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2019

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UNIVERSITY OF CALIFORNIA,
IRVINE

War by Algorithm: Giambattista Vico and Ethics of War in the Techno-Logical Era

DISSERTATION

submitted in partial satisfaction of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

in Political Science

by

John Robert Emery

Dissertation Committee:
Associate Professor Daniel R. Brunstetter, Chair
Professor Cecelia M. Lynch
Professor Brent J. Steele

2019

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ACKNOWLEDGMENTS

I would like to express the deepest appreciation to my committee chair, Daniel R. Brunstetter. His friendship, guidance, and mentorship throughout my PhD program was instrumental to me becoming the scholar that I am. He helped me carve out a space for my own voice in political science, balancing my countless interests from political theory, to technology, and grappling with the dilemmas of war in new and interesting ways. Without his pragmatic mentality that never sacrificed genuine novel scholarship, I would not have been able to complete these six grueling years; I am forever grateful to Daniel. It was his faith in me and my work that led to our first of many co-authored publications, as well as opening doors to build a supportive network of scholars from our first conference together. In the end, this dissertation could not have been completed without Daniel's unending comments on drafts and assistance in framing my work within an established literature while still paving my own path. He is truly someone I am proud to have worked with and to forever call a friend. I would also like to thank Brent Steele for his friendship and assistance navigating the world of ethics, conflict, and International Relations. He has been an influential figure in my scholarship from our first meeting at UCI through many beer meetings at every conference around the globe. Brent has showed me a way to enjoy every minute of what I do and not get bogged down in researching too narrow a topic just to fill a gap in the literature that doesn't need to be filled. I would also like to extend my thanks to Cecelia Lynch for aiding me in interrogating my methodological, epistemological, and philosophical assumptions. My first course with her at UCI was mostly spent looking up words like epistemology and ontology, but her interpretive methods course truly helped me articulate and find a space for the work I had been doing all along. Without her broad and exciting course readings, I may have relegated myself to compromising my scholarly values in the name of expediency. Cecelia has influenced my work more than she may realize and this dissertation is a result of that philosophical and methodological influence. I would also like to extend a special thanks to Bill Mauer and Mona Lynch for a fantastic year of debate, discussion, and workshopping for the NSF-funded Technology, Law, and Society working group and a successful summer institute. Without this interdisciplinary environment, my work on technology in warfare would not be what it is today. To all of my friends and colleagues in graduate school at UCI and beyond, I am forever indebted to your friendship and support through what was a trying six years. You were always there to celebrate my successes and commiserate in our failings. Graduate school is not possible without love and commiseration from those that are all struggling through a PhD program. To my wife Lilianna, you have seen my highs and lows of this dissertation with your unending compassion and support in a tenuous job market, I am lucky to call myself your partner, I love you. Finally, I would like to thank my mother and father, Jo Ann and Bob Emery, who have always prioritized and sacrificed for my education, I know how proud you are of me and I could never have imagined achieving a PhD without your love and constant encouragement. Thank you, this achievement is our cumulative success.

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FIELD OF STUDY

International Relations, Ethics of War and Peace, Critical Security Studies, and Political Theory

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Emery, John R. (R&R) “Probabilities Toward Death: Algorithmic Warfare, Machine-Learning Assassinations, and Techno-Ethics.”

Emery, John R. (2017) “Balancing Security, Risk, and Uncertainty in an Era of Contested and Fragmented Sovereignty.” In Daniel Brunstetter and Jean-Vincent Holeindre (Eds.), *The Ethics of War and Peace Revisited: Moral Challenges in an Era of Contested and Fragmented Sovereignty*. Washington DC: Georgetown University Press.

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Emery, John R. & Brunstetter, D. (2016) “Restricting the Preventive Use of Force: Drones, the Struggle Against Non-State Actors and *Jus ad Vim*.” In Kerstin Fisk and Jennifer Ramos (Eds.), *Preventive Force: Drones Targeted Killing and the Transformation of Contemporary Warfare*. New York: New York University Press.

Emery, John R. & Brunstetter, D. (2015) “Drones as Aerial Occupation.” *Peace Review: A Journal of Social Justice* 27 no. 4: 424-431. DOI: 10.1080/10402659.2015.1094319.

ABSTRACT OF THE DISSERTATION

War by Algorithm: Giambattista Vico and Ethics of War in the Techno-Logical Era

By

John Robert Emery

Doctor of Philosophy in Political Science

University of California, Irvine, 2019

Associate Professor Daniel Brunstetter, Chair

In an era where humans are increasingly being replaced or augmented by technological innovation, how might the humanist tradition offer us guiding questions for ethics of war today? My talk will explore the U.S. discourse of how improved battlefield technology is believed to make Western war an inherently more ethical space that eases the liberal conscience in killing. Drawing on the logics and practices of U.S. war making, my talk will address three phases of the transition from an ethics of practical judgment and due care to a computational techno-ethics of war. First, it traces the rise of smart bombs alongside collateral damage estimation software. Second, I examine the machine-learning processes that constructs ‘legitimate targets’ in US drone strikes via heterogeneous correlations of SIM card metadata. Third, I survey the consequences of a quantified global battlefield and the improbability of ‘meaningful human control’ over artificially intelligent ‘killer robots’. War by algorithm ultimately removes us from the act of killing while proffering a more ethical ‘science of warfare’. These practices enable decision-makers to tick the ethical box of due care with technology that is believed to be objective and neutral, yet in reality, has simply buried bias deep within the algorithmic code. Not only do these technologies of war and big data shape our capacity to think ethically, but fundamentally call us to reassess how complex ethico-political dilemmas of war could be replaced by computation. What is at stake is the erosion of effective constraints on the use of lethal force because this techno-rationalization of a quantified risk assessment has supplanted ethical decision-making, the site of the body, and emotions in contemporary conflict. Ultimately, I will argue that the science of humanity of Giambattista Vico, allows us to rethink algorithmic epistemologies of war in novel ways that bring the human back to the forefront of ethical decision-making in the 21st Century.

Introduction

“Today we glory in science and in cybernetic instruments, entrusting our future to them, forgetting that we still have the problem of finding ‘data,’ of ‘inventing them,’ since the cybernetic process can only elaborate them and draw consequences from them. The problem of the essence of the human genius and of its creativity cannot be reduced to that of rational deduction, which modern technology is developing to improbable depths.”

–Ernesto Grassi, *Vico and Humanism* (1990)

“Vision in this technological feast becomes unregulated gluttony; all perspective gives way to infinitely mobile vision, which no longer seems just mythically about the god-trick of seeing everything from nowhere, but to have put the myth into ordinary practice.”

–Donna Haraway, *Simians, Cyborgs, and Women: The Reinvention of Nature* (1990)

“People talk sometimes of bestial cruelty, but that’s a great injustice and insult to the beasts; a beast can never be so cruel as a man, so artistically cruel.”

–Fyodor Dostoyevsky, *The Brothers Karamazov* (1880)

“I am purely evil;
Hear the thrum
Of my evil engine;
Evilly I come.
The stars as thick as flowers
In the meadows of July;
A fine night for murder
Winging through the sky.
Bombs shall be the bounty
Of the lovely night;
Death the desecration
Of the fields of light.
I am purely evil,
Come to destroy
Beauty and goodness,
Tenderness and joy.

–Ethel Mannin “Song of the Bomber” (1936)

War is an experiment in catastrophe. Indeterminacy, uncertainty, and unpredictability reign supreme; yet, soldiers and scholars throughout the ages have attempted to construct a science of warfare and tame chance. The rise of computers, game theory, and deterrence theory during the Cold War, smart bombs and collateral damage estimation software from the Vietnam War to 9/11, as well as drones, big data and artificial intelligence (AI) in the Global War on Terror, all represent unique technological innovations that proponents claim will make warfare more predictable, scientific, rational, and ethical than the barbarism of past conflicts. The dissertation that follows is the commencement of journey along the path of pushing the boundaries of ethics of war and peace, constructivist International Relations, and critical military studies. The driving questions that guide this dissertation aim to conceptualize warfare and ethics in late modernity in all of its messiness, ambiguity, contingency, and contradiction. To understand war in an age of advancing technology, algorithmically controlled lives, and AI, we must fundamentally reassess our assumptions about ethics, war, and conflict in the international system. How does technological innovation seek to bring to fruition the liberal ideal of the ‘ethical war’, resolving the tension that puts at odds liberal democratic values and the need for quick and decisive victories at any cost? The belief that wars can be waged in a ‘precise manner’ while systematically shifting ethical discourse from protecting civilians to protecting *our* soldiers, presents a unique crisis in ethics of war today. How then are debates about how best to understand war shaped by assumptions of modernity, especially the contestation over philosophical assumptions of science between the search for universal and timeless Truth and science as contingent, contextually bound practices for understanding the social world. Additionally, what are the methodological assumptions about the nature of warfare and how best to study it, that divides debates within just war thinking today? How might the humanism and poetic wisdom of Giambattista Vico aid us in pushing debates in IR, war ethics, and critical

security studies forward by looking to past epistemological, ontological, and foundational debates about modernity?

In sum, this dissertation broadly explores questions surrounding technology, war ethics, and constructivist IR. First and foremost, the utilization of Vichian humanism is a broad critique of positivist IR and analytic philosophy in just war while proffering an alternative vision for both by embracing the ambiguity and contingency of inter-subjective human agency in warfare. Second, this dissertation draws upon interpretivist methodologies, narrative, and poetry to gain insight into the everyday practices and lived experiences of those living through and fighting in conflicts, to build an ethics of war from that foundation of human experience as opposed to a view from nowhere. Third, it engages with contemporary dilemmas of advancing technology that further challenges already blurred binaries between war/peace, universal/particular, human/machine, rational/emotional, and positivist/post-positivist methods for studying these phenomena. Specifically my research question asks in an era where the human in war and society is increasingly being replaced by algorithmic technology and artificial intelligence, how might the humanist tradition inform our ethical thinking today? By embracing the tensions as opposed to resolving them, my work pushes forward the necessity of a return to language, poetry, and narrative in IR as well as a return to an ethics of care and practical judgment in the technological era. Ultimately, this dissertation is a first step in a long process of exploring the intersections of humans, technology, and warfare that proffers a novel philosophical take on these issues by way of Vichian humanism.

Tracing the rise of some computational technologies of warfare from 1950 through today, this dissertation seeks to answer the questions: How might technologies of violence affect our understanding of ethics of war? How does divorcing the mechanisms of war from their human consequences enable a false belief that increasing battlefield technology makes war an inherently more ethical space? A few examples that will be explored in depth in chapters 3 and 4 of this dissertation elucidate how the computational method acts to slowly disengage our moral intuitions by abstracting the human consequences of war. War by algorithm traces a shift in moral thinking about war from an ethics of practical judgment to computational answers to ethico-political dilemmas. Although there has been a proliferation in JAG lawyers in the U.S. military and an evolving norm against targeting civilians in war, algorithmic innovation has been constitutive of this process and has yet to be explored in depth. In essence, the following examples present a unique evolution in conceptualizing computational abstraction and war ethics from the 1950s to today.

During the initial years of the Cold War when a team of RAND Corporation analysts first laid down the damage circles of a prospective Hydrogen bomb over maps of the USSR or Europe in what was deemed a rather “mechanical task” (Kaplan 1991: 77). Working with the top secret data from Los Alamos nuclear laboratory, the RAND analysts knew that the “H-Bomb could release the explosive energy of one million or five million or ten or twenty million tons of TNT. The Nagasaki bomb, by comparison, had released the equivalent of twenty *thousand* tons—or twenty kilotons” (Kaplan 1991: 77). These blast circles on various maps (which did not account for radiation nor fires sparked from the explosions) revealed that a “mere fifty-five H-Bombs of twenty megatons each would completely wipe out the fifty largest cities of the Soviet Union,

killing *thirty-five million* Russians, all in a matter of minutes. And that assumed that the urban population would have the protection of World War II-type shelters.” (Kaplan 1991: 77). With the rise of game theory, deterrence theory, and mutually assured destruction, this soon became the “technostrategic language”, of defense intellectuals that “plays a central role in allowing defense intellectuals to think and act as they do”, namely coming to divorce war from its human consequences in the nuclear era (Cohn 1987:690). A later generation of defense analysts would toss around figures of tens of millions of deaths with “casual aplomb; but in early 1952, nobody had ever dreamed of such massive destruction. Nobody had ever killed 35 million people on a sheet of paper before. To those who did it for the first time, the experience was shocking, disturbing and painful.” (Kaplan 1991: 78). Thus, in Chapter 3 of this dissertation I discuss the process of contestation between game theorists, mathematicians, and social scientists at RAND Corporation in early 1950s war gaming to contextualize what Cohn (1987) noted decades later about how technostrategic discourse of defense intellectuals, which legitimates the absence of ethical questions in favor of a “rational” discourse of nuclear annihilation.

Fast forward to the initial “shock and awe” campaign of the 2003 Iraq War. The U.S. military ran a statistical program called the collateral damage estimation tool (CDET) or “bugsplat,” which estimated the number of civilians that would likely be killed in a given kinetic strike. On opening day, the estimations presented to Gen. Tommy Franks “indicated that 22 of the [30] projected bombing attacks on Iraq would produce what they defined as heavy bugsplat – that is, more than 30 civilian deaths per raid. Franks said, ‘Go ahead, we’re doing all 30’” (Chamayou 2015: 216). From ‘smart bombs’ coupled with CDET to the CIA generating drone strike targets based upon SIM card metadata processed by machine-learning algorithms, and AI, technologies

of war are increasingly moving beyond meaningful human control. Although such innovations in death and destruction bring to mind the culmination of the idea of an “ethical war” that falls in line with Western ideals of warfare (Zehfuss 2018; Carvin and Williams 2014; Mabee 2016), such an overreliance on technology enables what it seeks to constrain. Thus, killing, maiming, and destruction becomes not only palatable or a tragic consequence of international politics, but virtuous and *ethical*. Yet, as I will explore throughout the dissertation, technology does not inherently make war a more ethical space. Instead, algorithmic technologies from smart bombs to killer robots function to *replace* difficult ethico-political decision-making with a fantasy of control over the uncertainties of conflict, while simultaneously absolving decision-makers of responsibility for killing by removing them one causal step further from the act of killing.

Perhaps the most compelling example of the central paradox in contemporary U.S. military practices, is the individualization of killing via the algorithmic construction of a shadow of subjectivity based upon an individual’s metadata. The narrative of progress in the ethical war can be stated thusly: we have moved from total war and carpet bombing to calculating “bugsplat” with “smart bombs,” to an individualized targeting in drone strikes. While the U.S. has the capability to target individuals globally, they are no longer individual subjects, combatants, or criminals being targeted. Human beings have become shadows of subjectivity, constructed by their metadata, that predicts a probability of “terroristness,” now or at some unknown point in the future. The use of U.S. drones in undeclared warzones has launched a generation of research in all fields of study; however, the drone itself is not as interesting as the machine-learning process in which targets are algorithmically determined. Schwarz (2016: 64) explores in her article on drones and bio-politics, “that which might pose a risk is identified and selected as a justified target merely on the basis of

identifiable markers, patterns and algorithmic calculations, and in most cases the exact factors that contribute to the algorithmic determination of targets remain opaque.” However, subsequent revelations about the SKYNET program via a leaked NSA PowerPoint allows us to gaze deeper into the practices and logics of U.S. targeting practices.

How then have covert practices in the Global War on Terror constructed a purportedly objective, neutral, and calculable probability of terroristness? SKYNET was the joint NSA and CIA operation over Yemen and Pakistan where the NSA swept up a dragnet SIM card metadata upon which drone strikes were based. SKYNET works like a typical modern Big Data business application. The program collects metadata and stores it on NSA cloud servers, extracts relevant information, and then applies machine learning to identify leads for a targeted campaign (Grothoff and Porup 2016). Except, instead of trying to sell the targets something like the business applications, this campaign executes their “Find-Fix-Finish” strategy using Hellfire missiles to take out their target (Scahill and Greenwald 2015). In addition to processing logged cellular phone call data (so-called “DNR” or Dialed Number Recognition data, such as time, duration, who called whom, etc.), SKYNET also collects user location, allowing for the creation of detailed travel profiles. Turning off a mobile phone gets flagged as an attempt to evade mass surveillance. Users who swap SIM cards, naively believing this will prevent tracking, also get flagged (the ESN/MEID/IMEI burned into the handset makes the phone trackable across multiple SIM cards). Given the complete set of metadata, SKYNET pieces together people's typical daily routines—who travels together, have shared contacts, stay overnight with friends, visit other countries, or move permanently. Overall, the slides indicate, the NSA machine-learning algorithm uses more than 80 different properties to rate people on their “terroristness” (Grothoff and Porup 2016).

Hence, the logical end of the automation of targeting procedures in AI enabled lethal autonomous weapons systems (LAWS) is that the individualization of targeting in an attempt to cleanse the conscience of liberal killing, the individual has been erased and we are now targeting a heterogenous calculation of metadata. Thus, the foundations upon which the laws and ethics of war have been established are beginning to crumble, i.e. the reciprocal right to kill and be killed in warfare on a recognition of the subjectivity of one another.

With these examples in mind, an exploration of the epistemological, methodological, and ontological foundations of modernity via Enlightenment critic Giambattista Vico (1668-1744) is in order. This dissertation aims to capture the tensions arise from a teleological and techno-logical narrative of the science of warfare making war inherently more ethical via a constitutive process tracing. Each chapter adopts a unique methodology in order to answer the specific question, yet all take an interpretivist epistemological stance consistent with my philosophical assumptions explored below. However, the overarching narrative of my project adopts the method of (Fierke 2013), of a *constitutive* approach to process-tracing that identifies shifts in *meaning* as part of a process that establishes parameters of a new game (in our present case of war technology and ethical discourse). Thus, my focus is on the meaning attached to technology, contested notions of “science”, bodily materiality, and psychological experiences of war rather than an exhaustive history of military technology per se. I utilize empirical, historical illustrations to explicate the relationship between the changing boundaries of how technology shapes our capacity to think ethically in war and the meaning that military practitioners and decision-makers attach to technological innovation. Such practices located within historical, cultural, and political context; therefore, conclusions from specific cases do not represent a claim that the same dynamics would

be present when transferred to another time and place i.e. conclusions are not universal and timeless. As a result, I adopt a more casuistic approach to ethical theorizing utilizing historical cases of technological innovation in U.S. war-making to highlight concrete ethical dilemmas and tensions and the enabling discourses and logics that divorce killing in war from its human consequences.

Throughout this dissertation, while questioning assumptions of modernity and how to conceptualize ethics of war today, I look to the U.S. practices of technological warfare from the Cold War to today in order to tackle what a humanistic ethical stance might look like in an artificially intelligent world. The three examples above are snapshots of the techno-problem-solving hubris that permeates the social world beyond its military applications, reducing humans to mere amalgams of quantifiable data upon which life and death decisions are based. These military applications are symptoms of wider issues of late modernity to quantify the unquantifiable and tame chance. Yet such a futile endeavor remains “a grandiose technocratic rationalizing dream of absolute control of the accidental understood as the irruption of the unpredictable. In the name of this myth of absolute eradication of risk, they construct a mass of new risks which constitute so many new targets for preventive intervention” (Castel 1991: 289). Thus, we have a persistent illusion in the technological era that algorithms, machine learning, and AI are somehow more “scientific” and “objective” much like the Cartesian method of which Vico was critical – yet as feminist scholars have argued for decades, attempts to eliminate human emotions from “rational” analysis is a “god-trick” that favors certain kinds of knowledge production.

The main focus of my dissertation's interjection into both IR and just war debates rests upon a number of philosophical assumptions that privilege my focus of deep contextual understanding as opposed to finding generalizable principles. Patrick T. Jackson (2010) argues that the real divide in IR is not qualitative vs. quantitative methods, but rather the philosophical ontologies of mind-world dualism vs. mind-world monism. The former is the ontological claim that there is no "objective world" that is separated from our understanding/interacting with it (think of intersubjective knowledge of constructivists), the latter is the ontological claim that there is a world "out there" beyond all of our knowledge making-practices that can be "objectively" evaluated. Ahistorical thinking that dominates positivist security studies and just war revisionism is an ongoing tendency to privilege the universal and abstract aspects of thought at the expense of the particular and contingent. I have a particular aversion to the idea that decision-making on moral issues in warfare can be reduced to a mechanical process, the application of an algorithm, generalizable for all contexts. As Chris Brown notes, a return to Aristotle's dictum that "sound moral judgement always respects the detailed circumstances of specific kinds of cases" represents a path forward to contemporary dilemmas of war, (Brown 2010: 101). However, instead of returning to Aristotle, I construct an ethics of practical judgment from within a Vichian constructivist and humanist understanding of the social world. Hence, in chapter one, I will make the case that Vico should be understood as a proto-constructivist, while also providing my methodological rationale for turning to poetic wisdom for the most unpredictable of all human endeavors: war.

Ultimately for Vico, one cannot exclude one form of knowledge (rational analysis) from the other (ethics, rhetoric, jurisprudence) as they are intimately interconnected. Accordingly, one

cannot divorce ethics from more “objective”, “empirical”, or “quantitative” forms of knowledge. Vico’s utilization of classical political humanism brings with it in my endeavor “openness at once to the unity and the self-identity of the idea and to the multiplicity of the variety, indeed, the very contradictions of the concrete order of existence and becoming. From this characteristic was born its profoundly moral or ethical character, its devotion to the concept of wisdom; for ethics, and wisdom, as its fullest expression, is essentially the pursuit of the idea and and through that multiplicity, variety and contradictions of human presence, within which it seeks to induce these properties of the idea, its unity and self-identity” (Grassi 1990, 60). Moreover, abstract theorizing about ethics in particular Vico spends his whole works critiquing: “The fool, who knows truth neither in its genus [in its generality] nor in its species [in its particular] bears within himself the penalty for his temerity. To the clever illiterate, who grasps contingent truths without arriving at general truths, those self same truths that today augment his cleverness will tomorrow become an impediment. The imprudent scholar who steers his course through particular truths by some general truth will come to grief on the shoals of life. But the wise, who, through the ambiguities and uncertainties of practice, hold close to eternal truths, when they are unable to proceed straight to their goal circumvent the obstacles and devise stratagems that will prove useful for a future that will be as long as nature permits.” (Vico quoted in Grimaldi 1958: 68). Ultimately, this dissertation utilizes Vichian thought to grapple with how imagination, myth-making, linguistics, rhetoric, and the poetic character of humans can be conceptualized and push my scholarship in new directions in the techno-logical era.

Questions of Modernity and Its Legacy in Contemporary Techno-Warfare

Although this is not a dissertation whose main focus is a commentary on modernity, it would be disingenuous to not address assumptions of ethics in modernity that shape my philosophical stance. I am most indebted to the intellectual historian Stephen Toulmin for his work on time and temporality, casuistic ethics, and especially his *Cosmopolis* in shaping my scholarship in unexpected ways. Toulmin understands the shift to modernity taking place in two phases around 1600. It is most marked by the philosophical shift from questions concerned with the particular, concrete, and contextual, to thinking about nature and society in a new scientific way that rendered all questions timeless and independent of their context. Thus, before 1600 theoretical inquiries were balanced against discussions of concrete, practical issues, such as the specific conditions on which it is morally acceptable for a sovereign to launch a war, or for a subject to kill a tyrant. From 1600 on, most philosophers committed to questions of *abstract, universal theory*, to the exclusion of concrete issues. Ultimately the universal and timeless questions took their entitled place on agenda of “philosophy” (Toulmin 1992: 24).

This Cartesian project of a new geometric method applied to all of human actions in society swept away the skepticism of Renaissance Humanists like Erasmus and Montaigne. Both of whom regarded human affairs in a clear-eyed, non-judgmental light to shed honest practical doubt about the value of “theory” for human experience. Thus, the humanist skeptics brought to light what Vico would expound in his *New Science* a roughly a century later, namely, nothing that is human is foreign; and understanding “man” within history was the path forward for philosophy (Toulmin 1992: 25-27). In sum, the Cartesian program for philosophy swept aside the reasonable uncertainties of 16th C. skeptics in favor of new, mathematical kinds of “rational” certainty and

proof. There was a devaluation of the oral, local, timely, and concrete for the formally “rational theory grounded on abstract, universal, and timeless concepts.” Rhetoric became subordinate to logic; validity and truth of rational arguments were independent of who presents them to whom, or in what context (Toulmin 1992: 75). The project in which I seek to bring forth in this dissertation is a recontextualization of the ethics of war against the turn of revisionist just war toward analytic philosophy in search of the universal and timeless answers to what constitutes a just war, independent of the context. Toulmin believes that an Aristotelian position more generally is a good counter to the Cartesian program. Throughout the Middle Ages and the Renaissance moral issues were using case analysis derived from Aristotle’s *Nicomachean Ethics*: “The Good, has no universal form, regardless of the subject matter or situation: sound moral judgment always respects the detailed circumstances of specific kinds of cases” (Toulmin 1992: 31-32). I argue in the chapters that follow that a casuistic understanding of ethics of war is the only path forward to counter the universalizing and deductive tendencies of AI; taking to heart Aristotle’s dictum that we must ethical reasoning must be understood: *Pros ton kairon* – as occasion requires. As Vico will further elaborate there is an intimate connection between ethics and rhetoric. Every ethical position was that of a given kind of person in given circumstances, and in spatial relations with other specific people: the concrete particularity of a case was “of the essence.” Thus, “ethics was a field not for theoretical analysis, but for practical wisdom, and it was a mistake to treat it as a universal or abstract science” (Toulmin 1992: 76).

One of the few individuals who utilizes the Toulminian method today is Chris Brown with his scholarship surrounding practical judgment in international political theory. Brown’s use of both Aristotle and Toulmin to articulate critiques of contemporary rule-based moral reasoning in

favor of an ethics of practical judgment. The problem with practical judgment is that it does not easily lend itself to quantification, and “making a judgement is often more intellectually demanding than following a rule” (Brown 2010: 230). What makes rule-based moral reasoning so appealing is that it “appears to offer a degree of moral security to individuals in an uncertain age such as our own”, a kind of objective assurance that they are doing the right thing (Brown 2010: 230). But following a rule necessarily involves exercising judgment, as moral dilemmas are often ambiguous, contradictory, and must be made quickly. There may possibly be moral rules that “can be understood algorithmically, in formal, logical terms, but others, the most important, cannot” (Brown 2010: 230). For this dissertation, ethics of war in all its uncertainty and failure to predict even the most basic outcomes of warfare throughout the ages should give us caution in thinking we can produce a an ethical science of warfare. Ultimately, “attempts to produce some kind of algorithm that will give a general answer to the question of what is right and what is wrong” in such cases—like the fight against terrorism or U.S. intervention in Syria—are unlikely to succeed. Moreover, this Aristotelian position applies more generally: the search for “universal and uncompromising” moral rules seems particularly fruitless in the cases that will be discussed throughout this dissertation, but as Brown has spent his decades expounding, this is simply illustrative of a wider problem with a great deal of contemporary moral reasoning (Brown 2010: 244). How then can Vico’s critique of the Cartesian logic and the kind of ethics it lends itself to inform ethical decision-making in warfare today?

Specifically, I want to do what Toulmin did in *Cosmopolis* in asking the question: what if we had adopted a Montaigne-like skepticism instead of a Cartesian skepticism, with Giambattista Vico; I want to explore the possibilities of a more humanistic account of ethics of war. Hence,

Vico's discussion of his "historical *ricorso*" and his philosophy of history explored in chapter two can be related to the place we have reached in techno-warfare of today where technological hubris has "perfected" the means while neglecting the ends of war. Furthermore, I will look to Jacques Ellul's *Technological Society* (1964) and the destructive legacy of the Cartesian logic where warfare dehumanized and emphasizing technical progress at the expense of man's humanity has led to an "efficient ordering" of warfare, which actively undermines the complex ethico-political tensions that are present the act of killing. Personally, my interest in warfare is the fact that it is at the boundary of the inhuman, intensely human, and almost superhuman (Faust 2011); yet we are taking a Cartesian scientific logic beyond its philosophical boundaries by believing that greater technology in war always already means that war is inherently a more ethical space. Ultimately for Vico, this kind of technological world leaves little for humanistic imagination, which I will argue is crucial to understanding the ethics of war in any meaningful sense.

The point is that, in dealing with complex situations, such as deciding whether it is right that one state should preventively use force against another, or against "terrorists" operating within the space between war and peace, "there is no substitute for a form of moral reasoning that involves a judgement that takes into account the totality of circumstances, rather than seeks for a rule to apply" (Brown 2010: 245). Rule-based moral logic has been pervasive in contemporary moral logic, especially in warfare. Applying the Kantian categorical imperative or making utilitarian calculations necessarily involves prudential judgment, especially in the context of the uncertainty of war. Applying the "rule" may make decision-makers feel good as they absolve themselves of moral responsibility because they followed the rule; yet, I assert this fails to capture the ethico-political dilemmas of today. Even Brown's practical judgment leaves something to be desired

going forward as virtue ethics may provide some answers to the tensions of contemporary war, while there is some work on virtue ethics and reflexivity (Amoureux 2017), few have treated the issue systematically. In the end, my interjection into constructivist IR and ethics of war seeks to bring forth a more humanistic understanding of language, jurisprudence, contextualized knowledge, and an ethics of practical judgment for the techno-logical era. With this endeavor I have selected Giambattista Vico as my Virgil: “Practical judgment in human affairs seeks out the truth as it is, although the truth may be deeply hidden under imprudence, ignorance, whim, fatality, or chance; whereas poetry focuses her gaze on truth as it ought to be by nature and reason” (Vico 1990: 43). Thus, by turning to Vico’s notion of poetic wisdom and applying it to just war thinking today, I seek to rescue ethics from trolley problems on steroids and ground ethics in contextual human experiences as opposed to “objective rules” of morality.

Ethics of War and Artificial Intelligence

The driving logic behind this dissertation is to understand the impact of technology on conceptualizing ethics of war. In this, I engage with IR and critical security studies scholarship to construct a narrative of evolving military technologies from the early Cold War to the battlefields of tomorrow. With such technologies increasingly removing humans from the battlefield and the decision-making process, a more humanistic account of ethics, epistemology, and ontology via Vico strives to shed a skeptical light on dominant discourses of technological innovation as inherently ethical. What follows in this section is a brief outline of each chapter of the dissertation. Each individual section adopts a unique methodology within an interpretivist framework to explore the specific puzzle of the chapter. For example in chapter three, I adopt the anthropological method of (Gusterson 1996) to understand the cultural production of the science of mutually assured

destruction via archival work at the RAND Corporation. Thus, I aim to understand the “production of ideology rather than the production of policy per se”, and hence utilize Clifford Geertz’s lens of cultural analysis of a “continual dialectal tacking between the most local of local details and the most global of global structure in such a way as to bring them into simultaneous view” (Gusterson 1996: 6). In chapter four, I utilize an historico-genealogical method as it helps us understand that a high-tech battlefield does not equate to a teleological avenue toward the “ethical war.” Genealogy brings to light buried practices and discourses of violence while historicizing novel technological innovations within the wider epistemological trend of the quantification of society more generally and specifically in the illusion of taming chance in war. Taking into account historical genealogy of drones has brought them out of their sci-fi allure and into broader narrative of US war practices, that construct *us* as ethical because we use “precise” technology in killing *them*. Ultimately, the individual methodological tools of each chapter are exemplary of my broader interpretivist methodology of exploring how meaning is constructed, debated, and contested with the introduction of new technologies of war.

The dissertation is as follows. Chapter one, “Giambattista Vico: Law, Language, and Eloquence in Interpretivist International Relations” is an overview of the philosophy of Vico and his contributions to both IR and ethics of war. I argue that Vico is a proto-constructivist, whose epistemology puts forth a vision of humans as “makers in the world” with language as the basis of societal rules, norms, and ideas. Vico was the first to proffer a “vision of man as historical. With him begins the modern sense of history, of man as essentially historical. Prior to Vico, the center of Western man’s vision of himself was nature” (Caponigri 1953: X). However, Vico’s conception of “man” was of man in society not in abstract individualism of Descartes. He sought to put forth

concrete circumstances in which humans began to understand themselves, via the laws, myths, and religion that they created by and for themselves. Thus, he did not view earlier civilizations with their myths as primitive, but as genuine attempts to understand their place in the world. Since, humans best understand themselves, they anthropomorphized notions of the divine in gods/goddesses. Hence, the proper study of mankind is, indeed, therefore, man; “not, however, man in that abstract individualism which so fascinated the centuries between which Vico’s life was divided, but man in society, because here alone, in the social structure, is the reality and fullness of man to be discovered” (Caponigri 1953: 55-56). Intersubjective language in its historical and cultural context is the foundation of understanding; man in his history is Vico’s fulfillment of Italian humanism. This becomes most evident in Vico’s hermeneutic circle: “when man creates in history; and above all when he creates language, he creates a structure that constitutes an interpretation of his experience. In turn that interpretation organizes the world around him. The study of history turns out to be an ongoing understanding and evaluation, in effect a constant reinterpretation, of these interpretive structures which men have created. There is no such thing as ‘objective’ history...The sheer arrogance of the Cartesian mind-set is exhibited by the insistence that it is the only valid ‘objective’ view of what constitutes reality, while other views or paradigms can only proceed out of ignorance and have therefore little, if any, intellectual value” (Paparella 1992: 33). Thus, following Vico’s hermeneutic circle, chapter one explores Vico’s critique of natural law, the ontology of language and eloquence, his Cartesian critique, and his philosophy of history and its impact on an ethics of war in the technological era today.

Chapter two, “AI and the Poetic Wisdom of Giambattista Vico: Ethics of War in The Techno-logical Era,” is firmly grounded in just war and international political theory debates. First,

I will sketch the debates between just war traditionalists and revisionists, arguing that the revisionist abstraction in thought experiments divorces ethics from the concrete human experiences of war. With a barrage of revisionist attempts to deem themselves arbiters of what objectively is the just war, or just conduct during war, they consistently fail to account for the essence of war: uncertainty, thrownness, and the concrete circumstances of particular conflicts. Second, I elaborate Giambattista Vico's ideal eternal history, which is a cyclical and highly contingent vision of man in history. Recognizing that we are inter-subjective makers-in-the-world, yet we do so not with consciousness or omnipotence, but by simply acting in the world and *ex post facto* constructing a cogent teleological narrative of how we arrived at the moral lessons of past conflicts which informs just war thinking. Third I apply Vico's notion of poetic wisdom to ethics of war today. For Vico, when the last stage of history is reached, man believes himself to have encompassed God's mind—as in AI today—and worships simply his own cleverness, at which point a historical *ricorso* takes place returning man to an earlier simplicity of poetic wisdom. I argue that AI, robotic, and algorithmic warfare of today represents such a moment of *ricorso* in that those of us who study ethics of war must return to the concrete circumstances of human experiences of war as opposed to revisionist or technological abstraction away from killing. Here, I utilize war poetry in order to capture the uncertainty and thrownness of warfare to push for a concrete ethics of war based in human experience in contrast to a revisionist vision of ethics as abstract thought experiments so they can find the “deep morality of war” devoid of complexity and nuance. In the end, Vico's poetic wisdom is an avenue for me to embrace the tensions that traditionalists and revisionists quibble over as opposed to attempting to resolve it. For Vico, true wisdom was not reaching for the whole to understanding the particulars (revisionism) but grasping the essence of the divine through the contextual, concrete, and particular.

Chapter three explores the ethics of war and the Cold War with a central puzzle: how did defense intellectuals come to casually toss around “rational” theories of deterrence that included the deaths of tens of millions in nuclear exchanges without finding it morally abhorrent? In a phrase borrowed from Carol Cohn’s (1987) classic work, how did “technostrategic language”, which “reflects and shapes the nature of the American nuclear strategic project, that it plays a central role in allowing defense intellectuals to think and act as they do”, come to divorce war from its human consequences in the nuclear era (Cohn 1987: 690)? Such a casual discussion of the mass slaughter of other human beings was not innate in the defense intellectual community, but was gradually adopted as it coincided with the rise of game theory and systems analysis at the RAND Corporation throughout the 1950s and 1960s. Through utilization of the RAND archives in Santa Monica, CA, I was able to gain an understanding of the contestation between the Social Sciences Division and the Mathematics Division over how best to predict a purely theoretical nuclear exchange between the U.S. and USSR. The Cold War Game as it was called, was designed and implemented by the mathematics and economics division. This played out in the first politico-military war game played in order to integrate political and economic dimensions into traditional war games exercises with a high degree of “political realism” to avoid simplifying the world as much as possible. The Cold War Game, took place in four iterations over the period from November 1954 and April 1956. The deep contextual understanding of this process as a space of contestation between defense intellectuals at RAND Corporation and the proliferation of similar type games offers a window into the psyche of how nuclear exchanges with the possibility of nuclear annihilation could be viewed as “rational”. Thus, the technostrategic language itself, accompanied by a belief in a more “scientific” way of warfare, in conjunction with advancing computing power, and the utilization of economic and game theoretic modeling applied to nuclear war, reshaped the capacity of defense

intellectuals to think ethically. Hence, “technostrategic discourse functions more as a gloss, as an ideological curtain behind which the actual reasons for these decisions hide. That rather than informing and shaping decisions, it far more often functions as a legitimation for political outcomes that have occurred for utterly different reason” (Cohn 1987: 716). Ultimately, this chapter probes the contestation between a rational analysis which divorces war from its horrific consequences, and in the contextual setting of the RAND, how defense intellectuals shaped a policy ideology that persisted into the post-Cold War era.

Chapter four engages in the contemporary literature of critical security studies and constructs an historico-genealogy of an evolution of U.S. technologies of war from Vietnam to AI today and its impact on ethics of due care. This chapter argues that technology has enabled practitioners to tick the box of ethical due care via appeals to technological superiority without actually practicing due care. Many view such technological innovations as novel solutions to the dilemmas of warfare because they remove human bias, emotion, error, and subjectivity by providing a more scientific, objective, and neutral means of waging war (Strawser 2010; Plaw 2013; Sullins 2010). Others view war technology as more problematic and have begun campaigns to “ban killer robots” to keep individuals accountable by giving them “meaningful human control” over targeting decisions (Sharkey 2010; Zehfuss 2012; Roff 2014). A more in-depth take on this area of contestation can be found in Beier (2017), yet as Mabee (2016) argues, a historical sociological approach of understanding U.S. “militarism” as opposed to “war”, “broadens out the critical analysis of present-day military practices, by focusing on their long-term institutionalization” (256). The for and against debate of war technology indeed misses something important about what the historico-genealogical arc of these military algorithmic evolutions tells

us about the quest for the “ethical war” – whether for realist (strategically to win hearts/minds) or more liberalist (protection of innocents) concerns – that has come to dominate American discourse.

Despite the rhetoric of “just war” that often accompanies praise of technological advances in targeting, virtue ethics and practical judgment has been abandoned and replaced by a predetermined utilitarian calculation conceived as objective and neutral techno-innovation in the eyes of practitioners. Such a (r)evolution in understanding war ethics speaks to a wider epistemological drive of quantifying the uncertainties of war into a numerically calculable risk assessments that ultimately reshapes the capacity of humans to make ethical decisions (Hagmann and Cavelti 2012). What is at stake in these techno-practices of war is the erosion of effective constraints on the use of lethal force because this techno-rationalization of risk assessment has supplanted genuine ethical deliberation about the consequences of contemporary conflict. While International Relations scholars have increasingly turned toward the “body” and “emotions” in the study of war, violence, and ethics (see: Gregory 2015; Steele and Solomon 2017; Campbell and Steele 2017), the question remains as to what these technologies of war tell us about the desire to eliminate the body and emotion from the battlefield.

Connecting Technologies of War and Ethics

There are a number of reasons to explore computing power, warfare, and the discourses and meaning created from these technologies. I recognize the co-constitution of human-technology interactions, in that humans create the technologies of war that constitute new conditions of possibility, while the technologies alter the strategic and ethical conceptualizations of war-making. Although I do not draw a causal line or make materialist arguments of the impact of technology in

shaping our ethical discourse on war, I do explore how constitutive meaning-making reshapes our capacity to think ethically in the technological era. Technology can be broadly defined and has been explored throughout the ages. I am limiting my study to the rise of computing power and advancing mathematics from the 1950s to today in order to explore how decision-making has been transferred from politicians and military practitioners to the writers of the algorithmic code. The philosophy of Giambattista Vico aids us in this exploration by probing our assumptions of epistemology and ontology that go into the quantification of the social world into predictive analytics that will always fall short in the face of the uncertainty and contingency of war. The ways in which history, language, and laws always already shape the rules, norms, and ideas that flow into innovation in ways of killing are crucial to examine through a constitutive process tracing. Thus, this dissertation does not attempt to produce a holistic account of the variables that led to this discourse of technology as making war an inherently more ethical and less bloody realm. Nevertheless, the narrative I put forth ought to give a healthy dose of skepticism about the possibilities and pitfalls of AI and the future of war.

This dissertation is an exploration of the assumptions of modernity in the techno-logical humanitarian language that has come to dominate contemporary political discourse as primary justifications for engaging in conflict on a global scale. Necessarily, some issues will be examined at the micro level to see the process of contestation that dominated early Cold War gaming and the advent of computing power, while others will be explored at a macro level of the narrative that contemporary technologies of war solve ethico-political dilemmas of liberal killing. I believe that a return to and a reworking of Vichian political thought will aid us in the contemporary dilemmas of lethal autonomous weapons systems and algorithmic warfare. Hence, I deploy his philosophy

of history and his Cartesian challenge of the narrowness of deductive logic at the expense of ethics and other ways of knowing as a foil to interpret techno-logics of contemporary discourse of ethics of war. Furthermore, I depart or invert Vico's poetic wisdom from the 'heroic' poetry of Homer to the anti-heroic poetry of civilians and soldiers affected by conflict. By doing this, I am still within a Vichian framework of questioning the certainty with which the Cartesian method is utilized but am simultaneously updating his notion of poetic wisdom for our contemporary technological dilemmas. In the end, I believe that a return to humanistic thought to counter algorithmic logics, and that is most convincingly conveyed by the anti-hero, the narrative of everyday struggles in war where violence is considered to be tamed and chance relegated to past conflicts because of scientific knowledge production today.

The power of poetry and narrative of the horrors and uncertainties of warfare are a necessary antidote to the certainty with which we wage warfare. It ought to cause us to question if our cause is truly proportionate and in last resort. Taking into account the suffering of civilians, soldiers, and the long-term impacts of moral injury, should give us pause on an accelerated temporality of the Global War on Terror. Speed, efficiency, and lethality is the current mantra of the U.S. military, and yet the 'move fast and break things' model is a dangerous precedent for lethal autonomous weapons systems that will soon be out of our human control. Thus, the rhetorical, emotive, and what it means to be human in the Vichian understanding are being eroded for the false promise of 'perfect rationality'. In reality, however, these algorithmic systems fall short of perfectibility in two respects. First, human fallibility is not eliminated, it is outsourced to computer programmers not subject to democratic debate or accountability; judgment is not eliminated but is buried in the algorithmic code. Secondly, in the quest to quantify all of life, that

which is unquantifiable, is excluded, and homogeneity is constructed where there is heterogeneity; difference in kind is reduced to difference of degree. Thus, the Vichian humanism informs my analysis today in that it captures the unquantifiable elements of meaning-making and centers on human knowledge production that delimit the conditions of possibility for the future of constructivist IR and the ethics of war.

In the end, this dissertation tackles an array of questions of knowledge construction, epistemology, ontology, and methodology through the lens of humanism, technology, and the ethics of war. Such an ambitious project that tackles assumptions of modernity, ethics, and methods in International Relations, may indeed be too broad. Nevertheless, by focusing on specific in depth cases I wish to highlight broader trends in ethics, society, and security studies more generally. Military applications of technological innovation to make war a more ethical space are symptomatic of late modernity more generally to quantify the unquantifiable and tame chance. Yet such a futile endeavor remains “a grandiose technocratic rationalizing dream of absolute control of the accidental understood as the irruption of the unpredictable. In the name of this myth of absolute eradication of risk, they construct a mass of new risks which constitute so many new targets for preventive intervention” (Castel 1991: 289). Drew Gilpin Faust has noted that those of us who study war are fascinated by the collision between the superhuman, inhuman, and immensely human experiences that are brought forth in warfare. For every case of inhumanity, one often finds a case of selflessness and ethical behavior to be emulated. In the end, AI cannot answer these essential questions of ethics, humanity, and the human condition. We have forgotten in modernity that rule-based moral reasoning or coded morality that can be quantified is a relatively recent way of understanding ethics, and one that should ultimately be challenged. These techno-

practices of war-making program an optimistic ideal future of war that fit the predetermined hopeful outcome, that cannot be tweaked with software updates based on the nature of how AI functions. Ultimately, this dissertation provides a narrative of the technological pursuit of the “ethical war” and demonstrates how a probable future of killer robots, is a symptom of a data-driven world that transforms complex social interactions into quantifiable terminology, erasing the essence of humanity in the process.

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Chapter 1: Giambattista Vico: Law, Language, and Eloquence in an Intersubjective World

“Nothing is more fraught with philosophical danger and difficulty than historical explanation, and nothing is more difficult to justify than the status of ‘truth’ which we can ascribe to the historical hypotheses and explanatory concepts with which we systematize historical events *after the fact*. How are such hypotheses and concepts, which always emerge on the level of full cognitive awareness long after the events that they ‘explain’ are dead and gone, to be justified as universally objective and valid truths?”

–J.M. Edie “Vico and Existential Philosophy”

“Men first feel necessity, then look for utility, next attend to comfort, still later amuse themselves with pleasure, thence grow dissolute in luxury, and finally go mad and waste their substance.”

–Giambattista Vico *Scienza Nuova*

“Practical judgment in human affairs seeks out the truth as it is, although the truth may be deeply hidden under imprudence, ignorance, whim, fatality, or chance; whereas poetry focuses her gaze on truth as it ought to be by nature and reason”

–Giambattista Vico *On The Study of Methods of Our Time*

“Common sense is judgment without reflection, shared by an entire class, an entire nation, or the entire human race.”

–Giambattista Vico *Scienza Nuova*

“L'uomo per l'indiffinita natura della mente umana, ove questa si rovesci nell'ignoranza, egli fa sé regola dell'universo” [Because of the indefinite nature of the human mind, wherever it is lost in ignorance, man makes himself the measure of all things]

–Giambattista Vico *Scienza Nuova*

Introduction

Giambattista Vico (1668-1744) was a relatively unknown philosopher and professor of jurisprudence in Naples, Italy who had little impact outside of his Neapolitan circles during his lifetime. However, Vico's views influenced the works of many that followed including J.G. von Herder and Jean-Jacques Rousseau. Beyond these, Vico's vision of man as historical paved the way for Hegel and Marx both of whom have been integral to IR scholarship. Twentieth century scholarship has established illuminating comparisons with the tradition of Hegelian idealism and taken up the relationship between Vico's thought and that of philosophers in the Western tradition and beyond, including Plato, Aristotle, Ibn Khaldun, Thomas Hobbes, Benedict de Spinoza, David Hume, Immanuel Kant, and Friedrich Nietzsche. Comparisons and connections have also been drawn between Vichian themes and the work of various modern and contemporary thinkers, *inter alia* W.B. Yeats, Friedrich Froebel, Max Horkheimer, Walter Benjamin, Martin Heidegger, Hans-Georg Gadamer, Jürgen Habermas, Paul Ricoeur, Jean-Francois Lyotard, and Alasdair MacIntyre.¹ Hannah Arendt interpreted Vico as the father of the modern historical consciousness and the forerunner of a concept of history as human "fabrication" and construction (cited in Lollini 2011: 388). Beyond this influence of Vichian scholarship, few have explored the work of Vico in depth either in just war scholarship or in constructivist International Relations. Early constructivists like Friedrich Kratochwil and Nicholas Onuf nod to Vico for his emphasis on law and language, yet practical applications Vichian scholarship has mostly been relegated to anthropology, and Italian or literary studies. However, Vico regained some life in recent decades, being one of the preferred philosophers of Isaiah Berlin and with the publications of Vico's works

¹ "Giambattista Vico," *Stanford Encyclopedia of Philosophy*. August 2, 2018. Available at: <https://plato.stanford.edu/entries/vico/#VicoLifeInfl>

in English in the early 1990s. Stephen Toulmin and June Goodfield (1965) note that Vico is where one can pinpoint the shift in the understanding of human history. This is because Vico was the first to proffer a “vision of man *as historical*. With him begins the modern sense of history, of man as essentially historical. Prior to Vico, the center of Western man’s vision of himself was *nature*” (Caponigri 1953: X).

This vision of humans as historical as opposed to a part of nature, led to the concept of historical development that many of the authors above took on in their own philosophies, such as Marx and Hegel. The most significant starting point in this shift in intellectual history occurred around 1725 in the Kingdom of Naples, where Giambattista Vico, “a professor of jurisprudence and one of the most curious and isolated visionaries of our whole intellectual tradition, conceived for himself a novel approach to all aspects of human society. Vico referred to this method as his *Scienza Nuova*; and though little was immediately done to follow up his intellectual programme, his books were the vehicle by which the concept of historical development at last entered the thought of Western Europe.” (Toulmin and Goodfield 1965: 125). What appears to us as forward-looking in Vico’s work must have appeared reactionary for his contemporaries, which is why he had such little influence before the nineteenth century. “For his fundamental ambition, which he did nothing to disguise, was to undo the intellectual damage done by Descartes, and to reinstate—though on a new and more profound basis—the older picture of human history as the continuous creative action of a divine Providence”, through concrete and contextual historical circumstances (Toulmin and Goodfield 1965: 126). Nevertheless, as we will see below, the notion of divine Providence was only one side of the coin in Vico’s understanding of human history; the other was the concrete historical laws, customs, and myths from contextually bound societies.

For Vico, humans in history and divine providence were co-constitutive: “Far from being arbitrary or purely contingent, historical custom is the vehicle through which divine providence operates. Nature and convention are inextricably yoked...” (Miner 2002: 38). In essence, Vichian thought can be best understood as a blending of the universal and particular, to account for the concrete customs within nations, while reconciling his religious worldview with some form of divine providence. This blending which may appear contradictory at first glance, is most exemplified by his synthesis of time and idea—explored in the temporality and philosophy of history section below— “the idea is no timeless essence; it is the eternal law of the appearance of concrete forms of time” (Caponigri 1953: 71). Thus, Vico’s study of contextually bound intersubjective human experience in unique cultural and linguistic circumstances, was viewed in relation to the divine, that the idea of law (is timeless) and necessarily existed before the creation of laws. Ultimately, Vico strove to place historical fact and universal truth in closer proximity.

Vico’s ideal eternal history in his *New Science* offers a cyclical, yet highly contingent, vision of humanity. There are three phases of Vico’s history: the poetic age, the age of heroes, and the age of man. Vico’s philosophical anthropology is based on the idea that humans are essentially “makers” (*homo faber*), that is they construct and reconstruct their own social world in order to master the uncertainty of life concerning birth, death and the unpredictable forces of nature (Tateo 2015; Tateo 2017). Vico’s contingency offers an uncertain future that cannot be determined by some teleological “law” of progress. It is cyclic in the sense that there is a recurrence of periods across time and nations of progression and regression. Vico does not try to do what many contemporary IR theorists do—predict the future based on our subjective ordering of the past—but to understand how humans have made and understood their history not with some concrete vision

of the future but by their own interpretations of the timeless essence of the idea. Vico “neither invests man with omnipotence, nor makes him provident: for him ‘men make their history, yet...not...with will and consciousness’” (Luft 2003: 6). In his cyclic understanding of history there is this tendency toward the universal or progress, but it is crucial that he recognizes this is an epistemological construction of his making on the idea of the eternal or providence. Therefore, Vico does not believe that humans could ever come to truly encapsulate God’s mind or the idea of the eternal, but one can understand how Man has taken the concrete appearance of the idea toward something timeless in the synthesis of time and idea. Ultimately, for Vico, art, poetry, and literature tend toward this ideal more so than the philosopher or historian, as they can more aptly capture the uncertainty of the human condition.

Vico believes that there are three stages to history: the era of the poetic, the heroic, and the era of man. And it is this cyclical structure of his *New Science* which was emulated by James Joyce’s *Finnegans Wake*. In its simplest form, “Men first feel necessity, then look for utility, next attend to comfort, still later amuse themselves with pleasure, thence grow dissolute in luxury, and finally go mad and waste their substance” (Vico SN 241). First, man attempts to understand his place in the world though that which he knows best—himself. Thus, early gods are simply humans with some sort of higher power that rules over them; the unknown was “explained” by anthropomorphized gods. Understanding early history in this mythical character, Vico attempts to embody the language and thought process of early Latins and Greeks rather than viewing them as ‘primitive’. For Vico,

“The essential poetic activity is the generation of myth; the first forms of human history are, therefore, pervasively and substantively mythical. But the myth is for Vico no idle evocation of the dreaming spirit of man; it is the spontaneous, imaginative form under

which man symbolizes to himself the historical processes of his culture in their universally relevant features. Every existential form of the spontaneous human consciousness is, consequently, myth; and the interpretation of myth is the primary methodological principle of the '*New Science*'...Language, in its turn, is for Vico the system of signs generated for communication and preservation of myth" (Caponigri 1953: 8).

As humans are naturally "makers" (poets, from the ancient Greek *poiein*, to make), they tailored on themselves a model of explanation for overwhelming natural phenomena – i.e. they invented divinity. This was the first real cultural product, as it started to organize and regulate individual and collective conducts (e.g. we behave in a certain way to please or not disappoint some being 'up there'). Vico maintains that sublime, imagination, and meaning-making are the foundations of humanity (Tateo, 2017: 343). However, I would add to Tateo's point in that *language* is the primary foundation upon which meaning-making and tending toward the divine or sublime can then be understood. Hence, "the mark of Vico's new uncanny poetic humanism is the *ontological* or onto-genetic implications of that principle as realized in the *New Science*: the claim that *verum* is the *made*, a *factum*; that *facta* are, at one and the same time, the true words, deeds, things is their maker, whose '*knowing*' is the *hermeneutic understanding of himself as maker*. In Vico's alien humanism humans are not essentially subjects of knowledge but 'poets,' creators, 'divine' because, like God, they make a real human world with language" (Luft 2003: 4).

"Vico's new historical method demanded an acute sensitivity to the nuances of language and the inner significance of myths. He stripped the picturesque surface off the older mythologies, to uncover the living thought that gave them birth. Originally, myths were neither poetic fancies, nor fictions of the priests, nor heroic legends magnified through the lens of the past. They represented rather Man's first crude but honest efforts to understand the world of nature and live

in harmony with it” (Toulmin and Goodfield, 1965: 127). In their fables the nations have, in a rough way and in the language of the senses, described the beginning of the world of the sciences, where the specialized studies of the scholars have since clarified for us by reasoning and generalization. Vico had a twenty-year struggle to grasp the “poetic” or creative nature of the first men of the human race, which he called the “master key” of the *New Science*. “He characterized that struggle as an effort to understand the strangeness of the historical origins they depict, which modern readers cannot grasp” (Luft 2003: X). Here is where Vico is the culmination of Renaissance humanism. The salient characteristic of classical political humanism is its “openness at once to the unity and the self-identity of the idea and to the multiplicity of the variety, indeed, the very contradictions of the concrete order of existence and becoming.” From this characteristic was born its “profoundly moral or ethical character, its devotion to the concept of wisdom; for ethics, and wisdom, as its fullest expression, is essentially the pursuit of the idea and through that multiplicity, variety and contradictions of human presence, within which it seeks to induce these properties of the idea, its unity and self-identity” (Caponigri 1953: 60).

Beyond bringing forth the relevant philosophy, and interpretations of Vichian texts, this chapter strives to bring Vico’s epistemological principles, into both interpretivist IR and just war thinking. As I hope will become clear by the conclusion of this chapter, I believe Vico can be considered as proffering the first interpretivist position in early modernity, by placing intersubjective human experience, imagination, law, and poetry at the center of his philosophical endeavor. Interpretivism in IR today “focuses on the meaning of human experience—the variations in possible meanings for given events, how meaning is made throughout knowledge construction, how power and ethics constitute meaning, the implications of meaning for political and social

phenomena” (Lynch 2014: 2). Thus, the Vichian project, which attempted to rid the world of the false certainty that Descartes that his deductive method purported to offer, sought to understand the meaning-making process of humans in society. As Lynch insists, interpretivist research today aims to “analyze the *meaning* and the variety of human experience...and to do so in *contexts* that are relevant for such meaning” (Lynch 2014: 13, emphasis original). Thus, in line with Toulmin’s discussion from the introduction, modernity and positivist IR social science aimed at rendering all matters independent of their contexts, in search of “necessary and sufficient” causal chains or the answers to ethical questions in just war revisionism. Nevertheless, interpretivist IR seeks to re-contextualize the social world to understand how meaning is inter-subjectively constructed in relation to issues of war and peace. Thus, interpretive methods “denaturalize dominant explanations, exposing them not as truth but as narratives that are discursively constructed, assigned particular meanings, and reproduced from partial or limited evidence and with particular stakes and purposes in mind” (Lynch 2014: 14). According to Luft (2003: XV), Vichian texts share “a notion of humans as embodied, finite, temporal beings, who exist in a world governed by material necessity, and who are dependent on the constitutive power of language to fabricate their human existence.” Vico’s “diverse expressions of *poiesis*, the interpretive sense-making of beings-in-the-world that takes place in language, a hermeneutic process *ontologically* creative of a real, though artificial, human world.”

This chapter is broken down into the following sections to address relevant aspects of Vichian philosophy for interpretivist International Relations and the ethics of war (to be explored specifically in chapter two). First, I will introduce how I define the humanism of Giambattista Vico, and why it is relevant to contextualize a techno-logical world of AI and techno-problem

solving. Second, I discuss Vico's critique of natural law jurists such as Grotius, Vattel and Pufendorf, the foundations of contemporary international law and the laws of war. Although Vico did not specifically write upon the subjects of *jus ad bellum* or *jus in bello*, his commentary on the jurists and the useful fictions they create to build their foundations on natural law, is of use as these foundations are beginning to crumble today in the face of killer robots. Third, I examine Vico's critique against Descartes, abstract rationalism, and deductive logic more generally that sought decontextualized universal 'Truth' at the expense of the local, oral, rhetorical, and poetic that ultimately stripped philosophy of its ethical character. This general critique of Cartesianism and its legacy bears a family resemblance to contemporary debates within the positivist and post-positivist divide in IR. Fourth, I examine Vico's primacy of language and social construction to demonstrate what Vichian thought may offer social constructivists today. Fifth, in the science of humanity in an intersubjective world, I stake Vico's epistemological principles as an essential interrogation into contemporary IR debates about science and knowledge production. Finally, I end with a brief exploration of why I believe that Vichian philosophy is relevant for understanding ethics of war in any meaningful sense today as a segway to chapter two on AI, just war, and Vico's poetic wisdom.

Vichian Humanism

What constitutes Vichian humanism as the culmination of Renaissance humanism and why might we care about humanism in the techno-logical era? Edward Said has noted Vico as the origin of the radical humanist idea that the "human mind creates the divine, not the other way around" (Said 2004: 109). Such an understanding of the primacy of language, human cognition, and cultural/temporal/geographic context in Vichian philosophy represents the first articulation of the

constructivist notion that we are makers in the world. However, what separates Vico from many who followed him is that he is not limited to a phenomenology of the mind of an individual subject. By understanding that humans are the makers of their history, both in the past and how meaning is created from this history—real or imagined—is an intersubjective recognition of historical construction which actualizes humanity. So what then was the renaissance humanism that Vico closed the bracket on? Humanism is defined by Ernesto Grassi as the philosophical movement that characterized thought in Italy from the second half of the fourteenth century to the final third of the fifteenth century. Ficino’s translation of Plato at the end of the fifteenth century and the speculative metaphysical Platonism and Neo-Platonism which it triggered led to a break with the Humanist approach to philosophy, which was taken up later only by isolated thinkers such as Nizolius or, outside Italy, by Vives and later Gracian in his theory of *ingenium*. Finally “the Humanist controversy reached its height in the thought of Giambattista Vico, whose work provides an outline of the whole range of Humanism’s implications” (Grassi 1990: 95). More than advocating for a classical education in the development of human virtue, it was a breaking apart of the academic disciplines that Vico was adamantly arguing against in his *Six Inaugural Orations on Humanistic Education* delivered at the University of Naples 1699-1707. The separation of disciplines for Vico was a loss to the understanding of humanity and human nature. Each discipline became so narrowly focused that it often neglects important topic such as ethics and eloquence at the expense of analytical rigor and soundness of argumentation that falls upon deaf ears as logic in the narrow sense often fails to move the soul to action. “In the past, all arts and disciplines were interconnected and rested in the lap of philosophy; subsequently, they were sundered apart. Those responsible for this separation can be compared to a tyrannical ruler who, having seized mastery of a great, populous, and opulent city, should, in order to secure his own safety, destroy the city

and scatter its inhabitants into a number of widely strewn villages. As a consequence, it is impossible for the townsmen to feel inspired, through the bold pride awakened by the sight of the splendor and wealth of their city and by the awareness of their number, to band together and conspire against him, lending one another help in their fight against the common oppressor” (Vico 1990: 47).

First and foremost, Vico’s humanism is an intersubjective philosophy of human agency. Traditional Italian humanism “identifies the source of agency, whether human or divine, as conscious and intentional, the creativity Vico attributes to his first men derives from the potency of a subjectively unconditioned ordinary language. That language is *itself* ontologically creative is not a notion Vico could find in his philosophical or theological traditions, given their assumptions of an orderly world and of the rational subjectivity of God and humans (Luft 2003: xiv). This emphasis on ordinary language will be explored below, however, it is essential to the whole endeavor of this dissertation to emphasize being makers in the world often without consciousness or intentionality. It is easy to look back and construct a cogent historical narrative toward a future teleology; nevertheless, Vico’s humanism buffed against this tendency on his emphasis of language in constituting the social world in all its uncertainty, contradiction, and strangeness. In the end, “Vico is certainly a humanist in the sense that he never loses his belief that meaning is made by humans for the sake of humane social existence” (Luft 2003: xvi). Yet, his transcendence of subject-centered humanism makes him especially interesting to interpretivist social science today. What slowly emerges in Vico’s *New Science* “is an uncanny poetic humanism affirming both the role of humans in the making of the social world, and the value of communal existence...But Vico’s humanism affirms human creativity and communal existence outside

assumptions of traditional humanism and modernism, without the problematic belief that agency is the privilege of subjectivity” (Luft 2003: xvi).

Not only did the Cartesian legacy devalue the Italian humanistic tradition, it led to persistent misunderstandings of humanism that last to today. Vico’s philosophy of science and his science of humanity pushed back against “the anonymity, the placelessness, and timelessness of *a priori* thought, instead of the unemotive, unrhetorical character of scientific, philosophical speculation, instead of the rejection of imagination and common sense on behalf of rationalism” (Grassi 1990: 55). The depreciation of the rhetorical, imaginative, and the intersubjective contextually bound knowledge has led to the rhetorical being a negative connotation rather than an area of study necessary as a part of conveying knowledge with eloquence. Emanuel Paparella firmly places Vico within the Italian humanistic tradition even as he makes important breaks from a subject-centered humanism of the past. In his *New Science*, Vico anticipated by two centuries “contemporary man’s most profound discovery concerning himself; the fact that he has a history, because by creating history man discovers and actualizes his own humanity.” This places Vico “well within the Italian humanistic tradition. He is, in fact, nothing short of the fulfillment of that tradition. A tradition interrupted by Descartes’ anti-humanistic stance and waiting, like embers under the ashes of a technocratic rationalistic society, for a new birth” (Paparella 1993: 27). In the end, Vico is the culmination of Italian humanism, whose foresight has vast implications for understanding the contemporary technological world.

Having established what I view as the Vichian contribution to humanism, I want to briefly explore how I view this applying to interpretivist IR today. In essence, Vico understands that

“objectivity” is conditioned first and foremost by language, in addition to historical, temporal, and social context; yet, he is primarily concerned with the meaning created from this understanding. Isaiah Berlin summarizes Vico’s thought as such: “But, ultimately, there is something we don’t know about the universe merely through observation; namely what are they for, whether they have a purpose, or if they have a purpose, what it is” (Berlin 2000, 465). Furthermore, MacIntyre cautions: “The notion of ‘fact’ with respect to human beings is thus transformed in the transition from the Aristotelian to the mechanist view....‘Fact’ became value-free, ‘is’ becomes a stranger to ‘ought’ and explanation, as well as evaluation, changes its character as a result of this divorce between ‘is’ and ‘ought’” (MacIntyre 2007: 84). The fact/value distinction in IR has long been a place of contention (See: Frost 1996; Walker 1992; Onuf 2002; Wight 2006; Lynch 2014; Kratochwil 1991; Yanow and Schwartz-Shea 2015; Schwartz-Shea and Yanow 2013), and Vico was one of the first humanist critics of the separation of fact and value in the Cartesian program. Ultimately, looking toward these early epistemological critiques, I aim to shed light on the legacy of Descartes in late modern social science, while proffering alternative direction for the field away from post-modern projects by emphasizing the pre-modern contestation of today’s issues.

Natural Law

The foundations of contemporary international law and the ethics of war are being dismantled by emerging algorithmic technologies. Ultimately, if one builds the structure of say the international laws of armed conflict upon such foundations, they are liable to crumble in an era of AI and human/machine integration. These “secular foundations” of the laws of war are an abstraction upon which was built an ideal (though logically sound) theory of the laws of nations. Vico argues that natural law fails in three fundamental ways. First modern natural law engages in a false

separation of *ius gentium* and the *ius naturale*, without noticing that “this law arose with the customs of nations.” Second, it relies on evidence from philology, itself uncertain and beset by anachronism. Third, it assumes the truth of diffusion theories, overlooking the more likely possibility that law evolves from the demands of the *sensus communis*, without presupposing actual contact among nations, which “pass their early days in savagery and seclusion” (Miner, 2002: 78). Hence, Vico’s critique of the foundations of natural law are especially relevant to understanding early debates of taken-for-granted concepts of the right to resort to force and the limitations within fighting wars.

The new edited volume *Just War Thinkers: From Cicero to the 21st Century* (Brunstetter and O’Driscoll 2017) highlights a number of aspects about the natural law theorists and their impact on international law and ethics of war that are worth addressing here, given Vico’s critique of natural law jurisprudence. In chapter six, Alex Bellamy discusses Vitoria’s fundamental assumptions and starting point for his theory. Hence, Vitoria believed that human sociability was derived from nature (as opposed to social contracts as argued by later Enlightenment thinkers) and that nature divided the human community into what he described as “perfect communities.” Tony Lang in chapter ten offers a fascinating look at Hugo Grotius, complicating the often simplistic notions of his legacy as “secularizing” law. Lang defines Grotius’ notion of natural law: “the idea of law that exists prior to any formal law-making process. It is meant to be the source or foundation of laws that are made by people. It is an immutable moral code that is universal for all peoples across all times and places.” Furthermore, Cicero’s influence can be seen in the text of *De Jure Belli ac Pacis*, especially on matters of political community and war. Grotius argued in the *Prolegomena* that natural law was not the same as the law of nations, but together they reinforced

the idea there are rules and laws that govern the conduct of communities when they wage war; thus, as Vico challenged, the two were distinct and separate for Grotius.

The volume continues with Luke Glanville's chapter 11 on Pufendorf who took a more positivist take on law than Grotius and was on a mission to secularize natural law. His response to the religious wars of his time was to seek to articulate grounds for morality that did not depend on divine revelation or the doctrines of any particular confession and thus could command the consent of all people. Pufendorf conceived of his religiously neutral theory of natural law as a contribution to a new science of morality that had been inaugurated by Grotius and developed by Hobbes. Then in chapter 12, Theodor Christov has some profound insight on Vattel. Cicero and Grotius heavily influenced Vattel's thought but Vattel marks an important point in the secularization of just war in so far as he derives his principles from nature as opposed to grace. What is key for Vico's critique is that Vattel does not really explore who defines the natural law in the first place, perhaps assuming that humanity's laws are automatically in line with broader European values. All of the important just war thinkers highlighted in this volume turn to Cicero, but Vico instead turns to Tacitus the Roman historian. Vico's preference for Tacitus offered Vico the opportunity to "examine, in detail, the power of chance and evil in history. Given his interest in early Roman history, we might expect Vico to prefer Livy [like Machiavelli]...But Vico felt an intimate affinity for Tacitus, and not the more cheerful Livy" (Hösle 2016, 16). Beginning with the particular in order to understand the universal, Vico wanted to explore universal ideals such as law, justice etc. from the vivid literary style that utilized the rhythm, prose, and poetic use of the Latin language in Tacitus. This clearly fits within Vico's worldview that these ideals can only be understood in their

linguistic context and ideas of justice divorced from their rhetorical forms are vacuous; “Tacitus says, eloquence and liberty are on a par” (Vico 1990: 88).

Vico’s largest contention with natural law is that it does not account for all of the particular legal structures of diverse nations and practical jurisprudence or interpretation of a law. Here we see his articulation of the universality of law stemming from particular circumstances: “The intention of the law, however, is universal; this intention embraces a class of instances which fall under actual adjudication, even though these instances, in all their particularity, irreducible novelty and uniqueness, could not have been foreseen or specifically intended in the law” (Caponigri 1953: 37). Indeed, the strangeness of particular laws and customs are the vehicle through which divine providence operates. Laws are not arbitrary or purely contingent because for Vico: “Nature and convention are inextricably yoked; a proper grasp of this nexus enables one to discern the ground of justice in something more than expediency” (Miner 2002: 38). This position insulated him from both the “rationalist approach of modern natural law as represented by Grotius and the skepticism that he finds in Epicurus, Machiavelli, Hobbes, Spinoza, and Bayle” (Miner 2002: 38).

As Vico understands him, Grotius treats the law of nations (*ius gentium*) and the natural law (*ius naturale*) as if they were not only distinct but also separate and autonomous. This separation lies at the heart of Vichian critique of natural law. Thus, he argues quite compellingly that this separation errs in that it neglects how any understanding of natural law must be born out of our concrete experiences of history, which is an amalgamation of various laws of various nations. Against this dichotomy, Vico will attempt to exhibit the *ius naturale* as present within the *ius gentium*, which over time becomes the *ius civile*. Therefore, “Vico will reject the notion that

natural law is profitably treated as if it were detached from the historical development of customs and the laws that grow out of those customs. He will argue that natural law has both a metaphysical origin in eternal truth and an historical origin in the customs of human society.” (Miner 2002: 37-38). As Vico stated concerning the natural law of nations: “The three princes of this doctrine, Hugo Grotius, John Selden and Samuel Pufendorf, should have taken their start...from the beginnings of the nations, where their subject matter begins. But all three of them err together in this respect, by beginning in the middle; that is, with the latest times of the civilized nations (and thus of men enlightened by fully developed natural reason) from which the philosophers emerged and rose to meditation of a perfect idea of justice.” (SN 394). Historical development of the laws of nations is where one must begin if one were to have a conceptualization of justice. Let us see how Vico addresses each of these authors and how they fail in sacrificing the particular for the universal, or neglecting the universal in favor of the particular.

In his cogent and concise takedown of Grotius, Selden, and Pufendorf, Vico states: “First Grotius, just because of the great love he bears the truth, sets aside divine providence and professes that his system will stand even if all knowledge of God be left out of account. Thus all the reproofs which in a great number of matters he brings against the Roman jurists, do not touch them at all, since they took divine providence for their first principle and proposed to treat of the natural law of nations, not that of the philosophers and moral theologians” (SN 395). “Then Selden assumes providence, but without paying any attention to the inhospitableness of the first peoples, or to the division the people of God made of the whole world of nations at that time into Hebrews and gentiles. Or to the fact that, since the Hebrews had lost sight of their natural law during their slavery in Egypt, God himself must have reestablished it for them by the law he gave Moses on Sinai. Or

to the further fact that God in his law forbids even thoughts that are less than just, with which no mortal lawgiver has ever troubled himself.” (SN396). “And finally Pufendorf begins with an Epicurean hypothesis, supposing man to have been cast into this world without any help or care from God. Reproved for this, he defends himself in a special dissertation, but, because he does not admit providence as his first principle, he cannot even begin to speak of law, as we have heard Cicero tell Atticus the Epicurean in his dialogue *De legibus*” (SN 397).

While this tells us a lot about Vico’s critique of natural law in these passages, yet we have lost the larger picture of Vico’s commentary on Grotius et al. throughout the ages. Indeed, Cardinal Corsini was supposed to fund Vico’s *New Science*, but pulled his funding leaving Vico to pay for the publication himself; a costly undertaking. Thus, Vico was forced to both substantially cut sections from the *New Science*, in addition to selling his family diamond ring to pay for its printing. What we are left with today, is a Vico who holds Grotius in a very high regard but believes he failed to incorporate an understanding of divine providence into his jurisprudence. Whereas Selden and Pufendorf fail in that they stray too far toward Stoic fate or Epicurean chance respectively, leaving little room for human agency.

Robert Caponigri gives us perhaps the best summation of the Vichian critique addressed above. The root fallacy which vitiates the argument (of Hobbes, Spinoza, and Bacon, Grotius, Selden and Pufendorf) from its inception is the same: “an abstract normative idea is apodictically intruded into the context of social process, into the order of the ‘certum’ of humanity. Instead of genuine history there is generated a pseudo-myth, which in its turn, like the poetry against which Plato directed his classical arguments, is at two removes from the truth. Such myths are productive

of false principles of every science;” (Caponigri 1953: 62-63). Thus, discussion of natural law, justice, or the law of nations, the most treasured philosophers fail in that they generate a useful myth upon which to base their theories instead of focusing, like Vico, on the concrete formation of societies in all their contradictions and varieties. In essence, Grotius fails because he does not bring his “profound learning about particular laws and customs to bear in his attempt to counter the skeptical reduction of justice to expediency. He relies not upon his philological and historical knowledge, but upon abstract and rationalistic arguments that do not persuade against the objections of the skeptics. His ‘system of universal law,’ however fertile a source of insights, need to be replaced by an alternative conception of *diritto universale* that places historical facts and universal truths in closer relationship” (Miner 2002: 37). Hence, natural law in its various formulations has fallen into abstraction as opposed to the concrete formations of social structures. Although divine providence may be the ultimate guidance, it is not teleological, or the law of nations was not created with foresight or intention of historical progress.

In the end, Vico is wary of straying too far toward resigning oneself to Stoic fate or Epicurean chance, and frames the failures of philosophers up to his point into one of these camps. Vico stated as such: “Hence Epicurus, who believes in chance, is refuted by the facts, along with his followers Hobbes and Machiavelli; and so are Zeno and Spinoza, who believe in fate. The evidence is clearly in favor of the contrary position of the political philosophers, whose prince is the divine Plato, who affirms that providence rules the affairs of men. It was therefore with good reason that Cicero refused to discuss laws with Atticus unless the latter would give up his Epicureanism and first concede that providence governed human affairs. Pufendorf ignored it in his hypothesis, Selden assumed it, and Grotius excluded it; but the Roman jurists established

it as the first principle of the natural law of nations” (SN 1109). Hence, Grotius ignores providence and human freedom in order to ground his theory on a quasi-mathematical certitude of secular reason. Vico praises Grotius for his learning and his “synthetic aspirations, but does not hesitate to imply that he combines the worst elements of Stoicism and Epicureanism. Pufendorf is similar to Grotius. He commits the fundamental error of ignoring providence and ‘employs a hypothesis completely Epicurean or Hobbesian (which in this matter come to the same thing)’” (Miner 2002: 77). Thus, Vico has carved out his critique of opposing positions to build his *New Science* as a blending of the universal and particular; divine providence and human agency.

The foundations upon which contemporary laws and ethics of war are based are beginning to crumble with the rise of technologies of warfare. The fulfillment of the humanist tradition proffered by Vico offers one set of questions through which one may illuminate current and future dilemmas of the laws and ethics of war. The story which is told by the just war tradition usually begins with Augustine and continues to the secularized jurists like Grotius, Vattel, Pufendorf et al., which led to the rise of positive modern international laws of war. However, what such narratives of the canon and authority of the tradition miss are the vibrant debates taking place at the tail end of the Italian Renaissance and the birth of modernity in response to the French enlightenment and the philosophy of Descartes. With the secularization of the laws of war, one could no longer turn to God, so they put nature and ideas about natural law in its place. What this misses however is what humanist critiques of the enlightenment sought to highlight, namely: by focusing on scientific logic alone, the practical judgment, contingency, chance, fortune, the devaluation of the local, timely, and contextually bound understanding of the social world, took a backseat to abstract theorizing rendering universal “truths” independent of their contexts. What

Vico offers in his critique of Grotius, Spinoza, and Pufendorf boils down to the basis of their natural laws of nations begins from a useful pseudo-mythical account as opposed to an historical account of how humans constructed law in their societal context. Furthermore, such abstraction exacerbates the separation of philosophy into geometric proofs and historical accounts, i.e. a devaluation of the rhetorical elements of the formation of the laws of nations. Ultimately, this fits within his broader critique of Cartesianism and abstract rationalism, which at every point of his life's work he attempted to dismantle the damage done by Descartes.

Against Descartes and Abstract Rationalism

The legacy of the Cartesian program for philosophy swept aside the reasonable uncertainties of 16th C. skeptics (like Montaigne) in favor of new, mathematical kinds of “rational” certainty and proof. Devaluation of the oral, local, timely, and concrete for the formally “rational theory grounded on abstract, universal, and timeless concepts. Rhetoric became subordinate to logic; validity/truth of rational arguments independent of who presents them to whom, or in what context” (Toulmin 1990: 75). Vico's reply to the proliferation of the Cartesian method in Neopolitan circles is as scathing as Descartes' contempt for history. There are four main critiques of Descartes that Vico addresses: 1) treating the social world as mathematical and mechanistic terms 2) abstract analytical reasoning as opposed to concrete and contextual understanding 3) an inability to ‘turn within’ for a pure cogito without being limited by language and society 4) the absence looking to the concrete artifacts of history as relevant to understand language, ethics, and the interconnectedness of the disciplines.

The Mathematical and Mechanistic World of Cartesianism

Isaiah Berlin famously included Vico as one of his three Enlightenment critics, and discussed

Vico's understanding of mathematics as such:

[Vico] said in effect: Yes, it is true, mathematics is a wonderful achievement. It is a body of irrefutable truths. But is a body of such truths not because it constitutes a kind of skeleton or representation of eternal verities about nature and the world...The rules of mathematics are made by us, by human beings. The symbols of mathematics are invented by us. It is like (he did not use the analogy, but this is, I think, what he meant) a game which somebody makes up. Of course mathematical reasoning is valid. But that is because we have made it so (Berlin 2013: 463).

While of course mathematical achievements are fantastic, it is a product of logically controlled human reason, we are able to use it as a device for the purpose of integrating and generalizing a great body of knowledge that rests upon observation and experiment to answer specific questions—though later we shall see how the age of “big data” the idea of specific questions becomes irrelevant. As Toulmin and Goodfield summarize Vico's critique of scientism:

Granted, the axioms and theorems of a well-formed mathematical system do present themselves to our minds with a unique clarity and certainty. But this is not—as Descartes had claimed—because God obligingly formed us with ideas which harmonize with the true realities of Nature. Mathematics is completely transparent to our minds, simply because it is *our arbitrary creation*. One can achieve a complete intellectual grasp only of things one has created oneself (Toulmin and Goodfield 1965: 126).

A recurring theme throughout Vico's collected works is pushing back against the Cartesians who believe they are rescuing philosophy from the skeptics by basing their philosophy

on the timeless certitudes of geometry. For Vico, the intersubjective world mediated by language, which structures our reality, cannot be escaped in favor of a 'pure' rationality divorced of society, other beings-in-the-world, and primarily language. Vico utterly rejects the Cartesian notion of the subject as a pure *cogito* that can be fully clarified and elucidated by a "'turning within' to a realm of truth untarnished by bodily sensations or unaffected by worldly and mundane projects. [For Vico,] truth is to be found through an examination of its incarnation in the works, artifacts, institutions, myths, and religious practices that man has created in order to understand himself" (Edie 1969: 486). Vico's quarrel with Descartes' *cogito* is that it "pretends to be a science of being when it is only a sign of being. 'Cogito is an indubitable sign of my being, it does not give me science (knowledge) of my being.' it is the consciousness of self, the statement of an existing fact, a given, like the atom of Descartes' physics" (Grimaldi 1958: 29). Thus, Descartes mistakes a sign of being for a complete science of being; the analytical method of Descartes reduces human thought one of its rare functions, namely, "the manipulation of perfectly defined categorical concepts in fully reflexive judgments. Thinking, as it is experienced in individual life as it is traced in the history of the human race, is vastly more complex than this and follows laws of meaning-contexture and relevance which have a pre-logical, affective, pragmatic morphology that is completely missed by rationalism" (Edie 1969: 485). "The human mind," Vico writes, "is naturally inclined by the senses *to see itself externally to the body*, and only with great difficulty does it come to understand itself by means of reflection." (Edie 1969: 488 emphasis original). Ultimately, Descartes' method reduces the foundation of knowing to a sign of being, rejecting the intersubjective and historical foundations of human societies, which for Vico is the only fruitful path toward a science of humanity. As an historical being, I am constantly included in my understanding of history based on my positionality and socio-cultural and linguistic contexts. In

the end, “We experience ourselves only by the detour of encounter with history; actually the opposite is also true: we experience history only by the detour of our self-understanding. This is the Vichian hermeneutical circle. The understanding of history can never be presuppositionless” (Paparella 1993: 51).

Against Abstraction: Philosophy of Language and Descartes

I argue that Vico correctly intuited that abstract theorizing was rightly one of the rare functions of the human mind and that we best understand the world and act in it based upon our human experiences, constructing wisdom from a world of uncertainty and chance. It is precisely because of the abstract intellectual training of the Cartesian method that learned members of society fail to conduct themselves with sufficient wisdom or prudence. Since “human events are dominated by Chance and Choice...those whose only concern is abstract truth experience great difficulty in achieving their means and greater difficulties in attaining their ends” (Vico 1990: 34). Mathematical or geometric certainty cannot be achieved in the social world, because society does not work in scientifically predictable ways. Thus, Vico’s study of past societies is first and foremost a study of how language structures our social reality. Where Descartes fails ultimately is that he has no philosophy of language; he produced only a philosophy of ideas independent of language. Hence, Descartes neglects the ways in which the social world is always already structured by language, assuming that ideas in our mind are somehow pure and not impacted by time or social context. In the end, “Vico takes the more modern route and establishes the ‘New Science’ at least in large part to show that there are no ideas apart from natural languages and that men neither can nor do think except through a gestural and verbal extension of their perceptual and existential embodiment in a cultural world” (Edie 1969: 485).

Vico's more general critique of the Cartesian method is that "we pay an excessive amount of attention to the natural sciences and not enough to ethics. Our chief fault is that we disregard that part of ethics which treats of human character, of its dispositions, its passions, and of the manner of adjusting these factors to public life and eloquence" (Vico 1990: 33). In his time, the legacy of Descartes was such that, if the "only target of our intellectual endeavors is truth, we devote all our efforts to the investigation of physical phenomena, because their nature seems unambiguous; but we fail to inquire into human nature which, because of the freedom of man's will, is difficult to determine" (Vico 1990: 33). Therefore, the "abstract 'analytical' method of Descartes and his followers, says Vico, reduces thinking to only one of its *rare* functions, namely, the manipulation of perfectly defined categorial concepts in fully reflexive judgments." Cognition in everyday life is vastly more complex than this and "follows laws of meaning-contexture and relevance which have a prelogical, affective, pragmatic morphology that is completely missed by rationalism" (Edeie 1969: 485).

The Cartesians, by transferring the rigid deductive method employed in the formal sciences to the practice of social life, commit the error of the imprudent scholar. They judge things by preconceived principles, blind to the reality surrounding them. This not only neglects how humans best intuit the world and the linguistic context but the contingency of life. "That chance and choice, which are very unstable, dominate human affairs and that simulation and dissimulation, those very fallacious factors lead them. It follows, therefore, that they who attend only to the truth [being the pre-conceived truth of the Cartesians] rarely succeed in finding the suitable means, and even more rarely, in achieving the [satisfactory] end in human affairs; and, disillusioned with their own counsel, deceived by others, they very often abandon the field. When, instead, one can cope with the contingencies of life, and their attending variety of circumstances [many of which are contrary

to the straight rigid rule of reason] then one can really evaluate the facts of men” (Grimaldi 1958: 65-66). In the end, “it is impossible to assess human affairs by the inflexible standard of abstract right...The difference, therefore between abstract knowledge and prudence is this: in science, the outstanding intellect is that which succeeds in reducing a large multitude of physical effects to a single cause; in the domain of prudence, excellence is accorded to those who ferret out the greatest possible number of causes which may have produced a single event, and who are able to conjecture which of all these causes is the true one” (Vico 1990: 34). Ultimately, science and prudence are put into contrast as the latter is an attempt at deep contextual understanding for action-guiding principles, while the former is a theory-centered ideal of an abstract science of human affairs.

In one of his earlier works *On the Most Ancient Wisdom of the Italians*, Vico’s anti-Cartesianism is most completely stated: “The rule and criterion of truth is to have made it. Hence the clear and distinct idea of the mind not only cannot be the criterion of other truths, but it cannot be the criterion of that of the mind itself; for while the mind apprehends itself, it does not make itself, and because it does not make itself it is ignorant of the form or mode by which it apprehends itself.” The ramifications of Descartes in contemporary social science cannot be overstated. The deductive method of Descartes is proffered as objective fact in positivist IR. The idea of a view from nowhere by which we can establish causal patterns in the social world with predictive capabilities is the core of the U.S. IR discipline. Nevertheless, the world is mediated by our language, context, positionality, and biases; the idea of turning within to discover a contextually independent mind neglects the world dependent contextualization of mind-world monism.

In conclusion, Vico's anti-Cartesian stance is a staunch rejection of a *tabula rasa* of the human mind. Humans are dependent on their social, linguistic, geographic and temporal contexts. We are dominated by chance and choice in human affairs and do not act in a mathematically predictable universe of cause and effect. Instead looking to the concrete practices of humans in their myths, practices, art, and language, one can begin to see how Man has understood himself throughout the ages in different contexts. For this, Vico develops a philosophy of language and social construction, that resonates with the work of linguistic constructivists in contemporary International Relations scholarship.

Language and Social Construction

As evidenced by Vico's Cartesian critique above, it is clear that Vico viewed language as fundamental in our construction of the world. Not only for the 'modifications of the human' which is Vico's conception of the synthesis of the the universal and particular, but eloquence and rhetoric itself were essential for inter-subjective wisdom. "What is eloquence, in effect, but wisdom, ornately and copiously delivered in words appropriate to the common opinion of mankind" (Vico 1990: 78). Vico views humans as intersubjective beings in the world who learn by trial and error in a social context and subsequently look back and impose logical order on chance and social norms. Hence, "We think primarily by 'examples' and 'likeness' and only later are we able to examine the exact nature of the logical validity which justifies our using, for example, an agricultural vocabulary for sowing (*disserere*), gleaning (*intelligere*), gathering up (*recolligere*), and storing away (*observare*) to designate the psychological processes of cognition." (Edie 1969: 489). As Edward Said notes, Vico's "etymological habits are a form of 'retro-signification' that drives meanings back to the bodies from whence originally they came. This is anti-Cartesian

atavism with a vengeance” (Said 1976: 819). In essence, for Vico the “world of men is like a text, and vice versa. Both come from the body in an act of inspired divination by which inert objects, random marks, become sign systems; as sensuous immediacy is lost intellectual and aesthetic powers are gained” (Said 1976: 826). In this section, I briefly explore Vico’s understanding of language as social construction in order to explore the possibilities for contemporary IR constructivists to adopt some Vichian foundations in their studies.

The ‘vulgar wisdom’ of Giambattista Vico’s *New Science* is rooted in man’s perspective-perceptual insertion in nature. Man, as always, having a bodily *place* within being and among being to whom he is related through common interests and projects. The works of this ‘wisdom’ are the “historical institutions which man adds to nature and which he attempts to understand by singing ‘the world according to man’ in poetic gesticulation and ejaculation” (Edie 1969: 489). Vico has not provided us with a complete theory of language, but his importance lies in “discerning one of the inescapable existential structures of human expression and thus of establishing a methodological principle which must be taken into account by any theory of language that would claim to give an adequate account of either the phenomena of speech or the experience of meaning” (Edie 1969: 489). Therefore, in order to understand the nature of language, one does not try to penetrate to the thought which Descartes assumed standing behind language. Rather, as Martin Buber puts it: one “takes a stand in speech and talks from there.” The encounter with any of man’s works especially those done through language, remains intrinsically historical. The link of language to history is “poetic wisdom” proper, which transcends the dichotomy between subject and object. The Cartesian objectivity, on the other hand “reduces a ‘work’ to a mere ‘object’ when such an operation is performed, the language event cannot possibly seize and transform the

reader...Consequently the encounter with the being of a work of art or a text cannot be Cartesian” i.e., static and ideational, outside of time (Paparella 1993, 73). Hence, speech acts are the foundation from which any philosophy must originate. But this is more in line with Wittgenstein’s use-theory of language than a phenomenology of mind. As transcendence of the subject/object, universal/particular dichotomies are bound to humans who act in society. This is the basis of Vico’s historicism where eloquence and wisdom are constitutively linked.

In a resounding rebuke of the Cartesian method and analytic philosophy more generally Vico stated: “those branches of philosophical theory are taught by such a method as to dry up every fount of convincing expression, of copious, penetrating, embellished, lucid, developed, psychologically effective, and impassionate utterance. The listeners’ minds undergo a process of constriction...” (Vico 1990: 37). Moreover, in the case of eloquence:

the same men assert that the modern study of methods, far from being detrimental, are most useful to it. ‘How much preferable it is,’ they say, ‘to induce persuasion by solid arguments based on truth, to produce such an effect on the mind that, once that truth coalesces with reason it can never be separated from it, rather than to coerce the listener’s soul by meretriciously eloquent allurements, by blazes of oratorical fire which, as soon as they are extinguished cause him to revert to his original disposition!’” Yet, the “role of eloquence is to persuade; an orator is persuasive when he calls forth his hearers the mood which he desires...Therefore, the soul must be enticed by corporeal images and impelled to love; for once it loves, it is easily taught to believe; once it believes and loves, the fire of passion must be infused into it so as to break its inertia and force it to *will*. Unless the speaker can compass these three things, he has not achieved the effect of persuasion; he has been powerless to convince (Vico 1990: 37).

Thus, eloquence is wisdom speaking to move the soul. Mathematical formulae of the logical structures of argumentation advocated by Descartes and his followers cannot touch the soul nor produce wisdom in Vico’s more humanistic understanding of the term.

Vico here looks to past civilizations in order to contextualize the tragedy of the loss of eloquence from the ancients. “I hold the opinion that if eloquence does not regain the luster of the Latins and Greeks in our time, when our sciences have made progress equal to and perhaps even greater than theirs, it will be because the sciences are taught completely stripped of every badge of eloquence. And, for all that Cartesian philosophy would claim to have corrected of the erroneous order of thought of which the Scholastics were guilty, placing the total force of its proofs in the geometric method, such a method is so subtle and drawn out that if by chance attention to one proposition is broken, it is completely lost to whoever is listening to comprehend anything of the whole of what is being said” (Vico 1990: 87). Vico is not alone in this understanding as he draws this understanding of eloquence from Tacitus: “Tacitus says, eloquence and liberty are on a par” (Vico 1990: 88). In order for one to have liberty, ethics, politics, logically valid argumentation like that of geometry cannot be independent of the rhetoric with which they are conveyed to an audience in social context. This intersubjective essence of eloquence links all forms of knowledge within Vichian linguistic philosophy which is overall key to his *New Science* of humanity.

Such a holistic view of Vico demands an understanding of the constitutive power of language for his philosophy. Sandra Luft argues that taken as a whole, Vichian texts share “a notion of humans as embodied, finite, temporal beings who exist in a world governed by material necessity, and who are dependent on the constitutive power of language to fabricate their human existence.” She presents them as “diverse expressions of *poiesis*, the interpretive sense-making of beings-in-the-world that takes place in language, a hermeneutic process *ontologically* creative of a real, though artificial, human world” (Luft 2003: XV).² Vico is very concerned with how

² Luft believes the term “ontological” is inappropriate outside the context of Greek metaphysics. She uses it in a nontechnical sense, as Heidegger does, to emphasize a conception of humans whose sense-

language structures our reality and lends itself to one type of epistemological standpoint or another. In his *On the Study Methods of Our Time*, Vico attacks Cartesian abstraction that posits truth with a mathematical kind of certainty, that which divorces language and argumentation from eloquence, rhetoric, and even of its ethical character i.e. reason divorced from emotion loses something inherently human in its argumentation. In a somewhat comical rant against the French language and Descartes, it becomes evident the ways in which Vico believes that language structures our intersubjective reality:

“The French language is abundantly endowed with words designating abstract ideas. Now, abstraction is in itself but a dull and inert thing, and does not allow the comparative degree. This makes it impossible for the French to impart an ardently emotional tone to their ideas, inasmuch as such an effect can only be achieved by setting thought in motion, and a vehement motion at that; nor can they amplify or elevate their discourse. Nor can they invert the order of words: the conceptual abstraction being the most general category, it does not supply us with that ‘middle term’ where the extreme points of a metaphor are able to meet and unite. It is therefore impossible in French for a single noun to be the vehicle of a metaphor; and metaphors composed of two nouns are, as a rule, somewhat stifled....French words have only two kinds of stress; they are accented on the ultima and on the penult, whereas Italian stresses the antepenult. In French the accent shifts to the penult, which results in a somewhat tenuous and thin sound. For these reasons, French is not fit for stately prose, nor for sublime verse. But though the French language cannot rise to any great sublimity or splendor, it is admirably suited to the subtle style. Rich in substantives, especially those denoting what the Scholastics call abstract essences, the French language can always condense into a small compass the essentials of things. Since arts and sciences are mostly concerned with general notions, French is therefore splendidly suited to the didactic genre. While we Italians praise our orators for fluency, lucidity, and eloquence, the French praise theirs for reasoning truly....We Italians, instead, are endowed with a language which constantly evokes images. We stand far above other nations by our achievements in the fields of painting, sculpture, architecture, and music. Our language, thanks to its perpetual dynamism, forces the attention of the listeners by means of metaphorical expressions, and prompts it to move back and forth between ideas which are far apart” (Vico 1990: 39-41).

making is not epistemic, nor even subjective, but the interpretive activity, linguistic and practical, of beings-in-the-world.

Therefore, in order to understand the nature of language, one does not try to penetrate to the thought which Descartes assumed standing behind language. The encounter with any of man's works especially those done through language, remains intrinsically historical. This context and temporal specific emphasis by Vico, bears a family resemblance to contemporary debates in just war thinking today explored in chapter two of this dissertation.

Although Vico's philosophy of history will be discussed in the following chapter, it is important to examine the interconnectedness between history and language for Vico. Rather than viewing 'primitive' civilizations as backwards or progressing toward some teleological future, he views the language, myths, and laws of particular societies as genuine attempts to understand the world around them. Thus, when men are ignorant of natural causes producing things, and cannot even explain them by analogy with similar things, they attribute their own nature to them. So the vulgar, for instance, say that the "magnet loves iron" (Toulmin and Goodfield 1965: 128). Thus, the Latin expression of the magnet loves iron, is a genuine attempt to linguistically construct meaning in a particular context whereby magnetism was not yet scientifically understood. For Vico, there is insight to be gained from vulgar wisdom, not to dismiss it as backwards or primitive thinking. "Vico's new historical method demanded an acute sensitivity to the nuances of language and the inner significance of myths. He stripped the picturesque surface off the older mythologies, to uncover the living thought that gave them birth. Originally, myths were neither poetic fancies, nor fictions of the priests, nor heroic legends magnified through the lens of the past. They represented rather Man's first crude but honest efforts to understand the world of nature and live in harmony with it...In their fables the nations have, in a rough way and in the language of the senses, described the beginning of the world of the sciences, where the specialized studies of the

scholars have since clarified for us by reasoning and generalization” (Toulmin and Goodfield 1965: 127).

Early civilizations utilized a substantively mythical language to discuss science, religion, and art. Mythical thought was anthropomorphic and animistic, because it was only natural to make oneself the metaphor through which one understood the uncertainties of nature. Mythology was the thought of men living primitive lives and they sought to measure the world of Nature by that which they already knew—namely, themselves:

“The essential poetic activity is the generation of myth; the first forms of human history are, therefore, pervasively and substantively mythical. But the myth is for Vico no idle evocation of the dreaming spirit of man; it is the spontaneous, imaginative form under which man symbolizes to himself the historical processes of his culture in their universally relevant features. Every existential form of the spontaneous human consciousness is, consequently, myth; and the interpretation of myth is the primary methodological principle of the ‘New Science’...Language, in its turn, is for Vico the system of signs generated for communication and preservation of myth” (Caponigri 1953: 8).

Vico instructs us to “endeavor to employ in practice that precept of Horace which, condensed in three lines, contains all the art of using language well in prose as in verse. ‘Right thinking is the first principle and source of writing,’ because there is no eloquence without truth and dignity; of these two parts, wisdom is composed. ‘Socratic writings will direct you in the choice of subjects,’ that is, the study of morals, which principally informs the wisdom of man, to which more than in the other parts of philosophy Socrates divinely applied himself, whence of him it was said: ‘Socrates recalled moral philosophy from the heavens.’ And ‘when the subject is well conceived, words will follow on spontaneously,’ because of the natural bond by which we claim language and heart to be held fast together, for every idea its proper voice stands naturally attached. Thus,

eloquence is none other than wisdom speaking” (Vico 1990: 89). Ultimately, Vico intuits that language is much more powerful than Descartes or his contemporaries give it credit; any method that abandons linguistic context misses an essential element of understanding the social world.

In the end, the primacy of language for Vico’s entire philosophy is a key link between constructivist IR today and ethics of war. Eloquence, wisdom, liberty, and ethics are all linked in Vico’s humanistic imagination of an intersubjective world; whereby humans construct a world of our making, yet without will or consciousness. Indeed, we may look back upon the past and see what we may later describe as progress; but that ascribes to past individuals a consciousness that they may not have had in the contingency and contestation of their time. Thus, “Man acts in the world, makes it ‘human’ and in so doing ‘humanizes’ himself; it is *only after the fact* that he can *understand* what he has done” (Edie 1969: 492, emphasis added). Ultimately, Vichian social construction means that humans in their context are the ultimate makers in the world in what some have deemed his science of imagination. “If the senses are faculties, by seeing we make the color of things, by tasting, we make flavors, by hearing, sounds, by touching, cold and heat... Imagination is, without a doubt, a faculty, because while we employ it, we form the images of things...According to these examples, the true intellect is a faculty since through it, when we understand a thing, we make it true. Consequently, arithmetic, geometry, and mechanics, the child of both, are founded in this faculty of man, since, by it, we demonstrate truth because we make it” (Grimaldi 1958: 113). It is through these modifications of our human and that we make the social world; since for Vico, we can only understand that which we have made, history is intimately human understanding humans in their historical context sheds light on broader philosophical principles in the world.

Science of Imagination in an Intersubjective World

The symbiotic nature of “fact” and “value”, the inescapability of the hermeneutic circle – that language only approximates reality as it is “socially mediated and temporally and geographically conditioned” – represent an interpretivist IR endeavor, yet the Vichian roots of these concepts have as of yet been overlooked (Lynch 2014: 16). As Paparella (1993: 33) noted, Vico’s hermeneutical circle is: “when man creates in history; and above all when he creates language, he creates a structure that constitutes an interpretation of his experience. In turn that interpretation organizes the world around him. The study of history turns out to be an ongoing understanding and evaluation, in effect a constant reinterpretation, of these interpretive structures which men have created. There is no such thing as ‘objective’ history...The sheer arrogance of the Cartesian mindset is exhibited by the insistence that it is the only valid ‘objective’ view of what constitutes reality, while other views or paradigms can only proceed out of ignorance and have therefore little, if any, intellectual value.” As I hope it has already been demonstrated and will be expounded upon in this chapter, Vichian philosophy is worthy of exploration in both the fields of the ethics of war and in constructivist IR, for his contextualization of history, his emphasis on language, and his critique of narrow abstract knowledge production that claims to be universally applicable. In sum, Vico’s understanding and articulation of humans as historical aids in the contextualization endeavor of Toulmin: “As an historical being I am constantly included in my understanding of history. We experience ourselves only by the detour of encounter with history; actually the opposite is also true: we experience history only by the detour of our self-understanding. This is the Vichian hermeneutical circle. The understanding of history can never be presuppositionless” (Paparella 1993: 51).

Although Vico did not explicitly draw this distinction between deduction and induction – what we might today term abduction – he distinguished a kind of knowing that is founded upon personal experience together with imaginative insight into the experience of other men and circumstances. For instance, when one understands their milieu and social relationships–i.e. something that he does not understand by deduction, nor by induction, nor by hypothetical deduction, nor by arranging experiments, testing hypotheses; one understands men, societies, situations and outlooks in an immediate fashion (Berlin 2000: 474). Although one may be mistaken, one may misunderstand, it is a kind of knowing that is distinguishable from the other kinds of knowledge (though Vico wants to argue though they are distinguishable, they are not completely separable). Then, in looking to the science of history, Vico’s seminal theses that there are “two great doors into the past which people have not sufficiently” explored; one is the nature of language and the other is the nature of ritual and myth (Berlin 2000: 467). But one must not fall into the trap of importing modern ideas and conceptions into the past that they are studying, For Vico, art is one of the natural forms of human expression; however in his time, there was a belief that there were certain rules for making works of art that were unalterable, universal and eternal (Berlin 2000: 472-473). Concerning art, Vico viewed the doctrine of immutable principles of art to be a huge fallacy. Rules of his time (as I would argue today) were seen to be universal and not contextual. Similarly, then to Aristotle discussed by Toulmin and Brown, Vico believed that one had to understand the specific concrete circumstances (Vico was a forerunner to the ideas of “culture”) of how individuals interpret their societies via their language, rituals and myths–not simply viewing them as “primitive”.

Perhaps the most important philosophical principle in Vico's thought is truth and knowledge are convertible. The important epistemological principle of the *verum-factum* can be summarized as follows:

“certain truth can be attained only when the knowing subject has himself produced his object. Accordingly, God can only know the world perfectly because he is its creator. Human beings, on the contrary, cannot have knowledge of nature, but only of mathematical entities—insofar as we create them: beginning with the abstractions of one and the point, the human mind generates its own world. According to Vico, this theory of knowledge is equally useful in rebuffing both the excessive epistemological pretensions of dogmatists and skepticism; only epistemology befits the human condition. The principle of *verum-factum* has a long tradition. But Vico was the first to energetically articulate it as an independent criterion for truth, and in direct contraposition above all to the Cartesian criterion of evidence. The ‘*cogito ergo sum*,’ which the humanist Vico had already observed in Plautus’s *Amphitruo*, is certainly true—and metaphysics should definitely attend to the ‘indubitable truth’, but Vico reasons, first, that knowledge of God comes before self-knowledge since God is that which thinks in me...Moreover, for Vico the *cogito* is purely ‘*conscientia*’ (consciousness) and certainly not ‘*scientia*’ (science) of the causes either of thought or being itself. Vico thus insists that the *cogito* is completely incapable of explaining the material relations of cause and effect: it is formal, empty, and incapable of deriving anything concrete. The principle of *verum-factum*, on the contrary, is most directly connected to the knowledge of causes: ‘*Probare per causas, idem est ac efficere*’ (To prove something from causes is the same as to make it)” (Hösle 2016: 25).

Ultimately Vico views science as an intersubjective human project whose principles are to be found not in the things themselves independent of human experience but rather “within the modifications of our own human mind” (Edie 1969: 491). This is the ultimate foundation from which Vico would lead scholars such as Marx and Hegel down the path man as historical as opposed to part of nature.

Indeed, Vico proffers, we must understand Man in his concrete historical circumstances and not project his/her own biases onto the past. Man as historical means that we are the collective authors of our own historical past and an therefore have an utterly open future. How then does

Vico attempt to bind the rationality in the irrational foundations of man? Vico argues that if we look to the laws, myths, poems, and myths early man made to understand himself, they were made in the image and likeness of human beings. They were not primitive ideas, but genuine attempts to understand the place of humans in nature, and by understanding the poetry, laws, myths etc. of past civilizations one can gain insight into their conceptualizations of that. Instead of projecting our own ideas backwards and attempting to create a linear-progressive notion of history, Vico wants to view each historical attempt at understanding as a concrete and distinct, contextually bound inter-subjective process of *man in society* as opposed to pure *cogito*. “Nothing is more fraught with philosophical danger and difficulty than historical explanation, and nothing is more difficult to justify than the status of ‘truth’ which we can ascribe to the historical hypotheses and explanatory concepts with which we systematize historical events *after the fact*. How are such hypotheses and concepts, which always emerge on the level of full cognitive awareness long after the events that they ‘explain’ are dead and gone, to be justified as universally objective and valid truths?” (Edie 1969: 490).

Introducing human subjectivity or inter-subjectivity of man in society into a temporal historical vision of humankind, presents what seems to be a pure contradiction: a finite principle (the contextually bound content of individual nations and their histories) with the infinite divine providence (or universal history whereby all individual histories of nations/groups tend towards). Hence, the introduction of the human subject as the principle of the synthesis of time and idea and the exploration of its dynamic structure is the intent and purpose of the Vichian doctrine of the ‘Modification of the Human Mind’. In this doctrine Vico identifies history unambiguously as the presence of the “human subject to itself and describes its pure phenomenology. The historicity of

the human subject involves that subject, in Vico's view, in radical contradiction; this view leads to his elaboration of the concept of 'providence', which is, in essence, the rectifying principle of human history" (Caponigri 1957: 6-7). Ultimately, "The idea is no timeless essence; it is the eternal law of the appearance of concrete forms of time" (Caponigri 1953: 71). As a professor of rhetoric in Naples, Vico sought to understand time and universal history through concrete interpretations of natural law throughout the ages, Caponigri put Vico's philosophy thusly:

The philosophical problem of history as it arises in the dual context of the natural law and of the project of a science of humanity...is the problem of the synthesis of time and idea. In this formulation time is the general formal principle of the positive structures of society and culture; that is, time defines the most general order, which pervades the realm of these structures. They appear in temporal succession, manifesting in this medium that variety and diversity, those transformations and dynamisms, which are the characteristics of their positivity. Idea, by contrast, in this formulation, defines that plenitude or perfection which would seem to be the implication of that positive movement and over against which the process of the formations of the concrete structures of sociality and of humanity are to be measured. The error of classical political humanism has appeared to Vico as the attempt to fix this ideality apodictically, that is, independently of that temporal order in which concrete forms of society appear" (Caponigri 1953: 71).

However, far from being arbitrary or purely contingent, historical custom is the vehicle through which divine providence operates (Miner 2002: 38). "In a single sentence, Vico condenses the view of philosophy scattered throughout his previous writings. Then he declares that 'this Axiom dismisses from the school of our Science the Stoics, who seek to mortify the senses, and the Epicureans, who make them the criterion'" (SN 130). In the *Scienza Nuova*, Vico holds that both culminate in the same error, but takes pains to emphasize the flaws proper of each sect. Now he only says that, "both deny providence, the former chaining themselves to fate, the latter abandoning themselves to chance" (SN 130). One difference is noted: The Epicureans "affirm that

human souls die with their bodies.” But the parallel is more important: “both should be called monastic, or solitary, philosophers. This is all Vico needs to say about the Stoics and Epicureans” (Miner, 2002: 79).

Vico’s Modifications of the Human Mind as the Synthesis of Time and Idea

Vico’s theory of history is a positive theory, which seeks to combine the radically particular historical laws of nations, with the ideas of the universal providence of mankind. This synthesis is not something that objectively occurs, but inter-subjectively is interpreted by Man throughout the ages within what Vico terms, “modifications of the human mind.” Vichian thought on this topic should not be confused with a metaphysics of the human mind—“such a formal and abstract dialectic of human consciousness would be an eternism and atemporalism which Vico’s purpose at every point is to oppose” (Caponigri 1953: 74). Vico is instead concerned with phenomenology. The doctrine modification of the human mind is the synthesis emergence of concrete forms of sociality and culture in time. It is the work of man’s thought through all of its diversity, will, determination and freedom, which sustain those forms of existence. Hence, Vico’s intent is indisputable: “he is concerned, by this determination of the modifications of the human mind, *to fix the law* of the temporal appearance of the *idea*, or of the temporal movement toward the *idea* in the *concrete process* of the formations of human society” (Caponigri 1953: 74). Hence, one is left with an understanding of the historical structure of the human mind itself—not an imposition of the present on the past—but understanding the synthesis of time and idea within an inter-subjective and diverse world. Ultimately, “the human mind does not produce history as something extraneous and contingent to itself; it produces itself in history and its modifications are the concrete principles of its temporal-ideal actuality” (Caponigri 1953: 74-75).

The synthesis of time and idea for Vico is crucial for understanding his subsequent cyclical history and historical *ricorso* (elaborated below) as it relates to the ethics of war in the contemporary era. The appearance of the idea in diverse contexts interpreted via language in law, myth, ritual, poetry, and religion lends itself to a hermeneutic interpretation of a Vichian theory of history. Luft argues that taken as a whole, Vichian texts share “a notion of humans as embodied, finite, temporal beings, who exist in a world governed by material necessity, and who are dependent on the constitutive power of language to fabricate their human existence.” She presents them as “diverse expressions of *poiesis*, the interpretive sense-making of beings-in-the-world that takes place in language, a hermeneutic process *ontologically* creative of a real, though artificial, human world” (Luft 2003: XV). In the conclusion, I argue that taking Vico’s humanism seriously is essential to maintaining human agency in an era of accelerated techno-warfare. Vico’s humanism is “a philosophy of human agency...where traditional humanism identifies the source of agency, whether human or divine, as conscious and intentional, the creativity Vico attributes to his first men derives from the potency of a subjectively unconditioned ordinary language. That language is *itself* ontologically creative is not a notion Vico could find in his philosophical or theological traditions, given their assumptions of an orderly world and of the rational subjectivity of God and humans (Luft 2003: XIV). In sum, man as historical is not some teleological or linear-progression toward some ultimate utopia (that is simply imposing order and contextually bound values on the past), it is instead an intersubjective process of beings-in-the-world interacting via language and creating their own rules, laws, myths, rituals, art, and poetry to make sense of a complex nature social interactions. Ultimately, synthesis of time and idea for Vico is the synthesis of the eternal with the concrete and particular; such that the internal time-structure of the nation can be understood in relation to the plurality of nations (or mankind) toward a universal history.

Conclusion: Vico's Impact on Ethics of War Today

As will be fully addressed in chapter two, I believe that Vico has a lot to offer ethics of war today which has turned to analytic philosophy to decontextualize complex ethico-political dilemmas and search for *the answers* to Justice in warfare. However, Vico warns us against neglecting chance and uncertainty of human endeavors for some logically sound argument devoid of wisdom or eloquence. Hence, Vico utilized the roman historian Tacitus to understand how humanity actually was. "Tacitus offered Vico the opportunity to examine, in detail, the power of chance and evil in history (Hösle 2016), 16. Any theory of ethics and warfare that ignores language and favors abstraction as opposed to the concrete circumstances of the soldier commits a grave error. Vico tells us: "it is an error to apply to the prudent conduct of life the abstract criterion of reasoning that obtains in the domain of science. A correct judgment deems that men—who are, for the most part, but fools—are ruled, not by forethought, but by whim or chance. The doctrinaires judge human actions as they *ought* to be, not as they actually are (i.e., performed more or less at random)." (Vico 1990: 35). As the following chapter addresses key aspects of war ethics and Vichian thought, I think it best to briefly conclude as to why I came to integrate Vico into my studies and apply him to diverse arguments from constructivism to AI and quantum computing in warfare today.

After being introduced to Giambattista Vico, in the little I have delved into his philosophy it has been insightful on a number of levels. First and foremost, I believe Vico to be one of the first social constructivists, who developed a theory of abduction in response to the Cartesian deductive logic. Furthermore, he offers a cyclical view of history that is highly contingent and not deterministic like the majority of philosophy of his time. Indeed, Vico was a man ahead of his time that was not discovered until the mid-1950's. He was a lowly professor from Naples, Italy who

had written an immense volume with commentary on all of the contemporary legal scholars like Grotius and others for his *New Science*. Only after its completion his funding was pulled before publication, whereby his masterpiece was cut to ¼ the original length and the rest of his work was lost forever. Beyond the sad life, he captured the imagination of great historicists like Isaiah Berlin, who wrote extensively on Vico, yet Vico has yet to be seen for his humanistic merit by IR constructivists or just war thinkers. In the end, I believe that Vico can offer both a useful philosophy of history to ask the right questions about the ethics of war today, he has something to offer constructivist IR, and provide the humanistic imagination through art and poetry what is erased from contemporary ethical logic.

Vico intuited that in that kind of technological world little room is left for works of humanistic imagination (e.g., literature, the arts, history, philosophy, ethics); i.e. the very modes of thought and sentiment through which Man may attempt to understand himself. It is this inability to associate humanistic thought with truth that lies at the root of contemporary technocratic mentality and its sheer inability to provide a unifying vision of the whole of human knowledge. The worth of an individual will not be conceived as intrinsic to his humanity any longer but as related to his contribution to an effective, efficient part of a social scheme. Any sort of transcendence over the social system, any inwardness and creativity are not only not appreciated but more often than not they are discouraged. The individual is seen as a mere cog in the system: a producing and consuming machine devoid of any inwardness.

Cartesian technocratic man on one hand, and Nietzschean charismatic man on the other; as we have seen, Vico's truth—while aiming for the transcendent—remains at all times open to

existence and its *contradictions*. His historicism may be evolutionary but it is never deterministic as a Fontanelle's or a Nietzsche's. Vico insists throughout his speculation that the historian must not anticipate but rather interpret reality. He must always begin with the *certum* in order to understand the *verum*. Vico's signal contribution and importance, according to Paparella, consists in the fact that he is still today the most valid alternative between Cartesian rationalism ushering in technocratic man ready to efficiently order the world, and Nietzschean anti-rationalism ushering in charismatic overman devoid of transcendence and ready to transvaluate values and impose them on a world locked in a deterministic eternal return (Paparella 2008). Based upon my previous work concerning temporality in IR, I am highly skeptical of any type of deterministic theories, thus Vico's contingent and humanistic imagination offers a possible solution to the false dichotomies of IR scholarship today—i.e. positivist/post-positivist, method trumping the types of normative questions one ought to be asking.

Vico's merit lies in the fact that “he begins with the particular without ever sacrificing the universal and ideal, and most importantly, without ever sacrificing the will to truth or the will to power....Vico whose concept of providence is left as the most valuable part of his thought, remains nowadays the most valid alternative between the two dehumanizing extremes of Cartesian rationalism ushering technocratic man ready to ‘efficiently order’ the world, and Nietzschean anti-rationalism ushering charismatic man ready to ‘transvalue values’ and impose his ‘superior’ values on the world.” (Paparella 1993: 144). For me, Vico offers an insight into war and language in ways that other philosophers have not given me. I spent the first few years of my PhD attempting to resolve the tensions of complex ethical dilemmas when it came to warfare, but Vico's blending of universal and particular opened doors for me to operate within these tensions with an

understanding of concreteness and eloquence was more powerful than logically sound modes of argumentation devoid of moral context. Ultimately, this chapter has been an exploration of the many facets of the thought of Giambattista Vico, which will be a lifelong endeavor.

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Chapter Two

AI and the Poetic Wisdom of Giambattista Vico: Ethics of War in The Technological Era

Crippled for life at seventeen,
 His great eyes seem to question why;
With both legs smashed it might have been
 Better in that grim trench to die
 Than drag maimed years out helplessly.

A child – so wasted and so white,
 He told a lie to get his way,
To march, a man with men, and fight
 While other boys are still at play.
 A gallant lie your heart will say.

So broke with pain, he shrinks in dread
 To see the ‘dresser’ drawing near;
And winds the clothes about his head
 That none may see his heart-sick fear.
 His shaking, strangled sobs you hear.

But when the dressed moment’s there
 He’ll face us all, a soldier yet,
Watch his bared wounds with unmoved air,
 (Though tell-tale lashes are wet),
 And smoke his woodbine cigarette.

–Eva Dobell, “Pluck”

(During a Great Battle, 1916)
The floors are slippery with blood:
The world gyrates too. God is good
That while His wind blows out the light
For those who hourly die for us –
 We still can dance, each night.

The music has grown numb with death –
But we will suck their dying breath,
The whispered name they breathed to chance,
To swell our music, make it loud
That we may dance, – may dance.

We are the dull blind carrion-fly
That dance and batten. Though God die
Mad from the horror of the light –
The light is mad, too, fled with blood, –
We dance, we dance, each night.

–Edith Sitwell, “The Dancers”

“Hindsight makes it difficult to imagine that the people under study are moving toward a yet incalculable and hidden future; that as a rule people have to venture a diagnosis of their existential situation in fear and hope...Indeed poets seem to be more capable of this difficult imaginative operation than historians.”

–Emanuel Paparella, *Hermeneutics in the Philosophy of Giambattista Vico*

“Too many people learn about war with no inconvenience to themselves. They read about Verdun or Stalingrad without comprehension, sitting in a comfortable armchair, with their feet beside the fire, preparing to go about their business the next day, as usual. One should really read such accounts under compulsion, in discomfort, considering oneself fortunate not to be describing the events in a letter home, writing from a hole in the mud. One should read about war in the worst circumstances, when everything is going badly, remembering that the torments of peace are trivial, and not worth any white hairs. Nothing is really serious in the tranquility of peace; only an idiot could be really disturbed by a question of salary. One should read about war standing up, late at night, when one is tired, as I am writing about it now, at dawn, while my asthma attack wears off. And even now, in my sleepless exhaustion, how gentle and easy peace seems!”

— Guy Sajer, *The Forgotten Soldier*

Introduction

Technological innovation strives to create a science of warfare to tame chance and uncertainty all while easing the liberal conscience for killing innocents in the name of saving strangers. It is claimed that soldiers are fallible, emotional, and biased, whereas artificial intelligence (AI), machine learning algorithms, and lethal autonomous weapons systems (LAWS) enable a more precise, ethical war. Just war theorizing today has attempted to grapple with the dilemmas of technological innovation on ethics of war (e.g. see Morkevicius 2014; Leveringhaus 2016; Roff 2014; Brunstetter and Braun 2011; Allenby 2013; Renic 2018). But how might the humanism of Giambattista Vico help us conceptualize human/computer interactions in moral decision-making on the battlefields of tomorrow? Just war debates today are framed in terms of the Walzerian casuists against his revisionist critics. While there is nuance and debate within each camp, (Braun 2018 :350) correctly identifies the heart of the debate as an incommensurable methodological divide between the analytic camps’ “search for moral truth which requires abstraction and thus has little to no place for the messy circumstances of real-world employments of force”, i.e. the traditionalist camp. As Braun sketches the nature of the divide, he focuses on the ‘moral equality of combatants thesis’ and rightly identifies a ‘third way’ approach of James Turner Johnson’s historical method that doesn’t rely on analytical abstraction. This chapter will address divide between just war thinkers that utilize historical examples and the revisionists that rely on abstraction to tackle the ontological disagreement of war as a collective endeavor and reductive individualism respectively. Linking internal just war debates to technological innovation in warfare, (Schwarz 2018 :281) argues that, “advanced technologies of violence influence moral decision-making in ways that are significant to just war thinking but often remain neglected. This, in turn, risks producing vacuums for moral decision-making about inflicting harm in war.” This

chapter strives to interject the humanistic philosophy of Giambattista Vico into contemporary discussions of the ethics of war in an era of AI and the potential utilization of LAWS. Vico's philosophy of history is a cyclical but contingent understanding whereby when the last stage of history is reached, man believes himself to have encompassed God's mind—analogue to AI today—and simply worships his own cleverness, at which point a historical *ricorso* takes place returning man to an earlier simplicity of poetic wisdom. In its simplest form, Vico's ideal eternal history is: "Men first feel necessity, then look for utility, next attend to comfort, still later amuse themselves with pleasure, thence grow dissolute in luxury, and finally go mad and waste their substance" (Vico SN 241). I argue that AI, algorithmic warfare, and LAWS are analogous to a Vichian *ricorso* in that those of us who study ethics of war must return to the concrete circumstances of human experiences of war. This madness is epitomized by the techno-optimism that humans will be absolved of difficult ethico-political decision-making in warfare by utilizing advanced technology and revisionist theorizing "paying more attention to the logical structure of the argument than the moral content of its object." (Schwarz 2018: 295).

The philosophy of Giambattista Vico is useful in three concrete ways for present crises within just war thinking and technologies of killing. First and foremost, it highlights the traditionalist notion of the political, social, and contextual nature of conflict the ontological divide between war as a collective endeavor and reductive individualism. Second, it calls to question the search for *the answers* to what constitutes a just war as opposed to just war as a practical language of a set of questions for decision-makers that takes into account the uncertainty, contingency, and messiness of warfare instead of abstract hermetically sealed logics of revisionism. Finally, it calls upon historical traditionalists who utilize casuistry to not only account for the *jus in bello* soldier

experience, but if war is truly a collective endeavor we should also include the *jus in bello* experiences on the homefront of the impacts of war, remembering, and memorialization. In the end, by introducing Vichian concept of poetic wisdom into the just war tradition, this chapter strives to address the concrete dilemmas of the techno-ethics of war today by a return to the concrete human experiences of war for civilians and soldiers alike.. Ultimately, Vichian thought in just war thinking ought to call on ethics of war scholars to recognize the contingency and unpredictability of the social world, to temper the hubristic search for the answers of what constitutes ‘Just’ war.

This chapter proceeds in four sections. First, I will sketch the debates between just war traditionalists and revisionists, arguing that the revisionist abstraction in thought experiments divorces ethics from the concrete human experiences of war. Hence, since revisionists have attempted to deem themselves arbiters of what objectively is the just war, or just conduct during war, I argue that this fails to account for the essence of war: uncertainty, thrownness, and the concrete circumstances of particular conflicts. Second, I elaborate Giambattista Vico’s ideal eternal history, which is a cyclical and highly contingent vision of man in history. Recognizing that we are inter-subjective makers-in-the-world, yet we do so not with consciousness or omnipotence, but by simply acting in the world and *ex post facto* constructing a cogent teleological narrative of how we arrived at the now. Third I apply Vico’s notion of poetic wisdom to ethics of war today. I argue that AI, robotic, and algorithmic warfare of today represents such a moment of *ricorso* in that those of us who study ethics of war must return to the concrete circumstances of human experiences of war as opposed to revisionist or technological abstraction away from killing. Here, I utilize war poetry on the battlefield and homefront in order to capture the uncertainty of

warfare to push for a concrete ethics of war based in human experience in contrast to a revisionist vision of ethics as abstract thought experiments so they can find the “deep morality of war” devoid of complexity and nuance. In Part four, I proffer Vico’s poetic wisdom as an avenue for just war scholars to embrace the tensions that traditionalists and revisionists quibble over as opposed to attempting to resolve it. For Vico, true wisdom was not descending from the universal to generalize about particulars— just war revisionism—but grasping the essence of the universal through the contextual, specific, and particular circumstances—just war traditionalism. Thus, war poetry will provide ethicists of war today with poetic wisdom of war as a collective endeavor.

Ethics of War Today

The revitalization of just war thinking during the Cold War (Ramsey) and the Vietnam War (Walzer) has invigorated an expansion of just war scholarship at the end of the Cold War through the Global War on Terror of today. Many argue that the just war is simply an antiquated and uniquely Western way of simply making something morally abhorrent (war in all of its brutality) something morally palpable to liberal Western values. Indeed, the use and abuse of just war language in U.S. justifications for conflicts such as George W. Bush with the Iraq war and Barack Obama with his expansive global drone war, once again call those of us who study the ethics of war to reassess the relevance of just war today (Brunstetter and O’Driscoll 2017). The notion that just war is simply a Western construct that simply universalizes Christian values of war neglects the serious scholarship that links the just war tradition to the Islamic, Indian, Greek, Roman and Chinese ethics of war noting some common principles throughout the various traditions (see: Kelsay 2009 ;Johnson 1997 ; Morkevičius 2018; O’Driscoll 2018). Today, there remain robust debates in the ethics of war broadly divided between traditionalists and revisionist camps. Should

the morality by which one abides by in London or Los Angeles be continuous and unchanging on the streets of Fallujah or Ghanzi? Or are the conditions of open armed conflict unique and subjected to a separate understanding of the morality in times of peace? What about the in-between space between war/non-war binary? Does this under-theorized area of conflict that defines our contemporary era need a new distinct moral category such as *jus ad vim*, or do the *jus ad bellum* and *in bello* categories suffice? Recognizing that under international law and the Laws of Armed Conflict (LOAC) makes this distinction between war/peace, what risk is there to expanding the temporal and geographic areas of war to “wherever terrorists may operate” as the U.S. did in the post-9/11 era? The tension is that the essence of conflict today and the technology available in which to undertake more discrete military operations has brought this dilemma to the fore, and is something that although may be analytically reconcilable, is practically speaking, a plight that may have no resolution. Hence, what guiding questions might allow us to reside within, rather than attempt to resolve this tension as a condition of war ethics today?

The main dividing lines between revisionists and traditionalists are not easily reconciled. There are five main points of contention between the two camps, of which (Braun 2018) has already fantastically tackled the second and touched upon the fifth. First, the bifurcation of war between *jus ad bellum* and *jus in bello*. Traditionalists believe that the two should be separated in that a just war could be fought unjustly and vice versa, while revisionists believe the two to be linked. Second, the moral equality of combatants thesis of Walzer that once war is waged, soldiers have an equal right to kill and be killed in accordance with *jus in bello* irrespective of the justness of *jus ad bellum*. Such a view recognizes that low-level soldiers are not privy to such information on the justness of a particular war given domestic propaganda, economic pressures, etc. Third,

revisionists proffer an individualist ontology for war and place the moral burden on individual soldiers both *ad bellum* and *in bello*. In contrast, traditionalists believe that war is a collective endeavor *ad bellum* and thus individual soldiers can only be held to account for their conduct *in bello*, while political leaders are responsible for the collective decisions *ad bellum*. Fourth, traditionalists argue that war is a special moral context separate from everyday morality in society, whereas revisionists believe that war does not require a separate morality; there are a set of conditions for individual who is liable to be killed in the domestic context which holds constant in times of war. Fifth, traditionalists broadly conceived tend to argue from real-world historical or contemporary situations to illustrate the questions that just war criteria offer as a guide to soldiers and policymakers, revisionists tend to view just war as a space of analytic philosophy and the criteria are boxes to be ticked to determine the “deep morality” of war. In the end, the search for the right *questions* for a practical guiding morality (traditionalists) and the *answers* for what is an objective just war (revisionists) that divide the camps remains incommensurable. Yet, in this piece I attempt to tackle the third and fifth divergences and ultimately call for an ethics of practical judgment whose foundation is the concrete collective human experience of war via the philosopher Giambattista Vico, who currently stands outside the just war tradition, but has much to contribute to the ethics of war and peace.

In reading one of the most recent edited volumes by a number of revisionists entitled: *Who Should Die: The Ethics of Killing in War*, I was struck by the notion of the *ought* in their title. They clarify in the opening pages that the book is primarily concerned with the concept of *liability*—“to investigat[e] seriously which individuals can be justly harmed in war and which individuals cannot be” (Jenkins, Robillard, Strawser 2018: 1). I believe that the role of just war in the contemporary

era should be an ethics of practical judgment and guiding principles to limit the horrors of war, hence, framing it terms of who ought to die, strikes me as an immoral starting point of the first order. The editors note that Jeff McMahan, Cécil Fabre and David Rodin have “brought to bear the instruments of analytic philosophy, sharpened and refined through the increasingly technical skirmishes of twentieth-century philosophy, and applied insights from more recent debates over moral epistemology and normative uncertainty in an attempt to articulate and specify moral demands on soldiers in warfare” (Jenkins, Robillard, Strawser, 2018, 2). One can already see the tensions between the use of real world complex dilemmas of technology and warfare and the goal of revisionists in thinking hard and debating vigorously which advanced trolley problem formula best encapsulates what they need to demand of soldiers. These debates seem particularly fruitless as they apodictically apply thought experiments from the abstract domestic context of whether a child is justified pinching another child on the playground (Frowe 2016) to the context of CIA assassinations via drones and machine learning algorithms in non-declared war zones. The domestic analogies of police and criminals are proudly touted as a common resort of revisionists, yet it seems obvious why these would seem ludicrous to the traditionalists who believe that war is a separate moral context, and the fog of war does not offer clear cut moral decisions of hermetically sealed and logically sound trolley problems.

There are a number of contentions that arise between the two camps. First and foremost, the “tradition” as such is not a stable entity, but has been debated, evolved, challenged, and re-interpreted based on who was writing and in what context. Divorcing the principles from the context in which they were introduced creates a notion that these principles are universally applicable and timeless, and having this as a philosophical starting point places revisionists in a

predicament as to *why* these principles and not others are their foundations. Furthermore, the “traditionalists” argue that “the principles of the just war tradition should not be mistaken for empty shells to be filled however one chooses, without any regard for their provenance and development over time, nor are they entirely determined by their past usage. It is possible to tweak or re-fashion them to meet new demands” as many thinkers did throughout the tradition (Brunstetter and O’Driscoll, 2018, 4). Because thinking of the tradition as such “involves conceiving of it as a multiplicity of closely related but competing voices, that when combined constitutes a unified field of inquiry and practical judgment.” (Brunstetter and O’Driscoll, 2018, 3). The adaptability of the tradition to the circumstances of the times such as the discussions of Francisco de Vitoria and Bartolomé de las Casas contesting over the rights of Indians in the era of European colonization in the new world. Even if the principles were “timeless”, their interpretation and application has been deeply influenced by the context in which they were defined, and the attempt to settle the definitions once and for all is a hubristic endeavor by the revisionists. Thus, in the post 9/11-era there has been a trend in elevating the just cause criterion above the more prudential category of last resort (Aloyo 2015); while there is an historical precedent for this, it is not the rationale revisionists give. Indeed, Jeff McMahan has previously argued for the proportionality requirement *in bello* to be subsumed by the *ad bellum* requirement of just cause (McMahan 2005, 3). Nevertheless, Mark Rigstad would be critical of the just cause argument. He cites the example that although George W. Bush may have had a just cause for preventive self-defense against al-Qaeda and its supporters, he questions whether or not warfare was the necessary and proportional means of prosecuting this cause (Rigstad 2007, 18). Ultimately, divorcing just war from its historical context, picking and choosing criterion and assuming that to be universal is

a major methodological problem that revisionists that all the “technical skirmishes” of analytic philosophy can never solve.

Perhaps my greatest point of contention with the revisionists is their false characterization of Michael Walzer as representing *the* traditionalist position. The tradition is not static, for the reasons stated above, but revisionists must hold one account as definitive of the traditionalist position they seek to attack. Revisionists argue that they are “set apart from the ‘traditionalist’ just war theory put forth by Walzer” through their investigation into who is *liable* to be killed (Jenkins, Robillard, Strawser, 2018, 1). Although Walzer’s *Just and Unjust Wars* is indeed the quintessential ethics of war text, he breaks substantially with the just war tradition and actually stands outside of it. As (Braun 2018: 352) notes, while Walzer reasons from “historical illustrations”, he does engage with the historical just war tradition only in a limited way. Furthermore, Chris Brown (2018: 205) argues compellingly that the problem with holding Walzer as the epitome of the tradition lies in the fact that “set in the context of the tradition, he is not, in any considered sense of the term, a just war thinker at all...[he] has few points of contact with Augustine, Aquinas and their successors and, as a result, whose account of the just war ignore, or sometimes actually rejects many features of the tradition. His approach to the tradition is *à la carte* – he takes from it what he needs, what makes sense to him, and leaves the rest: historical examples for their moral exemplarity.” Walzer is indeed more exemplary of the “legalist paradigm” which boils down to his own communitarian version of a theory of rights as opposed to the individualist starting point of revisionists. While he ultimately carves out a space for “supreme emergency” contra the legalist paradigm, “Walzer’s position can be seen as a defense of the current legal framework governing the use of force – but it departs radically from what had previously been understood to be the just

war tradition” (Brown 2018: 210). Both Brown and I agree with Walzer’s critique of revisionism that “relies on high levels of abstraction and fanciful hypothetical examples” (Brown 2018: 214), but the revisionist touting of Walzer as the exemplar of the “traditionalist” position is expedient at best, and fallacious at worst.

The divisions between traditionalists and revisionists have a number of points of contention some of which are commensurable some of which are not. On the issue of the bifurcation of war between *jus ad bellum* and *jus in bello* that divides the two camps, I believe a middle ground can be reached. The traditionalist position holds that individual soldiers in war are only responsible for their conduct *in bello* and are not responsible for the *ad bellum* decision to go to war. This is an indefensible position for understanding soldier experiences from all sides of WWI, who have similar experiences, nationalist sentiments, and a true lack of information due to sophisticated domestic propaganda. However, in an era where civil wars, irregular conflict, asymmetric war, and terrorism reigns supreme, the notion of states calling up soldiers to fight does become more of an individualized decision to take up arms than drafts of major global conflicts of the past. The Revisionist position eases some of the tensions that irregular wars and civil wars present by holding the individual accountable for the *ad bellum* decision as well as *in bello* conduct. Simply put the revisionist view is: “an unjust combatant acts wrongly even if he or she manages to act within the principles of *jus in bello* when attacking a just combatant” (Kahn, 2018, 20). Personally, I go back and forth on the issue when I had to teach ethics and the Vietnam War. Even if U.S. troops who were drafted were fighting justly in an unjust war, are the Viet Cong engaging them in firefights not liable to be killed? Thus, according to the revisionist case, those engaged in an unjust war act immorally by taking a life even in self-defense on the open battlefield. Even by standards where a

just and unjust side are more easily determined *ex post facto*, who determines which side is objectively just and which is unjust? Within the just war tradition, that power ultimately was only God's; yet, for the revisionists, Jeff McMahan, Helen Frowe, and Cecil Fabre are the ultimate determinants of Justice. In the end, I believe there is some middle ground in that specific cases may be more clear-cut generally to link the two, but linking the two for the logical soundness of the argument misses the practical judgment aspect inherent in the tradition.

The second point of contention arises directly from the first, which is the moral equality of combatants. The moral equality of combatants holds that all soldiers share a similar moral status across both sides of a conflict. This to say that even soldiers on the unjust side of the conflict do not wrong enemy soldiers when they kill them within the confines of *jus in bello*. This is a point that I believe is incommensurable between the two sides as the revisionists take an absolutist view of justice and engage in linguistic jiu jitsu in order to maintain the logical soundness of their hermetically sealed arguments impervious to real-world dilemmas and tensions. Here is where revisionism shines in its linguistic absolutism that stems from its basis in analytic philosophy, as they want to make a distinction between *excuse* and *justification*. "To say that an act is justified is to say that it is morally permissible, that it is impervious to moral criticism, or that no one is wronged by it. We may think some acts, however, are unjustified and yet still *blameless*" (Jenkins, Robillard, and Strawser, 2018, 4). This type of moral absolutism where the revisionist foundational claim is that unjust wars can never be fought justly and calls on soldiers on the unjust side not to fight, may consider them unjust, but still blameless. This is exactly what Walzer and other casuistic moral theorists were getting at in recognizing that all those sent to fight are just "poor sods...trapped in a war they did not make" (Walzer, 2006, 36). Taking an absolutist view of Justice

with revisionists as the arbiters of Justice, gives them the power to ascribe moral wrongs to poor soldiers who fought justly in a war they were blameless for.

On the issue of the moral equality of combatants, Braun (2018) and I meet halfway through his elevation of the historical just war method of James Turner Johnson. Braun concludes: “Reflecting on the moral symmetry thesis by using Johnson’s method, it turns out that, while revisionists are correct that there cannot be a moral equality between just and unjust combatants, in order to arrive at this judgement, it is not necessary to rely on artificial thought experiments” (350). While this author vociferously agrees with the latter point, as a traditionalist I disagree with the former. If ethics of war today is to remain an ethics of practical judgment, an evolving tradition adaptable to times and circumstances (especially technology to be explored below), then it must abandon the revisionist vision of eliminating the moral equality of combatants.

The third and fourth points of contention are the revisionists’ individualist ontology and the traditionalists’ notion that war is a collective endeavor and is separate moral space from everyday life. While an individualist ontology has a certain appeal today with the rise of irregular, civil, drone, and asymmetric wars, revisionists go too far in asserting an individualist ontology for all wars at all times. Furthermore, as warfare is increasingly blurred and the war/non-war binary is broken down the separation of morality between war and peace seems increasingly difficult to maintain. The use of U.S. drones in areas of non-declared war zones such as Pakistan and Niger presented a unique dilemma for traditionalist just war thinkers. On the one hand a point of contestation was over whether or not geographic boundaries applied to the War on Terror, hence whether IHL or IHRL ought to apply to civilian casualties in these in-between zones. On the other

hand, although it is a worthwhile debate it seems increasingly difficult to force irregular conflicts into boxes of war and peace to determine which type of morality ought to apply. Hence, in times of peace, one cannot take out civilians to kill the bad guy even if it is proportional to the evil committed, whereas in times of war, some civilian casualties can be acceptable as long as they meet the requirements of necessity, discrimination, and proportionality. Taking an individualist ontology is often easier in cases of civil war or other irregular and non-governmental conflict. Additionally, eliminating the bifurcation of moral space between war and peace, one has a consistent morality across time and space that is universally applicable to any type of conflict. Nevertheless, there are a number of dangerous consequences that arise from such a view of morality. First and foremost, it holds the positionality of the revisionist researchers ideas about ethics to be universal and timeless, rather than contextually influenced by their subjectivities and experiences. Secondly, from an individualist ontology, Helen Frowe has argued that those that participate in the war effort outside of combat can be liable to be killed. To what extent this extends is unclear, though I am sure the case can be made to attack the cooks of an ‘unjust side’ to starve the unjust enemy under such logic. Thus, although there can be some agreement that revisionism aids in solving some of the contemporary dilemmas, it also puts forth dangerous precedents as to “who should die”. While some revisionists like McPherson (2018: 222) take a more pragmatic approach to contemporary dilemmas arguing that legalist *jus in bello* guidelines are far too permissive in the technological era of the War on Terror, many remain caught up in abstract thought experiments caught up in hypothetical calculations of probabilities of liability.

My largest and most pertinent point of contention with much of revisionism is its reliance on abstract thought experiments to find the “deep morality” of war. War is an experiment in

catastrophe where uncertainty, chance, and unpredictability reign supreme. Attempting to fit the dilemmas of war into neat formulae to find the answers to moral questions. For example, Michael Robillard (2018: 102) poses the thought experiment: “Country A is currently mired in a vicious and bloody civil war between an unjustified, morally oppressive regime and a small group of morally justified insurgents. Seeing what is occurring in country A, several members of the international community decide to offer military aid to the insurgent group, who are significantly outgunned and outnumbered. Despite this offer, the insurgent group, as well as the vast majority of the oppressed political community for whom they fight, refuse external assistance since they want to win the war by themselves on their own terms.” The question is then posed: “What is the moral significance of allowing justified persons and/or communities to fight for themselves, even in cases where doing so will predictably result in greater overall harm and a lower likelihood of success” (*Ibid*). There is a lot to unpack here, Robillard is trying to tease out which is the higher moral obligation, consent or necessity in preventing the least overall harm. However, back here on planet earth, it is absolutely asinine to assume that this neat and tidy thought experiment could tell us anything about the messiness of war. Take for example the Nincic and Nincic (2004) article on paradoxes of moral authority in the case of Kosovo in the late 1990s. The first dilemma stems from a perceived need to protect a weak party against a stronger party in a context in which they both have predatory intentions toward each other, but cannot be otherwise distinguished by ‘good’ or ‘bad’ qualities. The dilemma is rooted in the fact that the intervention may alter the balance of power between the two, thus simply reversing their roles – with little gain in terms of the basic ethical predicament the intervention was designed to address. The second dilemma is associated with the fact that military intervention often results in considerable damage to the life and security of innocent civilians, thus marring its ethical content. What Robillard misses is that first there are

often not clearly objectively just and unjust sides. Second, the assumption that supplying weapons to the smaller just side will result in *less* loss of life—completely unknowable until *ex post facto* rationalizations. Third, that we are morally obligated to aid the smaller side via lethal means as opposed to non-lethal mediation or sanctions etc. thereby framing every question in terms of war as opposed to peaceful means; thus, Robillard is symptomatic of the perils of just war revisionism and its abstraction more generally.

Revisionists set up tidy arguments from which to make logically sound and valid conclusions that bear no resemblance to the actual dilemmas of warfare. Second, they assume that one can know the outcome of their actions in the world. As the above example demonstrates, there are rarely clear-cut objectively moral sides of a conflict especially in insurgencies. Moreover, military intervention often results in substantially more loss of life as opposed to stopping the killing, which is Robillard's core assumption in the thought experiment above. Take the case of Syria for example. The idea that there was a clearly just side to the conflict was early marred by the co-opting of the revolution by al Nusra and other regional interests who supplied arms and weapons. Even when the US decided to arm the rebels it was not enough to tip the scales of the conflict and exacerbated the killing. Moreover, Obama is often criticized for failing to intervene after a major chemical attack, which is now cited as the reason for continued killing. Yet, if our experiences in the past two decades in the Middle East have taught us anything is that intervention often leads to more death and destruction than would have occurred otherwise. We are morally obligated to learn from history as much as we are to 'save strangers.' Moreover, the notion that action and/or inaction in war can have predictable outcomes is a delusion of scientism that has infected the ethics of war via the revisionist turn to analytic philosophy. In the section that follows,

I put forth the Poetic Wisdom of Giambattista Vico as an antidote to the abstract moral theorizing of revisionism, and offer Vico to the just war tradition as an important figure worthy of our discussion. Although he does not engage directly in issues of war, he has important critiques of natural law jurists such as Vattel, Grotius, and Pufendorf that will aid us in understanding the epistemological and philosophical underpinnings of the modern origins of the just war tradition that we utilize today to limit the horrors of war.

Giambattista Vico and Just War

I now turn to the philosophy of Giambattista Vico in order to appeal to those that study ethics of war today, to take his notion of poetic wisdom seriously in our ethical analyses. Giambattista Vico was an early 18th C. Neapolitan philosopher who is known for his vociferous critique of the Cartesian method and constructing his *New Science* of humanity. He was the first to articulate humans as historical as opposed to part of nature paving the way for Hegel and Marx. In addition his philosophy sought to understand early civilizations not as ‘primitive’ but in their own linguistic, mythical, and poetic context as genuine attempts to understand the universe. For Vico, poetic wisdom is a “movement of the divine (the transcendent) descending into the human and conversely, of the human (the immanent) reaching for the divine. These two complementary poles, human free will and divine providential order, appear contradictory and mutually exclusive to reflective mind. They are however paradoxically related and inseparable. The particular of primitive mytho-poetic mind and the universal of abstracting ‘pure’ mind capable of reflecting upon itself may be distinguished but may not be separated” (Paparella 1993: 83). Vico shares Aristotle’s views that the objects of art, the characters of poetry are the individual realization of the universal. But there is a wide gap between the Vichian and the Aristotelian concept of

‘Universals’. For Aristotle the “Universal” is the fixed model, the entelechy—or soul—in whose image the particular thing is fashioned and toward which it tends. Vico’s “Universals” have nothing of this entelechical rigidity. As he repeatedly tells us, they are akin rather to the Platonic ‘eternal ideas’ interpreted in the Neo-Platonic sense as infinite perfections, serving not as the cause of things but as the reason for the continued ascendance of life toward the absolute perfection of the Divine Intellect. In his metaphysics, Vico will describe the ‘Platonic universals’ as formless entities imposing no mold or patten upon a variegated, ever mobile and ever mutable nature. “Concrete realities, therefore, are not the pallid reflections of absolute models. They occur, instead, in numberless, unpredictable guises, determined by an equally numberless and unpredictable series of circumstances. The arts, then, whose materials consist of this very same dynamic, mutable matter, should avoid restricting and hampering it unduly by channeling it into rigidly fixed forms” (Grimaldi 1958: 70-71). Thus, although I do not believe that I can find *the* answers to the just war as the revisionists claim, I believe that by an appeal to poetic wisdom in the concrete realities of warfare, one can get closer to the essence of war, which is thrownness, uncertainty, and immense complexity.

Vico’s Ideal Eternal History

Vico’s ideal eternal history in his *New Science* offers a cyclical, yet highly contingent, vision of humanity. There are three phases of Vico’s history: the poetic age, the age of heroes, and the age of man. Vico’s philosophical anthropology is based on the idea that humans are essentially “makers” (*homo faber*), that is they construct and reconstruct their own social world in order to master the uncertainty of life concerning birth, death and the unpredictable forces of nature (Tateo 2015). Vico’s historical contingency has an uncertain future that cannot be determined by some

teleological “law” of progress. It is cyclic in the sense that there is a recurrence of periods across time and nations of progression and regression. Vico does not try to do what many contemporary just war revisionists do—predict the future based on our subjective ordering of the past—but to understand how men have made their history not with some concrete vision of the future but by their own interpretations of the timeless essence of the idea. Vico “neither invests man with omnipotence, nor makes him provident: for him ‘men make their history, yet...not...with will and consciousness’” (Luft 2003: 6). In his cyclic understanding of history there is this tendency toward the universal or progress, but it is crucial that he recognizes this is an epistemological construction of his making on the idea of the eternal or Providence. Vico does not believe that humans could ever come to truly encapsulate God’s mind or the idea of the eternal, but one can understand how Man has taken the concrete appearance of the idea toward something timeless in the synthesis of time and idea. Ultimately, for Vico, art, poetry, and literature tend toward this ideal more so than the philosopher or historian, as they capture the uncertainty of the human condition. Vico believes that there are three stages to history: the era of the poetic, the heroic, and the era of man.

In its simplest form, “Men first feel necessity, then look for utility, next attend to comfort, still later amuse themselves with pleasure, thence grow dissolute in luxury, and finally go mad and waste their substance” (Vico SN 241). First, man attempts to understand his place in the world through that which he knows best—himself. Thus, early gods are simply humans with some sort of higher power that rules over them. “The essential poetic activity is the generation of myth; the first forms of human history are, therefore, pervasively and substantively mythical. But the myth is for Vico no idle evocation of the dreaming spirit of man; it is the spontaneous, imaginative form under which man symbolizes to himself the historical processes of his culture in their universally relevant

features. Every existential form of the spontaneous human consciousness is, consequently, myth; and the interpretation of myth is the primary methodological principle of the ‘*New Science*’...Language, in its turn, is for Vico the system of signs generated for communication and preservation of myth” (Caponigri 1953: 8). As humans are naturally “‘makers’” (poets, from the ancient Greek *poiein*, to make), they tailored on themselves a model of explanation for overwhelming natural phenomena: they invented the divinity. This was the first real cultural product, as it started to organize and regulate individual and collective conducts (e.g. we behave in a certain way to please or not disappoint some being up there). Vico maintains that sublime, imagination, and meaning-making are the foundations of humanity (Tateo, 2017, 343). However, I would add to Tateo’s point in that *language* is the primary foundation upon which meaning-making and tending toward the divine or sublime can then be understood. Hence, “the mark of Vico’s new uncanny poetic humanism is the *ontological* or onto-genetic implications of that principle as realized in the *New Science*: the claim that *verum* is the *made*, a *factum*; that *facta* are, at one and the same time, the true words, deeds, things is their maker, *whose ‘knowing’ is the hermeneutic understanding of himself as maker*. In Vico’s alien humanism humans are not essentially subjects of knowledge but ‘poets,’ creators, ‘divine’ because, like God, they make a real human world with language” (Luft 2003: 4).

Vico had a twenty-year struggle to grasp the “poetic” or creative nature of the first men of the human race, which he called the “master key” of the new science. “He characterized that struggle as an effort to understand the strangeness of the historical origins they depict, which modern readers cannot grasp” (Luft 2003, X). The strangeness and uncertainties of warfare I believe are applicable here. Grasping warfare and ethics within that horrific context cannot be

accomplished through abstract thought experiments. Instead, one path toward grappling with ethical ambiguity and uncertainty could be Vichian poetic wisdom. The early poetic activities of civilization then led to those myths to be institutionalized in the constructivist sense in the heroic age. The poetic wisdom of gods was brought down to the level of men, most importantly for Vico through Homer. From the heroic age we moved into the age of man. What is unique about Vichian historical *ricorso* or the return is that the historical truths of progress are later met with regress. This is not deterministic, but it comes at a time when the human mind believes it has come to encompass god's mind. According to Paparella, for Vico the historical course of civilizations within a providential order is that reaches a point when men simply worship their own cleverness at which point a historical *ricorso* occurs. Thus, when a society at the last stage of development in its "barbarism of reflection" fails to heal itself by taking responsibility for its history, the Vichian *ricorso* takes place, i.e., the return to primitivism and barbarism, which restores simplicity, religion and poetic wisdom (SN, 1106). It is that *ricorso* which saves Man by preserving his humanity. And here lies the root of contemporary Man's cultural malaise: in the presumptuous conviction that the human mind can and in fact will in the future encompass God's mind. At that point Man will be a god of sorts. Vico describes the last stage of deterioration of a whole civilization: "And finally they go mad." What brings about the madness is the delusion of being a god, which is nothing else, but the worshipping of one's cleverness and its derivations (Paparella 2008). I assert that this could be a useful interpretation for understanding the god-like techno-warfare discussed in the next chapter, and the ethics it produces.

The third stage of history is the barbarism of intellect where "pure reason" reigns supreme devoid of poetic wisdom. Such a scientific rationality returns man to their true understanding of

itself through its more primitive knowledge of poetic wisdom. The loss of imagination and the over-reliance on technological innovation to solve the ethico-political dilemmas is simply an attempt to escape from our human condition. The technological world that we are living in has forgotten its connection with the imagination of the whole, a loss of the human image of itself; the inability of the thinker to reflect its own wholeness into the products of his own thought. This barbarism of thought is a kind of human experience deprived of a cultural guide or center, without a perspective on the human mind. As Elio Gianturco used to comment in his magisterial lectures on Vico at New York University (1970): we live in a Cartesian world dominated by procedures, efficient ordering and technological know-how as fix-all for whatever ails us. Vico tried to demonstrate how the poetic logic was the cornerstone for the elaboration of whole systems of collective knowledge (poetic economy, science, geography, history, law, etc.) that were crystallized in myths. He claimed that poetic logic, based on imaginative function, was a proper epistemological stance that was overcome by rationality at a later stage of civilization, but wasn't disappearing and plays an important function in keeping alive the ethical dimensions of collective life against the "barbarism of reflection" (Tateo 2017: 338). Vico's philosophical anthropology is based on the idea that humans are essentially "makers" (*homo faber*), that is they construct and reconstruct their own social world in order to master the uncertainty of life concerning birth, death and the unpredictable forces of nature (Tateo 2015a; 2017). "Human beings are not mechanically obeying to the laws of nature, they are rather likely to violate them, for the good or for the bad" (Tateo 2015a: 31). (Tateo 2017: 343). Tateo's discussion of Vico therefore is "to discuss a general aspect of psychological experience: meaning-making is characterized by an aesthetic dimension, in which the cognitive, affective and ethical aspects are experienced as a totality (2017: 352).

Poetic Wisdom

Let us not mistake what the purpose of poetic wisdom is. It is not a question of siding with the poetic wisdom of Homer against the rational wisdom of Plato, but of interpreting wisdom (and therefore reason too) in a new way as “*sapienza poetica*,” (poetical wisdom). It is a sort of synthesis, a *novantiqua*; a blending of the two to arrive at a new understanding of both image and idea. That is what Vico shows the reader: he works his way back to the world of original thought (the myth) since for him “*verum factum convertuntur*,” the true and the made are convertible and Man can return to origins via what he himself has made: history, institutions, languages, artifacts, etc., in fact he can do that more surely than with science observing a nature that he has not made. Through his discovery of the imaginative universal, of fantasia as a way of thinking and acting, Vico finds a new origin for philosophical thought. Heidegger calls it “originative thinking,” without however giving much credit to Vico for this insight, but then he did the same disservice to Kierkegaard’s powerful critique of Hegel’s philosophy of history. No matter if human beings are acting to build a work of art, to kill or to pollute nature, there is always a po(i)etic aspect, as far as humans are producers of meaningful actions oriented towards a future condition (Tateo, 2017) yet to be realized. Nothing consolatory or ethic, nothing inherently good or bad in poetry, as it is a necessary condition of experiencing of the *homo imaginatas* (352).

Returning to the ethics of war and what Vico’s philosophy of history and humanistic stance brings us. It is paradoxically the poet that may have a more accurate account of the human condition in warfare than the historian. Take for example Julius Caesar in his *Gallic Wars*; Vico would say that Caesar is killing history. At the time of his writing Caesar already knows too much, i.e. the outcome of the war. Thus, to reveal that hope and fear of not attaining victory, the

uncertainties of war, would have meant to present himself as less than a god. Very rarely in the *Gallic Wars* is the reader confronted by open possibilities, or the confusion and uncertainty of not knowing what forms the historical facts will eventually take (Paparella 1993: 59). Thus, although we are offered a first-hand historical account, such *ex post facto* accounts of history fail to capture the essence of war the way that poets do. Vico much admired the work of Dante, crucial to the formulation of the Italian *vulgare* language. Paradoxically, Dante's subjective mytho-poetic account of the human condition turns out to be more 'historical' than Caesar's purportedly objective account of real events. The future toward which they tend, determines to a large extent the significance of the past. The evaluation and meaning of what is remembered gives us standards for the present and the future (Paparella 1993: 62). Here is where I link Vico's thought to Heidegger's thrownness, to capture what revisionism misses in holding individual soldiers to such a high bar. Dante unlike Caesar is far from giving a retrospective falsification in hindsight. On the contrary, he is masterfully recreating, as only a poet can, the very conditions of fear and anxiety he felt in the moment he became painfully aware of being lost on the road to perdition:

Midway upon the journey of our life
I found myself within a forest dark,
For the straightforward pathway had been lost.

Ah me! how hard a thing it is to say
What was this forest savage, rough, and stern,
Which in the very thought renews the fear.

So bitter is it, death is little more;
But of the good to treat, which there I found,
Speak will I of the other things I saw there.

I cannot well repeat how there I entered,
So full was I of slumber at the moment
In which I had abandoned the true way.

But after I had reached a mountain's foot,
At that point where the valley terminated,
Which had with consternation pierced my heart,

Upward I looked, and I beheld its shoulders,
Vested already with that planet's rays
Which leadeth others right by every road.

Then was the fear a little quieted
That in my heart's lake had endured throughout
The night, which I had passed so piteously.

And even as he, who, with distressful breath,
Forth issued from the sea upon the shore,
Turns to the water perilous and gazes;

So did my soul, that still was fleeing onward,
Turn itself back to re-behold the pass
Which never yet a living person left.

—Dante Alighieri *Inferno Canto I*

Dante is well aware that unless he can conjure up the terror and confusion he felt at the beginning of his journey he will end with a fossilized historical account, which will not yield self-knowledge. In the end, deep contextual understanding for Vico, captured by the artist or poet can often offer a more fruitful historical account than historians that attempt to 'kill history'.

Let us now take that notion of uncertainty, thrownness, and paradoxes of warfare through the eyes of a WWII German soldier Guy Sajer fighting on the Eastern Front from his infamous memoir *The Forgotten Soldier*:

“What happened next? I retain nothing from those terrible minutes except indistinct memories which flash into my mind with sudden brutality, like apparitions, among bursts and scenes and visions that are scarcely imaginable. It is difficult even to even to try to

remember moments during which nothing is considered, foreseen, or understood, when there is nothing under a steel helmet but an astonishingly empty head and a pair of eyes which translate nothing more than would the eyes of an animal facing mortal danger. There is nothing but the rhythm of explosions, more or less distant, more or less violent, and the cries of madmen, to be classified later, according to the outcome of the battle, as the cries of heroes or of murderers. And there are the cries of the wounded, of the agonizingly dying, shrieking as they stare at a part of their body reduced to pulp, the cries of men touched by the shock of battle before everybody else, who run in any and every direction, howling like banshees. There are the tragic, unbelievable visions, which carry from one moment of nausea to another: guts splattered across the rubble and sprayed from one dying man to another; tightly riveted machines ripped like the belly of a cow which has just been sliced open, flaming and groaning; trees broken into tiny fragments; gaping windows pouring out torrents of billowing dust, dispersing into oblivion all that remains of a comfortable parlor...”

Not only does the poet-soldier more accurately capture the paradox of war and the terror in which “nothing is considered”, comprised of “indistinct memories”, of the “agonizingly dying.” Moreover, Sajer directly targets the notion of objectivity of the “just warrior” of the revisionists: “the cries of madmen, to be classified later, according to the outcome of the battle, as the cries of heroes or of murderers.” Additionally, Sajer recognizes the malleability of history in that all the bloodletting and terror is later classified as just and unjust warriors—heroes or murderers—when in the end it is simply guts, death, and industrial slaughter. This poetic wisdom of the poet-soldier does what the revisionists cannot with abstract theorizing and their god-like stance as the ultimate arbiters of Justice.

The revisionist individualist ontology necessitates that individual soldiers ought to lay down their arms if they are fighting in an unjust war, failing to recognize that such a high bar for ‘poor sods’ stuck in the mud in complex situations is too much to ask. Because of their abstract theorizing and consistent moral demands whether in times of war or times of peace, individuals

must be privy to who is liable to be killed in what situation through advanced trolley problems. What this misses and poetic wisdom offers is that the stories we tell ourselves about war mislead us about *who* is doing the fighting. Out of their normal everyday lives, soldiers are thrown into these horrific situations and think that they will act like the heroes in the movies, but are really just frightened children in many cases. Kurt Vonnegut in *Slaughterhouse Five* is able to capture this in an exchange between the main character Billy Pilgrim and Mary in a discussion of how Billy will write his WWII memoir:

"You were just babies then!", she said.

"What?" I said.

"You were just babies in the war - like the ones upstairs!"

I nodded that this was true. We had been foolish virgins in the war, right at the end of childhood.

"But you're not going to write it that way, are you." This wasn't a question. It was an accusation.

"I-I don't know", I said.

"Well, I know," she said. "You'll pretend you were men instead of babies, and you'll be played in the movies by Frank Sinatra and John Wayne or some of those other glamorous, war-loving, dirty old men. And war will look just wonderful, so we'll have a lot more of them. And they'll be fought by babies like the babies upstairs."

So then I understood. It was war that made her so angry. She didn't want her babies or anybody else's babies killed in wars. And she thought wars were partly encouraged by books and movies.

So I held up my right hand and I made her a promise: "Mary," I said, "I don't think this book of mine will ever be finished. I must have written five thousand pages by now, and thrown them all away. If I ever do finish it, though, I give you my word of honor: there won't be a part for Frank Sinatra or John Wayne.

"I tell you what," I said, "I'll call it 'The Children's Crusade.'"

She was my friend after that."

Not only does this quote exemplify that abstract morality obfuscates who we are asking to make these complex moral decisions, about whether a particular war is just, let alone whether they are fighting it justly. Perhaps most importantly, it highlights the point of contention of war as a collective endeavor of traditionalists, which they often assert but rarely defend.

The poetic wisdom of Giambattista Vico can aid traditionalists in making the claim that war is indeed a collective endeavor that must take political, social, and cultural context into account, instead of revisionist hermetically sealed method of logic. The poem below captures a paradox of being human in warfare and how the home front and warfront are intimately connected.

The Deserter

By: Winifred M. Letts

There was a man, – don't mind his name,
Whom Fear had dogged by night and day.
He could not face the German guns
And so he turned and ran away.
Just that – he turned and ran away,
But who can judge him, you or I?
God makes a man of flesh and blood
Who yearns to live and not to die.
And this man when he feared to die
Was scared as any frightened child,
His knees were shaking under him,
His breath came fast, his eyes were wild.
I've seen a hare with eyes as wild,
With throbbing heart and sobbing breath.
But oh! it shames one's soul to see
A man in abject fear of death.
But fear had gripped him, so had death;
His number had gone up that day,
They might not heed his frightened eyes,
They shot him when the dawn was grey.
Blindfolded, when the dawn was grey,
He stood there in a place apart,
The shots rang out and down he fell,
An English bullet in his heart.
An English bullet in his heart!
But here's the irony of life, –
His mother thinks he fought and fell
A hero, foremost in strife.

So she goes proudly; to the strife
Her best, her hero son she gave
O well for her she does not know
He lies in a deserter's grave.

The poet on the home front captures an essence of the collective nature of warfare that many just war thinkers have neglected. How we construct stories about war of heroism to make losing loved ones palatable, neglecting that whether one died by a British or German bullet in WWI, the end result was death. Fear, anguish, anxiety, horror and death. If the goal for all just war scholars (be they revisionist or traditionalist) is to reduce the horrors of warfare, one must think of what is more apt to move the ethical needle in the right direction; sound logic, or poetic wisdom.

Vico is primarily concerned in his early works that the arts of eloquence, rhetoric, and humanistic education more generally under attack from an abstract individualism, that reduces the incertitudes of "nature and life" to Truth principles with mathematical certitude (Vico 1990): 15. Nevertheless, when it comes to the horrors of warfare and all that it unleashes in contemporary times as well as in the 20th Century, appeals to law, justice, and right are drowned out by a patriotic fervor. In WWI the language of the anti-war movement was more often poetry, whereas today it is appeals to international or domestic law to try to constrain the dogs of war. However, general appeals to law may be successful in academic circles, may fall upon deaf ears in the general public, thus poetry may capture the essence of the argument that moves the soul more so than legalistic appeals. As Vico noted, "it often happens that people unmoved by forceful and compelling reasons can be jolted from their apathy, and made to change their minds by means of some trifling line of argument" the orator must recognize the relationship between speaker and listeners to touch "all the soul-strings of his listeners" in argumentation. (Vico 1990: 15).

Scholars claim that Vico has constructed a science of humanity, a science of imagination, and an uncanny poetic humanism. “The mark of Vico’s new uncanny poetic humanism is the *ontological* or onto-genetic implications of that principle as realized in the *New Science*: the claim that *verum* is the *made*, a *factum*; that *facta* are, at one and the same time, the true words, deeds, things is their maker, *whose ‘knowing’ is the hermeneutic understanding of himself as maker*. In Vico’s alien humanism humans are not essentially subjects of knowledge but ‘poets,’ creators, ‘divine’ because, like God, they make a real human world with language” (Luft 2003: 4). Vico’s lifelong concern is with “poetic wisdom” and with establishing a “science of language”. His cardinal principle is similar to Heidegger’s and Merleau-Ponty’s: ‘minds’ are formed by language, not language by ‘mind.’ ‘The human mind,’ [Vico] writes ‘is naturally inclined by the senses *to see itself externally to the body*, and only with great difficulty does it come to understand itself by means of reflection. (Edie 1969: 488). Therefore in order to understand the nature of language, one does not try to penetrate to the thought which Descartes assumed standing behind language. Rather, as Buber puts it: one “takes a stand in speech and talks from there.” the encounter with any of man’s works especially those done through language, remains intrinsically historical. The link of language to history is ‘poetic wisdom’ proper, transcending the dichotomy subject/object. The Cartesian objectivity, on the other hand reduces a ‘work’ to a mere ‘object’ when such an operation is performed, the language event cannot possibly seize and transform the reader...Consequently the encounter with the being of a work of art or a text cannot be Cartesian i.e., static and ideational, outside of time (Paparella 1993: 73).

In the end, argue that the philosophy of Giambattista Vico elaborates the position taken by those such as Chris Brown in understanding practical judgment in contrast to abstract, universal

and timeless answers. The point is that, in dealing with complex situations, such as deciding whether it is right that one state should preventively use force against another, or against “terrorists” operating within the space between war and peace, “there is no substitute for a form of moral reasoning that involves a judgement that takes into account the totality of circumstances, rather than seeks for a rule to apply” (Brown 2010: 245). Rule-based moral logic has been pervasive in contemporary moral logic, especially in warfare. Applying the Kantian categorical imperative or making utilitarian calculations necessarily involves prudential judgment, especially in the context of the uncertainty of war. Applying the “rule” may make decision-makers feel good as they absolve themselves of moral responsibility because they followed the rule; yet, I assert this fails to capture the ethico-political dilemmas of today.

Artificial Intelligence and Just War Tomorrow

How must war ethics evolve and adapt to the technological changes of an illusory ‘clean war’ of precision in lethal autonomous weapons systems? There is indeed a space of moral vacuums that opens up as technology reshapes our capacity to think ethically. As (Schwarz 2018: 293) notes, “A moral vacuum opens when certain parameters of harm are no one’s responsibility; when the decision that harm is permissible has been determined through technological means. This moment is, paradoxically, also the very moment of moral responsibility. In other words, the moral vacuum exists exactly in the moment when neither law nor existing moral guides have adequate reach. It is in this moment where responsibility resides.” What I believe the poetic wisdom of Vico brings to this, is a pause. A time and space for eloquent reflection of the human consequences of war away from abstractions. The Silicon Valley model of move fast and break things, risks embedding problematic algorithmic technologies that ‘objectively’ calculate the weight and balance of human

life. Practical judgment requires concrete circumstances of specific cases in order to tease out the moralities of war, while not attempting to escape the tragedy of the human condition. As (Schwarz 2018: 294) aptly argues, the “idea of ethics-as-science is highly contested”, yet there is a race to program the laws of war and their rule based moral logics into killer robots.

Of course, there is no question that compared to the barbarism of past conflicts; proportionality is not comparable across historical eras (Brunstetter & Braun 2013: 309). In an incisive criticism of the technology argument, Henry Shue (2008: 187) notes the danger of pegging proportionality to casualty levels observed during the Second World War, when, it should be remembered, the Allies intentionally targeted civilian populations in the hopes of weakening German morale. Such an arbitrary benchmark is an unconscionably low bar based on what may well be a historic nadir for warfare. Thus, the appeals to technological superiority by those doing the killing seeks to relegate questions of ethics to the level of technology used to kill as opposed to confronting the just war dilemmas of war in the technological era. Giambattista Vico intuited that in the kind of technological world we are living in little room is left for works of humanistic imagination (e.g., literature, the arts, history, philosophy, and ethics); i.e. the very modes of thought and sentiment through which Man may attempt to understand himself. It is this inability to associate humanistic thought with truth that lies at the root of contemporary technocratic mentality and its sheer failure to provide a unifying vision of the whole of human knowledge. The worth of an individual will not be conceived as intrinsic to his humanity any longer but as related to his contribution to an effective, efficient part of a social scheme. Any sort of transcendence over the social system, any inwardness and creativity are not only not appreciated but more often than

not they are discouraged. The individual is seen as a mere cog in the system: a producing and consuming machine devoid of any inwardness (Paparella 2008).

What we risk in just war revisionism and technologically innovative ways of killing is that we lose sight of human suffering in abstraction. The science of warfare is illusory and the only truism of war is that uncertainty and unpredictability reigns supreme. While this can be minimized it can never be eliminated; nor can it be pre-programmed. Poetic wisdom highlights this uncertainty in our moral theorizing and stands against hubristic algorithms to solve complex ethico-political dilemmas. It calls upon just war traditionalists to creatively integrate dilemmas of the homefront if war is truly a collective endeavor and not simply reductive individualism. The simplification of the ethics of war may lead to logical answers, but those will not survive the wars of tomorrow in all their complexity. In the end, Dostoyevsky cautions us all that technology cannot resolve the tragedy of killing in war. We are playing God in our moral theorizing and technological innovation of more efficient ways of killing, while deeming ourselves the moral arbiters of “who *should* die”. Ultimately, “I think if the devil doesn't exist, but man has created him, he has created him in his own image and likeness.”

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Chapter 3

The Cold War Game: Certainty, Ethics, and Technostrategic Discourse in the Nuclear Era

Introduction

I begin this chapter on ethics of war and the Cold War with a central puzzle: how did defense intellectuals come to casually toss around “rational” theories of deterrence that included the deaths of tens of millions in nuclear exchanges without finding it morally abhorrent? In a phrase borrowed from Carol Cohn’s (1987) classic work, how did “technostrategic language”, which “reflects and shapes the nature of the American nuclear strategic project, [such] that it plays a central role in allowing defense intellectuals to think and act as they do”, come to divorce war from its human consequences in the nuclear era (Cohn 1987: 690)? Such a casual discussion of the mass slaughter of other human beings was not innate in the defense intellectual community, but was gradually adopted as it coincided with the rise of game theory and systems analysis at the RAND Corporation throughout the 1950s and 1960s. Through utilization of the RAND archives in Santa Monica, CA, I was able to gain insight of the contestation between the Social Sciences Division and the Mathematics Division over how best to theorize about a nuclear exchange between the U.S. and USSR. The individuals who came to be known as America’s “wizards of Armageddon” or the cohort of “thermonuclear Jesuits” were able to divorce the horrors of being incinerated alive or dying a painful death from radiation exposure from their logically sound, deductive arguments of mutually assured destruction and of thermonuclear warfare.

The Cold War Game (CoW) was designed and implemented by the mathematics and economics division in an attempt to incorporate politics and economics into traditional wargaming with the backdrop of escalating tensions between the US and USSR. Integrating more complex factors traditional war games exercises was no easy task; and its creators wanted to play with a high degree of “political realism” to avoid simplifying the world as much as possible. The game took place in four iterations over the period from November 1954 and April 1956. The deep contextual understanding of this process and the defense intellectuals at RAND Corporation and the proliferation of similar to the Department of Defense offers a window into the psyche of how nuclear exchanges with the possibility of nuclear annihilation could be viewed as “rational”. Thus, the technostrategic language itself, accompanied by a more “scientific” way of warfare with advancing computing power the the utilization of economic and game theoretic modeling, reshaped the capacity of defense intellectuals to think ethically. Hence, “technostrategic discourse functions more as a gloss, as an ideological curtain behind which the actual reasons for these decisions hide. That rather than informing and shaping decisions, it far more often functions as a legitimation for political outcomes that have occurred for utterly different reason” (Cohn 1987: 716). Ultimately, the archival method of this chapter allowed me to explore the intentions and contentions of game play between these early defense intellectuals. Such insights, often surprised me as many had more tempered worldviews than I would have imagined, while others remained blinded by their focus on the efficient organizing of warfare.

The method of this chapter is borrowed from Hugh Gusterson’s (1996) ethnographic work at the Lawrence Livermore National Laboratory—central to Cold War nuclear warhead and missile development—where he sought to understand their practices in order to analyze politics and power

during the late Cold War period. Furthermore, I integrate the emerging study of micropolitics in International Relations, to examine the everyday of these defense intellectuals at the site of the RAND Corporation in order to understand how new weapons technologies may “shape our capacity to think ethically” (Schwarz 2016). Concurrently, the turn to micropolitics, offers IR scholars more fine-tuned lenses that “reveal sites that promise to reshape how we view global politics and our place in it” (Steele and Solomon 2017: 269). With this micropolitical turn, I utilized the RAND archives, to gain insight into the goals, motivations, intentions, psychology, and contestation of early nuclear war theorizing that made Carol Cohn’s world of the defense intellectual a troubling, yet seductive, hyper-masculine arena devoid of ethical consideration. Hence, this turn encompasses three contemporary agendas in IR theorizing: “practices, emotions and the everyday” (Steele and Solomon 2017: 268). What were the everyday lived realities of these defense intellectuals? How might we understand the space of the politico-military wargame as a space of contestation of ideas, values, and ethics? And how did the context of the threat of nuclear war affect them personally and their research?

In the study that follows, I aim to examine the “production and contestation of power, knowledge, and belief at the local level in order to understand national and global political processes” (Gusterson 1996: 5). I do this within the context of a recent revival in studying Cold War defense intellectuals. Both Daniel Bessner (2018) *Democracy in Exile: Hans Speier and the Rise of the Defense Intellectual* and Ron Robin (2016) *The Cold War They Made: The Strategic Legacy of Roberta and Albert Wohlstetter* attempt to contextualize the intellectual history and legacy of these famous RAND analysts. Robin offers a sort of biographical process-tracing of the Wohlstetters’ intellectual legacy as it played out in policy of the George W. Bush administration

via the students of Albert in Paul Wolfowitz, Zalmay Khalilzad and Richard Perle. In contrast, I aim to understand the “production of ideology rather than the production of policy per se”, and thus utilize Clifford Geertz’s lens of cultural analysis of a “continual dialectal tacking between the most local of local details and the most global of global structure in such a way as to bring them into simultaneous view” (Gusterson 1996: 6). Thus, the method of “thick description” fits within my wider epistemological and philosophical assumptions of ethics in modernity and the turn to early-modern thought in Giambattista Vico that privileges the local, contextual, temporally bound, and rhetorical as opposed to the universal and timeless principles. According to Stephen Toulmin (1992, 43) Geertz’s “thick description” reintroduces ways of describing human culture implicit in Book VI of Aristotle’s *Ethics*, which I believe ultimately is one way to understand ethics in the technological era as discussed in previous chapters.

The CoW linked political, economic, and military problems, recognizing that strategy in the Cold War was “neither military nor political, but as being inextricably compounded of military and political actions”.³ Hence, the creation of this politico-military game sought to reflect the dilemmas of deterrence in the Cold War setting. The predominant name of the game at RAND in the early 1950s was systems analysis and game theory, which sought to quantify the uncertainties of warfare. From issues as simple as where best to locate military bases for Air Force refueling, to as complex as missile trajectory and nuclear exchange. Where Bessner’s study of Hans Speier is most enlightening is his emphasis on social science as opposed to reducing all the complexities of human behavior into threat matrices for game theoreticians to explore. In the forum on Bressner’s book, Robert Jervis noted: “Perhaps most interesting were Speier’s efforts at RAND to

³ Goldhamer, Herbert (1957) “Introductory Remarks For Cold War Session: Notes for a Briefing to Board of Trustees, May 2, 1957” RAND Corporation Archives. Goldhamer Box 006, p. 7.

counterbalance the strong role of the physicists and economists by insisting that analyses that lacked any consideration of culture, psychology, and individual decision-making were at best incomplete and usually misleading. He then developed games that relied more on role-playing than algorithms, and these became popular in Washington and still are in wide use.”⁴ However, Speier’s policy influence, according to James Davis, was limited to “U.S. psychological strategy and tactics against the Soviet Union (not available to the general public) and the U.S. psychological warfare effort against the German Democratic Republic (GDR) in the first half of 1953, which helped spur the failed East German uprising of June.”⁵ This was exemplified by Speier’s essay entitled “The Future of Psychological Warfare” published in the academic journal *Public Opinion Quarterly*. In the end, the CoW was short-lived at RAND as it was time consuming and more algorithmic and computerized war games came to the forefront.

The Cold War Game

“They were rational analysts, and they would attempt to impose a rational order on something that many thought inherently irrational—nuclear war. They would invent a whole new language and vocabulary in their quest for rationality, and would thus condition an entire generation of political and military leaders to think about the bomb the way that the intellectual leaders of RAND thought about it.” (Kaplan 1991: 10-11). Four total iterations of the Cold War Game (CoW) were played at the RAND Corporation in Santa Monica, CA beginning with the November 29 to December 10, 1954 game, followed by a February 1955 iteration, then transferring to RAND’s Washington DC

⁴ Jervis, Robert (2018) “Roundtable 10-18 on Democracy in Exile: Hans Speier and the Rise of the Defense Intellectual.” *International Security Studies Forum*. 26 November 2018. Available at: <https://issforum.org/roundtables/10-18-speier>.

⁵ Davis, James W. (2018) “Roundtable 10-18 on Democracy in Exile: Hans Speier and the Rise of the Defense Intellectual.” *International Security Studies Forum*. 26 November 2018. Available at: <https://issforum.org/roundtables/10-18-speier>.

branch commencing in May 1955 with the final game being played in April 1956. The game was not a traditional war-game as it sought a high level of political realism by avoiding “a variety of simplifying assumptions and special restrictions” of most gaming procedures.⁶ Although primarily conceptualized by Herbert Goldhamer, the CoW must be understood as a result of Hans Speier’s collaboration with John D. Williams. The game accomplished two things simultaneously. “On the books the game was a research tool intended to help the mathematicians working for Williams quantify and calculate emotional, or ‘non-rational,’ states. In addition, The Cold War Game was a natural step in furthering Speier’s interests in psychological warfare. The game was intended to help understand the psychological aspects of players so that the RAND Corporation, the military, or other sovereign interests could anticipate and react efficiently to future military conflicts. This dual purpose of the game was crucial, it is important to recognize the ways that propaganda and psychology were used as techniques of warfare alongside the quantitative and supposedly rational analytics of game theory.”⁷

In order to account for the uncertainties and unpredictable consequences that normally inculcate war games, Goldhamer conceptualized the “committee on nature”. This committee would introduce “independent” elements to the game not introduced by the governments or players; in essence, “side events” resulting from players’ actions, setting off additional consequences that may be unforeseen if focusing too closely on strategy. The “Nature Committee thus performs a vital function since without it reality would be reduced to government initiated

⁶ Goldhamer, Herbert (1954) “Toward a Cold War Game.” RAND Corporation Archives D(L)2603, p. 1.

⁷ Trammel, Aaron. “The Ludic Imagination: The History of Role-Playing Games, Politics, and Simulation, in Cold War America 1954-1984. PhD Diss. Graduate School-New Brunswick Rutgers, The State University of New Jersey, 2015.

action.”⁸ The use of nature along with referees would definitely make the game more time-consuming, but allowing players a less simplified game would “permit the participants to learn something about the consequences of certain types of actions taken in conjunction with a variety of events.”⁹ The game was ultimately slow by design to allow space for debate and discussion, to push back against nature or the referees, to find the right questions in thinking through complex dilemmas of the Cold War setting. Thus, Goldhamer’s initial vision for the CoW was that “[t]he aim is not to move on rapidly from point to point of the game but to clarify by discussion the intellectual issues raised in the course of the play. It is precisely through such discussion that many of the most fruitful results may become available.”¹⁰ The sessions were sound recorded and filmed, in order to emphasize: “The need to make ‘intuitive’ decisions on many concrete political matters and to defend them should stimulate the formulation of more coherent and rigorous propositions about those aspects of political life involved in cold war activity.”¹¹ Thus, Goldhamer envisioned it as an intellectual exercise and not “the development of a game useful for testing cold war strategies in an effective and relatively speedy manner.”¹²

Goldhamer and Paul Kecskemeti were responsible for the cross-hybridization of games and social psychology at the RAND Corporation. They were chiefly affiliated with a set of experiments that ran under the broad moniker of political gaming, which unlike the majority of wargaming that occurred at the RAND Corporation in the 1950s and 1960s, focused specifically on the intersection between games and the non-rational and social dimensions of decision-making.

⁸ Goldhamer, Herbert (1954) “Toward a Cold War Game.” RAND Corporation Archives D(L)2603, p. 4.

⁹ Goldhamer, Herbert (1954) “Toward a Cold War Game.” RAND Corporation Archives D(L)2603, p. 6.

¹⁰ Goldhamer, Herbert (1954) “Toward a Cold War Game.” RAND Corporation Archives D(L)2603, p. 7.

¹¹ Goldhamer, Herbert (1954) “Toward a Cold War Game.” RAND Corporation Archives D(L)2603, p. 8.

¹² Goldhamer, Herbert (1954) “Toward a Cold War Game.” RAND Corporation Archives D(L)2603, p. 9.

Players would be analyzed not only on the logistical insights gleaned through these exercises, but also by their psychological outlook. Although these political games were able to help their participants develop knowledge, the role-playing techniques these games used failed to provide the scientists at RAND useful quantitative metrics. However, that was never the initial goal of this particular game, it was one of the crucial elements that led to its eventual downfall.

The CoW quickly moved from intellectual exercise to broader applications and implications, even if it was met with skepticism. The game was developed by the mathematical analytics department (MAD) and played in the systems research laboratory (SRL) in order to “explore the possibilities of developing a new research tool in political science by applying war-games techniques to international politics.”¹³ From an exercise to developing “model situation that simulated the real situation as closely as possible with various analogues, in which players would make strategic decisions, SRL and MAD hoped that the game could be developed to the point where it could be used as a testing device for real cold-war strategies.”¹⁴ Perhaps much of this stems from Kecskemeti’s understanding of positivist social science is indicative of the role of gaming in understanding the Cold War: “A human activity is ‘analyzable’ if it can be broken down into a limited of isolable ultimate elements or building blocks, consisting, for example, in the proper use of certain instruments producing foreseeable effects under circumstances that can be anticipated. Military activities are ‘analyzable’ in this sense.”¹⁵ Thus, the prospect of analyzing

¹³ Digby Box 008–COW Notes by J. O’Connell, 1955, The Cold War Game–A Formal Definition [DRAFT], RAND Corporation Archives, p. 1.

¹⁴ Digby Box 008–COW Notes by J. O’Connell, 1955, The Cold War Game–A Formal Definition [DRAFT], RAND Corporation Archives, p. 1.

¹⁵ Kecskemeti, Paul (1955) “War Games and Political Games” RAND Corporation Archives D-2849. p. 4.

military activity boiled down to the understanding of elementary assumptions and their anticipated effects, which can then be predicted in advanced gaming exercises.

The internal dynamics and contestation between mathematics and social sciences was present from the establishment of the social sciences division at RAND. In early 1947 Olaf Helmer of the RAND mathematics division, thought that RAND might be too limited in its outlook. “Military problems, after all, were not just engineering or mathematical or physics problems; they involved questions that might better be investigated by economists or political scientists as well” (Kaplan 1991: 62). So John Williams head of RAND’s math division set of to persuade Frank Collbohm that RAND needed two new divisions one in economics and the other in social science (Kaplan 1991: 63). By the early 1950s John Williams was quite disappointed with the newly created Social Sciences division. He privately referred to Hans Speier, the division director, as “that Prussian staff officer” and thought that Speier was running the place as a base from which hires could research their doctoral dissertations (Kaplan 1991: 76). With this backdrop, the CoW was to commence with little input from the social sciences as the mathematics and economics divisions incorporated political and economic factors into traditional wargaming at the exclusion of the actual social scientists.

The opening remarks of the CoW by Olaf Helmer at RAND’s Washington DC branch following initial iterations at Santa Monica, framed the CoW somewhat differently, identifying the overall goals, purposes, and objectives of the application of war gaming to international relations. “The general purpose of the cold-war project is to explore the possibilities of developing a new research tool in the field of political science, by applying war-gaming techniques to the realm of

international politics.”¹⁶ “War-gaming is so intimately associated with the construction of mathematical models and the creation of behavioral simulation that the structure of our subject in fact specifically calls for the talents of a mathematical analyst and an experimental psychologist.”¹⁷ Beyond the initial proposal by Goldhamer to be a sort of thought experiment, the game evolved into developing mathematical modeling for international relations. Because in the case of nuclear exchange, everything had to be theoretical as there had never been an actual nuclear war. Helmer noted: “Whenever we are war-gaming, some aspect of military warfare, we are doing so as a substitute for experimentation. Actual experimentation, which would involve for instance, the dropping of bombs on armies and factories, is of course impossible, so we set up a model situation which, by way of numerous analogues, simulates the real situation as closely as possible.”¹⁸ Thus, the epistemological assumptions of many of the mathematics and systems analysts at RAND began to pervade the game; namely, a belief that scientific *prediction* of the cold war and a nuclear war was desirable, and indeed, possible.

As I have discussed in previous chapters on Vico and interpretive methods, attempts to predict the social world generally, and warfare specifically are where chance reigns supreme and prediction is illusory. Nevertheless, the morphing CoW attempted to do just that believing that purely hypothetical simulations could model reality. “Our eventual aim, therefore, should be to create a cold-war game with sufficiently adequate devices of simulation, so that the game could

¹⁶ Digby Box 008– COW Notes by J. O’Connell, 1955, “Helmer’s Speech” [DRAFT]. RAND Corporation Archives, p. 1.

¹⁷ Digby Box 008– COW Notes by J. O’Connell, 1955, “Helmer’s Speech” [DRAFT]. RAND Corporation Archives, p. 1.

¹⁸ Digby Box 008– COW Notes by J. O’Connell, 1955, “Helmer’s Speech” [DRAFT]. RAND Corporation Archives, p. 1.

be used as a testing device for cold-war strategies.”¹⁹ What that looked like in practice throughout the game was something like this: “if the player responsible let us say, for the U.S. in the game were to follow a prescribed overall strategy and if the other players by their actions simulated as closely as possible the reactions of other countries, the outcome of the game should be usable to predict the consequences of U.S. strategy under consideration.”²⁰ Prediction and the scientific study of international politics in the Cold War came to be like any other mathematical or economic problem, an advanced formula to be solved through deep thinking of bright minds. What role then did chance and contingency have in such endeavors? Helmer noted, “If chance events are likely to influence the outcome, the game might have to be played several times, with the appropriate use of a chance device, in order to predict a probability distribution for the consequences of the strategy in question.”²¹ Chance was something that could be measured, accounted for, and ultimately minimized with enough iterations. This logic present in early 1950s wargaming has become amplified today in the contemporary era of artificial intelligence. Because it is no longer a handful of iterations in order to determine probabilities of outcomes (explored in chapter four). Instead it is machine learning that can play millions of iterations and quantum computing that makes war more scientific and predictable, forgetting that the same mathematical assumptions that were written into this early systems analysis are also written into the algorithmic code today.

¹⁹ Digby Box 008– COW Notes by J. O’Connell, 1955, “Helmer’s Speech” [DRAFT]. RAND Corporation Archives, p. 2.

²⁰ Digby Box 008– COW Notes by J. O’Connell, 1955, “Helmer’s Speech” [DRAFT]. RAND Corporation Archives, p. 2.

²¹ Digby Box 008– COW Notes by J. O’Connell, 1955, “Helmer’s Speech” [DRAFT]. RAND Corporation Archives, pp. 2-3.

Rules of the Game

(Prepared by Andrew M. Marshall and Paul Kecskemeti)²²

A. General

1. The personnel of the game consists of “governmental” players who make political moves, “nature” players who supply information about relevant events not under the control of governmental players, and referees who act as coordinators of moves and of information and who control the game from the of information and who control the game from the point of view of feasibility of moves.
2. The play starts from the situation as it exists at the moment of playing. The participants are supposed to be familiar with this situation. Events happening in the world during the playing of the game may be incorporated in the plays they happen or disregarded at the referee’s discretion.
3. In the cold-war, the sequence in which moves are made has a certain influence upon the behavior of the players, in that the player who has the first move thereby seizes the initiative, forcing the others to react. This gives two variants of the game from the U.S. point of view: one in which the U.S. at first has the initiative and the main opponent (the S.U.) “reacts,” and another in which the U.S. “reacts” to an initiative taken by the S.U. Either variant may be played. In the course of the game, the player who at first plays a reactive or defensive role may regain the initiative.
4. The governmental players represent the top executive of their countries. Hence, they can do only those things which the executive they represent is free to do under the prevailing decision-making pattern. Moves that disregard the constraints (mainly legal limitations) under which an executive has to operate have to be considered “infeasible,” within the limits of these constraints,

²² Goldhamer, Herbert. (1955) “Summary of Cold War Game Activities in the Social Science Division.” D-2850. RAND Corporation Archives, p 23a-e.

moves may be optimally reasonable or fall short of optimal reasonableness. In the actual world, decision-makers may fail to achieve optimal reasonableness because of human failings or deficiencies. In the game, the governmental players may act either as they think an optimally intelligent executive would act, or as they think the executive is most likely to act. The first variant permits the players to develop and study optimal strategies; the second may serve to explore the most likely course that events would take under given conditions.

5. An alternative cold-war game may be played with the first move located at some point in the future. The following rules can also serve for the purposes of such a more “speculative” game with some modifications, e.g., as regards the formulation at the initial conditions from which the play starts.

B. Rules

1. Moves are made in written form and submitted to the referee. They describe governmental decisions or actions (in the case of governmental players), or other relevant facts (in the case of nature players). All moves are submitted with their date specified.
2. The player making a move may submit together with it a report giving the reasons he had for making the move, as well as spelling out his expectations concerning the consequences resulting from it. The referee may instruct any player to furnish such a report.
3. The player will announce, in making his move, his decisions as to who will be given and denied information about the move and its motivation. The referee may overrule the player's decisions about the pattern of access to information. He may also indicate changes in this pattern of access as they emerge in the course of time.
4. After each move, the referee will evaluate it for feasibility (consistency with existing

constraints). This point may be argued between the referee and the player. Moves involving details deemed infeasible will be amended accordingly, or the player may pass. Only moves judged feasible will be recorded. (Statements of motives and expectations are also subject to such critique.)

5. Both the referee and the players may call conferences to discuss moves by the players and decisions by the referees. Several players may also consult informally among themselves regarding moves. Consultations purporting to represent intergovernmental conferences, however, have to be handled as moves within the game.

6. The game starts by the referees selecting a governmental player who makes the first move.

7. After the first move is recorded, the referee sets a period of time for a round of follow-up moves by the other players.

8. After this, the other players will either pass, or indicate their desire to make a move.

9. The referee may request the players who intend to pass to show cause for this decision, and discuss with them possible factors in the situation that may induce them to change their minds.

10. The players who propose to make a move inform the referee orally about the general nature of the move they intend to make as well as its anticipated date.

11. The referee decides on the basis of this preliminary information which player will make the second move at which date (Dates anticipated for a may be changed by the referee on grounds of infeasibility.)

12. The procedure followed in designating the player who will make the third move is the same as under Rules 7 to 11, until all players who applied for moving within the round have done so.

When a round of moves is ended, the referee selects the player who will open the second round of moves, sets the date for the opening move, and so on for the subsequent rounds.

13. The “nature” players participate in the move following the opening move on the same footing as do the governmental players.

14. After the sequel following from a move has been played through, the referee may decide to revert to the time when that move was made and initiate a new sequence on the basis of a different move or a different set of immediate consequences.

15. As the game proceeds, the referee will consult with the players as to the time at which they intend to terminate it, and he will declare the game ended if and when a consensus among the players is reached regarding this. In the absence of such a consensus, the referee may end the game at any time.

16. After the game is terminated, the participants will discuss the various moves and evaluate the strategies followed by the various players.

I hope that these rules are straightforward enough to tackle the initial understanding of the game, but some concrete examples are in order to elucidate how play took place. Although there are sound recordings and films of gameplay, they have yet to be digitized and there is no mechanism to play such early film and sound recordings available for reference purposes. Attempting to incorporate political and economic aspects of warfare required expending resources—food, oil, trade, shipments of goods—and political moves such as sabotage, new distributions of political power etc. For example, one handwritten political move of a communist state allied toward the Soviet Union: “You are aware of my problems. I hope to remain functionally independent of my mistrusted former masters, the Anglo-American imperialists, but my gross material needs may drive me toward them. Can you aid me? I especially need food for the coming

year and the means of capital expansion”²³ Thus, one can see how political complications and alliances might play out and how allocations of resources especially with the committee on nature that could implement something all too common like a drought or low yield crop production. However, the moves within particular games are more unknown as the limits of the archive are endless forms of moves without the audio-visual context to understand those moves. But what is important for this study is understanding the epistemological assumptions that went into its creation, the space of contestation between various disciplines, and the production of ideology that has family resemblances today explored in chapter four. What I do have access to however, are the internal reports, descriptions of the game, and most relevantly the reactions to the game itself.

Reactions to the Game

Modeling simulations of nuclear exchanges and incorporating political factors was no easy task. As economic and political moves within the game were highly limited in what one could do and did not allow for thinking outside the box. In Olaf Helmer’s letter to John D. Williams, taking stock of the reactions to the CoW, the Social Sciences division was particularly critical. “[C]ritics from the Social Sciences Division, which was in no way involved in the preparation of this game, were vociferous in their rejection of the underlying political model for its lack of realism.”²⁴ Human decision making was limited to something of that representing an analog computer: “the human participating in the game acts as something like an analogue computer, in the sense that he takes the place of a black box, into which his artificial environment feeds certain stimuli, to which

²³ Digby Box 008-- COW Notes by J. O’Connell, 1955, The Cold War Game—a formal definition [DRAFT], RAND Corporation Archives, unfiled.

²⁴ Digby Box 008—Memorandum from Olaf Helmer to John D. Williams, M-154—(1-11-1955), RAND Corporation Archives, p. 2.

he reacts behaviorally by producing strategic decisions.”²⁵ This presents an interesting view of the human subject, assuming that given constrained situations will yield certain strategic outcomes and can then be modeled onto the real world with some semblance of scientific precision. Therefore, “It is hoped – and this is the basis for any validity that may be claimed from the results of war-gaming – that, if the stimuli simulate the real situation reasonably well and if the participants, by their training and general understanding, are able to perform an intuitive integration of the many interacting stimuli to which they are exposed, that their actions would reasonably well simulate the strategic decisions apt to occur in the analogous real-life situation.”²⁶ Hence, the accusation of a lack of realism of the sole political scientist involved in the gaming was a damning critique.

Olaf Helmer found the critiques unfounded and attempted to rebuff them. “The prime objection of unrealism, seemed to be somewhat beside the point since realism, at least in detail, had been neither aimed for nor claimed;”²⁷ The criticism of the “one political scientist among the players” was that “the game did not allow for any real political action”, which Helmer admitted would be “devastating if justified.”²⁸ In a defense of the political action in the game, Helmer noted: “If, as this same player pointed out, international politics is a struggle for power in the sense of preserving, extending and subverting governmental authority then this game was full of political action. The struggle for power, by negotiation of contracts and alliances, by threats and bribes and

²⁵ Digby Box 008-- COW Notes by J. O’Connell, 1955, "Helmer’s Speech" [DRAFT] (1955), RAND Corporation Archives, p. 2.

²⁶ Digby Box 008-- COW Notes by J. O’Connell, 1955, "Helmer’s Speech" [DRAFT] (1955), RAND Corporation Archives, pp. 1-2.

²⁷ Digby Box 008–Memorandum from Olaf Helmer to John D. Williams, M-154–(1-11-1955) RAND Corporation Archives, p. 3.

²⁸ Digby Box 008–Memorandum from Olaf Helmer to John D. Williams, M-154–(1-11-1955) RAND Corporation Archives, p. 3.

intrigues, by psychological warfare, by internal subversion and outright military aggression, went on throughout the game.”²⁹ Helmer went to strike down the most pertinent criticism by attacking the epistemological assumptions of the political scientist about international politics in general, saying that they adequately operationalized those important variables in the political moves of the game.

Following the fourth and final round of gameplay, there remained mixed reactions as to the efficacy of the CoW project as it was broadly conceived. By that time, they had numerous iterations in various venues, with a diverse set of players they came to a simple yet important realization: “in order for gaming to provide a means for testing strategies it would have to be conducted over a long period of actual time, utilizing a sizeable bloc of manpower and requiring many replays in which certain variables would be held constant while others would be modified.”³⁰ This would represent the end of the CoW as it was initially conceived, but elements and insights of it would continue to live on at both RAND and in the policy world. The practical problems of such a game that attempted to integrate the immense complexities of the social world were too much to bear. “From a practical standpoint we have grave doubts about the wisdom of attempting a program of the requisite scale involving a relatively prohibitive commitment of manpower and expenditure of other resources.”³¹

²⁹ Digby Box 008—Memorandum from Olaf Helmer to John D. Williams, M-154—(1-11-1955) RAND Corporation Archives, p. 3.

³⁰ Goldsen, Joseph M, (1956) “The Political Exercise: An Assessment of the Fourth Round”, D-3640-RC (5/30/1956) RAND Corporation Archives, pp. 31-32.

³¹ Goldsen, Joseph M, (1956) “The Political Exercise: An Assessment of the Fourth Round”, D-3640-RC (5/30/1956) RAND Corporation Archives, p. 32.

What then were the lessons learned from the CoW and where did it fall short? “The players agreed that in a strict sense no fundamentally new insight or scientific ‘breakthrough’ was produced by the play itself. Nor was it at all certain that the ‘knowledge’ which was generated could not have been yielded by the study of the same problems through conventional and less expensive procedures. The latter comparative evaluation might conceivably be established by controlled experiments in which a group comparable in composition to that of the players sets up a study plan using non-game procedures on the same topics.”³² Nevertheless, the participants had an overwhelming feeling that a great deal had been gained from the experience of playing the CoW. In sum, “The game puts a premium on the mobilization and reordering of pre-existing knowledge in relation to a special focus, a focus on political action, policy thinking, strategic and tactical inventiveness, and the analytic assessments of the consequences of alternative courses of action.”³³ In fact, the Washington DC branch of RAND Corporation was unique in that it integrated players from the Dept. of State, who were genuinely surprised at what they learned from playing the game. Primarily, “the explication of interconnections between military, economic, political, and psychological factors in an unfolding and dynamic political process. The game makes for a middle ground between academic and theoretical knowledge and the immediate practical conduct at political operations.”³⁴ In the end, what can be most readily understood was that it was not a strict adherence to the ‘rules of the game’ itself, but the pre-game seminars, the timeouts taken

³² Goldsen, Joseph M, (1956) “The Political Exercise: An Assessment of the Fourth Round”, D-3640-RC (5/30/1956) RAND Corporation Archives, p. 35.

³³ Goldsen, Joseph M, (1956) “The Political Exercise: An Assessment of the Fourth Round”, D-3640-RC (5/30/1956), RAND Corporation Archives, p. 36.

³⁴ Goldsen, Joseph M, (1956) “The Political Exercise: An Assessment of the Fourth Round”, D-3640-RC (5/30/1956), RAND Corporation Archives, p. 37.

from the game in order to ‘game out’ particular problems of relevance for practitioners such as: “the limitation of weapons in wartime as determined during peacetime.”³⁵

Game Proliferation

A number of similar politico-military games took place at RAND in the decades that followed. Although they did not often take on the same procedures and rules in a strict lab setting like the CoW, the precedent of attempting to incorporate more political aspects into wargaming had become the norm. This was true of the 1957 Romeo-Sierra wargame where political assumptions and scenarios were integrated into naval, atomic, and guerilla gaming.³⁶ The game was projected ten years into the future where mock declarations by Chinese foreign ministers which were shortly followed by blue team naval sorties.³⁷ The RAND games sparked interest and imitation in a variety of environments. In the years following the CoW, Goldhamer and other RAND personnel were invited to lecture at institutions such as the Army War College, the Carnegie Endowment for International Peace at Princeton, the State Department, Brookings Institution, and the Harvard Center for International Affairs (Curry and Wilson 2014: 73). At MIT the game was improved by Lincoln Bloomfield, who used it to explore questions of arms control policy for the Institute of Defense Analyses and in 1961 it was adopted at the Pentagon by the Joint Staff (Curry and Wilson 2014: 74). These politico-military games were adopted as “educational” and not necessarily utilized to “predict the success of a particular strategy or policy” (Curry and Wilson 2014: 74).

³⁵ Goldsen, Joseph M, (1956) “The Political Exercise: An Assessment of the Fourth Round”, D-3640-RC (5/30/1956), RAND Corporation Archives, p. 41.

³⁶ Paxson Box 002–Romeo Sierra Wargame Notebook, April 1957, RAND Corporation Archives, unnumbered page.

³⁷ Paxson Box 002–Romeo Sierra Wargame Notebook, April 1957, RAND Corporation Archives, unnumbered page.

Based upon Andrew Wilson's interviews, the consensus of game players at the State Department were rather skeptical of its utility for prediction, but could were useful military thought exercises to better understand foreign policy problems. The military found the games more useful for insights into overlooked problems. They claimed that the politico-military games "extended the horizons" of individuals who usually worked on limited aspects of the problems and were good to get officials in a "questioning mood" about the bureaucratic operating playbook of their respective departments (Curry and Wilson 2014: 74). Thomas Schelling believed that the games could teach: "how little of strategy, or even war, was military; how it was less concerned with the application of force than with the exploitation of *potential* force." (Curry and Wilson 2014: 75). Most importantly, it brought to light for Schelling that goals tended to change during the course of a situation, and when a team took bold moves, the opposing team tended to react less than the original team had thought, thereby making it less bold than intended. Ultimately, this appeared to Schelling to be due to the fact that each team would contain hawks and doves with the hawks concentrated on the remote contingency and the doves on the near one, but the opposing team only judged what they actually saw in action which was the immediate picture (Curry and Wilson 2014: 75).

When Wilson interviewed one Air Force analyst about nuclear war games of the early 1960s called Great Circle I and Great Circle II, he asked about how much of the gaming was done on computers, the analyst responded "The total nuclear exchange is very easy to computerize. We can, and generally do, use computers" (Curry and Wilson 2014: 122). Wilson followed up with the question: "Then your game model is purely military; it doesn't allow for political circumstances such as the indecision of a President?" To which the Air Force analyst responded:

“Well, the politico-military type of game is done at the Joint War Games agency. We always assume that the decision to respond is made. What we *can* do, in our games, is to introduce time lags; for example between the moment Red launches his weapons and the moment that the chief decision-maker gives the order to respond, and between this decision and the actual retaliation. The thing is to examine the effects of delaying decisions. At what time do we react to the threat?...What are the effects if we make the decision five minutes after he’s launched? What are the effects if we make it five minutes after first impact?” (Curry and Wilson 2014: 122). What is key here is how the politico-military game proliferated and became computerized. The core assumption of Air Force gaming in the early 1960s was that the president would respond, the only variable that remained up for question was time lag. Thus, the original purpose of the early CoW to interrogate assumptions, became a matter of assuming political action, determining the effects at what time the ‘inevitable’ decision was made. Thus, the agent-centric appeal of the CoW became subservient to calculable computer-based speed of the only logical decisions in a more deterministic and less contingent science of the Cold War.

In Bessner’s (2018) book on Hans Speier, he briefly alludes to the influences of the CoW in the Kennedy administration at the very of chapter eight. Although he does not elaborate much, it is easy to hear reverberations of the political aspects of the Cuban Missile Crisis in Secretary of Defense Robert McNamara who worked extensively with RAND. At the height of the crisis, McNamara repeatedly tried to temper the military men who wanted to launch a preemptive strike on Cuba pushing that “I don’t believe it’s primarily a military problem. It’s primarily a domestic political problem”³⁸ In McNamara’s later reflections on the crisis he recounts his conversation

³⁸ “At The Brink” *PBS Frontline* Documentary 1992 “At The Brink” Available via YouTube: <https://youtu.be/W4FDK7gC0Q8>.

with Admiral Anderson how the blockade would play out and standard operating procedures for maintaining the blockade of Cuba. He insisted to the Admiral that “we’re not trying to start a war, we’re trying to convey a message, a political message. There’ll be no shot fired by anybody. Do you understand, is that clear?”³⁹ Although it is not the goal of this chapter to rehash the Cuban Missile Crisis as it has been covered extensively, it is useful to see that instead of predicting or finding the solutions to complex political problems, framing such problems in political as opposed to military terms may have had some concrete policy impacts.

Other political gaming exercises were not so hypothetical and were utilized to deal with real crisis situations during the Cold War. For instance during the Berlin crisis of 1961 Thomas Schelling wanted to game “the ‘political’ use of military force” during his summer at RAND at the height of the crisis.⁴⁰ Schelling was precise in the benefits as well as limitations of this type of politico-military wargaming exercise: “This is therefore not the approach for analyzing the Berlin crisis, but rather a method of approach with comparative advantage toward particular types of decisions.”⁴¹ He went on, “I do not have in mind either finding ‘solutions’ or testing ‘strategies’ by use of the game”, focusing on the character of crisis decision making and having the focus be on the “‘bargaining’ aspect of a military crisis.”⁴² Thus, what Schelling understood as political in this process was “the use of military force to influence the enemy, and to influence the enemy’s expectations about what confronts him, what to expect of us, what risk he runs, [etc.]...The basic

³⁹ “At The Brink” *PBS Frontline* Documentary 1992 “At The Brink” Available via YouTube: <https://youtu.be/W4FDK7gC0Q8>.

⁴⁰ Digby Box 005–ARDC Limited War in Europe Study Memoranda 1960-1961, M-4961 (7/19/1961) RAND Corporation Archives, p. 1.

⁴¹ Digby Box 005–ARDC Limited War in Europe Study Memoranda 1960-1961, M-4961 (7/19/1961) RAND Corporation Archives, p. 1.

⁴² Digby Box 005–ARDC Limited War in Europe Study Memoranda 1960-1961, M-4961 (7/19/1961) RAND Corporation Archives, p. 2.

idea is that military activity in relation to Berlin is not simply a tactical military operation, but is ‘strategic’ in the broadest sense.”⁴³ One key component of his wargaming in this scenario is that he wanted to emphasize the contingency of the process in that “the actual decision is left to depend on what the enemy does.”⁴⁴

What crucially distinguishes this type of politico-military game from traditional wargaming and is the legacy of the initial CoW is that the purpose of the game is not to “‘game’ military tactics. The exercise involves military events, military decisions, military intelligence, and military evaluations; but it is intended to focus on critical decisions, and is not a means of tracing out the detailed tactical implications of these decisions.”⁴⁵ Perhaps most crucially the game retained the control team or referee from the CoW that controls all variable outside of U.S. or Soviet control. Thus, “Its function is to channel the exercise in interesting directions, maintaining the tempo of the crisis, provoking decisions by the playing teams, and choosing decisive points of time for the successive policy-planning stages.”⁴⁶ It is quite easy to see the tensions here between some of the proponents from the mathematics division during the CoW on constructing a more scientific and predictable game that can be translated to actual policies and Schellings more reserved approach and caveats. In essence, Schelling argued that the Berlin crisis game “is not a way of generating solutions to [the] problem, or a way of ‘testing’ strategies...The main purpose of the game is its benefit to the participants...in focusing their attention on the bargaining aspects

⁴³ Digby Box 005–ARDC Limited War in Europe Study Memoranda 1960-1961, M-4961 (7/19/1961) RAND Corporation Archives, p. 1.

⁴⁴ Digby Box 005–ARDC Limited War in Europe Study Memoranda 1960-1961, M-4961 (7/19/1961) RAND Corporation Archives, p. 2.

⁴⁵ Digby Box 005–ARDC Limited War in Europe Study Memoranda 1960-1961, M-4961 (7/19/1961) RAND Corporation Archives, p. 4.

⁴⁶ Digby Box 005–ARDC Limited War in Europe Study Memoranda 1960-1961, M-4961 (7/19/1961) RAND Corporation Archives, p. 3.

of military behavior in a crisis.”⁴⁷ In the end, the CoW and its politico-military incorporation proliferated in interesting ways that was much more tempered and nuanced than many of its creators had intended. Indeed, such games benefited researchers and policy-makers in thinking through possible consequences of military actions in the Cold War context. Nevertheless, even such nuanced approaches remained limited in that in such crises there are no guarantees and the enemy often acts in unpredictable ways. This was especially true early on in 1950s nuclear war gaming whereby there was a “mirror imaging” effect, in that U.S. officials acted as they would act, not as the Soviets would have acted in the same situation.

Futurecasting: Social Sciences Vs. Mathematics

There is indeed strong contestation at RAND between the social sciences and mathematics divisions, some of which has been explored above. However, it is crucial to understand these internal epistemological debates, while recognizing that systems analysis game theory were what ruled the day. The early Cold War represented a perfect storm of logical positivism, weapon and delivery system innovation, the rise of game theory, the introduction of computing power, and most importantly the quantification of international politics. Bessner’s in depth study of Hans Speier is insightful in that with Speier’s interest in psychological warfare, he adopted a more qualitative methodology for his research. Bessner stresses this point in a forum on his book: “To understand Speier’s importance, one must appreciate how tenuous the position of social science was in the early national security state. Though social scientists insisted they had contributed to the U.S. victory in World War II, this was hardly a widely accepted opinion. Indeed, many members of the postwar foreign policy establishment considered the social sciences to be a bit

⁴⁷ Digby Box 005–ARDC Limited War in Europe Study Memoranda 1960-1961, M-4961 (7/19/1961) RAND Corporation Archives, p. 5.

backward. For example, John D. Williams, the chief of the RAND Corporation's Mathematics Division, was convinced that the social sciences were "in the fourteenth century as compared with the physical sciences, with engineering, and so on." If Williams, who was instrumental in recruiting social scientists to RAND, could make this claim, one can only imagine what those more hostile to the social sciences believed."⁴⁸

One of the critiques of political science and the study of international politics in the context of the CoW was that it was an inexact science that could not be quantified the way economics or mathematics could. Hence, "The field of political science, unlike economics or the more exact sciences, has not developed either an integrated theory of payoff functions or adequate indices for those payoff functions which might be tentatively applied to limited problems. This lack is particularly apparent in the study of international politics."⁴⁹ One of the biggest hurdles that was encountered was the idea of political judgment in assessing interjections by the referees in their representation of "nature". As I have discussed in the introduction and chapter two, ethical practical judgment is the standpoint from which I believe ethics in the technological era should be discussed. Nevertheless, in the context of the CoW, judgment was viewed as a roadblock to quantifying the uncertainties of politico-military gaming.

How was this notion of judgment accounted for? "For example, the Referees in their representation of 'nature' would rule that a move or exchange of moves produced specified

⁴⁸ Bessner, Daniel (2018) "Roundtable 10-18 on Democracy in Exile: Hans Speier and the Rise of the Defense Intellectual." *International Security Studies Forum*. 26 November 2018. Available at: <https://issforum.org/tag/defense-intellectual>.

⁴⁹ Goldsen, Joseph M, (1956) "The Political Exercise: An Assessment of the Fourth Round", D-3640-RC (5/30/1956) RAND Corporation Archives, p. 49.

reactions in other countries among the public at large or among designated groups. These reactions would be brought to the attention of the relevant teams who would take them into account as best they could in deciding what if anything to do next. The extent to which these reactions could be ‘taken into account’ depends on the precision with which the reactions are stated and the adequacy of political theory available to the players for making their own estimate of what differences such reactions make anyway. A detailed knowledge of political history and a good sense of *political judgment* is of course what one must call upon.”⁵⁰ Leaving judgment to players in the game or politicians in the policy world was viewed as dangerous because it left open too many possibilities that could not be accounted for in a coherent theory of international or domestic politics. Therefore, the post-game assessment of the fourth round of the CoW gave a number of suggestions for “systematizing the criteria of judgment”⁵¹ What is perhaps most intriguing in this fourth round game assessment is the recognition that “mirror imaging” was a problem and that the solution was to take a more historical perspective in understanding the complexities of international politics.

However limited the scope of taking a historical perspective—in that the players often had a caricature understanding of USSR politics—it was a more nuanced view that embraced uncertainty and historical contingency as discussed in chapter one. There is an interesting interplay here between history, temporality, and assumptions of international politics. First and foremost, there is a recognition that international politics is not a ‘zero-sum’ game, because it often a conflict of “scales which vary from country to country. And for all countries the time span in which payoffs

⁵⁰ Goldsen, Joseph M, (1956) “The Political Exercise: An Assessment of the Fourth Round”, D-3640-RC (5/30/1956) RAND Corporation Archives, p. 51 (emphasis mine).

⁵¹ Goldsen, Joseph M, (1956) “The Political Exercise: An Assessment of the Fourth Round”, D-3640-RC (5/30/1956) RAND Corporation Archives, p. 51.

are presumed to accrue varies greatly.”⁵² While the assessment may have been somewhat of a distortion of Soviet time, the recognition that one must account for both a country’s and a leader’s historical perspective in assessing international politics was a large step forward. Thus, “The United States may tend to be impatient with delay, frustration, or tension: it wants to get things done, and the sooner the better. The communists may be more content to make haste more slowly and in addition be much more willing to sacrifice many human and other values in order to achieve a few choice aims.”⁵³ Furthermore, there was a recognition of the constraints of a democracy as opposed to a dictatorship—i.e. the USSR. “The dictator can more easily put his aims in rank-order and use coercive means to suppress those internal elements in his society whose demands and priorities differ from his.”⁵⁴

In congruence with the historical perspective—which was framed in the cliché of the question on whose side is history—but the disparities in the number and morality of aims; all questions which ultimately “forestalls any precise or formal solution” that cannot be quantifiably measured.⁵⁵ As Goldsen eloquently noted: “No government is absolutely free to impose its will upon the world; all operate under some constraints, all must operate with incomplete information about the present and the future, and all must expect the unexpected to interfere with their best-laid plans. World political history is replete with examples of Pyrrhic victories and conversely with situations thought to be defeats at the time which turned out to be ‘blessings in disguise.’ How to

⁵² Goldsen, Joseph M, (1956) “The Political Exercise: An Assessment of the Fourth Round”, D-3640-RC (5/30/1956) RAND Corporation Archives, p. 52. .

⁵³ Goldsen, Joseph M, (1956) “The Political Exercise: An Assessment of the Fourth Round”, D-3640-RC (5/30/1956) RAND Corporation Archives, pp. 52-53.

⁵⁴ Goldsen, Joseph M, (1956) “The Political Exercise: An Assessment of the Fourth Round”, D-3640-RC (5/30/1956) RAND Corporation Archives, p. 53. .

⁵⁵ Goldsen, Joseph M, (1956) “The Political Exercise: An Assessment of the Fourth Round”, D-3640-RC (5/30/1956) RAND Corporation Archives, p. 54.

allow for such considerations in evaluating real or game-simulated political developments is a formidable problem indeed.”⁵⁶ What is most perplexing for my purposes in this dissertation is how there can be such a candid acknowledgment of the uncertainties, tensions, complexities, and Pyrrhic victories, in history; yet, the ultimate conclusion is: “the need still remains to develop procedures which would serve to measure payoffs.”⁵⁷

Judgment in the end was deemed too difficult to quantify and although there were some novel solutions to this dilemma it was never resolved. Perhaps having governments in the game rank their objectives and acceptable time-frames for those could be one solution. However, such “indices might not be expressible in quantitative terms” and “in devising and introducing such measures the chances are that they would insert some added degree of unreality. A point of compromise would have to be reached between the values of realism and the possible advantages of further systematization.”⁵⁸ There are resemblances between these early contestations between social sciences and game theory at RAND in the 1950s and the quantitative/qualitative divide in political science today. James W. Davis in discussing Bressner’s book noted that “Speier remained committed to a broader vision of social science than represented in the other divisions of RAND, where formal and mathematical models, systems analysis, and game theory dominated.”⁵⁹ Hence, the divide at RAND between figures like Herman Kahn and Charles Hitch who sought formal solutions to national security questions and those like Brodie, Kecskemeti and Speier, who

⁵⁶ Goldsen, Joseph M, (1956) “The Political Exercise: An Assessment of the Fourth Round”, D-3640-RC (5/30/1956) RAND Corporation Archives, p. 53.

⁵⁷ Goldsen, Joseph M, (1956) “The Political Exercise: An Assessment of the Fourth Round”, D-3640-RC (5/30/1956) RAND Corporation Archives, p. 54.

⁵⁸ Goldsen, Joseph M, (1956) “The Political Exercise: An Assessment of the Fourth Round”, D-3640-RC (5/30/1956) RAND Corporation Archives, p. 54.

⁵⁹ James W. Davis ISSS Forum

regarded “any analysis that ignored politics, culture, and psychology or attempted to elide judgement,” to be little more than ‘*Unfug*’ [‘nonsense’]” bears a family resemblance to continuing divides in the methodology of social science today (Bessner 2018: 213-214). Indeed, Bessner suggests in the book that Speier’s influence in policy-making may have been limited by his “commitment to qualitative methods, in an environment at RAND in which a fervid commitment to mathematical modeling was increasingly the dominant ethos.”⁶⁰ It was so intense that the bellicose king of RAND’s defense intellectualism, Herman Kahn, typified the “view held by many RAND analysts: the social sciences were not really sciences but rather were inchoate and unproved opinions [masquerading] as facts” (Bessner 2018: 211). In the end, this space of contestation was pervasive at RAND, which both typifies and complicates the notion that a science of war can be established and the uncertainties and chance could be tamed by advanced mathematical modeling.

At a place like RAND systems analysis seemed to “be *the* way to get the scientific—the right—answer” such that the social scientists were looked down upon, “considered interesting in a speculative sort of way at best” (Kaplan 1991: 87). Shortly thereafter the RAND social sciences division was moved from RAND Santa Monica to its Washington D.C. location. In sum, “quantitative analysis had triumphed at RAND, through the spread of systems analysis and game theory and—until the Wohlstetter studies, which put the economics division on top of the strategic business—through the domination over the rest of RAND by the mathematics division” (Kaplan 1991: 120). Studies like *Protecting U.S. Power to Strike Back in the 1950s and 1960s* R-290, were

⁶⁰ Davis, James W. (2018) “Roundtable 10-18 on Democracy in Exile: Hans Speier and the Rise of the Defense Intellectual.” *International Security Studies Forum*. 26 November 2018. Available at: <https://issforum.org/tag/defense-intellectual>.

filled with sophisticated mathematical calculations about the best system for destroying the most Soviet targets with a high “kill probability” for the least money and survive a surprise attack often lacked a political dimension, such that it was fundamentally mechanical devoid of what the Kremlin leaders were actually prone to do (Kaplan 1991: 121). Most importantly, the name of the game was the *efficient ordering* of warfare, maximizing cost-benefit analyses in advanced mathematical systems analysis. This is exemplary of what Jacques Ellul meant in his *The Technological Society* (1964) when he said we are the heirs of Cartesian world, both in theory and in practice. That is, the logic behind a dehumanized world emphasizing technological progress at the expense of Man’s humanity. Ellul calls it the world of “efficient ordering” implying the transformation of all the spheres of human activity, be they productive, political, and even psychological, into systems of order arrived at through technology. All spheres of life are ultimately converted into procedures and structures. Humanistic thought rooted in imagination and intuition is simply excluded from this kind of efficient ordering (Ellul 1964). Thus these sorts of ‘scientific’ studies at RAND aimed at the efficient ordering of warfare: “...there were numbers, calculations, rigorously checked, sometimes figured on a computer. Maybe the numbers were questionable, but they were tangible, unlike the theorizing, the Kremlinology, the academic historical research and interpretation produced by social science. Wohlstetter snootily denigrated all such works as being in ‘the essay tradition’” (Kaplan 1991: 121). Social Sciences were relegated to DC while the real science of warfare was calculated by mathematics, economics, and physics divisions in Santa Monica.

Futuristic Divides

What role then did the ontological category of the “future” play in RAND analysis of technological development? There is an interesting distinction between projecting contemporary notions and trends into the future, and what actually occurs irrespective of this world-making. Here, I am persuaded by Jacques Derrida’s distinction between the future and *l’avenir* (the to come). “In general, I try and distinguish between what one calls the Future and “l’avenir” [the ‘to come’]. The future is that which – tomorrow, later, next century – will be. There is a future which is predictable, programmed, scheduled, foreseeable. But there is a future, *l’avenir* (to come) which refers to someone who comes whose arrival is totally unexpected. For me, that is the real future. That which is totally unpredictable. The Other who comes without my being able to anticipate their arrival. So if there is a real future, beyond the other known future, it is *l’avenir* in that it is the coming of the Other when I am completely unable to foresee their arrival.”⁶¹ This distinction gets to the point that, there is a future that we believe will come based on present projections of a hypothetical point in time, then there is what actually happens that can only be established *ex post facto*. Nevertheless, the practicalities of military equipment procurement means that the military must prepare for the wars they think they are going to fight, not what they actually may end up fighting.

Charles Hitch worked under Robert McNamara and founded the modern defence planning system at the Department of Defense called planning-programming-budgeting (PPB), for fiscal military planning. Hitch utilized systems analysis, which was “nothing more than economic analysis applied to the public sector” in order to “assist the decision-maker to choose the weapons systems and modes of operating them which maximize some military objective” for the given

⁶¹ Cited in: Kirby Dick and Amy Ziering Kofman, *Derrida: Screenplay and Essays on the Film* (Manchester: Manchester University Press, 2005), 53.

resources available in order to get fiscal considerations in at the early stage (Curry and Wilson 2014: 131). The systems analysis approach blended optimizing models and predictive models to aid decision-makers in hard budgetary choices where there are several (often intangible) objectives and multiple relevant costs. Thus, “the systems analyst must predict the important consequences...in assisting the decision-maker to make his own intuitive choice” (Curry and Wilson 2014: 132). Klaus Knorr (Professor of Economics and Director of the Princeton Centre of International Studies) was critical of the systems analysis method for defense spending because the cost-effectiveness approach could not be measured accurately due to imperfect information. As Knorr noted in an article for the *Bulletin of the Atomic Scientists* in 1966, “experience shows abundantly, financial costs are hard to estimate; technological advance is difficult to predict; and the benefits hard to evaluate. After all, research and development outputs will affect military capabilities only after a considerable time lag and – during this time – the relevant military, technological and military environment undergo substantial changes that impinge on the value of a weapon system, or a strategy for which it was designed” (Curry and Wilson 2014: 134).

Perhaps the person who was most guilty of this type of cost-benefit analysis was Ed Paxson of RAND’s mathematics division. He was known as a “numbers cruncher *par excellence*.” Intrigued by the most complex mathematical equations, “his dream was to quantify every single factor of a strategic bombing campaign”– the cost, weight and payload of each bomber, its distance from the target, which formation to fly in, refueling procedures, attrition rate, “the probability that something might go wrong in each step along the way”, the accuracy and weight of each bomb, the vulnerability of the target, the bomb’s “kill probability”, the routing of planes, fuel consumed, as well as *all* extraneous phenomena such as weather–and most importantly, to “put them all into

a single mathematical equation” (Kaplan 1991: 87). In essence Paxson attempted to quantify all of the uncertainties of warfare including kill probabilities, to gain an objective analysis of the efficient ordering of warfare.

However, Paxson was dealing with future war, the unknowable *l’avenir* of Cold War calculations of possible nuclear exchanges, such that the numbers that he so vigorously and scientifically analyzed were purely speculative often derived out of thin air. Thus, no matter how advanced his mathematical skills, utilizing the cutting edge of systems theory, his foundational assumptions were often faulty. One example of the shortfall of such speculative endeavor came from months of hypothetical modeling of air duels between fighter planes and bombers with another RAND systems analyst Edward S. Quade. The two worked through a trove of large series of equations to reach the conclusion that, “with the right kind of fire-control systems, a fighter pilot could close in on a bomber at a certain optimal point, fire his weapon, and shoot the bomber out of the sky six out of every ten confrontations” (Kaplan 1991: 88). With a 60% hypothetical success rate, the two tested their theory against the real combat data from WWII and found that in the cases where the fighter and bomber were in roughly the same geometric position they had determined to be “optimal” the fighter pilot had downed the bomber only 2% of the time. They puzzled over the disparity for days on end and concluded that real pilots shooting real bullets do not hastily get so close to a real bomber, and opt instead to make a few quick passes with a couple of shots. As Kaplan concludes, “war involved a lot of uncertainties, and if the systems analyst failed to take at least the most important ones into account (and who knew just what those were in any particular case?), the conclusions and recommendations might be way off the mark” (Kaplan 1991: 88).

This type of thinking was pervasive by many systems analysts, abstract theorizing devoid of real-world understanding. For example, in calculating the most efficient routing for bombing planes based on distance traveled and expenses, the systems analysts sometimes opted for twin propeller planes instead of jets, neglecting the fact that the Air Force pilots wanted to fly the state of the art planes and not some WWII era bomber. There were debates within RAND, between Paxson and Wohlstetter on the dilemma of strategic air command (SAC). Paxson theorized about bombing campaigns against the USSR as if it were a transportation problem, “getting the airplane from the U.S. to the target and then destroying as many targets as possible” (Kaplan 1991: 90). Wohlstetter however, broadened the problem on where best to place overseas bases given Soviet air-defense capabilities. Hence, the heart of the dilemmas for Wohlstetter: “On the one hand, as bases are moved farther away from the target, costs rise considerably: aircraft must be larger and heavier, so that they can travel great distances” (Kaplan 1991: 90). On the other hand, “when the base is close to the Soviet Union, the Soviet Union is also close the base. In other words, SAC might more swiftly and easily strike the Soviets; but the Soviets might also more swiftly and easily strike SAC” (Kaplan 1991: 91). Yet even Wohlstetter was guilty of making similar mistakes of abstractions and hypotheticals that many felt were out of step with the *l’avenir* in their futurecasting. Hence Robert J. Lutz, a former MIT aerospace engineer disagreed with Wohlstetter’s work, because he was “making the analysis too abstract. He was starting to do what Paxson and most other systems analysts did: come up with some amorphous, hypothetical bomber force that would do the ‘best’ job” (Kaplan 1991: 98).

There were exceptions to this rule of course in understanding the uncertainties of the *l’avenir* of nuclear exchange during the Cold War, namely from the young engineer James Digby

who would eventually become head of the Operations department at RAND. Throughout the archival process at RAND, I found myself inexplicably drawn to Digby's work that I would like to briefly reflect on. Reflexivity is essential to interpretivist International Relations scholarship (Jackson 2010: 157). Understanding my positionality as a researcher, that I am always already conditioned by my experiences, biases, and the context in which I am undertaking research, aids me in the archival process. Reflexivity is central to my philosophical hook up to the world of mind-world monism, and my distinct methodological predisposition. First and foremost, the archives at RAND are organized by individual names, and Digby was where I received most of my primary archival material. All of his papers and memos, anything he was cc'd on was preserved for the archive, hence Digby became my hookup to the inner workings of RAND in the 1950s. Moreover, Digby's position as an engineer who was always reflecting about both the promises and limitations of any new technology or method appeared to be a rarity amongst most RANDites. Furthermore, he was instrumental in moving toward the precision guided munitions in the 1970s in an aim to limit the casualties of war witnessed in Vietnam. In the end, Digby stands out as someone profoundly reflective about his role as a cog in the military machine, producing work that was always nuanced and understanding that every new technology or strategy had pitfalls and unknowns, contrasting the bellicose certainty of many RAND analysts.

In a talk given to the weapons systems evaluation group symposium in 1957, Digby discusses the problems of uncertainty in the advanced mathematical modeling at RAND exemplified by Paxson and even Wohlstetter. In asking the audience how much attention should one pay to the complex numerical modeling and manipulations from RAND, he states: "Most of us have emerged with a feeling that these complex models should be shunned for the burden of

our work. Their main purpose should usually be to lead us toward simpler methods, to teach us how to aggregate, and to expose those quantities that may be ignored.”⁶² He then joked that anyone who “designs wing structures for passenger airplanes--I hope you will ignore these remarks. You have a job that is much more deterministic than that of the systems studies in which, for instance, all of the air defense weapons might be compared.”⁶³ Thus, unlike many of his colleagues in mathematics or economics divisions, Digby recognized that there are engineering problems which are deterministic and systems analysts focus on “broad studies” where “there are many kinds of uncertainties.”⁶⁴ In sum, these uncertainties could never be fully accounted for and a science of warfare constructed because: “There are gaps in our knowledge of enemy equipment and tactics, there are wide variations in observed results with our own forces, there are fluctuating factors like weather involved, and the situations under study often have no real peacetime precedent.”⁶⁵ In the end, “Because of all this we think it’s wrong to go into great detail on one factor only to multiply it by another that is so vague that the philosophers debate whether it could rightly be called a probability. In fact we are coming to the opinion that too much emphasis is placed on the numerical outputs of broad systems studies: measures like total bombers shot down, cities destroyed, total bombs on target, and so on.”⁶⁶ Thus, Paxson seemed to be the exception to the rule at RAND, but was an important voice of dissent in tempering the high aspirations for a science of warfare.

⁶² Digby Box 001– James F. Digby’s “WSEG Symposium Talk” in “Speeches and Briefings 1957” (3/11/1957) RAND Corporation Archives, p. 6.

⁶³ Digby Box 001– James F. Digby’s “WSEG Symposium Talk” in “Speeches and Briefings 1957” (3/11/1957) RAND Corporation Archives, p. 6.

⁶⁴ Digby Box 001– James F. Digby’s “WSEG Symposium Talk” in “Speeches and Briefings 1957” (3/11/1957) RAND Corporation Archives, p. 6.

⁶⁵ Digby Box 001– James F. Digby’s “WSEG Symposium Talk” in “Speeches and Briefings 1957” (3/11/1957) RAND Corporation Archives, pp. 6-7.

⁶⁶ Digby Box 001– James F. Digby’s “WSEG Symposium Talk” in “Speeches and Briefings 1957” (3/11/1957) RAND Corporation Archives, p. 7.

Realism was the ultimate goal of the CoW and was the lack of realism was the critique of the social scientists of the game itself, and Digby cast doubt upon the entire premise of scientific realism at RAND. He said, at RAND “we do favor realism, [but] we cannot claim to be the nation’s leading practitioners thereof. Constant preoccupation with wars of the future has taken its toll.”⁶⁷ Returning briefly to Derrida’s distinction the future and *l’avenir*, many at RAND were preoccupied with a future of warfare which was scientifically and mathematically predictable, programmed, scheduled, foreseeable. Whereas, the *l’avenir* of the future, i.e. the unpredictability of the Cold War, was what Digby was more concerned with. To sum up this position, Digby joked that: “About six years ago [1951] two RANDites made a prediction of the NATO radar coverage for the year 1954. Sometime later one of them was asked about its validity; ‘Can’t tell you,’ he said, ‘that stuff isn’t going to be in until 1954.’ Strangely enough, he said this in late 1955.”⁶⁸ Ultimately, “Realism of military and technological detail is something to seek, but in analyses of uncertain future operations the study with the greatest detail is not always the one with the most realistic balance of effort. Neither can we say that the study laid down on historical principles is necessarily the one which is optimizing for the realistic goals of the future.”⁶⁹ In the end, Digby tempers much of the mathematical theorizing at RAND that came to dominate analyses at the expense of a more realistic account of *l’avenir* with the demise of the social sciences division in Santa Monica. The obsession with calculating the unknowable future, led to sophisticated equations that claimed to be able to make the unknowns of nuclear warfare predictable with precise calculations of percentage success rates of bombers that didn’t withstand the empirical realities of warfare.

⁶⁷ Digby Box 001– James F. Digby’s “WSEG Symposium Talk” in “Speeches and Briefings 1957” (3/11/1957) RAND Corporation Archives, p. 26.

⁶⁸ Digby Box 001– James F. Digby’s “WSEG Symposium Talk” in “Speeches and Briefings 1957” (3/11/1957) RAND Corporation Archives, p. 26.

⁶⁹ Digby Box 001– James F. Digby’s “WSEG Symposium Talk” in “Speeches and Briefings 1957” (3/11/1957) RAND Corporation Archives, p. 27.

What then can ultimately be said about the problems of the future in conceptualizing the possibilities of a nuclear exchange or limited nuclear war during the early Cold War period? The space of contestation at RAND offers us a ‘thick description’ of the everyday practices of RANDites in the early 1950s. Exploring the “production and contestation of power, knowledge, and belief at the local level in order to understand national and global political processes” (Gusterson 1996 :5). An in depth exploration of the CoW and its results, the diminishing of social sciences in favor of mathematical modeling, and the methodological problems of futurecasting, all serves to enlighten IR scholars as to how meaning was made in this particular context. Hence, “throughout knowledge construction, how power and ethics constitute meaning, [and] the implications of meaning for political and social phenomena” (Lynch 2014: 2). The Cold War Game itself demonstrated the limitations of attempts to quantify all aspects of warfare. Even while recognizing the fact that history is full of uncertainties when it comes to war, the need was to find more systematic ways to incorporate and account for these uncertainties. The lines between mathematics and social science are not as clear cut as one may expect as many of the social scientists were positivists, but who nonetheless felt that systems analysts offered too limited a vision of political actions during the CoW. However, there were RANDites like James Digby who strove to explore the complexities of warfare with measured nuance and without whom, much of my research would not have been possible. What then were the considerations of ethics in this rational world of defense intellectuals? How was the destructive power of nuclear weapons rationalized by the “thermonuclear Jesuits”?

Technostrategic Discourse and The Ethics of War

How can there be a rational world of meaning-making in which the absolute destruction of humanity is viewed as logical in the rationality of irrationality? As (Rosenthal 1990: 229) argued “logic reaches a dead end with mutually assured destruction”, yet this worldview was birthed at RAND and matured in in U.S. academic circles. While nuclear deterrence is premised on a paradoxical logic whereby the more suicidal one seems the more credible the threat of nuclear war and therefore makes an actual nuclear exchange less likely. As Gusterson (1996: 3) notes, “It can quite plausibly be argued—and equally plausibly disputed—that every technical innovation and change in strategic doctrine that makes it more feasible to fight a nuclear war thereby makes a nuclear war less likely.” Thus, the technostrategic discourse was such that the discussions of defense intellectuals were “carefully and intricately reasoned, occurring seemingly without any sense of horror, urgency, or moral outrage” (Cohn 1987: 690). However, in what follows, I want to demonstrate that early prospects of nuclear war planning and gaming at RAND were actually met with horror, aversion, and a profound sense of the magnitude of the situation. Although it is beyond the scope of this chapter to do a proper constitutive process tracing from that point of aversion to its normalization that Cohn discusses, my argument remains that mathematical modeling is the ultimate technostrategic discourse which buries the metaphors of “clean bombs” et al. in a “science of warfare” inherently devoid of ethical considerations due to its objectivity.

Perhaps those most guilty of this type of technostrategic discourse early on was Herman Kahn and Albert Wohlstetter. Indeed as Lynn Eden notes, Wohlstetter in the late 1950s was one of the first to articulate “that U.S. retaliatory, or ‘second-strike,’ forces—at that time the bomber force—had to be ‘survivable,’ or else the bombers would be an attractive target for the Soviet

Union to strike in a pre-emptive attack on the United States, thus setting off catastrophic nuclear war. Wohlstetter's idea, in principle, has endured and is widely accepted."⁷⁰ Herman Kahn is infamous for his caricature as Dr. Strangelove, and his seeming indifference to human suffering in nuclear war. Sharon Ghamari-Tabrizi (2005) examines the multiple contexts of Herman Kahn and his influential 1960 book, *On Thermonuclear War*. While fearful citizens scanned the skies for incoming Soviet bombers in the 1950s, Kahn and his fellow systems analysts at the Air Force's think tank, RAND, dreamed up plausible future wars. Kahn incorporated a combination of gallows humor and mathematical calculations with an ability to ignore the worst aspects of thermonuclear war into his studies and presentations. This incited the fury of critics, while his advocacy of a robust civil defense upset the Air Force leadership. Kahn was indeed aware that his "objective analysis" was not callously indifferent "to the human tragedy involved" but viewed radiation risks as acceptable by comparing them to peacetime exposure of industrial workers. Moreover, professing an optimism that birth defects resulting from thermonuclear war that the science of genetics is progressing rapidly that, "it is quite possible and even likely that future generations will develop genetic or medical techniques to eliminate or alleviate this particular legacy of war" (Kahn 1960).

While Kahn and Wohlstetter have had lasting legacies on nuclear deterrence, those who were more successful in the policy world were the like of Thomas Schelling discussed above. In Ron Robin's book *Jervis* believes it might have been more fruitful to compare Albert's "differences with Thomas Schelling, who became the dominant figure in strategic studies, and

⁷⁰ Eden, Lynn (2018) "Roundtable 10-17 on *The Cold War They Made: The Strategic Legacy of Roberta and Albert Wohlstetter*." *International Security Studies Forum*. 19 November 2018. Available at: <https://issforum.org/roundtables/10-17-wholstetter>.

whose writings, unlike Albert's, came to have great influence on scholarship in the social sciences, particularly the study of international politics."⁷¹ Nevertheless, as Robin ascribes in his book, Albert's legacy resided in his students that came to power in the George W. Bush administration with Paul Wolfowitz, Zalmay Khalilzad, and Richard Perle. And Robin ultimately gets his finger to the heart the Wohlstetters' thought based upon his interviews: "Both Roberta and Albert were comfortable with variations of nuclear brinkmanship because they never feared a reckless response from their overly cautious, reactive, and often frazzled enemy. The Wohlstetters cavalierly spread a potentially destabilizing interpretation of the arms race because—as they made it amply clear to those who are willing to read what they actually wrote—they did indeed recognize a remote possibility of Soviet aggression, but they never believed in the probability of a Soviet attack. Always the economist, Albert fervently believed that the way to bring down this ideological nemesis and its threat to domestic tranquility was to intimidate its agents into a spending frenzy that would bring their economic superstructure crashing down, thereby exposing the specious nature of the socialist creed."⁷²

The logics of Kahn and Wohlstetter with the suicidal intentions diminishing the actual threat of nuclear exchange proliferated into the American academy and beyond. However, by 1968, Philip Green in *Deadly Logic: A Theory of Nuclear Deterrence* offered a scathing critique of the established theories of nuclear deterrence, escalation, flexible response, and second-strike capabilities, although not for the reasons one may think. Green laments the "fact that most of our

⁷¹ Jervis, Robert (2018) "Roundtable 10-17 on *The Cold War They Made: The Strategic Legacy of Roberta and Albert Wohlstetter*." *International Security Studies Forum*. 19 November 2018. Available at: <https://issforum.org/roundtables/10-17-wholstetter>.

⁷² Robin, Ron (2018) "Roundtable 10-17 on *The Cold War They Made: The Strategic Legacy of Roberta and Albert Wohlstetter*." *International Security Studies Forum*. 19 November 2018. Available at: <https://issforum.org/roundtables/10-17-wholstetter>.

accepted theories on nuclear warfare are based on logic alone and not on more nearly perfect methods of scientific analysis” (Green 1968). The shortcoming as he sees it for a truly scientific analysis of nuclear deterrence would be: more data. Although at the time, his critique seemed to be a breath of fresh air, of policy-makers readily accepting of the logics of the experts of Kahn and Kissinger, his move further from the human element toward greater abstraction is troubling indeed. Nevertheless, beyond these individuals, how was the introduction of the hydrogen bomb first conceived by RANDites? What were the ethical implications for those privy to the destructive power of a hydrogen bomb, exponentially more powerful than the atomic bombs of Hiroshima and Nagasaki.

The Birth of the Hydrogen Bomb

In discussing nuclear strategy it is impossible to escape the work of Bernard Brodie, known as the “the original nuclear strategist”. Brodie’s work from *The Influence of Mass Destruction Weapons on Strategy* (1955), *The Anatomy of Deterrence* (1958), to *Escalation and the Nuclear Option* (1965) laid the groundwork for decades of deterrence theorizing in the U.S. academy. Brodie was handpicked to be a part of a four man team to interpret the implications of a hydrogen bomb in late 1951. Ernst Plesset, the head of RAND’s physics division, first got word that an H-bomb was possible from Los Alamos from his “Q”-level clearance (a very restrictive Atomic Energy Commission code word for all atomic-energy data). Plesset knew from Los Alamos scientists that the H-Bomb could release the explosive energy of one million or five million or ten or twenty million tons of TNT. The Nagasaki bomb, by comparison, had released the equivalent of twenty *thousand* tons—or twenty kilotons. A new term had been invented for the grander scale of the H-Bomb: *megaton*. Thus, Plesset chose three other analysts for the H-Bomb project: Charlie Hitch,

head of the economics division; Jim Lipp, head of the missiles division; and Bernard Brodie, a new employee with social science, to all work on this project in secrecy (Kaplan 1991: 76).

Who were these individuals and why were they chosen? Hitch had assessed bomb damage in WWII and could calculate how much damage the Hydrogen bomb could do to the Soviet economy. Brodie had written *the* book on strategic implications of the atomic bomb and had done targeting analysis for General Vandenberg, and would be best for thinking through the weapon's strategic impact. Lipp was a highly competent scientist who had directed RAND's project on earth-circling satellites, was assigned the task of figuring out the tactical implications of the H-Bomb in a European war. Plesset gave himself the job of presenting details on the bomb's technical aspect with some assistance from others in the physics division who would do some calculations for him while being kept in the dark on this particular project as it was top secret (Kaplan 1991: 76-77). Initially the work for this team was a "rather mechanical task" whereby Plesset and some others in physics drew some 'lay-down' circles, indicating the radius of various types of damage—blast, heat, prompt radiation (nobody as of yet knew about the vast implications of nuclear fallout)—produced by bombs of one to twenty megatons. Hitch, Brodie and Lipp took these circles and laid them over maps of various kinds of targets—cities, built-up industrial complexes, battlefields—scaled to the same dimensions as the circles. Yet, suddenly the work was no longer so mechanical as they were faced with the magnitude of the amount of destruction that twenty megaton bombs could cause.

Hitch was no stranger to understanding the consequences of bombing in war as he had studied strategic bombing during WWII, which produced tens of thousands of casualties. However,

the damage circles drawn up by Plesset showed “showed that a five- or ten-megaton hydrogen bomb would kill people within 50 square *miles* of ground zero, and would severely burn people’s skin and topple buildings within 300 square miles...a mere fifty-five H-Bombs of twenty megatons each would completely wipe out the fifty largest cities of the Soviet Union, killing *thirty-five million* Russians, all in a matter of minutes. And that assumed that the urban population would have the protection of World War II-type shelters” (Kaplan 1991: 77). Even an attempt by Brodie and Hitch to focus on Soviet industrial centers or more “legitimate targets” according to *jus in bello* ethical categories of discrimination and proportionality, ten to eleven millions deaths seemed unavoidable. Remember this is at a point where the harmful effects of radiation were not fully understood, nor the harmful effects of fire damage from nuclear weapons that Lynn Eden (2004) addresses because, “predicting nuclear weapons damage concluded that fire damage involved too many variables to allow prediction.” Although such language of mass destruction became the norm in later decades, at the time, no one had ever killed 35 million on a sheet of paper and the experience was depressing for those who undertook it. Charlie Hitch’s wife called John Williams’ wife one morning and asked, “What’s happening at RAND? Charlie comes home, he barely says hello, he’s uncivil, and after dinner he just locks himself up in his study. Something terrible is going on there” (Kaplan 1991: 78). For Jim Lipp, it was too much to bear. He was a gentle man, the sort of person who told friends that when it came to nuclear weapons, he cared about his grandchildren and his grandchildren’s grandchildren. Thus, when Lipp laid Plesset’s damage circles over a map of Western Europe to see how many soldiers and civilians would be killed if H-bombs were used on the battlefield. He calculated that even under the best of circumstances, nearly two million people would be killed, which made him nearly throw up. Soon thereafter Lipp

dropped out of the project and was replaced by Ed Paxson of mathematics division (Kaplan 1991: 78).

In a sort of tragic irony, although the four men were horrified by the implications of the H-bomb and its massive destructive capabilities, “their study and their briefings helped build and solidify support for the approval of the H-Bomb” (Kaplan 1991: 84). Furthermore, this study aided in Edward Teller’s proposal to build a special laboratory to manufacture it, which became Livermore Laboratory where Hugh Gusterson did his influential ethnography decades later. Ultimately, “If, as Robert Oppenheimer had remarked, ‘the physicists have known sin,’ the social scientists now became active collaborators” (Kaplan 1991: 84). Although the social scientists at RAND were horrified at the thought and grappled with the implications of the H-bomb for decades to come, their work paved the way for its utilization. In September 1952 the new lab was established in Livermore, CA under the auspices of the University of California. By November the same year the first hydrogen bomb (produced at Los Alamos) was exploded. It was codenamed Operation Ivy, blew the island of Eniwetok in the Pacific off the map with the power of twelve megatons. Edward Teller ‘watched’ the explosion on the seismograph machine at Berkeley. “In a fit of joy, he wired a three-word telegram to Norris Bradbury, director of Los Alamos: ‘It’s a boy’” (Kaplan 1991: 84). The destructive power of the H-bomb did not cause those like Brodie to resign in protest, but rather to rethink and reevaluate their aims to integrate sensible war aims and national interest with the H-bomb to avoid committing national suicide. In the end, Brodie thought that the hydrogen bomb “makes strategic bombing very efficient, perhaps all too efficient. We no longer need to argue whether the conduct of war is an art or science—it is neither” (Kaplan 1991: 79).

As the previous chapter grappled with ethics of war and the poetic wisdom of Giambattista Vico, now is an appropriate time to juxtapose the technostrategic discourse of defense intellectuals with those who lived through the only atomic bombs ever dropped. Eiko Taori was 21 when the atomic bomb dropped on Hiroshima. She was riding in a streetcar with her infant child; after being thrown to the ground from the blast “I held my son firmly and looked down on him. We had been standing by the window of the streetcar and I think fragments of glass had pierced his head. His face was a mess because of the blood flowing from his head. But he looked at my face and smiled. His smile has remained glued in my memory. He did not comprehend what had happened. And so he looked at me and smiled at my face which was all bloody after being thrown from the streetcar with him in my arms. I had plenty of milk which he drank all throughout that day. I think my child sucked the poison right out of my body. And soon after that he died. Yes, I think that he died for me.” Yamaguchi Tsutomu’s poetry attempted to tackle the loss of humanity and the horror of death and destruction in three short poems:

Where has it gone,
the dignity of humans as being humans?
It lies destroyed and ruined ...
corpses in the atomic field ...

Intending not to step on
half-burned corpses
I stepped over them
and saw boiled thoraxes.
Their guts
were yellow tinges .

I will never forget
the charcoaled bodies,
the corpses sitting I met

on the train tracks after
Hiroshima's atomic death⁷³

Bernard Brodie grappled with Clausewitz's famous dictum "War is a continuation of policy by other means." He had thought that a war including atomic bombs would be "much too violent to fit into any concept of a continuation of diplomacy." Yet, in learning of the H-bomb's enormously destructive power, Brodie came to see that Clausewitz was saying something quite profound: "That war is violence...but it is planned violence and therefore controlled. And since the objective should be rational, the procedure for accomplishing that objective for accomplishing that objective should also be rational, which is to say that the procedure and the objective must be in some measure appropriate to each other" (Kaplan 1991: 79). Thus, the destruction and death of the atomic bomb rarely entered into the minds of practitioners as it was viewed as just to end WWII. The power of the H-bomb may have been too much to bear, but its development and application persisted. What I have aimed in this dissertation to demonstrate is that the further one abstracts away from the *human* consequences of war in the name of a science of warfare, the more their ethical intuitions are disengaged. Early RANDites such as Lipp and Hitch recognized the inhumanity of it all, while later generations of practitioners and scholars would casually throw around tens of millions of deaths in nuclear exchanges, all secretly hoping it was too destructive to ever occur.

Abstract Ethics Divorced from Reality

The overall impact of technostrategic discourse and the quantification of warfare in general is to divorce decision-makers from the human consequences of their "rational" policies. Moral injury refers to the suffering and post-traumatic stress that soldiers often have to confront with the

⁷³ Diehl (2017), p, 133

prospect of taking another life (Litz et al. 2009; Meagher 2014). Defense intellectuals and decision-makers rarely had to look those they killed in the eye. In fact, millions of deaths were relegated to statistical calculations of probabilities of millions of casualties in a thermonuclear exchange. All of this becomes possible as human life is relegated to an expandable calculation of probabilities, as humans are no longer subjects, but a cog in the machine of the delicate balance of terror in the Cold War. As Elaine Scarry (1985) and Carol Cohn (1987) note, “metaphors that imbue humans with the characteristics of machines make it easier to do work that entails the risk of injuring humans. If instead of being ‘hurt’ they are ‘damaged,’ if instead of being ‘killed’ they are ‘disassembled,’ then they have been changed, in the world of language at least, from sentient to insentient. They are no longer sites of fear, pain, and feeling” (Gusterson 1996:124). Chapter four explores in depth the current literature on abstraction from killing and discourses that construct sentient subjects and machines of metadata.

The three preceding chapters in this dissertation have explored the ways in which I argue that any ethical stance which abstracts away from human subjectivity is a consequence of modernity and should be rejected. Poetic wisdom and historical just war thinking I believe poses a potential antidote to a language of war ethics as abstract analytic philosophy. In this particular context, it is evident the ways in which a technostrategic discourse and assumptions about rationality and science were contested at the site of the RAND Corporation. As evidence above, it tended to be more pervasive in the mathematics and economics divisions, yet even social scientists who were initially taken aback by the horrors of the H-Bomb learned how to speak the language of the defense intellectual throwing around tens of millions of deaths with casual aplomb. The mantra of the early Cold War period as well as the quantum computing era of today (explored in

chapter four) seems to be the mantra of Silicon Valley: move fast and break things. Ethical consideration and human consequences of one's positionality which enabled death and destruction was abstracted in both the language of rational calculation and Cohn's technostrategic discourse. What is interesting, is that although the CoW itself attempted to quantify the uncertainties of politics and economics in a politico-military wargame that was quickly abandoned at RAND, it had an unusual ethical impact on its players

In Aaron Trammell's analysis of the CoW, he brings to light one of the most relevant aspects of the ethical dimensions of the performative act of playing the game. "players had a sense of consequence, and more importantly, pressure while playing *The Cold War Game*: 'A third educational effect of the game was to give the players a rather unusual insight into the pressures, uncertainties, and moral and intellectual difficulties which have to be faced and resolved when foreign policy decisions are made.' And while these were certainly factors that pertained to military planning in the real world, they were not necessarily the by-products of simulation or conventional military analysis."⁷⁴ The realities of the possibility of nuclear annihilation and the gravity of decision making in the backdrop of a nuclear exchange with the USSR weighed heavily on those who played: "But most of all, the players quickly gained a sense of the awful consequences that might result from an ill-advised move. In the game, as in the real world, international relations were conducted under the shadow of the terrible destructiveness of modern weapons. Participants acquired a sense of crushing responsibility, and for this reason the game was sometimes exhausting. As a result of this sense of responsibility, players often tended to be extremely cautious. Those who in the classroom, or in publications may have advocated 'bold,

⁷⁴ Trammell, Aaron. "The Ludic Imagination: The History of Role-Playing Games, Politics, and Simulation, in Cold War America 1954-1984. PhD Diss. Graduate School-New Brunswick Rutgers, The State University of New Jersey, 2015, p. 108.

imaginative policies’ and criticized free-world leaders for timidity usually found themselves behaving with equal caution when they assumed the burden of policy-making in the game. Participants thus tended to judge foreign policy decisions in the real world differently after the game than they had done before it.”⁷⁵ As Trammell analyzes, “The game had a cooling effect upon its participants. Instead of advocating for radical policy change, they were forced to recognize the tactical landscape of foreign policy as a field of eggshells, where foul policy decision would yield substantial (and possibly apocalyptic) effects. Perhaps this sensibility was evocative of the subjectivities of actual diplomats as opposed to those of nation-states—this is one consequence of the acting required by the game. Either way, the production of what we would now call “emotional intelligence” through game-like simulations is a key facet for the historical significance of simulations and the role-playing game. Strategic decisions are not only analytic, they are also emotional, and any real analysis must take into account the moods produced by war in addition its geographies and technologies.”⁷⁶ Thus, the integration of the emotional elements of decision-makers more accurately depicted reality, while also having a tempering effect on even the most bellicose players.

An interesting dynamic is at play at this particular time and context within the RAND Corporation. On the one hand, the leading mathematicians, physicists, and engineers spent their days working out missile technologies and trajectories, while attempting to adapt to a new type of uncertain warfare in the nuclear era. The Cold War was a battle of politics and economics as much

⁷⁵ Davidson, W.P. “A Summary of Experimental Research on ‘Political Gaming,’” 1958, RAND Corporation Archives, D-5695-C, p. 8.

⁷⁶ Trammel, Aaron. “The Ludic Imagination: The History of Role-Playing Games, Politics, and Simulation, in Cold War America 1954-1984. PhD Diss. Graduate School-New Brunswick Rutgers, The State University of New Jersey, 2015, p. 109.

as, if not more than, a military tactical and strategic game. Hence, the simulation of the CoW by integrating these political, and emotional elements kept players grounded in a less abstract reality of the consequences of making decisions with life and death effects in ways that mathematical formulae of those like Kahn and Paxson did not. In the end, the social sciences division was relegated to RAND's D.C. branch and the game proliferated in interesting ways after being abandoned at RAND in favor of more scientific understandings of warfare via game theory and systems analysis.

There was an interesting ethical push and pull that went on amongst those who worked on nuclear issues, which wasn't really explored by academics until toward the end of the Cold War. True, it is evident that those like Hitch and Lipp when faced with the destructive power of the H-Bomb felt sick, depressed, and had to drop out of the project, yet many became cogs in the system of nuclear war. How did those who participated justify their actions and balance their personal ethics? The best study of this was (Gusterson 1996) in his anthropological study of those working at Livermore Laboratories in the 1980s. How those workers grappled with the ethical issues I believe is insightful for the defense intellectual in general throughout the Cold War. One individual at Livermore (Clark) had to negotiate his internal ethical paradox of being a physics graduate student protesting the Vietnam War to becoming a nuclear weapons designer: "I had to wrestle with the differences [between the Vietnam War and nuclear weapons work] for a while, and I really did come to the conclusion—which I still feel—that there is quite a difference between kind of stalemated nuclear deterrence and an active policy of dropping a bomb on friendly or moderate or neutral villages. Certainly one important difference to me we: in the one people were dying, in the other they weren't" (Gusterson 1996: 56). Clark found it *more* ethical to work on nuclear

weapons than conventional weapons. Precisely because conventional weapons were less destructive, and consequently, used to kill people frequently. Instead, nuclear weapons were so awful that they are not a means of killing people, but chips in a symbolic game of deterrence (Gusterson 1996: 56).

The idea which is pervasive throughout the Cold War and how such work was viewed as ethical, was that nuclear warfare was *so* destructive that they would never be used. This was a “central axiom” of Livermore laboratory life. The lab workers designed nuclear weapons to ensure, in a world stabilized by nuclear deterrence, that nuclear weapons will never be used. As one scientist John Fetterman wrote: “I do what I can to make waging unlimited war dangerous, and preparation for it expensive...I could say that if I didn’t do it, someone else would, but that argument was rejected at Nuremberg. I support the nuclear weapons business...to hold up an unmistakable caution flag to humanity demanding we make peace” Quoted in (Gusterson 1996: 56). Moreover, it was viewed by the defense intellectual that this stable world of nuclear deterrence was the epitome of rationality and those that protested this delicate balance of terror were emotional idealists. Indeed as Cohn (1987: 717) noted, “Much of their claim to legitimacy, then, is a claim to objectivity born of technical expertise and to the disciplined purging of the emotional valences that might threaten their objectivity.” Thus, from the very beginning of systems analysts at RAND in the 1950s to the academic deterrence theorists of the 1980s, taking the human consequences of the bomb into account was emotional, feminine, and would affect the objectivity of their analysis.

Of course there were many dissenters amongst those even at RAND, and I do not want to portray everyone as detached defense intellectuals. There is indeed nuance and debate, even with the overwhelming sense of rationally detached science with a narrow notion of objectivity, or personal ethical justifications of the threat is so great that MAD creates a stable world where war is too costly. One such critic of deterrence was the RAND sociologist Nathan Leites who had a number of interesting insights into the moral failures of the prominent deterrence standpoint at RAND. After a lengthy discussion of national suicide and how retaliation in MAD was what everyone presumed would happen if the Soviet Union struck first, Leites explores the flaws of “inevitability” in this logic. Whereby defense intellectuals and practitioners inside the White House felt as though there was a deterministic universe of mutually assured destruction, that was inescapable. Leites notes, “The sense of inevitability may fill the void of reasons; instead of acknowledging that we have chosen to act in a certain way, we may feel that this action is dictated by the nature of things.”⁷⁷ This was particularly true in the first nuclear decade where rapid technological progress in munitions, missiles, and computing power, were “bound to be used in an ‘all out’ fashion.”⁷⁸ Thus, the notion of automatic retaliation was troubling as “the mysteries of the new technology facilitated the denial of one’s responsibility of choosing – nuclear war would bring annihilation”⁷⁹ Leites is attempting to critique the overwhelming notion that these events are out of our control, somehow inevitable, and not a part of a political decision-making process; an essential process in ethical deliberation.

⁷⁷ Leites Box 006-- “Once More About What We Should Not Do Even in the Worst Case: The Assured Destruction Attack” [DRAFT], Working group on Nuclear Strategy for the Long Run: Alternatives to Deterrence. RAND Corporation Archives, December 1972, p. 7.

⁷⁸ Leites Box 006-- “Once More About What We Should Not Do Even in the Worst Case: The Assured Destruction Attack” [DRAFT], Working group on Nuclear Strategy for the Long Run: Alternatives to Deterrence. RAND Corporation Archives, December 1972, p. 8.

⁷⁹ Leites Box 006-- “Once More About What We Should Not Do Even in the Worst Case: The Assured Destruction Attack” [DRAFT], Working group on Nuclear Strategy for the Long Run: Alternatives to Deterrence. RAND Corporation Archives, December 1972, p. 8.

Leites gets to the heart of the issue of the fact/value distinction with respect to deterrence and mutually assured destruction. He notes the prominent adage from WWII that “the objective of devastating the enemy sufficiently to destroy his capability and will to wage war” is still a formula “still heard in the sixties.”⁸⁰ The linguistic trick of the technostrategic discourse in this formula is that: “Both the verb ‘to devastate’ and the noun ‘the enemy’ avoid the distinction between force and value, one still too new to have descended into our viscera.”⁸¹ Striking an enemy all out even if he had struck first is puzzling in that it “does not grossly violate our sense of justice” such that with “an act so monstrous revenge becomes acceptable”, whereby ‘revenge’ is “merely used to designate our response without any case being made for the moral acceptability of revenge in this unusual circumstance.”⁸² Thus, the fact that revenge is sought, and devastating the enemy is the goal, needs no comment. It is the logic by which MAD operates, devoid of moral considerations, absolving us of our responsibility of choosing this course of action. Thus, Leites in the early 70s recognized how defense intellectuals often are trapped by their logical discursive formulae that abstracts away from the moral considerations, framing political choices as inevitably dictated by reason. Forgetting that such rationality devoid of ethical consideration, attempts to absolve us of difficult ethico-political decision-making; something that is simply an attempt to escape the human condition.

⁸⁰ Leites Box 006-- “Once More About What We Should Not Do Even in the Worst Case: The Assured Destruction Attack” [DRAFT], Working group on Nuclear Strategy for the Long Run: Alternatives to Deterrence. RAND Corporation Archives, December 1972, p. 12.

⁸¹ Leites Box 006-- “Once More About What We Should Not Do Even in the Worst Case: The Assured Destruction Attack” [DRAFT], Working group on Nuclear Strategy for the Long Run: Alternatives to Deterrence. RAND Corporation Archives, December 1972, p. 12.

⁸² Leites Box 006-- “Once More About What We Should Not Do Even in the Worst Case: The Assured Destruction Attack” [DRAFT], Working group on Nuclear Strategy for the Long Run: Alternatives to Deterrence. RAND Corporation Archives, December 1972, p. 13.

Human-Machine Integration and the Rise of Precision-Guided Munitions

In the chapter that follows I construct an historico-genealogy of the rise of computing power in U.S. warfare and how it functioned to replace ethical due care in just war thinking. To close out this chapter, I want to focus on human-machine integration at RAND one of the earliest sites of computer usage for military purposes. Early on it was utilized for missile trajectory calculations at an enormous cost were rapidly utilized for wargaming in a human-machine integration project. John Williams, the head of mathematics in his semi-annual report of 1956 discussed the delivery of IBM's 704 computer to RAND.⁸³ The computer had a steep rental price of \$34,000 per month but was "between 4 and 20 times as fast" as the IBM 701 computer, with improved quantity and quality of storage.⁸⁴ Some of this exorbitant expense was buttressed by other organizations buying time on the computer, nevertheless it was an incredibly expensive, yet powerful machine. Some of the computations completed on this machine were fallout calculation for Albert Wohlstetter's study, a strategic air command penetration study, Moon Rocket computations for missile trajectory, along with numerous others.⁸⁵ Nevertheless, computer-based wargaming exercises were not high up on the priority list in the early 1950s, but as the technology progressed, so to did its expanded use for wargames.

In 1962 following the Cuban Missile Crisis the U.S. undertook a massive computerized war game that "confirm[ed] the belief that the United States would prevail in total nuclear war..." (Curry and Wilson 2014: 9). The war game was called the Simulation of Total Atomic Global

⁸³ John Williams, "Mathematical Division Semiannual Status Report," D-3736 (6/30/1956), RAND Corporation Archives, p. 25.

⁸⁴ John Williams, "Mathematical Division Semiannual Status Report," D-3736 (6/30/1956), RAND Corporation Archives, p. 25.

⁸⁵ John Williams, "Mathematical Division Semiannual Status Report," D-3736 (6/30/1956), RAND Corporation Archives, p. 21.

Exchange (STAGE) and took three years of preparation and five months to play. Programmers wrote “punch cards” with instructions fed into the computer with electronic symbols representing “missiles, bombers, decoys, interceptions” were recorded on magnetic tape (Curry and Wilson 2014: 9). Over 160,000 instructions were fed into the computers and determined which strikes were successful and how many losses were suffered. Ultimately, the results of the game have not been published, but are indicative of broader trends in systems analysis and game theory of the Cold War period and the attempt to quantify the uncertainties of a nuclear exchange, which contained only speculative data. Theorizing about a nuclear exchange that never occurred, uncertainty reigned supreme; yet, the high amount of data ran through computer simulators gave decision-makers confidence that the U.S. would prevail. A dangerous assumption that is given the aura of objectivity because of the certainty of the method utilized: advanced computerized statistical analysis.

While reverberations of the CoW continued to circulate, even in RAND similar politico-military games such as Romeo-Sierra or XRAY were played yielding some useful insights, the desire to quantify persisted. However, the prospect of a communist threat in Vietnam quickly made the U.S. recognize that intangibles such as ideology, to defeat communism with indigenous fighting forces. There was and ARPA (today’s DARPA) project funded in rand known as Project AGILE which was “an attempt to build up indigenous capabilities for political, para-military, guerilla, and small-scale limited war combat in Southeast Asia.”⁸⁶ Specifically RAND would have to send a team to Bangkok in order to assist with testing new weapons in combat including air delivered chemicals, and tactics that may be used in a variety of theaters. Nevertheless, this

⁸⁶ Digby Box 005 – T.E. Greene, “Memorandum: ARPA Request for RAND Assistance on Project Agile,” M-6760 (9/24/1951), Project Agile Conflict Studies Correspondence, RAND Corporation Archives, p. 1.

research and development field group would be working closely with its Saigon counterparts, both of which would focus on “a wide variety of problems such as the use of airpower against guerillas...the study of motivations, taboos, etc. among tribes that heretofore have been practically unexamined from the anthropological point of view; the content and appropriate dissemination of propaganda, etc.”⁸⁷ Given the limitations of quantitative systems analysis in issues such as psychological warfare, propaganda etc. military social scientists searched for more qualitative models to quantify these variables. By 1968 were already playing “computer games which purportedly enable them to manipulate intangibles such as the morale and loyalty of embattled communities, the economic and political health of nations, the growth of technology, and the magnetism of ideologies” (Curry and Wilson 2014: 135-136). Such a use of computer gaming for previously un-quantifiable aspects of warfare led orthodox systems analysts of RAND to refer to such game models as “*games to solve the universe*” (Curry and Wilson 2014: 136 emphasis added).

Conclusion

This chapter explored the space of contestation at RAND Corporation of the science of warfare during the early Cold War period. Debates between the social sciences division and mathematics/economics divisions came to fundamental philosophical disagreements on the degree to which the social world could be simplified and quantified, while maintaining realism. In expanding and elaborating the current trend of examining the lives of Cold War defense intellectuals, I sought to demonstrate three important takeaways. First, in addition to Cohn’s technostrategic language thesis of defense intellectuals, I argued that quantification abstracts away from the human consequences of war making it easier to kill tens of millions without blinking.

⁸⁷ Digby Box 005 – T.E. Greene, “Memorandum: ARPA Request for RAND Assistance on Project Agile,” M-6760 (9/24/1951), Project Agile Conflict Studies Correspondence, RAND Corporation Archives, p. 2.

Second, I offered a more nuanced insight into the role of early RAND defense intellectuals and the rise of politico-military gaming, demonstrating that it was a space of vigorous contestation, that ultimately succumbed to the quest for a science of warfare up until the Vietnam War. Third, I argued that predicting the future of warfare is impossible. New technologies, ways of theorizing, and ethical or political decision-making impact how we think through warfare. Whether AI and computing power will change the nature of warfare, the H-Bomb made it such that war was neither art nor science. In the wars of tomorrow, war may become so ‘scientific’ that *we* no longer have to kill, only robots will have to. However, no matter what the future may hold, a deep contextual understanding of how the defense intellectuals of the 1950s and 60s thought through the dilemmas of paradigm shifts ought to highlight how often we are wrong in our assumptions. In the end, this chapter has been a thick description of the contestation of power, rather than policy impact per se; demonstrating how the power to kill efficiently affects our ethical decision-making.

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Chapter 4: Probabilities Toward Death: Algorithmic Warfare, Machine-Learning Assassinations, and Techno-Ethics

“He learned how to sleep in the mud, tie a knot, kill a man. He learned the ache of loneliness, the ache of exhaustion, the kinship of misery. From the beginning he wanted to go home... He learned... that every man is alike and that each man is different, [but] if he was on the line it didn’t make much difference.”

–Debs Myers “The GI”

“Modern technology has become a total phenomenon for civilization, the defining force of a new social order in which efficiency is no longer an option but a necessity imposed on all human activity.”

–Jacques Ellul *The Technological Society*

“U.S. decision making processes need to be streamlined and accelerated, because the problems [of tomorrow] are not going to wait for traditional discussions.”

–John O. Brennan, former CIA Director

“We are learning lessons every day for the first time about how do you actually integrate AI into Department of Defense operationally fielded programs, not research and development, not test beds, but capabilities that are being used by warfighters day in and day out.”

– Air Force Lt. Gen. John N.T. “Jack” Shanahan, Project Maven

“At its best, computing in warfare allows us to achieve just objectives to protect the nation and our vital national interests, while minimizing unnecessary destruction and risk to our military and innocent civilians. I would argue that, to this point in history, computing in warfare has allowed us to make better decisions as combatants. War is a horrible thing, and it remains imprecise, but the jus in bello effect of computers has been generally a movement toward greater precision and more narrow applications of force.”

–Heather Wilson, Secretary of U.S. Air Force

Introduction

During the initial ‘shock and awe’ campaign of the 2003 Iraq War, the U.S. military ran a statistical program called the collateral damage estimation tool (CDET) or ‘bugsplat,’[i] which estimated the number of civilians that would likely be killed in a given kinetic strike. On opening day, the estimations presented to Gen. Tommy Franks “indicated that 22 of the [30] projected bombing attacks on Iraq would produce what they defined as heavy bugsplat – that is, more than 30 civilian deaths per raid. Franks said, ‘Go ahead, we’re doing all 30’” (Chamayou 2014, 216). From ‘smart bombs’ coupled with CDET to the CIA generating drone strike targets based upon SIM card metadata processed by machine-learning algorithms, and Artificial Intelligence (AI), technologies of war are increasingly moving beyond meaningful human control. Although such innovations in death and destruction bring to mind the culmination of the idea of an “ethical war” that falls in line with Western ideals of warfare (Zehfuss 2018; Carvin & Williams 2015; Mabee 2016), such an overreliance on technology enables what it seeks to constrain. Technology does not inherently make war a more ethical space; instead, algorithmic technologies from smart bombs to killer robots function to *replace* difficult ethico-political decision making with a fantasy of control over the uncertainties of conflict, while absolving decision-makers of responsibility for killing by removing them one causal step further from the act of killing.

This chapter represents the culmination of the consequences of Cartesian logic in the realm the technological impact on discourses of the ethics of war. What has been established thus far, are the Vichian alternatives to moral thinking in an age of advanced computing and artificial intelligence. According to Vico, society goes “mad” when the human mind believes that it has found Truth and can encompass God’s mind; thus, such hubristic thinking leads us into a historical

ricorso to save ourselves by preserving our humanity. As the techno-logics of algorithms in war claim to absolve us of ethico-political decision-making in warfare, Vico reminds us that we can never escape the human condition by narrow techno-scientific questions that neglect the intersubjective human experience. Thus, any foray into technology and the ethics of war, must take into account the poetic wisdom of the essence of war: uncertainty, contingency, and the horrors of war—as explored in chapter two. While the previous chapter three was a deep dive into the contextual understanding and space of contestation in the early Cold War world of The RAND Corporation, this chapter presents a broad overview of the evolution of algorithms in U.S. war-making from Vietnam to today. What follows then, is a discussion of how an ethics of due care and practical judgment in just war has been replaced by a narrow computational ethics that claims to solve the ethical problems of killing in war. Hence, with the quantification of the global battlefield we are no longer killing individual subjects, only shadows of subjectivity based upon metadata constructions of risk. The allure of scientific and numerical objectivity cloaks the ethico-political dilemmas in war as a technical problem to be solved, with the ultimate problem-solver being lethal autonomous weapons systems (LAWS) or killer robots. In the end, this chapter explores how this logic undermines the foundational principles of one’s symmetrical right to kill/be killed in war—the mutual recognition of subjectivity of the Other—the foundations upon which the laws and ethics of war are built.

With the abundance of human error and bias that leads to atrocities in warfare, the idea of a neutral machine that is free of emotion and can analyze any situation objectively, is indeed seductive for policymakers. However, such logic is illusory as humans, along with their biases and flaws, are always already involved in the programming of machines from writing the code, refining

the algorithms, and updating the software; but all of this takes place out of our purview. I view contemporary techno-practices of US war-making as one piece of a larger historico-genealogical development of algorithmic logic that has quietly shifted an ethics of due care in war to a techno-ethics of killing. The evolution of technology, so the argument goes, strives to render the uncertainties of war calculable, measurable, predictable, and ultimately make war humane endeavor, but in the process, also hides biases out of the practitioner's purview deep within the mirage of the code. Thus, in an era where we have reached a crisis in the laws of war (Clark et al. 2018) and the practice of ethics has become a technical problem to be solved, the question remains: what are the logics and tools of this technological (r)evolution for military practitioners, and what techno-ethics are enabled or excluded from these logics?

Many view such technological innovations as novel solutions to the dilemmas of warfare because they remove human bias, emotion, error, and subjectivity by providing a more scientific, objective, and neutral means of waging war (Strawser 2010; Plaw 2013; Sullins 2010). Others view war technology as more problematic and have begun campaigns to “ban killer robots” to keep individuals accountable by giving them “meaningful human control” over targeting decisions (Sharkey 2010; Zehfuss 2012; Roff 2014).^[iii] A more in-depth take on this area of contestation can be found in Beier (2017), yet as Mabee (2016) argues that a historical sociological approach of understanding U.S. ‘militarism’ as opposed to ‘war’ “broadens out the critical analysis of present-day military practices, by focusing on their long-term institutionalization” (256). The for and against debate of war technology indeed misses something important about what the historico-genealogical arc of these military algorithmic evolutions tells us about the quest for the ‘ethical war’ – whether for realist (strategically to win hearts/minds) or more liberalist (protection of

innocents) concerns – that has come to dominate American discourse. Despite the rhetoric of ‘just war’ that often accompanies praise of technological advances in targeting, virtue ethics and practical judgment has been abandoned and replaced by a predetermined utilitarian calculation conceived as objective and neutral techno-innovation in the eyes of practitioners. Such a (r)evolution in understanding war ethics speaks to a wider epistemological drive of quantifying the uncertainties of war into a numerically calculable risk assessments that ultimately reshapes the capacity of humans to make ethical decisions (Hagmann & Dunn Caveltly 2012). What is at stake in these techno-practices of war is the erosion of effective constraints on the use of lethal force because this techno-rationalization of risk assessment has supplanted genuine ethical deliberation about the consequences of contemporary conflict. While International Relations scholars have increasingly turned toward the “body” and “emotions” in the study of war, violence, and ethics (see: Gregory 2016; Solomon & Steele 2017; Campbell & Steele 2017), the question remains as to what these technologies of war tell us about the desire to *eliminate* the body and emotion from the battlefield.

Genealogy helps us understand that a high-tech battlefield does not equate to a teleological avenue toward the “ethical war.” Instead, genealogy brings to light buried practices and discourses of violence while historicizing novel techno-innovations within the wider epistemological trend of the quantification of society more generally and specifically in the illusion of taming chance in war. Taking into account historical genealogy of drones has brought them out of their sci-fi allure and into broader narrative of US war practices. Gregory (2013) did this with geographies of war; Chamayou (2012; 2014) with asymmetrical combat and manhunting; and Kindervater (2016) with her genealogical history of the rise of drones since the early 20th century. In a similar vein, I

construct a historico-genealogical narrative of how algorithmic calculation and technology is believed to make war an inherently more ethical space in US practices of warfare – of which drones are a piece of the puzzle. Building from Schwarz’s (2016) question of how drone technology as biopolitical assemblages might shape our *capacity* to think ethically, this paper examines how various technologies of war and their techno-logics function to *replace* ethico-political decision-making with objective, neutral, and quantifiable risk assessments. Thus, the genealogy that follows traces how we got to this point of ethics relegated to the algorithmic realm, and given this trajectory, the logical next step is autonomous weaponry that codifies the errors of today for the foreseeable future. The argument unfolds in the following manner.

First, I elucidate an historical genealogy of the evolution of smart bombs and collateral damage algorithms seeking to unearth the superficial layer of logic in which techno-innovation has been constructed as a replacement for an ethics of due care in warfare. Such technologies have enabled practitioners – like Gen. Franks above – to tick the ethical box of exercising due care in war, without actually practicing due care. This vision of *jus in bello* ethics runs counter to virtue ethics and practical judgment that ultimately masks the dilemmas of killing in war in a false sense of numerical objectivity. Second, a further excavation unveils that targeted killing in non-declared warzones based on metadata and machine-learning algorithms that produce a risk assessment of ‘terroristness’ destabilizes the legal and ethical justifications for targeted killing in the first instance – eroding ones subjectivity as a combatant. The quantification of war has moved from ticking the ethical box of killing innocent subjects, to killing heterogeneous correlations of data. Here I elucidate the paradox of a more ‘precise weaponry’ that can target individuals, but has eroded the very notion of an individual by killing the shadow of their metadata. Third, looking to the present

and near future, this genealogy unveils how the human assumptions that are always already written into the code of AI and machine learning algorithms. Mistaking these innovations as objective and neutral is thought to eliminate negative human biases, but with it also eliminates the positives of humanity, crucial to any understanding of a virtue ethics of practical judgment. In the end, this chapter probes the ethical quandaries that algorithmic technologies and AI on the global battlefield and proffers that such trends cannot make war inherently ethical; it can only remove humans one step further from the act of killing – an ultimately futile attempt to escape the human condition.

Techno-Ethics: From Practical Judgment to Computation in Western Warfare

Technology is portrayed as the solution to the dilemmas of Western warfare by killing within the parameters of the *jus in bello* laws of war – i.e. killing more discriminately and proportionally. In essence, the pervasive notion is that a ‘clean war’ is now technologically possible, and the US can target those who pose a threat to the US and others globally before they have an opportunity to carry out deadly attacks with no risk to US soldiers. Such war practices are depoliticized within life-affirming and humanitarian discourses, such that the “matrix of war invokes life as the ultimate purpose of its operations” (Jabri 2006, 60). Perhaps this notion is best summarized by Obama’s 2013 justification of civilian casualties of covert CIA drone strikes outside of declared warzones:

It is a hard fact that U.S. strikes have resulted in civilian casualties, a risk that exists in every war...But as Commander-in-Chief, I must weigh these heartbreaking tragedies against the alternatives. To do nothing in the face of terrorist networks would invite far more civilian casualties — not just in our cities at home and our facilities abroad, but also in the very places like Sana’a and Kabul and Mogadishu where terrorists seek a foothold. Remember that the terrorists we are

after target civilians, and the death toll from their acts of terrorism against Muslims dwarfs any estimate of civilian casualties from drone strikes. So doing nothing is not an option.[iii]

The act of killing itself is depoliticized because doing nothing in the face of terrorism is perceived not to be a viable option. In the post 9/11 era and the psychological vulnerability of Western populations have demonstrated the old way of terrorism as crime through criminal indictments and prosecution is perceived as ‘doing nothing’ in the face of a constructed ‘existential threat.’ Furthermore, Obama invokes his justification of killing civilians that are not in active combat zones in humanitarian terms of saving them from terrorists in their own land. Ultimately, technology is imperfect, but it is viewed as ethically superior means of war that can square the circle having to kill innocents cloaked in the humanitarian discourse of ‘saving strangers.’ Hence, the “logics at work here are such that faith in the ethical conduct of war has increasingly become coterminous with faith in the weapons” (Beier 2017, 10). Patricia Owens (2003) offers an insightful critique of how noncombatant deaths by Western militaries are only ever “accidents” because they never “intentionally” target civilians. The question of intention is brought to light by an over-reliance on a techno-logic that not only rationalizes civilian deaths as *a priori* accidental, but also raises the deeper question that these acts may be “beyond intention” (Owens 2003). There is indeed a legitimate critique of the principle of noncombatant immunity that relies on an assessment of the intentionality of the actors, as “it works to enable what it seeks to prevent, namely making the killing of civilians acceptable” (Zehfuss 2012, 423). Furthermore, the production of “us” as ethical because we “bomb precisely” depends upon “a curious fusion of intent and outcome *a fantasy of control*”, which is exacerbated by the development of smart bombs and collateral damage algorithms explored below (Zehfuss 2011, 561 emphasis added).

Ultimately, what I strive to demonstrate throughout this chapter is how the evolution of military technologies have systematically replaced an ethics of due care and practical judgment of human decision-making with algorithmic and AI logics that masks human bias deep within the algorithm, portrayed as objective, neutral, and scientific technologies of war.

The Evolution of Smart Bombs and Collateral Damage Algorithms

As the use of Precision-Guided Munitions (PGMs) or “smart bombs” has increased in the post-Cold War era, as has the use of software that calculates the probability of civilian casualties. According to Crawford (2013) the operationalization and institutionalization of statistical algorithms in US military engagements really evolved in an *ad hoc* manner gradually after the Vietnam War. Both PGMs and collateral damage estimation software advanced from the belief that technologies such as these make it “easier to be good” in modern war, as opposed to the awful moral choices presented during WWII and the Vietnam War (Zehfuss 2011). The Vietnam War saw the first use of laser-guided bombs (LGBs), and although they were only one percent of the munitions dropped in the war, Gen. William W. Momyer was impressed with their accuracy: “If the target could be seen and the target was vulnerable to the explosive power of the weapon, the probability of damage with a single weapon was 80 to 90 percent” (Correll 2010, 64). However these LGBs were dependent on good weather, the target not being obscured by smoke or camouflage – a tall order during the fog of war. But the Gulf War in 1991 marked the first extensive use of PGMs in Western warfare at eight percent of all bombs dropped leading the *Gulf War Airpower Survey* to declare: “Desert Storm reconfirmed that LGBs possessed a near single-bomb target-destruction capability, an unprecedented if not revolutionary development in aerial warfare” (Correll 2010, 64). Later during the 1999 Operation Allied Force in Kosovo the first GPS-guided

bomb was introduced – the Joint Direct Attack Munition (JDAM) – and it was not dependent on weather conditions or visibility of the target and was used to the tune of 35 percent of all bombs dropped. With this *ad hoc* evolution alongside a growing use of collateral damage software that was slow and unreliable, PGMs became the techno-solution to the moral dilemmas of warfare; yet, the term ‘precision’ itself is a misleading one.

The idea that the LGBs and JDAMs are “precise” is deceptive on two accounts. First, even if these munitions are only as precise as the intelligence that goes into where they *ought* to strike. Second, there is a major misperception of what “precision” means in common parlance versus the military conception of the term. The first was exemplified on February 13, 1991 when two 2,000 pound LGBs were dropped on the Amiriyah shelter, better known as the Al Firdos C3 bunker in Iraq, killing roughly 400 Iraqi civilians and severely injuring 200 others (Washington Post 1998). It was believed to be an Iraqi command center as daytime satellite photographs displayed trucks and limousines parked outside, suggesting “leadership activity” (*Ibid*). After international outcry from the incident, the US sought to protect its image and improve its collateral damage estimating capabilities, which at this time were computed using “engineering estimates developed independently for each appropriate target in a very lengthy process” (Crawford 2013, 242). Yet, improving the collateral damage estimates was a solution that this particular problem did not call for, as the intelligence was poor from the outset mistaking a civilian shelter for military leadership. Eight years later the failure of intelligence persisted when on May 7, 1999 by when NATO dropped five JDAM bombs onto the Chinese embassy in Belgrade mistaking it for the Yugoslav Federal Supply and Procurement HQ. The second deception exists in the linguistic trick of the term precision itself. Precision does not mean that the JDAM will hit the specific building it is aimed at

(assuming the intel is accurate), but that precision is “put[ting] 90 percent of their JDAMs within 10 meters—or about 33 feet—of the target” (Correll 2010, 64). Derek Gregory (2013) illustrates the linguistic trick of precision and accuracy in ‘smart bombs’ noting that there is large disconnect between the military and colloquial understanding of the term. Ultimately, in densely populated urban areas, 10 meters can be the difference between an enemy target and a hospital or school and therefore enables a public illusory discourse of precise bombing as more ethical than ‘carpet bombing’, when the reality is far from the ideal case espoused by the language itself.

Smart bombs or PGMs is only one piece of the puzzle in this historical unfolding of liberal militarism in search of the ‘ethical war’. Bieir (2017) makes the compelling case that smart bombs has been fundamental to the blurring of the agent and subjecthood; nevertheless these weapons systems were simultaneously accompanied with the rise of computer algorithms that claimed to be able to predict probabilities of civilian casualties for any given kinetic strike. Bieir then identifies three intertwined and mutually reinforcing moves whereby the rhetorical moves surrounding the advent of PGMs and the shift away from indiscriminate bombing of which he misses the algorithmic collateral damage component:

the denial of a viable oppositional subject position; the mystification of sites of subjecthood that is affected by discursive and semiotic construction of weapons averring varying degrees of autonomy; and the apparent predilection to impute agency to weapons themselves such that they may even be read to be occupying some measure of a subject position in the ethical practice of war (Bieir 2017, 11).

Hence, this piece expands Bieir’s analysis by deepening the understanding of technologies of militarism where “faith in the ethical conduct of war has increasingly become coterminous with

faith in the weapons” via the algorithmic mechanisms that further enabled the ethical PGMs discourse (10). During the Kosovo campaign NATO had begun utilizing the statistical package known as the Conventional Casualty Estimation Tool and the Collateral Damage Estimation Tool (CDET). CDET was run on over 400 targets in Kosovo and it used three-dimensional modeling for a “high fidelity assessment” of probable collateral damage, but this process was tedious and took several hours to run. By the early combat days of Afghanistan 2001 CDET was still used, but new software had also been developed, known as the Fast Assessment Strike Tool – Collateral Damage (FAST-CD), which was previously known as “Bugsplat” (Crawford 2013, 242). CDET was considered too slow because it required analysis of both manmade and natural features of the target area, whereas the renamed FAST-CD was much faster and according to Captain Mary Cohen “one of Bugsplat's benefits is that it's far simpler to use” (Graham 2003). Moreover, FAST-CD was ideal for time-sensitive targets, as it could take “as little as five minutes to run the program” (Crawford 2013, 242). Speed, ease of use, and the strategic and normative push to minimize civilian casualties in modern warfare were essential drivers in the development and evolution of these statistical software packages.

This evolution in computing, PGMs, and more capable intelligence gathering aircraft – i.e. drones – resulted in an increased *assumption* that civilian casualties could be reigned in and the *uncertainty* of warfare could be *tamed*. Thus, Brigadier General Kelvin Coppock, director of intelligence for the Air Combat Command, stated that bugsplat was a “significant advance” as “it will allow us to target those facilities that we want to target with *confidence* that we’re not going to cause collateral damage” (Graham 2003, emphasis added). Both programs have since been improved and are now known as Advanced CDET and FAST-CD 2.0. These stats programs offer

a fantasy of control to mitigate the unknown circumstances that paradoxically increase probabilities of civilian casualties as it decreases the liability and accountability of war-makers for foreseeable and preventable civilian casualties. Hence, the idea that precision munitions and collateral damage software make war less destructive or inherently more ethical, gives practitioners a false sense that the killing of innocents is always already beyond intention. The techno-logic is thus: the ‘ethical war’ is only a few software updates away, when FAST-CD fails to accurately predict the level of collateral damage in a timely manner we get FAST-CD 2.0.

Jus in Bello War Ethics and Due Care

The evolution of PGMs and CDET above fundamentally calls into question the belief that the ethical box of due care can be ticked by decision-makers by simply deploying “smarter” bombs alongside more advanced collateral damage algorithms. This begs the question: What does it mean to exercise ethical due care in war? Michael Walzer in his now classic book *Just and Unjust Wars*, illustrates what practical judgment and due care may look like. In order to demonstrate this Walzer utilizes the WWI memoir, *Old Soldiers Never Die*, of Private Frank Richards of the Royal Welsh Fusiliers. During his time in France, he and his fellow soldiers faced a dilemma, that the laws of war say to exercise “due care” not to harm civilians, but how did that play out in the reality of the battlefield? Richards wrote:

When bombing dug-outs or cellars, it was always wise to throw the bombs into them first and have a look around them after. But we had to be very careful in this village as there were civilians in some of the cellars. We shouted down to them to make sure. Another man and I shouted down one cellar twice and receiving no reply were just about to pull the pins out of our bombs when we heard a woman’s voice and a young lady came up the cellar steps...She and the members of her family...had not left [the cellar] for some days. They guessed an attack was being made and when we first shouted down had been too frightened

to answer. If the young lady had not cried out when she did, we would have *innocently murdered* them all (Walzer 2006, 154 emphasis added).

Walzer utilizes this case to illustrate that due care calls for the soldiers put themselves at some risk in order to protect civilians. If there had been German soldiers in the cellar they might have scrambled out firing and it would have been far more prudent to simply throw the bombs in the cellar without shouting down, which *military necessity* would have justified him doing so. However, Richards was “surely doing the right thing when he shouted his warning. He was acting as a moral man ought to act; this is not an example of fighting heroically, but simply of fighting well. It is what we expect of soldiers” (Walzer 2006, 154).

One can see how an ethics of due care is intuitive to us in inter-state symmetric warfare. While military necessity and the laws of war might dictate one course of action, practical judgment and simply acting how one ought to act in war presents an alternative course of action. This is not to say that soldiers act ethically most of the time. For example, US soldiers in Fallujah, Iraq sometimes would not exercise due care in clearing the city house by house because it was too time consuming. Instead, they would break windows and throw grenades, justifying it by stating that a warning was given to leave the city, so anyone that remained was liable to be killed as a combatant. This is indeed a misunderstanding of due care, whereby the ethical box was believed to be ticked by issuing an evacuation order or dropping leaflets to leave etc. How then can due care apply to asymmetrical war like that of drones? Schwenkenbecher (2014, 95) argues persuasively that the *jus in bello* “criterion of discrimination should be more closely linked to a principle of due care than to considerations of proportionality”, making due care necessary for any understanding of

war ethics today. For her, due care in the modern era where troops are not on the ground means setting a high bar of a positive commitment civilians and avoiding foreseeable harm which the principle of proportionality and doctrine of double effect may permit (Schwenkenbecher 2014, 100). Furthermore, Enemark (2017) explores this issue more in depth in his analysis of drone operators, and ethics where there is “no mutual physical risk...For only a killing that is warlike is supposed therefore to be morally better than mere slaughter” (10). Ultimately, with a conceptualization of ethical due care that is reliant on putting *our* soldiers bodies at some reasonable risk to protect civilian lives, how does the drone and an accelerated global battlefield that removes Western bodies from risk of violence impact war ethics today?

In contrast to an ethics of due care in the modern era, there a couple of alarming trends in justifications for killing civilians while systematically transferring risk from our soldiers to their civilians.[iv] First, is the belief by those such as Strawser (2010) that it is ethically imperative for us to remove our troops from the battlefield with the use of drones, countering Walzer’s claim that soldiers must put themselves at some reasonable risk to protect civilians. Second, as discussed above, is the confidence of Brig. Gen. Coppock that technology can “eliminate collateral damage” and of Gen. Franks to “go ahead” even when the algorithm predicts high probability of civilian casualties. Ultimately, the pervasive logic that when *we* (the US) kill civilians in war it is always already beyond intention, has found its technological justification removing decision-makers one step further from accountability for the killing of innocents. These trends of deference to technological solutions to the ‘problem’ of killing innocents arises from an accelerated War on Terror whereby ethical dilemmas are no longer interrogated and debated and due care is relegated to an idealized warfare of the past, that practitioners believe has passed. Former CIA director John

Brennan summed it up best when he said, “U.S. decision making processes need to be streamlined and accelerated...Because the problems [of today] are not going to wait for traditional discussions.” [v]

Quantifying the Global Battlefield: From Judgment to Computation

War is an inherently unknowable arena of human activity, where uncertainty in the fog of war reigns supreme. The attempt to bring contemporary technological innovation into war necessitated a quantification of the battlefield that required a presumption of how an enemy will fight, which is an educated guess at best. The infamous 2002 war-game exercise “Millennium Challenge” (MC) exemplified the technological hubris that the revolution in military affairs (RMA) brought about. Technology makes individuals one causal step removed from both killing and accountability for mistakes, we tend to defer to technology giving us a psychological sense of security in an uncertain venue like war (Burke 2006). This \$250-million war game pitted the US military (with technological capabilities predicted five years into the future) against Gen. Paul Van Riper’s red-team enemy forces. But Riper did not want to play by the rules—aka show off the RMA to defeat an inferior enemy—and decided to “preempt the preemptors” and strike the US forces first (Zenko 2015). Zenko recounts the event as such:

Once U.S. forces were within range, Van Riper’s forces unleashed a barrage of missiles from ground-based launchers, commercial ships, and planes flying low and without radio communications to reduce their radar signature. Simultaneously, swarms of speedboats loaded with explosives launched kamikaze attacks. The carrier battle group’s Aegis radar system — which tracks and attempts to intercept incoming missiles — was quickly overwhelmed, and 19 U.S. ships were sunk, including the carrier, several cruisers, and five amphibious ships. ‘The whole thing was over in five, maybe ten minutes,’ Van Riper said (Zenko 2015).

However, a ten-minute end to the most expensive military exercise to date was not what the military had anticipated, so they simply refloated the virtual naval fleet and continued the exercise to Van Riper's protest. He believed that misplaced faith in then-nonexistent technologies were dangerous and ought not to be assumed in the upcoming Iraq War, such that he set out to destroy the US fleet to demonstrate the limitations of this kind of technology and its logic (Zenko 2015). And he did so in extraordinary fashion. MC 2002 exemplifies how assumptions of a collectively held strategic imaginary and its assumptions of the nature of war will find their way into the algorithms and issues that arise from that given the evolving nature of war type and enemies faced.

Although those in command claimed to have learned from the lessons of MC 2002, Iraq and Afghanistan have since demonstrated that technological reliance without political and strategic imagination, that goes hand-in-hand with ethical practical judgment, is doomed. Nevertheless, since 2002 computation power and artificial intelligence has reached levels that few could have predicted, and once again the essence of future wars would be data-driven. With machine-learning algorithms, AI, and the loitering capabilities of drones, human judgment has dramatically ceded decision-making power in contemporary conflicts as will be demonstrated below. As the US moves to quantify the global battlefield and render "knowable" the uncertainties of war by simply disguising them as numerical probabilistic outcomes, greater strategic errors will dominate as the ends of war are neglected in favor of perfecting the means. Probabilities cannot dictate *values*, strategies, political dilemmas of war, or ethical criteria such as due care or responsibility; nevertheless, "it now lies at the basis of all reasonable choice made by officials" (Hacking 1990, 4). By briefly tracing the historical genealogy of smart bombs and Bugsplat, I hope to have demonstrated how the quantifiable battlefield constructs an illusion of certainty by burying the

process of decision-making in the algorithms themselves such that *judgment* has been replaced by *computation*. There is an underlying determinism within the statistical logic, ethico-political decision-making is reduced to software updates; when FAST-CD fails to predict Bugsplat in a timely manner, we get FAST-CD 2.0.

Machine-Learning Assassination and the Erosion of the Subject

There is a central paradox that this genealogy takes the next step in shifting from calculating ‘bugsplat’ with ‘smart bombs’ targeting buildings, to targeting individuals in drone strikes. While the US has the capability to target individuals globally, they are no longer individual subjects, combatants, or criminals being targeted. Human beings have become shadows of subjectivity, constructed by their metadata, that predicts a probability of ‘terroristness’ now or at some unknown point in the future. The use of US drones in undeclared warzones has launched a generation of research in all fields of study; however, the drone itself is not as interesting as the machine-learning process in which targets are determined. Schwarz (2016, 64) explored in her article on drones and bio-politics “that which might pose a risk is identified and selected as a justified target merely on the basis of identifiable markers, patterns and algorithmic calculations, and in most cases the exact factors that contribute to the algorithmic determination of targets remain opaque.” However, subsequent revelations about the SKYNET program via a leaked NSA PowerPoint allows us to gaze deeper into the practices and logics of US targeting practices. SKYNET was the joint NSA and CIA operation over Yemen and Pakistan where the NSA swept up a dragnet SIM card metadata upon which drone strikes were based. SKYNET works like a typical modern Big Data business application. The program collects metadata and stores it on NSA cloud servers, extracts relevant information, and then applies machine learning to identify leads for a targeted campaign (Grothoff

& Porup 2016). Except, instead of trying to sell the targets something like the business applications, this campaign executes their “Find-Fix-Finish” strategy using Hellfire missiles to take out their target (Greenwald & Scahill 2015). In addition to processing logged cellular phone call data (so-called “DNR” or Dialed Number Recognition data, such as time, duration, who called whom, etc.), SKYNET also collects user location, allowing for the creation of detailed travel profiles. Turning off a mobile phone gets flagged as an attempt to evade mass surveillance. Users who swap SIM cards, naively believing this will prevent tracking, also get flagged (the ESN/MEID/IMEI burned into the handset makes the phone trackable across multiple SIM cards). Given the complete set of metadata, SKYNET pieces together people's typical daily routines—who travels together, have shared contacts, stay overnight with friends, visit other countries, or move permanently. Overall, the slides indicate, the NSA machine-learning algorithm uses more than 80 different properties to rate people on their “terroristness” (Grothoff & Porup 2016).

The paradox then is that while the targeting can become more individualized – by a loitering drone striking a car in the desert – the shadow of subjectivity is all that is targeted, hence the individualization of killing has eroded the subjectivity of the individual. These techno-practices of war are a concrete illustration of how the *who* targeted is no longer an individual subject, but a *what* of statistical correlations of probabilities of ‘terroristness,’ whereby radical homogeneity is *constructed* from heterogeneous data upon which life and death decisions are based. Hence, the idea of *who* qualifies as a combatant and becomes a legitimate target – in line with *jus in bello* ethics – has been eroded. The ethical implications are staggering as the subjectivity of the combatant has been replaced by the process of data construction, which undercuts the rationale for why it is ethically permissible to kill a combatant in war—one’s subjectivity. Nordin and Öberg

(2015) discuss the erosion of subjectivity of those operating drones (i.e. the chain of command, the drone pilot, the military lawyers, the removal of the soldier from combat, etc.) as opposed to those targeted in drone strikes as I wish to discuss. The laws and ethics of war assume some level of reciprocity in the right to kill and be killed strict guidelines for who is a legitimate target. Yet, while technology allows the US to target not an individual, but an object, a shadow of subjectivity based solely on metadata collected and calculated out of thin air with the SKYNET.

N=All: Statistical Death Sentencing

At this juncture of the historical genealogy, algorithmic war has moved from ticking the ethical box of killing innocent subjects, to killing constructions of data in an attempt to quantify the uncertainties of war. This section explores the quantification of the battlefield into calculable “risk-analysis formula, which assigns a numerical value to a risk theme by multiplying the probability of occurrence by a figure for the potential impact” presenting a “rationalization of the future based on engineering risk-assessment methodology” that is nothing more than “a glorified form of guesstimates” (Hagmann & Dunn Caveltly 2012, 81). Risk-assessments in US warfare and counter-terrorism practices cloak their guesstimates of an inherently uncertain venue and attempt to produce a predictable future outcome from the chaos of war. Contemporary security practices silence questions of a “malleability of future trajectories” of warfare (Hagmann & Dunn Caveltly 2012, 81), while simultaneously propping mathematical science that is “already enfolded the intuitive and inferential in its very objectivity” (Amoore 2014, 425) as a scientifically objective solution to the problem of terrorism. Ian Hacking in his book *The Taming of Chance* traces the intellectual and historical processes that led to the birth of modern statistics and the institutionalization of the “probabilization” of Western intellectual thought. Here he discusses the

avalanche of data that early statisticians of the 19th century that explored everything from suicide rates and crime rates, to jury sizes and birth rates, or whatever was of statistical interest. However, Big Data of today, according to Amoore and Piotukh (2015), makes a crucial epistemic break with early statisticians whereby *everything* can be quantified and analyzed with massive computing analytics. Thus, the advent of Big Data and the necessary computing power to analyze it has significant practical and ethical implications for counter-terrorism operations that seek to prevent future attacks before they can come to fruition.

What are the implications then of breaking statistics from subsets to $n=all$ datasets? Statisticians consistently argue that even within subsets, the bell curve cannot tell you anything about a particular individual in that group; yet that error is amplified when everything and everyone becomes quantifiable. Chamayou sums it up best: “But the whole problem—at once epistemological and political—lies in this claimed ability to be able to correctly convert an assembly of probable indices into a legitimate target” (2014, 49). The first implication is an *epistemology* of population where $n=all$, where Pakistani or Yemeni residents are reduced to a numerical object of interest, detached from the population as such, and relegated to a “chain of analysis” in which the person of interest emerges from the links of “activities funded;” “members of;” “listed;” “acquainted with;” “traveled to;” etc. (Amoore and Piotukh 2015, 359). What is ontologically problematic for SKYNET and targeted killings based upon these statistical correlations is far more pronounced in errors than a poorly targeted ad for business marketing. These algorithmic technologies tends to reduce difference in *kind* to differences in *degree*; a reduction and flattening that “patterns of life” emerge where interventions are made on that basis (Amoore and Piotukh 2015, 361). Hence, the NSA’s cloud-based behavior analytics system constructs a “pattern of life”

where the “highest scoring selector” based on social network and travel behavior metadata—that is, the target *most likely* to exhibit ‘terroristness’—turned out to be Ahmad Muaffaq Zaidan, *Al Jazeera’s* longtime Islamabad bureau chief.[vi] Since it was a covert CIA program, the inner workings of the algorithm remain classified; nevertheless, it should give us all pause when General Michael Hayden (former director of the NSA and CIA) bluntly states: “We kill people based on metadata” knowing the process of data construction.[vii] The rise of big analytics has rendered *all data tractable*, which “carves out radical heterogeneity into flat difference of degree, such that it appears as though everything is calculable, everything about the *uncertain* future is nonetheless decidable” (Amoore and Piotukh 2015, 361, emphasis added). Ultimately, the turn to Big Data and machine learning functions to replace judgment with computation under the guise of a calculation of risk of a knowable future yet to come. Such probabilities cannot dictate *values*, such as due process in law or due care in war, but “it now lies at the basis of all reasonable choice made by officials” (Hacking 1990, 4).

The paradoxes of a more precise technology accompanied by a misunderstanding of statistics in big data are amplified in a War on Terror that blurs the lines between war and law enforcement. Contestation over which bodies of law apply – International Humanitarian Law or International Human Rights Law – in these in-between spaces of Pakistan and Somalia highlight the dilemmas of counter-terrorism with global reach in an era of contested and fragmented (Fisk and Ramos 2016; Brunstetter and Holeindre 2017). Nevertheless, the genealogy thus far has demonstrated the rise of techno warfare: smart bombs, collateral damage algorithms, quantification of war, and SKYNET targeting shadows of subjectivity as a piece of the larger historical tension to meld liberal values with war-making. The paradox of targeting individuals that are a shadow of

subjectivity is that the aim is not to confront a concrete dangerous situation that those ‘terrorists’ pose “but to anticipate all the possible forms of irruption of danger. ‘Prevention’ in effect promotes suspicion to the dignified scientific rank of a calculus of probabilities” (Castel 1991, 288, emphasis original). Hence, quantification of the battlefield does not make war an inherently more ethical space; it simply cloaks suspicion and ontological insecurity in scientific language and numerical objectivity. Ultimately, these paradoxes are amplified as one moves further away algorithmic-based decision-making toward Artificial Intelligence.

Artificial Intelligence: The False Promises of Perfect Rationality

The final stage of this genealogical narrative seeks to highlight the present and near-future military applications of AI. Arguing first that human assumptions that are always already written into the code of AI and machine learning algorithms. Second, that mistaking these innovations as objective and neutral is thought to eliminate negative human biases, but with it also eliminates the positives of humanity crucial to any understanding of a virtue ethics of practical judgment and due care. The debate as it currently stands for proponents and opponents of AI in warfare can be boiled down to this: AI will bring us closer to the “ethical war” by dramatically reducing civilian casualties through the elimination of human bias. Or AI will bring us closer to destruction by opening Pandora’s box through the violation of the first of Isaac Asimov’s three laws of robotics: a robot may not injure a human being or, through inaction, allow a human being to come to harm. Finally there is the middle ground that simply calls for varying degrees of “meaningful human control” over autonomous weapons systems (Human Rights Watch 2016). I argue however that the framing of this debate is misguided, on the premise that it fundamentally misunderstands *how* AI functions.

Programmers themselves do not know *why* AI makes the decisions that it does, because of the nature of AI. Google DeepMind's AlphaGo that defeated the world champion in what is arguable the most difficult game in the world, Go, best demonstrates how AI works. First the AI had the rules of the game programmed, and played a number of Go players to where it became a decent Go player. What happened next was that AlphaGo played against itself in millions of games, until it learned the best of all possible strategies. Thus, when it played the world champion, it was making moves no human had ever made in the game, and DeepMind could not explain *why* it would do that because no human could track all the millions of iterations it played; hence, the essence of AI is it is always already beyond meaningful human control in the first instance. What is important for AI in warfare, is that there are not strict "rules of the game" like in Go or chess, as Millennium Challenge above demonstrated, when the enemy doesn't play by the rules, you cannot just refloat the Naval fleet and try again. The world is complex; war is an experiment in catastrophe where the complexities of the social world are amplified exponentially. My hesitation about AI rests in the fact that once Pandora's box is opened, we cannot know why it makes the decisions it does, which has enormous consequences when we give AI the power to take human life. Ultimately, AI is the next step in the genealogical narrative toward the goal of the 'ethical war', even if it is not quite 'killer robots' yet, it will be soon.

Project Maven

First and foremost, before discussing the problems associated with AI and 'killer robots' I want to address what AI has already been deployed on the battle against ISIS by the US. Much like speed and ease of use were issues for collateral damage software, the proliferation of drones on the global battlefield has led to a crisis in an over-abundance of video "data", a technical problem to be

solved. Project Maven launched in April 2017 and it created an Algorithmic Warfare Cross-Functional Team that sought to “accelerate DoD’s integration of big data and machine learning.”[viii] The accelerated battle tempo of the text seeks integrate this AI into smaller ScanEagle drones in “90-day sprints” of analyzing Intelligence, Surveillance, and Reconnaissance (ISR) (see Kindervater 2016 for a history of ISR and dynamic targeting with drone technology). Followed by a subsequent sprint to “consolidate existing algorithm-based technology initiatives related to mission areas of the Defense Intelligence Enterprise, including all initiatives that develop, employ, or field artificial intelligence, automation, machine learning, deep learning, and computer vision algorithms” including Reaper drones.[ix] The accelerated temporality of the text itself should give us caution in that they are sprinting to incorporate this technology without pausing to question the unintended consequences of doing it. As of April 2018, Lt. Col. Garry Floyd stated that Maven has moved beyond the Middle East into Africa: “We’re in five or six locations in AFRICOM and CENTCOM,” (McLeary 2018). Within a year of launching, Maven has greatly expanded, and more troubling is that it is only one of hundreds of AI projects currently at the DOD.

There are two key fears present with Project Maven: how will these biases built into the system without critical reflection be amplified in the future when the AI can target independent of human control and how will it adapt to vastly different geographical, urban, and war environments? While bias in Project Maven’s AI may be subtle in its first deployments thus far that have been limited to identifying objects, yet “[w]hile the algorithm is trained to identify people, vehicles and installations, it occasionally mischaracterizes an object. It’s then up to the intel analyst to correct the machine, thus helping it learning” (Weisgerber 2017). Such problems

as different geographies than the AI was trained on, presented initially a 60% accuracy rate, nevertheless, “Just over a week on the job — and a handful of on-the-fly software updates later — the machine’s accuracy improved to around 80 percent. Next month, when its creators send the technology back to war with more software and hardware updates, they believe it will become even more accurate” (Weisgerber 2017). Thus, the problem is presented simply as software updates and bugs in the system that will become the foundations for AI – that will likely have the ability to execute and generate targeting decisions – will be compounding these initial biases in the system in the “sprint” to deploy the technology. The DOD is currently soliciting private companies, like Google, to develop targeting software for drones “to automatically Detect, Recognize, Classify, Identify (DRCI) and target personnel and ground platforms or other targets of interest. The system should implement learning algorithms that provide operational flexibility by allowing the target set and DRCI taxonomy to be quickly adjusted and to operate in different environments.”[x] The idea that the taxonomy for targeting people and objects with “operational flexibility” remains wedded to the idea that war is a timeless and unchanging facet of international politics, and that the immense strategic, tactical, and cultural complexities that we experienced in Afghanistan and Iraq could somehow be programmed away. Such a technological hubris offers an easy fix, to immense complexities. For instance, how could AI distinguish between our on-the-ground allies and foes that change within months within a single conflict, let alone across conflicts? Even if the technology were able to get there someday, the intrinsic argument against surrendering that control to the algorithm holds strong, in that killer robots lack agency – the ability to do otherwise (Leveringhaus 2016).

AI, Agency, and the Positives of Humanity

Even if we have not yet reached the point of ‘killer robots’ the above explication should show how we are closer than many of us may have been aware and that there is very little discussion about the ethico-political consequences of such as that interferes with the “sprint” to adopt this technology. This accompanied by the lure of the ‘ethical war’ where *our* troops can be removed from the battlefield while simultaneously eliminating human errors that result in civilian casualties, has a compelling argument to introduce killer robots onto the battlefield as soon as possible. In this section I discuss the dual issues that arise from the prospect of killer robots making ethical choices in warfare via computation and the impossibility of programming practical judgment. First, although AI may someday be better at selecting the legitimate targets than a trigger-happy 20-something, robots lack agency – or the ability to do otherwise – an inherently moral decision that cannot be reduced to an objective mathematical calculation. Second, in the search for the ideal Cartesian ‘rational man’ by eliminating bias, error, panic, dehumanization, etc. from the practical judgment of soldiers to the computations of the ‘killer robot,’ one also removes the positives of humanity – pity, compassion, and empathy – or the moral ‘calculations’ that go in the decision *not* to pull the trigger even when you may be legally justified in doing so.

There are both contingent –i.e. the technology is not good enough yet – and intrinsic arguments against killer robots that Leveringhaus (2016) addresses in a useful and accessible typology for assessing how killer robots convert human agency to artificial agency. Furthermore, there are two types of targeting decisions that killer robots can make, executing and generating targeting decisions. Executing a targeting decision is simply an artificially intelligent drone deciding between targets already deemed legitimate by the programmer by applying the *jus in*

belo criteria before deployment. This unto itself is highly problematic as it assumes that the algorithm is somehow objective and neutral – not contextually bound by programmer bias – a kind of “god-trick,” which I will explore in the following section. Generating a targeting decision, on the other hand, differs in that the robot must apply the criteria and assess whether a human is a legitimate target or not (discrimination) and a calculation of whether a particular course of action is likely to cause excessive harm to those who cannot be intentionally targeted (proportionality). The problem is such that killer robots will find it hard to determine “what constitutes proportionate and necessary harm,” as the application of the *jus in bello* criteria are highly context dependent (Leveringhaus 2016, 5). Furthermore, “the real problem is that the ways in which lives are ‘weighted’ and ‘balanced’ in proportionality calculations is not fixed, but subject to a much broader change in circumstances on the ground” (Leveringhaus 2016, 6). Hence, the intrinsic arguments against killer robots as outlined by Leveringhaus, involve a lack of agency, the context dependence of decision-making in war, and I would add a problem with rule-based moral reasoning more generally.

Killer robots lack agency, or the ability to do otherwise, an essential feature of exercising ethical practical judgment and due care on the battlefield. Soldiers in Iraq were frequently told to abide by the 51% rule: being if you feel as though your life is 51% in danger, you can take the shot. What is clear here in speaking to US Marines who served in the war is that this is a general rule, but ultimately comes down to one’s judgment and assessment of the on-the-ground context of what that 51% means. This number 51% gives the illusion of objectivity and a calculable risk to a soldier’s life, when the reality is purely subjective interpretations and judgments of concrete circumstances. These are dilemmas explored in Walzer’s *Just and Unjust Wars* when he deals with

the ethics of killing a soldier while bathing in the river and how he is *hors de combat* even if he may be a legitimate target once he puts on his uniform and picks up his gun later. Recognizing that recent conflicts have not been against soldiers in uniform, this practical judgment becomes ever more necessary. This ability to otherwise and *choose* not to pull the trigger even if one is legally justified in doing so gets at the heart of the intrinsic argument against killer robots as they lack this agency.

Programmer Bias and Tin Men Ethics

Beyond lacking agency, the belief that killer robots represent an ideal Cartesian rationality devoid of social, political, and cultural context, presents an elimination of the positives of humanity in an attempt to minimize the negatives of human emotion. This represents the possibility of the culmination of the ‘god-trick’, which feminist scholars have been discussing for decades. Donna Haraway (1988, 581) famously describes the ‘god-trick’ of Western scientific epistemologies: the illusion of being able to see everywhere from a disembodied position of ‘nowhere’ as an integral component of histories of militarism, capitalism, colonialism, and male supremacy. Wilcox (2017, 13) takes Haraway’s ‘god-trick’ one-step further in their discussion of the weaponized drone, with its global surveillance capacities and purported efficiency and accuracy in targeting weapons. “The ‘god-trick’ is not only visual, but more broadly epistemological: artificial intelligence, especially in an age of ‘big data’, can also appear to have omniscient power that appears everywhere and nowhere at once The work of posthuman feminists provides a necessary check on tendencies to theorize the drone as ‘other than human’ in ways that reinforce the separation of humans from techno-scientific practices, including the use of visual technologies, algorithms, and artificial intelligence in various configurations to enable ‘drone warfare’” (Wilcox 2017, 13). While the

weaponized drone is indeed a perfect symbol of this culmination, the hidden symbol of the god-trick lies in the algorithmic code of AI itself. It is truly god-like technology as code is everywhere and nowhere simultaneously and it is inherently trusted as a higher form of rationality, divorced from the human judgment that went into writing the code in the first instance.

The god-trick and the removal of humans from the act of killing, brings forth the old trope that breaks down humans into reason (which is a positive masculine attribute) and emotion (that is a negative feminine burden) to be eliminated in warfare via techno-innovation. Valerie Morkevicius traces the argument for the importance of emotions in ethics in her “Tin Men Ethics” article highlighting the practical significance of emotions in the decision-making process. She argues that, “emotions can help us to act morally in four ways that are particularly relevant for the ethics of war. By informing our moral intuition, generating empathy and holding us accountable for our choices, our emotions – as expressions of our inner soul or conscience – actually guide us toward more ethical behavior” (Morkevicius 2014, 9). By cultivating an in depth understanding of how reason and emotion are linked in ethical behavior, the notion of a “sprint” toward battlefield AI and programming ethics into the algorithm becomes quite a fruitless and dangerous endeavor. Thus the goal of AI in the battlefield ‘solves’ the problem emotions in war in favor an idealized rational robot, while eliminating an inseparable aspect of moral reasoning, being emotion. Where would we be in warfare without pity, conscience, empathy, and forgiveness? In my view, war ethics are inseparable from practical judgment, as exemplified from the WWI and Iraq examples above, and the notion that ethics can become the application of an algorithm has wider Western scientific epistemological and societal rationales than the “ethical war.” Nevertheless, these attempts to absolve and distance us from the act of killing in war, represents the culmination of the

clash of liberal values of human rights, with its propensity to commit violence on an industrial scale against the Other. An attempt to escape the consequences of this killing via military technological innovation, will lead to a greater ease in taking lives as the ethical box has always already been ticked, and the door will completely shut accountability for killing of innocents by Western actors.

Conclusion

In the technological era, the allure of the ‘ethical war’ seems within reach building on the decades-long trajectory from smart bombs and collateral damage software, to machine learning drone strikes, to the killer robots of tomorrow. This historico-genealogical narrative – following Beier (2017) – has sought to raise important questions about the necessity of practical judgment in war ethics, and the inability to provide an algorithmic answer these ethico-political dilemmas, especially when blinded by the uncertainties of warfare. Attempts to quantify the world and the global battlefield of the US War on Terror raise new ethical dilemmas as the transformation of judgment to computation attempts to absolve decision-makers from accountability for killing. While this genealogy demonstrated the road taken in abrogating our ethical responsibilities to a coded morality, the future trajectory of killer robots is by no means inevitable, as it remains a space of contestation. The lessons of Haraway (1988) on the impossibility of the god-trick updated by Wilcox (2017) for the drone era provides a cautionary tale for future military development in the field of AI and a simulated ethics. While IR scholars who study war and violence are increasingly returning to the site of the ‘body’ and the ‘scars of violence’ (Steele, 2012) while simultaneously refocusing on emotions, how does the advent of AI and the prospect of a purely “rational” decision-making machine in war impact this recent trend in IR scholarship?

These military applications are symptoms of wider issues of late modernity to quantify the unquantifiable and tame chance. Yet such a futile endeavor remains “a grandiose technocratic rationalizing dream of absolute control of the accidental understood as the irruption of the unpredictable. In the name of this myth of absolute eradication of risk, they construct a mass of new risks which constitute so many new targets for preventive intervention” (Castel 1991, 289). Drew Gilpin Faust has noted that those of us who study war are fascinated by the collision between the superhuman, inhuman, and immensely human experiences that are brought forth in warfare. For every case of inhumanity, one often finds a case of selflessness and ethical behavior to be emulated. In the end, AI cannot answer these essential questions of ethics, humanity, and the human condition. We have forgotten in modernity that rule-based moral reasoning or coded morality that can be quantified is a relatively recent way of understanding ethics, and one that should ultimately be challenged. These techno-practices of war-making program an optimistic ideal future of war that fit the predetermined hopeful outcome, that cannot be tweaked with software updates based on the nature of how AI functions. In the end, proffering this historico-genealogy of the technological pursuit of the ‘ethical war’ demonstrates how a probable future with killer robots, are a symptom of a data-driven world that transforms complex social interactions into quantifiable terminology, erasing the essence of humanity in the process.

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Notes

[i] A quick note of important clarification from Maj. Joe Chapa US Air Force (USAF) is necessary in order to clear up a large gap between the civilian use of the term “bugsplat” and its original meaning within the military circles. “Bugsplat *was* software that depicted the expected blast and fragmentation pattern of the various air-to-surface weapons in the U.S. inventory. But it wasn’t that ‘the dead’ were depicted as squished bugs” (Chapa, 2017). This disconnect is important as it has often been portrayed as an impersonal way of referring to collateral damage as “bugsplat” when it was primarily used to describe the software and its probable blast radius in the statistical package.

[ii] Campaign to Stop Killer Robots. Available at: <https://www.stopkillerrobots.org/>.

[iii] Obama’s Speech on Drone Policy (2013) *New York Times*, 23 May. Available at: <http://www.nytimes.com/2013/05/24/us/politics/transcript-of-obamas-speech-on-drone-policy.html>.

[iv] For a detailed discussion of this systematic transfer of risk from Western soldiers to non-Western civilians see: Shaw, M. (2002) Risk Transfer Militarism, Small Massacres, and the Historic Legitimacy of War. *International Relations* 16 (3): 343-359.

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[vii] Cole, D (2014) ‘We Kill People Based on Metadata’ *The New York Review of Books*, 10 May. Available at: <http://www.nybooks.com/daily/2014/05/10/we-kill-people-based-metadata/>.

[viii] Deputy Secretary of Defense (2017) Establishment of an Algorithmic Warfare Cross-Functional Team (Project Maven), 26 April. Available at: https://www.govexec.com/media/gbc/docs/pdfs_edit/establishment_of_the_awcft_project_maven.pdf.

[ix] *Ibid*.

[x] Automatic Target Recognition of Personnel and Vehicles from an Unmanned Aerial System Using Learning Algorithms. *SBIR & STTR: Dept. of Defense*. Available at: <https://www.sbir.gov/sbirsearch/detail/1413823>.

Conclusion

This dissertation has explored how meaning is constructed via a technostrategic discourse to make killing in war palatable to Western liberal conscience by techno-logical problem-solving. By looking back to the philosophy of Giambattista Vico, I argued that we can begin to reconceptualize what it means to be human in an era of artificial intelligence and algorithmic ethics. Thinking through first order principles of epistemology, ontology, the nature of language, and insights of poetic wisdom on moral intuition, re-contextualizes the techno-logical era within a broader discourse of ethical theorizing. Tracing the rise of computing power in war and how meaning is constituted quantitatively and algorithmically in war, we can see how abstraction from the human consequences of killing seeks to construct technological war as inherently more ethical than the barbarism of past conflicts. Nevertheless, as I have demonstrated throughout, compressing the strategic, political, and ethical uncertainties and contingencies of war into neat quantifiable and measurable boxes functions to replace an ethics of practical judgment with computational ethics. As technologies of war and lethal autonomous weapons systems are being developed to improbable depths, we must fundamentally reassess our assumptions of ethics in the technological era. On this journey I argue that Giambattista Vico may prove our Virgil.

This dissertation explored a number of concrete elements of the computerization of killing in war. Chapter one examined the philosophy of Giambattista Vico and how a turn to his study of language and history can offer insight for constructivist IR, just war, and critical security studies in the technological era. There are three avenues which I view promising for a future of IR and war ethics with a Vichian epistemology. First, Vico provides us a language of critique of rule-based moral reasoning based upon abstraction and the false objectivity of mathematics in moral

theorizing. Such an understanding of ethics divorces it from constitutive elements of what it means to be human, namely the context, time, and place in which rhetorical arguments were made for particular audiences and circumstances. This emphasis on the particular and contextual instead of the universal and de-contextualized pushes back against positivism that continues to dominate IR today and has seeped into ethical thought in just war revisionism. Second, Vichian thought paved the way for early studies of anthropology and hermeneutics, both of which are integral to the interpretivist turn in constructivist IR today. Thus, if we are to take the reflexive turn seriously, we ought to interrogate the earliest articulation of inter-subjective humans as historical, proffered by Vico in his *New Science*. Third, Vico proffers a philosophy of history through which we can interpret the development of AI as a problem-solving tool. Thus, when man reaches the last stage of history where he falsely believes that his mind can encompass God's mind, a historical *ricorso* occurs returning man to poetic wisdom. This poetic wisdom man saves himself by preserving his humanity.

In chapter two, I take Vico's notion of poetic wisdom and invert it from a poetic wisdom of heroic (Homeric) poems and focus on the everyday lived experiences of soldiers and civilians in warfare. This poetic wisdom saves our ethical theorizing from abstraction and quantification, by re-engaging our moral intuitions by connecting us to the human suffering of another in war and conflict. Thus, my drive in the turn to the poetic throughout is threefold. First, it emphasizes the contingent, paradoxical, and uncertainties of warfare as opposed to the pursuit of a science of warfare proffered by techno-optimists. Second, it reconnects us to war as an immensely human experience, which appeals to our moral intuitions of practical judgment as opposed to a computational ethics that attempts to render all human experience into mathematical theorizing.

This divorces us from the complex ethico-political dilemmas of war and makes killing a more mechanistic process. Finally, this chapter sought to highlight the divide between just war revisionists and traditionalists and how just war thinking ought to incorporate Vichian assumptions. Vico posited that the foundations of just war and international law today via Grotius failed to take into account the variety of concrete human history in the formation of the law of nations. Thus, understanding the humanist critique of early international law may aid us going forward in understanding ethics in an era of AI and how law will look in the future world order.

Chapter three takes a micropolitical look at the space of contestation at the RAND Corporation in the 1950s and the advent of computer-based wargaming. Looking into the logics of mutually assured destruction, quantification of political psychology, and the infighting between social sciences and mathematics over the nature of the social world, I highlight the tensions inherent in understanding war. This is both a foil for the quantitative/qualitative divide in social science, as well as addressing how early nuclear strategy employed a technostrategic discourse that enable the casual discussion of tens of millions of dead. Early on, many at RAND met with horror the discovery of the H-Bomb and its destructive capabilities. While others continued on in work looking to find the maximum efficiency in money spent, bombs dropped, and targets destroyed. Although these were not coated in ethical terminology, there were clear ethical dilemmas that were being swept away in favor of notions of objectivity and scientific rationality. This is exemplified in the short-lived Cold War Game, whereby even the most bellicose proponents of nuclear threat posturing tempered their play faced with the real-world consequences of having to make the decision themselves. This however, slowly faded away as computer simulated war games began to predict with confidence that the U.S. would prevail in a nuclear exchange with the

Soviet Union. Ultimately, this ethical investigation into the advent of computer-based war gaming exemplifies the effects of abstraction and divorcing war-making from its human consequences at the micropolitical site of RAND Corporation in the 1950s and 1960s.

The fourth and final chapter continues the discussion from chapter three with broader brush strokes, by exploring the perfection of algorithmic warfare from smart bombs, to collateral damage estimation algorithms, and metadata drone assassinations. I argue that this trend represents a shift from an ethics of practical judgment to a computational ethics, that eliminates due care for civilians from the equation. Proponents argue that war becomes an inherently more ethical space by virtue of utilizing advanced battlefield technologies. However, as this chapter argues, a different kind of computational ethics is prioritized that necessarily eliminates that which is unquantifiable. However, the constructions of ‘terroristness’ via SIM card metadata calculations of probability obscures the basis from which life and death decisions are made in the U.S. Global War on Terror. Hence, there is a false belief that these technologies of war and computational algorithms are somehow better suited to accurately predict who is a legitimate target in war and who is illegitimate. However, as the empirical record has shown, this is not the case. More importantly, is that it undermines the legitimacy of the mutual right to kill and be killed in combat, which underpins the legal and ethical justifications that distinguish war from murder. Ultimately, algorithmic warfare raises essential epistemological questions of knowledge construction that Vico offer guiding questions for in the years to come. As AI is being developed to improbable depths, we must ask ourselves what it means for a machine to take a human life, and how it eases our liberal conscience of killing in war in an attempt to escape the human condition.

In sum, this dissertation explores the complexities of modernity through the process of algorithmic warfare from 1950s nuclear wargaming to killer robots of tomorrow. By probing our ethical, epistemological, and ontological assumptions in attempts to construct a science of warfare, I examined a number of key cases in the recent history of U.S. practices of war. Although such an exploration is an ongoing project and these cases were meant to be illustrative of wider social trends, the goal is to re-contextualize these purportedly objective and timeless truths into their embedded social, discursive, and temporal contexts. War is an experiment in catastrophe; believing that we have created a science of war risks neglecting the uncertainty and contingency of war, its only timeless essence. While the ethics of war, critical security and constructivist IR have much to interrogate for years to come, I believe that Giambattista Vico may aid us in our endeavors to make sense of late modern warfare. “Today we glory in science and in cybernetic instruments, entrusting our future to them, forgetting that we still have the problem of finding ‘data,’ of ‘inventing them,’ since the cybernetic process can only elaborate them and draw consequences from them. The problem of the essence of the human genius and of its creativity cannot be reduced to that of rational deduction, which modern technology is developing to improbable depths.” –Ernesto Grassi, *Vico and Humanism* (1990).