
Military Physician Edward Bright Vedder's Efforts to Legitimize Healing and Harming Using Western Just War Theory, 1899-1949¹.

Los esfuerzos del médico militar Edward Bright Vedder por legimitar la curación y la agresión sirviéndose de la teoría occidental de la Guerra Justa, 1899-1949.

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Abstract: This paper examines the career of military physician Edward Bright Vedder from the Philippine-American War (1899-1902) to the end of the Second World War (1945). Vedder helped discover the cure for beriberi while simultaneously promoting chemical weapons, calling the former a “needless sacrifice” and the latter “humane.” He believed both chemical warfare and beriberi saved lives. Drawing on Vedder’s unpublished memoir, *Fifty Years in Medicine*, and the canon of just war theorists, this work offers a case study of how one military physician used Western military theory, specifically the principle of double effect (or collateral damage), to rationalize the problem of dual loyalty.

Keywords: chemical warfare, beriberi, just war theory, military physician, medicine, collateral damage, problem of dual loyalty

Resumen: Este artículo examina el papel del médico militar Edward Bright Vedder desde la Guerra filipino-estadounidense (1899-1902) hasta el final de la Segunda Guerra Mundial (1945). Vedder contribuyó a descubrir la cura para el beriberi al tiempo que promovía las armas químicas, denominando al primero “innecesario sacrificio” y a las segundas “humanas.” El creyó que tanto la guerra química como el beriberi salvaban vidas. Valiéndome de las memorias inéditas de Vedder, *Fifty Years in Medicine*, y el canon de los teóricos de la guerra justa este trabajo plantea un caso de estudio sobre cómo un médico militar utilizó la teoría militar occidental, específicamente el principio del doble efecto (o daño colateral) para racionalizar el problema de la doble lealtad.

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Palabras clave: guerra química, beriberi, teoría de la guerra justa, medico militar, medicina, daño colateral, problema de la doble lealtad.

Military physician Edward Vedder's work to cure beriberi in the aftermath of the Philippine-American War and efforts to develop chemical weapons during the First World War appears to reflect a discontinuity between healing and harming. Military physicians of the period found themselves in a liminal space: a tug between the Hippocratic oath taken while in medical training and the brutal warfare of kill and be killed to protect one's fellow soldier, country, and ideologies. This moral dilemma is known as the problem of dual loyalty, or mixed agency. Vedder's loyalties were committed to both the medical and military traditions, but the contemporary observer sees that occasionally the goals of both these traditions were in contrast.² Yet, Vedder himself saw no contradiction between curing diseases and promoting chemical weapons; he believed both focused on saving lives. His beliefs and actions resembled the Western social, medical and just-war theories he was trained in; in fact, Vedder's life is interesting and worth studying because of how distinctly he followed the conflicting ideals of the Western medical and military traditions, despite their apparent –on the surface– conflicting ideologies. His dual loyalties led to a seemingly incongruous personal ideology that complicated his life-saving work on beriberi.

Vedder was a military man who believed in the United States Army and almost never disagreed with the justness of its cause. Vedder's views on civilian deaths reflected a philosophical tradition that undergirded just war theory. According to this tradition, as long as the war was just, civilian casualties were excusable and the killers exculpated. Today, this is known as collateral damage. This term was not a part of the vernacular at Vedder's time of writing, but a similar ethical dilemma, the doctrine of double effect, had its roots in medieval jurisprudence and was later written about by Thomas Aquinas (c.1225-1274). The principle of double effect questions whether an individual is responsible for foreseeable, yet unintended, side-effects that harm in the same way they are responsible for harms that are directly intended. Aquinas frames the question by asking whether or not violent self-defense was just. He imagines a situation where thieves attack an individual and threaten him with personal harm, positing the

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victim's response of violence as just. He compares this with the self-defense exercised by soldiers in wartime as a point of contrast.³

Aquinas further argues that those who are able to restrain from inflicting violence as a matter of self-defense are morally responsible to do so. If a death can be avoided, it should be. Soldiers may not kill indiscriminately and must be fully aware of what constitutes self-defense. Therefore, the doctrine of double effect does not provide a blanket justification for civilian casualties. Morally good leaders and soldiers have a responsibility to minimize foreseen and unintended consequences. Individuals also have a moral obligation to protect other humans who are in need or suffering. This early concept of Aquinas's is now known as humanitarian intervention. Aquinas's idea of the humanitarian is the type of image Vedder wanted to leave for posterity. Vedder's life-long efforts in medicine, particularly his work to cure beriberi, easily leaves such an impression. It is his work with chemical warfare that complicates such a legacy of a kindly, humane physician.

At the end of his life, Vedder wrote an unpublished autobiography summarizing his work in the medical field called *Fifty Years in Medicine*. Vedder narrated his autobiography in the third person and interspersed stories about his life with facts he had learned about medicine, the state of the medical field, his military service, and his opinions about life. Written with a sense of humor, the autobiography portrays Vedder's peculiar, but likeable, personality. Most of the autobiography is about Vedder's adult life, with very little information about his childhood and early years of education, but he does provide some insights into what his childhood might have been like. Edward Bright Vedder was born in 1878 in New York City. He was the son of Baptist minister Henry Clay and his wife Minnie Lingham Vedder. At a young age, Vedder became interested in the observation of natural creatures, which he believed led him to a career in the sciences: "The physician usually has a biological mind, and as a boy has studied spring peepers (*Hyla*), tree toads and birds."⁴ Attending college in 1898, he earned his Ph.B (Bachelor of Philosophy, involving extensive research) from the University of Rochester where he studied biology. Next he attended the University of Pennsylvania, earning his M.D. in 1902 and his M.S. in 1903.

Vedder was a medical student at a most transformative moment in the history of medicine. Just fifty years before, patients were still treated by the ancient methods of bloodletting, cupping, and leaching. Only the luckiest underwent surgery with anesthesia. Physicians of the 19th century were limited in the types of remedies they could offer patients. American physician Oliver Wendell Holmes, Sr. (1809-1894) is said to have quipped that if all the medical practice of the day were "sunk to the bottom of the

³ Gregory M. REICHBERG, Endre BEGBY, and Henrik SYSE (eds.): *The Ethics of War: Classic and Contemporary Readings*, Malden, MA, Blackwell Pub., 2006, 189.

⁴ Unpublished autobiography, Edward VEDDER, date unknown, Box 3, Folder 1, Papers of Edward Bright Vedder, Edward G. Miner Library, University of Rochester. Hereafter referred to as EBV papers.

sea it would be all the better for mankind – but all the worse for the fishes.”⁵ Between 1800 and 1850, major transformations in technology and medical theory occurred in Europe. The way diseases worked became better understood and the technological tools necessary to understand diseases, germs, and the body expanded. In America, the French and German schools influenced medicine and the field modernized in the mid to late 19th century. The field of nutrition expanded as well, with the discovery and extensive research into the vitamin, calorie and carbohydrate. Scholars and scientists from all over the globe contributed to the expanding scientific fields.⁶ Vedder’s research was invariably caught up in this global expansion of medical knowledge, especially as American medicine borrowed heavily from the more advanced European medical tradition. Vedder’s celebrated idea of curing beriberi with a vitamin-enriched concentrate relied heavily on the work of Dutch scientists.⁷

Vedder became interested in research and publication early in his life. While in medical school, one of his projects was to isolate the dysentery bacillus in the United States. With the encouragement of an adviser, Vedder and his research partner Charles Duval published their first research paper in the *Journal of Experimental Medicine* in 1902.⁸ This experience whetted Vedder’s appetite for further exploration into the unknowns of medicine. He believed that by identifying a new chemical structure, germ, vitamin, or disease, he would leave an enduring legacy. Vedder boasted later in his life that he found discovering new phenomena an easy task: “It was not a particularly difficult job. The organisms were simply waiting for someone to find them, and laboratories all over the country have been finding them ever since.”⁹ With so much new technology and modernized theories about medicine, it is not difficult to believe Vedder’s claim. He and his contemporaries had their hands full making important scientific discoveries.

While medicine was very important in Vedder’s life, both as a young boy and new student, it wasn’t until his graduate career that he became interested in the military. Vedder attributed his decision to sign up for the army’s medical service to a picture of Walter Reed hanging in the University of Pennsylvania’s laboratory. In 1900 American physician Walter Reed headed a scientific team, which discovered that the mosquito *Aedis aegypti* transmitted yellow fever. This discovery refuted the view that yellow fever was spread from person to person. It was a major breakthrough for the military as men were dying of yellow fever by the thousands in tropical locations.¹⁰ Vedder writes that Reed’s work “was a model of research.” It was equally important to him that

⁵ Quoted from an editorial, n.a.: *Medical Review of Reviews*, Volume 23, No. 5 (May 1917), p. 314.

⁶ There are many compendiums on the history of medicine, for specific references in this paper see Ray PORTER: *The Greatest Benefit to Mankind: A Medical History of Humanity*, New York, W.W. Norton & Co., 1997, pp.348-396; for a history of nutrition, see Walter GRATZER: *Terrors of the Table: The Curious History of Nutrition*, New York, Oxford University Press, 2005.

⁷ A fuller discussion of Vedder’s reliance on Dutch scientists’ work will follow later, for more on the international work done on beriberi see Kenneth John CARPENTER: *Beriberi, White Rice and Vitamin B: A Disease, A Cause and A Cure*, Berkeley, University of California Press, 2000, pp. 33-59, 93-94. For the reliance of American medicine on European traditions see Raymond PORTER: op. cit., pp. 304-397.

⁸ Unpublished Autobiography, Box 3, Folder 2, EBV Papers.

⁹ Ibid.

¹⁰ See J.R. MCNEILL: *Mosquito Empires: Ecology and War in the Greater Caribbean, 1620-1914*, New York, Cambridge University Press, 2010.

Reed's research "was well known."¹¹ From early in his career, Vedder strove to earn professional recognition for his accomplishments in science. And so, "believing that there was an opportunity for research in the Army, it was decided to try for the Army Medical Corps."¹²

Vedder's enlistment in the Army followed a moment in American foreign policy that was intent on expansion. National leaders attempted to solidify the nation's global political and economic prominence, especially among other imperial nations such as Great Britain, France, and Russia. America quickly became a colonial power by using force against smaller and less organized countries to assert itself. Using the rhetoric of "civilize [...] and uplift [...] our little brown brothers" living on small islands like the Philippines, Cuba, Puerto Rico, and Hawaii, America set about to establish a permanent presence with military bases.¹³

The army sent Vedder to Cotabato, Mindanao in the Philippines in 1905. He arrived at the tail-end of a military engagement known as The Philippine-American War, in which Theodore Roosevelt declared an American victory in 1902. Troops were still stationed on the island, however, to maintain peace against the rebellious Filipinos. One of these rebels was Datto Ali, who according to Vedder was "a Moro chief whose elimination had become a necessity after he had attacked and killed the Officer and men of a small detachment."¹⁴ In Cotabato Vedder treated gunshot wounds and other ailments of both the white soldiers and Filipino allies. Even though he provided needed medical care for the Filipino allies, Vedder treated the Filipinos with racism and paternalism, attitudes common among many white, middle-class Americans. Throughout his life, Vedder callously valued the lives of humans much different than him. He did not consider all humans equally valuable, both in medical and military terms. As such, he cared more about the health and wellbeing of combatants and white men than civilians and peoples with darker skins.

Vedder saw the Filipinos as a physician and aspiring researcher would, they were sick and in need of a cure, their bodies were sites where experimentation could occur: a discovery was possible. As Vedder himself noted: "an opportunity was afforded for the study of beriberi in addition to the study of intestinal parasites." As "an opportunity" for research, perhaps the sick Filipino soldiers would help make his name in the medical community. Vedder's description of the sick, non-white, foreign people indicate that he saw them as a means to an end – as objects. They were not valuable in their own right, as humans with ideas and feelings.

Equally patronizing, Vedder viewed the native Moros as noble savages. He described the men as "unusually tough" and declared that they never suffered from wounds

¹¹ Autobiography, Box 3, Folder 9 and Box 3, Folder 2, EBV papers.

¹² Ibid.

¹³ On American foreign policy pertaining to the Philippines see Gorge C. HERRING: *From Colony to Superpower: US Foreign Relations Since 1776*. New York, Oxford University Press, 2008, pp.320-329; Michael H. HUNT: *Ideology and US Foreign Policy*, New Haven, Yale University Press, 1997, p. 81.

¹⁴ Autobiography, Box 3, Folder 3, EBV Papers. For the Philippine War see Brian LINN: *The Philippine War, 1899-1902*, Lawrence, Kans., University Press of Kansas, 2000; Glenn Anthony MAY: "Why the Filipinos Fired High: Popular Participation in the Philippine Revolution and the Philippine-American War", *Bibliion* 7 (Spring 1999), pp.87-104.

that would otherwise “leave a white man shocked and helpless.” Describing one man who had been shot accidentally, Vedder says “he was not the least bit shocked, had walked a mile to the hospital and stood there patiently waiting for the doctor to appear.” Vedder arrived to find the man in front of the hospital in a pool of his own blood. This story indicates that Vedder saw the Filipinos as insensitive to pain and suffering. This brought the Filipinos’ natures very close, if not on par, to that of animals, further increasing their value as excellent research subjects.¹⁵ Through this lens, Vedder saw the Filipinos as “the other,” a group of people to be acted upon, not as actors in their own right. This framework allowed Vedder to view them guilt-free as research subjects and bodies with solely utilitarian value.

In the Philippines, Vedder’s work on beriberi became the most significant contribution of his medical career. Beriberi was a terrible disease that inflicted much pain, suffering, and loss of life on its victims. The medical community identified beriberi in two forms, the dry and the wet. The dry form manifested “a great loss of power of certain groups of muscles or perhaps of all muscles, which become shriveled and intensely painful to the touch.” Usually, these individuals had lost weight and were barely able to “hobble around with the aid of a stick.” Next, swelling in the lower half of the body resulted (often called dropsy) and victims usually ended their suffering with heart failure and death. Wet beriberi was the opposite of the shriveled limbs of dry beriberi. The “patients’ limbs may appear well rounded or even considerably enlarged.” Both forms were extremely painful, and in certain cases, dry and wet beriberi could coexist.¹⁶

Vedder built his knowledge of beriberi on earlier work by Dutch scholars Christiaan Eijkman and Gerrit Grijns. Eijkman and Grijns had performed experiments on chickens and birds believed to be suffering from beriberi. They fed the birds a concentrate from rice that made the fowl better. Eijkman, in particular, had done much good work researching the disease and in 1929 shared Nobel Prize in Physiology or Medicine for his work with beriberi (after Vedder’s 1913 publication of his manuscript, *Beriberi*).¹⁷ Eijkman’s idea of curing with a concentrate stuck with Vedder and in the Philippines during the Philippine-American War he began to pursue this approach to find a cure.

¹⁵ Vedder was an ardent supporter of animal dissection and testing, even giving testimony in court to uphold the merits of vivisection. Labeling anti-vivisectionists as “unmitigated liars,” Vedder argued that experiments on animals, even dogs, ought to be continued because of the great benefit to mankind. He argued that “dogs are seldom used except for the purpose of developing new surgical operations, and then only curs that would otherwise be destroyed in the city pounds.” Vedder believed that any reasonable person faced with the decision to choose either the life of a man or an animal would choose that of the man. Box 3, Folder 10, EBV Papers, pp. 6-7

¹⁶ Edward B. Vedder, “The Needless Sacrifice to Beriberi” in Box 3, Folder15, 2-3, EBV Papers. Another form of the disease, infantile beriberi, affected small children and caused them to cry but without any tears. While in the Philippines, Vedder did not recognize infantile beriberi as a separate condition, but he did focus on curing Filipino children and infants as well as adults.

¹⁷ Beriberi was also studied extensively in Japan where the Japanese army attempted to find a cure for the soldiers afflicted with beriberi. The Japanese understood that there was a correlation between the diet of soldiers and beriberi, but failed to identify what exactly was causing the problem. On Eijkman and Grijns see CARPENTER, op. cit., pp.33-59. Edward VEDDER: *Beriberi*, New York, William Wood & Company, 1913.

Vedder understood beriberi to be a problem of nutrition and described it as “a disease resulting from faulty metabolism, usually only seen in those persons who eat rice as the staple article of diet, and is directly caused by the deficiency of certain vitamins [sic] in the food.”¹⁸ Using the timeless physician’s skill of observation, Vedder noticed that the staple of white rice, consumed by both the Philippine and American soldiers, caused beriberi. Glistening white rice with the husks polished off was quickly replacing the standard dirty-looking brown rice with the husks still on. White rice became popular as advances in technology led to the mechanical ability to polish off the dirty-looking husks and make the substance more palatable. People often thought the white rice tasted better and preferred it to the brown rice. It was the husks of rice, however, that contained necessary vitamins such as thiamine and Vitamin B₁.

Observing that people fed with polished rice had no symptoms of beriberi compared with people who were fed unpolished rice was the simple part; proving why this was so was more difficult. Indeed, this was what stumped Eijkman and Grijns during their research. Vedder knew that in order to prove that rice polishings eradicated beriberi, he would need to use a concentrate of the polished rice and compare the health of those who ate polishings with those who did not. Along with Weston Chamberlain, also of the US Army Medical Corps, Vedder treated fifteen infants with the concentrate. In all fifteen cases the babies recovered from their vomiting, restlessness, edema of the face and legs, stoppage of urine secretion, and difficulty in drawing breath. Vedder and Chamberlain gave the infants twenty drops of the concentration every two hours. After a few days, the infants were completely recovered and Vedder believed he had finally proved that beriberi was a vitamin deficiency condition, not a disease caused by germs or poisons.¹⁹

Immediately, Vedder began to emphasize the preventability of the disease: “Since beriberi is directly caused by an improper diet and can be prevented entirely by a proper diet, all the suffering, death and economic loss which beriberi causes may well be called a needless sacrifice.” This phrase, needless sacrifice, at first-glance might indicate that Vedder pitied his Filipino patients and wanted to help reduce deaths and suffering. In fact, while Vedder may have felt this way, he essentially blamed the victims of beriberi for their own condition. “It might be supposed,” he wrote, “that if the suppression of beriberi is so simple, the disease would long ago have been eradicated...It must be realized however that the sanitary control of beriberi involves a radical change in the food habits of these Oriental races. It is notoriously difficult to change the food habits of the most intelligent populations, and it is quite impossible when dealing with ignorant peoples who do not believe the facts above stated.”²⁰ Vedder was up against two obstacles in changing the way in which Filipino’s ate: the impoverished infrastructure of the country and his own racist assumptions about Filipinos.

As previously noted, Vedder’s work with beriberi was both a global and a team effort. Vedder’s research was almost entirely a replication of Christian Eijkman’s earlier

¹⁸ Edward VEDDER, *Beriberi*, viii.

¹⁹ CARPENTER, op. cit., pp. 93-94. Frances Rachel FRANKENBURG: *Vitamin Discoveries and Disasters: History, Science, and Controversies*, Santa Barbara, Ca, Praeger, 2009, pp.24-25.

²⁰ Vedder, “The Needless Sacrifice” Box 3, Folder 15, p. 6, EBV Papers.

work. Other American scientists helped Vedder make the discovery, too, in fact, likely devoting more time to the project than Vedder himself did. Robert Runnels Williams was one such scientist and stationed in the Philippines while Vedder worked on beriberi. Vedder asked Williams, a chemist, to find and isolate the compound in the polishings that staved off beriberi. Vedder knew beriberi was a vitamin deficiency disease; he just didn't know which vitamin it was and often used Christian Eijkman's phrase, the "beriberi preventing vitamin," to describe the nutritional deficiency.²¹ Believing that a chemist could better solve the puzzle, he asked Williams in 1913 to find out what it was in the rice polishings that prevented beriberi. Williams had a difficult time completing Vedder's request in the 1910s, but refused to give up. He eventually determined the structure of thiamine in 1933, and three years later he had synthesized thiamine.²² Vedder moved on without Williams' discovery, however, and began to write and speak about his success proving that beriberi was a deficiency disease. In this way, Vedder took much of the credit for curing beriberi, often without recognizing the help of Williams, Chamberlain and the Dutch chemists who influenced his work.

Vedder capitalized on his discovery of a cure for beriberi and used it to promote himself as a leader of tropical medicine, a new field of study for the United States. As Vedder explains, "interest in Tropical Medicine coincided with our first tropical experience in Cuba and the Philippines."²³ Physicians originally considered diseases such as malaria, cholera, plague, leprosy, and small pox as "tropical" in nature because these diseases were typically observed among the poorer populations of the regions that the United States was beginning to imperialize, such as Cuba and the Philippines. As one of the men at the center of the action, Vedder would go on to become an "expert" in the field of Tropical Medicine. Towards the end of his life, he served as President of the American Academy of Tropical Medicine. Despite the immediate fuss and interest in diseases of a supposed tropical nature, Vedder admitted later in his life that the tropical diseases are actually geographically widespread and cannot be singularly located in the tropics. Even beriberi was widespread and once identified as a vitamin deficiency disease seemed less "tropical" than it had originally. It was similar to other deficiency diseases such as rickets and scurvy, which could be found anywhere where proper nutrition was lacking.²⁴

²¹ Vedder, *The Needless Sacrifice to Beriberi*, Box 3, Folder 15, p. 7, EBV Papers.

²² FRANKENBERG, op. cit., p.25. Robert Runnels WILLIAMS: *Toward the Conquest of Beriberi*, Cambridge, Harvard University Press, 1961. Williams spent his own money, working throughout the Great Depression to make the discovery.

²³ Autobiography, Box 3, Folder 9, page 2, EBV Papers.

²⁴ The increased prominence of intellectual, scientific theories of eugenics, phrenology, scientific racism and Darwinism, combined to the spread of American imperialism in countries with darker-skinned "others" led to a flourishing of the study of tropical medicine. Leaders in tropical medicine utilized the science of difference to explain white superiority against native inferiority. Much of the activity surrounding tropical medicine can be traced back to the colonial efforts of the US military around the turn of the century, beginning in earnest with the Spanish American War and continuing onward, even to today. The American military enthusiastically led the charge in the new fields of tropical medicine, with many of its physicians rallying around the cause. As tropical medicine progressed, medical authorities began to see diseases less as biological difference and less as an outcome of a place in the tropics. Instead, biological difference became inherent, racialized human difference, always viewed in opposition to the superior white American. But while defining these racial hierarchies under the guise of medical science, leaders in

Publishing about beriberi also solidified Vedder as a significant man of science who helped improve the state of medicine, as well as boosted the status of the army's medical unit. The army honored and promoted Vedder's discovery as much as possible. In 1922, the army named the North Wing at the new Army Medical School located at the Walter Reed General Hospital in Washington, D.C. "The Vedder Pavilion."²⁵ There was even an educational film made about Vedder and Williams' work in the Philippines. The screenplay portrays Williams' work with thiamine as dependent upon Vedder's encouragement. In *The Modest Miracle*, produced for the National Nutrition Program, a naïve Williams converses with the learned Doctor Vedder. According to the screenplay, Vedder walks in with "a jar of something new and different."

- Vedder: Where can I leave this?

- Williams: What is it?

- Vedder: Why it's an extract of rice bran I made...I had a bright idea of feeding it to these sick natives – when their faces get blue and their legs swell.

- Williams: But why bran?

- Vedder: Oh, a Dutch doctor found out that there is a special food value in the bran but you can't tell people that. They think it looks better and tastes better with the brown covering rubbed off, so that's why they're bound to eat it – and the heck with their health!

- Williams: If there was some way to extract the good part out of the coating, and feed that...?

- Vedder: That's what I've done here – I think! If I could get someone to analyze it for me – tell me what the active principle is in there?

- Williams: Who d'you think's ever gointa be able to do that? They wouldn't even know what they're looking for!

- Vedder: I thought you might work on it.

- Williams: Not me.

- Vedder (Quoting): No job too big – no job too small.

And with that, Vedder leaves the guilt of curing ill people and the discovery of thiamine to his young protégé.²⁶

tropical medicine also revealed their own fears and anxieties in the frustratingly hot, humid, foreign tropics which had a tendency to mystify them. Instead of the medical men conquering the tropics, the diseases, and the people in tropical territories, the tropics often conquered them, leaving them fevered, exhausted, perplexed and frightened. For a fuller treatment of tropical medicine see Michael WORBOYS: "Germs, Malaria and the Invention of Mansonian Tropical Medicine: From 'Disease in the Tropics' to 'Tropical Disease'" in D. ARNOLD (ed.), *Warm Climates and Western Medicine: The Emergence of Tropical Medicine, 1500-1900*, Amsterdam, Rodopi 1996, 181-208. For the Philippines specifically see Warwick ANDERSON: *Colonial Pathologies: American Tropical Medicine, Race, and Hygiene in the Philippines*, Chapel Hill, Duke University Press, 2006.

²⁵ Borden Institute, Decade 8,

http://www.bordeninstitute.army.mil/other_pub/centennial/decade8GPO.pdf (last accessed 3/28/2012).

²⁶ *The Modest Miracle*. Screenplay. New York: Welding Picture Sales Corporation for The National Nutrition Program, 1941. Obtained through the New York State Archives, Motion Picture Scripts Collection.

The actual facts of the discovery and conversation between Vedder and Williams were likely much different than what's captured in the screen-play. But the portrayal of Vedder's paternal guidance of Williams and the film's emphasis of Vedder as a learned expert nudging the young Williams along is important to Vedder's image and the story he wanted to leave for posterity. The film, along with Vedder's monograph, *Beriberi*, leaves a legacy of Vedder as a great healer and helped solidify his image as an individual with vast concern for the health of all mankind. And indeed, these images of Vedder have some saliency. His work with beriberi saved many lives and helped eliminate unnecessary deaths. His research contributed to the increase in longer lives and the prevention of disease. In contradistinction to Vedder's image of himself as a great healer, however, is his belief system that ultimately valued only the health and well-being of white Americans fighting in battles and trivialized or dehumanized the lives of enemy civilians and soldiers. Vedder's healing, then, had a much darker counterpart.

As a child, Vedder unleashed his medical curiosity on "a collection of bird's eggs, butterflies and moths" and he "tried to skin and stuff small animals."²⁷ Killing a creature to study it was long a mainstay of the physicians' practice and Vedder saw no contradiction in the deaths of creatures intended for study. It was the deaths of patients and soldiers of the United States Army that he worked hard to avoid. Every good military man knew that enemy deaths were victories. Civilian deaths, like the small animals Vedder skinned and stuffed as a child, were necessary byproducts, results of a force that was morally right and just. Explaining away civilian and enemy deaths was long a structural component of Western military tradition.

After Aquinas, the principle of double effect developed with the writings of Western thinkers, such as Francisco de Vitoria (1492-1546), Francisco Suarez (1548-1617), Jean-Pierre Gury (1801-1866) and G.E.M. Anscombe (1919-2001). These authors furthered Aquinas's arguments about self-defense to develop what would become a long-standing moral theory. Because Vedder's opinion about civilian and enemy casualties reflected a broad tradition of Western thinking, it is worth reviewing these thinkers and the intellectual history of the principle of double effect.

Similar to Thomas Aquinas's concerns regarding the justification of a military attacker, Francisco de Vitoria questions to what extent an aggressor is justified in inflicting harm upon his adversary. For de Vitoria, the answer first depends on how just or unjust the cause of the aggressor is, which leads him to conclude that there is a "right manner" for waging war (*debitus modus*). In de Vitoria's time, the principle of double effect had not yet reached a modern formulation, but as scholar Peter Haggemacher claims, at the heart of Vitoria's considerations lies an idea which appears to herald the modern principle of protection of civilian persons: only the individuals responsible in one capacity or another for the wrongful act and its persistence may be fought, since

²⁷ Autobiography, Box 3, Folder 1, EBV Papers.

they alone are the offenders... all other subjects of the enemy are by definition *innocentes* and should thus be spared.²⁸

Francisco Suarez furthers the concept of “right intention” to argue that the prince, or leader, of a nation at war has a moral obligation not only to his commonwealth, but also to the enemy. According to Suarez, before making war the disgruntled prince must declare his grievances to the enemy and declare his intentions. In order for the war to be just, the enemy must have done something to offend or damage the prince. If possible, the war may be wholly averted if a resolution can be found for the wrongs committed against the warring prince. If no resolution can be found, then the prince is justified in going to war. Suarez argues that the “innocents,” those not engaged in the fighting, may not be the recipients of directed military strategies. Suarez does not rule out the indirect effects of fighting on the civilian population, however. He asserts that indirect side-effects are inevitable: “they [innocents] may be slain, when such an act is necessary in order to secure victory.” While Suarez makes this assertion, he does so with a caveat. Accidentally killing innocents is not an act to be taken lightly, as “the killing of innocent persons is intrinsically evil.” But Suarez values the end of war over an individual’s right to life and asserts that “in the case of certain means essential to victory,” and therefore peace, the killing of innocents is justified.²⁹ Suarez thus outlines an essentially modern definition of collateral damage and the principle of double effect.

Jesuit thinker Jean-Pierre Gury furthered the concept of the principle of double effect stating: “It is licit to posit a cause which is either good or indifferent from which there follows a twofold effect, one good, the other evil, if a proportionately grave reason is present, and if the end of the agent is honorable – that is, if he does not intend the evil effect.” For Gury, as long as the cause is “good or indifferent,” evil outcomes are justified. Clearly, Gury values the intent of the individual and places less concern on the actual actions of the individual. This “ends justify the means” type of thinking is one of the modern tenets visible in Vedder’s formulations of just war theory. Civilian deaths are simply one of the evils inherent in a just cause.³⁰

Whether or not Vedder read any of these authors, the Western philosophical tradition, built upon the writings of these philosophers, certainly influenced his thinking by asserting that killing the enemy was justified. The principle of double effect served as justification for the deaths of civilians. It existed as a moral theory that usefully diminished the value of human lives in order to get on with the real business of war – killing the enemy. Members of the military understood this to be simply another instance of the natural barbarity of war. While the doctrine of double effect could not be used for unmitigated justification of unnecessary casualties, it worked as a guilt-erasing scapegoat for

²⁸ Peter HAGENMACHER: ‘Just War and Regular War in Sixteenth Century Spanish Doctrine’, *International Review of the Red Cross*, 290 (September-October 1992), pp.440-1; Quoted in REICHBERG, SYSE, and BEGBY, op. cit., p. 323.

²⁹ From Francisco SUAREZ: ‘Disputation XIII, Section VII: What is the Proper Mode of Conduction War?’ in REICHBERG, SYSE and BEGBY, op. cit., pp. 364-365.

³⁰ Joseph M. BOYLE, Jr.: ‘Toward Understanding the Principle of Double Effect’ *Ethics*, 90.4 (July, 1980), pp. 528-529.

soldiers who looked around them and felt disturbed to their core by the death and carnage caused by their military pursuits.

Collateral damage was first labeled as such during the nuclear arms race of the 1960s.³¹ Civilians of cities, who were not direct military targets in themselves, would be affected by the explosion and radiation produced by an atomic bomb. Proponents of nuclear warfare claimed these deaths were a necessary evil justified by the supposed outcomes of the bombing; i.e., victory and therefore peace. As will be shown, Vedder too was influenced by the nuclear bombs dropped on Hiroshima and Nagasaki as these horrific events influenced his rhetoric about chemical warfare specifically, and collateral damage in general. And when writing about the horrors of warfare, the problem of dual loyalty would come through under the surface of Vedder's claims for the justness of chemical warfare.

Following his service in the Philippines, the army sent Vedder to a number of places. In 1913, he went to the Army Medical School in Washington DC to conduct research. In 1916, he served in Nogales Arizona building a laboratory. According to Vedder, this laboratory was "used during the alleged peaceful invasion of Mexico in pursuit of Villa. President Wilson was apparently unaware of the International fiction that the landing of Marines is not an act of war, but the invasion by any number of Army men is an act of War."³² This is the only time in his autobiography that Vedder criticized the United States' decision to go to war. After the summer of 1916, Vedder returned to the Army Medical School and served the remainder of First World War at the school training new recruits and testing various substances such as postage stamps, court plaster, adhesive tape, and candy for signs of poisoning planted by the Germans. Vedder viewed the testing as unnecessary hype and hysteria: "Pounds of candy were sent in to determine the presence of powdered glass," he wrote. This was "due to the malignity of the Germans. These candies were distributed to various members of the personnel, who ate the candy, and were then enabled to state that there was no glass in them."³³ And in 1919-1922 he served as Director of the Eighth Corps Area Laboratory at Fort Sam Houston, Texas. Later in his life, sections of a building would be named after him at Fort Sam Houston.³⁴ Aside from his time in the Philippines and brief trips to Puerto Rico and India, the remainder of Vedder's military service was performed in the United States.

In 1922, the Army sent Vedder to the Edgewood Arsenal in Maryland, where the Chemical Warfare Services division was located. Vedder relished his opportunity to work at Edgewood because he believed that "chemical warfare, including the use of the different gases, liquids, smokes, incendiaries, and other chemicals seemed to be one of the most important Army assignments."³⁵ Chemical warfare using synthetic or fabrica-

³¹ Stephen J. ROCKEL: 'Collateral Damage: A Comparative History', in Stephen J. ROCKEL and Rick HALPERN, (eds.), *Inventing Collateral Damage: Civilian Casualties, War and Empire*, Toronto, ON, Between the Lines, 2009, p. 5.

³² Autobiography, Box 3, Folder 5, pp.6-7, EBV Papers.

³³ Autobiography, Box 3, Folder 5, pp.6-7, EBV Papers

³⁴ Autobiography, Box 3, Folder 6 and pamphlet, Box 8, folder 6, EBV Papers.

³⁵ Autobiography, Box 3, Folder 7, EBV Papers

ted chemicals was a rather new military strategy. It was first used in 1915 by the Germans at Ypres, Belgium, and caused 1000 deaths and wounded 4000 among the ill-prepared French troops.³⁶ The first gases used were chlorine and phosgene. In 1917, the Germans introduced mustard gas, “the King of Battle gases,” which caused more deaths than any of the other available chemical gases combined. Persons exposed to mustard gas needed to bathe with hot soap and water within thirty minutes to remove the chemical from their skin. Extreme blistering, acute conjunctivitis, damaged lungs, and lesions were the bodily symptoms.³⁷ Anyone who read about chemical warfare during the Great War knew the extreme physical symptoms inflicted on victims of mustard gas. Vedder called mustard gas “an even better casualty producer.”³⁸

As the Germans were the first to use chemicals as an effective weapon, the Allied forces quickly mobilized to produce gas and ship it to the front. For this purpose, the American military conceptualized Edgewood Arsenal, located at the Aberdeen Proving Ground not far from Baltimore, Maryland. Approved in December 1917, the first chemical bombs started production in August 1918. By the end of the year, the Arsenal produced daily over 70 tons of gases, such as liquid chlorine, chloropicrin, phosgene and mustard gas.³⁹ Research on chemical warfare was also a priority at Edgewood Arsenal, along with training troops in the use of Stokes mortars, phosgene mortars, and other chemical warfare agents. Vedder was likely aware of these developments in chemical warfare and perhaps resented his position at the laboratory testing German postage stamps and candy, while cutting edge work on chemicals was being done at Edgewood.

From the start, Vedder was incredibly enthusiastic about chemical warfare. He argued that chemical warfare was valuable for “dissipating the opposing Army better than did firearms, and it was at the same time more humane or at least less barbarous, and more economical.” In terms of manpower, “it required many fewer troops and much less money to produce sufficient gas than to secure fire control.” Vedder believed the wounds caused by chemical warfare were less destructive than bullet wounds and often included in his writings a picture of a man with his face shot off by a gun to demonstrate his point. “Gas did not maim as did missiles[sic], the wounds of which caused the loss of arms, legs, and the distressing destruction of the jaws and other wounds to the face.” In Vedder’s mind, chemicals were useful weapons for the US military because “War is a barbarity at best, and the use of gas was no worse than any other barbarity.”⁴⁰ With this reasoning, Vedder could readily use the theory of the doctrine of double effect to excuse enemy deaths. The war was just, the war was barbarous, and the death of enemies was simply part of the enterprise. In fact, Vedder’s consideration of these is-

³⁶ L. F. HABER: *The Poisonous Cloud: Chemical Warfare in the First World War*, New York: Clarendon Press, 1986, pp. 31-32; G. J. FITZGERALD: ‘Chemical Warfare and Medical Response During World War I’, *American Journal of Public Health* 98:4 (2008), p.611.

³⁷ FITZGERALD, op. cit., pp.617-618

³⁸ Autobiography, Box 3, Folder 7, p.2, EBV Papers.

³⁹ HABER, op. cit., pp.167-168.

⁴⁰ Autobiography, Box 3, Folder 7, p.2, EBV Papers.

sues demonstrated that he felt an ethical obligation as part of a moral military with a strong sense of responsibility to allay unintended consequences.

Vedder's job while at Edgewood was researching and preparing a medical response to large-scale chemical gas attacks. Vedder wrote one of the first textbooks on this topic, *The Medical Aspects of Chemical Warfare*, in 1925. Sections of the book explain what chemical warfare is, the component of gas, and the chemistry, physics, and meteorology associated with planning a chemical attack. Vedder also offers advice on how to protect soldiers from gas attacks by using gas masks and protective clothing. In the over three-hundred pages of this book, Vedder never once considers the impact of chemical warfare on civilians. While he does have a brief section on the protection necessary for the preservation of war horses, he fails to include other non-military related animals. Plant species and the natural world only figure into Vedder's analysis as nuisances. "Tall grass, bushes, trees, buildings, etc., retard the movement of air and gas clouds making them more persistent."⁴¹ Perhaps because Vedder never served overseas during First World War and failed to witness the devastating gas attacks first hand – the destruction visited upon civilians, crops, plants, and animals – he could not envision the effects of gas outside of a military context.

Vedder's life is also an example of how men and women of the "lost" generation coped with and reasoned through the increasing brutalities of war, which eliminated life at a rapidly accelerating and widespread rate, while at the same time comprehending medical sciences that introduced life-saving technologies and extended life expectancy. Comparing Vedder's 1925 *Medical Aspects* with his unpublished biography written in 1948 demonstrates how the dropping of the atomic bomb on Hiroshima and Nagasaki by Allied forces in 1945 shaped his argument on chemical warfare. Vedder employed reasoning that argued gas was better than the atom bomb given the terrible devastation of the atomic bomb.

The first sentence of *Medical Aspects* says, "There has been and there still is considerable prejudice against the use of gas in warfare." Explaining why the public should come to accept chemical warfare, he argues that gas was more humane than guns or bayonets.

The facts indicate that gas warfare is more humane than other forms of warfare. Gas causes a smaller proportion of deaths than other weapons. Only 1.73 per cent of our total gas admissions resulted in death. Yet 8.26 per cent of our gunshot admissions resulted in death. If deaths on the field were considered, the disproportion would be many times greater, since many wounded men die on the field, but few gassed cases. Gas causes less suffering than wounds... Do you think the bayonet is more humane than gas?... Think of the torn and mangled bodies... Is not the gas *that does not mutilate*, more humane?... Still further, gas warfare may be made as humane as desired. Other weapons cannot be so used. Once the bullet or shell has star-

⁴¹ "Protection for horses is not as necessary as for men, yet cavalry may have to traverse a gassed area, and draft horses may be used in hauling supplies and ammunition." Edward B. VEDDER: *The Medical Aspects of Chemical Warfare*, Baltimore: Williams & Wilkins Company, 1925, p.214; on plants and the environment, p.66.

ted, all control over it is gone, and the degree of injury produced is a matter of chance. But gas may be varied to suit the conditions.⁴²

Vedder's attitude about the appositeness of chemical warfare never changed, but his argument for promoting it did. At the end of his life in the late 1940s, Vedder strategically contrasted the benefits of chemical warfare not against old technologies such as guns and bayonets, but with a brand new technology, the atomic bomb. He writes:

The authorities are now engaged in exculpating themselves for using atom bombs, claiming that the war was shortened thereby, and so many lives saved, not only American but Japanese...Is the use of gas any worse than promiscuous bombing including the use of atomic bombs

Not only did Vedder's strategy of argument change, but his framing of the problem was slightly different, too. He did not specify if the Japanese and American lives that were supposedly saved by the atomic bomb were American and Japanese *soldiers*. Likely due to increased televised and reproduced images of the atomic bomb, Vedder could no longer escape the terrifying effects of modern warfare as he had during the First World War and he could no longer blindly support American war tactics as he had with chemical warfare. Vedder's promotion of chemical warfare by asking an equivocal question ("Is the use of gas any worse than promiscuous bombing?") suggests that the sheer horror of the bomb put his entire rationale supporting chemical warfare into question.

The atomic bomb also changed just-war theorists' response to the doctrine of double effect as first proposed by Aquinas. G.E.M. Anscombe, a philosopher of just-war theory writing during the time of Vedder's life, explored the troubling new problems posed by modern warfare. She complicates Gury's simple formulation of intent by arguing that modern weaponry and complex societies combined to blur the distinction between civilians and soldiers so that intention was difficult to tease out. Anscombe writes:

No action can be excused whose consequences involve a greater evil than the good of the action itself, whether these consequences are accidental or not. Double effect therefore only excuses a grave incidental consequence where the balance of the total effects of an action are on the side of the good.⁴³

Thus, under the shadow of the bomb, the principle of double effect became about intention and consequences – deaths due to a devastating and horrific bomb could not be excused simply by virtue of being accidental, especially if it was known that such deaths could and would occur. It is impossible to know if Vedder read Anscombe who

⁴² VEDDER, *The Medical Aspects of Chemical Warfare*, pp. xi-xiii.

⁴³ From G.E.M. ANSCOMBE: 'The Justice of the Present War Examined' in REICHBERT, SYSE and BEGBY, op. cit., p.630.

was writing in 1939, but the utter shock of the atomic bomb and its implications for modernity and Western philosophy is evident in both Anscombe and Vedder's writings.

Vedder's view of himself as a humanitarian who saved lives by curing diseases and promoting chemical warfare makes perfect sense according to the Western philosophies of racism, paternalism and of just war theory and the principle of double effect, yet the atomic bomb put all of these claims into question for Vedder. Before the bomb, Vedder understood chemical warfare to be humane and war to be a necessity. The deaths that resulted from chemical warfare and other forms of battle were easily dismissed by the principle of double effect. The dilemma of dual loyalty resulted in a compartmentalization of Vedder's professional and intellectual interests. Throughout his professional work, human life was a phenomenon he explored through his medicine, not through his military theory. After he aged and after the effects of the atomic bomb, however, human life and death became linked in ways that he could no longer separate with any theories offered by just war ideology. Like all individuals he wanted to be happy, find success and recognition, and live his life without guilt and self-loathing. The principle of double effect not only explained civilian deaths as inconsequential, but allowed Vedder to never consider civilian deaths in his "humane" arguments for chemical warfare, until he recognized the horror of such deaths after the tragic atomic bomb.