrated scientific textbook of its kind and due to its success, Al-Zahrawi gained significant acclaim in Europe.³¹ *Al-Tasrif* was translated into Latin in the twelfth century and was seen for the next 500 years as the preeminent surgical textbook in Europe.³² In their book, “History of Plastic Surgery,” Santoni-Rugiu and Sykes put forth that Al-Zahrawi developed the “art” of plastic surgery and was focused on the aesthetic results of his operations.

It has been argued that nineteenth-century American surgeons were pioneers in the creation of the field of plastic surgery.³³ While he acknowledged that plastic surgery had existed for thousands of years in medical history, he asserted that “it has emerged from oblivion but twice in the steady stride of the development of surgery in Western Civilization.”³⁴ Aufricht contended that it was introduced to the West in the fifteenth and sixteenth centuries by the Branca family and Gaspare Tagliacozzi in Italy, only to disappear from surgical interest for about two hundred years.³⁵ He then comments that the field re-emerged early in the nineteenth century in Europe and listed a variety of American surgeons that began experimenting with facial reconstruction as well as going abroad to study plastic surgery techniques.³⁶ Dr. Gurdon Buck would be one of those traveling to Europe for specific training and he would eventually study surgery at hospitals in Paris, Berlin, London and Vienna after receiving his medical degree in 1830.³⁷

In contrast, Bolognese surgeon Gaspare Tagliacozzi (1545-1599) “has long been heralded as the father of Western plastic surgery.”³⁸ Tagliacozzi provided abundant illustrations

³⁰ Paolo Santoni-Rugiu and Philip J. Sykes, “Chapter 12, Introduction to Cosmetic Surgery,” In *History of Plastic Surgery* (Berlin: Springer Berlin/Heidelberg, 2007), 300.

³¹ Santoni-Rugiu and Sykes, 300.

³² Santoni-Rugiu and Sykes, 300.

³³ Gustave Aufricht, “The Development of Plastic Surgery in the United States,” *Plastic and Reconstructive Surgery* 1, no. 1 (1946): 3.

³⁴ Aufricht, 3.

³⁵ Aufricht, 3.

³⁶ Aufricht, 3.

³⁷ Bradley J. Buck and Steven H. Selman, “Beyond Buck’s Fascia: The Life and Contributions of Dr. Gurdon Buck (1807-1877),” *Urology* 78, no. 3 (2011): 492.

³⁸ Emily Cock, “‘Lead[ing] ‘em by the Nose into Publick Shame and Derision’: Gaspare Tagliacozzi, Alexander Read and the Lost History of Plastic Surgery, 1600-1800,” *Social History of Medicine: The Journal of the Society for the Social History of Medicine* 28, no. 1 (2015): 1.

via his book “De curtorum chirugia per insitionem libri duo,” published in 1597, that detail his work in rhinoplasty (surgery of the nose). Current histories of plastic surgery indicate that after Tagliacozzi’s death, his rhinoplasty methods were overlooked and subsequently discarded. However, in her defense of Tagliacozzi’s work, Emily Cock asserted that his work was purposefully silenced due to social pressures around ruined noses in the seventeenth and eighteenth century.³⁹ Cock also states that Tagliacozzi’s techniques were referenced by seventeenth- and eighteenth-century surgeons as well as his book being translated into English and published in London in 1687 and 1696.⁴⁰

Other scholars also argue that there really is no true “father” of plastic surgery.⁴¹ He views the history of plastic surgery, particularly of the facial region, including a wide range of specialties and disciplines as contributors to its development.⁴² There are many factors that have pushed plastic surgery to advance as a science. This research focuses on one such factor - how societal beliefs since ancient times influenced those who performed plastic surgery. Those who engaged in surgical procedures considered themselves the creators of numerous techniques to both restore functioning and as a method to maintain, restore or enhance a person’s appearance. However, the individuals participating in such work were not truly the creators as argued via this research.

This research posits that formally trained medical professionals that have existed since ancient times were a part of a social process and responding to their particular societal needs through their work. They were not the guides and “artists” that they believed themselves to be - their work was driven by what society told them to do. Doctors did not recognize that they were part of a societal process through their plastic surgery efforts. Societies construct behavior patterns by considering certain actions as acceptable or not. For example, when American Civil War soldiers like Carlton Burgan are injured through their participation in a war where the society in which they live see war as something that is just and right, the society of the time gives

³⁹ Cock, 5.

⁴⁰ Cock, 5.

⁴¹ Roger L. Crumley, “Some Pioneers in Plastic Surgery of the Facial Region,” *Facial Plastic Surgery & Aesthetic Medicine* 5, no. 1 (January/February 2003): 1.

⁴² Crumley, 1.

approval for their facial reconstruction. For example, men and women contracted sexually transmitted diseases (i.e., syphilis) via prostitution and ended up with damaged noses.⁴³ As a result, societal mores concluded that their actions were unacceptable and not only shamed them for their actions but diminished those who wished to provide reconstructive rhinoplasty to once again allow them to move throughout their lives without societal reprisal. Society defines who is worthy of plastic surgery – not the patient or the surgeon. In the period of examination through this thesis, it will be demonstrated that as societal expectations of who is deemed “worthy” changed, so did the work of plastic surgeons. Additionally, the lack of awareness by researchers over the years who often provide “historical” reviews of plastic surgery regarding this construct is fascinating. Through the research process for this thesis, it became clear that while historians who wrote about plastic surgery appeared to have some understanding of the impact of societal beliefs regarding worthiness, medical professionals who put forth on the topic of plastic surgery did not.

The Myth of Reconstruction

Examples abound regarding the misperception by plastic surgeons and those in the medical field who write about the topic of who actually created the specialty. Beginning as early as Sushruta, plastic surgery was done not for functionality only, but to be able to blend in with the rest of the population.⁴⁴ During Sushruta’s time, women and men were subjected to mutilation as it related to social transgressions such as prostitution and crime. Gaspare Tagliacozzi, a renowned Italian surgeon in the sixteenth century, was celebrated by his medical contemporaries for his transformative work in rhinoplasty and other facial deformities. However, due to “...his temerity in interfering in the affairs of the Almighty”, was excommunicated after his death, his

⁴³ J.R. Galagali, Yadav Sagar Shyamlal and Shikha Gianchand, “A Rare Case of Tertiary Nasal Syphilis: An Unusual Ear, Nose, and Throat Manifestation of a Rare Disease,” *International Journal of Otorhinolaryngology and Head and Neck Surgery* 9, no. 5 (2023): 1. Syphilis is a bacterial infection that left untreated can evolve into a systemic illness that eventually can lead to death. Per the authors, with advanced syphilis, the saddle nose nasal deformity is caused by the destruction of the bony framework of the nose and the shrinking of fibroid tissue leading to the appearance of a flattening of the middle of the nose.

⁴⁴Elizabeth Haiken, *Venus Envy: A History of Cosmetic Surgery* (Baltimore: The Johns Hopkins University Press, 1997), 7.

corpse was exhumed from its grave and placed in unconsecrated ground.⁴⁵ Additionally, it has been argued by more recent medical historians that Tagliacozzi's work had faded in terms of relevance at the time of his death and that history should consider that rhinoplasty was resurrected in the nineteenth century. Courtney R. Hall, in "The Rise of Professional Surgery in the United States: 1800-1865," also argued that professional surgery did not exist anywhere in America much prior to 1800.⁴⁶ Richard C. Webster, in "Cosmetic Surgery: Its Past, Present and Future" writes that there are two fields of plastic surgery.⁴⁷ One is reconstructive surgery, which Webster defines is for "...the reasons of restoration or maintenance of physical health and function" and cosmetic surgery, defined as being for "...reasons of maintaining normal appearance, restoring it, or enhancing it beyond the average level toward some aesthetic ideal." Additionally, Webster argues that the differences between the two fields within plastic surgery are mainly due to the necessity of such surgery. The author posits that surgery to eradicate disease, to lessen pain or save lives is seen by medical professionals and the general population as necessary and patients usually *do not* want such surgery – reconstructive surgery.⁴⁸ Webster argued that the statements above about the motives for reconstructive surgery are the opposite of cosmetic surgery; cosmetic surgery is considered unnecessary for normal functioning and is performed because patients *want* it.⁴⁹ As will be explored throughout this thesis, the descriptions surrounding the reasons for plastic surgery as defined above are not so simple.

One reason that such simplistic definitions for people desiring plastic surgery are not truly effective is the complexity of defining societal expectations of self-worth related to physical appearance. Emily Cock argues convincingly how the nose operated as an indicator of shame during Tagliacozzi's time.⁵⁰ What Cock does not focus on is what is considered a respectable nose – how did one in Tagliacozzi's time know? Dr. Buck's work in his experimental

⁴⁵ Goleria, 5.

⁴⁶ Courtney R. Hall, "The Rise of Professional Surgery in the United States: 1800-1865," *Bulletin of the History of Medicine* 26, no. 3 (May-June 1952): 231.

⁴⁷ Richard C. Webster, "Cosmetic surgery: Its Past, Present, and Future," *The American Journal of Cosmetic Surgery* 1, no. 1 (1984): 3.

⁴⁸ Webster, 4.

⁴⁹ Webster, 4.

⁵⁰ Cock, 3.

reconstructive surgery of Carlton Burgan's badly damaged face has been put forth as a reparative surgical operation as recently as 2011.⁵¹ However, Dr. Weir's personal writings published in 1917 described the process of Carlton Burgan obtaining his surgeries as the following:

Dr. Buck said he would like, if the patient were willing, to have him sent, when he got his justly entitled discharge papers, to the New York Hospital for the proposed surgical treatment. Thither, in due course of time, did the man go, and by a series of operations during the course of several months, Dr. Buck was able, by sliding skin from the neck, temple and lips, together with dental aid, to replace the lost upper jawbone, to fill up the huge gap with new flesh and restore the patient, though much necessarily scarred, to an effective condition *and not too offensive to a neighbor's eye* [italics added].⁵²

In 1881, Dr. Edward T. Ely was working in his clinic at the Manhattan Eye, Ear and Throat Hospital where a young boy came in complaining about being ridiculed due to having ears that protruded outward. Dr. Ely would then go on to perform the first operation for the correction of "protruding ears" in the New World.⁵³ However, there was no documentation suggesting that there was anything functionally wrong with the boy's ears.

Societal expectations of worthiness did not stop at the face. For example, per "A Lecture on Malformations of the Female Genital Organs in Their Clinical Aspects," Arthur Giles argued that "clinical aspects of malformation have relation to the question of sex, to menstruation, to marriage, and to childbearing."⁵⁴ In his discussion of malformations that "preclude menstruation, marriage and childbearing", the author reported the following case:

Case IX.-Absence of Vagina: Hernia of an Infantile Uterus in the Left Inguinal Canal. I saw lately at the Prince of Wales's General Hospital, Tottenham, a single woman, aged 22, who complained of primary amenorrhea and of a swelling in the left inguinal region that felt like an omental inguinal hernia. On inspection of the vulva there was no trace of a vaginal orifice, and on rectal examination neither vagina nor uterus could be felt. The girl was engaged to be married. She was admitted for operation, and I first made a dissection to see if there was a vagina but, after reaching a depth of about 2 inches between the urethra and rectum, I could find no evidence of a vagina and therefore desisted. Turning to the hernia I found a large hernial sac whose inner margin was so extensive that one could hardly speak of it as having a neck; the contents of the sac consisted of an infantile uterus; the left round ligament was short and unusually stout, and it appeared to have played a part in drawing the uterus into the canal. I divided the round ligament, returned the uterus into the abdomen and closed the large gap in the

⁵¹ Buck and Selman, 494.

⁵² Weir, 27.

⁵³ Blair O. Rogers, "The Development of Aesthetic Plastic Surgery: A History," *Aesthetic Plastic Surgery* 1, (1976): 5.

⁵⁴ Arthur E. Giles, "A Lecture on Malformations of the Female Genital Organs in Their Clinical Aspects," *The British Medical Journal* 2, no. 2648 (September 30, 1911): 723.

inguinal canal. *It was necessary to explain to the patient and to her fiancé that marriage was out of the question* [italics added].⁵⁵

The most interesting statement regarding the above case is the author's belief that "it was necessary" to inform his patient and her fiancé that not only would she not be able to have children, but that due to her "malformation," marriage was impossible between the two. Where did the author obtain this opinion? As noted in the description of the case, beyond not having a vagina and uterus, there appeared to be nothing else hampering the patient from marrying. There was no other medical finding per the author's own writings that could have prevented a marriage from occurring. A more likely scenario is that societal expectations of women in 1911 revolved around their worth as providers of progeny and this author's "medical conclusions" were actually driven by societal mores of the time.

The Impact of Violence and War on the Development of Plastic Surgery

As already mentioned, war can be viewed as providing a "worthy" population of plastic surgery patients due to societal standards between the Civil War and the end of World War I. Researchers such as Crumley have posited that wars influenced the advancement and sophistication of plastic surgery, specifically World War I with the use of trench warfare as a method of military engagement that led to massive maxillofacial injuries.⁵⁶ Throughout history, physical violence has been used as a method of social control and plastic surgery has been utilized to fix wounds coming out of such violence.⁵⁷ For example, in India during the time of Sushruta, the population was often attacked by small professional armies or gangs engaging in robbery. Such raids frequently included physical mutilation of those captured.⁵⁸ Also, Indian justice at the time implemented consequences to criminal activities often through amputation of body parts dependent on the crime committed. For example, thieves would lose a hand, unfaithful husbands, their genitalia and unfaithful wives, their noses.⁵⁹ While those looking for

⁵⁵ Giles, 724.

⁵⁶ Crumley, 1.

⁵⁷ Richard B. Stark, "The History of Plastic Surgery in Wartime," *Clinics in Plastic Surgery* 2, no 4 (1975): 509.

⁵⁸ Stark, 509.

⁵⁹ Stark, 509.

prosthetic hands and penises would need to wait about 2500 years, surgical reconstruction of the nose was initially described by Sushruta and as explained previously by the *Indian Method* of rhinoplasty using a pedicle flap. More than 500 years later, Celsus (25 B.C.E. to 50 C.E.) told of facial reconstruction skin flaps for Roman soldiers.⁶⁰ He observed wounded soldiers of the Roman Empire and believed that transplantation of living tissues was quite possible even though he himself almost certainly did not perform such techniques.⁶¹

Violence continued to be a motivator for plastic surgery, particularly during wartime. Chambers, Davis and Rasmussen argue that plastic surgery, particularly craniofacial surgery, had its beginnings in the horrors of war.⁶² Chambers et al also posit that those surgeons who pioneered plastic surgery made their seminal contributions while caring for battlefield casualties.⁶³ Little is documented regarding plastic surgery until Europe emerged from the Dark Ages. The work of military surgeons from the Renaissance forward re-established plastic surgery as a method to medically treat wartime wounds. Gunshot wounds were studied along with more congenital challenges such as cleft lips during the fifteenth century.⁶⁴ In the beginning of the fifteenth century, an Indian-type rhinoplasty was used by Branca the Elder of Sicily and Antonius, his son, but it appears that their work was focused on repair of mutilated noses lost by sword-fights brought on by dueling versus actual wartime activity.⁶⁵ Ambroise Paré's seminal observations of wound healing in 1536 occurred from battles occurring in Turin, Italy during the Italian Wars period. Paré recognized that gunshot wounds frequently would lacerate and contuse tissue, but not burn or poison them, contrary to beliefs related to wound treatment at the time.⁶⁶ Similar to the Brancas, Gaspare Tagliacozzi, as mentioned earlier, was a Bolognese surgeon

⁶⁰ James A. Chambers, Michael R. Davis and Todd E. Rasmussen, "A Band of Surgeons, a Long Healing Line: Development of Craniofacial Surgery in Response to Armed Conflict," *Journal of Craniofacial Surgery* 21, no. 4 (2010): 991.

⁶¹ Daniel J. Hauben and Gijbert J. Sonneveld "The Influence of War on the Development of Plastic Surgery," *Annals of Plastic Surgery* 10, no. 1 (1983): 66.

⁶² Chambers, Davis and Rasmussen, 991.

⁶³ Chambers, Davis and Rasmussen, 991.

⁶⁴ Chambers, Davis and Rasmussen, 991.

⁶⁵ Martha T. Gnudi and Jerome P. Webster, *The Life and Times of Gaspare Tagliacozzi, Surgeon of Bologna, 1545-1599: With a Documented Study of the Scientific and Cultural Life of Bologna in the Sixteenth Century* (New York: Reichner, 1950), 111.

⁶⁶ Stark, 510.

during the sixteenth century and performed surgical reconstructions of the nose via a version of the pedicle skin flap (using the upper arm as the donor site); while he did not invent the procedure, he is often associated with the procedure as the inventor.⁶⁷ Like the Brancas', Tagliacozzi described the procedure as needed during the sixteenth century due to "...frequent duels, street brawls, and other clashes of armed men..."⁶⁸ Chambers et al also discussed other reconstructive plastic surgery such as the replanting of a soldier's nose in 1731 and the procedure known as "debridement" developed in the eighteenth century as a result of managing battlefield wounds.⁶⁹

An acceleration of plastic surgical technique development occurred in the nineteenth century due to advancements in the destructive capabilities of weaponry as well as a new emphasis on science. Chambers et al describe plastic surgery as an outcome of wartime violence as a method of "restoring form and function to *intentionally* [italics added] injured faces."⁷⁰ Injuries via intentional violence such as war, is part of the social construct defining plastic surgery. It is another example of how worthiness for plastic surgical intervention was created. The American Civil War was to begin a new chapter in reconstructive plastic surgery.

There are other demonstrations of how societal expectations impact the field of medicine and plastic surgery in particular. In the following sections, the evolution of medicine from a "heroic" to a "scientific" tradition created the opportunity for plastic surgery to be grounded in science – giving it legitimacy as a medical specialty will be described. Once plastic surgery was viewed as an authentic practice, it would eventually be marketed as being able to "fix" the ills defined by society at that time.

The Status of United States Medicine Prior to the Civil War

In the mid-nineteenth century, the medical profession was beginning a transformation. However, there was still much resistance to new theories of contagion, disease causation, germ

⁶⁷ Cock, 6.

⁶⁸ Stark, 510.

⁶⁹ Chambers, Davis and Rasmussen, 991.

⁷⁰ Chambers, David and Rasmussen, 991.

theories, quarantine measures, ideas about prevention and how to study and organize medicine and the job of the medical sciences within medical education.⁷¹

Prior to and at the beginning of the Civil War, historians said little positive about the state of American medicine. In 1807, Thomas Jefferson appeared to foreshadow what was to come in regard to medicine when he wrote a letter that commented, “a revolution was needed because a physician would propose ‘some fanciful theory’ and declare that it was a new key to understanding that gave him unique insight into all nature’s secrets.”⁷² Jefferson also noted in that same letter understanding that the best physicians had dissected human bodies and had knowledge of anatomy; he intimated the challenges in moving from deference for established beliefs to a focus on science as a method for medical practice. Medicine in the United States was considered backward due to “pioneer conditions” and a subsequent low level of education.⁷³ There was little to no professional medical education in the United States prior to 1800 as standards for physicians were quite low, no method existed to spread medical knowledge and hospitals did not exist for most of the population.⁷⁴ Additionally, medical students were few where American medical colleges did exist; the M.D. degree was not granted in the United States until 1770, and only one person received it.

While it might be the case that surgery was not a professionalized practice, it would be inaccurate to conclude that surgery was not occurring in the United States prior to 1800. Those who practiced surgery had challenges to overcome to be accepted within American society. In the late eighteenth century, surgeons appeared to suffer from discrimination from a variety of sources. First, surgeons were seen as craftsmen, not as of a professional class, thus the surgeon was seen as an inferior person. Also, since surgeons were often relatively uneducated, they were viewed unflatteringly with physicians – particularly those trained in Europe, who were considered to be of higher social rank. Finally, regardless of location, there was significant

⁷¹ Shauna Devine, "To Make Something Out of the Dying in This War": The Civil War and the Rise of American Medical Science," *Journal of the Civil War Era* 6, no. 2 (2016): 152.

⁷² James A. Ramage and Andrea S. Watkins. "Calomel, Cholera, and Science: 1825–1865," In *Kentucky Rising: Democracy, Slavery, and Culture from the Early Republic to the Civil War*, (University Press of Kentucky, 2011), 215.

⁷³ Hall, 232.

⁷⁴ Hall, 232.

prejudice against anyone (i.e., surgeons, anatomists or hospital workers) who were "...implicated in any way in disturbing the repose of the dead."⁷⁵ Those Americans aspiring to become surgeons soon discovered that they had to travel to the well-established medical training colleges in Edinburgh, Great Britain and elsewhere in Europe to gain effective training and education. Such experiences would exert direct and long-lasting influences on Americans who were to return to the United States to become leading surgeons of their day.⁷⁶

In the 1830s and 1840s, in reaction to assaults on elitism and the professions during the Jacksonian era within the United States, many states had discarded medical licensing laws and state recognition of medical societies.⁷⁷ During this time, there were hardly any university-educated medical doctors and most trained by apprenticeship. Such a situation resulted in a lack of basic general education and a lack of widespread acceptance of the consideration and use of the scientific process in medical care.⁷⁸ The lack of regulatory mandates for medicine both lowered educational criteria and fostered the abundance of competing medical factions, including heretical practitioners.⁷⁹

The most significant disagreement occurred between those who viewed themselves as "heroic" or "allopathic" clinicians and those whose training and beliefs were grounded in science and data. Another name for "heroic" medicine in the decades prior to the Civil War was "regular" but its use was misleading. The use of "regular" as a type of medical practice appears to have been a method to distinguish from what were considered more "irregular" or homeopathic medical training.⁸⁰

The ideas of "heroic" medicine gained a foothold in American medical practice through the work of Benjamin Rush, who was considered the most influential medical thinker at the beginning of the nineteenth century. Heroic medicine was the most extreme version of the theory that when the human body is in excess of sickness, health can be regained by bleeding, purging,

⁷⁵ Hall, 238.

⁷⁶ Hall, 240.

⁷⁷ Devine, 152.

⁷⁸ Devine, 152.

⁷⁹ Devine, 152.

⁸⁰ Marsha J. Hamilton. "Mercury and Water: Two Civil War Surgeon of the 148th Pennsylvania Volunteers," *Pennsylvania History: A Journal of Mid-Atlantic Studies* 75, no. 4 (2008):172.

and perspiring.⁸¹ It treated patients by either removing almost all of their blood or giving them extreme diarrhea from doses of calomel.⁸² The system was called “heroic” because “when the doctor came, he was a hero for taking such extreme action and producing such immediate, obvious results.”⁸³ While such treatment was beginning to decrease as the Civil War approached, it was not yet considered unsafe. Americans had confidence in heroic medicine. They were looking for medicine that worked and all the treatments worked, in their eyes. Bleeding decreased pulse rate and bleeding with purging (i.e., use of calomel) lowered body temperature and lessened agitation.⁸⁴ Calomel always produced diarrhea and the typical dose created the involuntary salivation of mercury poisoning, and the removal of saliva was considered a positive – it was severe, but that is what assured the patient that something was being done.⁸⁵ Unfortunately, many patients, such as Carlton Burgan, suffered the consequences of the excesses of heroic medicine.

The heroic theory of medicine dominated American medical thought and practice until 1850. Apprenticeships were still strongly valued, as there were few medical colleges and as stated earlier, their standards differed significantly. The treatment of “bleeding” was lessening and was almost completely discontinued by 1860. There is some debate about the motives for the change; the traditional viewpoint was the physicians were more confident in the body’s ability to heal itself, but other authors put forth that “heroic” doctors changed due to the desire to stay in practice.⁸⁶ Such changes in doctors’ behaviors who had been grounded in the heroic medical practice theory could be seen as altering their practice to attain what societal mores expect from doctors of the time, foreshadowing what was to happen to the practice of plastic surgery.

Quarrels about the safety and usefulness of traditional medical treatment were pervasive prior to the Civil War. Rival schools of medical training challenged each other’s facilities,

⁸¹ Ramage and Watkins, 216.

⁸² Ramage and Watkins, 216.

⁸³ Ramage and Watkins, 217.

⁸⁴ Ramage and Watkins, 217.

⁸⁵ Ramage and Watkins, 217.

⁸⁶ Ramage and Watkins, 226.

curricula, and faculty.⁸⁷ Different medical associations would engage in condemnation and ridicule of each other, different medical journals would lambast each other's work. *The Cincinnati Medical Observer* noted in 1857 that "it has become fashionable to speak of the Medical Profession as a body of jealous, quarrelsome men, whose chief delight is the annoyance and ridicule of each other."⁸⁸ As demonstrated earlier in this chapter, little changed in the creation of the plastic surgery specialty of medicine. The arguments about "who did what" continued to be powered by what might be seen as petty jealousies. The majority of surgeons who would constitute the United States Medical Department in the Civil War were still of the heroic tradition.⁸⁹ As long as society believed in the power of heroics, such treatment would continue. After all, the soldiers who made up the armies of the Union and the Confederacy often came from the same families, thus their beliefs about the types of medicine that they believed to be effective were likely the same as well. Once society's opinions about what medicine should be altered change, then the medical profession itself would modify as well. As was the country, the state of medicine was in significant flux at the time of Carlton's Burgan's original illness in June 1863.

The Revolution of Medicine in the United States

As noted earlier, the United States was firmly in the grasp of the heroic process of medicine at the beginning of the Civil War. However, as the Civil War progressed, medical practices began to evolve in terms of the transition from the type of medical practice that reportedly had been happening since the Jacksonian Era and the changing focus by the new practice on relying on science and prevention. Carlton Burgan was one of the thousands of soldiers on both sides of the war caught in the middle of this transformation; he was stricken with typhoid fever leading to an horrific result.

⁸⁷ Michael A. Flannery, "Another House Divided: Union Medical Service and Sectarians During the Civil War," *Journal of the History of Medicine and Allied Sciences* 54, no. 4 (1999): 483.

⁸⁸ Flannery, 483.

⁸⁹ Kathryn Shively Meier, "U.S. Sanitary Commission Physicians and the Transformation of American Health Care," In *So Conceived and So Dedicated: Intellectual Life in the Civil War–Era North*, edited by Foote Lorien and Wongsrichanalai Kanisorn, 19-40, (New York: Fordham University Press, 2015), 22.

Typhoid fever is a serious intestinal illness that sickened many soldiers both Union and Confederate during the Civil War and it also had a high mortality rate. Typhoid is caused by a bacterium that is spread via excrement. Food and water were easily contaminated with the bacteria due to poor sanitation, poorly designed latrines and swarms of flies.⁹⁰ The disease tended to be most rampant in military camps, such as Carlton's Company B, located near Harper's Ferry, in then Virginia, and aptly called, "camp fever." Symptoms included fever, general fatigue, diarrhea, headache, back and muscle aches and rose-colored spots on their chest and abdomen – symptoms that Carlton experienced. In May and June 1862, there were no standard treatments for typhoid, but doctors would give patients opiates, quinine, and calomel, which often worsened diarrhea and possibly adding mercury poisoning to the patient's difficulties.⁹¹ Unchecked typhoid can lead to complications such as intestinal bleeding, peritonitis and pneumonia.⁹²

Upon admission to the hospital, Carlton was described as in a "prostrated condition" with "a bed sore over the sacrum, his body was bathed in sweat and covered with sudamina [a rash]. His tongue was dry and his teeth covered with sordes [dark incrustations on the lips and teeth of patients with prolonged fever]."⁹³ It was reported that he had been sick in camp since June 5th, and that he was treated for pneumonia with mercury along with stimulants and given a healthy diet. Such treatment led to catastrophic results for Carlton as shown by the picture below. Details leading to the outcome of Carlton's initial treatment will be provided in Chapter 3.

⁹⁰Glenna R. Schroeder-Lein, *The Encyclopedia of Civil War Medicine* (London: Taylor & Francis Group, 2008), 309.

⁹¹ Schroeder-Lein, 310.

⁹² Schroeder-Lein, 311.

⁹³ Woodward Barnes, Otis Smart, Joseph K. Huntington, Joseph Janvier Woodward, Charles Smart, George A. Otis, D. L. and Huntington, *The Medical and Surgical History of the War of the Rebellion (1861-65), Vol 2, Part 1, Section III* (Washington, D.C.: Government Printing Office, 1870), 376.



Figure 1. Carlton Burgan after mercury poisoning and prior to reconstructive surgery.⁹⁴

Carlton's initial treatment placed him squarely in the "heroic" medical practice that was for most Americans (even likely Carlton) the standard and expected practice of care. He sustained a horrific wound via the overuse of mercury in the treatment of another illness that devastated both armies during the war. However, due to the changes that were beginning in the medical field as the war continued, Carlton Burgan did not die from his wound. He would find himself in the company of physicians moving medical practice toward a more scientifically based system brought on by the needs of soldiers fighting in the Civil War.

Carlton Burgan's life had been irreversibly altered due to the maintenance of traditional societal mores regarding the definition of effective medical practice at the time of the American Civil War. Upon his military discharge, he reported to New York Hospital to begin the first of his five surgeries to reconstruct his wounds from his physician-induced calomel overdose. Carlton was about to head into a new tradition of medicine that was considered to be grounded in the science of the day that included the advent of medical discoveries such as effective antiseptics

⁹⁴ *Source:* Photograph from the National Museum of Health and Medicine, collection OHA 75, photo ID CP 1659 (1862).

and anesthesia. However, the influence of societal expectations of physical appearance on the motivations of medical professionals, particularly in the area of plastic surgery, cannot be ignored.

Chapter 2

THE DEVELOPMENT OF WARTIME MEDICINE

In *Contributions to Reparative Surgery: Showing Its Application to the Treatment of Deformities, Produced by Destructive Disease or Injury; Congenital Defects from Arrest or Excess of Development; and Cicatricial Contractions from Burns*, Dr. Gurdon Buck concluded his discussion of his reconstructive facial surgery work on Carlton Burgan by putting forth the following:

In May of 1871 the author visited Burgan at his home, in the suburbs of Baltimore, and found him a married man, and father of two children. He enjoyed good health, and was pursuing a laborious occupation. He still wore constantly the same palate-plate that had been adapted in March, 1863. Time had considerably improved the condition of the right cheek and nose. The cicatricial lines on the surface of the cheek were no longer elevated ridges, but had shrunk into shallow furrows and became much less conspicuous. The cheek itself was pliable at all points, and the right half of the nose retained its plump shape, although it had lost its excessive thickness.¹

For a book whose goal was to provide medical professionals with precise medical techniques to ensure effective outcomes for those obtaining reconstructive surgery, one may wonder as to why its author ended the conversation about reportedly the first facial reconstruction surgery ever done with commentary on his patient's marital, parental and work status. Why did Dr. Buck start with this information versus the information regarding the status of Carlton's facial reconstruction as mentioned later? Upon further review of Buck's book, it should be noted that all but one of the patients whose cases were described were young women who were "unmarried," children and soldiers. There also appeared to be one case that was actually cosmetic in nature; a 13-year-old boy had abnormal hair growth on the left side of his forehead that were of different textures as well as color and the skin underneath was described as "found to be of a tawny hue, like that of the scrotum."² Buck wrote that both the patient and his parents wanted "this conspicuous disfigurement remedied."³ Nowhere in the case report written by Buck stated that there was a medical need for such a surgery. The surgery entailed the use of a cautory iron and

¹ Gurdon Buck, *Contributions to Reparative Surgery: Showing Its Application to the Treatment of Deformities, Produced by Destructive Disease or Injury; Congenital Defects from Arrest or Excess of Development; and Cicatricial Contractions from Burns* (New York: D. Appleton and Company, 1876), 51-52.

² Buck, 165.

³ Buck, 165.

a solid caustic potassa [a caustic agent] on the boy's forehead repeatedly to remove the hair growth. Additionally, the author indicated that "nitrate of silver" was also used to control any regrowth of hair until "cicatrizacion [scarring] was completed."⁴



Figure 2: 13-year-old male patient with abnormal hair growth – pre and post treatment.⁵

The above example demonstrates the power of societal beliefs on medicine and plastic surgery in particular. In his preface, Dr. Buck wrote, "There is no department of surgery where the ingenuity and skill of the surgeon are more severely taxed than when required to repair the damage sustained by the loss of parts, or to remove the disfigurement produced by destructive disease or violence, or to remedy the deformities of congenital malformation."⁶ Who better fits that category than young women of marriageable age, children and soldiers hurt in the line of duty? But then Dr. Buck contradicts himself with his inclusion of abnormal hair growth as something in dire need of repair. Where does "abnormal hair growth" with its accompanying treatment by cauterization tools, caustic agents and silver nitrate fall for Dr. Buck? A 13-year-old boy was subjected to such a process due to having hair in the wrong place, of the wrong texture and the wrong color. On examination of the above photographs, one would be hard-pressed to find much of an improvement.

⁴ Buck, 167.

⁵ Buck, 166-167.

⁶ Buck, iii.

As It Was from The Beginning...

While plastic surgery did not develop into a formal medical specialty until the start of the twentieth century, it did not mean that people had never desired to achieve physical attractiveness that was not provided via genetics. References on how to enhance eyelids found in ancient Egyptian writings such as the Ebers' papyrus 1000 years B.C.E., showed that ancient peoples were interested in attaining physical beauty.⁷ For example, women in ancient Rome willingly used cosmetics that contained lead, silver and even arsenic and wholly took on the risks of such poisons to maintain their appearance of youth.⁸ In "Cosmetic Surgery: Its Past, Present, and Future," Richard C. Webster argues that "...there is nothing new about the desire of human beings to enhance appearance or seek beauty in personal appearance and, even in ancient times, certain members of groups, tribes, or societies became skilled in catering to this fundamental, this human *need* [italics added]."⁹ But is it true that desiring physical attractiveness is, as Webster appears to be positing, an instinctual urge? Or is it more likely that the "need" for physical attractiveness is learned? This thesis posits that during this time period, plastic surgery instructs members of society on what physical attractiveness is to be and who ought to have it as well as reasons for people not to be physically attractive.

Society also determines how a person is judged to be of worth. As mentioned in Chapter 1, at the time of Sushruta, Indian justice was such that mutilation was the preferred method of punishment for those engaging in behaviors outside the expected norms of society of the time, such as amputation of the hand, genitalia and noses. Those judgements were created by the expectations of those living in the society and who had power to dictate what was acceptable behavior. Societal mores also determined who deserved the opportunity to return to the society at large seamlessly through methods such as plastic surgery and those who did not. Throughout the history of plastic surgery, medical doctors have claimed that they created plastic surgical

⁷ Paolo Santoni-Rugiu and Philip J. Sykes, "Chapter 12, Introduction to Cosmetic Surgery," In *History of Plastic Surgery*, 300-306, (Berlin: Springer Berlin/Heidelberg, 2007), 300.

⁸ Santoni-Rugiu and Sykes, 300.

⁹ Richard C. Webster, "Cosmetic Surgery: Its Past, Present, and Future," *The American Journal of Cosmetic Surgery* 1, no. 1 (1984): 5.

techniques to bring back functioning to others and every new finding and every new technique came out of *their* desire to heal the sick. However, while doctors did develop life-changing procedures and techniques within plastic surgery, it was not strictly their doing.

This thesis also argues that doctors were not the creators of their craft, they were simply responding with to what society as a whole told them about acceptable standards of living in the world. It has been well-documented that warfare played a significant role in the development of new technological advances (of the time) for both general surgical as well as more focused plastic surgical practices.¹⁰ The sheer number of war casualties forced medical providers to be innovative and look for other solutions to lessen loss of life and to correct the impact of violence on soldiers' bodies. Medical doctors and researchers who write about plastic surgery claim that World War I was the watershed moment for the evolution of plastic surgery due to the myriad of facial injuries that ensued related to the new trench-style warfare espoused.¹¹ However, the decision to be innovative did not come from the medical profession itself, contrary to statements made by numerous leading medical professionals of the time. Society demanded it of them. For example, the societies comprising the United States of America and the Confederate States of America at the time of the American Civil War approved of the use of medical intervention for soldiers wounded in battle. However, at the beginning of the war, there was no clear mechanism to ensure that such a demand could be met. While not explicitly stated, for both men and women, physical appearance was a major way of identifying themselves to the world around them.¹²

Fort Sumter fell on April 15, 1861 and President Abraham Lincoln summarily requested 75,000 troops to suppress what was initially called an armed rebellion on April 16th. Men responded to his call and women also committed with a similar fervor to assist in preparing for the realities of illness and battle wounds in the newly developing Union army. Different localities and people, from churches and schools to people's homes, worked diligently to prepare to assist soldiers who would likely encounter enemies in battle. Surgeons and physicians also participated

¹⁰ Richard B. Stark, "The History of Plastic Surgery in Wartime," *Clinics in Plastic Surgery* 2, no 4 (1975): 509.

¹¹ B.K. Rank, "The Story of Plastic Surgery, 1868-1968," *Practitioner* 201, (1968): 115.

¹² Lois W. Banner, *American Beauty*, (New York: Knopf, 1983), 4.

by instructing on how to make lint, bandages and hospital garments. However, further education and guidance were needed.

Such guidance came from the experiences of soldiers and subsequent changes made regarding sanitary practices that occurred during the Crimean War, occurring between 1854-1856. This next section will provide information on the Crimean War as it relates to the decisions made in regard to medical and sanitary conditions during the American Civil War.

Foreshadowing of the American Civil War – The Crimean War and Medical Care of British Soldiers

By more recent historians, the Crimean War is considered to be the world's first modern war due to the use of new types of communication technology including the presence of almost daily war correspondence via the press, the use of photography and the telegraph.¹³ Specifically, this war was one of the first to be documented comprehensively through written reports and photographs. Other examples of innovations were the use of steamships, ironclad floating batteries and significant utilization of fire and trench warfare.¹⁴ The outcome of this war was fundamentally determined by the technological and industrial capabilities of the different warring states; one could consider this finding as a foretelling of causes related to the eventual outcome of the American Civil War nine years later.

The importance of the press in all of its manifestations of the time was critical in the focus on the plight of soldiers who were wounded and/or taken ill during the Crimean War. A likely factor in the development of the United States Sanitary Commission (USSC) during the early years of the American Civil War was the attention brought to the battlefield conditions of British soldiers during the Crimean War. In his 2000 book, *Crimea: the Great Crimean War 1854-1856*, Trevor Royle tells of the impact on the readership of *The London Times* in learning about the conditions in which British soldiers were existing, "When *The [London] Times* 40,000 readers

¹³ Candan Badem, *The Routledge Handbook of the Crimean War* (Abingdon, Oxon: Routledge, 2022), 1.

¹⁴ Badem, 1. The author comments that the Crimean War foreshadowed aspects that would occur in World War I in terms of the impact of the Industrial Revolution on warfare.

opened their copies on the morning of 12 October 1854 they received an unwelcome surprise...they were treated to the harsh reality of the aftermath of battle and the suffering of the soldiers.”¹⁵ Badem also stated that “Here, laid bare was the first stark evidence of the revolting conditions faced by the sick and wounded...while in the past they had died like flies far removed from public gaze. Now, thanks to the presence of reporters the people of Britain could understand what was being done in their name...”¹⁶

Such reporting led to criticisms of the British Army Medical Department in terms of their lack of preparedness for the appropriate care of their wounded. Mary Livermore’s memoir regarding the first days of Union preparation for war with the newly formed Confederate States of America will sound similar themes in a later section.

The British public would not simply discover the tragic conditions of soldiers wounded in battle. They would also learn about the horrific conditions of British medical care on the frontlines of the Crimean War in terms of loss of life by illness. Lack of sanitary care as well as poor nutritional opportunities existed within the British army where out of 24,000 troops sent to the Crimea, 18,000 had died in less than nine months from a lack of effective sanitary regulations and food.¹⁷ More importantly, through the reporting of *The London Times* and other newspaper outlets, the British public began to learn about what has been described by contemporary scholars as an enduring scandal of official indifference toward British soldiers serving in the Crimea as well as a dawning awareness by the British government that the army that they sent to the Crimea was not prepared to fight the war.¹⁸ For example, the Director-General of the [British] Army Medical Department sent out a team of doctors to determine conditions for a “short war” as the British government only expected a “summer campaign....senior British offices were convinced that the fighting would be over within a few weeks and that the troops would be back home by Christmas.”¹⁹ Thus, the Medical Department judged the needs of soldiers in terms of

¹⁵ Trevor Royle, *Crimea: the Great Crimean War, 1854-1856* (New York: St. Martin’s Press, 2000), 246.

¹⁶ Royle, 246.

¹⁷ Royle, 246.

¹⁸ Royle, 248.

¹⁹ Royle, 205.

overall medical care through that lens, never considering the possibility of a protracted war. Finally, civilian surgeons had also been enlisted for the duration of the war with no lack of volunteers to gain "...the opportunity to improve their own medical skills."²⁰

Royle (2000) was blunt in his assessment of the quality of medical care of British soldiers, particularly in the early days of the Crimean War, "The most fortunate casualties were those who received direct hits...they died instantly and were beyond suffering."²¹

Another challenge for the British Army Medical Department was the lack of executive authority it wielded to make needed changes. Because of this difficulty, the Department had little ability to have influence because they were not included in the planning of both the military and domestic actions of the army.²² Predictably, this issue led to the Medical Department being consistently ill-prepared when needed and they would become unjustly vilified by the military command, the press and ultimately, the British public.

As noted earlier, the main cause of loss of life for British soldiers during the Crimean War was disease, approximately 75 percent, that was most likely due to poor sanitary conditions at camps and hospitals. The most typical diseases causing loss of life were diarrhea and continued fever (likely typhoid) which accounted for nearly 40 percent of all deaths by disease (22.4% and 17.5%, respectively) and cholera and dysentery made up another approximately 42 percent of deaths (27.7% and 13.9%, respectively). Thus, only four diseases made up the vast majority of disease-related deaths of British soldiers during a very short period of time (nine months).²³ Unique to the Crimean war was that there was a worldwide cholera pandemic occurring during the length of the war and due to the medical profession's lack of knowledge surrounding

²⁰ Royle, 205. As was discussed in the chapter, the opportunity by surgeons to engage in skill development and innovation was often a by-product of wartime through a captive population (grievously wounded and ill soldiers).

²¹ Royle, 223. The author also put forth further information on the medical care of soldiers, writing "For those who received abdominal wounds or had limbs torn off there was a long slow wait for the orderlies to pick them up off the battlefield and then an uncertain future as doctors patched them up behind the lines. Many survived the operations only die a few days later from post-operative infection, for battlefield surgery was still a dirty business. Surgeons operated with unsterilized instruments, wounds were dressed with lint from discarded linen, and operating tables were usually encrusted with the blood and detritus from previous patients."

²² Badem, 338.

²³ Badem, 340.

contaminated water as a source of spread, it is understandable how cholera outbreaks would follow the different armies' movements.²⁴

The Crimean War produced numerous examples, at least to those who were influencing the “desire to help” upon the start of the American Civil War, of both what to do and what *not* to do relating to ensuring the health of soldiers. What is also clear from the review of literature in this area is that it was easy to point fingers and make judgments on how processes should work when they do not. One hypothesis I argue is that there was a need for an outside force to instigate change, specifically related to medical concerns in terms of effective management of the health of soldiers in both the Crimean and the American Civil War era. It appears through the literature focusing on medical and sanitary practices during the Crimean War that Florence Nightingale was such an outside force. Researchers argue that it was the unrelenting mismanagement of resources by a Medical Service that was “a law unto itself” made up of doctors who believed “they knew best” that was a powerful causal factor in the mortality rates of British soldiers.²⁵ When Nightingale attempted to assist the Medical Service with her cadre of nurses, those in charge were resentful of their presence and made their work of providing improved sanitary and health to wounded and disease-ridden soldier much more challenging.²⁶ It should also be asserted that the impact of the press, particularly *The London Times*, which has been noted to be Florence Nightingale’s benefactor, was part of the outside influence to break through the paralysis and indecision of the British Medical Service. The outcry from the British public upon learning of the conditions of their soldiers, via the press, created the opening for women such as Nightingale. Finally, it is also argued that the introduction of women such as Nightingale and her staff as well as her focus on science as a source of information to enact change also challenged the status quo of “old medicine” that existed at that time.²⁷

²⁴ Badem, 341.

²⁵ Badem, 253.

²⁶ Badem, 253.

²⁷ Badem, 335. The vast majority of the literature surrounding Florence Nightingale and her work during the Crimean War comes across as almost heroic in nature. This author argues that while Nightingale’s influence was valuable and admirable, her work during the war did not cause the reduction in mortality long thought to be the case. The author states instead that his systematic evaluation of primary sources shows that the mortality at least one hospital that Nightingale purportedly strongly impacted reflected very closely with what was going on in terms of sanitary

The Relevance of the Crimean War in Terms of the American Civil War

As noted previously in this chapter, the Crimean War could be considered the first modern war. While the war was occurring, the United States sent military officers to be observers related to many parts of the war effort, including the medical services.²⁸ At the time, the innovations happening with the British Army Medical Department were specifically noted to be a process for use during a potential American armed conflict; such innovations were later used by the Federal army during the American Civil War. However, learning information about innovations that would be of great use is quite different from the actual *implementation* of such innovations. Per review of the literature related to medical services provided by the Union army at the beginning of the American Civil War, it is apparent that such knowledge had not been utilized. Instead, those responsible for the health of Union soldiers fell into the same type of trap as the British in terms of expectations related to issues such as the length of the war and the ease by which it would be to defeat Confederate forces. As will be discussed in the next section, in relation to maintaining the health of the Federal Army, like the Crimean war, it required an outside force to bring about change.

conditions at the frontlines of the war. Thus, the author argues that the improvement in the overall health of soldiers in the Crimean war linked with a policy to not evacuate patients with a poor prognosis were the main factors lead to the decrease in mortality rates in the base hospitals, instead of any significant changes instituted locally – such as Nightingale’s work. The initial findings of the first British Sanitary Commission established that the British army was getting the sanitary situation under control. The author comments that although the principal medical officer of the Royal Navy, Deputy Medical Inspector David Deas, “...admired Nightingale, he saw ‘dozens of things placed at her credit which...she had nothing to with; but such is the fashion of the day [she] now gets credit for having both suggested and executed.’” The author concludes by reiterating that Nightingale was “...an extremely influential individual and that many people the world over have benefitted in some way from her later achievements which would have been fashioned in part by the experience she gained during the war.” However, the author argues that she was not responsible for the improvement of the health of the British army at the front as this had previously been happening before the Sanitary Commission, for which she claimed was developed via her influence, had arrived in the Crimea in April 1855.

²⁸ Badem, 258.

The United States Sanitary Commission (USSC)

Overview

In her book, *My Story of the War*, Mary Livermore's memoir about her experiences as a Union Army nurse, she wrote about the state of confusion and lack of preparedness as men began to arrive to designated areas to begin their military service to the Union.²⁹ She noted that "...for no telegram announced the coming of the hungry men, nor for long and weary months was a system devised for the comfort and solace of the soldiers, as they passed to and from the battle-field. Many became ill or exhausted from exposure, but no relief was furnished."³⁰ The author was quite specific in her description of soldiers arriving to their specific camps:

Rarely were preparations made for their reception. Men stood for hours in a broiling sun, or drenching rain, waiting for rations and shelter, while their ignorant and inexperienced Commissaries and Quartermasters were slowly and painfully learning the duties of their positions. At last, utterly worn out and disgusted, they reached their camps, where they received rations as unwholesome as distasteful and endeavored to recruit their wasted energies while lying upon rotten straw, wrapped in a shoddy blanket. Such fearful misery contrasted sadly with the cheerful scenes they had left, and if it did not cool their enthusiasm for the national cause, it developed an alarming prevalence of camp diseases, which might have been prevented, if efficient military discipline had prevailed.³¹

Livermore also told of the conditions of medical services in the early days of the war:

The hospital arrangements, in the early part of the war, were as pitiful and inadequate as were the facilitations for transportation. Any building was considered fit for a hospital; and the suffering endured by army patients, in the unsuitable buildings into which they were crowded during the first year of the war can never be estimated...There was no trained, efficient medical staff. There were no well-instructed nurses, no sick-diet kitchens, no prompt supply of proper medicines, and no means of humanely transporting the sick and wounded. Our entire military and medical systems, which seemed well high perfect at last, were created in the very midst of the war.³²

²⁹ Mary A Livermore. *My Story of the War* (New York: Arno Press, 1972), 123. At the outbreak of the Civil War, Mary Livermore volunteered her services to the local Sanitary Commission and served the wounded in hospitals, gathered and dispatched thousands of bushels of vegetables to the fronts, and organized money-raising fairs.

³⁰ Livermore, 124.

³¹ Livermore, 124.

³² Livermore, 124-125. The author knows this information because she maintained correspondence with a variety of soldiers that she assisted throughout the war and provided excerpts from their letters. 1 in particular, from a volunteer of the Fifth Wisconsin, writing from Camp Griffen, near Washington, D.C., November 12, 1861, wrote, "I suppose you would like to hear what we are doing in Virginia in the way of bringing the rebels to subjection. As yet we have done little fighting but have lost a large number of men. They are dying daily in the camps in hospitals, from pneumonia, dysentery, and camp diseases, caused by severe colds, exposure, and lack of proper food when ill. We have taken very heavy colds lying in our arms in line of battle, long frosty nights. For two days and nights there was a very severe storm, to which we were exposed all the time, where in shoddy uniforms and protected only by shoddy blankets, and the result was a frightful amount of sickness. We have about 30 in our regiment hospital who will

Dr. Charles J. Stillé was a lawyer who had been a prominent member of the Philadelphia Associates of the United States Commission.³³ He, like many of the men selected for such positions, was someone who believed in the importance of science as well as being part of a movement that put forth the important of “efficiency” – a nod to the beginnings of the second Industrial Revolution that would start in earnest after the conclusion of the American Civil War. After the Civil War formally ended, Dr. Stillé was asked to write a history of the United States Sanitary Commission’s work during the Civil War.³⁴

Similar to the emergence of the Crimean War, the American Civil War and the preparations for engaging in such an endeavor were done in a hasty manner. Such haste existed in all parts of the Union fighting force and created significant obstacles in raising an adequately efficient army; such obstacles were a lack of centralized authority and a lack of an overall sanitation system.³⁵ Stillé wrote, “Gross neglect prevailed, therefore, in the recruiting camps, partly owing to a total ignorance of sanitary laws, partly to the feebleness and defectiveness of the military organization, and partly to the incompetency of the officers, without whose intelligent and zealous co-operation nothing could be done.”³⁶

For Stillé, the lessons from the Crimean War could not be more evident. He viewed the work of the British Sanitary Commission as invaluable in the development of a strategy in managing the “...health, comfort, and efficiency of armies.”³⁷ He indicated that the experiences

never again be good for anything, if they live. Our hospitals are so bad that they men fight against being sent to them. They will not go until they are compelled, and many brave it out and die in camp. I really believe they are more comfortable and better care for you camp, with their comrades, than in hospital. The food is the same in both places, in the medical treatment the same when there is any. In the hospital the sick man lie on rotten straw; in the camp we provide clean hemlock or pine boughs, with the stems cut out, or husks, when we can “jerk” them from a “secesh” cornfield.”

³³ “The Late Dr. Charles Janeway Stillé,” *The Pennsylvania Magazine of History and Biography* 23, no. 3 (1899), 390.

³⁴ Charles Stillé, *History of the United States Sanitary Commission Being the General Report of Its Work During the War of the Rebellion* (New York: Hurd and Houghton, 1868), iii.

³⁵ Stillé, 24-25.

³⁶ Stillé, 25.

³⁷ Stillé, 27. At the time of the publication of this general report, Florence Nightingale was being revered for her role in the decrease of mortality of soldiers, although the author did hedge his compliments. He wrote, “We were left to no vague conjecture as to the causes which produced the fearful mortality of the allied [specifically British] troops...Public opinion in England, indignant and horror-stricken at this frightful result, long before the war closed, called loudly for investigation and remedy...the remedies had been recently given to the world in parliamentary

of the Crimean War, for those who knew it, would provide a template in mitigating the management of health via use of "...strict sanitary measures, which in strict accordance with the general laws of health should be adopted to provide for the safety of an army."³⁸ Another issue that was discovered by examination of the Crimean War experience was that the British military command structure was considered overly rigid in the administration of an army medical department – much was said about the military's inflexible observance of regulation and standards while soldiers were dying.³⁹ Yet another challenge was the inability of the British medical staff to impart changes due to lacking any administrative power to introduce, order and implement sanitary efforts.

Stillé also recognized the importance of the local and national press in regard to gaining support to enact what he and his fellow Commissioners viewed as necessary changes to health and sanitation for the Union Army, as put forth by the British Sanitary Commission documents. He explained that "the importance, therefore, of rousing public opinion to the absolute necessity of forcing upon the government the adoption of precautionary measures to ensure the lives and safety of our troops in camps, in barracks and in hospitals, was the practical lesson which was taught by the Crimean experience..."⁴⁰ Such support led to a change in process via the emergence of the British Sanitary Commission. In 1855, the Commission was given unlimited power to change the sanitary conditions for the British army, including both in camps and hospitals.⁴¹ The results were considered to be the "grandest contribution ever made by science to the practical art of preserving health among men required to live together in large masses."⁴² The British Sanitary Commission were able to determine what types of diseases exists in camps and hospitals, provide instructions for their removal and assure that their expectations were completed as instructed. Such a process was considered "extraordinary, almost revolutionary"

reports, in the works of *professional men* [italics added], and especially in the invaluable testimony of Miss Nightingale..."

³⁸ Stillé, 28.

³⁹ Stillé, 29.

⁴⁰ Stillé, 30. The topic of use of the press in gaining and maintaining support for the ideas that would be put forth via the United States Sanitary Commission will be explored in a later section.

⁴¹ Stillé, 30.

⁴² Stillé, 31.

from past actions from military around the world and prevented thousands of deaths will be viewed as its greatest gift to history.⁴³

While many in the United States viewed the British Sanitary Commission's efforts as unparalleled, the lack of preparedness that existed at the very beginnings of the American Civil War seemed to doom the Union army to a similar experience as the British army in the early days and months of the Crimean War, as mentioned earlier. Like the British Army Medical Department, there was no awareness within the Union Army medical organizations of the need for structured, science-based sanitary process for military camps and hospitals when war had initially broken out. Even with United States military sent to observe the processes of military action in the Crimea, it appears that little was either learned or retained in terms of medical care for soldiers who would form the Union military nine years later.⁴⁴

Stillé argued that Union soldiers soon learned that strong military discipline is essential for efficiency but also their ongoing safety as part of a larger organization as an army.⁴⁵ While there were attempts in maintaining order and discipline, within the ranks of soldiers who suffered through the incompetence of their officers, hope was being lost and replaced with "...a dangerous spirit of mutiny."⁴⁶ The high spirits and strong motivation to defend their country began to wane for Union soldiers and was being replaced with complete distrust of the Union military organization. This situation was noticed most obviously with the disturbing occurrence of certain diseases, (i.e., dysentery) that led experienced officers in the Union army to expect that "...fifty per cent of the volunteers, before the end of the summer [1861], would fall victims to diseases entirely preventable by wise measures of precaution rigidly enforced."⁴⁷

⁴³ Stillé, 32.

⁴⁴ Stillé, 33. Stillé writes that "No such extraordinary powers as were conferred upon these [British] Commissioners, and fully exercised by them when it was necessary to accomplish there object, were ever granted by the Government of the United States to any body of men outside of the regular military organization; but, perhaps, many will recall periods during the [Civil] war when such a despotic authority wisely exercised by such a Commission as that sent to the Crimea, would have saved thousands of lives to the country and millions of dollars to its treasury."

⁴⁵ Stillé, 34.

⁴⁶ Stillé, 34.

⁴⁷ Stillé, 34. Stillé's focus is on Virginia in this section of his commentary about the lack of sanitary conditions with the initial built-up of the Union forces.

As commented earlier, the initial motivation to help these Union soldiers came from families as well as local charities and women's groups, particularly in the area of medical care. One such example was the Woman's Central Association of Relief (WCAR), a New York-based ladies' aid society that gathered and dispensed supplies to Union soldiers almost immediately upon the beginning of the war.⁴⁸ This group was presided over by the renowned Unitarian minister and upper-class reformer Henry Whitney Bellows, who was subsequently elected as its president and quickly took over the entire organization.⁴⁹ He and others that were referenced as "...some enlightened men" who were viewed as having been taught by their professions to value preventive hygienic methods, came together to share their beliefs as a voluntary group with the Union military forces for the good of Union soldiers.⁵⁰ Bellows and three other doctors representing a number of aid societies went to Washington, D.C., to meet with government officials to see how they could assist after the Union army medical purveyor in New York declined offers of supplies as they were not considered needed.⁵¹ The group visited with Cabinet members such as Secretary of War Simon Cameron, top Army officials and President Lincoln himself to convince them of the need for a more efficient and thorough process of sanitation within the Union army, using data from past wars, particularly the Crimean War, that demonstrated that illness was the main killer of soldiers, not battlefield injuries.⁵² On June 9, 1861, Secretary Cameron issued an order to create the United States Sanitary Commission (USSC), providing it with the authority to inspect, report, develop standards and provide resources with the cooperation of the secretary of war and the Union medical department to improve the health and sanitation of the Union army.⁵³ The order was signed by President Lincoln on June 13, 1861.

⁴⁸ Kathryn Shively Meier, "U.S. Sanitary Commission Physicians and the Transformation of American Health Care," In *So Conceived and So Dedicated* (Fordham University Press, 2015), 25.

⁴⁹ Meier, 25.

⁵⁰ Stillé, 34.

⁵¹ Glenna Schroeder-Lein, *The Encyclopedia of Civil War Medicine* (London: Taylor & Francis Group, 2008), 315.

⁵² Meier, 25.

⁵³ Schroeder-Lein, 315.

The goal of the USSC was not to supplant the Union government as the authority over the care of soldiers, but to shape the narrative that it would be the more effective in aiding the government in the direction of humane treatment of Union soldiers.⁵⁴ To do so, Bellows brought together a number of well-regarded thinkers to create civilian intervention in the military/medical areas of the Union army.⁵⁵ While many of the founding members of the USSC were physicians, there were other individuals who played key roles in the organizational structure of the USSC such as the social leader and city planner Frederick Law Olmstead as general secretary who had the task of being the operations manager of the commission.

While the new commission immediately engaged in visits to Union army camps around Washington, D.C., it discovered that such camps struggled with overcrowding, exposure, unsanitary sewage disposal and little resistance to infectious diseases. In April 1862, the Commission put forth a variety of reforms that were part of a medical reform bill pushed through Congress, but their most important was the decision to pressure then Secretary of War Edwin Stanton to remove the Surgeon General at the time (General Clement Finley); he opposed any type of scientific advance within the Union Army Medical Department.⁵⁶

In Dr. William Hammond, the USSC found their Union Surgeon General. A doctor who had a strong science background as well as an extensive military career, he was the first surgeon general appointed by merit versus seniority.⁵⁷ He had served effectively in the U.S. Army on the western frontier the decade prior to the Civil War and had been recognized by the newly-created American Medical Association (AMA) for his research on health and hygiene.⁵⁸ He resigned from the Army in 1860 to take a professorship at the University of Maryland in the anatomy and physiology department – as many physicians with similar training and beliefs did at the time. He

⁵⁴ Stillé, 36. The author also put forth that the USSC believed that “they had discovered the root of the evil in the want of an effective organization of nearly all the measures of the Government concerning the health and comfort of the soldier.”

⁵⁵ Schroeder-Lein, 315.

⁵⁶ Shauna Devine, *Learning from the Wounded: The Civil War and the Rise of American Medical Science* (Chapel Hill: The University of North Carolina Press, 2014), 13.

⁵⁷ Jeffrey S Reznick, and Kenneth M Koyle, “Combat and the Medical Mindset—The Enduring Effect of Civil War Medical Innovation,” *The New England Journal of Medicine* 372, 25 (2015):2378.

⁵⁸ Reznick and Koyle, 2378.

reenlisted in the Union Army as an assistant surgeon, but with powerful allies within the USSC, he was promoted to the Surgeon General position on April 28, 1862. Dr. Hammond's focus on scientific reasoning as well as efficiency was an important decision point for his promotion and likely support of any USSC changes such the use of civilian medical inspectors.

The USSC Inspectors

The 1862 medical reform bill also called for a permanent group of inspectors to examine sanitation efforts in hospitals and camps, as recommended by the USSC. Even though the strength of the Army had doubled in the beginnings of the Civil War and the population of general hospitals for wounded soldiers would quadruple, there had not been a corresponding increase in military medical inspectors. The USSC argued that making use of civilian physicians would be acceptable due to the lack of resources within the Union army medical department for such a project. The USSC had the goal of finding the "best and ablest members of the medical profession," and only asked for short time stints for men that were unable to be away from their main duties for a significant time period but interested in helping "the national cause and that of humanity."⁵⁹ The medical committee within the USSC began the process of soliciting more than one hundred physicians throughout the Union and attained the services of Dr. Henry G. Clark as Inspector-in-Chief.⁶⁰ Of the one hundred sought, sixty entered the service during October 1862 and began the process of special inspection of Union military hospitals in all parts of the country.⁶¹ The goal of these 60 new inspectors was to "...secure a high standard of professional ability in the management of the Military Hospitals, and to detect and remove such defects in their administration or care, as were susceptible of remedy or improvement."⁶² Also, the USSC put forth that since these inspectors had significant private practice obligations, each surgeon taking on an inspector position would only dedicate one month for the actual inspection work. These

⁵⁹ Stillé, 441.

⁶⁰ Stillé, 441.

⁶¹ Stillé, 441.

⁶² Stillé, 441-442.

inspectors were also assigned by the Inspector-in-Chief to groups of hospitals located in a specific area with the goal of avoiding assignments that were very distant from their homes.⁶³

Particular areas of focus were given to inspectors. For example, they were to examine the construction and location of hospitals, the number and “character” [quotes added] of the staff, surgeons and nurses, the number of patients, the type and severity of the illnesses that patients were suffering, mortality rates, quality of hospital food, and numerous other issues related to the quality of care.⁶⁴ All reports written by the inspectors would be communicated confidentially to the Surgeon General for review. Overall, the Union hospitals were viewed as being satisfactory overall, much to the USSC’s surprise. The biggest challenge found by inspectors was the lack of appropriate hospital buildings; the evidence provided by all of the inspectors was consistent in terms of the need to create hospitals only in buildings specially built for such a purpose.⁶⁵

The overall goal of the work of the medical inspectors was to improve the comfort and treatment of patients in Union military hospitals. Since the inspectors were considered to be leaders in the medical profession, the USSC hoped that dialogue between such individuals with enlisted physicians would positively impact the quality of patient care. Inspectors were typically welcomed into hospitals by the medical officers in charge and the inspectors found “...among them material for a most efficient corps of Hospital Surgeons.”⁶⁶ The greatest need for improvement was of the hospital structures themselves, and when hospitals were converted to the Pavilion system, mortality rates for patients within Pavilion hospital designs were far less than hospitals not making use of such a design. Statistical evidence as put forth by the USSC as well as experience gathered by European hospital practitioners demonstrated that hospitals located in crowded urban centers with hundreds of patients lent themselves to high rates of disease.⁶⁷ This type of hospital was not a significant change, but it was a strategy to systematize existing hospital structures to make them easy to clean and well-ventilated. Often, older hospitals that did not

⁶³ Stillé, 442.

⁶⁴ Stillé, 442.

⁶⁵ Stillé, 442.

⁶⁶ Stillé, 444.

⁶⁷ Jeanne Kisacky, "The Hospital Building as a Means of Disease Prevention, 1700–1873," In *Rise of the Modern Hospital: An Architectural History of Health and Healing, 1870-1940*, (Pittsburgh, PA.: University of Pittsburgh Press, 2017),14.

have the capacity to be completely redesigned incorporated the pavilion model by building multiple, separate pavilions. New York Hospital, where Carlton Burgan was treated, was built in 1791 with one original building and it was transformed into a pavilion-style hospital through the addition of multiple buildings by 1859, lowering the risk of infection and increasing positive patient outcomes.⁶⁸

Dr. Buck and the USSC

As noted in Chapter 1, Carlton Burgan sustained severe facial damage and speech difficulties from mercury poisoning. He was transferred to Union General Hospital No. 1 in Frederick, Maryland on August 3, 1862. He would have a chance meeting with a USSC inspector that would change his life.

Dr. Gurdon Buck was an USSC inspector who had committed to working for the Commission from September 1, 1862, to May 1, 1863.⁶⁹ Dr. Buck reportedly was sent by the USSC after the Antietam and Monocacy battles and provided significant help through his surgical work and advice. Dr. Buck certainly met the criteria to be a USSC inspector. Dr. Buck was born and raised in New York and obtained his medical degree from the College of Physicians and Surgeons in 1830. After serving as an intern on the medical service of New York Hospital for eight months, he went to Europe for further training, similar to others of his generation who were grounded in the scientific method of medicine. He studied in the continental clinics of Berlin, Paris, and Vienna for two and one-half years prior to returning to New York. In 1833, Dr. Buck was appointed visiting surgeon to the New York Hospital. Dr. Buck was a revolutionary surgeon who, beyond his landmark work in facial reconstructive surgery, also developed orthopedic devices that were first implemented in the Civil War and continued to be used over 100 years later. He was likely one of the first in medical history to use pre-and postoperative photographs of his patients to demonstrate the results of plastic and reconstructive surgery procedures as well as

⁶⁸ Kisacky, 39.

⁶⁹ Stiles, 551. This information is taken from Appendix No. 7, List of the Special Inspectors of the General Hospitals of the Army.

created new operative plastic surgery techniques.⁷⁰ Finally, he was also known for his charitable work and openness for collaboration – providing a unique opportunity for Carlton Burgan.

On December 17, 1862, Carlton Burgan was formally discharged from the Union Army. On December 31, 1862, Carlton was admitted into the New York Hospital to begin his work with Dr. Buck.

⁷⁰ Blair O Rogers, “The Development of Aesthetic Plastic Surgery: A History,” *Aesthetic Plastic Surgery* 1 (1976): 23. Dr. Buck made numerous contributions to plastic surgery such as creating new surgical techniques to correct congenital deformities such as harelip, alveolar clefts, macrosomia and macrocheilia. His treatment of burns was based on an understanding of the challenges of correcting deformities related to scar tissue, like Carlton Burgan.

Chapter 3

“WE CAN REBUILD THEM”

As noted at the end of Chapter 2, an encounter with a USSC inspector gave Carlton Burgan an opportunity to move away from the horrific damage caused by a likely “old medicine” regimental physician to regain functioning of much of his face. This chapter describes the five surgeries that were performed by Dr. Buck to repair Carlton’s face with the goal of providing him with a chance to live a normal life as portrayed by the societal expectations of the time. An exploration of the experience of Civil War victims, specifically soldiers is given. Finally, the chapter argues that the timeframe for the development of modern plastic surgery should be reconsidered.

The Five Reparative Surgeries

Preparation for the First Surgery

After reviewing Carlton’s case, Dr. Buck acknowledged the need, prior to any surgery, that “an artificial substitute should be adapted to the cavity of the mouth to supply the place of the right maxillary bone and afford a solid support to the soft parts that would require to be transposed for the reconstruction of the mouth and the closure of the cheek and nostril.”¹ Dr. Buck goes on to discuss the collaboration between himself and Mr. Thomas B. Gunning in terms of supplying Carlton with a dental prosthetic, which he saw as a significant challenge.² A revolution in dentistry allowed the development of such prosthetics. In 1851, Nelson Goodyear developed and patented a manufacturing process for making hard rubber, which he named vulcanite.³ The development of this hard type of rubber led to the first denture base being

¹ *Transactions of the Medical Society for the State of New York for the Year 1864* (Albany, New York: Comstock & Cassidy, Printers, 1864), 175.

² *Transactions*, 175. It is important to communicate the level of esteem in which Dr. Buck held Mr. Gunning. He began with, “Mr. Thos. B. Gunning, an eminent dentist, residing at No. 41 East 21st street, to whom the case was submitted, generously undertook the execution of this delicate and difficult work. The result which he has achieved, after patient and persevering labor, displays remarkable ingenuity and skill, and cannot fail to elicit universal admiration.”

³ Frederick A. Rueggeberg, “From Vulcanite to Vinyl, a History of Resins in Restorative Dentistry,” *The Journal of Prosthetic Dentistry* 87 (4): 365.

created from vulcanite in 1853.⁴ Mr. Gunning ended up creating two vulcanite dental prosthetics for Carlton prior to the first surgery.⁵ Dr. Buck described the fixtures as follows:

the fixtures which he [Mr. Gunning] adapted consisted of two principal pieces, superposed, when in place, one above the other. The upper, or nosepiece, occupied the nasal fossa, and filled out the right half of the nose. It was hollow and open in front and behind for the free passage of air. The lower, or palate-piece, occupied the roof of the mouth, and supported upon its upper surface the nosepiece. It consisted of a plate stretching across the roof of the mouth and supplying the dental arch at its margin on the right side, together with the teeth belonging to it. Its left margin took support from the existing teeth of that side, some of which it embraced. The surfaces of both pieces, where they came in contact with the walls of the nasal and buccal cavities, were channeled with furrowed lines to facilitate the flow of the secretions back into the fauces. Their accurate adjustment to each other, and to the cavities they were adapted to occupy, permitted them to be worn without causing any irritation. The light and indestructible nature of the material of which the pieces were constructed adapted them admirably to their present use.⁶

Carlton was then tasked with wearing the fixtures and he discovered that he could wear them continually with comfort and was able to remove and replace them without pain.⁷ As a result of the fixtures, Carlton's speech improved as well as his ability to chew and swallow "that afforded him the highest satisfaction."⁸

⁴ Rueggeberg, 366. Per the author, initial manufacturing tools were extremely cumbersome, weighing as much as 1200 pounds. Typically, fourteen strips of prepared rubber material were placed into a master mold, against a master cast, and steam-heated under pressure. The resulting denture base was then created. The process was extremely technique-sensitive and often very dangerous. However, they were also a third of the cost of metal or ceramic dentures of the time. Thus, Dr. Buck's comments about Mr. Gunning's skills seem very appropriate and Carlton was again fortunate to have highly skilled practitioners working on his case.

⁵ Gurdon Buck, *Contributions to Reparative Surgery: Showing Its Application to the Treatment of Deformities, Produced by Destructive Disease or Injury; Congenital Defects from Arrest or Excess of Development; and Cicatricial Contractions from Burns* (New York: D. Appleton and Company, 1876), 36.

⁶ Buck, 36-38.

⁷ Buck, 38.

⁸ Buck, 38.



Figure 3: Carlton Burgan's dental fixtures.⁹

Dr. Buck also made another decision that was still in its infancy but based on scientific evidence. He decided to have Carlton moved to an outbuilding on New York Hospital's premises that had not been used for several weeks. His goal was to prevent Carlton from developing erysipelas, which is a bacterial infection of the upper layer of skin with symptoms including fevers, chills, shivers and high temperatures.

Statistical evidence as well as experience gathered by European hospital practitioners demonstrated that hospitals located in crowded urban centers with hundreds of patients lent themselves to high rates of disease.¹⁰ As Dr. Buck trained in numerous European hospitals, it is likely that he was aware of this knowledge. Both American and European hospital physicians concluded that the conditions of the hospital's buildings caused disease. This discovery led to changes in hospital architecture and hygiene, with a focus on creating "preventive structures" such as the pavilion-ward hospital.¹¹ This type of hospital was not a significant change, but it was a strategy to systematize existing hospital structures to make them easy to clean and well-ventilated. Often, older hospitals that did not have the capacity to be completely reconfigured incorporated the pavilion model by building multiple, separate pavilions. New York Hospital, where Carlton was treated, was built in 1791 with one original building and it was transformed into

⁹ Buck, 36-37.

¹⁰ Jeanne Kisacky, "The Hospital Building as a Means of Disease Prevention, 1700–1873," In *Rise of the Modern Hospital: An Architectural History of Health and Healing, 1870-1940*, (Pittsburgh, Pa.: University of Pittsburgh Press, 2017), 14.

¹¹ Kisacky, 23.

a pavilion-style hospital through the addition of multiple pavilions by 1859.¹² Due to the renovations completed by New York Hospital and Dr. Buck's science-based background, Carlton's risk of infection was much lower than would have been had he been treated by an "old" treatment standard.

The First Surgery

The first surgery was done on March 26, 1863 and began with the preparation of Carlton's left half of his upper lip. His lip itself was then divided from his upper jaw to his lip and cheek as far outward as his molar teeth.¹³ Carlton's lip was then cut through its entire thickness from the point where it joined the left ala nasi, on a parallel line with his lip border toward the middle of his cheek. The newly created lip flap was then trimmed square at its free extremity.¹⁴ The second step of this surgery was to prepare the now redundant underlip as a support for the destroyed right half of Carlton's lip with the goal of creating a more circular shape to his mouth.¹⁵ The third step was to close the open space in Carlton's right cheek via the transposition of the parts impacted by the second step of the procedure. The operation took approximately three hours due to the frequent pauses needed to maintain the effect of the anesthetic used (ether). No bandage was applied, and warm-water dressings were placed on the repair.¹⁶ It took Carlton approximately 17 days to recover from the first surgery and the result is shown below:¹⁷

¹² Kisacky, 39.

¹³ Buck, 38.

¹⁴ Buck, 38.

¹⁵ Buck, 39.

¹⁶ Buck, 39-40. The method of keeping the new structures secured was via silver-wire and fine-thread, inserted close together. Also, before closing, the many ligatures that had been applied to bleeding vessels were loosely twisted into a skein and brought out to the surface at the outer angle of the transverse incision that allow Carlton's right cheek to come forward and meet the new under-lip flap Dr. Buck created.

¹⁷ Buck, 41.



Figure 4: Pictorial results of Carlton Burgan's first surgery.¹⁸

The Second Surgery

Carlton's second surgery was completed on April 23, 1863. The goal of this surgery was to lengthen and restore Carlton's right half of his mouth to a more natural angular shape. The surgery was performed according to the method that Dr. Buck employed for the first surgery.¹⁹ After the surgery, Dr. Buck reported that the "improvement thus effected was highly satisfactory, the symmetry of the mouth, and its normal dimensions, being in a good degree restored, and the pouting condition of its border remedied."²⁰ The result of Carlton's second surgery is provided below:²¹

¹⁸ Buck, 41.

¹⁹ Transactions, 178-179. After Carlton was anesthetized, the right half of his mouth was circumscribed by an incision in the line of the vermilion border that divided the thickness of his lip and extended further toward the left angle of his mouth in the under lip than in his upper lip. An obtuse angled flap was created, and the detached vermilion border was then seized by a hook and drawn to the right side, filling up the new angle of Carlton's mouth and secured by a silver wire suture, Per Dr. Buck, the rest of the vermilion border adjusted itself with perfect accuracy into its new position and was secured by twelve fine thread sutures.

²⁰ Transactions, 179.

²¹ Buck, 42.



Figure 5: Pictorial results of Carlton Burgan's second surgery.²²

At the end of Carlton's second surgery, he had been wearing his dental fixtures for over six weeks. It was determined that he would need to remove them due to the potential damage they may create from pressure placed by the palate piece upon his left upper teeth. The pressure was caused from the use of pieces of sponge between Carlton's right cheek and the artificial teeth for the purpose of counteracting the contraction of newly formed scar tissue. To repair the damage, three different cuts were made in the interior of Carlton's mouth, without anesthetic.²³ Dr. Buck was assisted by Mr. Gunning, who replaced the dental fixtures into Carlton's face.

The Third Surgery

Carlton's third facial reconstructive surgery occurred on June 18, 1863 at 3 pm. The goal of this surgery was to close the remaining opening in Carlton's right cheek and cover the adjoining side of his nose with a patch of skin that was taken from the left side of his forehead.²⁴

²² Buck, 42.

²³ Transactions, 180. After the dental fixtures had been removed, the newly created positioning of Carlton's facial structures underwent changes related to the contracting of new scar tissue from the first surgery. New bands of scar tissue had formed in the inside of Carlton's mouth. When he would open his mouth, these bands would become tense and prevent the separation of his teeth beyond approximately an inch. He also had another adhesion on the right side of his chin, between the cheek and lower jaw, which was another obstacle in Carlton being able to open his mouth. These issues needed to be rectified so Carlton could wear the fixtures and prior to any additional reconstructive surgery. These bands were cut so that Carlton's upper border of his lip relaxed.

²⁴ Buck, 44.

The opening involved the right half of Carlton's nose below the nasal cavity and the nearby cheek as far out as its middle. The lower border of his facial opening went from the inferior edge of his left nostril horizontally across to the middle of his right cheek and formed the upper part of the new underlip patch.²⁵ The skin from Carlton's forehead was used to construct a new right cheek and nostril and lint was used as a compression dressing"²⁶ By June 24, 1863, the edges of Carlton's forehead skin patch had "united at all points" and he had little inflammation or swelling around the surgical site.²⁷

The Fourth Surgery

As Carlton was healing from his third surgery, a bulging fold had developed at the upper part of his nose and between his eyebrows due to the doubling of the pedicle (the skin flap of Carlton's forehead patch used to construct his new right cheek and nostril). This issue was considered a "conspicuous disfigurement" and the goal of the fourth surgery was to remove it.²⁸ On August 8, 1863, Dr. Buck removed the excess skin and lessened the excessive thickening of Carlton's right nostril.²⁹ The results of the fourth surgery were considered an improvement by being now only one-third the size of the original wound. However, "the shrinkage which the nose-patch had undergone had produced a deep furrow along the cicatricial (scar) line, occupying the lower third of the ridge of the nose. The furrow terminated below, at the apex of the nose, in a deep, unsightly notch."³⁰ The repair of this furrow was the goal of Carlton's fifth and final surgery.

²⁵ Buck, 44-46. The patch of Carlton's forehead skin was "brought around edgewise from left to right and above downward till it reached its new location on the right side of the nose and cheek, where it was adjusted with its straight edge along the entire length of the external ridge of the nose and secured there by three pin sutures, inserted at equal distances apart, and additional intermediate fine-thread sutures." Even though the third surgery took almost three hours, Carlton did not suffer any negative consequences from the long use of ether.

²⁶ George Worthington Adams, *Doctors in Blue: The Medical History of the Union Army in the Civil War*, (New York: H. Schuman, 1952), 116.

²⁷ Buck, 46.

²⁸ Buck, 48.

²⁹ Transactions, 184-185. Fine sutures that were inserted close in space were used to close Carlton's wound. Those sutures were removed on the day after surgery and all remaining ones removed by the fourth post-operative day.

³⁰ Buck, 49.

The Fifth Surgery

Carlton's final facial reconstructive surgery took place on October 27, 1863.³¹ Within six days, his sutures were all removed, and Dr. Buck considered the surgery to have achieved "a great improvement in the appearance of the nose."³² While healing, Carlton continued to stay at New York Hospital. He was in good health and worked as an assistant nurse in a large ward. The use of relatively healthy patients, such as Carlton, as hospital workers became more common with the establishment of the Invalid Corps within the Union Medical Department in the spring of 1863.³³

In terms of the outcome of his five surgical procedures, Carlton still maintained an enlargement of the nasal patch constructed from skin from his forehead, which gave the right side of his nose a "plump" form."³⁴ When the patch was pricked, the sensation was no longer referred to the forehead as it was initially but focused on the true area of irritation. Dr. Buck commented that the scar tissue on the inside of Carlton's right cheek had been prevented from contracting "by the persevering efforts of the patient, who had faithfully executed the directions given him, to introduce one or more fingers into the mouth and stretch the bands to their utmost limit, and to repeat the operation several times daily."³⁵ In regard to dental prosthetics, after the five surgeries, Carlton only used the palate-plate that covered the roof of his mouth and provided the lost teeth of his right side; he no longer needed the nasal prosthetic. Carlton had no difficulties wearing the palate-plate and was able to eat "all kinds of food" and his speech did not demonstrate much of a defect if he wore the prosthetic.³⁶ Below is the final result for Carlton

³¹ Buck, 49. Dr. Buck did two parallel incisions on each side of the furrow. His incisions penetrated deep in converging planes so that both sides of the furrow and the notch below it was included. The opposite edges of the wound were held in precise contact by two pin sutures and three fine-thread sutures.

³² Buck, 50.

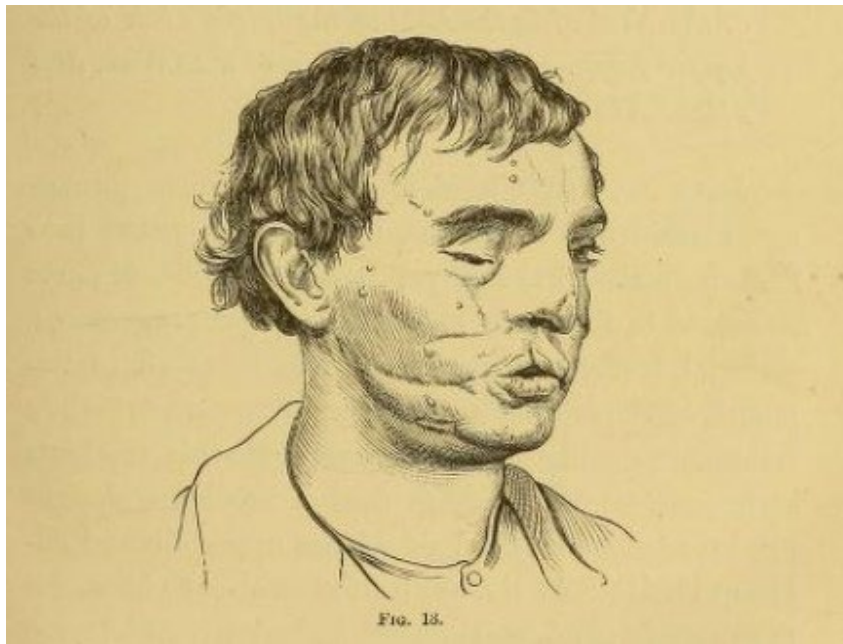
³³ Paul A Cimbala, "The Aftermath of Battle," In *Soldiers North and South: The Everyday Experiences of the Men Who Fought America's Civil War* (New York: Fordham University Press, 2010), 181.

³⁴ Buck, 50.

³⁵ Buck, 50.

³⁶ Buck, 50-51.

Burgan in terms of the revolutionary five facial constructive surgeries through which he persevered:³⁷



Figures 6: Pictorial results of Carlton Burgan's fifth and final surgery.³⁸

It should also be noted that Carlton also received an artificial right eye “through the kindness of Mr. T.J. Davis, the skillful optist, No 483 Broadway [New York]...adapted to the right orbital socket, and is worn by the patient a part of the time.”³⁹ It is difficult to comprehend the magnitude of Carlton's five surgeries completed by Dr. Buck as well as the amazingly good results achieved despite the absence of any antibiotics and the risk of contracting opportunistic illnesses such as typhoid fever, scarlet fever and erysipelas. Dr. Buck's training and background in the “new” medical tradition of anatomy, physiology and the scientific method and Carlton Burgan's bravery in volunteering for experimental surgery intersected to provide a 20-year-old man an opportunity for a normal life.

³⁷ Buck, 50-51.

³⁸ Buck, 51.

³⁹ Transactions, 186.

The Realities for War Victims at the Time of Carlton Burgan's Illness

Chapter 2 provided extensive information related to the experience of British soldiers who were victims of both battle injuries and disease during the Crimean War. It was also noted that American military personnel were observers of the actions that the British took to treat the soldiers medically with the goal of getting them ready to return to battle. Unfortunately, at the beginning of the Civil War, these lessons were not heeded. This section will delve into the life experiences of soldiers who served in the Civil War and were either injured in battle or felled by disease.

In total, battles of the Civil War occurred in over 10,000 places and is considered the bloodiest war in United States history.⁴⁰ Nearly 620,000 people died in the war and more died in the Civil War than all the other wars in which the United States was a part combined.⁴¹ Specifically, 110,000 Union and 94,000 Confederate soldiers died from battle wounds.⁴² It is suggested that such numbers may be an underestimate of total deaths as information related to Confederate soldier death was destroyed when Richmond, VA (the capitol of the Confederacy) was burned in April 1865. Additionally, there is a lack of information related to the numbers of disabled soldiers for both the Union and the Confederacy; such numbers would be important in understanding the full impact of victimization by soldiers through their participation in the Civil War. Similar to the Crimean War, death rate by disease took a much higher toll than by combat; approximately twice the number of soldiers died of disease.⁴³ It is estimated that 250,000 Union and 164,000 Confederate soldiers died from some type of disease.⁴⁴ The war left approximate 1 in 10 healthy Union soldiers dead or disabled, of which Carlton Burgan was one.

As discussed in Chapter 1, medical care in the United States at the time of the Civil War was hit-and-miss at best. Training was often substandard to basically non-existent and medicine

⁴⁰ Robert F. Reilly, "Medical and Surgical Care During the American Civil War, 1861-1865," *Proceedings – Baylor University Medical Center*, 29, no. 2 (2016): 138.

⁴¹ Reilly, 138.

⁴² Richard H. Shryock, "A Medical Perspective on the Civil War," *American Quarterly* 14, no. 2 (1962): 164.

⁴³ Reilly, 138.

⁴⁴ Shryock, 164. The author also wrote that the average soldier was ill between two and three times a year and compared to male civilians of military age, were five times apt to become ill.

was not yet embodied with clear professional protocols to ensure competent training and skill. Knowledge available at the start of the Civil War was also not utilized due to the complete lack of preparation and ensuing disorganization of the Union medical services resulting in needless illness.⁴⁵ Overall, in the initial year of the Civil War, causal factors to battle-related deaths were inexperienced medical personnel, a lack of a coordinated strategy to move the injured from the battlefield rapidly, wound infections (i.e., gangrene) because the importance of sterile techniques were not known to be necessary and battlefield strategies that did not match up with advances in weaponry.⁴⁶ Other causal factors related to death by disease included poor sanitation standards particularly by line officers, poor diet and limited treatments for disease.⁴⁷ At the time of the Civil War, little was known about the causes of disease. The lessons of the Crimean War would not be remembered until the creation of the United States Sanitary Commission, whose recommendations would not be put forth until April 1862. The most important recommendation, the use of inspectors to review medical practices both in the field and within Union army hospitals, was not implemented until October 1862, two months after Carlton Burgan suffered his facial injury.

Prior to the Civil War, only 113 doctors were enlisted in the United States Army, caring for the 16,000 soldiers making up the army and the largest military hospital had only 40 beds.⁴⁸ At the beginning of the war, 27 doctors left the Union army. At the time of the first major battle of the war (Bull Run), there were no military ambulances; ambulances were driven by civilians who ran when the gunfire first began.⁴⁹ Wounded soldiers from the first battle of Bull Run were left on the

⁴⁵ Shryock, 165. The author argues that many are to blame for the unnecessary illnesses/deaths of Union soldiers. He comments, "Sharing in responsibility were the original medical officers, indifferent generals and politicians, a mediocre profession and rural regiments hitherto unexposed to infections and unfamiliar with the rudiments of hygiene."

⁴⁶ Reilly, 138-139. In the years just preceding the Civil War, little had improved in terms of the quality of medical training. As noted by the author, in relation to medical schools, there was no standards for admission, no entrance exam and no state medical licensing boards. Medical school was two years in length. During both years, lectures were provided in two four-month semesters. No clinical practice was provided prior to graduation. In 1862, when Carlton Burgan was injured, there were only six colleges of pharmacy in the United States and the majority of doctors prescribed, created and dispensed their own medications.

⁴⁷ Reilly, 138-139.

⁴⁸ Reilly, 139.

⁴⁹ Reilly, 139.

battlefield for days, the first two days spent in the rain.⁵⁰ The Union Surgeon-General at the time, Clement Finley, did not order medical supplies until after the battle had concluded. The challenge with ambulance services was a longstanding one; for example, the Union army was supposed to have 170 ambulances available at Second Bull Run, but only 45 were there and most of them broke down.⁵¹ Similar to the first Bull Run battle, up to 3000 wounded soldiers were left on the battlefield for several days. In terms of battlefield medical care, organizational structures to provide such care were nonexistent at the beginning of the Civil War. Initially, stretcher bearers were part of regimental bands and often fled when battles started. At the time of the battle of Antietam (September 17, 1862), there were 71 separate Union field hospitals and no consistent method to get the wounded to such hospitals.⁵² In the first year of the war, the Union wounded were brought to large, makeshift battlefield hospitals, usually under tents. In 1862, the Union began to move toward the use of trains and boats to transfer the wounded to Union general hospitals.

In terms of the type of surgical procedures performed during the Civil War, 75 percent were amputations, which took approximately two to 10 minutes to complete.⁵³ Of these 75 percent, the mortality rates were approximately 26.3 percent.⁵⁴ Only about one in 15 Union physicians were allowed to complete amputations as only the most senior and experienced surgeons could perform them. However, this rule did not initially apply during the early part of the Civil War. This process was enacted due to public opinion believing that the number of amputations was too high. Such public perceptions may be due to the significant mortality rate related to amputations early on in the war as noted previously.⁵⁵ Amputations and other surgical

⁵⁰ Reilly, 139.

⁵¹ Shryock, 162.

⁵² Reilly, 139.

⁵³ Reilly, 140. 175,000 extremity wounds to Union soldiers were recorded, per the author. It is highly likely, particularly in the early days of the Civil War, that such a number is an underestimate of such injuries due to the lack of infrastructure available to convey such wounded soldiers to fast medical care.

⁵⁴ Reilly, 140. The author notes that the further from the torso such an amputation occurred, the better the chance for survival.

⁵⁵ Reilly, 141. The author comments that amputations were also not completed by the use of sterile techniques given that knowledge related to Joseph Lister and his treatise on antisepsis did not appear until after the war in 1867.

procedures were performed under anesthesia - it was used in approximately 80,000 cases. While both ether and chloroform were available at the time of the Civil War as anesthetics, chloroform was preferred in battlefield settings as it worked faster, could be used in smaller quantities and was nonflammable.⁵⁶ In terms of wound infections, the challenge of managing such infections was quite difficult in the preantibiotic era of the Civil War as they could lead to worsening post-surgery symptoms or even death. Gangrene, a form of necrotizing fasciitis, was first seen in larger general Union hospitals and 45 percent of patients experiencing gangrene would die as a result.⁵⁷ Gangrene was recognized as infectious and some attempts were made to disinfect wounds via chemicals such as bromine with some success. Also used as a disinfectant was carbolic acid, which Joseph Lister would go on to use as part of the antiseptic surgery process.⁵⁸ However, Civil War surgeons did not use carbolic acid to sterilize fresh wounds although they knew that carbolic acid was successful in cleaning infected wounds. Here again, the divide between “old” and “new” medicine can be seen. Lister believed in the “science” of infection – bacteria can cause infection and believed that a surgeon’s hands or instruments could be contaminated with bacteria. Thus, if wounds were rinsed at the beginning of a surgical procedure, infection may be avoided.⁵⁹ However, American surgeons in the 1860s were either not aware of the science of bacteriology or did not view it as important.⁶⁰

As discussed in Chapter 2, there were a number of causes that led to a high rate of noncombat-related illnesses in the Union army at the time of Carlton Burgan’s illness. Latrines were infrequently used, would drain into drinking water supplies or be left exposed. Food quality

⁵⁶ Reilly, 141. In terms of recorded information, there were on 43 anesthesia-related deaths. However, at the time, anesthesia was considered fairly light in terms of the depth of sleep patients were in (stage II) which led to a misperception that it was not being used. In wondering about such a misperception, it is possible that patients under light sedation may have awoken in the middle of surgeries. In Carlton’s case, ether was used as the anesthetic.

⁵⁷ Reilly, 141. The author points out that most infections were causing by either staphylococcal or streptococcal bacterium. Patients with staphylococcal infections fared much better than those with streptococcal ones – gangrene is a form of streptococcal infection.

⁵⁸ Shryock, 163.

⁵⁹ Shryock, 163.

⁶⁰ Shryock, 163. The author comments that American surgeons considered themselves to be “practical men” with more wound experience than any other surgeons elsewhere. This maintenance of old medical traditions into the Union Army Medical Department throughout the Civil War would lead to multiple deaths and unnecessary and catastrophic injuries, such as those experienced by Carlton Burgan.

was mediocre as it was often inadequately stored, poorly cooked and did not provide enough Vitamin C to prevent scurvy.⁶¹ Little effective medication was available and the majority of such medication was botanical in nature. Existing medications that were viewed as helpful were quinine for malaria, morphine (for pain relief) and the aforementioned chloroform and ether. However, as Carlton would soon discover, there were many other medications that were harmful. Such medications, as discussed in Chapter 1, appeared to be helpful to patients because they provided outward evidence of change – such as sweating or increased heart rate. In reality, the risk of further illness or death was significant with medications such as Fowler’s Solution that was used to treat fevers but contained arsenic and calomel, a treatment for diarrhea that was derived from mercury. As noted earlier, calomel was the treatment that Carlton received for typhoid and pneumonia leading to his facial injury.⁶² Although emetics and laxatives, along with morphine and alcohol, were typical treatments, the chief medical officers of the Union army were beginning to doubt the efficacy of extreme vomiting and purging during the early years of the Civil War. When Union Surgeon General Hammond in 1863 put forth an order banning the use of mercury tarter emetic and calomel, such doubt found expression in action.⁶³ However, it was too late for Carlton.

Throughout the Civil War, the most common illnesses among Union soldiers were gastrointestinal in nature. During the war, there were approximately 711 cases per 1000 soldiers every year.⁶⁴ There were over 75,000 cases in typhoid fever in the Union army throughout the Civil War due to contact with fecal material via contaminated food, water and flies.⁶⁵ Typhoid

⁶¹ Reilly, 141. Per the author, Union soldier’s diets mainly consisted of fresh or pickled beef that was heavily salted and was often spoiled. Salt-cured pork was another staple that was often rancid and mainly fat. Other dietary staples included coffee and hard tack, which was a large biscuit that usually needed to be dipped in coffee to be edible. The author also commented that there was little in the way of fruits and vegetables, which often led to Vitamin C deficiency and scurvy, as mentioned above.

⁶² Reilly, 141. In his discussion of calomel, the author writes, “Mercury is excreted in high concentration in saliva. This led to excessive salivation, loss of teeth and gangrene of the mouth and cheeks in some patients.” The author goes on to reference Carlton Borgan as a “famous” [quotes added] case of calomel poisoning.

⁶³ Shryock, 167.

⁶⁴ Reilly, 141.

⁶⁵ Reilly, 142.

killed approximately 17 percent of impacted soldiers in 1861 and 56 percent by 1865.⁶⁶ The second most common illness was malaria, with an average annual rate of 522 cases per 1,000 Union soldiers.⁶⁷ More fatal than malaria were respiratory illnesses such as tuberculosis and pneumonia, usually due to exposure and overcrowding in tents or barracks that led to an average of six deaths per 1,000 men each year.⁶⁸ Measles outbreaks also frequently occurred, with over 67,000 reported cases in the Union army leading to 4000 deaths. Since approximately 48 percent of the Union army consisted of farmers from rural populations, the likelihood of such soldiers having acquired immunity from measles and other childhood illnesses was low.⁶⁹ Additionally, epidemics related to such illness were common when influxes of new troops occurred, particularly during the early months of the Civil War, as mentioned in Chapter 2.

An important variable regarding the lives of Civil War soldiers that was briefly discussed in Chapter 2 was the impact of weather on soldier's health. Like their counterparts in the Crimean War, both the Union and the Confederacy believed that the war would be a short one, lasting only a few months, as each side was very confident in their abilities to vanquish the other. Thus, along with most other things in relation to the collection of thousands of soldiers to fight a war, little preparation was given to the real challenges of weather. Scholars have written about the scourges of rain, snow and wind on soldiers' health; who could forget how the Continental Army was decimated by their lack of preparedness for a winter in Valley Forge, Pennsylvania? The lack of appropriate provisions for protection against inclement weather probably played a role in the high levels of disease suffered by soldiers during the Civil War. For Carlton Burgan, weather was a contributing factor in the development of his illness leading to his injury.

Below is a description of the weather in Virginia on May 30-31, 1862:

A disagreeable, rainy, misty morning" opened May [1862] in the Shenandoah Valley, where famous events would unfold during this month. The 4th was "so pleasant" in Front Royal, the 6th brought "bright May sunshine," and still on the 9th the Valley weather remained "so beautiful," in the words of a local woman. Invading Northern troops swarmed through Front Royal, where it was "raining very hard," on May 14; the next day continued "cloudy and rainy. In a camp near Richmond, the 'very severe thunderstorm' on the night of May 30 brought 'wind and a deluge of rain.' Many tents were blown down

⁶⁶ Reilly, 142.

⁶⁷ Shryock, 166.

⁶⁸ Shryock, 165.

⁶⁹ Reilly, 142.

and the camp flooded. The lightening was very sharp, and the clouds hung over us for several hours". Soldiers described "the worst thunderstorms" they had ever known. "Storm after storm from early in the afternoon until midnight and when we got to the creek just below Richmond it was like a river."⁷⁰

At the time of these weather events, Carlton Burgan was a member of the Purnell Legion Maryland Volunteers.⁷¹ He and his company had been through numerous reassignments and were attached to the 2nd Brigade, Major General Franz Sigel's Division, Department of the Shenandoah.⁷² From May 28, 1862 to May 30, 1862, Burgan's company had been a part of the defense of Harper's Ferry, Virginia. In June 1862, Burgan's company was again reassigned to the 2nd Brigade, 2nd Division, 2nd Army Corps, under the command of Brigadier General James Cooper, where they are a part of the military operations in the Shenandoah Valley, Virginia.⁷³

For Carlton Burgan, the defense of Harper's Ferry would be his final military experience as a Union soldier. He fell ill while in camp and due to his worsening symptoms, he became a patient of the Union Army Medical Department. As described in Chapter 2, Union soldiers experienced poor living conditions that frequently included direct exposure to the elements without relief leading to more severe illness with the potential to disable as well as kill. Such is what happened to Carlton Burgan and the following information provides the background to Carlton's illness and his condition:

Carlton Burgan, aged twenty, native of Maryland and a private soldier in Company B, Purnell Legion, Maryland Volunteers. The following particulars of his antecedent history were furnished by Robert F. Weir, M.D., Assistant Surgeon United Army, in charge of the Army General Hospital No 1 at Frederick, Maryland, where Burgan was a patient before coming to New York. He was taken sick June 5, 1862 with rheumatic pains from exposure to wet and cold while serving with his regiment. He continued ailing till July 4th, when he was sent to hospital and reported sick with typhoid fever. On the 3d of August following he was transferred to the General Hospital at Frederick.⁷⁴

⁷⁰ Robert K. Krick, *Civil War Weather in Virginia* (Tuscaloosa: University of Alabama Press 2007), 55.

⁷¹ Buck, 31.

⁷² Steve A. Hawks, *The Civil War in the East*, [https://civilwarintheeast.com/us-regiments-batteries/maryland/purnell-legion-maryland-infantry/\(2020\)](https://civilwarintheeast.com/us-regiments-batteries/maryland/purnell-legion-maryland-infantry/(2020)).

⁷³ Hawks, <https://civilwarintheeast.com/us-regiments-batteries/maryland/purnell-legion-maryland-infantry>.

⁷⁴ Buck, 31-32. As noted earlier, typhoid is a bacterium easily spread by poor sanitation conditions and was most rampant in military camps, such as Carlton's Company B, located in Harper's Ferry, in then Virginia and aptly called "camp fever."

By the time Carlton Burgan had been admitted to General Hospital #1, his condition worsened even further and "...he had recently taken as treatment for pneumonia, two scruples of calomel, one scruple of mercury with chalk and 65 grains of blue pill. He was given stimulants and a nutritious diet."⁷⁵

Seven days later, changes began to occur in Carlton's condition as described below:

On August 10th, a slough appeared on the gum at the root of the right upper bicuspid tooth on the right side; the slough spread rapidly outward toward the cheek and inward upon the roof of the mouth. Both bicuspids and the canine tooth dropped out. The outer surface of the cheek became swollen, red and glistening; the right eyelids swelled and closed. The gangrene continued to spread until it had destroyed the right half of the upper lip, the adjacent portion of the cheek and ala nasi; it also denuded the entire superior maxillary bone of the same side.⁷⁶

The ulcer rapidly extended to the cheek and the roof of the mouth; by the 21st, it had nearly reached the orbit, the entire upper maxilla [jaw] being exposed. From this date, the parts gradually assumed a healthy action, and, by the 27th, ulceration had entirely ceased and the patient's general health steadily improved. It was then close to the eye and had removed the right ala [the lower right side] of the nose and the right half of the upper lip from the angle of the mouth, beyond the median line, on the left side. On October 1st, the entire right superior maxilla, the vertical plate of the palate bond, and a narrow strip of the left maxilla, being quite separated from the healthy bone, were removed.

The great loss of substance on the right side of the face caused frightful deformity. The right eye was destroyed and sunken; the right half of the upper lip, the right ala of the nose, and the adjacent portion of the cheek, besides the right superior maxillary bone were gone, leaving an extensive opening directly into the cavity of the mouth and right nasal fossa [nasal cavity]. The margin of the opening, which was everywhere cicatrized [scar formation at the site of a healing wound], was constituted below and outwardly by the border of the lower lip, which was stretched obliquely upward and outward, and terminated at the malar [cheek] bone, where the superior maxilla had separated from it.⁷⁷

As initially discussed in Chapter 1, had it not been for the connection between two doctors, Carlton Burgan's life trajectory would have been quite different. War brought together Dr. Weir and Dr. Buck, one as a physician and administrator of a Union General hospital and the other as a United States Sanitary (USSC) inspector. One of the long-term motives of the USSC

⁷⁵ Joseph K. Barnes, Joseph Janvier Woodward, Charles Smart, George A. Otis and D.L. Huntington, *The Medical and Surgical History of the War of the Rebellion (1861-65)* (Washington D.C. G.P.O, 1870),148. A scruple is defined as 1.3 grams, so Carlton received 2.6 grams of calomel, 1.3 grams of mercury with chalk and approximately 421 grains of blue pill. Blue pills are pills that contain mercury.

⁷⁶ Buck, 32. A "slough" is a layer or mass of dead tissue separated from surrounding living tissue.

⁷⁷ Barnes et al., 376.

was to populate the Union Medical Department with physicians that were grounded in science in the hope that medicine would be more focused on rational, scientific outcomes.

Plastic Surgery and Civil War Victims

Introduction

One would believe that there would be simple goals for plastic surgery for those suffering a variety of injuries through their participation in the Civil War. A basic goal may be to help the victims live normal lives. However, how would “normal” be defined in such a context? As introduced in Chapter 1, this issue of normalcy is an age-old debate. This section will explore definitions of plastic surgery during the Civil War and discuss the consideration of World War I as the launching point of modern plastic surgery through a short historiography of seminal plastic surgery techniques.

Definition of Plastic Surgery at the time of the Civil War

Medical scholars continue to argue about the role of plastic surgery *as a medical specialty* to this day. Research work in the twentieth century has spent much time attempting to convince themselves and the American public of its strengths as a unique medical practice that can repair damage caused by congenital defects or the brutality of war injuries. At the time of the Civil War, plastic surgery was not considered a unique type of medicine. It fell into the category of all medical procedures until the Civil War.⁷⁸ This thesis argues that plastic surgery began to differentiate into its own specialty during the Civil War; the typical belief about plastic surgery as a subspecialty of medicine has been that the circumstances of World War I caused plastic surgery to become a free-standing specialty. However, the creativity that was borne from necessity for those wounded during the Civil War led to the development of techniques that “fixed” such victims. For example, the work done by Dr. Buck on Carlton’s face, jaw and eye had the goal to restore Carlton’s basic functioning. Prior to these five surgeries, Carlton’s ability to communicate verbally was nearly non-existent. Only with the advent of multiple surgical techniques used in

⁷⁸ B.K. Rank, “The Story of Plastic Surgery 1868-1968,” *The Practitioner* 201 (1968): 114.

collaboration with new practices in dentistry and optical care, allowed Carlton to regain the ability to communicate verbally. Dr. Buck himself viewed his work with Carlton and others that needed reconstructive facial surgery as having the goal to repair damage.

It is fascinating to review the historical record when it is describing what has been considered the watershed moment for plastic surgery evolving into its own specialty – World War I. Often, scholars contradict themselves within their writings about such a reality. Richard B. Stark, in his article, “The History of Plastic Surgery in Wartime,” describes surgical techniques performed by a variety of surgeons in different countries that focus on maxillo-facial wounds prior to World War I. In terms of the Civil War, Stark then provided facts regarding maxillo-facial surgery such as how “32 plastic surgical operations upon the head and neck were performed by surgeons in the United States Army.”⁷⁹ He further stated that the 32 surgeries included “six reconstructions of the eyelid; five of the nose; three of the cheek; fourteen of the lip, palate, or other parts of the mouth; and four of the chin.”⁸⁰ Stark also acknowledged Dr. Buck as performing the first total facial reconstruction (for Carlton Burgan). He then contradicted himself by stating that at the beginning of World War I, “no trained surgeons existed who could treat maxillo-facial wounds.”⁸¹ Another example of misinformation was in B.K. Rank’s article, “The Story of Plastic Surgery 1868-1968,” where he lists World War I as the emergence of plastic surgery as a free-standing specialty. He also claims that “only one great and fundamental discovery pertinent to plastic surgery belongs to the past century,” the principle of free grafting.⁸² That statement is simply incorrect. The next section will provide evidence that plastic surgery was well on its way to being a medical specialty long before World War I.

Plastic Surgery Techniques Created Prior to World War I

At the time of Carlton’s surgeries, a variety of techniques were used to ensure the most likely chance of success for the reconstruction of his face. Thus, the most important feature is the

⁷⁹ Richard B. Stark, “The History of Plastic Surgery in Wartime,” *Clinics in Plastic Surgery* 2, no 4 (1975): 511.

⁸⁰ Stark, 511.

⁸¹ Stark, 511.

⁸² Rank, 115.

ability to guarantee that techniques created to optimize such success actually do work as intended. In Chapter 1, an overview was provided related to the development of particular plastic surgery techniques. In this section, more depth will be provided to the discussion of such techniques that were being used at the time of the Civil War for victims of battlefield injuries or disease. In addition, plastic surgery techniques developed in the United States focusing on reconstruction of body parts other than facial injuries between the ending of the Civil War and the beginning of World War I is reviewed.

Skin Flaps

Reconstructing wounds historically has been difficult for surgeons of all types. Some wounds can be simply left to heal or closed in a linear manner.⁸³ However, like Carlton Burgan's injury, other wounds need more complicated movement of local or remote tissue to regain functional and anatomic connections and to optimize the final appearance.⁸⁴ The term "flap" was derived from the Dutch word "flappe" during the sixteenth century which described something that was attached by one side and draped broad and loose.⁸⁵

What exactly is a "skin flap?" In broad terms, a skin flap is a section of healthy skin and tissue that is partly detached and moved to cover a nearby wound. It may be comprised of skin and fat or skin, fat and muscle and it is usually still attached to its original site at one end allowing the flap to remain connected to blood vessels.⁸⁶ Use of skin flaps allowed surgeons to have confidence that a wound will heal productively.⁸⁷ Such a procedure was done either temporarily or as a final operative technique. Pedicle skin flaps are used when an injury has caused the loss of skin, subcutaneous fat and/or muscle or when bones or tendons need to be enclosed.⁸⁸ A

⁸³ Ashley Wysong and Shauna Higgins, "Basic Principles in Flap Reconstruction," In *Flaps and Grafts in Dermatologic Surgery*, 2nd Ed., (Elsevier, 2018), 16.

⁸⁴ Wysong and Higgins, 16.

⁸⁵ Wysong and Higgins, 16.

⁸⁶ Wysong and Higgins, 16.

⁸⁷ Herbert Conway, "The Techniques," *The American Journal of Nursing*, 64, no.1 (November 1964), 94. The author stated that the dermis "...is the important component of a skin graft [or flap]. This lower layer of the skin not only supplies coverage for a wound, reducing the loss of protein, electrolytes and fluids, but also provides many other essential protective functions of the skin..."

⁸⁸ Conway, 96.

pedicle is the “base” of the flap that remains attached to skin next to the wound and contains all of the vascular supply needed for preliminary flap survival.⁸⁹ As was done for Carlton, transplantation of pedicled tissue usually occurs in stages as they must be planned so that their blood supply is guaranteed. This is a necessary part of the technique because the surface of the body is comprised of nearby blocks of skin and fat and nourished independently.⁹⁰ In the case of Carlton Burgan, the use of skin flaps was part of the process of giving him improved function and appearance and likely assisted in his physical rehabilitation.

Thus, it was a critical surgical technique used by Dr. Buck in repairing the damage to Carlton Burgan’s face, as explained earlier in this chapter. Medical researchers have commented, as noted in Chapter 1, that the use of flap surgery bloomed at the time of World War I to repair heinous facial wounds brought on by the use of trench warfare. It is argued that such work played a significant role in plastic surgery long before World War I as will be explained further; the most obvious example is Carlton himself.

The roots of flap surgery, like many other types of medical innovations, was an outgrowth of violence. Its origin came from a demeaning type of punishment that was widespread in India, the amputation of noses for criminal behavior. The first documented description of the pedicle flap for the repair of any body part was found in the “Sushruta Samhita.”⁹¹ This technique was shared with the Greeks and they and Roman physicians went on to write about reconstructive procedures similar to the Indian methods. From the ninth to the twelfth centuries, the Arabs gave this knowledge to the rest of Europe during their occupation of Sicily. During the Middle Ages, surgical advances ceased, but with the start of the Renaissance, Italian surgeons resumed use of the Indian method but modified it by using a delayed skin flap from the forearm instead.⁹²

⁸⁹ Wysong and Higgins, 16.

⁹⁰ Conway, 96.

⁹¹ Farah N. Khan and Aldona J. Spiegel, “The Evolution of Perforator Flaps,” *Seminars in Plastic Surgery* 20, no. 2 (2006), 53. A pedicle is a stalk through which a flap receives nourishment until its transfer to another site results in the nourishment coming from the new site.

⁹² Khan and Spiegel, 53. Per the authors, Susruta described his procedures as follows: “...A careful physician having taken a plant leaf of the size of the nose of that person, and having cut adjoining cheek according to the measurement, and having scarified [to make scratches or small cuts in something, such as the skin] the nose tip should attach it to the nose tip and quickly join it with perfect sutures...When the healing is complete and the parts united, remove the excess skill.”

Popularized by Gaspare Tagliacozzi, a Bolognian surgeon in the 1500s, this technique gained a new name, the “Italian Method” for nasal reconstruction.⁹³ As noted in Chapter 1, there continues to be arguments about the active use of Tagliacozzi’s work between the fifteenth and eighteenth centuries. The return of skin flaps occurred in 1794 when a British Army surgeon described in a London-based magazine how an Indian bullock had his nose reconstructed with a pedicle forehead flap due to it being cut off as punishment. Joseph Carpue, an English surgeon, is noted to have immediately utilized the technique to repair the noses of two British army officers, also cut off as punishment.⁹⁴ Carpue went on to publish his account of the surgeries in 1816, which led to a renewed interest of flap surgery in Europe at that time. However, as commented in earlier chapters, such communication was not always effective and reconstructive techniques were being developed in the nineteenth century independently. European surgeons would continue to make inroads in plastic surgery techniques in the early nineteenth century such as cheek and lip switch flaps in the 1830s and 1840s to repair damage caused by carcinoma excisions and typhoid gangrene.⁹⁵ Another example of such work being completed in parallel to others was the work of Tribhovandas Shah of Junagadh, India who published a book in 1889 where he described over one hundred cases of nasal reconstruction using a forehead flap.⁹⁶

There is consistency in the historical record regarding the accomplishments of Dr. Gurdon Buck, the facial reconstructive surgeon that performed Carlton Burgan’s facial reconstruction. In Chapter 2, a review of Dr. Buck’s training and experience was provided; Dr. Buck was considered a leader in the profession, which led to his work as an USSC inspector and eventually to his work with Carlton. Part of the techniques deployed in Carlton’s facial reconstruction surgeries were the use of forehead and facial skin flaps as a method to close the

⁹³ Khan and Spiegel, 54. The author’s description of Tagliacozzi’s technique – “A flap is detached from the arm and cut in the form of a nose to be applied to the stumpy of a nose. They detach the skin from with a bistoury [surgical knife], scarifying the nose, and attached the arm to the head, in such a manner that the two wounds are applied to one another. When union is perfect, they cut off with admirable skill, as much skin off the arm as necessary...”

⁹⁴ Khan and Spiegel, 54.

⁹⁵ Roger L. Crumley, “Some Pioneers in Plastic Surgery of the Facial Region,” *Archives of Facial Plastic Surgery* 5, no.1 (2003): 1.
Crumley, 1.

⁹⁶ Stark, 510.

injury site making up most of Carlton's right nose and cheek. The use of different versions of pedicle flaps would be the foremost reconstructive technique for large skin defects until the 1970's.⁹⁷

Free Grafts

Free grafts are skin grafts where tissue is transferred from one region to another without an attached pedicle providing a direct blood supply.⁹⁸ Blair O. Rogers, in his article "Historical Development of Free Skin Grafting," argues that the development of plastic surgery as a specialty was due to the ability to skillfully transplant tissue, particularly skin.⁹⁹ As discussed in Chapter 1, one consistency in the historical literature regarding plastic surgery is how so many individuals consider themselves inventors of particular techniques. This issue is again seen in the area of free grafts. There is much back and forth about how free grafting initially came to be, but it appears that the most reliable finding in terms of free grafting's genesis would be via India through the use of the free graft from the buttocks for a repair of a nose cut off as punishment.¹⁰⁰ Another case of free grafting was documented as the first successful one occurring in Europe in 1823 using the Indian method of free grafting. This case made use of a free graft taken from an upper thigh of a woman who had suffered from some type of skin disease that caused the loss of her nose, adjacent cheek and eyebrow regions.¹⁰¹ After the success of this surgery, it appears that the ability to effectively reproduce a free graft technique did not occur and the enthusiasm for

⁹⁷ Klass W. Marck, Roman Palyvoda, Andrew Bamji and Jan J. van Wingerden, "The Tubed Pedicle Flap Centennial: Its Concept, Origin, Rise and Fall," *European Journal of Plastic Surgery* 40 (2017): 473.

⁹⁸ Blair O. Rogers, "Historical Development of Free Skin Grafting," *Surgical Clinics of North America* 39, no. 2 (1959): 289.

⁹⁹ Rogers, 290.

¹⁰⁰ Rogers, 293. Unfortunately, no date is provided directly. The author references this surgery with another one that reportedly occurred in 1823 "six years later."

¹⁰¹ Rogers, 293. The author explains the motives of the surgeon (Christian Büniger) behind the use of the procedure and the procedure itself as follows: "Nothing remained for me now but to think of using the Indian method in which a fully-separated piece of skin, taken from the buttocks, is transplanted to the nasal stump...I have a good many doubts about this method, but I believed that in this case where use of the method required only required the loss of a piece of skin from the patient's leg, an attempt should be risked, since in using this method at least nothing further could be ruined and the patient would therefore not have to endure too much unnecessary pain."

the use of free grafts decreased until the 1840's, when two American surgeons completed free grafts for nasal and earlobe reconstruction.¹⁰²

In 1869, J.L. Reverdin, who was a Swiss intern at the Hôpital Necker in Paris, solved a challenging wound healing problem. He noticed in an ulcer case that epithelial growth developed from a spontaneously appearing island of epithelium in the middle of the ulcer. It occurred to Reverdin that epithelization of granulating surfaces might move quicker if small amounts of epithelium were artificially implanted in the wound.¹⁰³ He then decided to test his theory with a patient who had lost the skin of his thumb; he cut small pieces of epithelium from the patient's arm and transplanted them to the wound. He discovered that within a few days, these transplants grew and multiplied to the ends of the wound. While not necessarily appreciated initially, this finding by Reverdin would ignite interest in skin grafts around the world.¹⁰⁴ Soon, other surgeons were making use of Reverdin's discovery as well as attempting new techniques including transplanting larger sheets of epidermis called thin, split-thickness grafts in 1872.¹⁰⁵ In 1875, another free grafting technique coming out of Reverdin's work was called a "full-thickness graft," which was a graft that held all epidermal and dermal parts of skin down to the subcutaneous fat layer.¹⁰⁶

From these two techniques grew a variety of advances in plastic surgery such as lip-switch operation, endonasal rhinoplasty and the island flap between the Civil War and World War I. Specifically related to gynecology, for women both without a vagina, inlay flaps were also developed.¹⁰⁷ As argued throughout this chapter, the time between the onset of the Civil War

¹⁰² Rogers, 295. The American surgeons were Jonathan Mason Warren of Boston and Joseph Pancoast of Philadelphia. Warren completed a free graft for a nasal reconstruction in 1840. Pancoast completed a free graft for an earlobe reconstruction in 1844.

¹⁰³ Rogers, 297. Epithelial tissue is a membrane that covers the skin and other body parts.

¹⁰⁴ Rogers, 297. Per the author, Reverdin's grafts are also called "pinch" grafts because surgeons cut them by picking up a very thin piece of superficial skin with the point of a needle or "pinches" them with a lightly held forceps in one hand and with the other, slices a small cone of skin formed away from its based with a sharp knife, scalpel or razor blade.

¹⁰⁵ Rogers, 297. The author states that thin, split-thickness grafts consist of the entire thickness of epidermis but only a very thin superficial layer of dermis.

¹⁰⁶ Rogers, 297. As with so many plastic surgery inventions, there is debate about who created and when both thin, split-thickness and full-thickness grafts came into existence.

¹⁰⁷ Stark, 511. The creation of a free graft for women born with what was called a congenitally absent vagina will be discussed further in Chapter Four.

and the beginning of World War I was truly significant in terms of growth for the field of plastic surgery and in medicine in general. The five surgeries performed on Carlton Burgan and many others would not have occurred with the success that they had if the history of plastic surgery began in 1914, as espoused by so many medical historians. How did such history be overlooked? Chapter 4 will discuss the impact of societal expectations along with the second Industrial Revolution in the transformation of plastic surgery into a wanted commodity in the United States. The chapter will also provide a historical review of the different “body parts” targeted by plastic surgery and why.

Chapter 4

THE ROLE OF PLASTIC SURGERY IN THE EVOLUTION OF WORTH

Dr. Gurdon Buck stated that in June 1864, Carlton Burgan was “in the enjoyment of good health.”¹ He had worked as an assistant nurse in a large hospital ward of New York Hospital throughout the time he was receiving treatment. Dr. Buck viewed Carlton as engaging in “persevering efforts” to ensure the long-term success of his surgically reconstructed face.² As he continued to heal, Carlton was able to only have to use the prosthetic for the right maxilla by the time of his release and reportedly was “worn constantly with entire comfort, and can be removed and replaced at pleasure.”³ With the use of this prosthetic, Dr. Buck indicated that Carlton could chew any type of food, speak clearly and “now betrays very little defect.”⁴ As mentioned in Chapter 2, Dr. Buck visited Carlton in May 1871 and he noted that there had been continued improvements in his facial appearance and was complimentary about Carlton’s life circumstances, including having a wife, children and a job. However, the apparent last known photograph of Carlton Burgan shows him wearing a type of mask over most of his face.

¹ Gurdon Buck, *Contributions to Reparative Surgery: Showing Its Application to the Treatment of Deformities, Produced by Destructive Disease or Injury; Congenital Defects from Arrest or Excess of Development; and Cicatricial Contractions from Burns* (New York: D. Appleton and Company, 1876), 50.

² Buck, 50. Per the author, Carlton would put one or more fingers into his mouth to stretch the cicatricial bands on the inside of his right cheek to prevent contraction.

³ Buck, 50. The right maxilla prosthetic was made up of a “palate-plate that covers the roof of the mouth and supplies the lost teeth of the right side.”

⁴ Buck, 50-51.



Figure 7: Last known photograph of Carlton Burgan.⁵

One may wonder why Carlton was wearing a mask. He was an elderly man when this particular photograph was taken. Carlton died on March 24, 1914. During that time, the United States was undergoing radical changes that would impact American citizens in all facets of their lives; changes that had been occurring since the ending of the Civil War. This chapter will focus on how societal expectations related to people's bodies were reconstructed and the part that plastic surgery played in such reconstruction.

The Importance of "Fixing" the Body

Throughout history, there has been a desire to repair damage to the bodies of human beings, particularly as it relates to violent acts. Chapter 1 discussed initial forays into plastic surgery focused on repairs to the body of those receiving punishment from violating societal expectations regarding behavior. Those accused of adultery, thievery or prostitution often had a

⁵ *Find a Grave*, "PVT Carlton Burgan," Accessed May 11, 2023, <https://www.findagrave.com/memorial/114162145/carlton-burgan#>

body part removed because of not maintaining the societal norms of the time regarding such actions. Another use of plastic surgery was to repair facial scars caused by dueling.⁶ Plastic surgery also was used to help individuals suffering from congenital deformities such as cleft palates and as was described through the story of Carlton Burgan, wounds caused by some type of injury. The goal of such types of interventions was to allow those afflicted with such punishments to regain the ability to “blend in” with the rest of the population. Throughout the rest of this chapter, the importance of “blending in” as a method of meeting societal expectations for men and women will be explored through the creation of specific consumer targets for plastic surgery, the impact of second Industrial Revolution and the movement by Americans toward mass consumerism in parallel to the professionalization of plastic surgery and its resultant clientele. Finally, the chapter will conclude by revisiting the argument that the field of plastic surgery was not the force behind changes in consumer culture related to appearance. This thesis also asserts that plastic surgeons were able to define cosmetic surgery as “reconstructive” medicine via the use of the relatively new social science of psychology.

The Influence of Psychology

The tenets of psychological theory in the United States prior to the Civil War launched the creation of the American dream as well as psychology’s role in it. Such tenets included the ideas of equal opportunity and right of all people to participate in determining their lives.⁷ These beliefs were compatible with the initial process of democratic government and industrial capitalism, which will be further explored in a later section of this chapter. All scientific discoveries were appreciated because they were viewed as useful for the good of all individuals as well as the United States overall.⁸ Another important foundational element was the belief that every person had the ability to adapt for the better in terms of their needs and desires. Finally, the importance of an individual’s inner life and the importance of self-knowledge allowed for psychology to easily

⁶ Elizabeth Haiken, “The Making of the Modern Face: Cosmetic Surgery,” *Social Research* 67, no. 1 (Spring 2000): 82.

⁷ Maurice Green and R.W. Rieber, “The Assimilation of Psychoanalysis in America,” In *Psychology* (Elsevier Inc., 1980), 264.

⁸ Green and Rieber, 264.

integrate in the United States, as a method for people to meet societal standards that would be popularized from the end of the Civil War on.⁹

Beginning in the first decades of the nineteenth century, the unconscious part of the mind gained more attention and by the mid-1880s, the term “unconscious,” whose original meaning had been to lack awareness of something, began to signify something quite different – a unique and separate part of a person’s mind that existed outside of their awareness.¹⁰ In 1869, a more refined definition of the unconscious was offered; it was described as the manifestation of numerous unconscious forces such as feelings, instincts, and personality changes.¹¹ This particular version of explaining the unconscious would catch hold with the introduction of Sigmund Freud’s theory of psychoanalysis. At the time, however, these new definitions were not yet bolstered by respectable, scientific inquiry. Many attempts were made to craft psychology as a system of science that could be grounded in quantitative, mathematical language.¹²

Medical practitioners of the late 1880s onward lamented the changes in societal standards of living with the advent of industrial urban development.¹³ Also, they feared losing any respectability that they had gained for scientific clout over the power of superstition and religion during this time period. Discoveries such as the importance of sanitation on healing and other medical techniques revolutionized during the Civil War were believed by medical doctors as the beginning of their power to end illness. During this time, there was also a focus on understanding the causal factors of physical illness and how disease was due to a weakness or defect in a person’s physical makeup. Causes of such weakness were numerous and included climate, social and political turmoil, urban living and alcohol.¹⁴ Mental illness was believed to be caused

⁹ Green and Rieber, 264-265.

¹⁰ Green and Rieber, 265.

¹¹ Green and Rieber, 266.

¹² Green and Rieber, 265. It can be argued that this need to be seen as a “science” continues to haunt the discipline of psychology to this day. As the authors noted, this need was “...never fully realized” but quantitative analysis via statistics and other mathematical tools are used today in psychological research.

¹³ Green and Rieber, 267. The authors commented that medical doctors were concerned with what they deemed to be “...degradation and deterioration of the quality of human living.” The authors also indicated that signs of such degeneration included the “...loss of moral sense, excessive originality, morbid vanity, mystical tendencies, religious enthusiasm and revolutionary ideas.”

¹⁴ Green and Rieber, 267.

by physical components such as inherited congenital defects, infections and tumors; some acknowledgement was given to the social and psychological challenges of the time.¹⁵

In the late nineteenth century, there was a particular focus on sickness, with physical illness being substituted for moral weakness. First defined by theorists such as Freud, were terms used currently to define mental health challenges (e.g., “phobias”).¹⁶ The language that constitutes modern psychiatry and psychology started during this time period - within a medical context. Since psychology was in its infancy during this timeframe, little was offered in terms of treatment other than medical interventions in the continuation of attempting to legitimize psychology as a “science.”¹⁷

With his foundational development of classical psychoanalysis, Freud’s goal was to take the findings of his particular technique and generalize the information into an all-encompassing medical philosophy. He believed that all causes of illness were science-based and thus, can be fixed by medical interventions. Classical psychoanalysis began to achieve popular acceptance in the United States in the first decade of the twentieth century. It is important to note that like plastic surgery, psychiatric treatment similar to Freud’s classical psychoanalysis was independently being created in the United States.¹⁸ Boris Sidis, who was a founder of the New York State Psychiatric Institute, published articles and books related to the challenges of mental health treatment.¹⁹ Like Freud, Sidis would abandon earlier types of medical interventions for building of therapeutic verbal rapport.

However, there were challenges to the movement away from strict medical interventions. As the late nineteenth and early twentieth century was known for its rapid change processes in all segments of society, so was the field of psychology. The pendulum of psychological thought

¹⁵ Green and Rieber, 267. Little has changed in terms of societal beliefs regarding the causal factors of mental illness.

¹⁶ Green and Rieber, 267.

¹⁷ Green and Rieber, 267. The authors indicate that for those suffering from mental illness, surgical interventions such as sterilization (men and women) and amputation of the clitoris for “nervous” women were used.

¹⁸ Green and Rieber, 276. Freud’s work was created in Vienna, Austria and while he wrote books whose importance to the discipline of psychology are unparalleled, it appears that his level of influence was limited at the time.

¹⁹ Green and Rieber, 276. The Institute, began in 1895, was one of the first in the United States to combine teaching, research and treatment in caring for mentally ill patients.

swung from Freud's focus on childhood psychosexual experiences as a cause of mental illness to an emphasis on psychobiological factors causing mental illness. In the United States, it appeared that psychology continued to push forward the need for experimental observation of patients to replicate findings scientifically, not simply by creating techniques based on the case of single patient. For example, in 1896, Adolph Meyer, published a paper that put forth his psychobiological theory of psychiatry; he viewed people's psychological reactions as "continuous with and inseparable from physiological, chemical and anatomical reactions."²⁰

The Entrance of Alfred Adler and the Inferiority Complex

Alfred Adler, along with Carl Jung, were two of Freud's closest associates. Adler was a general practitioner in Vienna and became acquainted with Freud around 1900 after Freud's publication of *The Interpretation of Dreams*.²¹ In response to a scornful review of the book, Adler defended the work and was subsequently asked by Freud to join his discussion circle of psychoanalysts. While Adler believed that he and Freud differed in beliefs regarding mental illness, he eventually became a close confidante of Freud's and was considered by Freud as one of his most promising followers.²² However, by 1907, Adler began to challenge Freud's work; he observed that there was a fundamental tendency for people to compensate for inferior organic structures that led to inflated development of certain functions and associated behaviors.²³ By 1910, Adler's opinions had continued to evolve away from Freud's theories as he viewed the driving force behind life was the desire to be relevant in the world, may it be within a specific society, culture or family.²⁴ Adler continued to regard the longing for self-esteem as the basic motivational principle in all human nature and recognized the impact of feelings of inferiority and reactions to them as determining personality types.²⁵

²⁰ Green and Rieber, 278.

²¹ Green and Rieber, 279.

²² Green and Rieber, 279.

²³ Green and Rieber, 279. The authors provide an example of Adler's assertion: "For example, a person who has a weak right arm in childhood tends to develop an extremely strong right arm in later life in compensation for the earlier weakness and with this added strength come other abilities, such as dexterity."

²⁴ Green and Rieber, 282.

²⁵ Green and Rieber, 282.

Adler puts forth that all children begin life with a “deep feeling of inferiority...every child runs the danger of a mistaken development.”²⁶ Adler also states that such feelings (i.e., inferiority, inadequacy or insecurity) determine the life paths of individuals that begin almost immediately after birth.²⁷ He also argues that people orient themselves to goals that they have created artificially but do not exist in reality, but such fictitious beliefs can be corrected through experiences such as education.²⁸ Adler claims that education can help the maturing child free themselves of insecurity and feelings of inferiority.²⁹ However, if children’s feelings of inferiority become so intense to the point that they cannot imagine the ability to compensate for weakness, Adler argues that a danger arises where attempts at compensating may lead to overcompensation as if the desire for overbalance will eliminate negative feelings.³⁰ An example of overcompensation may be obtaining rhinoplasty when physically unnecessary. Adler indicates that when individuals eventually understand that all human behavior stems from the achievement of a goal, then people could also discover what their biggest challenges may be in reaching such a goal. However, he also states that “science alone can illuminate the process and make it comprehensible; science alone is finally able to *modify* [italics added] it.”³¹ In particular, Adler spoke of individuals with some type of physical defect or negative character trait as if it could not be helped, but with the advent of plastic surgery as a medical intervention for those experiencing such problems, they now can be “fixed.”³²

According to Adler, people whose inferiority complexes were not managed in childhood due to physical defects could find all types of opportunities negatively impacted by both unresolved feelings due to having physical flaws and the challenges such physical flaws may

²⁶ Alfred Adler, *Understanding Human Nature* (New York: Greenberg, 2013), 70. Adler’s statement offers the opportunity for people to not take responsibility for their actions since all experience some type of inferiority complex.

²⁷ Adler, 72.

²⁸ Adler, 74.

²⁹ Adler, 74. The author writes that educational experiences can compensate children for their insecurities by teaching the techniques of life, providing an educated understanding and by providing them with a social feeling for others.

³⁰ Adler, 75.

³¹ Adler, 82-83.

³² Adler, 77. The author mentions that it is the task of society to develop possibilities for a person with feelings of inferiority (which is everybody) so that they may feel themselves as equal to every other human being within their environment.

pose.³³ This concept is particularly relevant for children because as soon as they become aware of their disfigurement, they are now at a functional disadvantage which will allow for the development of severe psychological instability due to the negative critiques by their social group.³⁴ Elizabeth Haiken, in her book *Venus Envy: A History of Cosmetic Surgery*, focuses on new psychological theories proposed by Adler and others as a method to “fix” difficulties such as inferiority complexes, but provides an inaccurate conceptualization of the beginnings of such mental health challenges. As noted by Adler, inferiority complexes are not developed in adulthood; they exist within days of birth. It denotes the power of psychological processes that come into play immediately. In an adult, such psychological challenges are already in existence and are guiding individuals in terms of belief and behavior. The promotion of psychology as a method of healing was present at least three decades prior to what Haiken puts forth in her argument.

The discipline of psychology transformed between 1880 and 1920 from an offshoot of philosophy in the study of the mind to a more visible and practical science against the backdrop of developing industrialization, urbanization and immigration.³⁵ The impact of the Progressive Era in terms of intellectual and social trends gave rise to psychology having both practical application and social worth.³⁶ In Paul M. Dennis’ article, “Contributions to the History of Psychology: LXXIX. Psychology’s First Publicist: H. Addington Bruce and the Popularization of the Subconscious and Power of Suggestion Before World War I,” the author states that along with new inventions such as the telephone, phonograph and automobile, there were corresponding

³³ Elizabeth Haiken, *Venus Envy: A History of Cosmetic Surgery* (Baltimore: The Johns Hopkins University Press, 1997), 114.

³⁴ Haiken, 106.

³⁵ Paul M. Dennis, “Contributions to the History of Psychology: LXXIX. Psychology’s First Publicist: H. Addington Bruce and the Popularization of the Subconscious and Power of Suggestion Before World War I,” *Psychological Reports* 68, no. 3 (1991): 755.

³⁶ Dennis, 755. The author viewed the Progressive Era as “...a popular effort begun in the 1890s to safeguard the survival of democracy under the onslaught of special interest economic groups.” The author also commented that “...Progressivism was a set of implicit social theories marked by optimism and the belief that the problems associated with a rapidly growing modern industrial society could be overcome through the exercise of the intellect and will. Its various tenets included faith in the power of science (including the social sciences), emphasis on environmental manipulation as an instrument for change, concern for the welfare of the child and various victims of modernization and an egalitarian view that assumed people to be basically good and more similar than different.”

developments in psychology such as “new Binet tests to identify the feeble-minded and lie detectors to determine one’s innocence or guilt.”³⁷ During this time, psychological clinics began to emerge to assist with treating “the problem child” [quotes added], testing to determine career placement, developing effective ways to advertise a product and using new psychological therapies to demonstrate the potential power of the mind over the body.³⁸ The study of psychological phenomena and mental health purported that all consciousness was not incorporated into the “self” or what has been described as “personality,” but that there are other unknown areas of the “subconscious” – a hidden state of consciousness.³⁹ Through the writings of H. Addington Bruce, the concept of the subconscious was seen as a large warehouse that stored mental images of everything individuals saw, heard or else experienced through their five senses.⁴⁰ Bruce also wrote that psychology can be used to hypothesize about the damage done to people due to the stresses of modern life that is borne not in the body, but in the deep recesses of the mind.⁴¹ Bruce describes that all people live with subconscious memory images of trauma which he argued were the causes of most psychological difficulties such as “insomnia, stammering and bashfulness as well as a myriad of examples of hysteria and multiple personality.”⁴² These memory images reportedly “remain vividly alive in the subconscious, to act as perpetual irritants of the nervous system and in time to give rise to the appearance of the symptoms of which the sufferer complains.”⁴³

Progressivism and psychological theories such as Adler’s are intertwined in that both see human beings as being responsible for their actions and if they simply make use of the psychological and societal tools at their disposal, they can overcome any type of adversity. Bruce fully embraced the tenets of psychological thought put forth by Adler and other theorists in a way

³⁷ Dennis, 755.

³⁸ Dennis, 755. The author comments that psychology and advertising created a public perception that an “...applied science of the mind might be as effective in controlling human nature as chemistry, physics, and the new technologies had been in mastering the natural world.”

³⁹ Dennis, 757.

⁴⁰ Dennis, 758.

⁴¹ Dennis, 758.

⁴² Dennis, 758. The author notes that Bruce is providing such descriptions via popular magazines; this particular piece of information was published in *Good Housekeeping* in 1915.

⁴³ Dennis, 758.

that conforms with the Progressive Era trends. In particular, the trend to place responsibility for improved social behavior on societal factors that Bruce hastened to respectability through his writings in the popular media of the time.⁴⁴ As will be discussed in a later section, one of these new tools to repair psychological wounds would be plastic surgery.

Revolutionizing Surgery

Adler wrote that all people experience the signs of an inferiority complex within the first few days of birth and dependent on how it is managed, it can haunt them throughout their lives. So it can be said for plastic surgery. The specialty has been around for thousands of years yet has long been viewed as inferior to other medical specialties and has even been seen as a practice outside of the medical realm. Part of the difficulty in the acceptance of plastic surgery as a legitimate medical specialty is the difficulties with the evolution of medicine itself. As has been discussed in other chapters, medicine as well as its practitioners had been seen until the recent past as barbaric and something or someone to avoid. Care of the body was provided by the family unless one was a war participant. However, medicine was revolutionized in the United States during the Civil War; Carlton Burgan is an important example of such a transformation. As stated earlier in this thesis, Carlton was caught in the middle of the transformation. “Old” medicine led to his facial injury and “new” medicine allowed him to regain functionality and resume his life. Plastic surgery has had numerous “revolutions” since its inception. To understand the development of plastic surgery in the United States, it is necessary to discuss the origins of professional surgery in the United States.

Research has correctly focused on the beginnings of professional surgery in the United States occurring within the nineteenth century. Some of the most significant developments in professional surgery overall during the nineteenth century was the discovery of anesthetics, the creation of aseptic and antiseptic surgery in relation to the new science of bacteriology, the development of targeted surgery in treating diseases and extremity injuries and the rise of plastic

⁴⁴ Dennis, 762.

surgery into a specialty.⁴⁵ Additionally, a change in the means by which surgeons are educated, the growth of surgical societies and associations, and the beginning of more rapid international communication as well as publications are also noted to be important developments.⁴⁶ As mentioned previously, most of the United States' celebrated surgeons, such as Dr. Gurdon Buck, received much of their medical training in Europe (particularly Great Britain) in the early decades of the nineteenth century.⁴⁷ It should be mentioned that most Americans traveling to Europe for medical training were already physicians due to their basic training and experience gained in available American medical schools or as apprentices under the guidance of private instructors. But overall, the United States lagged European countries in terms of medical education, had low to nonexistent professional standards for physicians and lacked hospitals.

Specialization in medicine was not yet a professional option by the end of the Civil War. The main difficulty was the availability of different types of healing. For medical specialization to take hold, medicine had to develop reliable standards such as consistent medical training programs, governing boards, college-based instruction and official associations.⁴⁸ Specialization can be considered throughout the Civil War as a method by some physicians, such as Dr. Buck, to respond to the challenges that needed specialized expertise and interventions while also benefiting professionally from the opportunities they were given.⁴⁹

The history of the United States was marked by rapid social and economic changes and medical science kept pace with such changes. The nation had an enormous population expansion; for example, more than five times as many people lived in the United States throughout the Civil War than at the turn of the century.⁵⁰ There was a corresponding uptick in medical practitioners as well during this time of population growth. Another important factor quite

⁴⁵ John S. Billings, *The History and Literature of Surgery* (Philadelphia: Lea Brothers & Co., 1895), 90.

⁴⁶ Billings, 90.

⁴⁷ Courtney R. Hall, "The Rise of Professional Surgery in the United States: 1800-1865," *Bulletin of the History of Medicine* 26, no. 3 (May-June 1952): 231. Such desire for training outside the United States had been occurring since the late colonial time and continued past the American Revolution.

⁴⁸ Shauna Devine, *Learning from the Wounded: The Civil War and the Rise of American Medical Science*, First edition (Chapel Hill: The University of North Carolina Press, 2014), 134.

⁴⁹ Devine, 134.

⁵⁰ Hall, 237.

significant to surgery was the occurrence of three wars between 1800-1865; the War of 1812, the Mexican-American War and the Civil War as it made available significant surgical candidates on which to enhance their skills or attempt more experimental surgical procedures, such as Carlton Burgan's facial reconstructive surgeries.⁵¹ American surgeons participating in the above three wars had a particular focus on saving lives; thus the frequent use of amputations in the this period before the discoveries by Joseph Lister. Nineteenth century surgeons were committed to amputations in cases of compound extremity fractures, but inflicted substantial suffering on their patients and were mainly failures due to the limited medical knowledge base that existed at the time.⁵²

One area of surgical expertise apparently unique to American surgeons was in the area of gynecology – it was a part of operative surgical interventions that barely existed prior to the nineteenth century.⁵³ In his article, “The Rise of Professional Surgery in the United States: 1800-1865,” Courtney R. Hall argues that one reason for American surgeons becoming leaders in gynecological surgery may have been due to the frontier setting of colonial America.⁵⁴ Hall posited that such conditions necessitated innovation; for example, just prior to the end of the eighteenth century, two successful extrauterine pregnancy surgeries were completed in Virginia.⁵⁵ Other examples include removal of diseased ovaries with the first successful surgery completed in 1809, to be followed by other such surgeries effectively performed in 1821 and in the 1840s and later.⁵⁶ J. Marion Sims was a respected general surgeon when he attempted the repair of a vesicovaginal fistula in 1846; however, his success was likely due to improved surgical techniques and technologies.⁵⁷

⁵¹ Hall, 237. The author notes that during the Civil War over four million men had been mobilized and thousands of medical and surgical personnel had served in the Union and Confederate armies.

⁵² Hall, 244.

⁵³ Hall, 248.

⁵⁴ Hall, 248.

⁵⁵ Hall, 248.

⁵⁶ Hall, 249.

⁵⁷ L. Lewis Wall, “The Controversial Dr. J. Marion Sims (1813-1883),” *International Urogynecology Journal* 31, no. 7 (2020): 1301. The author describes vesicovaginal fistulas as “...hideous complications of prolonged labor, in which the tissues of the vesicovaginal septum are crushed between the impacted fetal skull and the laboring women’s pelvic bones, leading first to ischemia, then to tissue necrosis, and finally to continuous urinary incontinence as the traumatic

Industrial Revolution, Mass Consumerism and Medicine

While there were extraordinary changes in medicine that were hastened by the medical needs of soldiers throughout the Civil War, the dynamics of medicine actually began to change in the 1810s and 1820s. Improvements in literacy along with technological innovations in paper and printing allowed for a surge in health advice to enter American homes via the early days of advertising.⁵⁸ Newspapers played an important role in promoting medicine and medical products as well beginning in the 1830s. However, as noted in Chapter 1, there was still much dissent between more formally trained physicians and other types of practitioners.⁵⁹ One strategy physicians attempted to block other types of practitioners from successful practice was forming the American Medical Association (AMA), a national organization having the goal to professionalize medical practice.⁶⁰ In 1848, the AMA would create a code of ethics that essentially validated their members' superiority over other types of practitioners; a "good" physician did not criticize other doctors, steal patient from colleagues, claim to have secret remedies that cure deadly diseases, or advertise his own services. Unfortunately, the AMA's efforts were usually undercut by the actions of their members by creating for-profit medical schools that provided inadequately trained doctors and opening up drug companies that gave cheap alternatives to visiting a doctor.⁶¹ By the 1870s, the medical arena had what would be seen today as few limits. States allowed medical societies to issue medical licenses using standards beneath the AMA's guidelines. But physicians who were incompetent could be sued for malpractice and medicine manufacturers could not sell deadly poisons as harmless medicine.⁶² Not all people appreciated the reforms occurring in medical practice as the

fistula opens between the bladder and the vagina." While Dr. Sims is heralded for his work in the area of gynecology, the author notes that "Sims is controversial today not so much because of what he did, but because of whom he did it to." Sims' first patients were enslaved African American women with vesicovaginal fistulas whom he operated on between 1846-1849 and refined his technique that he described in 1852. For example, on one enslaved woman, he performed 20 operations before ultimately curing her.

⁵⁸ Nancy Tomes, *Remaking the American Patient: How Madison Avenue and Modern Medicine Turned Patients into Consumers*, (Chapel Hill: The University of North Carolina Press, 2016), 22.

⁵⁹ Tomes, 22. The author writes that regular physicians were being challenged by new medical groups such as homeopathic, Thomsonian, botanic and eclectic practitioners.

⁶⁰ Tomes, 23.

⁶¹ Tomes, 23.

⁶² Tomes, 25.

preference for “do-it-yourself” care and picking whatever type of medical practitioner desired was still prevalent. However, a determined minority of physicians and laypersons convinced state and federal legislatures that “some bad choices needed to be eliminated for the public’s own good.”⁶³ One example of such a group would be the United States Sanitary Commission.

After the Civil War, the United States experienced one of the fastest and profound economic transformations any country has ever undergone. This extreme growth was related to the United States having significant natural resources, a growing source of labor, an increasingly strong market for manufactured products and available investment capital.⁶⁴ Expansion of factory production, mining and railroad construction had the United States transitioning from a rural landscape of small farms and craftsperson workshops to a more mature industrial society. By 1880, the United States Census Bureau indicated that the majority of the American workforce held non-farming jobs and by 1890, two-thirds of Americans were wage earners. Between 1870 and 1920, approximately 11 million Americans moved from small farms to cities and there was also a wave of immigration approaching 25 million people. Big cities were consumption oriented in that urban households depended on others to provide food and other essentials on a cash basis.⁶⁵ The expansion of print culture along with newly created mail order services resulted in consumer consumption trends reaching rural areas as well.⁶⁶ While the technological and economic innovations during this period were revolutionary, not everyone benefited from the changes.

How did medicine figure into this new consumption era? In the past, news about scientific advancements moved quite slowly, but with new types of mass media available, such information was shared much faster and by the 1920’s, such developments were regularly reported by newspapers and magazines.⁶⁷ Magazines also pushed the idea that by meeting the

⁶³ Tomes, 26.

⁶⁴ Eric Foner, *Give Me Liberty!: An American History*. 2nd ed. (New York: W.W. Norton, 2008), 591-592.

⁶⁵ Tomes, 39.

⁶⁶ Tomes, 39.

⁶⁷ Tomes, 40. The author provided an example of a new journalistic concept called the “medical breakthrough story” beginning in the 1880’s with Louis Pasteur’s creation of a rabies vaccine.

beauty standard of the time, a person's success in employment and marriage would improve.⁶⁸ Also, with the growing popularity of film beginning in the 1890's, consumers began to see images of medical innovation and as the commercial movie industry added sound to their films, the depictions of physicians, hospitals and the "medical miracles" was even more effective in raising the profile of the medical profession as a whole.⁶⁹ For consumers, the creation and distribution of mass media guaranteed that everyone who could read a newspaper or watch a movie would see that medicine had much offer in terms of new products and services. For medicine, the movement toward reverence of modern science blended well with the idea that more and better scientific knowledge was the essence of progress, medical and otherwise.

The Rise of Plastic Surgery in the United States and Societal Expectations of Conformity

Plastic surgery began to be of importance in the 1840s within the United States. Many scholars document the first plastic surgery occurring in 1844, when a large forehead opening caused by a syphilitic ulcer was closed.⁷⁰ Other ground-breaking plastic surgeries in the 1840s were completed for the restoration of lips and cheek. There does appear to be some inconsistency within the literature regarding the first successfully completed plastic surgery in the United States; in 1832, a repair of a young farmer's jaw and cheek was completed by Dr. Valentine Mott.⁷¹ As discussed throughout this thesis, the Civil War was the greatest single influence in the advancement of American surgery since the founding of the country.

Many medical scholars have put forth both when and how plastic surgery became a genuine medical specialty. There has been much discussion of the challenges of defining what plastic surgery is in relation to medicine. Plastic surgery diverges from other medical practice in fundamental ways. This thesis asserts that plastic surgery has always been about societal expectations of conformity. This point is easily seen in the context of the historiography of plastic

⁶⁸ Haiken, *Venus Envy*, 31.

⁶⁹ Tomes, 40.

⁷⁰ Hall, 251.

⁷¹ Eugene H. Pool and Frank J. McGowan, "Surgery at the New York Hospital 1 Hundred Years Ago," *Annals of Medical History* 1, no. 5 (1929): 509. On review, it appears that Dr. Mott might have completed a type of flap surgery, but due to the lack of specifics surrounding the procedure, the surgical process is not known.

surgery itself and is explained thoroughly in Chapter 1. For the United States, when the societal expectations related to appearance began to change, so did the work of plastic surgery.

As discussed earlier in this chapter, the new science of psychology is argued to be the one of the most powerful influences on how plastic surgery became respectable in the United States. By recognizing social constructs such as “ugliness” as a deformity and putting forth plastic surgery as a cure-all for psychological problems, plastic surgeons became the conduits of reproducing and recreating a definition of beauty in line with societal beliefs of the day.⁷²

This influence began long before World War I, as can be seen by the morphing of the motivations behind plastic surgery. For example, the argument about what plastic surgery is – “reconstructive” versus “cosmetic.” There is no argument as plastic surgery is posited by this thesis to always be “reconstructive.” From its very beginnings, plastic surgery has been about “fixing” the body to both make it functional as well as to parallel the societal expectations of the time period. In the United States, such paralleling becomes obvious after the Civil War. So many men incurred horrible wounds that left them with missing limbs, chronic pain and in Carlton Burgan’s case, a facial wound that was debilitating as well as disfiguring. The populace of the United States during and after the Civil War had to cope with the realities of such injuries and expected such men to be “fixed” by the available medical procedures of the time.⁷³

Furthermore, what was considered a “deformity” changed as the United States populace moved into the Second Industrial Revolution and were influenced by new beauty expectations pushed by mass media as well as the emerging science of psychology which plastic surgeons co-opted as a method to push their field forward. One such example is provided by John Staige Davis, M.D. in “The Art and Science of Plastic Surgery,” where the author seems to be making a clear distinction between “reconstructive” and “cosmetic surgery.”⁷⁴ Davis elevated those performing “reconstructive” plastic surgery as true surgeons and is dismissive of physicians that

⁷² Elizabeth Haiken, *Venus Envy: A History of Cosmetic Surgery* (Baltimore: The Johns Hopkins University Press), 10.

⁷³ Sarah Handley-Cousins, “‘Wrestling at the Gates of Death’: Joshua Lawrence Chamberlain and Nonvisible Disability in the Post-Civil War North,” *The Journal of the Civil War Era* 6, no. 2 (2016): 229.

⁷⁴ J.S. Davis, “The Art and Science of Plastic Surgery,” *Annals of Surgery* 84, no. 2 (1926): 206.

engage in “the work done in beauty parlors...who are usually well advertised, and who are really “beauty doctors.”⁷⁵ However, Davis then appears to contradict himself when he remarked, “there is a group of patients who desire face lifting, or some similar procedure done, who have a definite *psychosis* [italics added], and at times the plastic surgeon is called upon to operate in order to relieve the mental condition.” This statement is an excellent example of how plastic surgeons inserted themselves into providing medical care to the mind.

Body Parts Impacted by Violence and American Societal Expectations

Defining society’s expectations of appearance is highly challenging as it is driven by everchanging cultural conventions that are very pervasive, taken for granted and assumed to be known to all.⁷⁶ Scholars in the specific area of beauty culture have also come to recognize that such expectations intersect with many other parts of culture and society such as art, theater, medicine and this thesis argues, emotional well-being. While such intersections can be difficult to interpret, general patterns emerge regarding what is acceptable societal physical appearance from the Civil War through World War I. For both men and women, there were significant shifts in societal expectations of appearance during this time period. During the Civil War, the image of a frail, pale, willowy woman was the standard of acceptance – this is one of the very few occasions where an allusion to race is made. After the Civil War, a new image of a “buxom, hearty, and heavy” woman was born and in the 1890s, societal standards evolved again to a “tall, athletic, patrician” look for women.⁷⁷ Finally, in the 1910s, a small, boyish appearance for women was introduced via movies and fashion magazines.⁷⁸

For men, the dominant model of acceptable appearance prior to the Civil War was one of youth; a man was to demonstrate a slim figure and be clean-shaven.⁷⁹ During the Civil War, men were expected to put forth an appearance including a full beard and a portly girth (which demonstrated success and business acumen) and by the end of the nineteenth century, societal

⁷⁵ Davis, 206. This paper was presented at the American Surgical Association on May 24, 1926.

⁷⁶ Lois W. Banner, *American Beauty*, (New York: Knopf, 1983), 4.

⁷⁷ Banner, 5.

⁷⁸ Banner, 5.

⁷⁹ Banner, 240.

expectations returned to a more youthful and athletic appearance that coincided with the increase of importance in male athletic endeavors such as baseball and football.⁸⁰ If men and women did not display such attributes, they would not meet the accepted standard for physical appearance of the time. As was mentioned above, there is a fascinating silence regarding skin color and race in the historical review of research related to plastic surgery and the time period encapsulated by this thesis.

Carlton Burgan, along with many other Civil War veterans, did not meet these societal standards, particularly as the nineteenth century drew to a close. As mentioned in Chapter 1, during and immediately after the Civil War, Union war veterans were considered to be worthy of being made “physically whole” due to their bravery in defending the country. Their injuries that made them look, act and feel different were accepted as part of their worth. However, as the Second Industrial Revolution arrived and the mass consumer era began, there was a movement back toward conformity in many areas, including physical appearance. If someone was not conforming to societal expectations of the time, they were not valued and were not seen in the greater American culture as worthy of being accepted into American ideals of exceptionalism. If a person was not considered worthy from their outward appearance, such an experience may lead to emotional devaluation (i.e., inferior complexes) which was also seen as a challenge in meeting the democratic societal standards of the time. The focus of this section will be discussing how the nose, face and genitalia were the parts of human beings most impacted by violence and American societal standards.

Nose

As has been reviewed in past chapters, the nose was the first body part targeted by plastic surgery. What has also been explored has been the inconsistency of historians in their research into the origins of such work. There have been many suggestions regarding the origins

⁸⁰ Banner, 240 and 242. The author comments that Charles Dana Gibson, a famous American illustrator, created the images of both women and men that had significant influences on societal expectations of appearance in the late nineteenth and early twentieth century – one of youth and athleticism, in particular.

of rhinoplasty (surgery of the nose) and taken in total, historical research has been most consistent in putting forth that plastic surgery of the nose has had a long and varied past. What is most clear is that repair to the nose originated out of violence, either via warfare or punishment. Chapter 1 provided an introduction to rhinoplasty; this section will provide more depth to the work of rhinoplasty available for historical review.

The Brancas of Sicily, circa 1430 C.E., appear to have created the use of arm flap reconstruction of noses.⁸¹ Their work was continued by Gaspar Tagliacozzi, a protégé of the Brancas and published by him in 1507.⁸² Tagliacozzi, unlike many plastic surgeons after him, did not have as a goal to claim priority or unquestionable originality in the field, but took for granted that knowledge related to past surgeons was known.⁸³ Instead, he wanted to show the fundamental differences between his work and those who came before him in terms of practical application and to promote the respectability of his particular work in relation to other branches of medicine.⁸⁴ Tagliacozzi's goal was to provide plastic surgery a scientific formulation that would demand respect from both other medical disciplines at the time as well as society as a whole. However, Tagliacozzi was not successful in his endeavors. One likely factor contributing to his lack of attainment could be related to the circumstances surrounding his work on noses damaged by advanced syphilis.⁸⁵ Chapter 1 discusses the impact of societal beliefs about ruined noses in the seventeenth and eighteenth century and how such beliefs probably silenced Tagliacozzi's achievements.

A London surgeon, Joseph C. Carpue, resumed work reportedly completed in India in 1794 that completed a forehead flap reconstruction of a mutilated nose.⁸⁶ Ambroise Paré, a

⁸¹ Frank McDowell, James A. Valone and James B. Brown, "Bibliography and Historical Note on Plastic Surgery of the Nose," *Plastic and Reconstructive Surgery* 10, no. 3 (1952): 149.

⁸² Martha T. Gnudi and Jerome P. Webster, *The Life and Times of Gaspare Tagliacozzi, Surgeon of Bologna, 1545-1599: With a Documented Study of the Scientific and Cultural Life of Bologna in the Sixteenth Century* (New York: Reichner, 1950), 1. Tagliacozzi's book was called *De Curtorum Chirurgia Per Insitionem Libri Duo*.

⁸³ Gnudi and Webster, 131.

⁸⁴ Gnudi and Webster, 131.

⁸⁵ Emily Cock, "Lead[ing] 'em by the Nose into Publick Shame and Derision': Gaspare Tagliacozzi, Alexander Read and the Lost History of Plastic Surgery, 1600-1800." *Social History of Medicine: The Journal of the Society for the Social History of Medicine* 28, no. 1 (2015): 1.

⁸⁶ McDowell, Valone and Brown, 149. The authors discuss the case of Cowasjee, a soldier under the command of a British lieutenant-colonel who was mutilated by the order of an Indian sultan.

noted French surgeon in the sixteenth century for his insights related to wound care, also wrote about a patient where the rhinoplasty techniques put forth by Tagliacozzi were successfully executed; the patient had been using a silver nose prosthetic for many years prior to the surgery.⁸⁷ Arm-flap and forehead-flap reconstructive surgeries began to be performed by many German surgeons in the nineteenth century, with numerous reworkings of the original methodology. At the same time, French surgeons also were experimenting with use of cheek skin flaps. These types of surgeries had a variety of names dependent upon who took credit for them – Indian, Italian or French.

In 1845, a German surgeon, Johann Friedrich Dieffenbach wrote a seminal book titled “Operative Chirurgie” that contained over 100 pages of descriptions of flap reconstruction for noses.⁸⁸ He saw the importance of careful designing of the flap, the preparation of the area to receive the flap, the actual transfer of tissue and postoperative specifics.⁸⁹ Dieffenbach is an important figure in the development of rhinoplasty techniques as his writings provided an insight into surgery of the timeframe, his observations are viewed just as accurate in the 1800s as they are now and are important original opinions. One example of his writings regarding preoperative rhinoplasty procedures is as follows:

You cut a nose out of a piece of leather. Before you start the operation, you place the leather pattern on the nose by blurring the edges around the stump. If the shape is satisfactory, you spread the pattern on the forehead in such a way that the part which forms the septum comes to lie close to the hair. You have to shave the hair so that it won't get into the wound. During the operation, the patient leans his head against the breast of the assistant who holds the sides of the head with his hands. And now you begin.⁹⁰

Dieffenbach's work was observed by American surgeons training in Europe in the first few decades of the nineteenth century, as medical training was at its nadir in the United States at

He and four other native [Indian] soldiers had been made prisoners of the sultan and their noses and hands were cut off and they were sent back to the English – leaves were bound over the stumps of their arms to control bleeding, but the remnants of their noses were left as was. Their wounds healed and the soldiers were given pensions. However, they later received nose repairs that appeared to have been done via forehead flap reconstruction when an English lord living in India by happenstance saw a merchant with a scar on his nose and forehead, who had a similar procedure done due to having his nose cut off due to committing adultery.

⁸⁷ McDowell, Valone and Brown, 149.

⁸⁸ McDowell, Valone and Brown, 150. “Chirurgie” means “surgery” in French.

⁸⁹ McDowell, Valone and Brown, 150.

⁹⁰ McDowell, Valone and Brown. 150.

that time. One practitioner, Jonathan Mason Warren of Boston, Massachusetts availed himself of the opportunity to watch Dieffenbach perform a rhinoplastic procedure in 1837; he was one of the first Americans to write about an “Indian” rhinoplasty.⁹¹ In terms of restoration of injuries of the alae and tip of noses, again in 1845, Dieffenbach proposed turning downward a forehead flap from above the injury for covering and then creating a vertical flap from the middle of the forehead for covering as well.⁹² Unfortunately, like other attempts at nose repair during this time period, this one was unsuccessful.

In the early nineteenth century, large and total nasal reconstructions were beginning to occur in Europe and the need for a more secure structural framework in which to perform such reconstructions became necessary. Initially, silver and gold were used as frameworks that would be placed into a nasal cavity and shaped into a nose that befitted societal approval of the time.⁹³ Other methods to prevent collapse of a reconstructed nose were the use of metal tubes inside each nostril to keep airways open, use of removable metal supports and air balloons and utilizing gold, lead, ivory, amber, silver, celluloid and caoutchouc as removable nasal supports.⁹⁴ In terms of nonremovable supports, other surgeons attempt to wrap flaps around aluminum and platinum metallic supports – most of these supports had some part of the support exposed within the nose itself.⁹⁵ Bone grafts were also attempted beginning in 1864, when periosteum was taken from a forehead flap in order to manufacture new bone in a reconstructed nose; however, necrosis of the frontal bone was a consequence of such a procedure when it was replicated.⁹⁶ In the same year, a flap was attempted that included periosteum, but also actual bone. This and other attempts using bone grafts in this manner were not successful at the time. The first written description of a

⁹¹ J. Mason Warren, “Rhinoplastic Operation,” *The Boston Medical and Surgical Journal* 16, no. 5 (1837): 69. The author’s description of the procedure was quite detailed and provided objective medical facts regarding the procedure. Such style of writing would be again seen via Dr. Buck’s book.

⁹² McDowell, 331. The alae of the nose are the fleshy parts of the nose that connect nostrils to the face.

⁹³ McDowell, Valone and Brown, 152. Such nose shapes were described by the authors as Roman, Carthaginian or Roxelanne.

⁹⁴ McDowell, 324-325.

⁹⁵ McDowell, 325. The author commented that platinum supports were shaped in the form of a St. Andrew’s cross (a diagonal cross shape).

⁹⁶ McDowell, 325.

cartilage graft for nasal support was in 1900, for use in a saddle nose repair; costal cartilage was harvested from the rib area for nasal support.⁹⁷ Also in 1900, a precursor to the tubed pedicle flap, the jump flap (a flap that originated in the chest to the wrist and then to the nose) had rib periosteum within it for support. However, after a variety of attempts with periosteum, it was discovered that it typically reabsorbed into the body and did not form bone consistently. In 1920, tubed pedicle flaps began to be used as a successful method of nose reconstruction.⁹⁸

Another area of nasal reconstruction prior to World War I revolved around treatment of “saddle nose” deformities. A “saddle nose” during this time period usually was due to congenital deformity, trauma-induced damage to the nose or through some type of illness, which in this time period was likely advanced syphilis. Saddle nose repair began in the 1820-1840 time period where skin flaps were inserted into the dorsum of the nose.⁹⁹ Frontal bone was often used as part of a forehead flap as well as removable or nonremovable metallic frameworks, as noted earlier. Injections of “Vaseline” was also used and was initially widely used until negative complications such as fatal pulmonary emboli occurred.¹⁰⁰ In 1904, the introduction of low-melting point paraffins was begun and this method was used often for more than 20 years. At first, the results from paraffin injections seemed positive; a variety of syringes were developed, and several types of materials were used. Such injections were eventually abandoned due to negative side effects such as thrombosis, pulmonary emboli and infarction.¹⁰¹ Heterogenous transplants were also attempted by surgeons to repair saddle nose deformities.¹⁰² The most famous attempt was done by Robert Weir in 1892; Dr. Weir was the physician managing Carlton Burgan’s case prior to Dr. Buck’s involvement. Dr. Weir unsuccessfully implanted a duck’s breastbone into a patient’s dorsum, which while initially “remarkably satisfactory,” soon created a local infection and was removed.¹⁰³

⁹⁷ McDowell, 326.

⁹⁸ McDowell, 326. The tubed pedicle flap for such procedures was put forth from Gillies from his work on facial reconstruction of World War I injured soldiers.

⁹⁹ McDowell, 327. The dorsum of the nose starts at the top of a nose and ends at the tip.

¹⁰⁰ McDowell, 327. The author comments that it is not clear if “Vaseline” was similar to current-day petroleum.

¹⁰¹ McDowell, 327.

¹⁰² McDowell, 327. A heterogenous transplant is a transplant between different species.

¹⁰³ McDowell, 328.

In 1845, Dieffenbach briefly mentioned surgery to straighten a twisted nose through external incisions, chiseling the bones away from the face and the nasal septum from the palate and finally, fracturing the nose and creating an overcorrection.¹⁰⁴ No mention was made of the motivations of such surgery. In 1887, John Roe presented a paper to the New York State Medical Society titled “The Deformity Termed Pug Nose, and Its Correction by a Simple Operation,” where he described a surgical procedure where he reduced bulbous nasal tips in five patients and illustrated the results with before and after drawings.¹⁰⁵ In 1891, Roe presented another paper before the same society titled, “The Correction of Angular Deformities of the Nose By a Subcutaneous Operation.”¹⁰⁶ It appears that this surgery was the first specific description of nasal hump removal with attached photographs of patients before and after the surgery.¹⁰⁷ These two surgeries established Roe as the inventor of corrective rhinoplasty. While McDowell, Valone and Brown make this claim in their discussion, this statement is inconsistent with their review of the literature on rhinoplasty where they report repairs on mutilated noses as early as 600 B.C.E.¹⁰⁸ The word “mutilated” is defined “to cut up or alter radically so as to make imperfect and to cut off or cause severe damage to a limb or essential part of.”¹⁰⁹ Deformity is defined “the state of being deformed, a physical blemish or distortion or a moral or aesthetic flaw or defect.”¹¹⁰ McDowell, Valone and Brown appear to be using the words synonymously when the definitions are quite different. It is argued that this change in interpretation is directly related to societal expectations that were shifting at the time of the Roe’s surgical procedures. “Fixing” the nose

¹⁰⁴ McDowell, 332.

¹⁰⁵ McDowell, 332. The author writes that Roe performed the surgery via intranasal incisions; such incisions dissected the nasal lining free, lifted the nose tip up and cut out the excess mass. The author also indicates that if the alar cartilages were deformed, Roe repaired those as well. After such surgeries, Roe would place silver tubes in the patients’ nostrils and put a splint over the outside of the nose to keep its new shape until it was healed.

¹⁰⁶ McDowell, Valone and Brown, 159.

¹⁰⁷ McDowell, Valone and Brown, 159. The authors wrote that the surgery was performed under local cocaine anesthesia. After the first incisions, Roe “...undermined the skin widely, inserted angular bone scissors up through the nostrils, cut the hump off until the dorsum was smooth, and then strapped the skin down with pressure and a splint.”

¹⁰⁸ McDowell, Valone and Brown, 149.

¹⁰⁹ *Merriam-Webster*, s.v. “mutilated (v.)” Accessed May 8, 2023, <https://www.merriam-webster.com/dictionary/mutilated>.

¹¹⁰ *Merriam-Webster*, s.v. “deformity (n.)” Accessed May 8, 2023. <https://www.merriam-webster.com/dictionary/deformity>.

was no longer about function; it was now about fitting in with what American society at the time viewed as acceptable.

Face

Carlton Burgan reportedly had the first facial reconstruction surgery performed by Dr. Gurdon Buck. The five surgical procedures he endured to regain functionality are well described in Chapter 3. As much as Dr. Buck appeared to focus on the importance of restoration of function, he also had another goal for Carlton's surgery – to not have his appearance offensive to others.¹¹¹ While a review of Carlton's Burgan's facial surgery has been well-documented in Chapter 3, the next section will delve into facial surgery more fully.

Facial surgery, similar to rhinoplasty, has existed for many centuries. One of the earliest facial plastic surgeries targeted what was originally called a "hairlip," now known as a cleft lip.¹¹² Cleft lips are due to incomplete fusion of the maxillary and medial nasal processes.¹¹³ Cleft lips have been traced back to Egyptian mummies and in 390 C.E., a successful cleft lip repair was completed by an unknown Chinese surgeon on an 18-year-old farmer.¹¹⁴ In 950 C.E., Saxon surgeons of pre-Norman Britain may have been the first to provide a clear description of a cleft lip repair in Europe while in the twelfth century, a Flemish surgeon named Jehan Yperman provided the first precise description of a cleft lip and its surgical repair. During the colonial and post-Revolution America period, cleft lip repairs were also being completed by traveling physicians and surgeons; such practitioners made their services known by advertising in newspapers or broadsides of the time. Most of these surgeons were considered "quacks" or "charlatans" as they not only advertised surgical procedures, but also hocked worthless concoctions such as "anti-venereal sugar plums" and "cures for blindness."¹¹⁵ However, cleft lip surgery had not evolved

¹¹¹ Robert F. Weir, *Personal Reminiscences of the New York Hospital from 1856-1900: Some Civil War Recollections, 1861-1865* (New York Hospital, 1917), 27.

¹¹² Blair O. Rogers, "The Historical Evolution of Plastic and Reconstructive Surgery," In *Nursing Care of the Plastic Surgery Patient* by Donald Wood-Smith and Pauline C. Porowski (St. Louis: C.V. Mosby Co., 1967), 8.

¹¹³ Lisa M. Elden and Karen B. Zur, *Congenital Malformation of the Head and Neck* (New York: Springer New York, 2014), 108 and 110.

¹¹⁴ Rogers, 9.

¹¹⁵ Rogers, 18.

beyond simple cauterization or paring of the cleft edges with basic lining up of the lip sections until the nineteenth century with the use of curved incisions and the use of flaps from the lateral lip.¹¹⁶ Additionally, there was not yet a surgical procedure for repair of malformations of the soft or hard palate. In 1766, the first cleft palate repair was credited to a French dentist named LeMonnier and in 1819, Dr. Philibert Roux reported repairing a soft palate of a medical student.¹¹⁷ Finally, in 1861, a repair of a hard cleft palate was reported by Bernard von Langenbeck and some of his techniques are still used today.¹¹⁸

The use of surgical flaps, as described in Chapter 2, played an important role in the repair of cheeks in the United States as Valentine Mott in 1831 reportedly used a large cheek flap to fill in a scar defect of the left oral commissure region.¹¹⁹ In terms of the ear, Chapter 1 describes the first known ear surgery that was performed for improvement of appearance only occurring in 1881. As may be recalled, the surgery was done due to the patient (a young boy) being ridiculed for how his ears protruded. The focus on plastic surgery as a legitimate method to medically treat emotional difficulties was just beginning through the influence of the young science of psychology as discussed earlier in the chapter.

The repairing of facial scars was first done in the United States by Thomas Mütter of Virginia in 1841 where he corrected a burn scar contracture of the neck through the use of a flap from the patient's shoulder.¹²⁰ After this surgery, Mütter indicated that "many shocking deformities from burns have been relieved by the performance of operations conducted on these principles (use of flaps)" and that eyelids, cheeks, noses and lips can be repaired using the same techniques.¹²¹ During the Civil War, Gurdon Buck and David Pierce were considered two of the

¹¹⁶ Elden and Zur, 111.

¹¹⁷ Elden and Zur, 111.

¹¹⁸ Elden and Zur, 111. The authors indicated that von Langenbeck's technique of "... raising the mucoperiosteum from the posterior edge of the cleft hard palate to the posterior aspect of the alveolus continues in modern cleft hard palate repair."

¹¹⁹ Rogers, 24. Oral commissures are corners of the mouth.

¹²⁰ Gustave Aufricht, "The Development of Plastic Surgery in the United States," *Plastic and Reconstructive Surgery* 1, no. 1 (1946): 7. The author indicated that the patient was a 28-year-old female who had been severely burned at age five which drew "...down of her chin to within one and one-half inches from the top of the sternum, which made her unable to close her mouth, nor could she turn her head from side to side."

¹²¹ Aufricht, 9.

best representatives of plastic surgery. Dr. Buck's work has been discussed in the context of Carlton Burgan's facial reconstruction surgeries. Dr. Pierce was a contemporary of Dr. Buck's and served as a brigade surgeon during the Civil War. His book, *Plastics and Orthopedics: Three Reports to the Illinois State Medical Society in the Years, Respectively, 1864, 1867, and 1871*, was considered a seminal book in terms of its detailed and critical study of plastic surgery methods occurring at that time.¹²² In 1898, George Monks described the successful reconstruction of a right lower eyelid through the use of a pedicle flap technique and used the same technique for a later eyebrow reconstruction.¹²³ Throughout the time of the Civil War to the beginning of World War I in 1914, facial plastic surgery continued to grow in popularity as Americans moved away from defining beauty and self-worth from within to a method of personal definition of physical perfection defined by American society itself. The new beauty culture put forth in the late nineteenth and early twentieth centuries advanced American democratic ideals through the belief that if a person had plastic surgery, that person could attain better employment and improve their financial situation.¹²⁴

Genitalia

The history of plastic surgery of the body cannot end without the exploration of its impact on male and female genitalia. Like other plastic surgery procedures, restoration of genitalia either due to violence, congenital malformation or as a method of reaching societal beauty standards are explored in this section.¹²⁵

Circumcision is referenced in the Old Testament and while it was originally viewed as a religious ceremony, the practice spread rapidly in relation to its benefits for personal hygiene,

¹²² Aufrecht, 14.

¹²³ George H. Monks, "The Restoration of a Lower Eyelid by a New Method," *The Boston Medical and Surgical Journal*, 139, no. 16 (1898), 386-387. The author discussed how the patient was in need of surgical intervention on his lower right eyelid due to having a malignant tumor on the lid. Because of the amount of infiltration of the tumor, the right eyelid was completely removed and recreated via a pedicle flap harvested from the right temple region.

¹²⁴ Haiken, *Venus Envy*, 31.

¹²⁵ Paolo Santoni-Rugiu and Philip J. Sykes, "Chapter 9, Reconstruction of the External Genitalia," In *History of Plastic Surgery*, 251-275. (Berlin: Springer Berlin/Heidelberg, 2007), 253.

particularly in warmer climates.¹²⁶ It is suggested that Egyptians and Phoenicians were two of the first to practice circumcisions as early as 1550 B.C.E. and while they adopted it mainly for hygiene, the procedure was not lacking in religious overtones.¹²⁷ Ancient Hebrews viewed circumcision as a sacred ritual and the practice was officiated by a rabbi, Greeks in the fifth century B.C.E. engaged in circumcision as a preventive measure and the Romans continued the practice into the Common Era.¹²⁸ However, early on in the history of circumcision, the practice soon became problematic; in Rome, a radical excision was viewed as a “defect” as men with such an exposure were “looked upon as the most unfortunate of beings!” when in the gymnasium.¹²⁹ The power of Roman societal expectations was in full force and thus, it has been noted that decircumcision was practiced by Jews to be able to blend in at places such as the gymnasium, an institution created to be a meeting place for cultural and athletic activities that included hot baths.¹³⁰ Peter Charles Remondino, in *History of Circumcision, from the Earliest Times to the Present: Moral and Physical Reasons for Its Performance, with a History of Eunuchism, Hermaphrodism, Etc., and of the Different Operations Practiced Upon the Prepuce*, further describes the risks to Jewish men were great in terms of maintaining a circumcised penis as “in other cases, threatened exile, confiscation, or exorbitant taxation drove them [Jewish males] to adopt every possible expedient to eradicate the sign of their Israelitism and make attempts to reform a prepuce.”¹³¹

¹²⁶ Santoni-Rugiu and Sykes, 253.

¹²⁷ Santoni-Rugiu and Sykes, 253.

¹²⁸ Santoni-Rugiu and Sykes, 254. The authors indicated that the Roman surgeon Celsus noticed that circumcision could be a medical intervention when foreskin could not be drawn back to expose the glans.

¹²⁹ Santoni-Rugiu and Sykes, 255.

¹³⁰ Santoni-Rugiu and Sykes, 256.

¹³¹ P.C. Remondino, *History of Circumcision, from the Earliest Times to the Present: Moral and Physical Reasons for Its Performance, with a History of Eunuchism, Hermaphrodism, Etc., and of the Different Operations Practiced Upon the Prepuce*, (No place, unknown, or undetermined: F.A. Davis, 1900), 68. The author shared how Jewish men attempted to regain a prepuce: “This was no easy operation, and in later times by the aid of appliances...in speaking of the instrument used in Rome, a sort of a long funnel-shaped copper tube in which the Hebrew carried his virile organ...the weight of which, by drawing down the skin, was supposed in time to draw it down far enough to answer the purpose.” The author goes on to state that such a procedure was rarely a success.

Sander L. Gilman in “Decircumcision: The First Aesthetic Surgery,” puts forth that decircumcision set Jewish men’s bodies apart from “that of his neighbors,” specifically Europeans and how societal expectations of physical appearance influenced decisions regarding use of plastic surgery procedures to appear as society (of the time) dictates.¹³² The author refers to issues such as “damaged masculinity” only being understood through the lens of medical science; the influence of Adler’s inferiority complex is quite present. As plastic surgery can fix feelings of inferiority via surgery, the best response, per Gilman, was to operate and remedy the emotional difficulties of the patient.¹³³ To be sure, such surgery also remedied the issue of Jewish males to “pass” as the importance of restoring the ability of these men to be seen as meeting the beauty and body standards occurring post-Civil War and throughout the turn of the century were vital. This is particularly relevant as Jewish men in the nineteenth century were beginning to enter the broader societal network, converting to Christianity and marrying non-Jewish wives, thus the need for Jewish men to be able to be viewed in terms of societal expectations as conforming to the societal appearance standard of the time.¹³⁴

In terms of female genital plastic surgical procedures, much of the focus has been on congenital vaginal malformations such as the imperforated hymen, vaginal atresia and hypospadias.¹³⁵ Again, the Roman surgeon Celsus provides one of the first treatments for vaginal malformations. For a repair of an imperforated hymen, he recommended an X-shaped incision to open the vaginal opening and for vaginal atresia (lack of a vagina), Celsus argued that the most favorable treatment would be to dissect “a cavity between the bladder and the intestine, and then filled with cotton soaked in vinegar to keep it open.”¹³⁶ Additionally, the patient needed to insert a tin tube in the newly created vagina at frequent intervals to maintain its shape.¹³⁷ The

¹³² Sander L. Gilman, “Decircumcision: The First Aesthetic Surgery,” *Modern Judaism* 17, no. 3 (1997): 201.

¹³³ Gilman, 202.

¹³⁴ Gilman, 204.

¹³⁵ Santoni-Rugiu and Sykes, 258.

¹³⁶ Santoni-Rugiu and Sykes, 258.

¹³⁷ Santoni-Rugiu and Sykes, 258. The authors discuss other potential corrective surgical interventions for the imperforated hymen – “a servant maid, whom several scholars could not deflower, after having shock’d all their vigour against the ligature of her caruncles...the girl, being wholly imperforated, could not discharge her menstrual terms, they being detained by a membrane which joined the carcuncules, and entirely lock’d up the passage... A lengthwise

above surgical interventions were used well into the nineteenth century. As gynecology as a medical specialty was not present until the nineteenth century, usually women only became aware of such malformations through illness, particularly abdominal pain or in examination for proof of virginity prior to marriage.¹³⁸

Within the United States, creditable efforts to repair vaginal malformations were occurring throughout the nineteenth century. In 1818, John Syng Dorsey published a surgical text that had the description of a vaginal reconstruction similar to the one performed by Celsus with warnings about the need to avoid damaging the bladder as well as making use of tampons to keep the newly created vagina dilated.¹³⁹ Similar procedures were written about through the middle of the nineteenth century. The difficulty of managing contracture of new vaginas was a challenge for nineteenth century surgeons as it often resulted in quashing the success of such surgeries. Initial attempts at prevention of such contracture were by lining the new vagina with skin grafts; there is some argument as to when such a process was first completed.¹⁴⁰

Even with all of this optimism about the success of such surgeries, there was one powerful dissenter – Samuel David Gross. In 1864, not only did Gross comment that “there was nothing to be done when there is an absence of the vagina,” but he also argued that “women are impotent and therefore disqualified from marriage.”¹⁴¹ During this time period, women had very few options regarding the dictates of their lives as relentless societal messages viewing women as subservient to men meant that their only worth came from their ability to bear children. Although, as mentioned earlier in this chapter, rapid changes in the United States opened doors to women, societal expectations just became heavier for women as now not only should they

incision in that membrane, from where issues out a great quantity of black and stinking blood, gave the patient ease, and perfectly cured her.”

¹³⁸ J. B. Banister and A.H. McIndoe, “Congenital Absence of the Vagina, Treated by Means of an Indwelling Skin-Graft,” *Proceedings of the Royal Society of Medicine*, 31, no. 9 (1938): 29.

¹³⁹ Santoni-Rugiu and Sykes, 262.

¹⁴⁰ Santoni-Rugiu and Sykes, 262. The authors comment that dependent on who is asked, such an innovation took place as early as 1870 or as late as 1936.

¹⁴¹ Santoni-Rugiu and Sykes, 262. A similar statement would be made 50 years later about the vaginal reconstructions carried out for the past 2500 years as “...uninspired surgical exercise on the external genitalia.”

marry and have children, but they now must consider the challenges of new standards for physical appearance brought forth by psychology and advertising.

In 1898, Robert Abbe, in his article, “New Method of Creating a Vagina in a Case of Congenital Absence,” put forth plastic surgery options regarding different types of vaginal atresia.¹⁴² He emphasized the importance of distinguishing between “congenital closure of the outer or middle portion, (where the uterus and the vaginal wall near it remain)” and the lack of a vagina altogether, often also lacking a uterus and ovaries in terms of treatment.¹⁴³ For a partial closure, Abbe simply indicated that a “surgical procedure will easily make a complete and enduring canal” but did not provide specifics. In terms of a complete absence, Abbe argues that if an opening is created between the rectum and the bladder, then after a long period of granulation (wound healing), tampons would be introduced to have skin scarring that would grow inward to form a vagina.” Unfortunately, while Abbe speaks confidently about surgical repair for these issues, he also indicated that results have “never been worthy of being called a success.”¹⁴⁴

In 1911, Arthur E. Giles, in “A Lecture on Malformations of the Female Genital Organs in Their Clinical Aspects,” reviewed surgical interventions for female genital malformations. He readily admitted that his reviews “have relation to the question of sex, to menstruation, to marriage and to childbearing.”¹⁴⁵ Beyond providing important information about plastic surgery options in these areas, Giles also seemed to be commenting on societal mores related to what he called “malformations,” but his language use suggested he was arguing the case for women’s self-worth of the time. For example, he discussed a case involving a surgical intervention on a 22-year-old patient in 1908. He reported that the patient had “had some kind of ulceration in early life, which led to much scratching and rubbing of the vulva.” Giles observed that the patient’s vulvar orifice was narrowed by scar tissue that would have made sexual intercourse and having

¹⁴² Robert Abbe, “New Method of Creating a Vagina in a Case of Congenital Absence,” *Medical Record (1866-1922)* 54, no. 24 (1989): 836.

¹⁴³ Abbe, 836.

¹⁴⁴ Abbe, 836.

¹⁴⁵ Arthur E. Giles, “A Lecture on Malformations of the Female Genital Organs in their Clinical Aspects,” *The British Medical Journal* 2, no. 2648 (1911): 723.

children impossible.¹⁴⁶ Since the patient “desired to marry,” Giles operated and increased the size of the vulvar opening. The result of the surgery, per Giles, was “most satisfactory” and in 1911, the patient’s mother came to Giles and asked for a certificate of marriageability, which Giles provided after inspecting the patient’s vagina once again.¹⁴⁷ Giles’ article is an example of how societal expectations, conveyed (not created) by a plastic surgeon, could impact lives.

To conclude, this chapter provided an overview of multiple change agents influencing the direction of plastic surgery between the approximately 40-year history between the start of the Civil War and post-World War I. As the United States emerged from the Civil War and headed into a unique period of rapid growth and transformation brought on by the Second Industrial Revolution, societal expectations regarding human beings also transformed. A historical analysis has been provided to argue that the field of plastic surgery and the medical practitioners that existed within it were not responsible for changes in consumer culture – societal beliefs about appearance in all of its forms drove the field.

¹⁴⁶ Giles, 724.

¹⁴⁷ Giles, 724.

Chapter Five

CONCLUSION

Carlton Burgan's story within the annals of plastic surgery is unique as he was caught in the middle of a transformation that would revolutionize medicine in the United States. As so many Union and Confederate soldiers did during and after the Civil War, he suffered due to ignorance and arrogance from those who were considered medical practitioners. Change is always difficult but for those who were ill or wounded by weapons of war, they hold the hope that such caregivers will provide the very best care possible, even if such care is out of the norm.

While Carlton did suffer and experienced a horrific injury, he was also in luck. Because of the beginnings of change in medical care in the Union Army by way of the United States Sanitary Commission, Carlton got the opportunity to meet a renowned surgeon who offered a chance of recovery. Dr. Gurdon Buck was part of the transformation of both medicine overall and plastic surgery in particular. Carlton and Dr. Buck began a journey that resulted in the first facial reconstructive surgery completed in 1863. There were numerous risks to the five surgeries Carlton would have and the process itself was unique as it incorporated new surgical techniques as well as included two other disciplines (dentistry and optometry). After the surgeries, Carlton returned to his home in Baltimore County, Maryland, married, resumed work as a laborer and had 10 children. He died in 1914 at age 71.

Although Carlton Burgan's surgery was initially quite well-known in United States government documents, medical societies and via a book written by Dr. Buck, he faded away from the historical record not to appear again until 1996. Why would that be? Carlton himself was a revolutionary focal point and it did not make sense that he would not be more prominent in, at the very least, plastic surgery records of the time. There are a variety of potential explanations, but this thesis has argued that the evolution of plastic surgery between the ending of the Civil War and the close of the Progressive Era in the United States left individuals such as Carlton in the historical dustbin. There has been and continues to be a debate about the role of plastic surgery in the United States. The Second Industrial Revolution and the expansion of businesses such as advertising pushed forward the belief that anything can be fixed through plastic surgery, even

deep-seated psychological challenges such as inferiority complexes. If a person did not attempt to heal such wounds, they were not working toward becoming what societal beliefs of the time expected of them – perfection.

In Chapter 4, discussion of Carlton's life after his facial reconstructive surgery was provided. It was mentioned that the last available photograph of Carlton was taken when he was wearing a mask. In the years just prior to his death, societal views regarding disfigurement due to violence or illness were changing. While the surgery may have aged unevenly and not to the expectations of physical appearance of the time, his recovery was still a medical miracle. Regardless of why, his choice of wearing a mask was hiding a miraculous event., Carlton's physical appearance and Carlton no longer fit into what was accepted in terms of physical appearance – thus, the use of the mask to hide what was truly a miraculous event.

Carlton returned to the historical record actively in 1996. On August 22, 1996, the "Baltimore Sun" newspaper wrote a story about the National Museum of Civil War Medicine in Frederick, Maryland which heralded the efforts of Civil War medical practitioners and used Carlton's story as an example of success.¹⁴⁸ Unfortunately, while the author put forth some correct detail regarding Carlton's experience, he also described Carlton's "before" photograph as "...Burgan's disease-eroded face reminds you of a grotesque Popeye *in extremis*" and that his face was "...thickly scarred with Frankenstein-esque seams..."¹⁴⁹ There was no discussion about Carlton beyond incorrect information about the illness that led to Carlton's mercury poisoning. The article concluded with a discussion about how the museum was "a work in progress" due to a lack of financial support, but quoted the director of the museum as gamely stating, "...We're going to tell an aspect of the Civil War that hasn't been told before."¹⁵⁰ Instead of providing information about Carlton's experience during his facial reconstruction work or Dr. Buck's innovations in getting Carlton to a place of functionality, the story sensationalized him and cruelly focused on his appearance. Some things never change.

¹⁴⁸ Lowell E. Sunderland, "History is the Best Medicine the Civil War Had to Offer," *Baltimore Sun*, August 22, 1996, 22 Aug 1996, Page 53 - The Baltimore Sun at Newspapers.com, 1e and 5e.

¹⁴⁹ Sunderland, 5e.

¹⁵⁰ Sunderland, 5e.

One of the goals of this thesis is to change the circumstances regarding the story of Carlton Burgan. As articulated throughout this thesis, Carlton was a change agent in the history of plastic surgery in the United States. His story was one of bravery and sacrifice in a way that he likely could not imagine when he joined the Union Army. Carlton's decision to allow Dr. Buck to perform these revolutionary surgical procedures and publicize his physical journey allowed other plastic surgeons to learn new skills to help others. However, Carlton continued to be a powerful example of the changes in societal standards regarding physical appearance and worth. He was again caught in a change process where his sacrifice was ignored as only his physical appearance mattered. Societal expectations of appearance changed in terms of outward appearance and at the time of Carlton's death, if Americans did not attempt to meet new societal standards of health and beauty or at the very least, blend in, they were marginalized. An important future research consideration would be a more in-depth study of the history of plastic surgery in terms of race as there was a conspicuous void in the medical research of the time.

Throughout the history of plastic surgery, there has been (and continues to be) an argument about what it is as a medical specialty. The battle between "reconstructive" and "aesthetic" plastic surgery has existed since people had body parts cut from their bodies as a consequence of war or punishment for actions not deemed appropriate for societal standards of appearance of the time. As was demonstrated throughout this thesis, there truly was never a battle as plastic surgery is asserted to have always been a mechanism for reconstruction to societal expectations of the day.

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