

Examining the Influence of Civilian Casualties on
Insurgent Attacks in Iraq

by

Jessica Eve Karnis

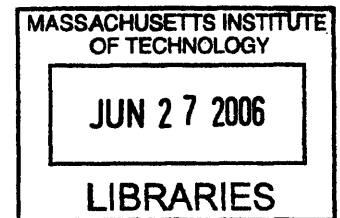
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ABSTRACT

Although there have been several attempts to tabulate civilian casualties in the Iraq War, the effect of these casualties on the Iraqi population and insurgent organizations has not been thoroughly examined. From the literature of the motives and mechanisms behind the formation and expansion of insurgencies, as well as the culture and values of Iraqi society, it is expected that increased civilian casualties will create grievance among the population, causing support for insurgents and increased attacks on coalition forces. This paper statistically analyzes data on Iraqi civilian and coalition force casualties to determine if there is a causal relationship between the two variables. It also recognizes the limitations and potential biases of the available data. Control variables are included in the statistical analysis to compare the influence of civilian casualties to competing theories of insurgency formation. Analysis demonstrates that while civilian casualties and coalition casualties have a positive relationship, significant causality between the two variables cannot be established. Alternative hypotheses examine unique factors in Anbar and Baghdad provinces and the role of focus events in insurgent activity. The paper concludes with recommendations for further study.

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CHAPTER 1

INTRODUCTION

During the course of the Iraq War there has been much speculation, but limited examination, of the influence of civilian casualties on the insurgency movement. Arguments have been made that civilian deaths are the primary motivation behind resistance to the Iraqi government or, conversely, that insurgents operate independently of the conduct of coalition forces and grievances lie elsewhere. Identifying the correct assumption is difficult because the Iraqi people's varied reactions to civilian casualties have increased the uncertainty in determining the causes of the insurgency.

While the exact figures and causes of civilian deaths may be disputed, it is accepted that a significant number of civilians have been killed in Iraq and are now dying at a faster rate. Anthony Cordesman at the Center for Strategic and International Studies measured more than 60 Iraqis killed daily in 2005, up from 40 the previous year.¹ Although the US military does not systematically track these casualties, President Bush acknowledged in December 2005 that "30,000, more or less" Iraq civilians have been killed since the start of the US-led invasion.²

The large-scale effect of violence on Iraqi civilians, whose support insurgents depend on for success, suggests that civilian deaths need to be studied from the perspective of solving an insurgency problem rather than the traditional humanitarian viewpoint. Sarah Sewell, former deputy assistant secretary of defense for peacekeeping,

¹ "Rising Civilian Toll Is the Iraq War's Silent, Sinister Pulse," *New York Times*, 26 October 2005, sec. A, p. 12.

² "What's the Story Behind 30,000 Iraqi Deaths?" *Washington Post*, 18 December 2005, sec. B, p. 2.

noted on the issue of civilian casualties: “War’s effect on civilians is too important to be left to the pacifists.”³

This paper tests the hypothesis that civilian casualties create grievances among the Iraqi population and lead to increased insurgent attacks against coalition forces. Analysis of data on the casualties of Iraqi civilians and coalition forces demonstrate that while there is a positive relationship between the two variables, there is not sufficient causality to conclude that civilian casualties play a leading role in the insurgency.

Chapter 2 of this paper discusses the two primary theories of counterinsurgency and why civilian deaths are more likely to promote violence than deter conflicts. Specific characteristics of Iraqi culture and demographics are presented as additional motivators of insurgent organizations. Chapter 3 lays out the quantitative methodology used in this study, introducing the measurement and data sources of independent and dependent variable. Control variables that address other leading grievances of insurgencies are introduced, and the limitations and biases of this data and their effects on statistical findings are also discussed. Chapter 4 presents the statistical analysis of the data and examines the role of civilian casualties as a motivation for the insurgency. Alternative hypotheses are discussed in Chapter 5, specifically the characteristics in Anbar and Baghdad provinces that promote insurgency, and how insurgent organizations respond to focal events during the war. The conclusion in Chapter 6 recommends further studies on this issue.

³ *ibid*

CHAPTER 2

JUSTIFICATION OF HYPOTHESIS

This chapter defends the premise that in the Iraq war, civilian casualties of all types motivate attacks against coalition forces. First, the two main theories of counterinsurgency-hearts and minds, and coercion- are reviewed to determine whether civilian deaths will likely encourage or deter violent retaliation. Second, the perceived level of discrimination of civilian casualties in Iraq and how this perception motivates additional violence is discussed. Third, the focus of retaliation on coalition forces is examined, including cases where coalition members are not directly responsible for civilian deaths. Last, the social networks among families and tribes in Iraq are analyzed to determine how groups shift support to the insurgency based on the deaths of a few members.

Theories of Counterinsurgency

Insurgents depend upon the population for recruits, intelligence and resources. A successful counterinsurgency campaign must effectively separate insurgents from the population in order to sever this support and to more discriminately target resistors. There are two competing ideas of how a counterinsurgency is best won. The first theory of winning hearts and minds is based on providing benefits to the population for not participating in the insurgency. Through socio-economic improvements, a government can win the loyalty of its people and discourage resistance. From this perspective, civilian casualties are counterproductive, creating grievances among the population and

detracting from the benefits provided by the government. It has been difficult for conventional militaries to employ strategies of winning hearts and minds; it is much easier to kill a man than to improve his welfare. Lt. General Metz stated in August 2004: “[I] don’t think we will put much energy into trying the old saying ‘win the hearts and minds.’ I don’t look at it as one of the metrics of success.”⁴

The coercion theory is based on the assumption that force can be used to control the behavior of individuals and groups. By raising the costs of participating in the insurgency, civilians are deterred from providing support to resisters. However, the assumption that individuals base their decisions solely on comparing costs and benefits fails to consider irrational mechanisms. Gurr describes that “force threatens and angers men, especially if they believe it to be illicit...angered, they want to retaliate.” Psychology studies have found evidence that if anger is strong enough, it overrides inhibitions of anticipated punishment.⁵ Civilian casualties may work to coerce the population, so long as the costs of joining the insurgency are significantly higher and irrational emotions do not supersede security concerns.

Discriminate and Indiscriminate Violence

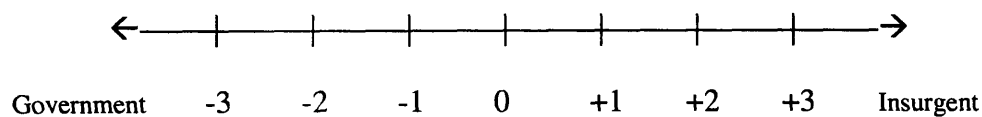
The best indicator of who the population will support, the government or the insurgents, is based on whether violence by coalition forces is perceived as discriminate or indiscriminate. At the same time, government forces must be able to provide protection to its supporters as promised. This section will focus on how security concerns motivate or deter participation in an insurgency.

⁴ Andrew Krepinevich, “Can the United States Win in Iraq?” Center for Strategic and Budgetary Assessments, 11 March 2005.

⁵ Gurr (1970) in Richard Schultz, “Breaking the Will of the Enemy during the Vietnam War,” *Journal of Peace Research* 15, no. 2 (1978): 112-113.

Borrowing from Petersen’s *Resistance and Rebellion*, the actions of a population during a civil conflict can be measured on a scale of –3 to +3, where the negative side represents support for the government and the positive side represents support for insurgents (see Figure 1 below). Support for either side of this conflict scales as follows: a “3” indicates participation in a mobile and armed organization, a “2” indicates organized participation at a local level, a “1” represents unarmed and unorganized support and a “0” indicates neutrality.⁶

Figure 1- Spectrum of Civilian Participation in an Insurgency



Knowing the number of civilian deaths is insufficient to predict the impact on an insurgency, knowing the victim and the perpetrator is equally important. If the population at a point on the spectrum becomes the target of government or insurgent violence, this group will move to a safer position to achieve security. Whether a person shifts towards the negative or positive side is determined by which movement offers the best protection against the violence. This scenario is based on the rational choice model, in which an individual calculates the costs and benefits of his role in the conflict and chooses his position to maximum his own security.

For example, if individuals at +1 are killed it may encourage others to claim neutrality if they know the population at 0 is spared violence. However, if there is no

⁶ Roger Petersen, *Resistance and Rebellion: Lessons from Eastern Europe* (Cambridge: University of Cambridge Press, 2001), 8-9.

additional security guaranteed by becoming neutral, the +1 group may join an armed organization to protest the government. If violence is perfectly discriminate towards insurgents, then civilians are guaranteed safety through their neutrality or cooperation with the government. As violence becomes more indiscriminate, there is less motivation for civilians to remain neutral and more incentive to resist the side that engages in indiscriminate violence.

While discriminate violence generally may effectively modify behavior and deter retaliation, violence targeted at ethnic groups often has the opposite outcome, increasing the level of retaliation. Individuals may shift their support for ideological or political movements to increase their security, but ethnic identities are usually fixed, at least within short time periods, and the population does not have the option of switching sides.⁷ If a member of an ethnic group views himself as a victim, the best opportunity for security is to resist the perpetrators of the violence. Targeted individuals will believe their chances for survival are strongest under the protection of their group. This group unity is often seen as an offensive threat to other ethnic groups, rather than a defensive maneuver-a perception that is likely to increase violent responses.⁸

Cases of Deterrence

Considering only the rational mechanisms of achieving security, there are three cases where civilian casualties would successfully deter retaliation, none of which describe the conflict in Iraq. The first case is when violence on one side is both discriminate and strong, ensuring that the security of all enemies is threatened. However, the same side must be capable of ensuring the security of its own supporters against

⁷ See: Chaim Kaufman, "Possible and Impossible Solutions to Ethnic Civil Wars," *International Security* 20, no. 4 (Spring 1996).

⁸ See: Barry Posen, "The Security Dilemma and Ethnic Conflict," *Survival* 35, no. 1.

violent attacks from opponents. Very clear consequences must be established for an individual's support or dissidence in order to motivate change in behavior. During the first phase of the Greek Civil War, the EAM (National Liberation Front) engaged in brutal yet discriminate violence, so that any resentment created was overpowered by fear.⁹

The second scenario for deterrence is where one side can link an individual's dissident action with that of a group and direct violence can be applied against all members of the group. In the Guatemala Civil War (1960-1996), the government selectively killed all inhabitants of villages that were thought to be aiding insurgents, thereby pressuring villagers to discourage their neighbors from supporting guerillas. This method of targeted but massive violence expanded responsibility for individual actions to include the entire community, effectively discouraging further resistance.¹⁰

The last case is where the government decimates a significant portion of the population so that the insurgency cannot obtain sufficient resources from civilians to operate effectively. This is only applicable in cases where the government has such a strong military advantage over the insurgency that their operations are based on strength rather than intelligence support from the population. In this situation, civilian resistance is perceived to be futile. Although the last two scenarios are not a viable option for counterinsurgency tactics, as the Geneva Convention prohibits the intentional killing of non-combatants, they are useful for understanding the mechanisms behind support for insurgency movements.

⁹ Stathis Kaylvas, "The Logic of Violence in Civil War," MIT Working Group on Insurgency and Irregular Warfare, Cambridge, Ma., 10 February 2006.

¹⁰ *ibid*

The indiscriminate killing of civilians generally fails to either create a sense of security or to impose a fear of retaliation. This violence may work in the short run to deter resistance, but in the long-term it creates problems of grievance. Research by Kelly Greenhill examines the efficacy of population relocation as a counterinsurgency method and finds a similar pattern-this strategy, like large-scale violence, often fails to achieve either the hearts and minds objective of providing security or the coercion method of installing fear. Success occurs only at two extremes: when individual's quality of life improves in these strategic hamlets, or when life is so hard that resistance appears futile.¹¹

Iraq as a Spiral Case

In Iraq several factors increase the likelihood that civilian deaths will lead to increased violence. These casualties arise when the government forces have either failed to protect its citizens, or in some cases their actions have directly lead to the deaths of civilians. This has led a significant number of Iraqis feel that their security is best achieved by supporting the insurgency. In some regions, insurgent forces are perceived as the stronger group, capable of employing greater violence and coercion. Additionally, some Iraqis view coalition forces as the cause of violent conflict and attacks against occupying troops may encourage their withdrawal. Insurgents may be perceived to be the bigger threat to civilians through their use of violence or coercion, making it more dangerous to oppose them rather than government forces.

Civilian deaths in Iraq may be perceived as both discriminate and indiscriminate, depending on the point of view. Violence against the population appears to be targeted

¹¹ Kelly Greenhill, "Draining the Sea, or Feeding the Fire?: Evaluating the Role of Population Relocation in Counterinsurgency Operations," unpublished manuscript, Wesleyan University, 2005.

outside of the insurgency or simply too careless in its selection, leaving too many innocent civilians killed. In addition, both Sunnis and Shiites feel their group to be subject to the majority of violence, further increasing tensions between these ethnicities.

Indiscriminate Violence

Some Iraqis perceive the force used by security forces as excessive, particularly the use of long-range weapons, which frequently leads to collateral damage. Civilian casualties also result when insurgent forces use the population as cover, hoping to deter coalition retaliation. While the military can gather information on the location of insurgents, it is much harder to verify whether civilians are also present. Coalition forces may also be relying on bad intelligence from the population, leading to the treatment of innocent civilians as insurgents. There have been multiple incidents of informants fingering neighborhood rivals or other personal enemies for purposes of revenge rather than the provision of useful information.¹² The coalition recognizes the importance of discrimination: “Every time we kill one of them, we breed more that want to fight us. We end up turning neutral people against us.”¹³

There is a common perception among Iraqis that security forces are indiscriminate not only in the targets of their violence, but also in their failure to protect civilians who oppose the insurgents. Coalition forces cannot consistently guarantee the security of Iraqis who remain neutral or support the government, nor can they effectively target all insurgents. Individuals have not been assured that it is safer to support the government, so incidents of violence against civilians have led to grievances against the authority in Iraq.

¹² George Bristol, “Battling the Hydra”, MIT Security Studies Program, Cambridge, Ma., 30 January 2006.

¹³ Carl Conetta, “Vicious Circle: The Dynamics of Occupation and Resistance in Iraq,” Project on Defense Alternatives, 18 May 2005.

Another factor in the casualty reports that makes the violence in Iraq seem indiscriminate is the killing of women and children. There are conflicting reports on whether this demographic is a significant or minor portion of the civilian casualties. According to Iraq Body Count, men (including the elderly) represented 81.7% of violent deaths in the conflict.¹⁴ A report released by the Iraq Ministry of Health in July 2005 indicates that 91% of civilians killed in insurgent attacks were men.¹⁵ In contrast, a study reported in *The Lancet* claims that less than 30% of deaths of victims after the invasion were men between the ages of 15-59.¹⁶ The actual figure of women and children killed, however, is much less important than the figure perceived by the Iraqi people. For instance, Haifa Street in Baghdad was renowned for frequent insurgent attacks, but local Iraqis claim that anti-American resistance did not start there until a US armored vehicle crushed an elderly man and his grandson.¹⁷

Ethnic Discrimination of Violence

Concurrently, perception of ethnic discrimination in the Iraq conflict increases the likelihood of retaliation in the form of insurgency. After Sunnis were removed from positions of power in the government and military, this ethnic group experienced a reversal in status and saw themselves shutout of the new government. Coalition forces have enabled this transfer of power to Shiite leaders and could be seen as responsible for

¹⁴ Iraq Body Count, "Iraq Body Count: A Dossier of Civilian Casualties 2003-2005," 4, available from http://reports.iraqbodycount.org/a_dossier_of_civilian_casualties_2003-2005.pdf

¹⁵ "Data Shows Rising Toll of Iraqis From Insurgency."

¹⁶ Les Roberts, "Mortality before and after the 2003 invasion of Iraq: cluster sample survey," *Lancet* 364, 20 November 2004: 1860.

Les Roberts' research has been widely criticized for its methodology; two concerns that Roberts acknowledges is the relatively small cluster size, and the potential recall bias of individuals interviewed. "Counting the Casualties," *The Economist*, 4 November 2004. Sarah Sewell criticizes the methodology in "What's the Story Behind 30,000 Iraqi Deaths?" describing, "War is not like a pandemic: it comes in pockets."

¹⁷ "Insurgent Leader Says Crackdown Disrupted His Cell," *Miami Herald*, 6 March 2005.

the exclusion of Sunnis. Violence against Sunnis during the occupation is thought to be supported, or at least enabled, by the new government. The New York Times reported an incident where Shiite policemen took away 13 Sunnis who were later found killed and tortured and another situation where ten Sunnis were suffocated after being locked in a police van.¹⁸ Sixty percent of Iraqi prisoners are from either Anbar or Baghdad provinces, which have significant Sunni populations, leading Sunnis to believe they are being unfairly prosecuted.¹⁹

Sunni-based insurgent organizations have frequently targeted Shiite civilians in an attempt to instigate civil war and delegitimize the new government by demonstrating their inability to maintain order. These Sunni organizations are succeeding in creating grievance against Iraqi security and coalition forces that are failing to protect the population. Shiites are unable to alter their ethnic identity and cannot appease instigators of violence, so cases of ethnic violence against Shiites are likely to cause retaliation against Sunnis, leading to a spiral of violence. A man whose wife and eight children were murdered claimed that the killing took place only “because we are Shiites, I have no enemies.”²⁰

Although insurgent groups may have different goals and grievances, a primary method of all insurgents is “to encourage U.S. forces to undertake excessive, punitive, counter-insurgency raids that disrupt the lives of ordinary Iraqis including the killing of civilians.”²¹ Insurgents want coalition forces to employ excessive force in order to create unrest among civilians, and they are succeeding in this goal. Coalition forces are already

¹⁸ “Data Shows Rising Toll of Iraqis From Insurgency.”

¹⁹ “U.S. to Expand Prison Facilities in Iraq,” *Washington Post*, 10 May 2005, sec. A, p. 15.

²⁰ “23 Killed in Bombing at Baghdad Recruiting Center,” *New York Times*, 11 July 2005, sec. A, p.1.

²¹ Ahmed Hashim, “The Sunni Insurgency in Iraq,” *MEI Perspective*, (15 August 2003).

predisposed to focus on their own security rather than the security of civilians. In addition, environmental and cultural barriers prohibit coalition forces from obtaining accurate intelligence. As a result of these factors, civilian casualties are often a consequence of coalition military operations.

Coalition forces have recognized the importance of how violence is perceived among Iraqi civilians and are working to alter that perception. Major John Nagl, who is also a scholar of counterinsurgency, reported that during his tour “direct-fire attacks on us have dropped dramatically. We have a pretty clear message. If you shoot at us we will do our damnest to kill you, and most of the time we will. And if you live in a neighborhood and you know there are bad people and you don’t want Americans to return heavy fire into your neighborhood, endangering your families, you need to turn in the bad guys. That message is being received.”²² Although this message is a clear warning that insurgents will be targeted, it does little to assure that neutral civilians will be protected from insurgent violence. Both perceptions must be present for violence to act as a deterrent in all cases.

Attribution of Violence to Coalition Forces

A significant amount of retaliation for civilian deaths will be directed at the coalition forces. Although the coalition is directly responsible for a certain portion of these casualties, this figure is perceived by the Iraqi population to be significantly higher than it actually is. Reports of coalition forces mistreating civilians, whether reality or rumors, creates a negative impression and leads Iraqis to blame the coalition for violent incidents involving civilians. The coalition has recognized that “Abu Ghirab is a huge

²² Peter Maass, “Professor Nagl’s War,” *New York Times Magazine*, 11 January 2004, 31.

symbol for the insurgents.”²³ It has damaged the credibility of coalition forces: 54% of Iraqis believe the incidents at Abu Ghirab represent how all Americans are and 61% believe that no one would be punished.²⁴ A June 2004 poll found 10% of Iraqis reported having had “very negative” encounters with coalition forces. A survey conducted during March and April of 2004 found that 58% of Iraqis believe US forces have behaved badly, but only 7% of this group reached this opinion from personal experiences. Others arrived at their conclusion from things they had seen or heard, demonstrating the potential impact of rumors and false information.²⁵ From the same survey, 71% of Iraqis questioned considered coalition forces to be occupiers, and therefore more obligated than the Iraqi government to establish security.²⁶ One Iraqi explained: “The Americans promised us rights and liberty. They should have just come and given us food and some security...It was then that I realized that they had come as occupiers and not liberators and my colleagues and I then voted to fight.”²⁷

A majority of Iraqis approve of insurgent attacks against coalition forces; there is much less support for those who kill Iraqi civilians. An Iraqi civilian insisted: “The real resistance won’t kill Iraqis. They attack the occupier, and they attack them in remote places and don’t use civilians as cover.”²⁸ A report to Congress on the progress of the Iraq War stated that while 80% of insurgent attacks are targeted at coalition forces (see Figure 2), civilians take 80% of the casualties from these incidents.²⁹ While some insurgent leaders have gone out of their way to prevent harming Iraqis, civilians still bear

²³ “Rebels Said to Have Pool of Bomb-Rigged Cars,” *New York Times*, 9 May 2005, sec. A, p. 11.

²⁴ “Iraq Index: Tracking Variables of Reconstruction and Security in Post Saddam Iraq,” The Brookings Institute, 23 March 2006, 48, available from www.brookings.edu/iraqindex

²⁵ Conetta, “Vicious Circle.”

²⁶ *ibid*

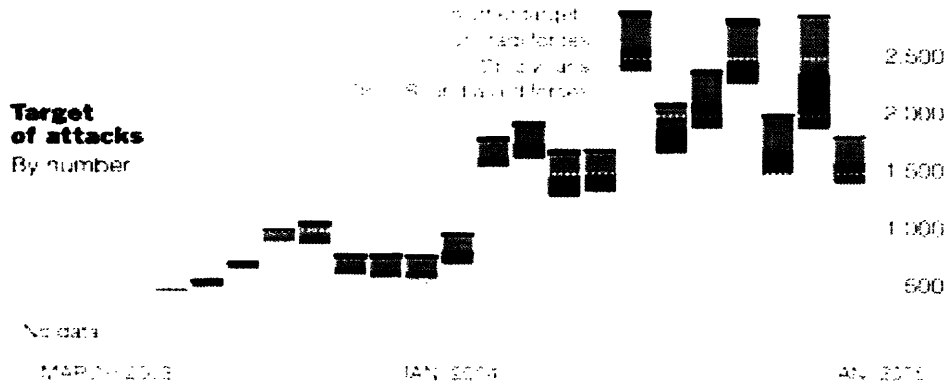
²⁷ Bruce Hoffman, “Insurgency and Counterinsurgency in Iraq,” RAND Corporation, June 2004, 16.

²⁸ Nir Rosen, “On the Ground in Iraq,” *Boston Review*, March/April 2006.

²⁹ “Measuring Security and Stability in Iraq,” Report to Congress, October 2005, 3.

the brunt of these attacks, which often involve indiscriminate, large-scale weapons such as explosives.³⁰

Figure 2- Target of Insurgent Attacks June 2003-February 2005³¹



However, a portion of civilian casualties results directly from coalition military operations, either as collateral damage or as mistaken targets. It is impossible for coalition forces to conduct occupation without civilian deaths. The exact figure is difficult to measure; Les Roberts’ research claims that 84% of civilian deaths in his study were directly from coalition operations, though none involved misconduct of coalition forces. In his work, 95% of these coalition-related deaths are from aerial weaponry. While many of these casualties are from the conventional phase of the war, which this paper does not examine, air strikes have continued in Iraq since May 2003.³² Iraq Body Count reports that 37.3% of civilian deaths are from coalition forces (see Table 1), a

³⁰ “Bombs Kill 21 and Hurt 70 in Baghdad”, *New York Times*, 13 March 2005, sec. A, p.1.

³¹ “U.S. Commanders See Possible Cut Troops in Iraq,” *New York Times*, 11 April 2005, sec. A, p.1.

³² Roberts, “Mortality before and after the 2003 invasion of Iraq,” 1857.

smaller-and perhaps more accurate-figure than Roberts found.³³ According to a report released by the Iraq Health Ministry in July 2005, the majority of civilian deaths were caused by insurgent attacks.³⁴

Table 1- Civilian Causes of Death by Category, March 20 2003- March 19 2005³⁵

US-led forces alone	37.3%
Predominantly criminal killings	35.9
Unknown agents	11.0
Anti-occupation forces alone	9.5
Both US-led and anti-occupation forces involved	2.5
Ministry of Health-defined 'military actions' ³⁶	2.5
Ministry of Health -defined 'terrorist attacks' ³⁷	1.3

Though there are disputes on the portion of deaths for which insurgents are responsible, many of these deaths will likely be blamed on coalition forces. In addition to the failure of coalition forces to protect the population from insurgent attacks, many Iraqis feel coalition troops further threaten their security because the troops are targets for insurgent attacks. In cases where civilians are killed during clashes between coalition and insurgent forces, the US is likely to be seen as the cause for violence. From a poll conducted by the British Ministry of Defence, 67% of Iraqis feel less secure because of the occupation and less than one percent believes coalition forces are responsible for improvement in security. Many civilians have indicated they believe they would be safer

³³ There is some question of the accuracy of Iraq Body Count's attribution of death. Anti-occupation force: target was coalition personnel or Iraqis working with coalition, Both forces: if military clash and caught in crossfire, Criminal: reported by mortuary mostly gunshots, US led: bombing raids/military offenses

³⁴ "Data Shows Rising Toll of Iraqis From Insurgency."

³⁵ "Iraq Body Count," 10.

³⁶ The Ministry of Health defines "military actions" as all casualties not labeled "terrorist attacks", where "The casualties may have been killed or injured by terrorist or coalition forces."

³⁷ The Ministry of Health defines as: "Casualties of car bombs and other clearly identifiable terrorist attacks."

if coalition forces withdrew from Iraq, a conclusion that may be encouraging attacks against coalition forces to expedite their exit.

Even if the majority of civilian deaths are not actually directly attributable to coalition forces, the important aspect is the perception of the Iraqi population. Marine Col. Michael Denning claimed that in his experience, “insurgents will kill civilians and try to blame it on us.”³⁸ In a case of a car bomb in Khaldiya, rumors were spread through the city that the explosion was actually caused by a US missile fired because the local police refused to support the occupation.³⁹ When American troops responded to a suicide car bomb in Baghdad in May 2005, angry crowds threw stones at their vehicles.⁴⁰ Incidents can be complicated and have multiple interpretations, such as an air strike on a home from which insurgents had been firing mortars, despite residents asking the guerillas to leave the home. The father of one victim blamed Abu Musab al-Zarqawi’s group for the attack, while the victim’s son claimed, “she was killed in the bombing by the Americans.”⁴¹ Even Iraqis who concur with the coalition goal of removing insurgents disapprove of the coalition’s methods, believing “the Americans killed many Iraqis to get Qaeda fighters.”⁴²

Another concern is that coalition forces are failing to protect the boarders, and thus foreigners make up the majority of the insurgency. In reality, it is estimated that between 700 and 2000 foreign insurgents are present in Iraq, only a small fraction of the total number.⁴³ Iraq’s first interim president, Ghazi al-Yawer shared this sentiment: “We

³⁸ “U.S. Airstrikes Take Toll on Civilians.”

³⁹ Jonathon Morgenstein, MIT Security Studies Program, Cambridge, Ma., 9 May 2005.

⁴⁰ “79 Die in Attacks as Rebels in Iraq Intensify,” *New York Times*, 12 May 2005, sec. A, p.1.

⁴¹ “U.S. Airstrikes Take Toll on Civilians,”

⁴² “October Toll Is 4th Highest for U.S. Troops in Iraq,” *Washington Post*, 1 November 2005, sec. A, p. 19.

⁴³ “Iraq Index,” 18.

blame the United States 100 percent for the security in Iraq. They occupied the country, disbanded the security agencies and for 10 months left Iraq's borders open for anyone to come in without a visa or even a passport."⁴⁴

Other civilian casualties that are not directly caused by coalition or insurgency forces are still likely to be attributed to the coalition. The second highest cause of civilian deaths is criminal activity; coalition forces, as the occupier of Iraq, are seen as responsible for providing security to the Iraqi people. Although authority was officially transferred to the Iraqi government on June 28, 2004, there is still the belief among the population that coalition forces possess the real power and influence in Iraq. The lack of law and order in Iraq and the post-invasion violence is attributed in large part to coalition forces. One civilian observed: "Before the war, there was a strong government, strong security. There were a lot of police on the streets and there were no illegal weapons. Now there are few controls. There is crime, revenge killings, so much violence."⁴⁵ From his research, Roberts concluded that Iraqis believe coalition forces have disrupted law and order in Iraq and that violent attacks are the only solution to the occupation.⁴⁶

Even non-violent deaths, which are not covered by Iraq Body Count, can be attributed to coalition forces due to failures in the utility and health care systems. There is even less data on these deaths and no concrete idea of what death toll. Despite the limitations of his study, it is worth noting that Roberts did attempt to measure all excess deaths caused by the war. Also, UNICEF has conducted studies on the failures of the

⁴⁴ Conetta, "Vicious Circle."

Another result of the lack of border security is that Iraq is now major transit point for the trafficking of hashish and heroin in the Middle East, a problem that did not exist during Saddam's time in power. "Iraq Used For Transit of Drugs, Officials Say," *Washington Post*, 12 June 2005, sec. A, p.22.

⁴⁵ "Iraq Body Count," 10.

⁴⁶ Les Roberts, "The Iraq War: Do Civilian Casualties Matter?," *Audit of the Conventional Wisdom*, (July 2005): 3.

health care system and child malnutrition to determine how the Iraq War has impacted civilians, but there is no overall study on non-violent deaths.⁴⁷

Unfortunately, all civilian casualties can be blamed on the conduct of coalition forces, whether they directly harmed Iraqi civilians or failed to protect them. Therefore, the grievances created by these deaths will prompt some of the Iraqi citizens to retaliate against the coalition forces either via armed conflict or non-violent resistance. The US is perceived as directly installing and training new government forces, and while complaints against the Iraqi government are numerous, there is likely to be more sympathy for Iraqi leaders than Western occupiers. 67% of Iraqis indicated that violent attacks had increased in the country because “people have lost faith in the Coalition forces.”⁴⁸

Iraqi Culture

The previous section discussed how individual security and perception discriminate violence leads to cost-benefit calculations of allegiance. This section examines further the influence of Iraqi culture on individual reactions to civilian casualties. Although a person may choose to act alone in attacking coalition forces, it is more likely that he will work in a group, gaining access to additional resources and moral support. In Iraq, there are very strong ties among family members as well as extended clans and tribes. Due to the unity of group members, only a portion of an organization needs to support the insurgency before the remainder of the group will follow.

⁴⁷ Conetta, “Vicious Circle.”

⁴⁸ *ibid*

Family Networks

The typically large sizes of families and family unity in Iraq support the claim that every civilian killing or arrest produces more insurgents. The average size of a household in Iraq is approximately seven persons, increasing to eight in Anbar province and other rural regions.⁴⁹ Thus, for every civilian casualty, there is likely to be approximately a dozen male relatives of military age available to avenge death or dishonor in their family.⁵⁰ Iraqi culture emphasizes the importance of family unity, expressed in customs such as first cousin marriage, which is more likely to occur among tribes in rural provinces.⁵¹

One survey revealed that 22% of households had been directly affected by violence in terms of deaths, handicaps or significant monetary loss. While nearly one-fourth of all households is a significant proportion, the extensive social ties in Iraqi culture suggests that likely every social group has had at least one member significantly affected by the war.⁵²

Some Iraqis feel that violent retaliation is the only acceptable response to an unnatural death in the family. American reparation attempts for loss of life can be seen as insulting: one Iraqi rejected compensating offers from American troops of canned beans, rice and sugar, asking, "Are they making fun of us? Will this bring back those we lost?"⁵³ A civilian whose cousin was killed in Ramadi during September 2003 echoed the growing sentiment of Iraqis: "As long as [American troops] act like this, there will be no

⁴⁹ "Iraq Living Condition Survey 2004," Ministry of Planning and Development Cooperation, 2005, 22, available from <http://www.iq.undp.org/ILCS/overview.htm>

⁵⁰ Barry Posen, "Exit Strategy," *Boston Review*, January/February 2006.

⁵¹ Ahmed Hashim, interview with author, Cambridge, Ma., 16 May 2005.

⁵² Conetta, "Vicious Circle."

⁵³ "Rising Civilian Toll Is the Iraq War's Silent, Sinister Pulse."

stability in Iraq. Every person martyred here today is worth 100 Americans... Let me make this clear: The real war has not started yet. It starts from this day on.”⁵⁴ In some cases, insurgent groups seek new recruits by visiting homes after the deaths of family members.⁵⁵

Tribal Networks

If enough families within a clan support the insurgency, they could convince other clan members to join the resistance. Anti-occupation forces working through village, tribal and friendship networks indicate a similar process occurs at the tribal level.⁵⁶ There are several tribes that are predisposed to supporting the insurgency, such as those with Baathist members or the 50,000-strong Albueissa tribe in Anbar that had negative interactions with American troops.⁵⁷ The death of a single tribal member has the potential to shift the support of a large number of people towards the insurgency.

Although Baathist party ideology considered tribes an impediment to modernization, Saddam Hussein discreetly encouraged tribal affiliations and policies during the Iran-Iraq War before doing so publicly after the Gulf War. Saddam incorporated tribal values into his government and based his political appointments primarily on kinship within his Tikriti clan and other loyal tribes.⁵⁸ If an individual's tribal lineage had been lost, it was in his interest to ask a sheik for affiliation privileges.⁵⁹ As a reward for loyalty, Saddam provided tribes with weapons and money and allowed

⁵⁴ Conetta, “Vicious Circle.”

⁵⁵ Hashim, interview with author.

⁵⁶ Conetta, “Vicious Circle.”

⁵⁷ Ahmed Hashim, “Insurgency and Counterinsurgency in Iraq,” U.S. Naval War College, 4 June 2004, 20.

⁵⁸ Paul Collier, “Breaking the Conflict Trap: Civil War and Development Policy”, World Bank Report 2003, 69.

⁵⁹ Conrad Crane and W. Andrew Terrill, “Reconstructing Iraq: Insights, Challenges, and Missions for Military Forces in a Post-Conflict Scenario,” U.S. Army War College’s Strategic Studies Institute, February 2003.

them to develop some level of autonomy and political organization. As a result of Saddam's policies, these social networks, with strong loyalty ties between members and supplies of weapons and financing, facilitates the development of insurgencies. Blood feuds have increased recently as tribes have gained autonomy, influence, and the offensive advantage of modern weapons like machine guns and RPGs, which facilitate preemptive attacks against enemies.⁶⁰

Particularly in rural areas where Iraqis depend on their clans and tribes for economic cooperation and protection, if individuals in a group are killed, it directly affects the livelihood of the remaining members. In Arab culture, there is a strong relationship between honor, revenge, and group survival. A clan that fails to correct a wrong committed against the group likely faces future dishonor and threats to security.⁶¹ Even in the absence of physical violence, insult to the culture or honor of civilians can lead to violent retaliation. One Iraqi, describing the resentment towards coalition forces, said: "The Americans have given us nothing- no jobs and no hope. They are thieves. They break into our houses without warning and stand on our heads. This is why the people are getting more hurt and more angry. And this is why we want revenge."⁶² American forces have reported detaining insurgents who cited the embarrassment and resentment of interrogation by troops as their motivation to join the insurgency.⁶³

⁶⁰ Amatzia Baram, "Neo-Tribalism in Iraq: Saddam Hussein's Tribal Policies 1991-96," *International Journal of Middle East Studies* 29, No. 1, February 1997.

⁶¹ See: Raphael Patai, *The Arab Mind*, (New York: Scribner, 1973).

⁶² Ahmed Hahsim, "Terrorism and Complex Warfare in Iraq," *Terrorism Monitor* 2, no. 13, 17 June 2004, 2.

⁶³ Hashim, interview with author.

Given the situations in which civilian casualties motivate or deter civilian casualties, it is expected that the perceived indiscriminate violence and sectarian tensions in Iraq would encourage retaliation against coalition forces. Characteristics of Iraq's culture and demographics further encourage insurgent activity.

One criticism of the argument put forth is whether grievances caused by civilian casualties will be attributed ethnic rivals or insurgent organizations, rather than coalition forces. Sectarian violence is an intended goal of insurgents, and ethnic conflict likely increases as a result of civilian casualties.

Nevertheless, the insurgency is not a unified organization like the US or British military, and knowing the perpetrator of a single insurgent incident is difficult. It is easier to focus attacks on coalition forces than members of a loosely organized and hidden resistance group. In addition, an action by one insurgent organization does not create resentment against all insurgents. The lack of coalition response to civilian casualties could lead to support for insurgents who target American and British forces.

Media reports and individual statements coming from Iraq suggest civilian casualties are a strong motivator for insurgents. This study quantitatively determines the strength of the relationship between civilian deaths and insurgent activity. The following chapter will describe the variables and methodology used in this analysis.

CHAPTER 3

METHODOLOGY

The methodology for this study uses data of civilian Iraqi and American and British military casualties over 22-months.⁶⁴ The data covers seven provinces of Iraq, selected for their high level of insurgent violence. Regressions were run using coalition casualties with a one-month lag period, including control variables based on competing theories of insurgency formations. The chapter concludes with a discussion of the limitations and potential biases of the data used. Analyzing data on civilian and coalition casualties will determine whether incidents of violence against civilians are followed by reactionary attacks on coalition forces.

Design

In this study, regressions are run for seven Iraqi provinces using monthly totals of civilian casualties as the independent variable, and totals of coalition casualties the following month as the dependent variable. Control variables are included to compare the level of influence of the independent variable to demographic characteristics of the provinces. This analysis tests how effectively the level of civilian casualties can predict the amount of violence directed towards coalition forces. Although there are many factors motivating insurgent resistance, a consistent pattern of high coalition casualties preceded by high levels civilian casualties indicates a strong presence of reactionary mechanisms.

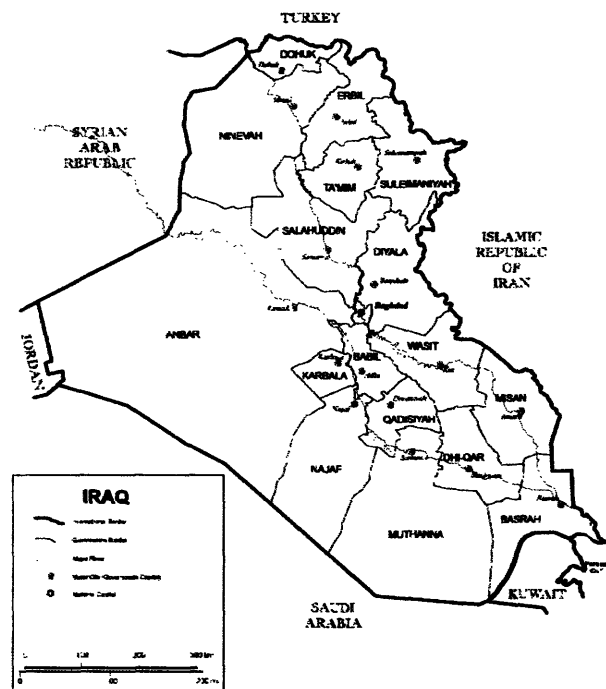
⁶⁴ Civilian casualties are measured from May 2003 through February 2005; coalition casualties span June 2003 through March 2005.

Data

Provinces

Iraqi provinces were included in this study if they observed at least 20 coalition deaths during the 22-month time period. Seven out of the 18 provinces met this criteria: Anbar, Babil, Baghdad, Basrah, Diyala, Ninevah, and Salahaddin (see Figure 3). The majority of violence against both civilians and coalition forces occurred in two provinces: Anbar—a Sunni-dominated rural region with tribal traditions, and Baghdad—a dense, multi-ethnic urban area that is relatively modern. Diyala, Ninevah, and Salahaddin, which all lie north of Baghdad, have significant Sunni populations with Kurdish presence. Babil and Basrah in the south are both Shiite-dominated provinces.

Figure 3- Map of Iraq Provinces⁶⁵



⁶⁵ "Iraq Maps- Administrative," Global Security, available from <http://www.globalsecurity.org/military/world/iraq/images/map-provinces3.gif>

Independent Variable: Civilian Casualties

Data on civilian casualties are taken from the Iraq Body Count database, which has been referred to as “the best guesstimate in town,” although its figures are incomplete.⁶⁶ Iraq Body Count is a compilation of violent death reports from hospitals, morgues, as well as individual incidents reported by at least three media sources.⁶⁷ From this source, a dataset was compiled with information on the date of the incident, the province in which it occurred, and the average number of civilian casualties reported. Iraq Body Count lists a minimum and maximum number of deaths per incident, because incidents can vary among eyewitnesses and to avoid double counting. This study uses the averages of each range as the number of casualties; the maximum reported number, however, is likely more realistic. Data spanning multiple months or provinces, such as reports from hospitals and morgues were excluded, because any uniform distribution of these casualties could distort the relative variation between months and provinces.

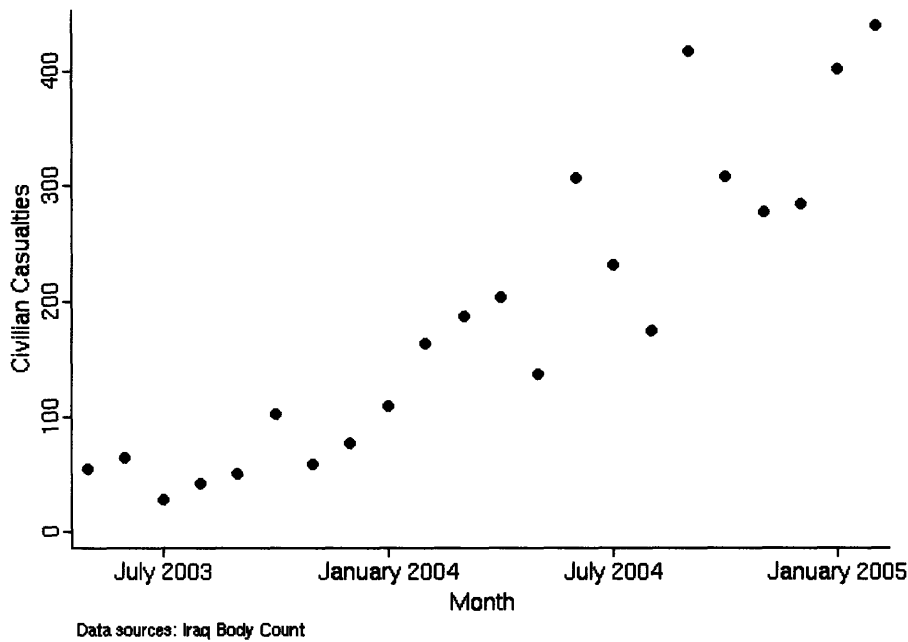
Data was taken from May 2003, the beginning of the non-conventional phase of the war, through February 2005, as shown in Figure 4. The invasion portion of the war, in March and April 2003, was excluded because a disproportionately large number of civilians were killed during these two months, and attacks on coalition forces during this time were based on resisting the invasion rather than the conduct of coalition forces. The former regime loyalists (Republican Guard members, Baathist party leaders, Iraqi military officers, the Saddam Fedayeen, and other military and intelligence leaders) were

⁶⁶ “Rising Civilian Toll is the Iraq War’s Silent, Sinister Pulse,”

⁶⁷ “Iraq Body Count,” 3.

the first actors of the insurgency and had plans to engage coalition forces in guerilla warfare before the invasion began.⁶⁸

Figure 4- Iraq Civilian Casualties May 2003- February 2005



Other studies have attempted to total the number of civilian casualties in Iraq; however, I chose to use Iraq Body Count because it provided details of each incident so data could be compared by province and month. Roberts has published the most controversial study, in which he calculated 100,000 civilian casualties.⁶⁹ A study in the *New England Journal of Medicine* examines mental health problems among American soldiers in Afghanistan and Iraq, potentially providing another method for measuring civilian casualties. This study found that of troops interviewed, 14% of Army forces and

⁶⁸ "Hussein's Agents Behind Attacks, Pentagon Finds," *New York Times* 29 April 2004, sec. A, p.1.

⁶⁹ Roberts, "Mortality before and after the 2003 invasion of Iraq."

28% of Marines deployed in Iraq reported they were responsible for the death of a non-combatant.⁷⁰ Extrapolating these figures using the total number of forces served in Iraq would indicate the total number of civilians killed in Iraq by coalition forces.

Total casualty figures released by the Iraqi Health Ministry or Ministry of the Interior are less useful for statistical analysis because they fail to demonstrate variance of casualties across Iraq and over time. Reports coming from the Iraqi government are primarily tabulations rather than datasets and may be biased, since releasing these figures often creates negative sentiments toward the government. Al Jazeera reported claims that US occupation authorities issued orders to the forensic medicine department not to talk to the media about the number of bodies it receives and that Iraqi officials are prohibited from releasing any information about a body count.⁷¹

In the Iraq Body Count database, the occupation of the victims is provided in 10% of the cases. Of these incidents, 75% appear to be discriminate attacks on individuals employed in security, military, politics or with the government. These professions may be over-represented in the dataset because they are easier to identify, but their disproportionately high frequency may indicate also that insurgent attacks are discriminate towards security forces that are connected to the US and Iraqi governments.⁷²

⁷⁰ Charles Hoge, Carl Castro, Stephen Messer, et al., "Combat Duty in Iraq and Afghanistan, Mental Health Problems, and Barriers to Care," *New England Journal of Medicine* 351, no. 1, 1 July 2004: 18.

Surveys conducted on soldiers from Army 3rd Infantry Division in December 2003 after a eight-month deployment in Iraq and marines from 1st Marine Expeditionary Force in October and November 2003 after a six-month deployment. Both battalions were involved in ground-combat operations during the conventional phase of the war.

⁷¹ "Iraqi group: Civilian toll over 37.000," *Aljazeera*, 31 July 2004.

⁷² "Iraq Body Count," 8.

Dependent Variable: Coalition Casualties

Data on coalition casualties were primarily taken from CENTCOM casualty reports that publish incidents where US soldiers are killed in the Iraq Theater.⁷³ From this source, data was collected on soldiers who were killed in Iraq through hostilities including the date and province of the incident. Deaths from accidents or natural causes are excluded. One flaw with this source is that it does not include soldiers who were injured in Iraq and died outside of Iraq as a result of their wounds. Another concern is that the data was gathered from press releases, which CENTCOM recognizes are not intended to be statistically accurate.⁷⁴

The British Defence ministry provided reports of all British deaths from hostile causes in Iraq.⁷⁵ Military deaths from the United Kingdom were important to include since British troops comprised a significant portion of the coalition forces, and were responsible for the southern provinces of Iraq: Basrah, Muthanna, Dhi-Qar, and Misan. Measuring only American casualties would fail to pick up insurgent activity where US forces were not stationed. I chose not to include deaths from other coalition troops because at the time there was no well-organized data set that indicated the month and province of these casualties, and distinguished between hostile and non-hostile deaths. The US and British made up the vast majority of the coalition forces and measuring casualties from only these two nations accounted for nearly all coalition deaths in Iraq during that time period.

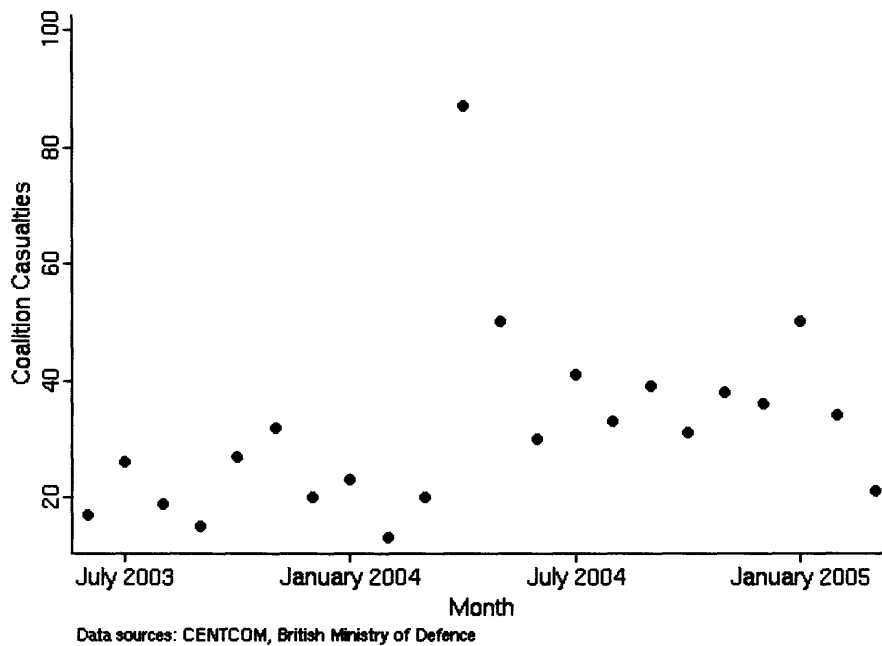
⁷³ "Casualty Reports," US CENTCOM, available from <http://www.centcom.mil/sites/uscentcom1/Lists/Casualty%20Reports%201/AllItems.aspx>

⁷⁴ Nick Balice (Chief Media, US CENTCOM), to author, 14 July 2005.

⁷⁵ "Operations in Iraq: British Fatalities," British Ministry of Defence, available from <http://www.mod.uk/DefenceInternet/FactSheets/OperationsInIraqBritishFatalities.htm>

Data on coalition casualties was collected from June 2003 to March 2005, as shown in Figure 5, to allow for a one-month lag between civilian casualties and a potential reactionary attack on coalition forces. These casualties can be seen in Figure 5 below. While some insurgent attacks may have been immediate, and others were planned over a long-term basis, a one-month delay is sufficient to allow for the formation of grievances and the planning of attacks. It was important to not measure insurgent and coalition deaths taking place in the same incident, but instead to capture any reaction. One estimate within the Marine Corp estimated a two-week time period between the decision and execution of an insurgent attack.⁷⁶

Figure 5- Coalition Casualties June 2003-March 2005



⁷⁶ Marine Col. George Bristol described that in his experience, insurgents took approximately 10-17 days to carry out an attack: Planning 2-5 days, Gathering Material 2-5 days, Coordination and Cooperation 2 days, Reconnaissance and Surveillance 2 days, Action 2-5 days

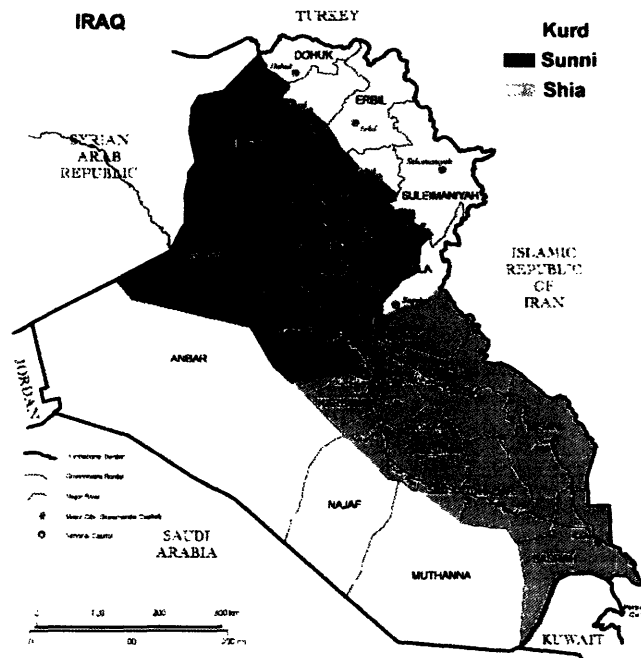
Control Variables

Control variables used in these regressions are based on alternative hypotheses of what factors motivate insurgent activity: voter turnout, unemployment, access to water, and population density. A data source capturing changes in living conditions over time would have been ideal to observe how the insurgency varies with improvements or stalling of reconstruction efforts. However, because such data was not available, the values of the control variables were assumed to be constant through the time period used. These variables can still account for differences of insurgent activity between provinces, rather than over time, assuming reconstruction progress are basically uniform across the provinces.

Voter turnout in the January 30, 2005 election was included as a way to measure not only ethnicity, since many Sunnis chose to boycott the election, but also whether citizens consider the Iraqi government to be legitimate.⁷⁷ The provinces with lower voting participation are more likely to be dissatisfied with the Iraqi government, and with coalition forces as well, and are more likely to participate in the insurgency. Although there are maps showing generally the ethnic distribution in Iraq (see Figure 6), there is no census data available on the ethnic makeup of Iraq's provinces. Election results were used as a proxy for this variable. In the election, Sunnis are best represented by their absence, rather than their vote for a certain political party. From having a general idea of which provinces tend to have a higher proportion of Sunnis, this measurement was a good proxy for ethnicity, but best represents political grievance.

⁷⁷ Voter turnout calculated from: Independent Electoral Commission of Iraq, "Results for Governorates," available from http://www.ieciraq.org/Results/ProvResult13_02_2005.pdf and http://www.ieciraq.org/Results/GC/GC_Results_11_02_2005.pdf and "Iraq Living Condition Survey 2004," 16.

Figure 6- Ethnic Distribution in Iraq⁷⁸



Unemployment was also included, since a higher proportion of jobless civilians indicate less economic security.⁷⁹ A larger proportion of individuals who have free time and fewer obligations are more likely to join an insurgency. The impression of coalition forces is that many insurgents are young, unemployed, men who are paid for conducting operations for the insurgency movement.⁸⁰ A poll by the British Ministry of Defence found that individuals who were unemployed, looking for work, and had insufficient money for basic needs were more likely to carry out insurgent attacks.⁸¹ In traditional Arab culture, the male head of household is expected to provide for his family. Since unemployment is seen as particularly shameful, this may provide additional incentive to

⁷⁸ "Iraq Maps-Demographic," Global Security, available from <http://www.globalsecurity.org/military/world/iraq/images/iraq-map-group1.gif>

⁷⁹ "Iraq Living Condition Survey 2004", 122.

⁸⁰ Hashim, "Insurgency and Counterinsurgency in Iraq," 16.

⁸¹ "Secret MoD poll: Iraqis support attacks on British Troops," *London Telegraph*, 23 October 2005.

rebel against the government.⁸² Unemployment in Sadr City, a primary location for Shiite insurgents, was estimated to be around 70%.⁸³

The percent of population whose water was either unsafe and/or unstable was included, as lack of safe and stable drinking water could be an indication of lack of infrastructure and other services in the area, and therefore some level of grievance against the government.⁸⁴ Poor access to water is also more likely to occur in impoverished regions where residents may be more willing to support an insurgency. The rebuilding of infrastructure is necessary to win the hearts and minds of the population in Iraq; support for the new government cannot be achieved when the basic needs of the people are not being met.

The final control variable is population density.⁸⁵ Laitin and Fearon found that states are more likely to experience civil war if a large population and rough terrain were present, allowing insurgents to avoid detection.⁸⁶ However, one could argue either rural or urban Iraq would better suit insurgents. Insurgents may be able to gain resources from farmlands or open water sources, and there is generally less security presence in rural regions. One could also argue that insurgents can blend in easier with the population in urban areas such as Baghdad, and having a denser population increases likelihood of finding recruits and sympathetic civilians to provide information and supplies. The high

⁸² Literacy rates were considered as a control variable, but there is a nearly perfect correlation between literacy and unemployment (-0.914), therefore, this variable was not included in the regression to avoid errors. This correlation indicates that provinces with higher unemployment also had higher literacy rates. Possible explanations are that more literate provinces such as Baghdad have a higher proportion of white collared workers whose industries have not recovered from the war. Alternatively, relatively illiterate provinces such as Anbar may have more individuals who are outside of the labor force or dependent upon local industries such as farming, which was relatively undisturbed by war.

⁸³ Ahmed Hashim, "Iraq's Chaos," *Boston Review*, October/November 2004.

⁸⁴ "Iraq Living Condition Survey 2004," 37.

⁸⁵ Calculated from: "Iraq Living Condition Survey," 16, and "Provinces of Iraq," Statoids available from <http://www.statoids.com/iiq.html>

⁸⁶ See: James Fearon and David Laitin, "Ethnicity, Insurgency, and Civil War," *American Political Science Review* 97, no. 1, 2003.

population density of Baghdad also allows for higher casualties and more opportunities for insurgent attacks. Assuming that individuals will react to deaths within their social networks and every single death will create grievance among a given number of people, population density becomes a more appropriate control variables than the per capita casualty count. The percent of civilians killed per district and whether a per capita casualty threshold exists will be discussed in Chapter 5.

Table 2 below summarizes the values of the four control variables for each province, and provides an average value of each variable.

Table 2- Value of Control Variables by Province

Province	Voter Turnout	Unemployment	Lack of Water	Population Density ⁸⁷
Anbar	34.8	8.4	28	0.02
Babil	79.3	8.9	56	0.60
Baghdad	60.6	13.5	37	23.16
Basrah	70.2	10.6	25	0.24
Diyala	43.2	8.7	53	0.19
Ninevah	11.5	8.2	44	0.18
Salahaddin	21.5	6.5	48	0.12
Average	45.9	9.3	42	3.50

Limitations of Data

Independent Variable

There are three levels of concern for the civilian casualty data used in this research. The first is the accuracy of primary sources such as eyewitnesses or medics that are used by journalists. The second is the potential bias in media reports on casualties

⁸⁷ Measured in thousands of persons per square mile

that are used as sources in the Iraq Body Count database. The third concern is the exclusion of casualties that were not assigned to a specific province or month.

There is a general agreement that the total number of civilian deaths is likely to be higher than the figure reported by Iraq Body Count, however, over reporting deaths in individual incidents can create biases. Some Iraqis have claimed that casualty reports exaggerate the number of deaths either under orders from insurgents or for propaganda purposes. Residents in the Anbar province admit that medical workers have done this, which is especially concerning since medics were the leading primary source for media reports during the Fallujah campaign of April 2004.⁸⁸ Additionally, eyewitnesses, particularly Westerners, have difficulty distinguishing between civilians and insurgent casualties, leaving much room for error.⁸⁹

Iraq Body Count uses a spectrum of reliable news sources in order to verify as many casualties as possible. However, the media can only report on incidents in their location and many reporters are unwilling to be stationed in regions of Iraq with increased security risks, or where less high-profile news occurs. A single death in the Anbar countryside is less sensational than an attack on a Baghdad police station, leaving many incidents in rural areas unreported. Human Rights Watch had conducted a tally of Iraqi killed in Baghdad by American soldiers, but is unable to study other areas because of the risk of moving around the country.⁹⁰ Many Western journalists have left Iraq due to the public's decreasing interest in the Iraq conflict and security concerns, as over 50 members of the media have been killed in the conflict. Iraqi staff members working for

⁸⁸ "U.S. Airstrikes Take Toll on Civilians," and "Iraq Body Count," 20.

⁸⁹ "What's the Story Behind 30,000 Iraqi Deaths?"

⁹⁰ "Data Shows Rising Toll of Iraqis From Insurgency,"

Western media companies are now undertaking a higher portion of direct reporting, perhaps leading to inconsistent reporting methods overtime.⁹¹

The Iraq Body Count Dossier, released July 2005, also excluded entries such as Baghdad morgue reports that covered extended periods when providing breakdowns of casualties per month and province. Although this decision excludes a significant number of casualties, the intent of this analysis is to measure the effect of differences among months and provinces, rather than to report accurate levels of casualties.

Iraq Body Count includes only reported deaths and does not make any estimate for casualties that may have been missed.⁹² The primary concern of this data set is not that some deaths go unreported; it is that there is no systematic way to report deaths, resulting in biases. While Iraq Body Count has been criticized for delays in updating its dataset, it maintains that their focus is on accuracy rather than serving to report news.⁹³

Dependent Variable

In this study, the dependent variable is the number of coalition casualties. The primary limitation of this data is that it does not include casualties for all coalition forces. In Basrah province there are no American casualties in the dataset, so failing to include forces from the United Kingdom would have ignored the insurgent activity in that province. Reviewing current data from Iraq Coalition Casualties, Italy has experienced all of their deaths by hostile activity in the province of Dhi-Qar.⁹⁴ Unfortunately, at the time of this study, data on Italian deaths were not available, and so Dhi-Qar is not included here.

⁹¹ "Iraq Body Count," 22.

⁹² "Civilian Toll is Placed at Nearly 25,000," *New York Times*, 20 July 2005, sec. A, p.8.

⁹³ "Iraqi group: Civilian toll over 37,000."

⁹⁴ Iraq Coalition Casualty Count, available from www.icasualties.org

The data on American casualties is incomplete since soldiers who are injured in Iraq and die after being transported out of theater are not included. Although having this data would increase the size of the dataset, it is unlikely to introduce a bias in the date or location of insurgent attacks where American forces receive medical attention outside of Iraq.

Data on coalition casualties is limited by a more narrow scope of geographic location. While the majority of media reports included the city of civilian casualties, and in many instances in Baghdad the neighborhood as well, coalition casualty reports were not as detailed. Reports from the British Ministry of Defence provided the highest level of detail on incidents that led to casualties, while reports on soldiers in the Army occasionally gave city location. Marine casualty reports provided the least amount of detail, generally listing only the date of the incident and its occurrence in the Anbar province.

With more specific location details on coalition casualties, there could be more detailed levels of analysis within cities. Particularly within Anbar province, where a significant portion of violence has occurred, it would be useful to examine the reaction to fighting in Fallujah within the city and in the surrounding areas. In Baghdad, where neighborhoods are generally segregated by ethnicity, it would be valuable to understand the ethnicity of civilian casualties and any variance in reaction against coalition forces.

Control Variables

As discussed, the lack of data measuring the change over time for control variables does not consider how insurgent activity is affected by the improvement or decline in standard of living. The static control variables only consider the difference in

standard of living between the provinces at a certain point in time; the differences between the provinces in reality has changed during the 22 months included in this study. However, this paper primarily intends to measure the affect of civilian casualties on insurgent activity, and having static figures, while not ideal, still considers the differences between the provinces.

CHAPTER 4

ANALYSIS

Using the methodology presented in Chapter 3, this chapter analyzes the relationship between the independent and dependent variables and compares the influence of control variables. The impact of civilian casualties on coalition deaths is discussed in comparison to competing theories of insurgency. The analysis of this data indicates that while there is a positive relationship between civilian and coalition casualties, the relationship between the two variables is weak and cannot be used to accurately predict the level of insurgent violence directed towards coalition forces.

Independent and Dependent Variable

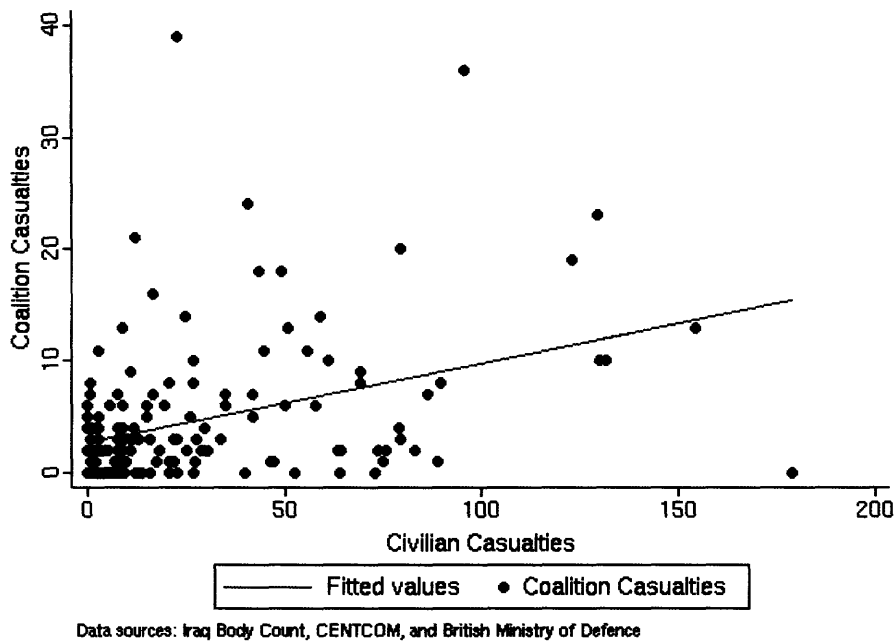
Figure 7 below shows the distribution of civilian and coalition casualties for all seven provinces over the 22-month period. There is a positive correlation between the two variables (see Table 3 below); with a regression line showing that for every 100 additional civilian deaths it is predicted that seven coalition forces will be killed in insurgent attacks the following month.

Table 3- Regression of Civilian and Coalition Casualties

Dependent Variable: Coalition Casualties	
Civilian Casualties	0.708 (0.014)
Intercept	2.660 (0.603)
R ²	0.139
N	154

Although civilian casualties are only a weak motivator for insurgent activity, it is clear that civilian deaths do not deter attacks against coalition forces. Since months with fewer civilian casualties tend to observe fewer coalition casualties, it is not necessary to employ large amounts of violence to quell insurgent activity. As civilian casualty levels increase, there tends to be increased attacks against coalition forces, demonstrating the formation of grievances.

Figure 7- Regression of Civilian and Coalition Casualties



Control Variables

When the four control variables are included in the regression, there is still a positive relationship between the independent and dependent variable, although the effect of civilian deaths is considerably weakened. This model predicts that for every additional

100 civilian deaths, approximately 3 coalition forces will be killed in insurgent attacks the following month (see Table 4).

Table 4- Regression of Civilian and Coalition Casualties with Control Variables

Dependent Variable: Coalition Casualties	
Civilian Casualties	0.034 (0.013)
Election Turnout	-0.102 (0.053)
Population Density	0.474 (0.130)
Unemployment	-0.830 (0.623)
Unsafe Water	-0.196 (0.044)
Intercept	19.954 (5.832)
R ²	0.371
N	154

Although a positive correlation is observed, the regression model does not accurately predict the level of insurgent activity based on civilian deaths in the preceding month. There is a general relationship of increased insurgent activity after higher months of civilian deaths. The reasons for the Iraqi population to support the insurgency are complicated, and civilian deaths are only one motivation for insurgents, not a leading cause.

This is evident because the four control variables had a larger influence on coalition casualties than civilian deaths did, as shown using the average value of control variables and the coefficients from the regression in Table 5 below.

Table 5- Predicted Influence of Independent and Control Variables

Variable	Average Value	Regression Coefficient	Influence on Coalition Casualties
Civilian Casualties	26.80	.034	+0.91
Election Turnout	45.88	-.102	-4.68
Population Density	3.5	.474	+1.66
Unemployment	9.3	-.830	-7.72
Lack of Water	42	-.196	-8.23

Two variables did perform along the lines of conventional theories of insurgency: voter participation and population density. Provinces with higher voter turnout in the January 30, 2005 Iraqi election were less likely to experience insurgent attacks against coalition forces. Coalition deaths were more likely to occur in regions of Iraq that observe less political participation. Also, population density is positively correlated to attacks against coalition forces and while in other conflicts insurgents may be more likely to operate in mountainous regions, in Iraq it appears the insurgents choose to operate in more densely populated regions of the country. However, the significance of this relationship may be limited since Baghdad is an outlier for population density and has experienced a high level of insurgent activity.

The remaining variables of unemployment and access to water had unconventional correlations. Unemployment and coalition deaths are negatively correlated, so regions experiencing higher unemployment are less likely to engage in attacks against coalition forces. Access to safe and stable drinking water is also negatively correlated to coalition deaths, thus provinces with better drinking water supply tend to observe more attacks against coalition forces. It is possible that a certain level of development in a region is necessary to support an insurgency, where the supply of water could be a proxy for the resources available to insurgents. An alternative explanation is

individuals violently act upon political grievances only after basic needs, such as water, are met.

CHAPTER 5

ALTERNATIVE HYPOTHESES

After testing the data for a relationship between civilian and coalition casualties, there appears to be two alternative potential explanations for explaining high levels of coalition deaths. The first is that the amount of coalition casualties in Anbar and Baghdad provinces are overrepresented for their share of the Iraqi population.⁹⁵ It is likely that specific characteristics of these two provinces, which were not captured by the control variables, contribute to insurgent participation. The second explanation arises after examining Figure 6 from Chapter 3, where there are clearly months with higher incidents of coalition casualties, while the remaining period is relatively flat. In comparison to Figure 4, civilian deaths have steadily increased during the course of the conflict. It is expected that something particular to those peak months motivated insurgents to attack coalition forces, while in contrast, civilians are consistently affected by violence.

Characteristics of Provinces

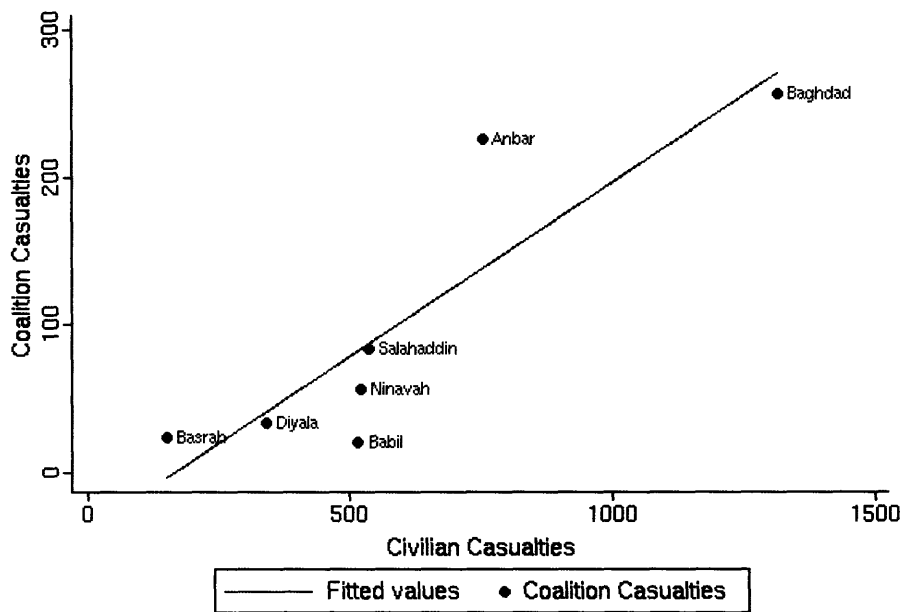
Although some relationships among the control variables appear to contrast conventional wisdoms about insurgents, it is possible that several provinces with large amounts of violence altered the significance of these variables. Anbar and Baghdad provinces experienced the highest levels of coalition deaths, and are also outliers for several control variables, potentially skewing the results. The population density of Baghdad is 40 times higher than that of the next densest province, and its unemployment

⁹⁵ Anbar and Baghdad account for 50% of civilian casualties in the dataset, 48% of the Iraqi population, but 69% of all coalition deaths.

rate of 13.5% is higher than other regions, resulting in an exaggerated significance.⁹⁶ Interestingly, 72% of residents surveyed in Anbar maintained access to safe and stable drinking water during the conflict, creating a false relationship between this variable and the insurgency.⁹⁷

Figure 8 below summarizes civilian and coalition deaths by province, including a best-fit line, demonstrating how the level of violence in Anbar and Baghdad compares to other regions of Iraq.

Figure 8- Total Civilian and Coalition Casualties per Province



Data sources: Iraq Body Count, CENTCOM, and British Ministry of Defence

While five of the provinces observed less than 550 civilian and 100 coalition casualties, Anbar and Baghdad are outliers for their levels of violence. A USA Today Poll in March and April 2004 demonstrates that while all ethnic groups have experienced decreased

⁹⁶ “Provinces of Iraq,” and “Iraq Living Condition Survey 2004,” 16.

⁹⁷ “Iraq Living Condition Survey 2004,” 37.

security, that difference is more pronounced in Baghdad and Sunni areas.⁹⁸ Only 21% of Sunnis surveyed across Iraq have reported they feel safe in their neighborhood, compared to 63% for all civilians.⁹⁹

Table 6 below calculates expected coalition deaths per province based on the regression from Table 4 and the levels of civilian casualties. The ratio between the independent and dependent variables demonstrates Anbar and Baghdad experience fewer civilian casualties per coalition death than other provinces.

Table 6- Predicted Coalition Deaths per Province

Province	Civilian	Predicted Coalition	Actual Coalition	Coalition Difference	Ratio Civilian: Per Coalition
Anbar	752	139	226	+87	3.33
Babil	515	83	21	-62	24.52
Baghdad	1314	271	256	-15	5.13
Basrah	151	<0	24	+24	6.29
Diyala	340	41	34	-7	10.00
Ninevah	520	84	57	-27	9.12
Salahaddin	536	88	84	-4	6.38

The Sunni population is significant in both Anbar and Baghdad, where they reside in segregated neighborhoods. This ethnic group is more opposed to the presence of coalition forces and has a negative view of their country's future compared to other Iraqis. Only 13% of Sunnis surveyed believe that ousting Saddam was worth their current hardships, compared to 98% of Shiites and 99% of Kurds.¹⁰⁰ Characteristics of

⁹⁸ Conetta, "Vicious Circle."

⁹⁹ "Iraq Index," 44.

¹⁰⁰ *ibid*, 40.

Sunni culture, particularly their perception of authority, predispose them to rebel against coalition forces, more so than other ethnicities.¹⁰¹

In contrast to Sunni pessimism, Kurds hold a positive view of coalition forces and post-war Iraq; 73% of Kurds surveyed believe that their life is better since the war, while 59% of Shiites and only 23% of Sunnis felt the same.¹⁰² The Kurdistan region was spared the conventional phase of the war that focused on Baghdad and Southern Iraq, yet there has been a significant amount of insurgent violence in Diyala, Tamin and Ninawa where Kurds reside. Only 16% of Kurds support insurgent attacks against coalition forces, demonstrating loyalty towards the Americans, regardless of their level of civilian casualties.¹⁰³

Shiites in the south have been generalized as more tolerant of the occupation. Possible explanations are the repression experienced under Saddam after the Gulf War, or the British counterinsurgency techniques that minimize the use of force.¹⁰⁴ However, the perception of coalition forces varies among southern provinces: while only 25% of residents in Basrah support attacks against coalition forces, 65% of the population in Misan share that sentiment.¹⁰⁵ During the conventional phase of the war, it is estimated that across Iraq, two Shiite civilians were killed for every one Sunni.¹⁰⁶ Although there has been significant activity of Shiite militias in the southern provinces, support for coalition forces is much higher among Shiites than Sunni civilians.

¹⁰¹ Hashim, "The Sunni Insurgency in Iraq,"

¹⁰² "Iraq Index," 44.

¹⁰³ *ibid*, 40.

¹⁰⁴ Hashim, interview with author.

¹⁰⁵ The overall level of support for attacks against coalition forces was 45%. "Secret MoD poll."

¹⁰⁶ Conetta, "Vicious Circle."

Anbar

There are several factors that may lead the population in Anbar to be less tolerant of civilian casualties that occur within the province. During Saddam's regime, there was minimal government presence in Anbar, while local tribes possessed a significant amount of autonomy. The lack of rule of law, combined with a high proportion of Sunnis who resent the shift of power to Shiites and Kurds, make Anbar the ideal location for an insurgency.

The vast size of Anbar's fifty five thousand square mile province and rural distribution of population resulted in a region that was hard to police, a dilemma that the coalition forces inherited from Saddam Hussein. In the vacuum of federal power, local tribes and their leaders acted as the rule of law in both politics and economics. Many villages in Western Iraq were stopping points along routes for smugglers, who with few alternative economic opportunities, were considered to be legitimately employed.¹⁰⁷ There is still significant opposition to the federal government: six months after the January election, 46% of residents in Ramadi and 53% in Hit believe boycotting the election was a good decision, compared to 11-14% of Sunnis in Baghdad.¹⁰⁸

Tribal insurgents in Ramadi, Fallujah and Hit, have developed operational security based on cultural and social norms, with clannish structures of insurgent groups. Individuals are reluctant to leave or betray their group; such action is seen as dishonorable and dangerous.¹⁰⁹ For these reasons, Anbar province is predisposed to support an insurgency, but civilian casualties can still act as a motivator, as the instability in Fallujah began much earlier than the 2004 attacks on the city. In May 2003, the

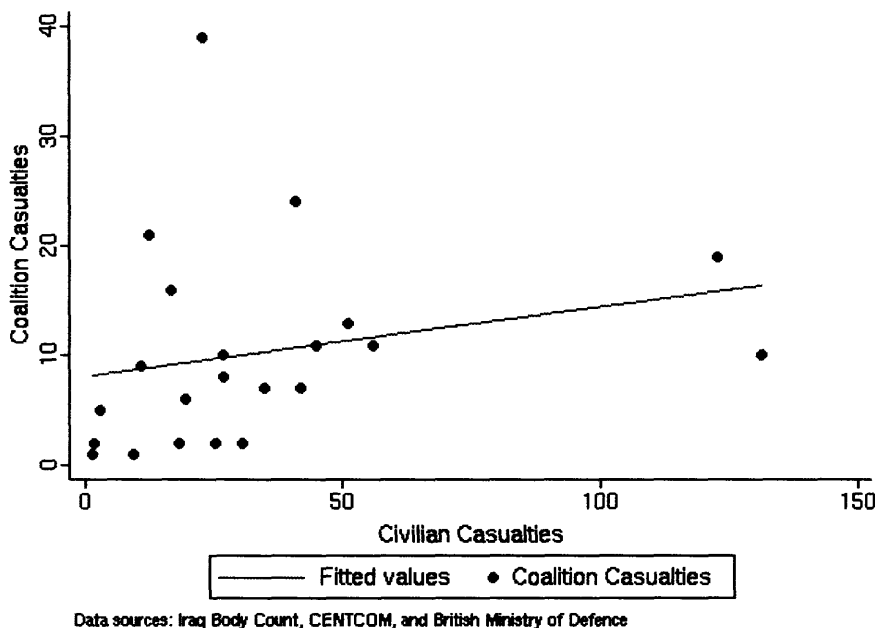
¹⁰⁷ "U.S. Widens Offensive in Far Western Iraq," *Washington Post*, 15 November 2005, sec. A, p. 1.

¹⁰⁸ "Measuring Stability and Security in Iraq," 7.

¹⁰⁹ Hashim, "Insurgency and Counterinsurgency in Iraq," 27.

accidental killing of civilians by coalition forces in Fallujah and Hit led to resentment among residents, who believed the coalition failed to respond adequately to the incidents.¹¹⁰ Anbar has experienced much higher per capita civilian casualties than any other province, as one in 136 of citizens in Fallujah have been violently killed during the two-year period since the invasion of Iraq.¹¹¹

Figure 9- Regression of Civilian and Coalition Casualties in Anbar Province



The regression of data from Anbar province (as shown in Table 7 and Figure 9) predicts 6 coalition deaths for every 100 additional civilian casualties, a similar finding to the regression for all of Iraq (in Table 3) that predicts 7 coalition deaths for the same level of civilian casualties. However, the constant coefficient for the two regressions is much different: 8.1 for Anbar, compared to 2.6 for all of Iraq. This number is the

¹¹⁰ Hashim, “The Sunni Insurgency in Iraq.”

¹¹¹ “Iraq Body Count,” 6.

predicted amount of coalition deaths per month if no civilians were killed in the previous month. This demonstrates that Anbar province is predisposed to insurgent activity, independent of violence against civilians, compared to other regions of Iraq.

Table 7- Regression of Civilian and Coalition Casualties in Anbar Province

Dependent Variable: Coalition Casualties	
Civilian Casualties	0.064 (0.059)
Intercept	8.095 (2.799)
R ²	0.008
N	22

Baghdad

Baghdad does have a similar predisposition to insurgency like Anbar province, as both have significant Sunni populations. The large presence of coalition troops in Baghdad increases the probability of civilians having a negative interaction with coalition forces, explaining the high level of insurgent activity in the capital. Insurgents also have a greater chance of obtaining resources and protection from Baghdad's large population.

Despite excluding the conventional phase of the war from this analysis, Baghdad still observes the highest level of civilian casualties, since its high density leads to greater collateral damage during violence. Nearly half of the deaths during the war have occurred in Baghdad, where one in every 500 civilians has been violently killed in the war up to March 2005, with many more wounded.¹¹² While the regressions in Chapter 4 focus on the total number of civilian casualties, rather than the per capita figure, it is

¹¹² *ibid*

possible that the ratio of violent deaths per population could be a better measurement. Applying this ratio to a U.S. city of 100,000 residents, such as Cambridge Massachusetts, 200 persons would be violently killed over a two-year period. Even if residents are not personally impacted by the violence, it would likely lead many residents to feel less safe and lose faith in the local police force.

The mere presence of US forces, regardless of their behavior, may lead to grievances among the population and encourage insurgent activity. This could explain the large-scale violence in Baghdad, as coalition forces are heavily invested in the restructuring of the Iraqi government in the capital. Since data on the quantity and location of coalition troops is not publicly available, the impact of this variable on insurgent activity cannot be tested. While deaths among coalition forces in Baghdad saw several spikes during the 22-month time period, deaths of civilians in the province have continued to increase over time. Coalition forces are pressured to maintain security within Baghdad, and are likely to value force protection over minimizing harm to non-combatants. Baghdad has a significant number of checkpoints, where firepower is excessively used against civilians when vehicles fail to obey coalition orders.¹¹³

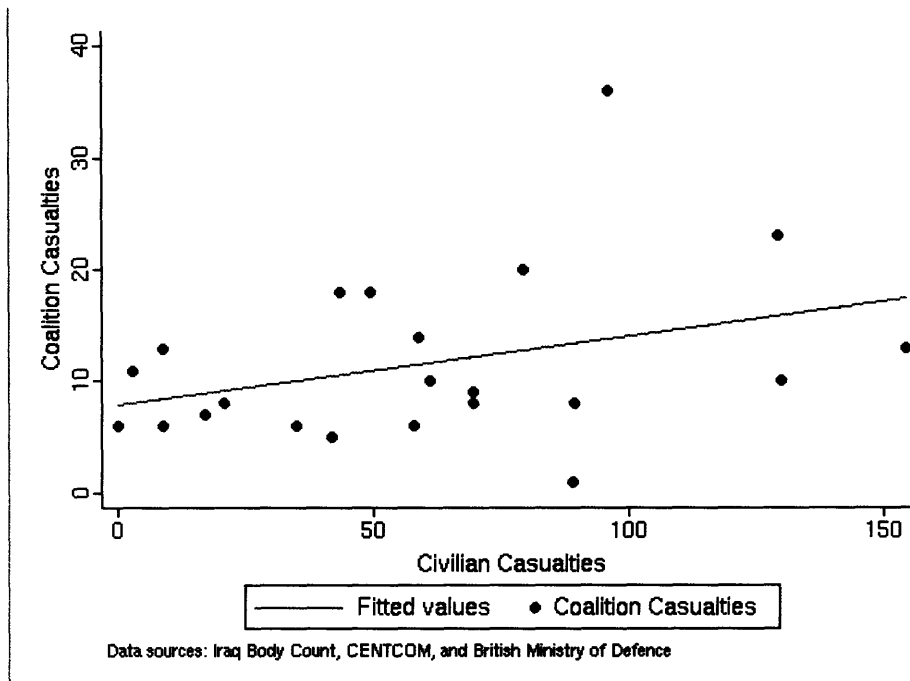
Table 8-Regression of Civilian and Coalition Casualties in Baghdad Province

Dependent Variable: Coalition Casualties	
Civilian Casualties	0.062 (0.037)
Intercept	7.962 (2.737)
R ²	0.075
N	22

¹¹³ *ibid*, 7.

The regression of data from Baghdad province predicts 6 coalition forces killed for every 100 civilians, a ratio comparable to both Anbar province and Iraq overall. (See Figure 10 and Table 8.) Similar to Anbar province and in contrast to the rest of Iraq, there is a higher constant coefficient: 7.9 compared to 2.6 for all of Iraq. This regression predicts that 8 coalition forces will be killed each month in Baghdad if no civilian casualties occur.

Figure 10- Regression of Civilian and Coalition Casualties in Baghdad Province



Focal Events

There are two types of focal events that can motivate insurgent activity: signals for coordinated action, and incidents that create grievances. The first types of events could be national elections or other political events with symbolic significance. The

second are actions, frequently violent events that remind citizens of the lack of security in their country, such as large attacks or reports of abuse by coalition forces.

However, it is difficult to determine which events significantly impact insurgent activity, because reactions may be immediate or delayed, or provide motivation for a few individuals or for an entire organization. After qualitatively analyzing the characteristics of provinces experiencing the highest levels of coalition casualties, outliers of insurgent violence over time should also be examined.

This section briefly considers how conventional fighting in April and November 2004, and the national election in January 2005, impacted insurgent activity directed towards coalition forces. A more thorough study of focal events and their influence on the insurgency should be conducted.

Iraq

Referring back to Figure 6 in Chapter 3, the deadliest month for coalition forces in Iraq by far was April 2004, with CENTCOM reporting 87 hostile deaths in Iraq, 75 of which occurred in Anbar and Baghdad provinces. The following month saw a total of 50 deaths, 39 of which occurred in those two provinces. The second highest peak was during January 2005, the month of the first national election in Iraq, where 47 coalition soldiers were killed, 39 of them in Anbar and Baghdad provinces.

Table 9- Percent of Coalition Casualties Occurring in Anbar and Baghdad Provinces

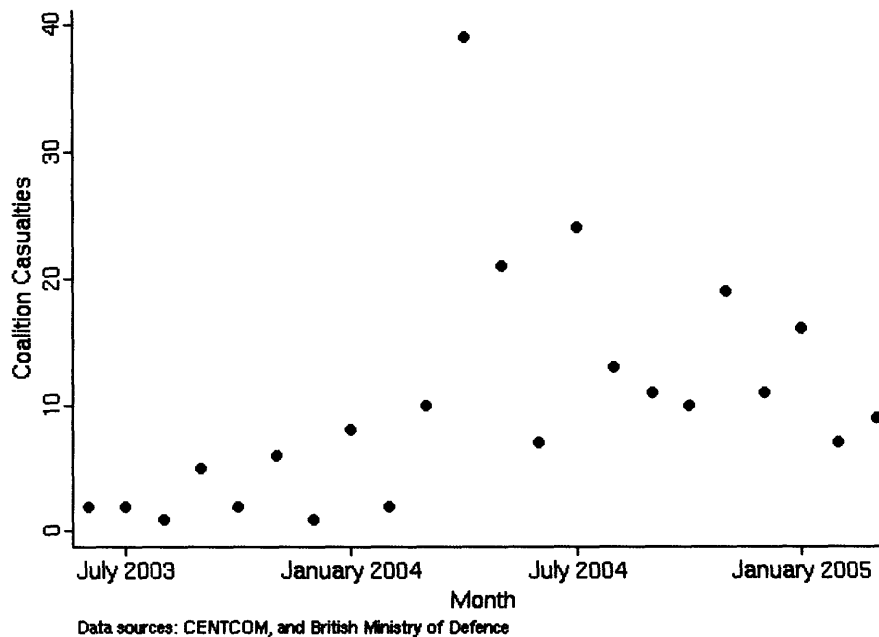
Province	Overall	April 04	January 05
Anbar	32%	46%	34%
Baghdad	36%	41%	49%

As shown in Table 9, these two provinces are over represented for coalition casualties during these months, even while considering their overall level insurgent violence during the war.

The following sections will consider specific events in the Anbar and Baghdad provinces that may have provoked insurgent activity. The demographics and culture of these provinces have been shown to support insurgent activity, but specific months will be examined to explain peaks of coalition casualties. Lulls in violence are not necessarily due to fewer insurgents or a weakened organization, rather, they could represent efforts for regrouping or strategizing. When insurgent activity does occur is the best opportunity to consider motivations behind insurgent attacks.¹¹⁴

Anbar

Figure 11- Coalition Casualties June 2003- March 2005 in Anbar Province

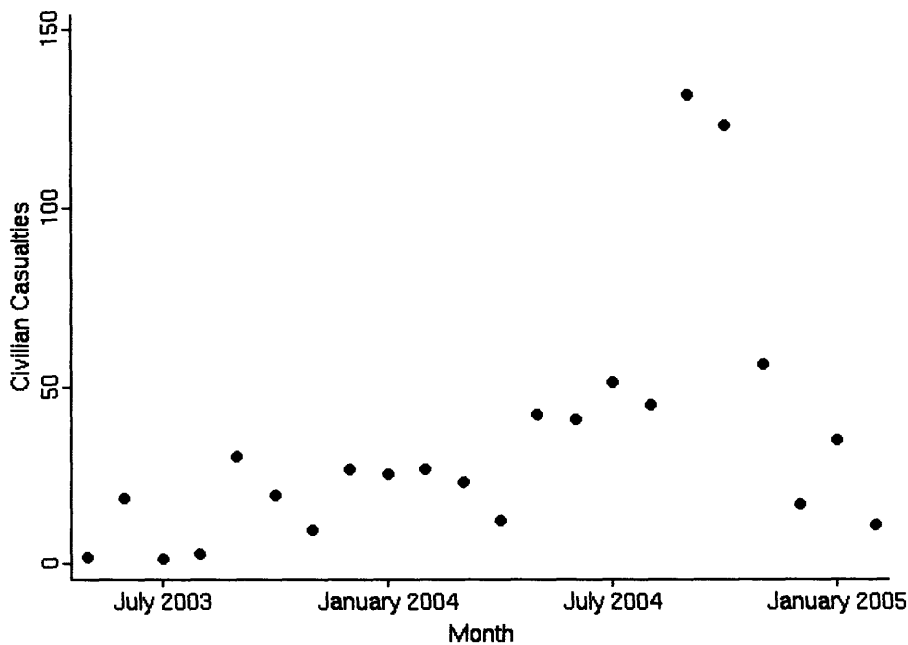


¹¹⁴ Robert Tomes, "Relearning Counterinsurgency Warfare," *Parameters* 34, no. 1, Spring 2004: 23.

Attacks against coalition forces in Anbar appear to gradually increase early in the occupation, while sharply peaking in April 2004, as shown in Figure 11 above. Although insurgent activity after April 2004 has been higher than previous months, coalition deaths do appear to be decreasing in Anbar province.

April marked a heavy month for coalition forces in Fallujah and Ramadi, following the deaths of four American civilian contractors in Fallujah. April 6-10 saw a series of complex and coordinated attacks, utilizing precise intelligence on the movement of Marine forces.¹¹⁵ The two major assaults on Fallujah: Operation Vigilant Resolve in April 2004 and Operation Phantom Fury that November, had very different impacts on the casualty rates of coalition forces and civilians, as shown in Figure 12 below.

Figure 12- Civilian Casualties May 2003- February 2005 in Anbar Province



¹¹⁵ Bristol, "Battling the Hydra."

Operation Vigilant Resolve caused that April to be the deadliest month for coalition forces during the time period of this study, while the level of civilian casualties does not change from the previous month. In contrast, Operation Phantom Fury created very large levels of civilian casualties, while having less impact on coalition forces. After the April assault of Fallujah, many of the major insurgent players were still in the city, and attacks on coalition forces in Anbar were higher than average.¹¹⁶ Marine Lt. Gen. James Conway explained, “When we were told to attack Fallujah, I think we certainly increased the level of animosity that existed.”¹¹⁷ There was also a smaller spike in insurgent violence in January 2005 during the election, despite the Sunni boycott.

Baghdad

The patterns in Baghdad are not nearly as clear; there is greater fluctuation in coalition casualties after April 2004, as shown in Figure 13 below. There does appear to be significant levels of resistance in the early phases of the occupation that was not present in Anbar. Heavy insurgent bombings began in Baghdad during October 2003, and although there is an increase of coalition casualties that month, that level does steadily decrease, indicating that coalition forces may have adapted to this new threat. The biggest peak in April 2004 corresponded to attacks by Sadr’s militia.

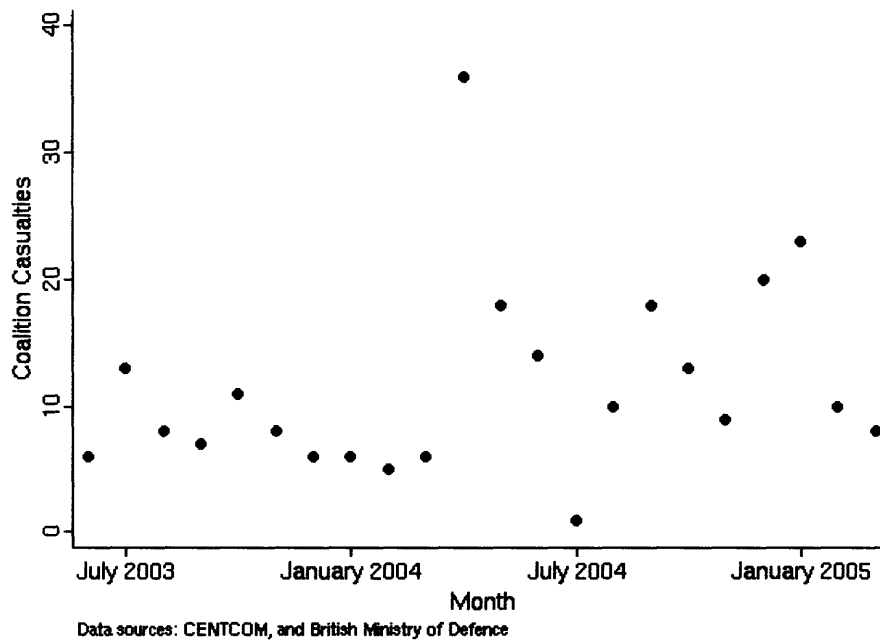
After the January 2005 election and the transition to a new government, it has been observed that insurgents are killing Iraqi civilians and security forces at a faster rate, rather than focusing exclusively on coalition forces. .¹¹⁸

¹¹⁶ *ibid*

¹¹⁷ Conetta, “Vicious Circle.”

¹¹⁸ “Data Shows Rising Toll of Iraqis From Insurgency.”

Figure 13- Coalition Casualties June 2003- March 2005 in Baghdad Province



After establishing a positive correlation between civilian and coalition casualties, it is worth noting that the majority of coalition deaths occur in Anbar and Baghdad. Although these provinces also experience high levels of civilian casualties, the pattern of violence against each group is very different. Civilians in Anbar are motivated by both tribal networks and general Sunni grievances, while in Baghdad the large presence of coalition forces increases the probability of negative interactions with civilians, and provide opportunities for insurgent attacks. Although these regions are predisposed to support insurgent violence, several focal events further motivated attacks on coalition forces. A significant number of coalition troops were killed in the relatively conventional battles at Fallujah and Sadr city, and during insurgent attacks protesting the national election.

CHAPTER 6

CONCLUSION

The Iraqis' attitude towards coalition forces and civilian casualties would suggest that these deaths are a leading grievance among insurgent organizations. However, the quantitative analysis of the data in this project demonstrates only a weak relationship between civilian deaths and attacks on coalition forces. Civilian casualties are only one grievance of insurgents, and cannot be used to accurately predict coalition casualties through statistical regression.

The motivations behind insurgent attacks can be better understood by examining grievances of the population at a local level. The demographics and culture of Anbar and Baghdad provinces enable increased levels of insurgent activity, leading to coalition casualties independent of violence against civilians.

The findings of this research are limited because this study covers only a 22-month time period, representing only a portion of the to date insurgent movement in Iraq. Including recent data would provide a clearer picture of how the insurgency has evolved throughout the conflict.

Increasing the length of this study would allow the data to be examined at a local rather than provincial level, since the number of observations in this paper was often too few to permit accurate analysis within cities. Examining specific towns in Anbar province, or neighborhoods within Baghdad, would give additional insight on how grievances caused by civilian casualties can spread through local networks.

Working with data during an extended time period would also permit a more thorough examination of focal events during the conflict in Iraq. There have been a

sufficient number of national political events and large-scale coalition operations to study more precisely how these specific types of focal events influence the insurgency.

In addition, a comparative study could be conducted to analyze whether the findings of this paper are unique to Iraq's culture and demographics, or if the role of civilian casualties in this conflict reflects a general trend among insurgencies. Future wars will likely have similar civilian casualty data available from Internet media reports, allowing the death of civilians to be examined as an influence on violence rather than only a consequence.

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