Delving into Drones:
Secret War Drone Strikes, Mass Media's Role, and the Need for Better Data

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Abstract

Since their introduction, drones have evolved into a preferred weapon platform for many of the world's military forces. They are prolific in their utilization and deadly in their ability. However, drone strike data is highly inconsistent, as is the extent of reported casualties that have resulted from their use. This inconsistency is the impetus for this project's principal goal: to assess the degree of variation between existing databases and to aggregate them in a new meta-database. Using an in-depth analysis of the available drone strike casualty data within an aggregated statistical modeling framework, further insight into this data variability is achieved. This study examines data from seven tracking organizations that measure drone strikes in the so-called 'ghost wars' in Pakistan, Yemen and Somalia, and reveals a high degree of variation in the data. Furthermore, this study examines the relationship between mass media, public opinion, and elites, with the understanding that drone data may influence foreign policy decisions. This study contends that with no publicly available official data sources on these wars, and with dramatic levels of data deviation between the unofficial tracking organizations that currently measure casualty figures, there is a clear need for more consistent drone strike data.

Keywords: Drone; UAV; Predator; Tracking; Casualty; Data

Dedication

I dedicate this work to the other members of my cohort.

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List of Acronyms

AUMF	Authorization for the Use of Military Force
CAP	Combat Air Patrol
CENTCOM	United States Armed Forces Central Command
CHRC	Columbia Human Rights Clinic Counting Drone Deaths project/database
CIA	Central Intelligence Agency
CNN	Cable News Network
DOD	Department of Defense [sic]
ESD	Extreme Studentized Deviate (test)
FATA	Federally Administered Tribal Areas (of Pakistan)
HVT	High Value Target
LWJ	Long War Journal, and accompanying database
MOD	United Kingdom Ministry of Defence
NAF	New America Foundation, and accompanying database
NSA	National Security Agency
NYU	New York University
PBS	Public Broadcasting Service
PMR	Pakistani Management Report, and accompanying database
RAND	Research ANd Development
SAM	Surface to Air Missile
SATP	South Asia Terrorism Portal, and accompanying database
TBIJ	The Bureau of Investigative Journalism, and accompanying database
UAV	Unmanned Aerial Vehicle
UCLA	University of California, Los Angeles
UMASS	University of Massachusetts-Dartmouth Drone Database
VTOL	Vertical Take Off and Landing

Chapter 1.

An Overview Of Drones

1.1. Introduction

Drones have become a highly coveted tool in today's militaries, with a recent RAND Corporation report listing 120 countries as having either acquired or in development of drone technology. Of these, "23 were identified" as being in various stages of fielding armed variants, whether through domestic production or by purchasing models produced elsewhere (Davis et al. 2014, 9). With program expenditures in the billions of dollars, drones operate in some of the most remote regions on Earth and are predicted to continue this role for the foreseeable future (Davis et al. 2014). Firmly established in the global military arsenal, drones have been referred to as "wonder weapons" and as "clean, proportionate, and morally defensible" solutions to decidedly complex conflicts (Sluka 2013, 89; Porch 2013, 345)[1]. But have those terming these programs as a panacea to international threats fully investigated the possibility that their appraisal of drone efficacy is based on imperfect information? In the case of the clandestine conflicts in Pakistan, Yemen, Somalia, for which no official casualty list exists, this article argues that they have not.

The entirety of drone casualty data available to the public is sourced from a select few databases and their respective tracking organizations (Grut et al. 2012). As this study will highlight, the secret nature of the wars in these three states have defied efforts to accurately study the quantities or categories of drone casualties that have occurred within their borders. Because "the drone program is covert, the government

[1] *It is important to note that neither author fully subscribes to these sentiments, and are instead describing the widespread opinions they have encountered in relation to drone use.*

does not release official data on the program", which leaves no baseline measurement as a comparison to database estimates (Metz 2013, 5). The thousands of data points and strike dates within these databases differ in a number of ways across their decade of measurement, but this difference has not been outlined comprehensively in any study to date. The empirical evidence for drone strike casualty data is plentiful, but the quality of that evidence is difficult to determine when the databases are studied independent of one another. Thus, it has been notoriously difficult to ascertain the degree of relative accuracy for any one database. Notably, an aggregated, cumulative format of comparison of these databases has not been attempted until this project. This project's intent to analyze seven drone databases in a comparisons of variation both internally and externally will constitute a decisive step towards assessing the true degree of disparity and ultimate value of this casualty data.

A central assertion of this project is that by comparing the summarized results in a time-series analysis across casualty categories, it is possible to develop a better understanding of the data inconsistencies across and within the databases studied. By creating this new, aggregated database for these 'ghost wars', a deepened appreciation for the gaps in scholarly knowledge on the subject can be reached. The creation of this comprehensive 'meta' database – the first of its kind – is meant to encourage formation of new research on the subject, but is also useful as a reference point for interested readers. I conclude the project by stressing that the extent of data divergence clearly shows that the reliability of drone strike data is distressingly low, and will remain so given the paucity of official information. In analyzing the data in this new, comparative model, the contribution to scholarly research of this project is the production of a new framework for analysis within the meta-database that accompanies this thesis. In summary, this study's primary goal is to create a new database that delineates the discrepancies in the data and to highlight the imperative of exact and dependable casualty information.

A further goal of this project is to demonstrate that there exists a linkage between the drone data analyzed, the public, and elites. A concept borne out in the literature reviewed for this article is that data, and the public opinion it informs, does have an effect on foreign policy creation. Linking the data studied in this project to the concept of a data/foreign policy connection makes apparent that data plays a role in the

influence media can have on elite decision-making, and further stresses the importance of accurate information. Without the accurate and reliable data necessary to advance the literature on drone efficacy in these clandestine conflicts, any logical or intelligent discussion of their operation is stymied.

This thesis is organized in the following format. Chapter one gives a historical account of the development and adoption of drones, as well as a brief summary of civilian casualties in drone strikes, easily the most contentious result of their use. In chapter two's literature review, this project connects this article's quantitative data sections to a broader understanding of how the media and this data effects the formation of public opinion, and how public opinion in turn pressures those who create and implement foreign policy. Chapter three gives an overview of the seven different databases examined in this piece, presents a summarized and illustrated view of the quantitative findings of this project, and indicates knowledge gaps in our understanding of drone strike deaths. The variation present in these databases, and the failure of the media to properly indicate this variation, will also be discussed at length. Chapter four offers a projection of the coming decades of drone use and their importance in modern conflict, as well as a final concluding section that details the key findings of this paper and my own suggestions for future research.

Of note to the reader is that the wars in Iraq and Afghanistan are excluded in this study, as the United States' Central Command (CENTCOM) and the United Kingdom's Ministry of Defence (MOD) have released drone strike statistics for the conflicts in these states[2]. Due to these releases, no independent tracking organizations have measured the casualty data in these countries.

[2] *The Iraq/Afghanistan drone statistics are promising for future study, and there is much more to learn in an independent analysis of these data sets.*

1.2. The Ascendance of Drone Warfare

Drone. Even the word has a vaguely menacing air to it, with a touch of mindlessness. It evokes images of swarming insects, possessed by tireless purpose and the potential for considerable violence. This is a reasonably accurate description of the military instrument considered in this project: the armed unmanned aerial vehicle (UAV), referred to in this project as a drone. In the region they have operated in most frequently, the Federally Administered Tribal Areas (FATA) of Pakistan, the locals have even begun referring to drones as *machays* (wasps, in the Wazirwola dialect), in reference to both the buzzing sound heard as they hover high above, and to the 'sting' of their missiles (Williams 2010, 879).

Common in today's world, the progenitors of drones were first conceptualized in a more primitive form during the 1940s, but the projects were abandoned due to questions of their feasibility given the technological limits of the age. Modern drone use would not appear until *Operation Mole Cricket 19* during the 1982 Lebanon War (Budge 2014; Morris 2000). A secret, multi-year development effort, this war saw the Israeli drone program initiate the first test of modern drones in a combat environment. The Israelis made the innovative decision to use their unarmed, diminutive RPV *Mastiffs drones* as a decoy 'screen' against the Syrian surface-to-air missile (SAM) batteries they faced (Morris 2000). Supported by Israeli fighter jet squadrons, the drone operators had two key goals: 1.) Activate the SAM radars systems so that they could be targeted by the AIM-7F *Sparrow* radar-seeking missiles the fighter jets carried, and 2.) Intercept as many missiles from the SAM sites as possible. The justification for sacrificing the *Mastiffs* in this way was that for every drone fired at, the fighter jet pilots would face one fewer potentially fatal missile. In a decisive victory, the operation resulted in only a handful of Israeli manned jets being destroyed, and the Syrian forces losing 86 aircraft and all SAM sites in the area (Morris 2000**).** This was proof of concept of the value drones could have, and a clear indication that they had a future role in warfare.

The archetypal modern iteration of drones is the MQ-1 *Predator*. It has become synonymous with drone warfare, and has flown the bulk of both surveillance and attack missions in the countries discussed in this project. Although the *Predator* is in the

process of being replaced by its larger and more heavily armed successor, the MQ- 9 *Reaper*, *Predators* are still widely seen as the symbol of armed drone warfare. First utilized in a non-lethal Intelligence, Surveillance and Reconnaissance (ISR) capacity in the Gulf War, the originally unarmed *Predator* has since altered the very landscape of modern combat (Springer 2013). With the ability to launch AGM-114 *Hellfire* missiles added to the *Predator's* tactical repertoire in the wake of 9/11, this "allowed new strategies to be adopted" and was an excellent example of "how a relatively minor technological advance can have big consequences" (The Economist 2014, SS11). To exhibit the pace in which drones - both armed and unarmed - have been integrated into the fabric of the U.S. military, when the U.S. "invaded Iraq in 2003, it had a couple hundred; by the time it left, it had almost 10,000" (The Economist 2014, SS11).

A tenfold increase in the span of less than a decade is unheard of in other cases of military weapon platform adoption. How drones became the leading weapon of anti-insurgency and counterterrorism operations was a similarly accelerated process. Signed in the frantic period immediately following the 9/11 attacks, the Authorization for the Use of Military Force (AUMF) was intended to facilitate swift retaliation against Al-Qaeda, the Taliban, and other enemies of the United States in their newly coined War on Terror. Under the congressional authority granted within the AUMF, what followed was an expansion into other states and provinces that the U.S. deemed to be harbouring terrorists or insurgents: Pakistan, Yemen, and Somalia (Bergen and Rowland 2013). The CIA drone programs in these regions are heavily dependent on the legal authority granted by the AUMF, and there has been much debate surrounding the unclear legality of its application, especially with respect to questions over whether lethal action under the AUMF umbrella constitutes illegal war acts.[3] [4]

Another major factor in the ascendance of drones has been the simple budgetary reality that they are substantially cheaper than manned aircraft. That cost disparity is not lost on top military minds, who have become increasingly budget-conscious given recent

[3] *Joint Special Operations Command (JSOC) and the Pentagon/Department of Defense (DoD) do not have command authority over the strikes in the clandestine wars in Pakistan, Yemen and Somalia.*

[4] *See Ahmad 2013; Cronogue 2012; Bradley and Goldsmith 2005 as examples of pieces where the legal ambiguity of drone strikes has been covered at length.*

announcements of sweeping cuts to all branches of the military (Hagel 2014). Former Secretary of Defence Robert Gates was quoted as saying that because of the current generation multi-role fighter F-35 *Lightning II*'s prohibitively high development and per-unit costs in comparison to drones, he envisioned it as being the "Pentagon's last manned fighter aircraft" (Benjamin 2012, 17). The F-35's final delivery cost is projected to be between $105-$125 million per unit, depending on the variant (conventional, vertical take-off and landing (VTOL) etc.) (Butler 2013).

Drones, in contrast, come as a consolidated package – the drone, the command-and-control center, and other equipment are all included in the purchase. An analysis by TIME contributor Winslow Wheeler, utilizing Department of Defence (DOD) Selected Acquisition Reports (SAR), calculated the total cost at $120.8 million for *four* MQ-9 *Reaper* drones and their associated infrastructure (Wheeler 2012). Called a Combat Air Patrol (CAP), this group of four drones represents a significant cost advantage and for the Air Force/DOD compared to a single next-generation combat aircraft like the F-35 (Wheeler 2012). This is no minor point. With the military oft criticized for wastefulness in an economic atmosphere that has become increasingly hostile to unnecessary expenditures, any cost-cutting measures are seen as politically important. The shortened development time and low per-unit cost of drones make them a very attractive option for today's militaries.

To summarize, within the span of only a few decades drones have evolved from their simple, ineffective beginnings to become what former CIA director Leon Panetta called the "only game in town" in the geographically and politically inaccessible regions discussed in this project (Callum 2010). Drones also represent significant strategic flexibility. Since the areas in which they operate (like the tribal agencies in Pakistan) have no true air defence capabilities, drones can launch strikes with impunity. Their unmanned nature removes the fear of killed or captured pilots entirely, making drones very capable of both ISR and armed strikes in a low-risk platform. Given these benefits, drones are cemented as a weapon without equal in today's military arsenal. However, even among their most ardent supporters their remains the unavoidable reality that many of these same strikes produce one undesirable and divisive outcome: civilian casualties.

1.3. The Civilian/Combatant Divide

A focal point in the drone debate has concerned the nature of drone strike deaths, particularly the classification of whether individuals killed were 'combatants' or 'civilians'. The third Geneva Convention, as outlined in article 4A, states that combatants can be defined as "persons who participate in the use of a weapon or weapon-system in an indispensible function" (Ipsen 1995, 81). Additional protocols "stress the need to protect civilians during wartime," and were created to ensure that civilian populations would never become intended targets (Van Engeland 2011, 17). Further, targeting civilians has become a grave violation of international norms and law, and this has remained the *de jure* and *de facto* understanding of the world's nations since the conclusion of the Second World War. Breaches of these Conventions, for example Iraqi shelling of Kurds with chemical weapons, have been met with condemnation and international efforts to bring those responsible to justice.

In theory, unarmed individuals should be clear 'non-targets'. But those inadvertently injured or killed in a military operation, which may occur in wartime, must be recorded as civilian casualties as a point of complying with the Geneva Conventions. In practice, this has not been the case with respect to drone strikes. Due to both the unique approaches to how combatants are categorized, and the fact that war has not been officially declared in the states where these strikes occur, a legal 'grey area' has been created that has legally insulated drone strike programs. A leaked CIA document that reported drone activity in Pakistan in 2010-2011 was instrumental in interpreting this creative labelling. A high-value target (HVT) would be listed by name, alleged acts, and affiliations. In contrast, any additional casualties resulting from a drone strike were more likely to be labelled as "other militants," "foreign fighters," or most worryingly, "unknown" (CIA report 2011). In the investigation of the report, of the 600 deaths reported in the strikes, only one individual was listed unequivocally as a "civilian" (CIA report 2011). This way of presenting casualties has been widely denounced as a way of sanitizing a program that, its value as a military and intelligence tool aside, still harms non-combatants.

Collateral casualties have been frequently highlighted as being unacceptably high in drone programs, and some argue that the situation has not improved. In a count of approximate HVT kill ratios using the "lowest death toll reported in any newspaper" for drone strikes in Pakistan, Hudson et al. of the Southwest Initiative for the Study of Middle East Conflicts SISMEC have reached some possible conclusions (Hudson et al. 2011, 132). In the earliest recorded cases of strikes in 2001-2002, the drone program had an HVT-to-other ratio of 1:5, meaning for every HVT killed, 5 other individuals were also killed (Hudson et. al 2011). By the end of 2010, that ratio rocketed to 1:147, a figure scholars and international policy makers have viewed as being far too high a level of collateral damage to justify targeting so few HVTs (Hudson et. al 2011; Plaw 2013; Grut et al. 2012). This ratio also means that for many strikes, *no* HVT was killed, and all resulting casualties from a strike would be strategically placed in other, less clearly defined categories (CIA 2011). This curious methodology of combatant classification is a recurring theme in drone literature, with Christian Enemark stating that in 2013,

> Several White House officials were reported as claiming that President Obama had embraced a method of counting casualties that 'in effect counts all military-age males in a strike zone as combatants…unless there is explicit intelligence posthumously proving them innocent' (Enemark 2013, 48).

The ambiguity over what constitutes a valid combatant has been mirrored in the databases that have attempted to code for civilian/combatant casualties and which will be analyzed in this study, specifically: the *New America Foundation (NAF),* the *Long War Journal (LWJ)*, the *Bureau of Investigative Journalism (TBIJ)*, the *South Asia Terrorism Portal (SATP)*, the *Columbia Human Rights Clinic's Counting Drone Deaths Project (CHRC)*, the *University of Massachusetts-Dartmouth Targeted Killing Project (UMASS)* and finally an entirely new database I have fashioned from the data in a leaked Pakistani government document*, the Pakistani Management Report (PMR)*. Highly divergent in the numbers they present, the large disparity between these seven databases will be discussed in a later section. Nonetheless, some illustrative totals are useful at this stage of the article.

A number of countries have had drone strikes occur within their borders, but Pakistan is -by a significant margin- the state that has experienced the most drone

strike. In this article's accompanying database, Pakistan accounted for 87.34% of drone strikes, with Yemen (12.15%) and Somalia (0.51%) trailing substantially. Evidently, the concentration on Pakistan experiences with drone strikes seen in the literature is warranted.

Much of the coverage in the media and within these databases focuses on the civilian deaths caused by these strikes, and as an especially contentious topic this is unsurprising. However, the true level of civilian casualties has been particularly difficult to discern. In a 2011 statement, a high-ranking counterterrorism advisor in President Obama's cabinet was reported by the New York Times as stating, in reference to drone strikes, "there hasn't been a single collateral death because of the exceptional proficiency, precision of the capabilities we've been able to develop" (Shane 2011, para. 4). With an effective claim of *zero* non-combatant casualties, many of those who administer the databases inspected in this paper decried the figure as extraordinarily unlikely, given the breadth of domestic accounts and news reports that had reported civilian losses (Walters 2014, 287; Boyle 2013, 7). After backtracking in a subsequent statement describing how "American officials could not confirm any such deaths," one thing became abundantly clear: the U.S. government has not been entirely forthcoming when evaluating the levels of non-combatant casualties resulting from drone strikes it has operated (Shane 2011, para. 11; Walters 2014).

As stated previously, to date their has been no release of official casualty data for the clandestine conflicts in Pakistan, Yemen and Somalia. This withholding of official casualty data by drone program operators created an information gap that was quickly filled by third-party tracking organizations. With their principal method of casualty determination being the scrutiny of regional and international news reports of strikes, the databases discussed in this article compile their casualty data from these media reports and other investigations. Depending on the methodology used by the tracking organization, the conclusions reached in determining drone strike casualties can be radically different, even when sourcing from identical media reports.

To illustrate, the New American Foundation (NAF), a non-profit organization widely considered as one of the leading databases on the subject, tracks drone strike

casualty figures in Pakistan and Yemen. NAF's listed casualty figures for Pakistan in 2010 as follows: 788 enemy combatants and 16 civilians killed (NAF 2014). The Bureau of Investigative Journalism (TBIJ) maintains another oft-cited database, but employs different casualty coding. TBIJ's alternative coding approach resulted in figures for the same year as 751 enemy combatants and 84 civilians as the 'minimum' amount of civilians they estimate to have been killed (TBIJ 2013). Even ignoring the Bureau's 'maximum' estimate of 196 civilians, the two figures are highly dissimilar. The reader must understand that these figures represent a single year for only two of the seven databases studied in this project, and that even greater inconsistencies will be revealed in subsequent sections. This high degree of variation in the data presents a major obstacle to any attempted research on the topic; without consistent and reliable data, studies on drone strikes will struggle to develop grounded conclusions.

Chapter 2.

Media, Public and Foreign Policy Linkages

What follows is a brief literature review of scholarship that has linked the media to foreign policy. The goal of this section is to clarify the concept that media reports on conflict shape foreign policy. By doing so, this section makes evident that drone data does not exist in isolation. Instead, it is the evidence used to further particular interests and policies, and its quality and consistency are paramount in making informed decisions.

A number of theoretical frameworks are discussed in this section, and it should be noted that none fully account for the data/foreign policy relationship analysed in this paper. As will be discussed in the concluding *Lessons Learned* section of the literature review, this is primarily due to a lack of social science scholarly publications that address this correlation. With that understanding, each theoretical model contributes something different, and they all build upon a common assumption: media matters.

To augment this review and build on some of the considered theoretical elements, the section will conclude with both a case study of the connection in a real-world setting, and an explanation of how this process relates to the databases discussed in this paper.

2.1. Indexing Hypothesis

First proposed by noted political science and communications scholar Lance Bennet (1990), the indexing hypothesis centers on the notion that journalists and the media reports they produce are shaped by the prevailing opinions and goals of societal elites. Bennet's conclusions are predicated on the idea that government (elites) and the

press (mass media) have an understanding in which the government is aware that they are "broadly accountable to the public" and that the media is the "key to attaining the desired level of public accountability" (Bennet 1990, 105). Hence, in circumstances where elites have need of acquiring this accountability, the media is the channel through which they communicate their interests. The media, within the indexing hypothesis, is little more than a delivery mechanism through which elites:

> Exert influence such that American foreign policy can be made to defend their interests, as well as to manipulate mass consciousness to gain public support for these policies (Jentleson 1992, 51).

Originally intended to be a cumulative take on the existing media-government relationship, Bennet termed the hypothesis a way to "distil" both the knowledge acquired through direct experience with various forms of media and a response to other disparate theories that existed at the time (Bennet 1990, 107). This remains one of the first attempts at coalescing the various approaches to understanding the interactions of media and government by creating a "common structural, behavioral and attitudinal framework" (Bennet 1990, 110). The resulting indexing hypothesis was used by other authors as a way of re-assessing the role media had in relation to elites at the very highest levels of government, for instance in Brody's (1991) *Assessing the President: The Media, Elite Opinion, and Public Support*.

2.2. Mediatization

The indexing hypothesis, written about extensively in the earlier years of media/elite literature (Bennet 1990; Jentleson 1992; Brody 1991 and others), is viewed by other, more modern authors as ultimately portraying an incomplete association between the two.

In response to the hypothesis, other scholars believe that media and journalists are not simply a 'conveyor belt' for elite views. These authors acknowledge influence does occur, but ultimately reject the suggestion of the indexing hypothesis that mass media *always* aligns its message within pre-determined rhetorical frameworks established through elite pressure (Brody 1991, Bloch and Lehman-Wilzig 2002).

Although the authors admit the media may acquiesce to demands in select cases, these are the exception. An example given is the case of an "international crisis," where elite interests are urgently communicated to the public by necessity, and that the media may have little recourse in this environment: for example emergency broadcast systems. Yet these authors hold that the media remain independent strategic actors in most circumstances (Bloch and Lehman-Wilzig 2002, 168; Baum and Potter 2008).

To reiterate, critiques of indexing scholarship argue that beyond merely presenting information in line with the desires and opinions of elites, the media is instead a participant in both how the information is presented and in what information is selected for presentation. This "active involvement," termed "mediatization," has become closely linked to conflicts in the modern era (Cottle 2006, 52-53; Bennet 2003). To clarify the term, Cottle states that war can become:

> Variously defined, framed and visualized; elaborated, narrativized and evaluated; moralized, deliberated and contested; amplified and promoted or dampened and reconciled; conducted and symbolized; enacted and performed. In a word: mediatized (Cottle 2006, 185).

Put simply, media and its offerings shape and inform our opinions on conflicts because they are the *exclusive* lens through which we are able to interpret such events. John Zaller, a scholar of elite leadership and public opinion, states that "most citizens are very poorly informed about public affairs in general and foreign affairs in particular" and look to the media to amend their ignorance (Zaller 1994, 187). He offers the case of the 1983 conflict in Nicaragua, where a poll of U.S. citizens revealed, "only 13 percent of the public knew which side the U.S. was supporting" (ibid, 187). Cottle argues that journalism is the central actor in this interaction between media and conflict:

> […] journalism remains the principal convenor and conveyor of conflict images and information, discourses and debates, and for this reason deservedly takes the lion's share of discussion. It is in and through the different mediums, forms and appeals of journalism that most of us come to know about the conflicts and contests waged in the world today and this daily infusion is delivered into the rhythms and routines of our everyday lives – and can do so 24/7 via real-time modes of communication (Cottle 2006, 3).

The concept of mediatized conflict should be unpacked to better explain its power. Shunning terms like 'bias' or 'distortion', Cottle insists that the media's role and mediatization of conflict are far more nuanced. Designating the labels of 'mediator' or 'messenger' as "neutrally-conceived," he instead argues that media is "capable of enacting and performing conflicts as well as reporting and representing them" and that the media is also "doing something" far beyond the more traditionally understood role of a strictly impartial observer of events (Cottle 2006, 9). Expressing the need to understand "*how the media do things with conflicts"* Cottle describes how this can alter the very fabric of social engagement with global conflict (ibid, 9; italics in original).

Cottle argues that the mass media is not monolithic, and instead allows for a degree of interplay between competing political agendas, cultural considerations, and other elements. He further attests that journalists and reporters are widely presumed to strive towards an ideal of impartiality, but that this assumed impartiality might itself be an erroneous belief (Cottle 2006). Examining mediatization in a deeper context, Cottle's research shows that media has inherent preferences towards *avoiding* impartiality, as is evident in studies of both "international broadcasting organizations" (Cottle 2006, 146, citing Paleyz and Tawney 1992) and "their editors and reporters" (ibid, citing Blaisse 1992; Schmid 1992). The motivations and circumstances for doing so will vary, but media outlets can and do construct rhetoric that may not be considered a 'neutral take on things' (Reese 2004). This mediatization is a conceptual shift from notions of simple bias, as the media is no longer separate from the message. They are, instead, deeply associated with what the message conveys.

The idea that there exists an interaction within how media engages with conflict is a core conceptual element in addressing the importance of drone strike data. The heart of that analysis lies with the understanding that conflicts exist within an environment thick with information, but that the quality of the information provided is especially important (Cottle 2006, 4; Zaller 1994). Given its position as the 'filtering entity' between current events and public access to information, this role has tremendous import. Information gained in this way, mediatized though it may be, is nevertheless used to make decisions on individual preference for future policy action. Zaller elaborates this, claiming that:

> […] in an ideal democracy, the public should seriously evaluate each new issue, decide what it wants to have done, and authorize its leaders to take appropriate action. The ideal, thus, is one of prospective (or forward-looking) citizen control of policy (Zaller 1994, 202).

Again, this 'ideal democracy' Zaller portrays is contingent on an informed citizenry, which is itself reliant on the media in order to become informed. Yet he cautions that the average citizen, in reality, is not in this position of adequate information (Zaller 1994). Indeed, the more likely scenario is a conflict where "the most that can be expected is that [the public] choose among competing elite and media messages – at least in cases in which competing messages are present – on the basis of source credibility" (Zaller 1994, 188). In cases where such credibility is difficult to determine, the likelihood of successfully and intelligently analyzing a conflict becomes increasingly limited.

To conclude, mass media must be engaged with to learn more about a given situation, military conflict or otherwise; there are simply no other options for the average citizen (Reese 2004). The dilemma is when the presentation of data/information occurs without accompanying assurances of credibility. This has the effect of narrowing the analytical choices available to an individual evaluating their own response to a conflict. Drone strike data presentation is certainly no different, and may be even more confined in terms of data accuracy. Cottle and Zaller's demands for a more profound understanding of the possible mediatization of conflict is mirrored within this project's attempt to do so on the most rudimentary level of the drone debate: the data, and who is providing it.

2.3. The Rational Public, The Media, and Elites: Links in a Chain

In light of the previous section, the role of media in wartime circumstances is undeniable; it is both present and pervasive. But what role does the public play in shaping foreign policy? W. Lance Bennet summarizes it thusly:

> The challenge of understanding the public dimension of foreign policy is to identify the underlying linkages among reporters, publics, and political

> elites that enable us to talk about different cases within the same analytical framework (Bennet 1994, 19)

Knowing the actors and their respective roles within the process of conflict information dissemination is a crucial step towards understanding these linkages. With their 2008 seminal piece *The Relationships Between Mass Media, Public Opinion, and Foreign Policy: Toward a Theoretical Synthesis,* Matthew A. Baum and Philip B. K. Potter trace the correlation between sources of information and how they can influence foreign policy. To do so, they identify three key actors: 1.) Public Opinion, 2.) Mass Media, and 3.) Decision Makers. It is the linkages between these actors, they argue, that affects foreign policy decisions at the very highest level (Baum and Potter 2008). To better understand this interrelationship, it is necessary to fully expound on the actors involved.

The first actor, and likely the most relevant, is the public. Baum and Potter contend that the public is an integral part of maintaining a peace-minded foreign policy, and that their participation and engagement is not optional if success in this matter is desired. They further acknowledge that recent scholarship has warned that only by taking the public's role into account can this balanced foreign policy be established in any lasting and effective manner, because the citizenry "are in fact generally coherent, consistent, and stable and that – for the most part – they make a good deal of sense" (Page and Bouton 2006, 17). An important caveat by the authors is that although "typical individuals" may not be well versed in the intricacies of international politics or foreign policy, their "collective behavior was nonetheless efficient and rational" (Baum and Potter 2008, 44). Individual political preference is a desire to correct any unfamiliarity with foreign policy, and to be more involved in the processes that shape it. Although not a perfect correlation, the result is a polity whose opinions have the potential to affect foreign policy created in democratic nations:

> The potential impact of foreign policy views on electoral outcomes is the critical mechanism linking public attitudes to elite behavior the electoral implications of their overseas activities. Thus, there is some reason for optimism regarding the efficacy of public opinion. In practice, the record has been mixed, and the translation from public attitudes to elite policy is not always simple or direct. […] Nonetheless, a mounting body of evidence suggests that the foreign policies of American presidents—and

> democratic leaders more generally—have been influenced by their understanding of the public's foreign policy views (Aldrich et al. 2006, 496).

Elites represent the second actor in this linkage chain. As Mills (1956) explains, "national power now resides in the economic, the political, and the military domains," and within those domains are those individuals who possess great influence and authority: elites (Mills 1956, 6). Although political elites are the focus of this section, the economic and military domains also intersect. Of importance is that the elite civilians who oversee military operation, appropriation, and funding are also elected representatives of the people (Mills 1956). In a democratic republic, this elite status is neither guaranteed nor unassailable. Beholden to their constituencies, these political elites are voted in and out of office by ordinary citizens based on their perceived performance. Thus, their position remains impermanent, and the fear of electoral vulnerabilities remains a very real one.

The potential of conflicts – both declared (e.g. Afghanistan) and clandestine (e.g. the drone program in Pakistan) – to weigh on this electoral potential is significant. In a 2004 study conducted by Chiozza and Goemans, the authors concluded that elected representatives do take into account the effect a military action can have on their election chances, and are more likely to eschew conflict when their positions are politically insecure (Chiozza and Goemans 2004). With reference to casualties, extended or prolonged conflicts with frequent civilian deaths can swiftly incite public disapproval over such action. James and Oneal (1991) argue that loss of public support will weaken the resolve of leaders to resort to force, especially in democratic nations (James and Oneal 1991, 327). This concern of losing the support of constituents often motivates politicians to avoid such conflicts for fear of the political ramifications were they to support such efforts.

The third actor, mass media, can be thought of as a 'channel' between the others through which conflict information is communicated. Succinctly described, "the media play the crucial role of collecting, framing, and distributing information—the key market commodity" (Baum and Potter 2008, 49). In their analysis, they see the media as an instrument of both elites (leaders) and the general polity (the public), and that it operates within an environment that must contend with the narrative pressures of both groups

(Baum and Potter 2008). Terming the media a separate entity, the authors insist that the ties between public opinion and foreign policy are deep and varied, and that mass media acts as an intermediary *and* as "independent strategic actors with distinct preferences and incentives" (Baum and Potter 2008, 41).

The media are therefore an actor whose relationship between the public and elites is both separate and connected. This link between the public and elites is shown in situations where the media has reported on the decisions of elites, and in practice "activation of public opinion is rare unless the decision receives media coverage" (Powlick and Katz 1998, 52). Once so activated, this is when "elites discuss the policy," and re-evaluate its merit in consideration of newly acquired public opinion polls…but not before (ibid). Thus, the media are an essential channel in this process. Without media coverage, the public will not activate. Without the ability to activate, public opinion goes unnoticed.

This is especially true within the realm of foreign policy, where "as the primary link between leaders and the public, the media are a central actor in the foreign policy marketplace," where the media provide information "supplied" and "framed" by elites (Baum and Potter 2008, 50). By 'frame', Powlick and Katz define this as the "central organizing idea or story line" or how the information is conferred to an audience within an "issue culture that is reflected and shaped by general audience media" (Powlick and Katz 1998, 36; Gamson and Modigliani 1989, 35). However, other authors contend that there is an equally important role in producing "un-framed" information for a polity that "demand[s] the information necessary to hold political leaders accountable", but which "the government has little political or institutional incentive to provide" (Baum and Potter 2008, 50-51; Zaller 2003, 128). Essentially, what information elites deem beneficial to reveal to the public, they will do so within a "shared frame" (Gamson and Modigliani 1989, 36). When the necessary precondition of benefit to the public is not met, that information is *not* shared (framed or otherwise). In such cases, it falls to the media to gather what information they can and distribute it to their audiences. The databases studied in this project concern wars where no official information source on casualties has been released to date, and are therefore an example of the media gleaning data from third-party sources.

2.4. Gulf Policy Case Study and the 'Rally-round-the-flag' Phenomenon

A brief case study of the rally phenomenon and the media/political elite linkages discussed thus far may assist the reader by demonstrating these processes in a real-world setting. William A. Dorman and Steven Livingston's *News and Historical Content: The Establishing Phase of the Persian Gulf Policy Debate* is a choice example of this. In their opening statement, the authors insist "central to public debate in a democracy is relatively free, open, and accessible information pertinent to the situation at hand," an idea this project builds upon (Dorman and Livingston 1994, 63). Investigating the months leading up to the First Gulf War (1991), the authors describe how editorial contributions and leading news media pieces had the undisguised and unapologetic intent of gathering public support for the Bush Gulf Policy.

Outlining the 'framing' of events by the media, the authors examine how certain elements of the conflict were excluded from the narrative. The use of chemical weapons by Iraq during the Iran/Iraq war in the preceding years, and how both President George H. W. Bush and President Ronald Reagan had effectively ignored this issue, was one aspect omitted almost entirely in the media (Dorman and Livingston 1994). Citing the thousands of editorial pieces written at the time (by the likes of the *New York Times, Washington Post* and other media outlets) frequent comparisons were made between Saddam Hussein's invasion of Kuwait and Adolf Hitler's invasion of Poland. This rhetoric, Baum and Potter argue, was instrumental in shaping public opinion towards supporting a war that was framed by the media as one of unacceptable aggression and grave consequence, much as World War II was depicted.

Of particular note is the concept of the 'rally-round-the flag phenomenon' (hereafter referred to as a Rally Event). John Mueller describes this as the garnering of political will required to perform an action centered on an event that is 1.) International, 2.) Involves the highest echelons of government, and 3.) "Specific, dramatic and sharply focused" (Mueller 1973, 209). Catherine Shapiro explains that if these three conditions are met, a Rally Event can be a time when the "public is thought to suspend its usual mode of opinion formation and form ranks […] behind the flag" (Shapiro 1991, 46). In

doing so, support is quickly gained, and questions over the validity of such decisions are often drowned out amongst calls for action.

Stephen D. Reese's 2004 piece *Framing Dissent in the Persian Gulf Wars*, part of the larger anthology *Reporting War: Journalism in Wartime* underlines many of these sentiments. Reese's argument is primarily that U.S. military action in the region during the first Gulf War received unilateral support in the media, with the understanding among the American public that the military was a "power that can be trusted" (Reese 2004, 261). Shapiro views such positioning of the media behind a decision to go to war, without adequately discussing alternatives, as a classic example of a Rally Event where support is given almost reflexively (Shapiro 1991). Moreover, Reese agrees that the 'framing' of the conflict produced an information environment where opposing viewpoints were made to seem illegitimate.

To do so, Reese explains how the "non-equivalent" sides of "anti-policy" and "pro-troop" were created and perpetuated in the media as being in direct opposition to each other, despite being position points in different arguments (Reese 2004, 250). One can, obviously, be both 'pro-troop' and 'anti-policy', especially when that policy is likely to maim or kill domestic soldiers. But by framing the discussion in this way, it became precarious to side against policy, for fear of being labelled 'anti-American' or 'unpatriotic' (Reese 2004; Cook 1994). This false dichotomy is remarkably similar to the 'with/against the terrorists' statements often heard before and during the Second Gulf War. Carefully selected facts and arguments were, in the Gulf Policy case, used to enhance public support for the conflict, while simultaneously downplaying arguments against U.S. intervention in Iraq (Cook 1994). The result of this clever mediatization of events was:

> Public support for administration policy, once it began to register in public opinion polls, quickly became a major asset to President Bush in the crisis. It deterred potential critics in Congress… [so] that Bush would be able to deliver on the promises of military action that he was making. This, in turn, enhanced Bush's ability to create an international coalition against Iraq. In short, by the time the country got around to debating Bush's Gulf policy, it was largely an established fact (Dorman and Livingston 1994, 65).

This form of “selective inattention” to significant contextual details by the media was a vital part of the administration’s ability to both attain and maintain support for the war, rather than creating the “robust culture of debate” that was sorely needed to properly address the issue (Dorman and Livingston 1994, 75-76). Additionally, dismissing or marginalizing dissenting opinions was central in this campaign for war, as a lack of opposition lends credence to the prevailing viewpoint being pushed (Reese, 2004). Importantly, Shapiro’s three criteria would certainly be met by the Gulf Policy Debate, with the overwhelming support for action and rare dissenting voices portrayed in the media exemplifying a Rally Event (Shapiro 1991). To conclude, this case study was a concise but instructive example of how interactions in the media/elite linkage chain sway public opinion, and how information presentation has real-world consequences.

2.5. Deliberative Democracy

A final element in the literature, which serves to supplement the linkage chain between the public and foreign policy, is the concept of deliberative democracy, also known as discursive democracy. Deliberative democracy has been tentatively defined by Jon Elster as:

> Collective decision making with the participants of all who will be affected by the decision of their elected representatives: this is the democratic part. Also, all agree that it includes decision making by means of arguments offered *by* and *to* participants who are committed to the values of rationality and impartiality: this is the deliberative part (Elster 1998, 8).

Deliberative democracy’s contribution to the explanatory mechanisms discussed thus far is that is articulates this process sequentially. The theory specifies that issues on which the public holds strong opinion may be conveyed to their elected representatives, who then debate these concerns in a political setting where these same issues can be resolved. Seen as a way of developing and furthering the causes of groups who hold a stake in such deliberative proceedings, while “diluting self-interested claims” elected representatives may have, this form (and forum) of democracy is especially relevant to the issue of drones (Elster 1998, 23). This dialogue, or discourse, is central to the idea

that policies can be properly developed while respecting the inputs of the public on the subject.

Since the nations both possessing the technological aptitude and utilizing drones in a combat capacity are at present exclusively democracies[5], deliberative democracy may be the bond between public opinion and policy makers' decisions to either continue or abolish these programs (Bergen and Rowland 2013). Drawing on the data-centric nature of this project, the concept of deliberative democracy is particular relevant to how opinion, shaped by information, can create political change. Therefore, the *vox populi* and its political power in this case should not be overlooked, as it may very well be the single most significant component of the future viability of drone programs worldwide. This dialogue and forum for deliberation must be taken into consideration when deciding on the continuation or abolishment of these programs, because if the public's interests are in their view not being properly represented, the "populace has electoral recourse and can register its displeasure at the ballot box" (Kaag and Kreps 2013, 100).

Of course, such an environment of discussion does not necessarily mean the public will decide to abolish drone programs. Some authors feel that because drones offer an innovative way of ensuring "troop protection and the ability to project force without risk", citizen voters may side with the program regardless (Kaag and Kreps 2013, 101). In an opposing view, others assert that drones have created a rift in the democratic capabilities of the areas in which they operate, giving the example of Pakistan as a state where political and democratic backlash against the continuation of the program has occurred on a wide scale (Fair et al. 2014).[6] In this way, it may be difficult to determine exactly what effect prolonged deliberative democracy will have on drone programs, but the literature agrees that it *does have an effect*.

A concern of this relationship is that the public opinion wielded in this political landscape (in support of drones or against their use) may be misguided. Within Fishkin and Luskin's model of ideal deliberative democracy, they identify the core consideration

[5] *Bergen and Rowland's 2013 article lists the only countries confirmed as having used armed drones in combat as the United States, the United Kingdom, and Israel.*

[6] *Imran Khan's popular, vehemently anti-drone political platform is a perfect example of this.*

of the deliberative method as "weighing", or the act of a full consideration of the issue being discussed (Fishkin and Luskin 2005, 285). To be able to properly 'weigh' an issue as complex and impactful as foreign policy, the authors argue that the discussion must have five key attributes to satisfy this requirement.[7] Of these, the most relevant concept to this project is that the discussion should be "Informed (and thus informative)" and that "arguments should be supported by appropriate and reasonably accurate factual claims" (Ibid, 285). In the case of drone strike data, the variation present among and between databases does not meet this criteria. With such divergence between competing casualty estimates, it is simply not possible for all data sources to be correct; some *must* be inaccurate. It thus follows that the public, in their deliberation on drone strikes, has not achieved the level of data solidity that Fishkin and Luskin believe is mandatory to make these decisions in 'informed' circumstances. The public's poorly informed state can lead to a lessened capability of deliberation, which in turn can lead to insufficiently formed public opinion being conveyed to the elites who formulate foreign policy.

2.6. Knowledge Gaps

Having assessed the links between media and foreign policy, the following section will reconcile these ideas within the goals and findings of this research project, as well as suggest gaps in the literature.

One clear issue has been a need for more scholarly literature on the databases themselves. There is a pattern of competing databases writing about one another's work in the field, but very little external scholarly perspective on these tracking organizations. If one were to discount articles written by individuals directly involved with a database (and thus susceptible to competing agendas and clear conflicts of interest), very little objective material has been written about the databases studied in this paper. Namely, questions of data collection, coding, and funding are sorely lacking. I view this as the first noticeable knowledge gap in the literature.

[7] *The five attributes are: Informed (and thus Informative), Balanced, Consceientious, Substantive, and Comprehensive.*

Further, through the course of the literature review it became apparent that there exists a similar gap in data/foreign policy scholarly works. Although the media/foreign policy linkage is extensively covered, very few pieces have been framed around the idea that core data can impact foreign policy decisions. This is unfortunate, and articles that dealt with the relationship investigated in this project were uncommon. Compounded with missing elements to the discussion surrounding the databases in question, this presented a serious literature gap that must be addressed if we are to determine the true impact of drone strike data. Drones, in their most modern manifestation, are a relatively new technology. Drone strikes and their data are equally novel, and it may take time for the academic literature to fill this void in the scholarly knowledge on the subject.

A second knowledge gaps appeared when discussing the role of data in an environment where the source of conflict details has shifted from official sources to non-official sources, which is especially relevant to the case of drone strikes. In clandestine conflicts like those in Pakistan, Somalia, and Yemen, information supply has shifted from elite (re: official) sources to mass media (re: unofficial) sources. This source provision change builds on the previous assertion of governments occasionally having no vested interest or political motivation in contributing information. This is certainly the case in these 'legally grey', protracted conflicts, where no official casualty data for the programs have been released to date.

The media's role in a protracted, clandestine conflict model has moved from *the channel* for information to *the source* of information, where elites have tapered off the amount of information delivered (it may still exist, but is no longer a primary, consistent source). Unlike declared conflicts, where information is provided by officials and may later be verified by the media, a clandestine conflict necessitates the media having to both provide and verify information. This is especially relevant to the drone strike data studied in this article, as Baum and Potter's 'typical individual' is now entirely dependent on mass media for information concerning these programs. Importantly, there is no dependable alternative source of information for such non-traditional conflicts; their clandestine nature precludes most discussion by informed representatives on the subject, and the goals and procedures of those running these operations are difficult to discern (Plaw 2013).

In relation to this project, the drone data utilized by such media add a fourth actor to the media foreign policy linkage chain, since mass media sources the drone strike data they use from this additional actor: the tracking organizations and the databases they manage. As with the others in the chain, this new actor adds an additional level of interconnectivity as the data and the databases themselves are not wholly independent. In this case, this fourth actor is actually co-dependent on mass media. Cassidy B. Sharp "discovered a circular pattern of information concerning drone strikes" in drone depiction in the media, and specifically emphasized the databases discussed in this paper. She argued that some of their data is sourced from 'unnamed' officials of unknown position, or unverified eyewitness accounts reported in the media (Sharp 2012, 34). These unproven reports are then re-reported in both competing media outlets and then subsequently the databases themselves. Terming this "recycled information," Sharp criticizes the usage of data not independently verified as a dangerous distortion of reality. She advances the argument that presenting these figures as 'fact', while having "no way of knowing how accurate these figures are," is irresponsible of the media (Sharp 2012, 35). Friedersdorf agrees, also advising prudence with databases that have no practical way of validating their stated casualty estimates, and can offer "only an approximation of how many were reported in the media" (Friedersdorf 2012, 2). Others feel that such data inconsistencies and overreliance on questionable sources has produced an "echo chamber effect" that magnifies and perpetuates unsound data reporting (Grut et al. 2012, 4).

As many of the reports used to construct casualty databases are originally sourced from regional and international media reports, there exists a central issue to how the data for drone strikes is collected. The mechanism for reporting to the public becomes a repetitive sequence between media report, database casualty data creation, and media report that cites that casualty data. But this mechanism of delivery is predicated on the data being reliable. If that is not the case, the previously established linkage models between mass media and foreign policy creation are significantly disrupted when the sources that mass media are drawing on to make their reports are of questionable validity. Much of the dialogue in the media/foreign policy literature concerns the intentions behind how information is presented. But there is a base assumption – mistaken, in the case of drone data– that the information is accurate in the first place.

Reconsidering the media/foreign policy linkage chain, this line of investigation into reduced data confidence may be altered to reflect this. Causally speaking, if we accept that 1.) Elites rely on public opinion to some degree in their decision making on foreign policy, and 2.) The public relies on the media to inform their opinion, it holds that 3.) The data the media utilize in their reports must be of appropriate quality to ensure the best chance at an enlightened decision making process.

However, as will be made apparent in the data section of this article, the databases are highly varied, have conflicting methodologies, and differ in both their motivations and conclusions reached. The usage of such databases without revealing these underlying potential flaws exposes any media outlet that does so to criticism of its reporting. In other words, full disclosure is rarely given of the speculative nature of much of the data used. News sources' attempts to introduce such data "almost inevitably leads to the encroachment of opinion," and "raises some questions about the validity and reliability of the underlying news reports" (Allan and Zelizer 2004, 322; Boyle 2013, 6). This also creates susceptibility to accusations of preferential source selection; in using database X, was the reporting coloured by a prejudgment of more/less casualties in a given time period? Databases being chosen solely based on how they represent strike data can manipulate the narrative. If one desires a 'pro-drone' stance, one could select the database that lists the fewest civilian casualties, and vice versa. This may not always be the case, but it certainly casts aspersions on the drone strike casualty figures presented by any media outlet that uses only one data source. Again, those using the data may indeed be ignorant of this contradiction. But by not advising the public that there are competing – and conflicting – database figures, they exacerbate an environment where it can be hard to distinguish whether or not the data is dependable.

In discussing the use of data by the media, it is important to introduce some examples of which media outlet use which data. The examples listed in table 1 offer a preliminary, and by no means exhaustive, glimpse into tracking organization selection by certain media groups.[8] What can be said even given this limited snapshot is that it is rare

[8] *Although the question of which media outlet uses which tracking organization is not the chief subject of this project, it would be a very interesting study. A full listing of the databases being used by the media would be rewarding to the field, and I encourage further research in this area.*

for a media outlet to present an aggregated picture of drone strikes. Which database is used, and questions of its accuracy or inaccuracy, is ultimately inconsequential. At present, there is no definitive evidence proving one database as any more or less reliable than any other. The concern is that it is typical of media outlets to use *only one* database, and to construct an argument/rhetoric around the figures it provides. But by not offering competing casualty estimates from other tracking organizations, these media outlets present only a partial account of these casualties, with no acknowledgement of the wide degree of variation in the data. Understandably, this could cause some confusion among readers as to which figures are 'true'. In researching this section, only the Public Broadcasting Service (PBS) article took a more comprehensive approach in assessing drone strikes by using three databases and combining their casualty figures to offer a more equitable perspective, in a similar approach to this study's goal of an aggregated database.

Table 1: ***Examples of Major Media Outlets and the Databases they Use***

Media Outlet	Database used	Article link
CNN	NAF	http://tinyurl.com/ovbhff9
	NAF	http://tinyurl.com/phpn6n3
	NAF	http://tinyurl.com/k9kszah
Huffington Post	TBIJ	http://tinyurl.com/mez84nj
	TBIJ	http://tinyurl.com/oc4khtg
	TWJ	http://tinyurl.com/lluv3ks
Al Jazeera	TBIJ	http://tinyurl.com/prpqmr2
New York Times	LWJ and Stanford/NYU report	http://tinyurl.com/3vh6rts
	LWJ	http://tinyurl.com/qz7dpcl
	TBIJ/CHRC	http://tinyurl.com/k9jxf9z
The Guardian	TBIJ	http://tinyurl.com/ma2xhpo
	TBIJ	http://tinyurl.com/lazmnfd
Macleans	TBIJ and SATP	http://tinyurl.com/nry3ut9
Boston Globe	UMASS	http://tinyurl.com/mdbdgvg
The New Yorker	NAF	http://tinyurl.com/mcwdptl
PBS	A *combination* of NAF, LWJ and TBIJ	http://tinyurl.com/lhepyxc

Thus, if the *foundational data* for the previously established media/public/elite relationship is inherently flawed, it weakens the overall connective dynamic described. The reporting of information in such a data-defective environment has potentially been corrupted by inaccuracies and inconsistencies at the very earliest stages.

Coupled with the mediatizing capabilities the media possess when they present the data and its narrative, as Cottle and Zaller argued, the media may be seriously misleading the public on the efficacy of drone strikes with data skewed by "a considerable amount of spin on all sides" (Boyle 2013, 6). If public opinion is in this way altered, when elites encounter the public's stance on whether or not to expand/contract the drone programs, the policies they create in response will be similarly misguided. Faced with a public that could have been convinced of a particular course while being woefully unaware that these opinions are based on defective information, elites could nonetheless be "trying to sustain a policy in the face of ongoing public opposition, [which] is both impractical and politically unwise" (Metz 2013; Powlick and Katz 1998, 53). Thus, regardless of the way the data shifts public opinion, it still has a causal effect on the decision-making ability of elites responsible for foreign policy.

Zaller asked the following in his 2003 article's concluding remarks, "can citizens who rely on the modern news media for their political information effectively discharge the duties of citizenship in a democracy?" (Zaller 2003, 129). It may not be possible to answer that at this time, but what can be said with some degree of certainty is that data inconsistencies within modern news media reports will do nothing to assist the public in their goal of becoming properly informed on foreign policy issues, including drone strikes. Being fully aware of this possible failing at the data level of the media/foreign policy linkage chain is absolutely integral to understanding the effects it can have in a practical sense, as in the Gulf Policy detailed by Dorman and Livingston and Reese. The level of data variability that contributes to this imperfect system of information transfer, as well as the conflicting methodological approaches these databases have taken, will be discussed and dissected in greater detail in this project's subsequent section. Finally, I fear that were the data to continue to be misrepresented as definitive listings of drone strike casualties, it could produce a Rally Event that saw individuals reflexively supporting the program, while remaining ignorant of its true costs both domestically and

internationally. This is not to say the public should not be supportive of the program, I merely argue for a fully informed perspective when deciding, which in the current data climate seems unlikely.

Chapter 3.

Current Empirics of Drone Casualty Databases

In order to more completely address the question of drone strike data variability, the ensuing chapter will outline the databases, examine the data, and present conclusions.

The goal of this project's data section is to reconcile the variability within and between these databases, and in the separate database I created, introduce a more expansive and inclusive data source.[9] Linking the databases most often cited in academic works and in the media enables comparison of data consistency. Because scholars and the media necessarily frame their arguments around third-party data (the only kind available at present), they should have the best data available when doing so. The two critical tasks in this section are to 1.) Examine the degree of variation in the data and, 2.) Reach a determination based on the findings within this new 'meta'/comparative format. To accomplish these tasks, this section will consist of three sub-sections:

3.1 The Databases – an analysis of each data source used in the meta-database, particularly in reference to their sources, methodology, and other pertinent information.

3.2 *The Data, Illustrated* – a summarized look at the data itself, with aggregated accompanying tables and summarizing statistics to better illustrate the differences between and within the data sets.

3.3 Lessons Learned – a discussion of the data gaps and weaknesses of the information studied, and suggestions for future work on the issue.

[9] *Full database available in Excel and SPSS formats.*

3.1. The Databases

Many of the sources used in this section are either from the database originators, or from competing tracking organizations. There is an apparent scarcity of sources that have commented not just on the data that these databases provide, but on the databases themselves. This is discussed in more detail in the 'lessons learned' sub-section.

3.1.1. Pakistani Tribal Area Management Report:

This database was sourced from a classified government report from the Pakistani regional government that outlined all the drone strikes recorded in the Pakistani tribal areas, and was originally reported by The Bureau of Investigative Journalism (TBIJ) in 2014. The document's relative newness and leaked origins has meant a lack of academic response or the availability of a stated methodology. The document apparently originated with the Federally Administered Tribal Areas (FATA) Secretariat, who "compiled the document using information obtained from local sources by field agents" (Ross 2014). After extracting and compiling the data in the lengthy document, the information was formatted into an entirely new, separate database – the Pakistani Management Report (PMR). The PMR provided an interesting counterpoint to the other databases, in that it was ostensibly an official data source clearly not intended to be released to the public. A unique feature among the databases, the PMR did not specifically code for civilian casualties (CIV in the database), and instead civilian deaths were integrated into the 'notes' column attached to each drone strike entry in the report. For example, if the listed casualties were 20, and the notes listed "civilian" or "all civilian," the civilian casualties were recorded in the new database as the same (Ross 2014). In this way, the notes were a way of further refining the casualty figures presented.

Some information has been redacted by TBIJ, mostly references to those who had "not been previously identified by other reports, to protect their identity" and other possible identifiers to maintain a level of anonymity (Ross 2014). Although TBIJ cautions that the document may not necessarily represent "the Pakistani government's full view of

drone strikes," it certainly gives a glimpse into the data availability at the highest levels of government in a region that actually experiences them (Ross 2014).

Because of the way much of the information was presented, a certain degree of interpretation was necessary in transposing this document into a database format. Frequent spelling errors and data gaps – some entries were simply left blank – showed a lax attention to detail. Additionally, examples of missing or incomplete figures, often stated as variations of "casualties are not yet known" or "details awaited," did nothing to assuage the impression that the report itself was not created with the same professionalism as seen in other databases (Ross 2014). Considering that the deaths reported all occurred within the administered territory of the state government actually writing the report, this was surprising. This may have been because only those in the office of the FATA Secretariat with proper clearance were the intended recipients, and an editing stage for public release was never reached.

In any case, it was not overly encouraging to see that the sole 'semi-official' data source included in this project is lacking in both comprehensiveness and effort. The PMR remained a valuable baseline for many of the strikes, but was decidedly ineffective in that exactly 1/6th of its recorded strike events (53 of 318) had no 'special notes' in the margins, and thus no way of discerning whether civilian casualties had indeed occurred. TBIJ confirms this in their conclusion that:

> Although the document records civilian casualties in the early years, from 2009 these almost disappear. Even well documented cases of civilian deaths are omitted. These include at least two incidents where the tribal administration is known to have admitted to the families that it knew civilians had died (Ross 2014).

The result of this was that the civilian casualties listed in the PMR database very likely underestimate total civilian deaths, but by how much is impossible to specify. The fact that civilian casualties are at first thoroughly documented, and then almost entirely absent, is disconcerting. It also gives credence to accusations of politicization of the issue after 2009, which may have pressured the Secretariat into underreporting civilian casualty numbers (Ross 2014).

3.1.2. New America Foundation

The International Security Program, known more commonly as the New America Foundation (hereafter referred to as NAF), is a non-profit organization funded primarily by organizational grants and subsidized by private donors. Focused exclusively on U.S.-centric security policies like as domestic extremism and NSA surveillance, NAF is also one of the premiere drone strike databases. With comprehensive data on both Pakistani and Yemeni strikes, NAF has produced a "Drone Wars" database that encompasses all strikes to date (NAF 2014). CNN, one of the websites that counts among those most utilizing NAF data, has deep ties to the NAF. It named the Director of the National Security Studies program at NAF, Peter Bergen, as its national security analyst. A prolific writer of drone pieces, Bergen regularly contributes to CNN and is active within both the NAF drone program and the scholarly contributions the NAF produces on the subject. This link is made apparent in a later figure (Fig. 1) on media use of certain drone databases, as CNN exclusively uses NAF drone strike data.

As stated in the methodology section on their website, NAF will not add a strike to their database unless "at least two credible sources verifying a strike" are located. In terms of media sources used, NAF makes use of "major international wire services," leading regional newspapers, South Asian, Middle Eastern and Western media reports to accomplish their goal of inclusive media coverage (NAF 2014). The NAF's well developed website and available data tables have seen widespread popularity amongst both scholars and media outlets.

However, the NAF is not without criticism. In her 2010 piece *Year of the Drone Misinformation,* Farhat Taj responds directly to Bergen and Tiedemann's 2010 *Year of the Drone* article, which was the inspiration and basis for the eventual NAF casualty database. Taj believes that Bergen and Tiedemann, employees and associates of the New America Foundation, have clear interests in furthering the methodology of the group. But Taj feels that the database and think tank's overreliance on casualty reports that they "are in no position to verify…independently" is a severe failing in their research, especially when there is little indication within the database itself that these limitations are a factor (Taj 2010, 534). Stating that "there are no media organizations with "deep reporting capabilities" in this lawless Taliban-controlled area" as referenced in the

Bergen and Tiedemann piece, Taj contends that the sources being presented are insufficiently comprehensive (Taj 2010, 530; Bergen and Tiedemann 2010). The New America Foundation database has been oft judged for this limited sourcing approach to casualty figures, and frequently use a fewer number of sources than some authors believe is necessary to develop a finer casualty attribution statistic (Plaw and Fricker 2012). Instead of the suggested broader sourcing style of other databases, NAF tends to cite fewer sources per strike, and depends heavily on the validity of those sources used to do so.

Taj further criticizes the additional usage of survey data unique to the NAF's approach to collecting casualty data, which they occasionally use to supplement the media reports that form the bulk of their information. Viewing these as fundamentally flawed, Taj explains that Pakistani public opinion surveys are sometimes used as building blocks for arguments in the drone debate, but that they are frequently not conducted in provinces where the strikes actually occur. Rather, they are far more typically surveys of individuals in the more secure urban areas of Pakistan. She concludes that the NAF surveys are far less representative of those directly affected by drone strikes than the NAF has alleged (Taj 2010).

Another common critique of the NAF database is its abundant coding of casualties into the 'unknown' category they use. In many cases, their methodology for determining civilian casualties leads them to instead classify a casualty as 'unknown', instead of a concrete categorization as a civilian or militant. In fact, the authors "never offer a working definition of the term "militant,"" further compromising their methodological approach (Friedersdorf 2012, 2). Even when the media reports they use to make their determinations widely agree that civilian deaths have occurred, NAF often chooses to code differently.

Despite using many of the same sources as other leading databases, NAF often reaches conclusions not seen in other tracking organizations. To whit, they state that "if the various media reports are so contradictory that we are not comfortable drawing a conclusion, then we label *all* of the dead as "unknowns" (NAF methodology webpage 2014, emphasis added). The NAF administrators also state that, "we don't claim our

research has captured every single death in every drone strike", which is no small admission (Bergen and Tiedemann 2010, 2). NAF's decision to frequently place casualties where there is a degree of uncertainty into this indecisive category occurs may jeopardize their overall findings. If even a fraction of the NAF 'unknown' casualties were themselves relegated to a more reasonably labelled category (e.g. *suspected* militant or *suspected* civilian casualty), the NAF database count would change considerably. With such a high attribution to the 'unknown' category combined with an average of "approximately 85 percent" assignation of 'militant' casualties, some scholars view the database as being overly cautious with respect to civilian deaths (Boyle 2013, 5).

3.1.3. South Asia Terrorism Portal

Directed by the Institute of Conflict Management in Delhi, India, the South Asia Terrorism Portal (SATP) provides another database. The least categorically comprehensive of the seven major databases used in this paper, the SATP Pakistani drone strike database incorporated only one of the distinguishing categories used in this project – overall casualties.[10] No academic literature was found discussing SATP, and there was no scholarly work that cited SATP beyond the suicide attack statistics the site also tracks. However, the site was cited in news media reports, and was thus considered 'fair game' in the overall comparative analysis. Upon discussion with the site's administrators, it was revealed that "all [their] data tables aggregate fatalities under three categories: Civilians, Security Forces Personnel and Terrorist/Militant" (personal communication with SATP admin 'Ajai' 2014). Clearly, separating or distinguishing between the kinds of casualties listed in this database was not feasible. But SATP's penchant for not recording civilian casualties is evidence in itself of questionable methodology. Why is that data not included? Why did the site administrators, as mentioned in personal correspondence, choose to "lump together" all casualty figures? (SATP 2014).

[10] *It also included injuries, but as this project is casualty-specific, those figures were not used.*

It was difficult to properly assess this database, as many of the categories important to this project are absent entirely, with the civilian and combatant classifications being prime examples. In terms of 'missing' data in the quantitative analysis undertaken, this database was far and away the least useful. *However*, it also serves as a perfect example of the kinds of data gaps seen so frequently in drone strike databases. The administrators of the site have chosen a specific casualty category to code for in their database, and readily admit that there are others they do not account for. Their casualty figures (again, only total casualties were measured) were comparable to others and could not be said to be unreasonable, but the incompleteness of the data source itself confounds any further in-depth analysis.

3.1.4. Long War Journal

A project arm of the non-profit think-tank *The Foundation for Defense of Democracies*, The Long War Journal (LWJ) has been a mainstay in drone strike data discussions. Named after the protracted 'War on Terror' and funded by "a think tank and donations from our readers," the site is a frequently cited source in drone research (LWJ 2014). The site collects information on drone strikes "through its program of embedded reporters, news and news aggregation, maps, podcasts, and other multimedia formats" (LWJ 2014). The LWJ boasts an impressive cadre of editors and contributors: Bill Roggio, the managing editor, is a U.S. Army regular force and reserve veteran, and has held numerous embedded postings covering the wars in Iraq and Afghanistan. Others hail from UCLA Law, George Washington University, and Silicon Valley. In short, the site is well staffed and regularly updated, with a focus on up-to-the-minute reporting. This database also offers the sincere disclaimer that "given the Taliban's control of the areas where the strikes occur, and a dearth of reporters in these areas, the exact numbers for casualties are difficult to know," and that in-person verification of its figures are unlikely (LWJ 2014).

LWJ's Roggio, likely due to his military background and connections, uses more 'unnamed' U.S. intelligence sources than any other database for his casualty data (Plaw and Fricker 2012). What at first glance would perhaps be a reliable font of data is in fact a severely limited one, with little admission of the "skew" possible in receiving

information from individuals for whom lower civilian death tolls may be in their vested interest (Plaw 2013, 141). The shortage of intelligence operatives 'on the ground' in FATA and other tribal areas speaks volumes about the value, or lack thereof, of such estimates. There is no reason to believe that this information is at all comprehensive, and there remains no way of verifying either the source itself or its bona fides in being able to record and collate drone strikes in the region. Adam Entous agrees, stating, "former intelligence officials acknowledged that in many, if not most cases, the CIA [leading U.S. intelligence source on drone strikes] had little information about the foot soldiers killed in the strikes" (Entous 2010).

A primary criticism, and one that severely impeded the quantitative usefulness of LWJ, was that only summaries are given of the data collected. The casualties are listed in total numbers of deaths along casualty category lines, but these are presented in a yearly format and not the strike-by-strike method offered by other databases. Additional data was informative, such as location and intended target of the strikes, but less useful as it was similarly presented over the entirety of the drone program in a summarized format. In spite of this, LWJ offers an interesting counterpoint: the database was considerably lower in its civilian casualty estimates than any other database. A salient point is that although the civilian casualties listed by LWJ are the lowest of all seven databases, its militant casualties were the highest. Reservations are certainly warranted concerning the categorization LWJ undertook in coding between 'militant' and 'civilian' casualty attribution.

3.1.5. The Bureau of Investigative Journalism:

A not-for-profit organization, the Bureau of Investigative Journalism (TBIJ) is a collaborative journalism initiative out of City University London, and has been involved in projects as varied as pharmaceutical costing reports to police custody deaths in the UK (TBIJ 2014). One of their 'major investigations' has been the ongoing 'Covert Drone War' project encompassing Pakistan, Somalia and Yemen. Awarded the 2013 *Martha Gellhorn Award for Journalism* for their work on the project, TBIJ has been one of the most oft-cited databases in drone literature.

TBIJ makes available, on a strike-by-strike basis, all recorded drone strikes that they include in their overall datasets. The sources, primarily Pakistani and Yemeni media with a smattering of Western media, are mostly "in English, but some Urdu reporting has been used" (TBIJ 2014). Further, the group has also "carried out several field investigations into possible civilian deaths," with a special emphasis on their continuing project *Counting the Dead*, whose aim is to comprehensively list and name the individuals – civilian and otherwise – killed in drone strikes (TBIJ 2014). Finally, there are unverified reports of TBIJ being in contact with an "unnamed U.S. counterterrorism official who is able on some level to provide insight into casualty numbers and drone strikes" (Metz 2013, 37).

In their report entitled *Living Under Drones: Death, Injury and Trauma to Civilians from US Drone Practices in Pakistan*, the Stanford/NYU collaborative project determined that the Bureau:

> Maintains a much more dynamic database than either *New America Foundation* or *The Long War Journal,* updating its strike information frequently to reflect new information as it comes to light. This frequent updating, together with *TBIJ*'s own investigations, makes its data far more reliable than other aggregating sources (Stanford/NYU clinics report 2012, 53).

In assigning civilian casualties, TBIJ is the most generous in applying that term to a casualty, by their own admission (Plaw 2013, 140-141). In this way, although the organization is one of the most thorough with respect to their level of investigation into the incidents, the database has been criticized as overestimating the proportionate amount of civilian deaths. The bureau itself states that in reports "where the dead are described as 'tribesmen', 'locals' or 'people', we believe this indicates possible civilian casualties and reflect this using the 0-X range" (TBIJ 2014). It could be argued that the upper limits set by TBIJ's database in both casualties and civilian deaths could potentially be accurate. However, the dissimilarity between its figures and other databases are more likely a high-water mark for the highest number of civilian casualties possible in a given strike/year (Plaw 2013). As such, this was an exceptionally useful database when comparing the data in a more 'meta' perspective.

3.1.6. Columbia Human Rights Clinic

A project of Columbia Law School's Human Rights Clinic, the Chantal Grut et al. 2012 piece titled *Counting Drone Strike Deaths*, this article was in essence an attempt at 'recounting' the drone casualty estimates of 3 previously discussed databases – TBIJ, LWJ and NAF. Citing a concern over the "significant methodological flaws" they identified in both the LWJ and NAF databases, the impetus for their own project was a desire to clarify contrasting casualty reports between the databases (Grut et al. 2012, 5).

The Columbia Law School Human Rights Clinic (CHRC) database was itself a creation of the project's final report, dubbed 'our count' by the authors (Grut et al. 2012). The CHRC database was thorough in its scrutinizing and judgment of the media reports cited by the three databases for each strike, and an account was given for the conclusions they reached. In cases where there was significant disagreement between the databases – or even cases where some of the databases did not report a strike at all – their findings were logically sound and carefully considered, with the goal of assigning a fair estimate of casualties. In many cases, where the researchers suspected errors or inconsistencies in the data, or where they had "concerns with the media sources", they "[took] a lower figure of zero" as the most likely casualty determination for that strike (Grut et al. 2012, 1). In this way, the CHRC project was attempting to refine the data as much as possible and opted towards conservative estimates when the data was questionable, all with the goal of reaching a more realistic level of casualty estimates (Boyle 2013, 6). The concluding remarks in the report indicate a support for the TBIJ tracking organization's figures and overall approach, and that the classification and coding of casualties in that database was the "more methodologically sound" of the three (Grut et al. 2012, 5).

The CHRC database has three main limitations: 1.) It only studies three databases, which were admittedly the most frequently used at the time of its creation, and 2.) It only covers the 2011 calendar year, and consequently does not include the first years of the program or more recent strikes, and finally 3.) It attempts to 'recount' the drone strike casualties, but does little to address the variation *between* the databases, and the implications this has. In presenting the CHRC database's findings

within this project, these caveats affected the data availability, and are clearly indicated in the tables and graphs.

3.1.7. UMass Drones Project

The University of Massachusetts Dartmouth's Center for the Study of Targeted Killing (UMASS) is a relatively new "research project focused on exploring the tactical and strategic wisdom of drone strikes and other targeted killing operations," but has some recent media coverage (UMASS 2014). Unique among the databases was the separate, twelve-page methodology document provided as a supplementary file to the data requested. In its methodology, the UMASS team strategized a tiered system of source verification: "primary", "second" and "subsequent primary" sourcing (UMASS methodology document 2014). The document indicated that a source with sufficient information and vetting was classified as 'primary', and additional sources were added to "fill the gap of information" as necessary (UMASS 2014). Admitting that, "uncertainty is probably inescapable given the limited access of reporters to the FATA," UMASS' tiered approach is one of the most error-resistant sourcing structures of the databases studied (Plaw 2013, 136).

A unique distinction of UMASS was that it covered *all* the parameters examined in this project and categorized in the full database[11] – casualties, civilian casualties, militant/combatant casualties, HVT casualties, and unknown – as well as providing location, detailed target data (for example 'a pick-up truck was destroyed'), and the names of any HVT or confirmed kill. In that way, UMASS was also the most thorough database examined.

Acknowledging those advantages, the issue of casualty range in the database was vexing. Unlike other databases, UMASS offered no range of casualties for any strike in any of the categories studied. This was an abnormal choice of data presentation, given the lack of assurances intrinsic to such casualty reporting, and is

[11] *Although every casualty category is not represented in the illustrative summaries in this article in order to condense the findings into the page limit allotted, all are available in the full database file.*

contrasted by the minimum/maximum range estimates of the other database. While UMASS's well considered methodology was encouraging, its lack of casualty flexibility may ultimately undermine their findings.

Plaw et al. (2011), the authors of the paper that originated the UMASS database, argued that the Bureau of Investigative Journalism's database figures were "impossible to identify their totals" in strike-by-strike comparisons or across casualty totals for a given period, because TBIJ uses "maximum to minimum estimates" (Plaw et al. 2011, 68). The authors, in response, clearly chose to avoid the same approach in their database. Since this project's primary goal was database comparison across a number of series and not simply totals, and considering TBIJ's role as a prominent member of that group, the data *is* possible to contrast if the UMASS database's figures are presented as minimum/maximum identical. In other words, their casualty (low) and casualty (high) figures are represented as the same value in both tallied bars in the graphs illustrated. What may seem redundant is actually anything but. Listing identical figures helps to show the permanence of their figures: UMASS brooks no range assessment because of a confidence in their estimates.

Again, this is opposed to the more forgiving ranging system of other databases, which offers something of a buffer for possible errors in these judgments. In this way, UMASS depicts their findings as definitive, when in truth they are only interpretations of oft-contested data. The reason other databases use a casualty range within is that it allows for a certain degree of uncertainty, something that UMASS does not fully account for.

3.2. The Data, Illustrated

This project offers a new perspective on the topic of drone strike casualties by collecting data from the prevailing drone strike data sources and coalescing them into one larger and more inclusive database, which is available in both Excel and SPSS formats. In approaching such an input-heavy task – there were a total of 30,324 data points from seven different databases – it was important that formatting and data display took precedence. Because of the amount of information encountered, it will not be

possible to show all findings within the confines of this paper, and summarized tables and graphs of the more significant results will be necessary. A 'meta' method of drone strike data analysis where a number of databases are combined for the entirety of the drone program has not been previously attempted, so this project aims to break new ground in drone strike analytics by doing so.[12]

A major motivation for this work was to combine and examine the databases in a collective format, so as to best evaluate the degree of variation present within and between them. Certain statistical tools will assist in this process of deriving more reasonable casualty levels, while accounting for gaps and dissimilarity in the data. This aggregated statistical approach is made possible by the simple reality that, to the best of current knowledge on the subject of drone strike data, no one database is any more or less accurate than any other; they merely offer competing estimates. To do this, four statistical methods will be employed: Mean, Median, Range, and the ESD test. The following will outline both the purpose of each method and the arithmetic for how it is calculated:

Mean $\bar{x}$ (represented in diagrams as a dotted line)

> The mean is the average of the figures for all the databases in a series. Although outliers typically impact averaged outputs, in this case aggregating the figures in a broader approach may mitigate these skewing effects. In doing so, the average figure may offer a more representative level of the casualty figures across all measured databases.

Arithmetically:

$$\bar{x} = \frac{\sum x}{n}$$

[12] *The CHRC database had the similar goal of assessing drone strike data, but attempted no statistical analysis or aggregation, as the chief goal of the study was instead designed to reassess figures already reached by using the same sources as the other databases.*

Where $\sum x$ is the sum of all values recorded, and *n* is the number of cases in the series.

Median $\tilde{x}$ (represented in diagrams as a solid line)

The median is the 'middle value' in a series. Since outliers may indeed be a factor that needs to be controlled for, the median value is an additional way of addressing these while offering a clearer picture of where the likely casualty figure in a given series may be situated.

Arithmetically:

$$\tilde{x}(even) = \frac{\left(\frac{n}{2}\right)^{th} value + \left(\frac{n}{2}+1\right)^{th} value}{2}$$

Where *n* again represents the number of cases, which is multiplied by given value parameters. Of note is that since all database figures are 'paired' in low/high estimates, the *even* formula will be used exclusively, as the total number of cases will always be an even number.

Range R

The range is the difference between the highest and lowest values in a series, and is a simplified way of showing the degree of variance. In addition, the source of each value will be indicated in parentheses, for example x_L 145 (LWJ), meaning that the lowest value of 145 was sourced from the Long War Journal.

Arithmetically:

$$R = x_H - x_L$$

Where the highest value is represented with the symbol x_H and the lowest value is represented with the symbol x_L.

Extreme Studentized Deviate Test (ESD, also known as Grubb's Test) *G*

The ESD is a test used to determine whether outliers are present in a series. However, unlike traditional data sets these outliers must continue to be included in calculations – they are not errors or irregularities in the data. Rather, they are the values *intentionally* inputted by the database administrators over a period of many thousands of data points. The numbers listed, therefore, are not a single input, but represent the sum total of many. For the purposes of this project, the ESD test is an excellent way of ascertaining whether or not the highest and lowest estimates are somewhat divergent values in the series, or are in fact true outliers.

Arithmetically:

$$G = \frac{\overline{Y} - Y_{\min}}{\sigma}$$

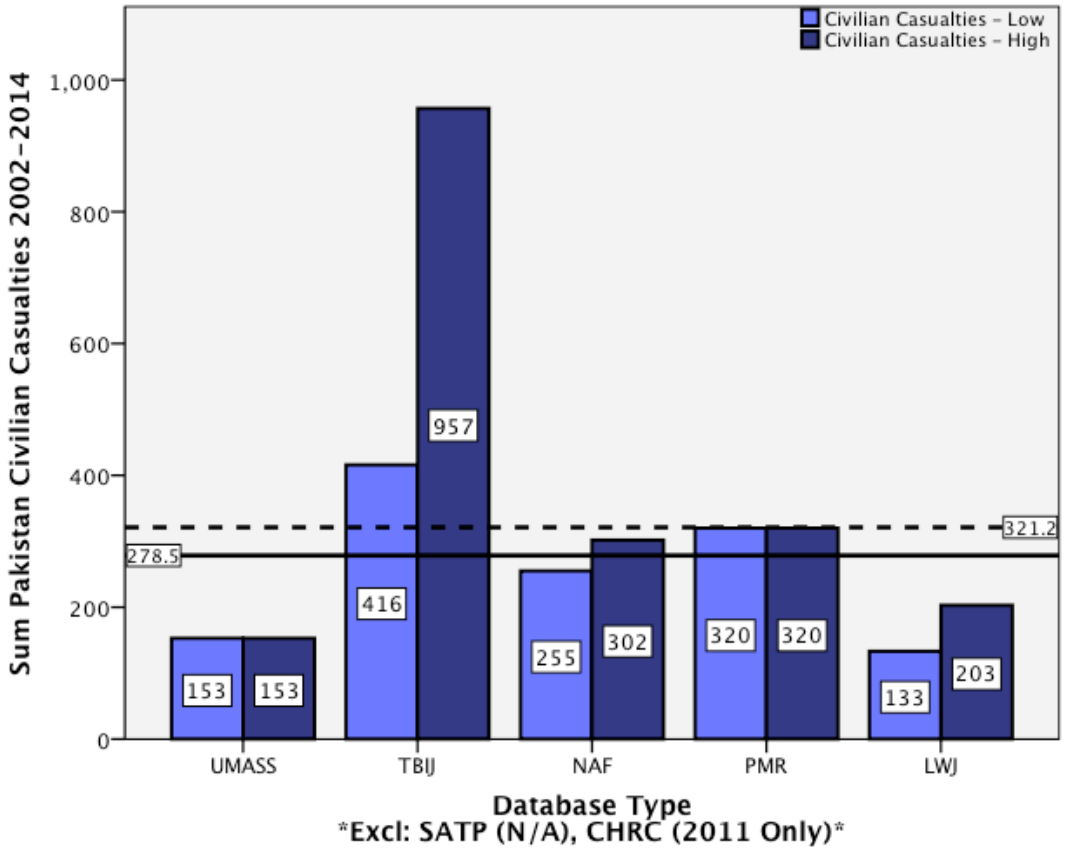
Where $\overline{Y}$ is the population mean, $Y_{\min}$ is the minimum case value, and σ is the standard deviation.

Each primary casualty category (civilian, militant and total) will be assessed in turn, and each country in order of prevalence of strikes. Pakistan will be first in database comparisons, as it has both experienced more strikes and accumulated more data within the databases than the other two countries combined. Yemen and Somalia follow, but in a more limited capacity. Fewer databases track the strikes in these nations, and some (for example the PMR) are Pakistan-specific in their focus. Since the databases do not all measure the same casualty categories, each series may utilize a different set of databases to better compare data levels (for example TBIJ does not record the category of militant/combatant casualties, so it would be excluded in that category comparison).

Additionally, in each casualty category, for the purposes of better data utilization and a more robust comparison, an analysis will be made of the entirety of the drone program (2002-2014) as well as a single, higher data availability year (2011), where more databases were able to contribute figures. All database exclusions will be listed in the x-axis label. Any further exclusions or other information relevant to calculations will be included in footnotes.

3.2.1. Pakistan

Figure 1: ***Pakistan civilian drone strike casualties 2002-2014***



Given the data, I calculate the following[13]*:*

Mean (dotted line)

$$\bar{x} = \frac{\sum x}{n}$$

$\bar{x} =$ ***321.20***

[13] *CHRC excluded, as it is 2011 specific. Additionally, SATP does not track the civilian specific casualty category, and is also excluded.*

Median (solid line)

$$\tilde{x}(even) = \frac{\left(\frac{n}{2}\right)^{th} value + \left(\frac{n}{2}+1\right)^{th} value}{2}$$

$\tilde{x}(even)$ = ***278.5***

Range

$R = x_H - x_L$

R = *957 (TBIJ) - 133 (LWJ)*

R = ***824***

ESD

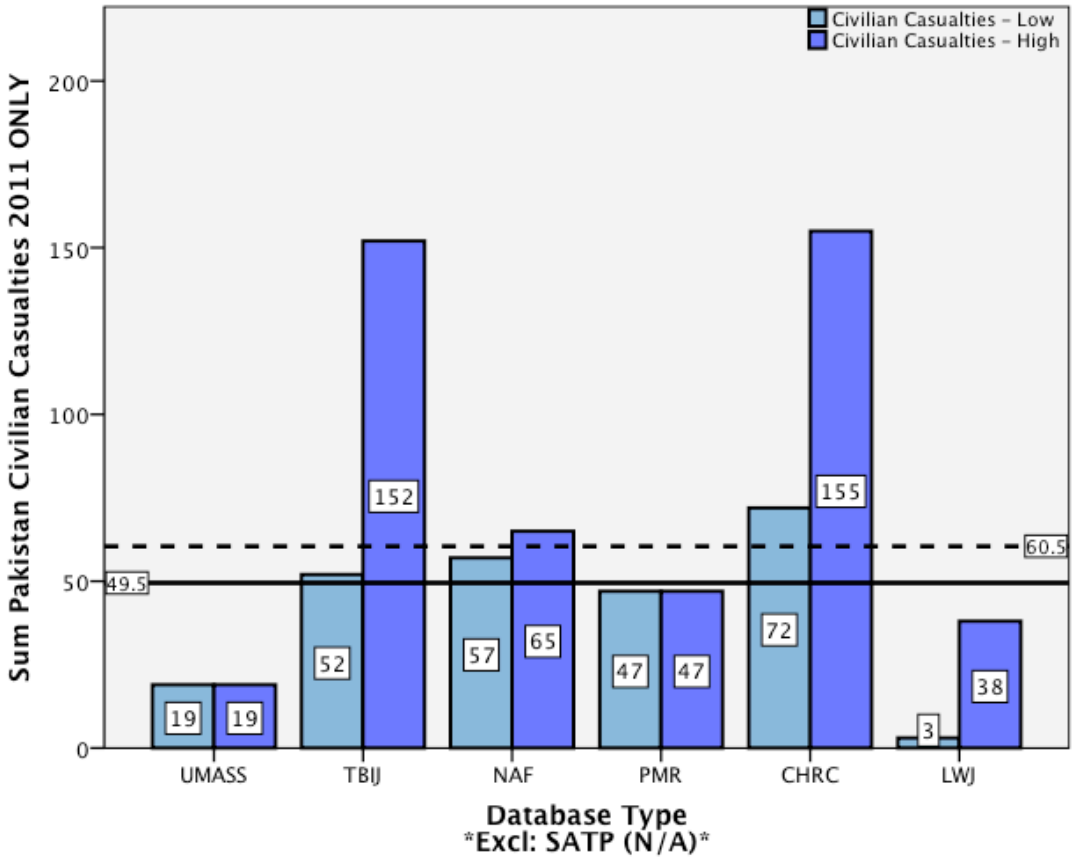
$$G = \frac{\overline{Y} - Y_{\min}}{\sigma}$$

G = ***Outlier detected? YES: 957***

Z-value of 2.64, which exceeds critical Z of 2.29, and has a P-value of <0.05 (statistically sig.)

As mentioned, although an outlier has been detected, it cannot be ignored; the data was intentionally entered as such. That being said, the highest civilian casualty for this time period may be considered to be unusually high, given the estimates of the other tracking organizations. As such, the reader should factor that into their consideration of the chart above.

Figure 2: ***Pakistan civilian drone strike casualties for 2011***



I calculate the following for this series:[14]

Mean (dotted line)

$$\bar{x} = \frac{\sum x}{n}$$

$\bar{x} =$ ***60.5***

[14] *SATP does not track the civilian specific casualty category, so is excluded.*

Median (solid line)

$$\tilde{x}(even) = \frac{\left(\frac{n}{2}\right)^{th} value + \left(\frac{n}{2}+1\right)^{th} value}{2}$$

$\tilde{x}(even) =$ ***52***

Range

$R = x_H - x_L$

$R =$ *155 (CHRC) – 3 (LWJ)*

$R =$ ***152***

ESD

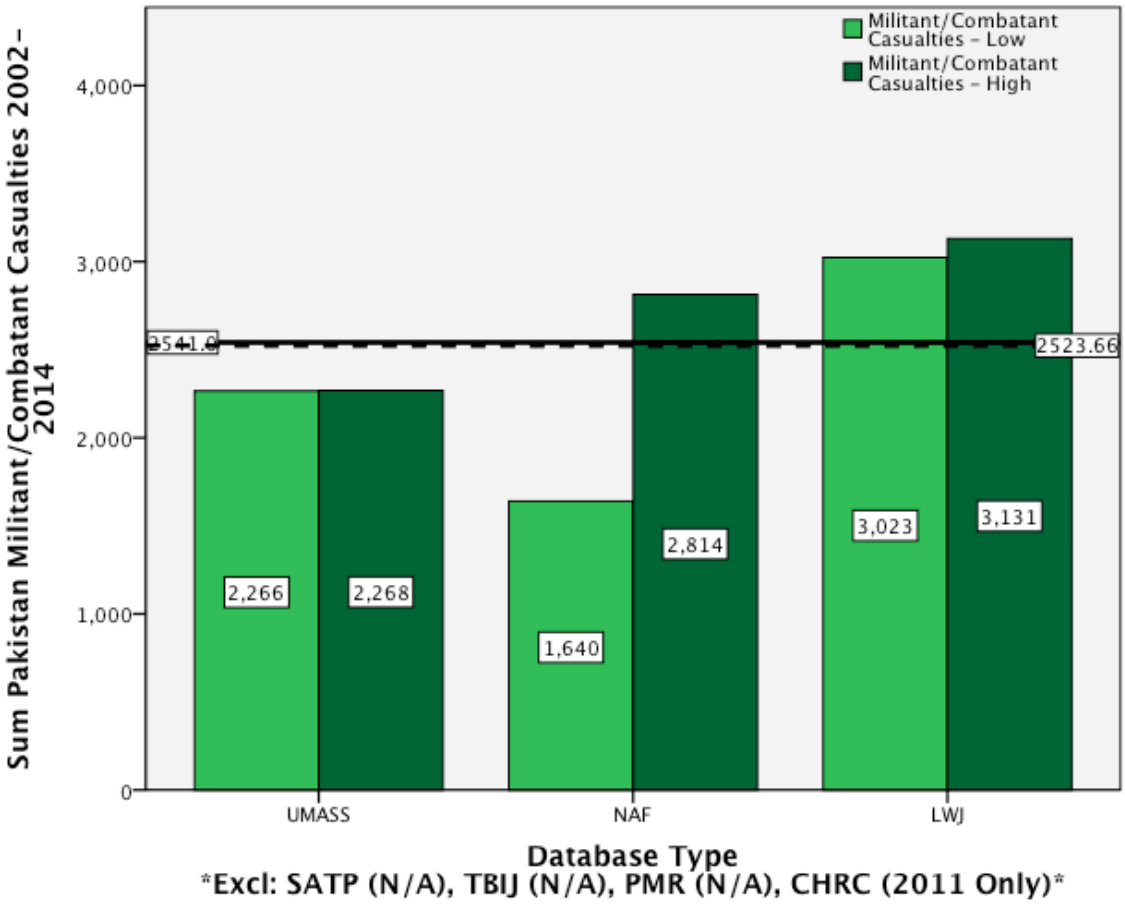
$$G = \frac{\overline{Y} - Y_{\min}}{\sigma}$$

$G =$ ***Outlier Detected? NO***

However, the values of 152 and 155 had Z-values of 1.91 and 1.98 respectively, or just below the critical Z of 2.41, and had P-values of >0.05, meaning they lack statistical significance. Therefore, although not true outliers, they are outside the bounds of most other Z-values, and according to the test are the furthest values from the others.

Concerning militant casualties, the same is also presented:

Figure 3: ***Pakistan militant/combatant casualties 2002-2014***



I calculate the following for this series:[15]

Mean (dotted line)

$$\bar{x} = \frac{\sum x}{n}$$

$\bar{x}$ = ***2523.66***

[15] *CHRC excluded in the calculations, as it is 2011 specific. Additionally, TBIJ, PMR and SATP do not track the militant specific casualty category, and are also excluded.*

Median (solid line, partially obscured in this case)

$$\tilde{x}(even) = \frac{\left(\frac{n}{2}\right)^{th} value + \left(\frac{n}{2}+1\right)^{th} value}{2}$$

$\tilde{x}(even) =$ ***2541***

Range

$R = x_H - x_L$

$R =$ 3,131 (LWJ) – 1,640 (NAF)

$R =$ ***1,491***

ESD

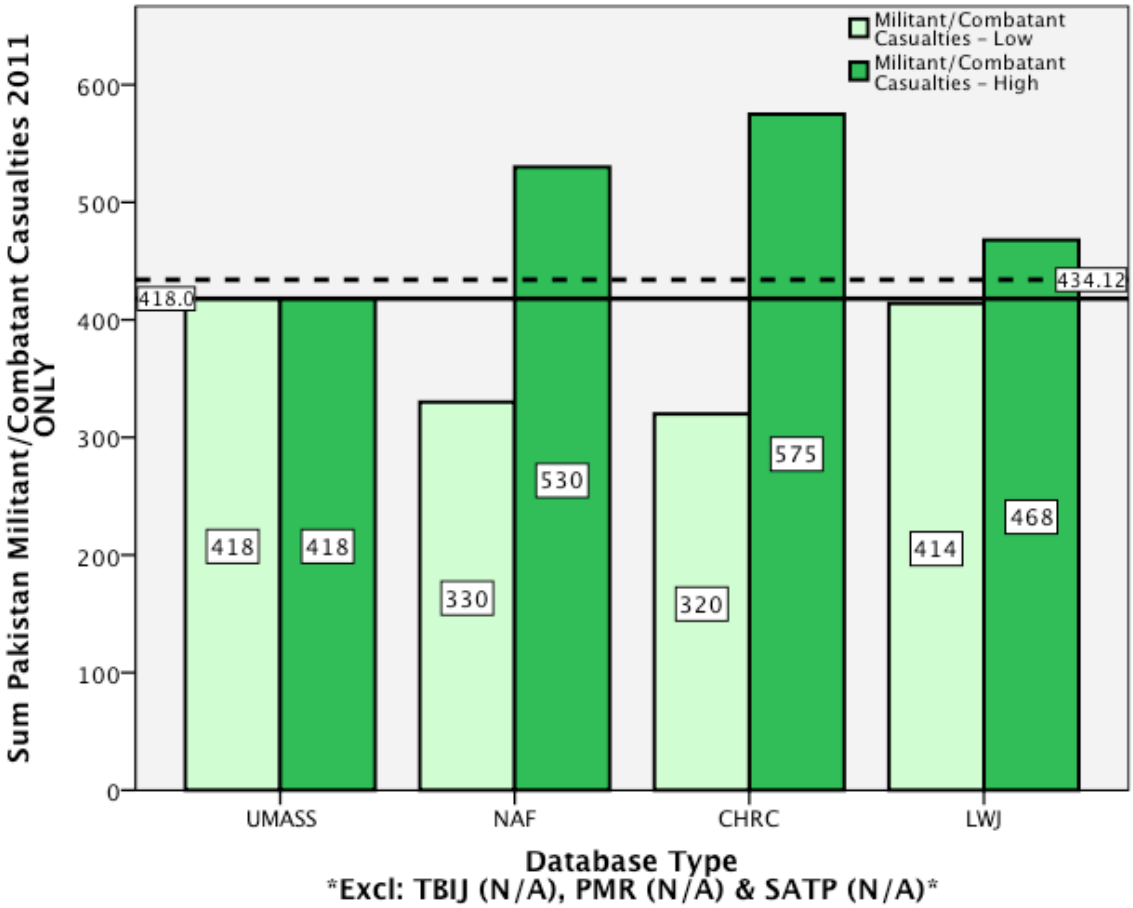
$$G = \frac{\overline{Y} - Y_{\min}}{\sigma}$$

$G =$ ***Outlier Detected? NO***

However, the value of 1,640 had a Z-value of 1.55, or just below the critical Z of 1.88, and had a P-value of >0.05, meaning it lacks statistical significance. Therefore, although not a true outlier, it is outside the bounds of the other Z-values, and according to the test it is the furthest value from the others.

In order to better illustrate, and to include a further database, Figure 4 will show militant casualties for 2011 alone:

Figure 4: ***Pakistan militant/combatant casualties 2011***



Mean (dotted line)

$$\bar{x} = \frac{\sum x}{n}$$

$\bar{x}$ = ***434.12***

Median (solid line)

$$\tilde{x}(even) = \frac{\left(\frac{n}{2}\right)^{th} value + \left(\frac{n}{2}+1\right)^{th} value}{2}$$

$\tilde{x}(even)$ = ***418***

Range

$R = x_H - x_L$

R = *575 (CHRC) – 320 (CHRC)*

R = ***255***

ESD

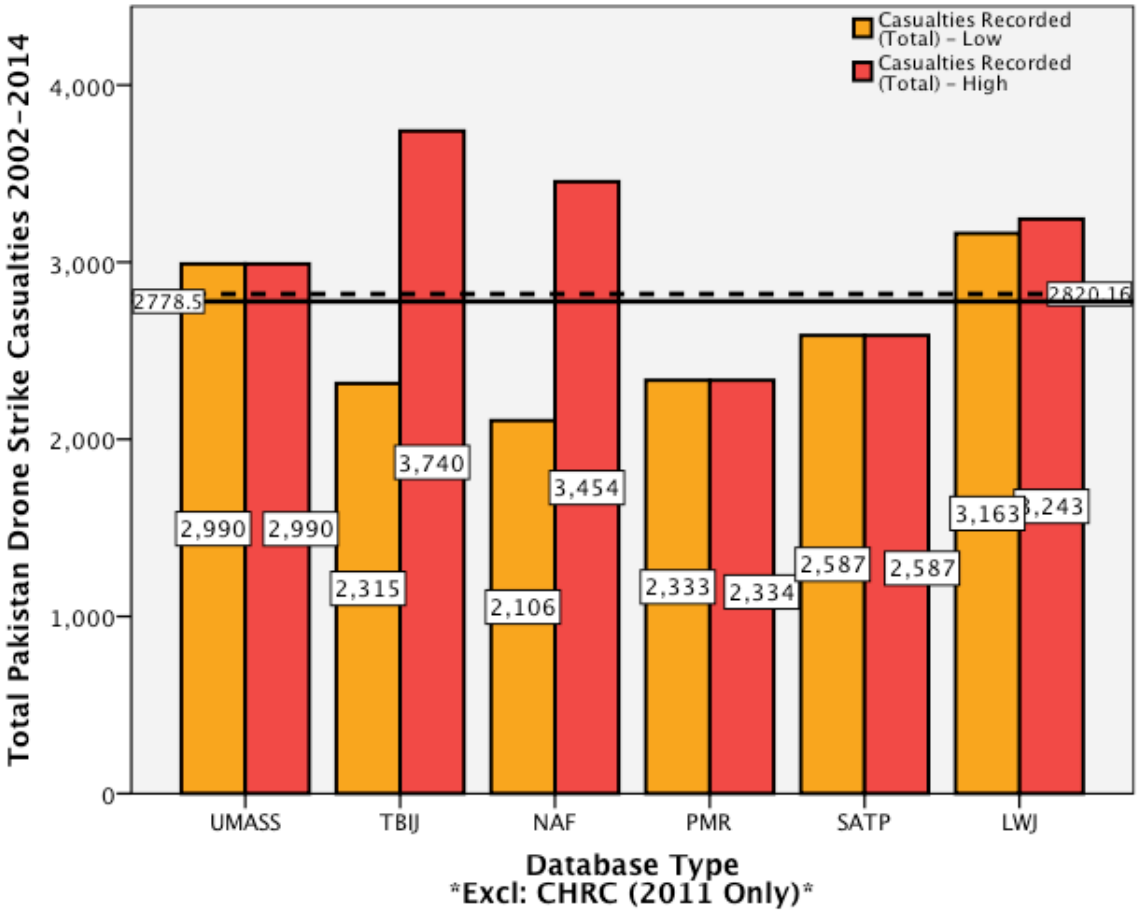
$$G = \frac{\overline{Y} - Y_{\min}}{\sigma}$$

G = ***Outlier Detected? NO***

The value of 575 had a Z-value of 1.59, which was far below the critical Z of 2.12, and had a P-value of >0.05, meaning it also lacked statistical significance. Therefore, although not a true outlier, it is outside the bounds of the other Z-values, and according to the test it is the furthest value from the others.

In terms of overall casualties, the following diagrams should help to elucidate differences:

Figure 5: ***Pakistan total drone strike casualties 2002-2014***



Mean (dotted line)

$$\bar{x} = \frac{\sum x}{n}$$

$\bar{x}$ = ***2820.16***

Median (solid line)

$$\tilde{x}(even) = \frac{\left(\frac{n}{2}\right)^{th} value + \left(\frac{n}{2}+1\right)^{th} value}{2}$$

$\tilde{x}(even) =$ ***2778.5***

Range

$R = x_H - x_L$

$R =$ *3,740 (TBIJ) – 2,106 (NAF)*

$R =$ ***1,634***

ESD

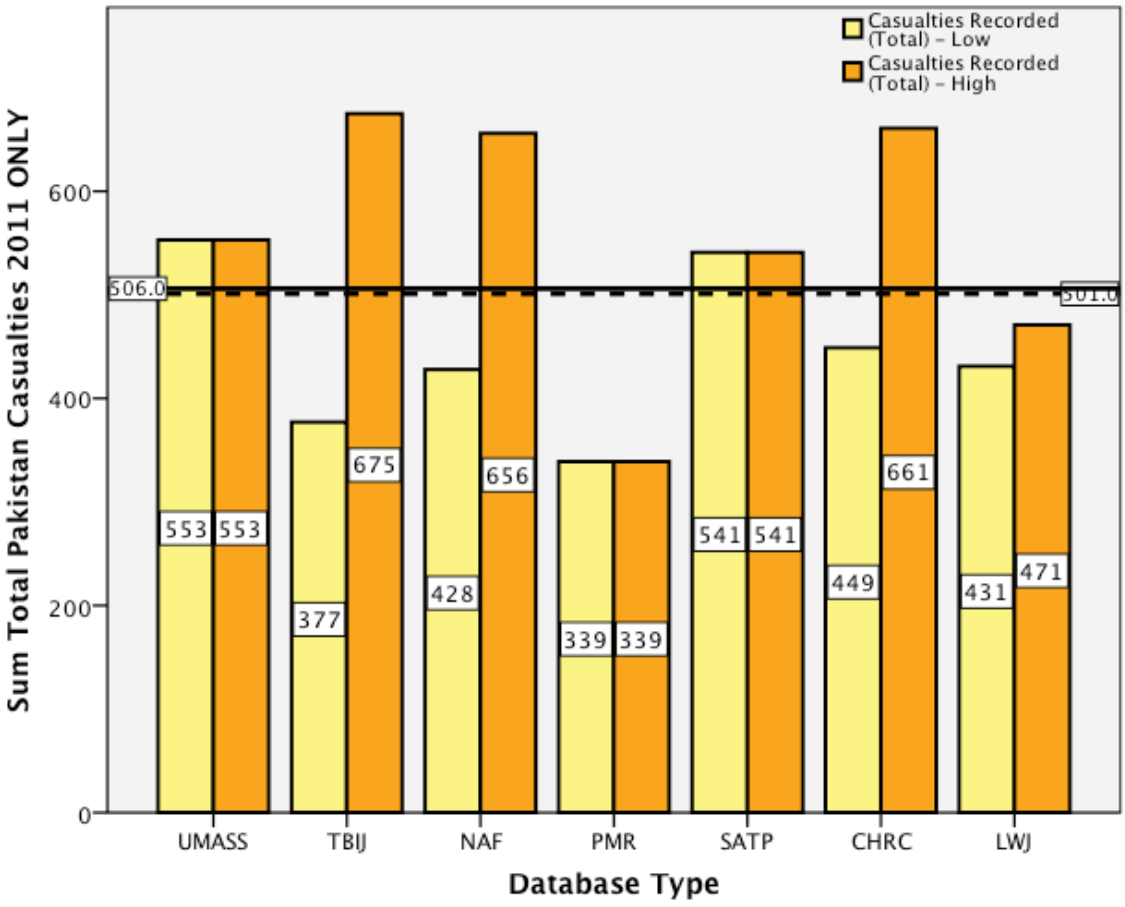
$$G = \frac{\overline{Y} - Y_{\min}}{\sigma}$$

$G =$ ***Outlier Detected? NO***

However, the value of 3,740 had a Z-value of 1.78, or well below the critical Z of 2.41, and had a P-value of >0.05, meaning it lacks statistical significance. Therefore, although not a true outlier, it was still outside the bounds of most other Z-values, and according to the test it is the furthest value from the others.

This is additionally refined in a 2011 specific analysis:

Figure 6: ***Pakistan total drone strike casualties 2011***[16]



Mean (dotted line, partially obscured in this case)

$$\bar{x} = \frac{\sum x}{n}$$

$\bar{x} =$ ***501***

[16] *No exclusions for this calculation.*

Median (solid line)

$$\tilde{x}(even) = \frac{\left(\frac{n}{2}\right)^{th} value + \left(\frac{n}{2}+1\right)^{th} value}{2}$$

$\tilde{x}(even) =$ ***506***

Range

$R = x_H - x_L$

$R =$ *675 (TBIJ) – 339 (PMR)*

$R =$ ***336***

ESD

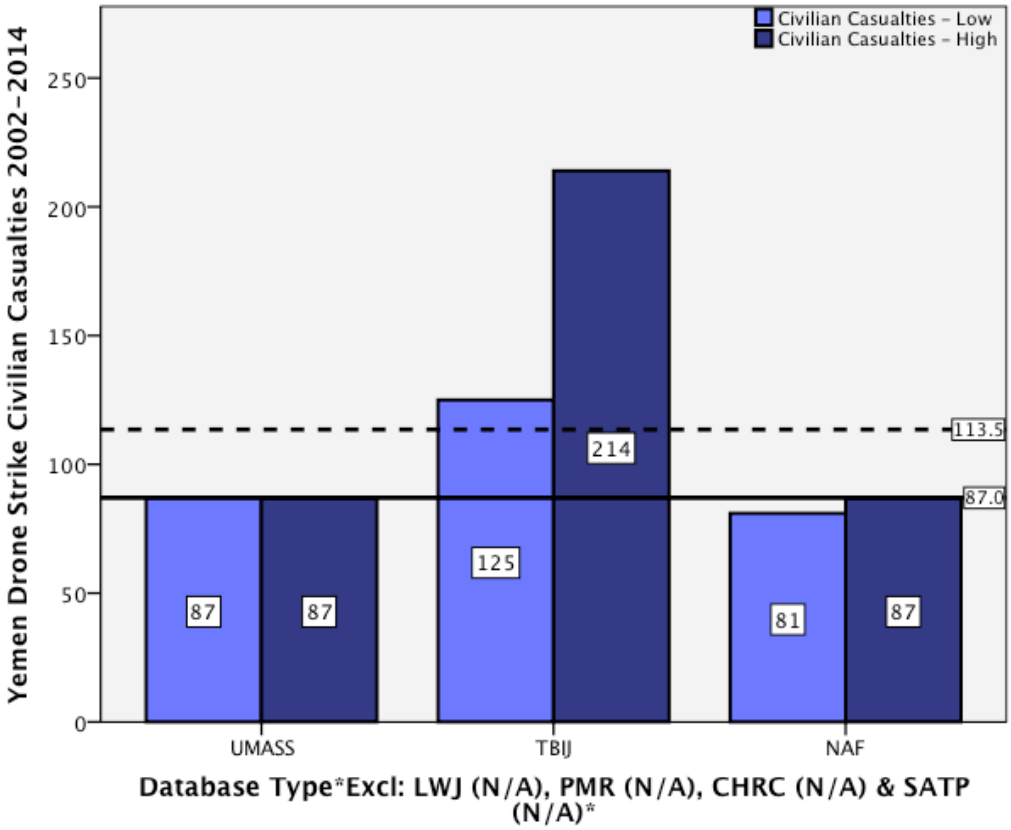
$$G = \frac{\overline{Y} - Y_{\min}}{\sigma}$$

$G =$ ***Outlier Detected? NO***

However, the value of 675 had a Z-value of 1.52, or below the critical Z of 2.50, and had a P-value of >0.05, meaning it lacks statistical significance. Therefore, although not a true outlier, it is outside the bounds of the other Z-values, and according to the test it is the furthest value from the others.

3.2.2. Yemen

Figure 7: ***Yemen civilian drone strike casualties 2002-2014***[17]



Mean (dotted line)

$$\bar{x} = \frac{\sum x}{n}$$

$\bar{x} =$ ***113.5***

[17] *For Yemeni Casualty figures, the data is restricted to UMASS, NAF and TBIJ only*

Median (solid line)

$$\tilde{x}(even) = \frac{\left(\frac{n}{2}\right)^{th} value + \left(\frac{n}{2}+1\right)^{th} value}{2}$$

$\tilde{x}(even)$ = ***87***

Range

$R = x_H - x_L$

R = *214 (TBIJ) – 81 (NAF)*

R = ***133***

ESD

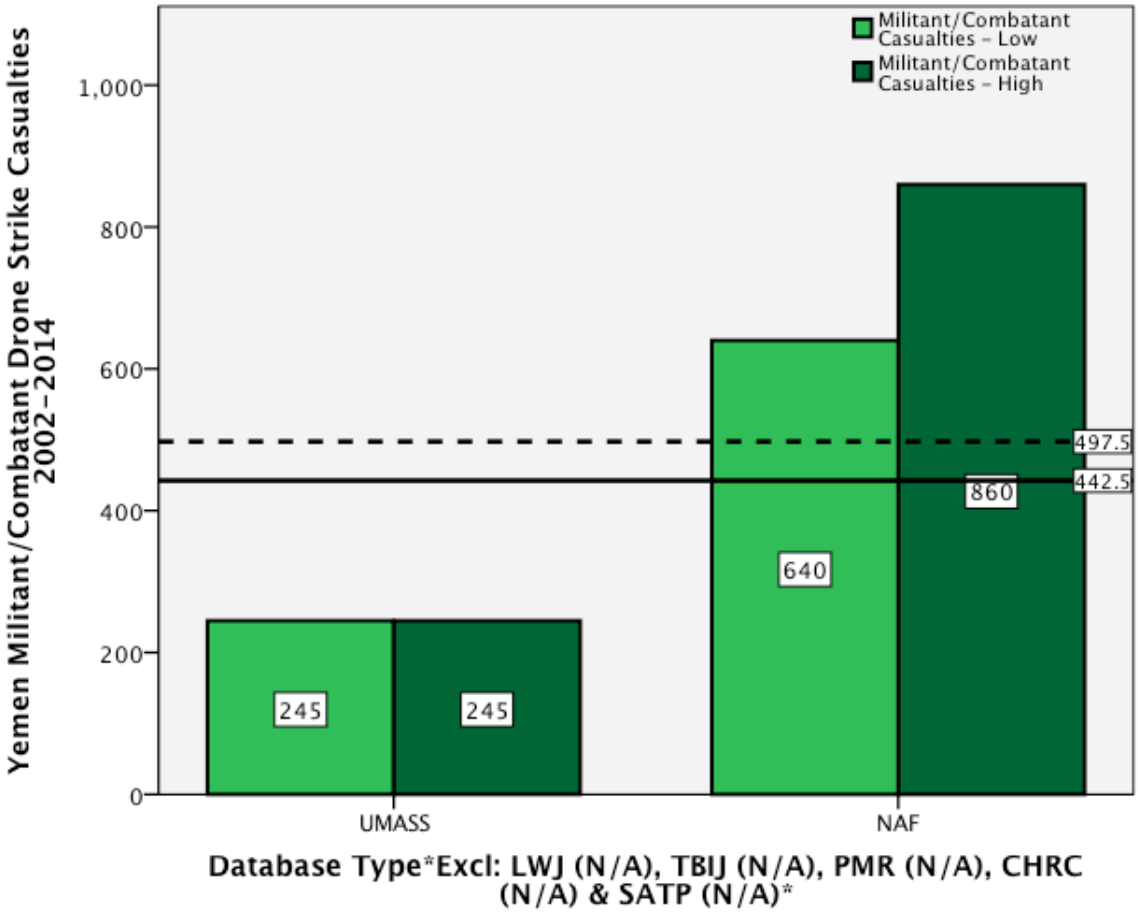
$$G = \frac{\overline{Y} - Y_{\min}}{\sigma}$$

G = ***Outlier Detected? YES***

Z-value of 1.94, which exceeds critical Z of 1.88, and has a P-value of <0.05 (statistically sig.)

As mentioned, although an outlier has been detected, it cannot be ignored; the data was intentionally entered as such. That being said, the highest civilian casualty for this time period may be considered to be unusually high, given the estimates of the other tracking organizations. As such, the reader should factor that into their consideration of the chart above.

Figure 8: ***Yemen militant/combatant drone strike casualties 2002-2014***



Mean (dotted line)

$$\bar{x} = \frac{\sum x}{n}$$

$\bar{x} =$ ***497.5***

Median (solid line)

$$\tilde{x}(even) = \frac{\left(\frac{n}{2}\right)^{th} value + \left(\frac{n}{2}+1\right)^{th} value}{2}$$

$\tilde{x}(even)$ = ***442.5***

Range

$R = x_H - x_L$

R = *860 (NAF) – 245 (UMASS)*

R = ***615***

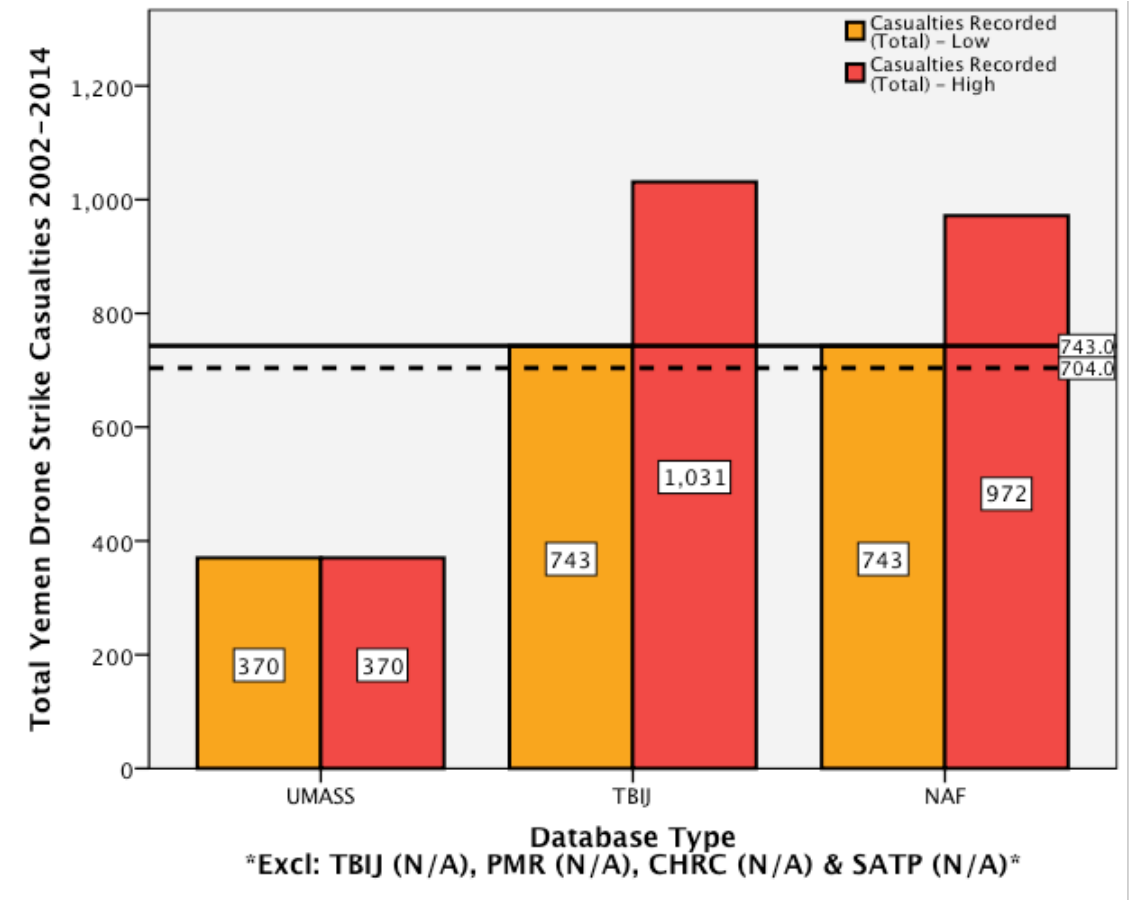
ESD

$$G = \frac{\overline{Y} - Y_{\min}}{\sigma}$$

G = ***Outlier Detected? NO***

However, the value of 860 had a Z-value of 1.19, or below the critical Z of 1.48, and had a P-value of >0.05, meaning it lacks statistical significance. Therefore, although not a true outlier, it is outside the bounds of the other Z-values, and according to the test it is the furthest value from the others.

Figure 9: ***Yemen total drone strike casualties 2002-2014***



Mean (dotted line)

$$\bar{x} = \frac{\sum x}{n}$$

$\bar{x} =$ ***704***

Median (solid line)

$$\tilde{x}(even) = \frac{\left(\frac{n}{2}\right)^{th} value + \left(\frac{n}{2}+1\right)^{th} value}{2}$$

$\tilde{x}(even)$ = ***743***

Range

$R = x_H - x_L$

R = *1,031 (TBIJ) – 370 (UMASS)*

R = ***661***

ESD

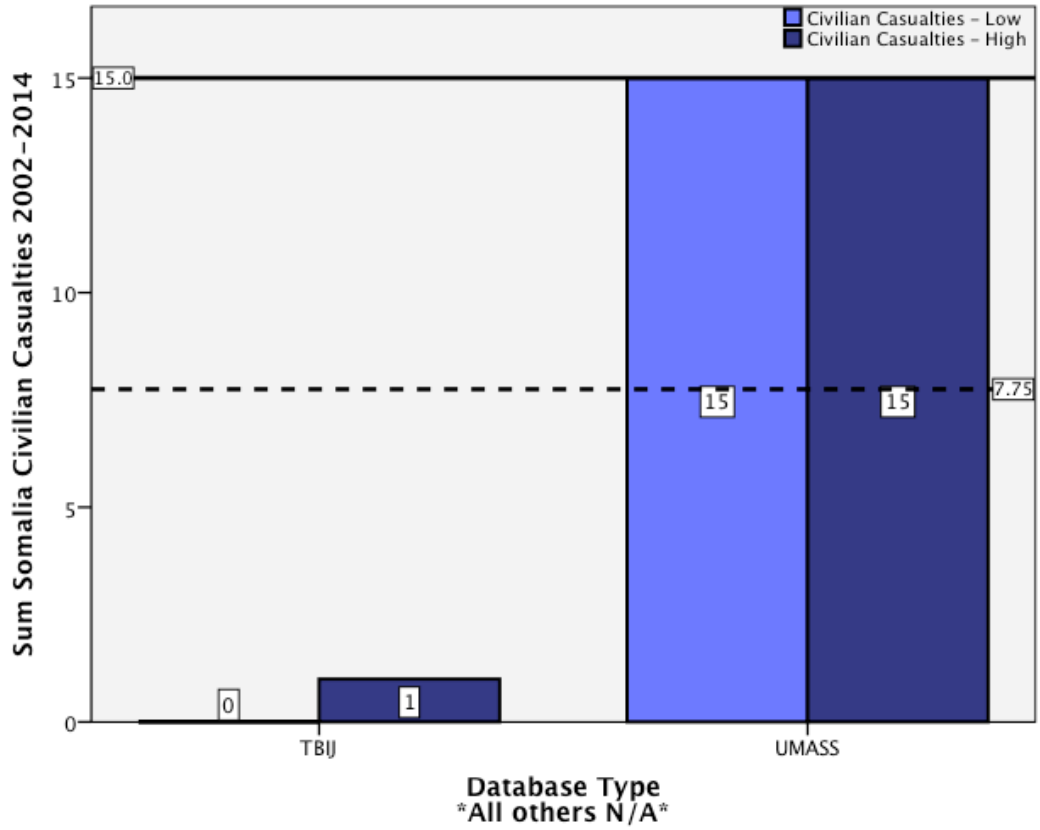
$$G = \frac{\overline{Y} - Y_{\min}}{\sigma}$$

G = ***Outlier Detected? NO***

However, the value of 1,031 had a Z-value of 1.37, or below the critical Z of 1.88, and had a P-value of >0.05, meaning it lacks statistical significance. Therefore, although not a true outlier, it is outside the bounds of the other Z-values, and according to the test it is the furthest value from the others.

3.2.3. Somalia

Figure 10: ***Somalia civilian drone strike casualties 2002-2014***[18]



Mean (dotted line)

$$\bar{x} = \frac{\sum x}{n}$$

$\bar{x} =$ ***7.75***

[18] *For Somalia figures, the data is restricted to UMASS and TBIJ only*

Median (solid line)

$$\tilde{x}(even) = \frac{\left(\frac{n}{2}\right)^{th} value + \left(\frac{n}{2}+1\right)^{th} value}{2}$$

$\tilde{x}(even) =$ ***15***

Range

$R = x_H - x_L$

$R =$ *15 (UMASS) – 0 (TBIJ)*

$R =$ ***15***

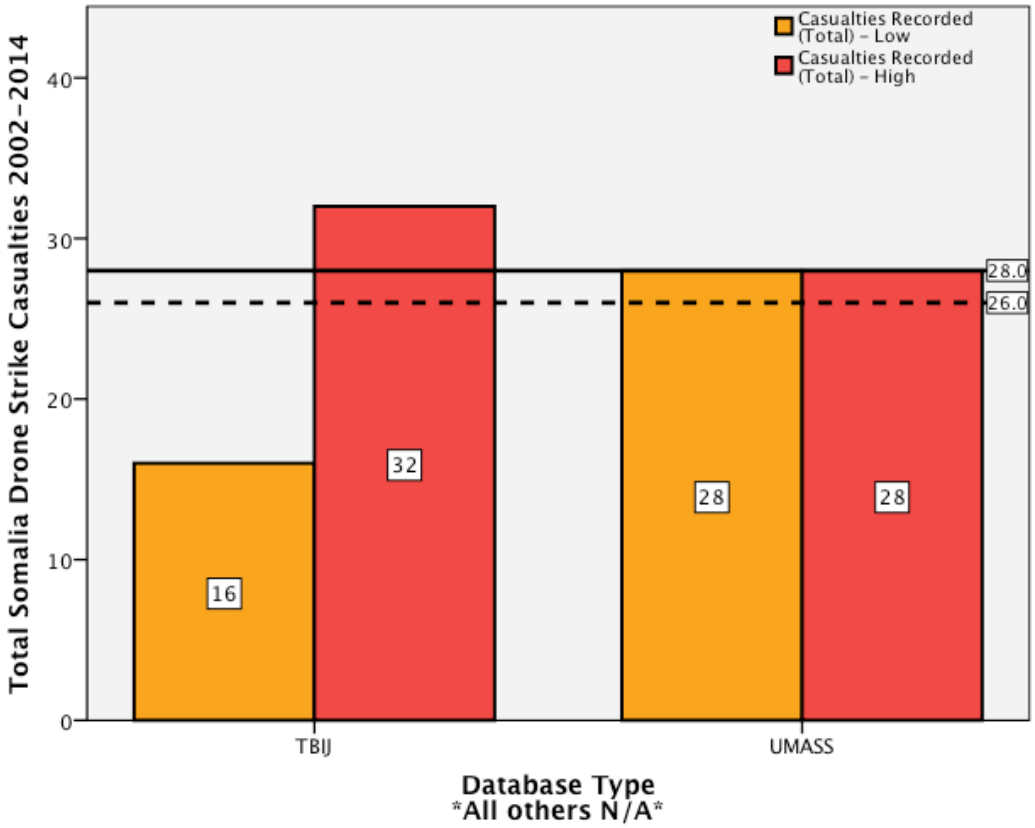
ESD

$$G = \frac{\overline{Y} - Y_{\min}}{\sigma}$$

$G =$ ***Outlier Detected? NO***

However, the value of 0 had a Z-value of 0.92, well below the critical Z of 1.48, and had a P-value of >0.05, meaning it lacks statistical significance. Therefore, although not a true outlier, it is just outside the bounds of the other Z-values, and according to the test it is the furthest value from the others.

Figure 11: ***Somalia total drone strike casualties 2002-2014***[19]



Mean (dotted line)

$$\bar{x} = \frac{\sum x}{n}$$

$\bar{x} =$ ***26***

[19] *Note: As only UMASS records militant/combatant casualties, the minimum two-database comparison level for Somali militant casualties was not met, and will thus not be measured.*

Median (solid line)

$$\tilde{x}(even) = \frac{\left(\frac{n}{2}\right)^{th} value + \left(\frac{n}{2}+1\right)^{th} value}{2}$$

$\tilde{x}(even) =$ ***28***

Range

$R = x_H - x_L$

$R =$ *32 (TBIJ) – 16 (TBIJ)*

$R =$ ***16***

ESD

$$G = \frac{\overline{Y} - Y_{\min}}{\sigma}$$

$G =$ ***Outlier Detected? NO***

However, the value of 16 had a Z-value of 1.44, or below the critical Z of 1.48, and had a P-value of >0.05, meaning it lacks statistical significance. Therefore, although not a true outlier, it is outside the bounds of the other Z-values, and according to the test it is the furthest value from the others.

3.3. Lessons Learned

I insist that drone data, particularly the number of civilians killed in drone strikes, is absolutely vital in shaping our opinion on the subject, and by extension foreign policy. As Chantal Grut of the Columbia Human Rights Clinic advised:

> We - the public, the analysts and experts, and the policymakers - still do not know the true impact or humanitarian cost of drones; the estimates, though well intended, may provide false assurance that we know the costs and can fairly assess whether to continue drone strikes. Where the tracking organizations' estimates significantly undercount the number of civilians killed by drone strikes, they may distort our perceptions and provide false justification to policymakers who want to expand drone strikes to new locations, and against new groups (Grut et al. 2012, 4).

But as the data has shown, variability exists within and between all databases, and to argue that 'undercounting' has occurred is to ignore the possibility that *none* of the data sources are reliable. What can be stated is that that the variation present in these data sets is unacceptably high. In many cases, the range showed dissimilarities between lowest and highest estimates that were more than double, meaning a >100% change in figures within the same series. Some were even greater in their differentiation. In taking a more cumulative approach, it is my view that the means, medians, and ranges calculated should give a clearer picture of the state of strike casualty data accuracy. To reiterate, given no way of authoritatively determining whether any one database is more or less reliable than any other, and as no data set can be ignored, only a summarized approach accounts for the degree of variation between the highest and lowest ends of the casualty series. In an aggregated format, the possibility of a skewing effect is also accounted for. Although later scholarship may discover unknown variables that categorically list one database methodology as superior, at this stage of our understanding on the subject such declarations cannot be made, and aggregates are likely the most valuable perspective. Thus, the mean and median lines indicated on the

diagrams may be better interpretations of overall drone strike casualty figures across these databases.[20]

Of immense importance in the drone dialogue is that, at present, the databases scrutinized in this project are the only sources of information for drone strike casualties. As with any database comparison, there were differences in the tracking organizations between their respective methodologies and the conclusions they reached. But it was the *degree* with which these sources differed that was disconcerting. Beyond the skewness (variation of some figures from the mean) and data disparity illustrated in the figures, another worrying pattern emerged: even with the strike dates themselves, arguably the most fundamental level of drone strike data analysis, many of the databases were not aligned. Some reported strikes on a given date, or multiple strikes spanning a single day, while others did not. This trend of disconnection and disagreement continues throughout the data sets and across the casualty categories measured. A parallel in everyday interactions would be if individuals differed not just on their account of an evening, but about which evening they were discussing in the first place. The same level of missing or contrasting core data in other fields would be highly abnormal, if not intolerable.

But these data discrepancies also pose the question of why they occur in the first place. Surely, the contributors are aware of other 'competing' databases and the concerns this paper has exhibited. Part of the answer is that the database origins and methodologies mirror the motivations of their creators. The NAF, for example, has a national security-centric tone to its website's rhetoric. It would fit that their lower civilian casualty estimates support an agenda of drone program continuance. TBIJ, on the other hand, has a human rights focus to its writing and subject matter, and their appreciably higher civilian casualty estimates reflect this perspective. Political pressures, funding concerns, and exclusivity agreements may also effect which databases are used.

[20] *For further details, please see the appendix for additional tables and figures regarding casualty estimates and other relevant, but supplemental drone strike information.*

It is admittedly difficult to judge these tracking organizations and the true intentions behind their work. What exacerbates the situation is the noticeable gap in the academic literature concerning the databases themselves and who operates them. Very little has been written about these tracking organizations, and as noted previously, much of it is sourced from articles written by database administrators who are less likely to remain impartial in an assessment of the strengths and weaknesses of organizations with whom they are in direct competition.

The tables and figures in this project were created to increase awareness of how reported casualties – especially civilian casualties, as they are the most politicized – are remarkably inconsistent. The databases, working in isolation, offer only one piece of the drone casualty puzzle. There is a missing awareness that the data presented by a database is not *the* answer, but *an* answer to questions of drone effectiveness. It should be unmistakable that there is a need for a more collaborative effort, incorporating an aggregated look at a range of casualty estimates as opposed to individual estimates. I posit that future data considerations be tackled in a far more comprehensive manner. Databases should not view other tracking organizations as in opposition, but rather as opportunities for further refining and correcting their own data, for a mutual benefit.

The media must take up this challenge and apply a more aggregated and comparative format to their representation of drone strike statistics in their reporting, and perhaps this study can be a template to do so. Referring back to the media/foreign policy linkages, only a better-informed and educated public is prepared to advise their elected officials (Dorman and Livingston 1994). But to be effective in that advice, they must have a far more robust comparison between competing information sources.

Chapter 4.

Future Considerations

4.1. Limitations of this Study

The primary limitation of this study has been alluded to in previous comments and footnotes. It is the understanding that a full accounting of the motivations behind media outlets' selection of certain databases was not attempted. The individuals who make these decisions have done so for a variety of reasons both personal and professional, and I do not aspire in this article to delineate all of them. A comprehensive inventory of which tracking organizations are selected by which media outlets in their reports could eventually augment the argument of this project. Although examples of this are given in table 1, the list is by no means complete. But this limitation is outside the scope of this paper, and would require a separate and lengthy effort to satisfactorily answer. There is much to learn by doing so, and I anticipate that subsequent undertakings will reveal a great deal about the underlying rational behind database selection.

Another limitation arises from the temporal nature of this data. As the data is constantly updated with new information, at the time of publication the database comparisons I have illustrated and analyzed are almost certainly due for expansion and refinement as drone strikes continue unabated. I believe that although this is an unavoidable constriction on the research, it also offers an opportunity for the comparative meta-database created for this project to serve as the groundwork for these future updates. This database was designed to be added to, edited, and used by others on an ongoing and iterative basis.

A final possible limitation is the concern by some authors that casualty estimates will *never* be accurate. Taj states that because Islamic burial rights are meant to occur as soon as possible (usually within twenty-four hours of death, but there is some accommodation for regional cultural preference), the ability to verify these casualties is limited (Taj, 2010). Even were independent observers or investigators present in the region, it is both dangerous and costly to enter these areas to attempt casualty substantiation.

Despite this study's conclusion of flawed casualty data and a call for official figures, it could also be true that were an official estimate made available to the public and added to the new database as a point of comparison, it may be no more able to improve current estimates. There is little indication that their figures would be any more reliable. Their access to these areas is equally limited, and their ability to investigate equally constrained. Until such figures are released it is impossible to reach further conclusions on the matter, and any argument for or against their usefulness is purely speculative.

4.2. Drones in the Years Ahead

As Christof Heyns, Special Rapporteur on extrajudicial, summary or arbitrary executions for the United Nations, stated in his report on the subject, "drones, it can safely be said, are here to stay" (A/68/382 2013, 4). They have shown themselves to be far too valuable a tool to be discarded, and their possible replacements have a number of disadvantages. Among other concerns: air strikes may be no more accurate, cruise missiles do not operate in real-time, and conventional forces ('boots on the ground') have the additional operational obstacles of negotiating state sovereignty and risk to troops (Springer 2013).

Future investment and procurement strategies seem to reflect drones' dominant position in potential future conflicts. The United States Naval Expeditionary Base Camp Lemonnier is one instance of this. Located in Djibouti, it is the U.S. military's drone and Special Forces deployment hub for the Horn of Africa. For this base alone, there has been an investment of $1.4 billion on new construction, and there are plans to expand its

infrastructure footprint from 98 acres to over 500 (The Economist 2012, 61). With the recent announcement of the U.S. securing a further ten-year lease extension for the site, with an "option to extend the arrangement for another decade," it is abundantly clear that both nations are firmly invested in the future of Camp Lemonnier and its contingent of drones and Special Forces (Al Jazeera, 2014). Such steps in Djibouti say nothing of the drone-operating base in Afghanistan, the undisclosed CIA drone base "elsewhere in the Arabian Peninsula," or other installations the public is not privy to (The Economist 2012, 61).

At present, the United States is both the technological leader and most persistent user of drones in a combat setting, and it "fields more robotic and drone platforms than the rest of the world combined" (Springer 2013, 65). However, the Russian Federation, France, Germany, and China all have "extremely advanced programs," and "it is only a matter of time" before they too use armed drones in combat (Springer 2013, 1). Although experts may differ in their predictions of how drones will be used in the future, there is consensus that the technology offers few limitations and poses many serious moral and legal questions. As shown, the data and understanding of drones is imperfect, and their capacity for unintended civilian casualties is difficult to deny. And yet, William Saletan's augmented Churchill quote may capture the reality of their use: "they're the worst form of war, except all the others" (Saletan 2013, para.1). The issue lies, therefore, with how to measure how effective – or ineffective – drones have truly been.

4.3. Conclusion: Decrepit Data

Their future role aside, modern militaries' heavy reliance on drones means the central assertion of this paper will be even more applicable: the data has been unsatisfactorily inconsistent, and this has foreign policy repercussions. Drones are fast becoming a prevailing military weapon platform, and as Singer states,

> Whatever [drone] doctrine prevails, it is clear that the American military must begin to think about the consequences of a 21st battlefield in which it is sending out fewer humans and more robots (Singer 2009, 110).

Some may question whether the literature referring to public opinion's effect on foreign policy is applicable to drone programs, or whether those capable of altering these programs would even listen. To this I refer the reader to President Barack Obama's 2013 speech at the National Defense University of Washington, D.C. In the speech, the President addressed many of the concerns raised not by lawmakers and powerbrokers, but by ordinary citizens and activists:

> Much of the criticism about drone strikes, both here at home and abroad, understandably centers on reports of civilian casualties. There is a wide gap between U.S. assessment of such casualties and non-governmental reports. Nevertheless, it is a hard fact that U.S. strikes *have* resulted in civilian casualties (President Obama 2013, 22:05-22:30, his emphasis).

This is in direct response to the pressure being applied by the public in demanding reconsideration, or at the very least clarification, of the drone program. Further, in reference to the 'wide gap' he refers to, it must be restated that no official data set has been released thus far. The President nevertheless remained adamant that drones were far and away the preferred response to international extremism. He stated that "simply put, these strikes have saved lives," by removing high-level threats, and that Special Forces operations such as the one used to target Osama Bin Laden "cannot be the norm" (ibid, 18:30-18:33, 15:50-15:53). He cautions the listener to:

> 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 (ibid, 23:33-23:45).

And yet he also acknowledged that, "the same progress that gives us the technology to strike half a world away also demands the discipline to constrain that power, *or risk abusing it*" (ibid, 19:45-19:51, emphasis added). This notion of restraint, or when to use armed drones, lies at the heart of the drone debate. A dominant critique of the U.S. drone program is that it has become the "default choice" in responding to threats internationally (DePetris 2010). Yet it remains difficult to rationally debate a program when its operators refuse to release official drone strike data to the public.

If there exists both a noticeable divergence within database figures and incentives to keep them this way (as with the Obama administration's definition of what constitutes a 'combatant'), it is imperative that this fact be examined further for the sake

of what some see as the “regrettable collateral by-product” of such strikes: civilians (Porch 2013, 3). Without an improvement in database reliability or a discussion of alternatives to these databases and their methods of data collection, the electorate will continue to be reliant on conflicting third-party sources of information with disputed dependability (Woods 2013). Further work is needed to better understand both drone strike casualty figures and the tracking organizations that provide this information, as there are unacceptable variations within and between these databases. As the literature reviewed for this project has shown, the data and media more generally have a direct link to the public’s ability to understand drones. When this data differs significantly, their capacity to do so is severely impeded. This, as detailed at length in this paper, may create a misleading foundation for any potential dialogue on the issue of drone strikes as a tool of foreign policy, and may direct our leaders towards making the wrong choices on whether to continue or abolish drone programs. If public opinion is indeed shaping such policies, it is equally important that the data used in forming public opinion be as solid as possible.

To conclude this project, President Obama and his administration evidently feel that drones are the best possible option against extremism among a bevy of sub-optimal choices, and that may be the case. However, with the current state of data variation, and without superior alternatives to these tracking organizations, it is irresponsible to accept that declaration. In the case of drone casualty data, it is apparent that any one database is inadequate as sufficient evidence in arguing for or against the continuation of drone programs. In order to achieve a suitably enlightened argument on the issue, the international community desperately needs better information. How to achieve this is a question I pose to others, and I expect much debate, but I remain convinced that only with concrete data can the discourse on drones truly begin in earnest. Hopefully, both this project’s findings and the comparative database created to accomplish its goals will provide motivation for future efforts to improve our data availability, accuracy, and to refine our understanding of drone warfare.

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Appendix A.

Data Links

Database Links:

UMass Drone (UMASS)

http://umassdrone.org/ *(now redirected to http://www.targetedkilling.org/)*

New America Foundation (NAF)

http://securitydata.newamerica.net/drones/pakistan/analysis

South Asia Terrorism Portal (SATP)

http://www.satp.org/satporgtp/countries/pakistan/database/Droneattack.htm

The Bureau of Investigative Journalism (TBIJ)

https://docs.google.com/spreadsheet/ccc?key=0AogpD5TbyQnvdEdQQkIyNE9qSnZ5WFFqZjJSZ0VHdEE#gid=9

Pakistani Management Report (PMR)

www.thebureauinvestigates.com/2014/01/29/get-the-data-pakistani-governments-secret-report-on-drone-strikes/

Long War Journal (SATP)

http://www.longwarjournal.org/pakistan-strikes.php#

Columbia Human Rights Clinic (CHRC)

http://web.law.columbia.edu/sites/default/files/microsites/human-rights-institute/COLUMBIAPakistanDataSetFINAL.pdf

Appendix B.

Supplementary Figures

Figure A.1

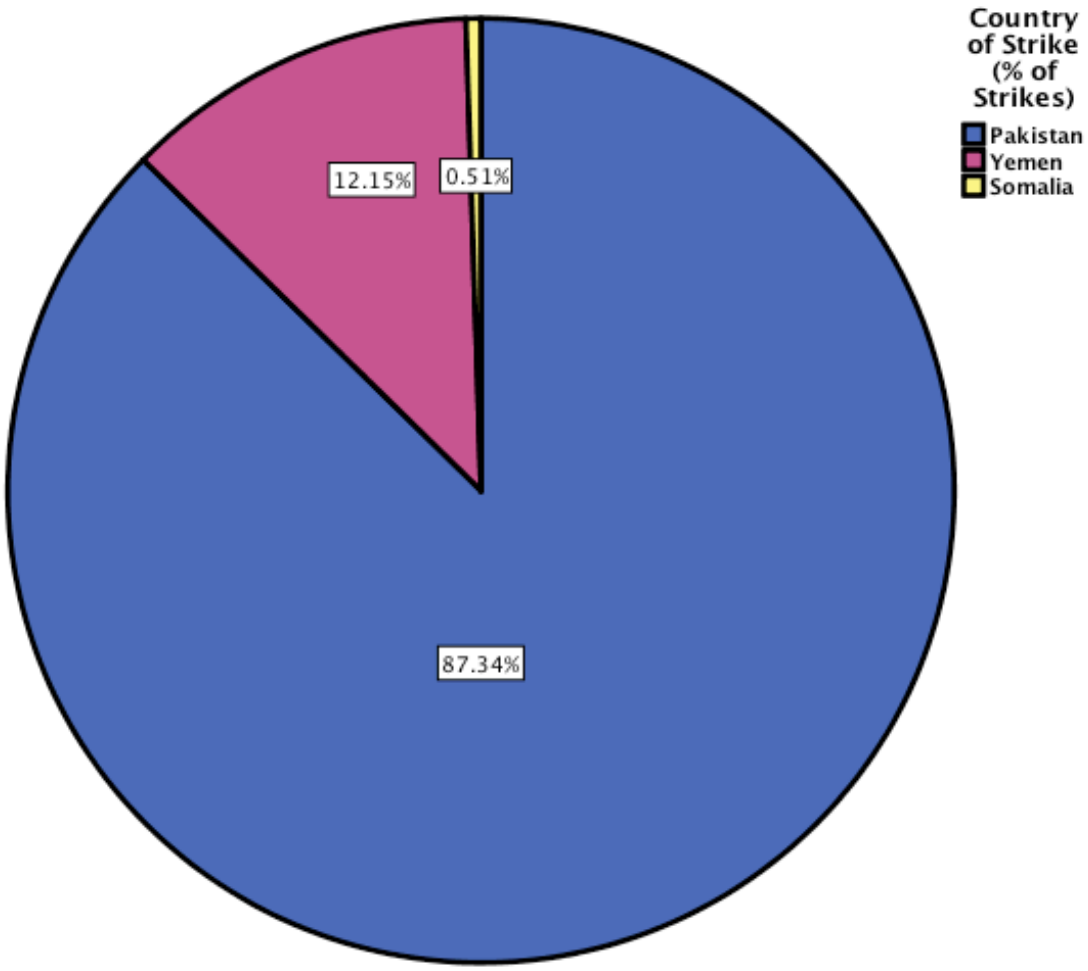

Figure A.2

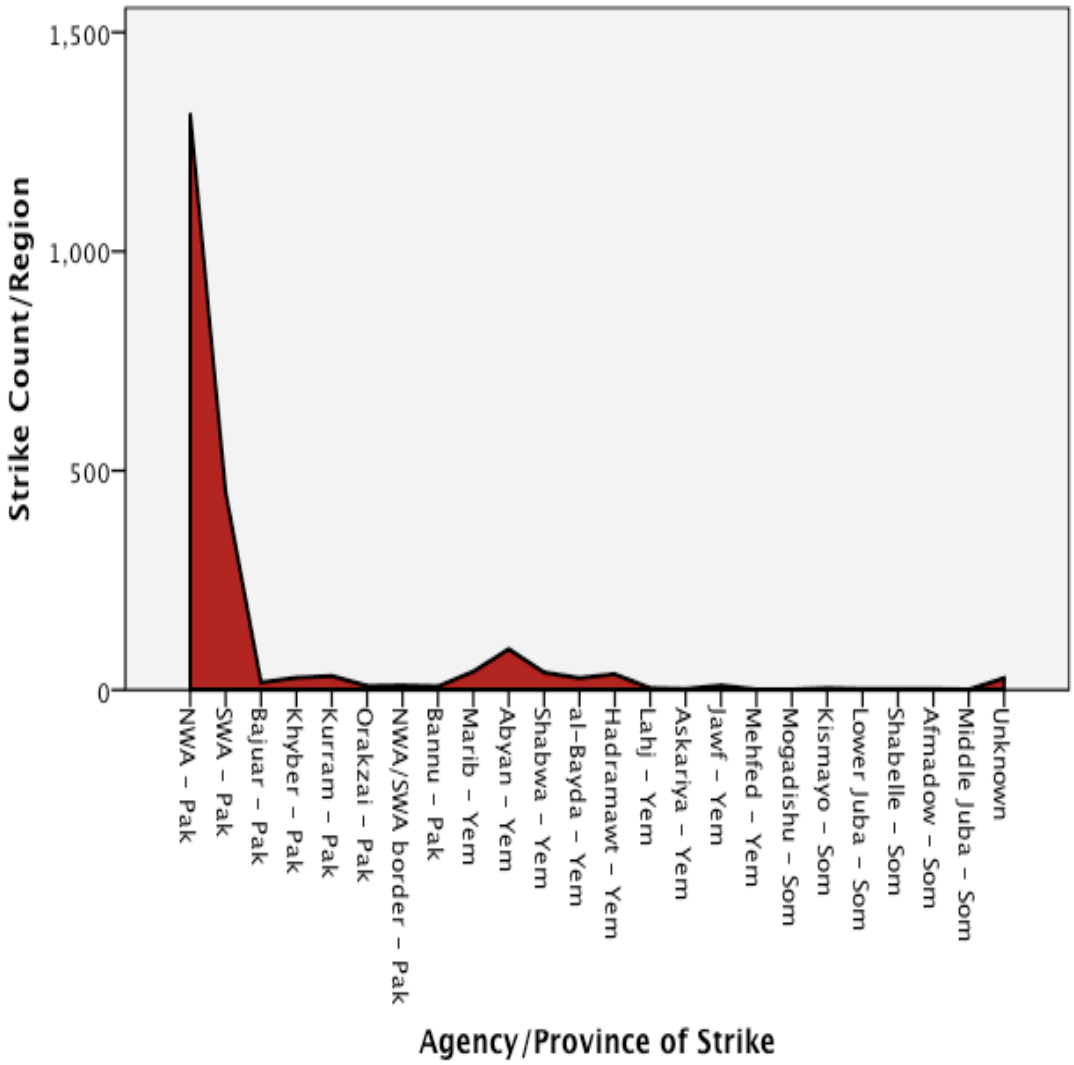
Strike Count/Region
1,500
1,000
500
0
NWA – Pak
SWA – Pak
Bajuar – Pak
Khyber – Pak
Kurram – Pak
Orakzai – Pak
NWA/SWA border – Pak
Bannu – Pak
Marib – Yem
Abyan – Yem
Shabwa – Yem
al-Bayda – Yem
Hadramawt – Yem
Lahj – Yem
Askariya – Yem
Jawf – Yem
Mehfed – Yem
Mogadishu – Som
Kismayo – Som
Lower Juba – Som
Shabelle – Som
Afmadow – Som
Middle Juba – Som
Unknown
Agency/Province of Strike

Figure A.3

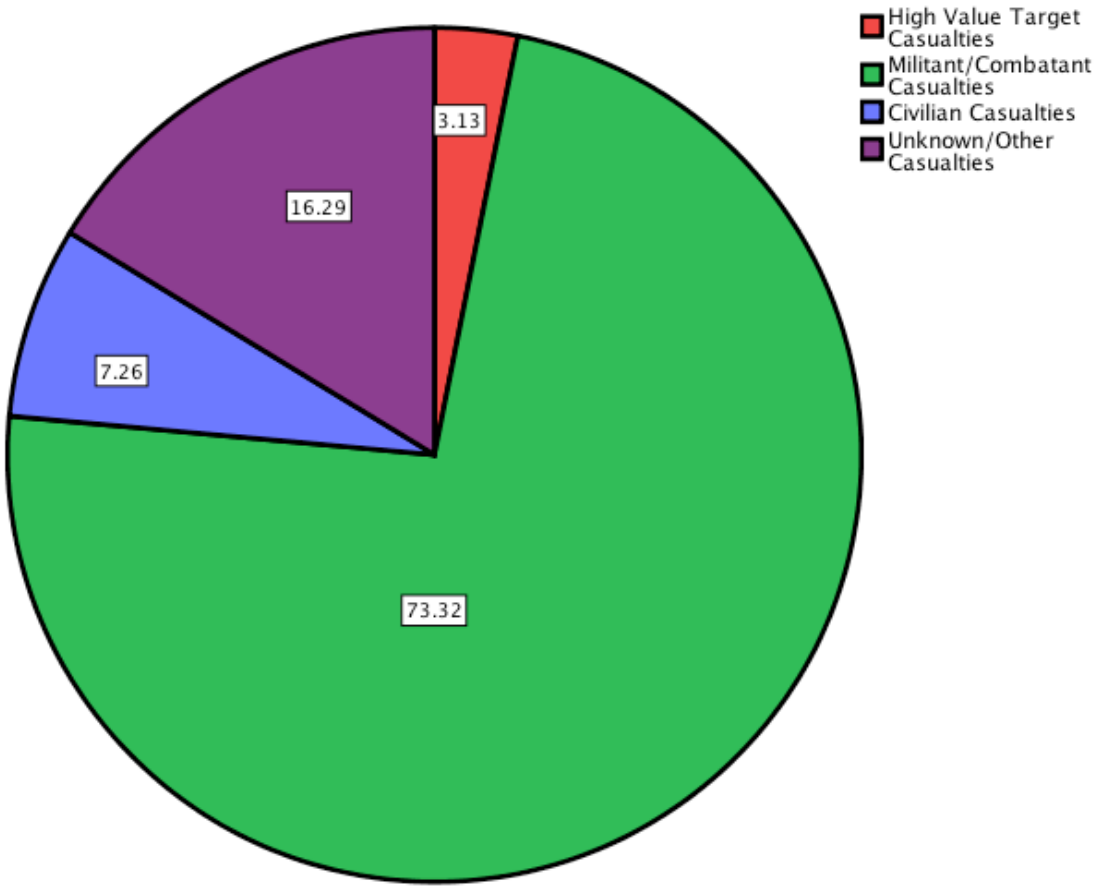
High Value Target Casualties
Militant/Combatant Casualties
Civilian Casualties
Unknown/Other Casualties
3.13
16.29
7.26
73.32

Figure A.4

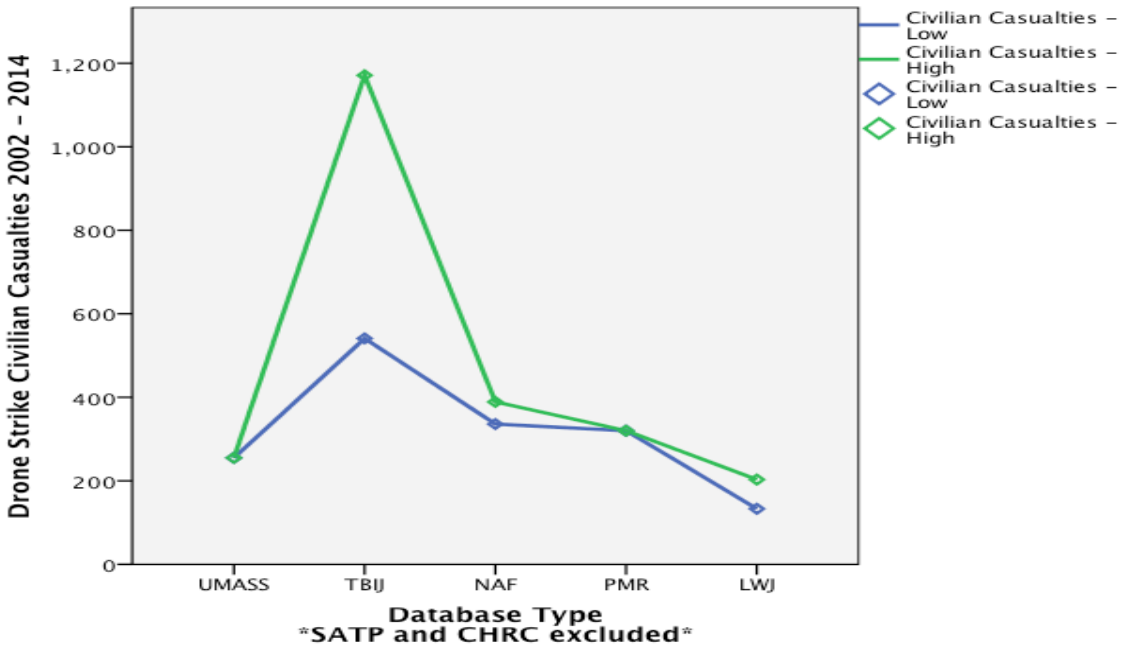

Figure A.5

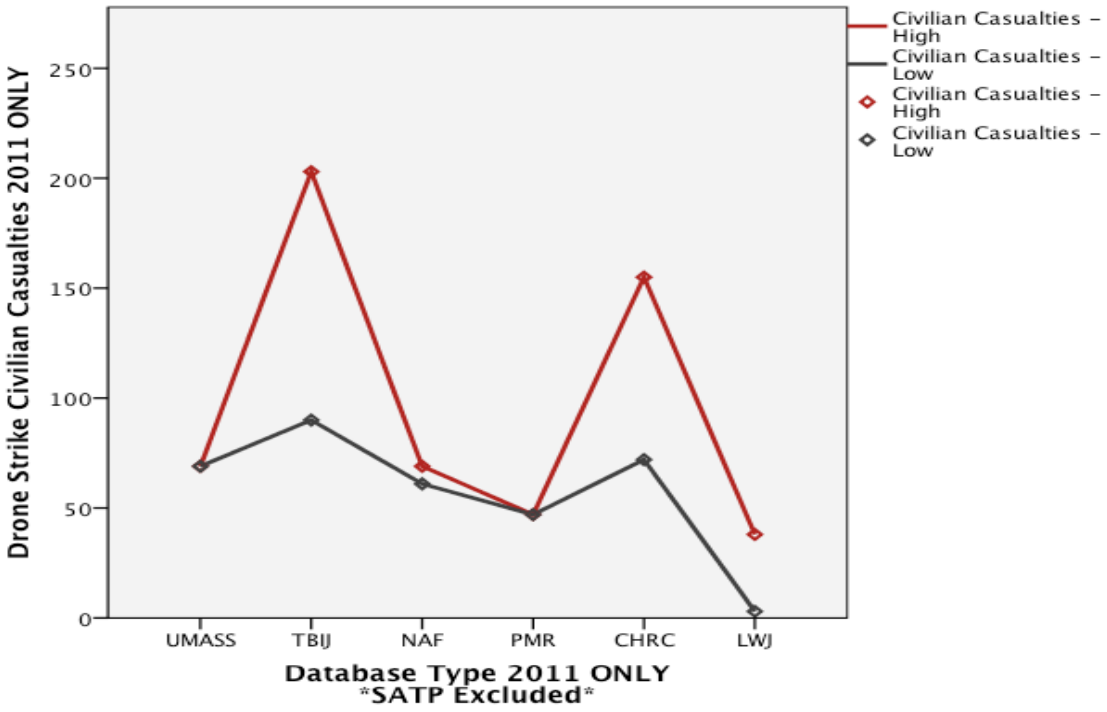

Table A.1

Descriptive Statistics

		Min	Max	Sum	Std. Deviation	Variance
Casualties Recorded (Total) - Low	2165	0	83	15212	7.518	56.515
Casualties Recorded (Total) - High	2136	0	83	18378	8.480	71.911
High Value Target Casualties - Low	1012	0	8	592	.794	.631
High Value Target Casualties - High	1021	0	25	999	1.464	2.143
Militant/Combatant Casualties - Low	1064	0	55	5624	5.305	28.146
Militant/Combatant Casualties - High	1072	0	43	7125	6.367	40.544
Civilian Casualties - Low	1807	0	81	1539	4.567	20.861
Civilian Casualties - High	1795	0	82	2296	5.322	28.325
Unknown/Other Casualties - Low	921	0	66	812	3.312	10.970
Unknown/Other Casualties - High	887	0	66	937	3.909	15.277