

USAF Risk Management in Counterinsurgency:
Emphasizing Considerations of Civilian Life and Moral Dimensions

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Elijah Alexander Kidd

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On my honor as a University Student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments

Advisor

Kathryn A. Neeley, Associate Professor of STS, Department of Engineering and Society

Civilian Lives Matter:

Does the military advantage to be gained from striking a target outweigh the anticipated incidental civilian loss of life and property if this target is struck?

-Air Force Doctrine Publication 3-60

On October 26, 2020, a United States air strike was called to target a Taliban commander. The air strike ended up killing three civilian children in addition to the insurgent. (Crawford, 2020, p. 1) In this situation, the U.S. military personnel involved in the decision-making process decided that the military advantage of killing the Taliban commander outweighed the lives of three innocent children. What methods were used to reach this conclusion? How was the pilot able to pull the trigger knowing that innocent children were in the vicinity? These questions cannot be answered by simply browsing United States Air Force (USAF) documentation.

The United States has employed air power in “more than a dozen conflicts against guerillas, so-called bandits, and other irregulars.” (Corum and Johnson, 2003, p. 3) However, the beginning of the 21st century marked a new era of counterinsurgency (COIN) that sprang up in multiple Middle Eastern locations. The modern era of COIN missions and the increased demand for air strikes brings the issue of civilian casualties to the forefront of military scrutiny. (Crawford, 2020) The strategies and tactics used by the USAF in COIN operations rely on quantitative risk analysis and do not put primary importance on minimizing civilian casualties. If the flaws in the risk management strategies surrounding COIN missions are not analyzed and corrected, lives will continue to be needlessly lost. This work aims to show that the USAF risk management system fails to consider moral responsibility in both the classification of risk and actions taken in response to risk. This topic ties in directly with my technical project of creating a novel light attack aircraft design for the annual American Institute of Aeronautics and

Astronautics undergraduate competition. This newly created light attack aircraft design is optimized for use in COIN environments by maximizing versatility in close air support situations.

Investigating the sociotechnical systems surrounding USAF risk management by applying a model of risk management analysis yields a better understanding of why civilian casualties are prevalent in COIN operations. Risk management analysis is a technique used to critique or validate a risk management system. In this case, a model published by Rachel Hollander based on moral responsibility is used to analyze the USAF risk management sociotechnical system. There is published information on civilian casualties due to COIN operations and USAF procedural documents. However, the intricacies of the risk strategies used by the USAF remain unknown; but applying Hollander's risk management analysis brings a new perspective to the situation.

Costs of War:

The COIN sociotechnical system consists of constantly changing actors and interactions. Accordingly, this environment is described as both "complex and chaotic" by researchers devoting their professional career to the subject. (Connable, 2012, p. 33) The main actors concerning civilian casualties in COIN are insurgents, pro-government forces (PGF), and civilians. PGF is a term used to encompass the U.S., its allies, and the Afghan Government, excluding all insurgent or anti-government forces. (Crawford, p. 6) Whereas civilians are defined as any non-militant person living in areas of conflict. However, the interactions between two actors of any group may change drastically given the situation and surrounding environment. The following sections present statistics regarding civilian casualties and discuss their implications on the COIN sociotechnical system.

One flaw specific to COIN missions is the act of pilots targeting civilians to suppress insurgencies. (Hultman, 2012) Researchers from Johns Hopkins University estimated that in a span of 40 months between 2003 and 2006 over 650,000 civilians were killed in Iraq conflicts alone. (Hall and Stahl, 2006) This staggering number speaks volumes to the impact COIN operations and insurgency regimes have on a region. However, this data is extremely generalized and includes civilian deaths caused by insurgent forces. In contrast, shown below in Figure 1 are the reported civilian casualties caused specifically by PGF air strikes in Afghanistan from 2006 to mid-September 2020.

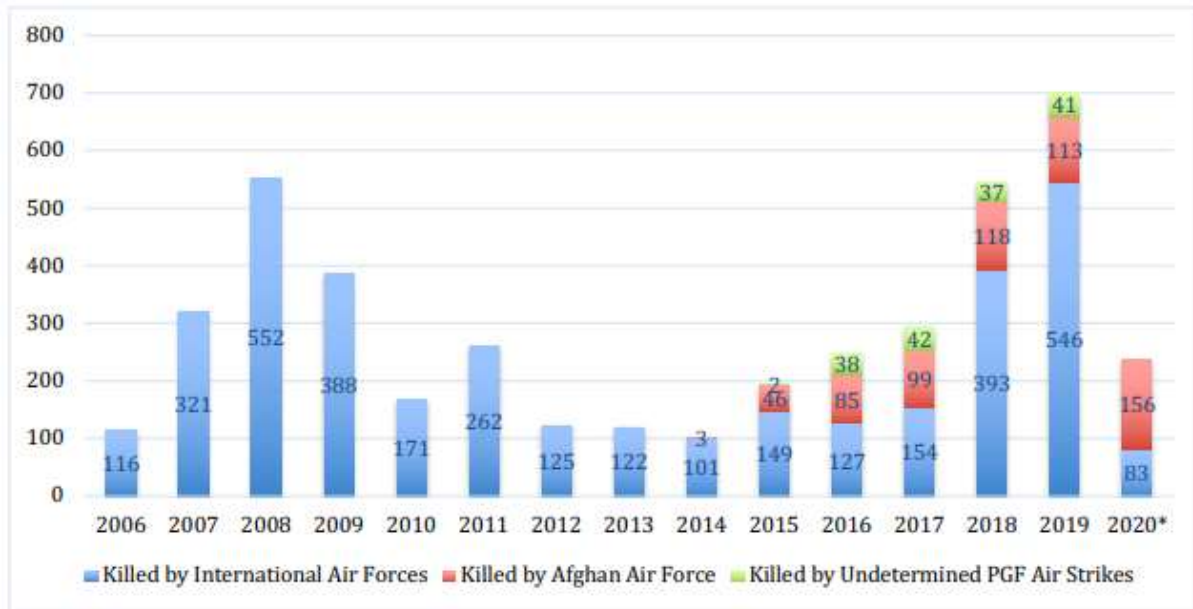


Figure 1: United Nations Assistance Mission in Afghanistan (UNAMA) Reported Number of Civilians Killed in Afghanistan by Pro-Government Air Strikes, 2006 – September 2020 (Crawford, p. 6) The number of civilian casualties in Afghanistan has been steadily increasing over the past six years.

The increase in civilian casualties in recent years can partially be attributed to the increased role played by the Afghan Air Force (AAF), a complicating variable that will be addressed later in the conclusion. However, International Air Forces are still responsible for the majority of the

casualties since 2015. (Crawford, p. 6) The borderline exponential increase in civilian casualties over the past six years establishes the scope of the problem. Thousands of innocent civilians will continue to be killed in the upcoming years if the USAF risk management system does not alter and improve their strategies.

This increase in civilian deaths seen in Figure 1 can be directly linked to condolence payments made by the U.S. in Afghanistan during this period. The U.S. argues the validity of these civilian casualty numbers. For example, UNAMA asserts that 546 civilians were killed by international air forces air strikes in 2019, while the U.S. insists that only 97 civilian casualties were caused by U.S. air strikes. (Department of Defense, 2019) However, the U.S. acknowledges injuring and killing of Afghan civilians as military strategy through condolence payments. Seen below in Table 1 are the condolence payments made to Afghans by the U.S. from 2015 to 2019.

Table 1: U.S. Military “Condolence Payments” in Afghanistan for Deaths and Injuries, 2015-2019 (Crawford, p. 8) Significant payouts have been made to the families impacted by civilian casualties in the past 5 years.

Year	Number of Condolence Payments	Total Paid
2015	11	\$ 47,475
2016	297	\$ 1,370,684
2017	26	\$ 128,389
2018	56	\$ 163,337
2019	65	\$ 314,020
total	455	\$ 2,023,905

These payments have continually been increasing since 2015, apart from the outlier in 2016, and the 2019 total payment is more than the 2017 and 2018 payments combined. While these payments may seem like a positive improvement in the way the U.S. military approaches civilian casualties, it instead highlights the systemic lack of moral responsibility found in the U.S.

military. By taking the 2019 total of condolence payments, \$314,020, and dividing that number by the 97 U.S.-reported civilian casualties in 2019, one can see that the U.S. military values an Afghan civilian's life at approximately \$3200. The intricate morality involved with putting a price on a human's life will be discussed in more detail after a model for analyzing risk management is presented.

The research question for this work relates to understanding how the tactics currently used in COIN missions are flawed and not optimized to reduce loss of life. It was previously unknown how the USAF system in place for risk assessment and analysis functions and how to begin improvement. However, it has been shown through previous research that "campaigns that target civilians indiscriminately increase support for insurgency among civilians." (Pechenkina, 2017, p. 1) Therefore, the act of killing civilians not only violates the moral considerations of COIN operations but also strengthens the power and support of the insurgent regime.

Bringing the civilian death count to zero is not the goal, as it would not be achievable. However, decreasing this number for future COIN related missions will not only save lives but also increase the effectiveness of COIN campaigns. This process starts by analyzing the way the USAF goes about classifying and communicating risk at an organizational level and assessing the weaknesses. This work investigates the sociotechnical systems surrounding USAF risk analysis and classification to yield a better understanding of how to minimize civilian casualties in COIN operations. A model of risk analysis found in a chapter from *Acceptable Evidence: Science and Values in Risk Management* by Rachelle Hollander will be used in order to interpret and analyze the way the USAF classifies and manages risk. Hollander's model discusses and takes into consideration scientific evidence, as well as human values and morality.

Science, Politics, and Responsibility:

Rachelle Hollander investigates the relationship between science, politics, and responsibility in risk management in a book she co-authored, titled *Acceptable Evidence: Science and Values in Risk Management*. (Hollander, 1994). This work aims to understand the concepts and ideas dictated by Hollander and use them to evaluate the USAF risk management strategies. The thesis of her model revolves around a “new acknowledgment of our collective moral responsibility” due to the highly political and social context of the modern day. (Hollander, p. 160). The model is also centered around “more sophisticated scientific and ethical analysis” completed by engineers, policymakers, and scholars. Hollander believes that this collaborative diversity in thought and strategy is crucial to determining acceptable risk and acceptable evidence successfully.

Hollander borrows the definition of moral responsibility described by John Ladd and emphasizes two major qualities that separate moral responsibility from other types of responsibilities. The first characteristic is that “moral responsibility is forward looking” and instead of focusing on who or what to blame, it works towards preventing failure in the first place. Hollander describes moral responsibility as “the exercise of moral foresight” which directly aligns with the overall risk management goal of mitigating and minimizing risk before it happens. A second distinction of moral responsibility that Hollander highlights is its nonexclusive nature. Hollander and Ladd argue, “it is not the case that just because someone is morally responsible for something, ‘other persons are not responsible’ (Ladd, 1982, p. 9).” (Hollander, p. 162). Moral responsibilities lie not only with an individual but are shared and divided across an organization. Ladd describes how moral responsibilities vary “only to the extent that one person is better able to do something about [them] than others.” (Ladd, p. 9) This

becomes an important concept in hierarchical organizations such as the USAF where responsibility and power are strictly organized and divided.

Hollander also focuses her model on the moral and ethical dimensions of performing scientific analyses or tests. She argues, “the decision to use a scientific test at all sometimes has moral dimensions... [and] the decisions about which test to use must also have moral dimensions.” (Hollander, p. 166) Hollander uses the example of workplace drug testing as a prime example of the moral dimensions of scientific testing. An authority figure must first make the decision to test their employees and then decide which test to use. This immediately introduces the dilemma of having to choose between a test that gives more false positives or one that has more false negatives. The answer comes down to the consequences of each respective false test result and in this case, the authority figure would have to decide between the possibilities of over accusing people of using drugs or missing someone that is under the influence. Therefore, Hollander asks, “what are the grounds for deciding to use a test that will indicate that some people are affected who in fact are not or a test that will not identify everyone who is affected?” (Hollander, p. 167-168) The moral dimensions of any given situation shape the answer to this question and cause major discrepancies between scenarios. Hollander hypothesizes that all the questions surrounding scientific tests and analyses are based in morality and “are not scientific questions, as they do not have scientific answers”. (Hollander, p. 168) These intense moral dimensions change the playing field of every situation to such a degree that Hollander states, “all scientific tests cannot be equally ‘good.’ The goodness of a scientific test depends on personal and social values.” (Hollander, p. 167) This model brings quantitative risk management practices and techniques into question, seeing as individual and collective morality play such an important role.

Hollander’s model of analyzing risk management systems and interactions can be used to assess the 2019 USAF risk management framework in order to better understand why civilian casualties occur so frequently. The modern USAF 5-step risk management process can be seen below in Figure 2.



Figure 2: USAF 5-Step Risk Management Process (Rauch, 2019, p. 17) This continuous cycle of steps is used by the USAF to analyze and manage risk.

This flow chart depicts the full risk management cycle the USAF employs on a continuous basis. The risk management document goes into a thorough step by step description of how risk is handled and the responsibilities of individual personnel in any given situation. Analyzing this document using Hollander’s model reveals significant clarity on the sociotechnical system surrounding counterinsurgency operations with respect to managing risk.

A second area of analysis for the USAF risk management system is the quantitative nature of their risk assessment. A sample USAF risk matrix can be seen below in Figure 3.

Risk Assessment Matrix			PROBABILITY					
			Frequency of Occurrence Over Time					
			A Frequent (Continuously experienced)	B Likely (Will occur frequently)	C Occasional (Will occur several times)	D Seldom (Unlikely; can be expected to occur)	E Rarely (Improbable; but possible to occur)	
SEVERITY	Effect of Hazard	Catastrophic (Death, Loss of Asset, Mission Capability or Unit Readiness)	I	EH	EH	H	H	M
		Critical (Severe Injury or Damage, Significantly Degraded Mission Capability or Unit Readiness)	II	EH	H	H	M	L
		Moderate (Minor Injury or Damage, Degraded Mission Capability or Unit Readiness)	III	H	M	M	L	L
		Negligible (Minimal Injury or Damage, Little or No Mission Capability or Unit Readiness)	IV	M	L	L	L	L
			Risk Assessment Levels					
			EH=Extremely High H=High M=Medium L=Low					

Figure 3: Sample USAF Risk Assessment Matrix (Rauch, p. 18) This sample matrix depicts the classifications and probabilities used by the USAF when assessing situations.

The risk analysis techniques and severity level groupings of the USAF can be analyzed through this document. Specifically, this work explores the highest severity level where the USAF classifies loss of assets and death as equally catastrophic.

The first step in understanding the flaws and goals of the USAF risk assessment and management system is to understand the system itself. The Air Force Doctrine Publication 3-60 Targeting is critical to understanding this system. This document explains the basic principles of the law of war and how they shape targeting procedures in the USAF. The most relevant section to the topic of risk analysis is titled Proportionality. This section of the document explores the decision-making process for completing a strike that may incur civilian loss of life or property. By employing Hollander’s model to evaluate these documents, along with other statistics and publications from the USAF, a clear pattern of disregarding morality and improvable practices becomes evident.

Results:

Hollander's model on risk management analysis yields insight on a theoretical level to the issues found in the USAF risk management system. In the following sections, two primary USAF documents are analyzed using Hollander's model: Air Force Instruction 90-802 (Risk Management Framework) and Air Force Doctrine Publication 3-60 Targeting (Law of War). These documents both come directly from the U.S. government and contain indications of significant disregard for civilian life in combat situations. The results produced by this analysis are categorized into three major categories of flaws: quantification, proportionality, and delegation.

1. Quantification

The USAF Risk Management Framework relies too heavily on quantitative analysis and fails to apply moral responsibility. The 5-step process seen before in Figure 1 gives a general overview of the risk management process used by the USAF. However, delving into step 2 more thoroughly, it becomes evident that many moral dimensions are neglected. This step includes sub-step 2.2, "Assess Hazard Severity. Determine the severity of the hazard in terms of potential impact on personnel, equipment, mission or activity." (Rauch, p. 18) This statement falls significantly short of the model and guidelines put forth by Hollander in the previous section. It completely neglects to mention any assessment of possible environmental or civilian impacts and focuses solely on mission objectives and U.S. assets. As previously mentioned, the condolence payments made to Afghan civilians found in Table 1 show exactly what value U.S. military officials place on civilian life, \$3,200. This finding implies that the USAF does not place enough emphasis on the moral dimensions of risk analysis and instead relies on quantitative risk analysis.

2. Proportionality

The Law of War details the moral dimensions of risk analysis in the USAF and the balance they attempt to strike against mission success. However, this document outlines the subjective nature of this process and fails to present a moral proportional balance between the two. The document poses the right question given a mission situation involving civilians, “Does the military advantage to be gained from striking a target outweigh the anticipated incidental civilian loss of life and property if this target is struck?” (LOW, p.2) This question should always be at the front of a decision maker’s mind when determining if an airstrike should be called. However, based on the data and statistics presented previously, this very subjective comparison of civilian life and military advantage has led to significant and unnecessary civilian casualties. This finding highlights the gap in the defined proportionality set forth by the USAF and the concepts of moral responsibility described by Hollander in her risk management analysis model.

Similarly, analyzing the sample risk assessment matrix found in Figure 2 highlights the immoral proportionality used in USAF risk management. In the highest level of severity classification, the matrix lists “Death, Loss of Asset, Mission Capability or Unit Readiness” as “catastrophic” hazard levels. (Rauch, p. 18) However, casualties, whether civilian or friendly, must carry a uniquely significant importance based on the moral responsibility shared by all soldiers engaged in a conflict. There should be no question that a civilian casualty carries a higher severity level than losing an asset such as a weapon or vehicle. This easily overlooked grouping of severity levels shows a fundamental flaw regarding the proportionality used in USAF risk analysis.

3. Delegation

Another fundamental flaw found in the analysis of the Law of War document is that the hierarchical nature of the USAF leads to delegation and the loss of collective moral responsibility. The document states, “commanders should weigh the expected military advantages to be gained... against the incidental loss or injury to civilians.” (LOW, p.2) Placing this onus on commanders to decide the value of civilian lives violates the concept of collective moral responsibility because it disregards the remaining soldiers’ views and opinions. This follows directly from a quote previously referenced by Ladd in Hollander’s model, moral responsibilities vary “only to the extent that one person is better able to do something about [them] than others.” (Ladd, p. 9) This imbalance of power ultimately leaves soldiers to serve under a commander without the burden of collective moral responsibility. Without this moral responsibility holding them accountable, soldiers are significantly more likely to initiate an air strike or open fire when commanded without considering the repercussions.

Conclusion:

This work offers a better understanding of the risk management system that surrounds USAF counterinsurgency operations. The USAF risk analysis and management strategies regarding civilian casualties miss the mark of protecting and valuing human life. Applying Hollander’s model for risk management analysis to two primary sources for conduct from the USAF revealed that there is a systemic underrepresentation of collective moral responsibility. This lack of collective moral responsibility stems from the quantitative nature of USAF risk analysis, immoral proportionality laws, and the hierarchical nature of the military. The gradual shift towards the AAF as the primary actor in Afghanistan air strikes complicates the

presentation of these results. The risk analysis and management frameworks of the AAF will require similar critique and analysis as has been presented for the USAF. However, if the risk analysis and management practices of the AAF were analyzed using the framework outlined previously, the same concepts of collective moral responsibility and qualitative risk analysis would likely be absent.

On the other hand, risk management and analysis in COIN environments is extremely fluid and complicated. Bringing the civilian death count to zero is not the goal, seeing as it is not a realistic goal. In the heat of battle decisions must be made on the fly with little risk information to analyze, inevitably leading to mistakes and casualties. However, when civilian and troop lives are at stake there is little room for error and the USAF must devote more resources to managing and preventing the risk of civilian casualties. Specifically, the USAF must ensure that a larger focus is devoted to both qualitative risk analysis and creating an environment for collective moral responsibility to flourish. However, it is important to note that the “USAF counterinsurgency capabilities will neither deepen nor expand without the strong support of the senior leaders.” (Vick et al., 2006, p. 13) Therefore, individuals with decision-making power must be held accountable for the implementation of a morally responsible risk management system.

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