Atrocity victimization and the costs of economic conflict crimes in the battle for Baghdad and Iraq

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Abstract
Economic conflict crimes are defined in this paper as violations of international human rights and humanitarian law, as well as domestic law, associated with military and political conflict and producing significant monetary as well as other forms of suffering for civilians. Criminologists are well positioned by disciplinary emphasis to document and explain military and political violence resulting in economic conflict crimes. Criminal victimization associated with the US-led invasion of Iraq imposed an enormous toll on civilians. Yet there is little attention by criminologists or others to the profound economic costs to Iraqis, whether through lost property, life, or opportunities. We cautiously estimate that the economic losses for households in the city of Baghdad alone were almost US$100 billion, and more than three times this amount for the entire country, with Sunni groups experiencing significantly greater losses than others. So far as we know, our article presents the first estimates of civilian losses from economic conflict crimes that followed the US-led invasion of Iraq. These losses were widespread and systematic, the hallmarks of crimes against humanity.

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Introduction

Criminology is only beginning to consider the mass violence associated with war, armed conflict, and political repression. Savelsberg (2010: 1) observes how crucial this topic is: in the 20th century alone these crimes cost over 200 million lives, with hundreds of millions more injured. These numbers greatly exceed domestic street crime victimization (Hagan, 2010), and these acts are clearly crimes under domestic law and international human rights and humanitarian law, with great costs to persons and their property

It is short-sighted to omit the collateral costs to civilians of military and political conflicts. Former international prosecutor Louise Arbour (2007) notes that international tribunals have incorporated these costs within charges of atrocity crimes. She notes that the trial chamber of the International Criminal Tribunal for the Former Yugoslavia (ICTY) in the *Kupresik* case recognized that widespread destruction of homes and property can constitute the crime against humanity of persecution when committed with systematic intent. The non-judicial concept of atrocity crimes goes further by setting aside even the criterion of intent, at least in encouraging investigation of collateral costs to civilians and helping to preempt or charge crimes against humanity and genocide (Scheffer, 2007).

In this article, we give particular attention to economic conflict crimes: violations of international human rights and humanitarian law, as well as domestic law, associated with military and political conflict, broadly understood, producing significant suffering for civilians. We further ask whether these crimes in Iraq reach the widespread, systematic level of crimes against humanity. Neglect of economic conflict crimes is a failure of criminology.

Of special concern is systematically organized violence against racial, ethnic, and religious groups (Noji and Toole, 1997), and also political groups (Bass, 2001) – conflicts that are increasing. Between 1989 and 1999, studies suggest the number of these group-based mass conflicts more than doubled from the previous decade, from 14 to 30 (Natsios, 1997). In the last third of the 20th century, humanitarian refugees nearly doubled (Keely et al., 2001). Many internally displaced persons and refugees suffer enormous harm, including high rates of mortality and suffering.

Public health researchers documented these mass events and conceptualized them as 'complex humanitarian emergencies' (Waldman and Martone, 1999). This term is useful for planning assistance. However, criminologists are better positioned by disciplinary emphasis to document and explain political violence resulting in economic conflict crimes and mass atrocities (Hagan et al., 2006).

A criminal victimization approach provides an essential supplement to public health and population-based research (Hagan and Kaiser, 2011; Hagan and Rymond-Richmond, 2008, 2009). For example, this approach led to an estimate that hundreds of thousands, not tens of thousands, died in Darfur during 2003–4 – correcting misleading claims to the contrary by the US State Department (Hagan and Palloni, 2006). Criminologists can significantly advance knowledge and public awareness of such death and group destruction. In this paper, we extend this work to the crimes occurring following the invasion of Iraq.

Criminal victimization during the US-led invasion of Iraq and the subsequent post-invasion period imposed an enormous toll on civilians. To date, studies have focused primarily on loss of life in Iraq. The US collected detailed statistics on Coalition military

deaths. As of this writing, 4474 US soldiers have died in Iraq, along with 179 British and 139 other Coalition soldiers. However, beyond those on Coalition forces deaths, statistics on the conflict remain far less certain, leaving criminologists and the public with an inadequate understanding.

Iraq Body Count, which relies on media reports, figures from hospitals, morgues, and non-governmental organizations, and official figures to enumerate deaths, is perhaps the best known source of mortality numbers. Iraq Body Count (2010) reports 102,416 to 111,937 documented civilian deaths from violence, while further suggesting that WikiLeaks Iraq War Logs may add another 15,000 deaths. In February 2007, the Associated Press surveyed 1002 American adults and found that, although respondents had a relatively accurate sense of the death toll of US soldiers, they had an inaccurate knowledge of Iraqi civilians killed. Henderson, Olander, and Roberts (2009) conducted a study of reported Coalition forces and Iraqi deaths between 2005 and 2008 in 11 American and 5 non-American newspapers. The results revealed that US newspapers concentrated much more on Coalition forces deaths than on Iraqi civilian deaths, whereas in four of the five non-American newspapers the pattern was *reversed* – both suggesting a media bias and questioning newspapers as an accurate data source. Criminologists will not be surprised by studies (Henderson et al.) questioning media reports from conflict zones, because they have often been critics of media reporting (for example, Beckett, 1997). A major contribution of modern criminology is the development of self-report and victimization surveys to provide more representative data on criminal events. Public health scholars use analogous methods to develop data on deaths and displacement in conflict zones.

Several reviews of Iraq war mortality are based on public health methods. The best known is the Johns Hopkins study (Roberts et al., 2004) published several weeks before the 2004 US elections. The authors compared deaths reported before and after the invasion and estimated a 2.5-fold increase, with an estimated death toll of nearly 100,000. Respondents attributed most violent deaths to Coalition forces and disproportionately reported deaths of women and children. One cluster in Fallujah that experienced massive bombardment and reported far higher deaths than all other clusters was omitted as an outlier.

President Bush (Dunham, 2006) dismissed the Hopkins study and cited an Iraq Body Count calculation of 50,000 deaths. Burnham et al. (2006) published an updated survey, responding to criticisms of too few clusters in the earlier design of Roberts et al. (2004). They estimated a death toll as of July 2006 of over half a million persons. The 'best' estimate was 654,965 deaths, within a wide confidence interval. Although these results were again contentious, Waldman (see Reynolds, 2006) concluded: 'this is the best estimate of mortality we have.'

The Iraq Family Health Survey Study Group (2008) published a third estimate with a larger sample. It estimated 150,000 deaths due to violence from March 2003 through June 2006. This study may have estimated fewer deaths because it omitted excess mortality resulting from non-violent sources, and because the interviewers introduced themselves to respondents as representing government ministries.

This range of surveys suggests violent deaths were in the hundreds of thousands rather than the tens of thousands – and overwhelmingly involved civilians. Over time,

US attention shifted from deaths to the economic costs of the war to the US government, which Stiglitz and Bilmes (2008) estimate at over US$3 trillion. The Costs of War project at Brown University (Watson Institute, 2011) echoes such findings.

Nevertheless, there is paltry attention in existing studies to the profound economic costs to Iraqis, whether through lost property, life, or opportunities. Our estimates of civilians' monetary losses derive from self-identified violations of international human rights and humanitarian law. Such economic victimization is a central component of many conflicts. During the invasion and more so during the post-invasion period, these economic conflict crimes resulted in a major transfer of Iraqi wealth – homes, possessions, and resources that were the object of such crimes – from victims (often Sunni) to perpetrators (often Shi'a). Our goal in this paper is to use criminological methodologies and insights to advance documentation of victimization in the Iraq conflict. Establishing the dimensions and contours of this victimization is a step toward better understanding and explaining the collateral consequences of humanitarian and human rights crimes in conflict zones such as Iraq.

Joining two types of studies

This paper is based on two very different interview studies: the 2003 Gallup Poll (GP) of Baghdad and the 2003–8 Iraq History Project Current Violations Initiative (CVI). The GP conducted nearly 1200 interviews six months after the Coalition invasion using a random probability, residential household cluster design with a structured survey instrument. The CVI's interviews were more open-ended and conducted with nearly 2000 self-identified Iraqi victims of human rights and humanitarian violations in 2007–8. The GP focused on a smaller number of representatively sampled Baghdad residents, whereas the CVI included a greater number of non-randomly sampled victims, the majority of whom were displaced. By definition, residential household surveys will typically miss the largest share of human rights and humanitarian violations – because displacement from homes is among the most frequent of such events. Yet, as we show, residential surveys can still be quite useful. The challenge is to join the GP and the CVI in a scientifically meaningful way.

The Gallup survey in Baghdad

The American-led invasion of Iraq began on 19 March 2003, and the occupation officially began on 22 May. Gallup conducted its interviews in late August and September and completed nearly 1200 home interviews using a randomized probability design with 122 clusters in Baghdad. The interviewers achieved a remarkable 97 percent response rate. Gallup employees used satellite imagery and population numbers from the Ministry of Planning for sampling. Individuals from the Central Statistics Office conducted the interviews under the supervision of Gallup field supervisors.

We especially value several features of the 2003 GP. The first is the sampling design's representativeness. The second involves the questions the GP included about criminal victimization: whether the respondent's household had been burglarized, had a car or property taken, or been physical attacked. The third is that we could, with the assistance of the Gallup organization, identify the neighborhoods in which respondents lived. In

spite of its residential design having omitted the all-important group of displaced persons, we use the three preceding elements of the GP in valuable ways below.

The Current Violations Initiative

The larger Iraq History Project of which the CVI is a part consists of almost 9000 testimonies from across the country about political violence from the start of Ba'ath Party dominance in 1968 through the post-invasion period until 2008. Our use of this survey focuses on 805 interviews about the invasion and post-invasion period conducted with Iraqis in or displaced from Baghdad. The CVI was financed by the UK's Foreign and Commonwealth Office and the Soros Open Society Institute, and was directed by Daniel Rothenberg through the International Human Rights Law Institute at DePaul University College of Law.

The CVI is one of the few datasets addressing the full range of crimes then occurring in Iraq, including displacement, killings, targeted assassinations, mass lethal attacks, abductions, torture, threats and abuse of various types, by a variety of armed factions, including Coalition forces, Iraqi government forces, al-Qaeda, and various Sunni, Shi'a, and other militias. This comprehensiveness required interviewing well beyond the mostly closed-ended questions asked by Gallup. It also required concentrating on those victims directly experiencing the violence rather than a random sampling of the residential household population.

We especially value several features of the CVI. The first is the development of a victim sample and database of the full range of self-identified human rights and humanitarian violations during and after the invasion. The second is the questions it included about experiences of criminal victimization, which, like the GP, included assaults, beatings, and economic crimes such as looting, stealing or confiscation. In addition, the CVI asked interviewees to estimate monetary losses, which were translated into US dollars. These losses allow us to estimate the costs to civilians of the economic conflict crimes they experienced in association with military and political violence following the invasion. The third attractive feature of this survey is that interviews could be associated with specific Baghdad neighborhoods. Finally, the CVI's sample includes both displaced and non-displaced victims, giving us knowledge about the experiences of all Iraqis, rather than the more limited picture provided by the GP.

We first use overlapping elements of the GP and the CVI in the analysis below. We then continue with the CVI to estimate the actual collateral costs of the economic conflict crimes to civilians during the invasion and post-invasion period. Establishing these costs to civilians is the most distinctive aspect of this study. First, however, we describe the process involved in matching the residential neighborhood origins of the respondents in the two studies, a key challenge in establishing the CVI's representativeness.

Cross-referencing the sampling of Baghdad neighborhoods

To compare the CVI's sample with the GP's representative, random probability sample, we matched respondents' neighborhood locations in both datasets. We acquired a Hay/ Mahallah (the Arabic terms for neighborhoods) variable from Gallup indicating respondents' Baghdad residences with numerical codes. We then used a US military satellite

image of Mahallahs superimposed on a grid-like boundary map of Baghdad, in conjunction with the 'Baghdad – Districts and Neighborhoods' map of the Humanitarian Information Centre for Iraq (HIC, 2003). The latter included individual neighborhoods labeled with numerical designations, which we used to confirm the GP's neighborhood locations in relation to those identified by name in the CVI data.

Our analysis brings together 94 neighborhoods across both studies, 82 of which could be located within 9 'security districts': Adhamiyah, Thawra, Rusafa, Nissan, Kadhimiyah, Mansour, Karkh, Karadah, and Rasheed (shown in Figure 1). Location reporting was retrospective in the CVI, but we identified more than 80 percent of the neighborhoods. Our analysis includes 805 of 1028 respondents in the Baghdad portion of the CVI and 1112 of 1178 respondents in the GP. The mean security district contained 124 respondents in the GP and 85 in the CVI.

The results

Victimization prevalence

Our goal is to combine the strengths of the two surveys. Thus, we first examine how closely the CVI matches the GP across Baghdad's neighborhoods in terms of the
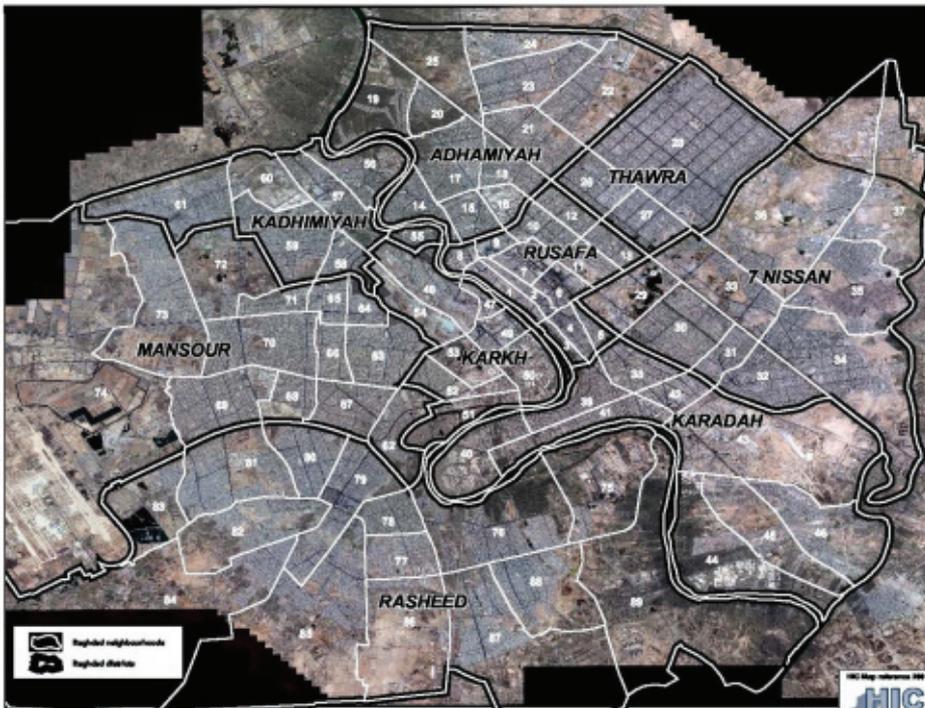

Figure 1. Baghdad security districts.
Source: HIC (2003), map reference 280.

Table 1. Comparison between the GP and the CVI datasets of index crime distribution across Baghdad neighborhoods

		Pearson's chi-square			Fisher's exact test	
		Value	DF	Significance	Significance	N
All victims	2003–4	37.3864	32	.275	.225	105
	2003–5	63.6822	34	.002	.000	166
Excluding displaced persons	2003–4	32.7778	31	.380	.533	80
	2003–5	39.0020	32	.184	.184	92

Note: Index crimes are assault/beatings, burglary/looting, and larceny/confiscation.

distribution of what we call 'index violations': assault, burglary, and theft, which are measured in both datasets. We then use the more detailed record of victimization in the CVI, adjusted to match the distribution of the overlapping index violations within the GP, to estimate the extent of the violations that the GP did not include. This predication allows us to estimate the total level of human rights and humanitarian crimes that occurred in Baghdad by the approximate time the GP was concluded: September 2003. We then use the CVI's chronological distribution to provide a fuller estimate through 2008. Finally, we use the CVI data on the costs of the economic conflict crimes and information from the GP on district populations to estimate monetary losses from these crimes in 2003–8.

Thus, our first task is to examine how closely the two studies' distributions of three index crimes (those measured in both datasets: assault/beatings, burglary/looting, and larceny/confiscation) parallel one another in Baghdad during the invasion and early post-invasion period. Table 1 compares the GP and the CVI distributions among neighborhoods of households who reported one or more index violations. In other words, it considers the two (column) distributions of index violations *across all* neighborhoods – not (row) percentages of households victimized *within each* neighborhood (the full table of 94 neighborhoods is not shown). Recall that the GP coverage is only through summer 2003, about six months during and after the invasion, whereas the CVI covers 2003–8. Accounts of the Iraq conflict describe the period 2003–5 as less violent than 2006–7, so it seems reasonable to expect the distribution of victims to be relatively consistent throughout that period. Accordingly, Table 1 compares the GP with the CVI only in 2003–4 and 2003–5.

As one might expect, given the absence of displaced persons in the GP's sample, whether the distribution of index crime victims differs between the two datasets depends on whether displaced persons are included. Indeed, when they are included for 2003–5, both Fisher's exact test and Pearson's chi-square show that the two distributions are significantly different (given the small number of respondents in many neighborhoods, Fisher's is the better measure). However, when we appropriately exclude displaced persons in rows 3 and 4, we find no evidence that the two samples indicate a different pattern of victimization. Moreover, in 2003–4, when fewer persons were yet displaced owing to the conflict, even including them in row 1 does not indicate statistically

Table 2. Estimate of total household victimization in Baghdad by September 2003, using the CVI proportions to adjust the Gallup partial estimate

	Index crime victimization Gallup	Non-index victimization[a] CVI	Estimated total victimization by September 2003		
			95% lower bound	Best estimate	95% upper bound
District					
Rusafa	3.95 (2.25)	57.45 (7.29)	6.90	9.28	14.16
Adhamiyah	8.45 (2.34)	69.57 (6.86)	19.10	27.77	50.85
Thawra	1.92 (0.85)	69.23 (13.32)	3.20	6.23	110.11
Nissan	8.72 (2.32)	56.10 (7.85)	14.60	19.87	31.11
Karadah	10.45 (3.77)	64.29 (9.22)	19.12	29.25	62.21
Karkh	28.95 (7.46)	25.00 (25.00)	28.95[b]	38.60	66.16[c]
Kadhimiyah	8.73 (2.52)	57.14 (13.73)	12.04	20.37	66.11
Mansour	20.69 (4.37)	60.32 (6.21)	39.71	52.14	75.89
Rasheed	4.82 (1.67)	70.00 (4.20)	12.58	16.06	22.23
Total	7.91 (0.81)	63.83 (2.48)	19.28	21.88	25.29
No. of households in surveys / Total no. of households	1112	376	1,129,032	1,129,032	1,129,032

Notes: Standard deviations in parentheses.
[a]Amputation/mutilation, bombardment, home destruction, village/town destruction, detention, disappearance, displacement, killing, forced job loss, massacre, rape/sexual violence, torture, beheading, bombing, harassment, kidnapping, forced business loss, forced home loss, threats/blackmail, and miscellaneous crimes/
[b]Lower bound is unchanged Gallup mean; 95% estimates are negative.
[c]Uses 70% confidence level; 95% estimates are above 100.

significant variation between the datasets. The distributions are significantly dependent only when we include both displaced persons and 2005 in the analysis. These results reinforce our confidence in the representativeness of the CVI data.

In Table 2, we begin to estimate total victimization prevalence in Baghdad following the invasion. The first column simply indicates the proportion of respondent households within each security district that reported the three index crimes considered in Table 1. Since the GP is a cluster sample, we display and estimate victimization according to district-wide rather than neighborhood proportions. The second column reports the proportion of households in the CVI who reported one of the 20 kinds of self-identified humanitarian and human rights victimization not captured by the GP. Many of these CVI crimes are of considerable importance: killings, displacement, targeted assassinations, mass lethal attacks, abduction, torture, and threats and abuse of various types. Just over 60 percent of respondent households in Mansour, for instance, reported one or more of these forms of 'non-index' victimization but *not* one of the index crimes captured by the GP. If the GP had included a more comprehensive measure, it should have had the same distribution of 'non-index' victimization as the CVI. Thus, the 20.69 percent of the GP who are index crime victims in Mansour represent 39.68 percent (100.00 minus 60.32)

of all Mansour victims (revealed in the CVI) – that is, 39.68 percent of the CVI experienced index crime victimizations (and possibly also 'non-index' violations).

We can use these figures to form a population estimate of the full range of victimization that the GP would have reported if it had asked about all 23 violations, yielding, for example, a 'best estimate' of victimization prevalence in Mansour of 52.14 percent (20.69 multiplied by the excess victimization ratio of 60.32/39.68, added to 20.69). The 95 percent confidence interval around this estimate is about 40–76 percent. Mansour is the district with the highest estimated prevalence in Baghdad. Mansour is one of the elite, predominantly Sunni neighborhoods in Baghdad, and is widely known for its diplomatic and professional residents and its proximity to the Green Zone and the Coalition Provisional Authority. As the conflict intensified, wealthier Mansour's residents quickly became targets.

Five other districts – Adhamiyah, Nissan, Karadah, Karkh, and Kadhimiyah – have estimated victimization prevalence at or above 20 percent by September 2003. Adhamiyah is a working-class district surrounded by Shi'as and contains two neighborhoods, Shaab and Ur, known for their violence. Sunni neighborhoods in Adhamiyah came under attack from Shi'a groups early in the occupation and later. As the occupation continued, American forces were attacked in Adhamiyah by al-Qaeda, resulting in escalating collateral damage. Nissan was a more middle-class district but also experienced rapid demographic changes and is known for high levels of violence, with Shi'a groups displacing Sunnis from the neighborhood. Karadah and Karkh both have higher estimated prevalence than Adhamiyah and Nissan. The high estimates for Karkh are somewhat unreliable given the low numbers of index-only-crime victims reported in the CVI and the fact that Karkh has the lowest actual population among the districts. Yet Karkh is the neighborhood with the highest reported index crime victimization in the GP (almost 30 percent), so we can be fairly certain of the high victimization there. Karadah is a relatively prosperous neighborhood with a number of luxurious homes and was thus an attractive target for costly victimization.

Thawra (Sadr City) is of particular note, having the lowest victimization estimate. Since low reporting of index crimes for Sadr City may at first seem surprising, it is important to emphasize the cross-validation provided by both data sources. Much of Sadr City's reputation for violence derives from Mahdi Army activity that is concentrated and led in Sadr City by Muqtada al-Sadr. Adhamiyah and Nissan both experienced widely reported victimization at the hands of the neighboring Mahdi Army in Sadr City. However, Sadr City itself benefited from the security provided by district-wide checkpoints manned by Mahdi Army members.

Both the CVI and the GP asked about household rather than individual victimization. As such, our population estimates are based upon the mean household size in Baghdad during 2003–8 of 6.2 persons (Iraq Family Health Survey Study Group, 2008). Estimates of Baghdad's population at the start of the invasion vary, but center at approximately 7 million persons; the estimate we use for the total number of families in Baghdad at any given moment during the post-invasion period is thus 1,129,032. Baghdad's estimated victimization prevalence indicates that slightly more than one in five households experienced at least one humanitarian or human rights crime by the time the GP was conducted. Based on these population figures, we estimate that, given the CVI's full measure of

Table 3. Total household victimization estimates for Baghdad during 2003–8

		Estimated total victimization during 2003–8		
	% in CVI	95% lower bound	Best estimate	95% upper bound
During Gallup period: 2003–4	16.75	217,661	247,021	285,536
After Gallup period: 2005–8	83.25	1,081,503	1,227,386	1,418,757
Post-invasion total of households victimized		1,299,164	1,474,407	1,704,293

victimization, the GP indicates that about 250,000 households had at least one member victimized by approximately six months following the invasion.

Thus far, we have restricted our analysis to the early years of the Iraq invasion and occupation. The next part of our analysis extends our estimate to more fully represent the rise and fall of victimization. First, we use the CVI to consider the invasion and early post-invasion period from 2003 to 2004, which we conservatively assume to be represented by the GP. Slightly more than 15 percent of the victimization reported by CVI respondents falls in this period, with the remaining 85 percent or so reported between 2005 and 2008. By using the ratio of these two time periods in conjunction with our victimization estimate in the GP from Table 2 (the first row of Table 3), we can estimate a victimization prevalence for 2005–8 (row two).

Since we cannot compare the CVI with the GP during these later years, this estimate is based on the assumption that CVI's sampling in 2005–8 continues to be representative. We have no reason to believe otherwise, because the proportion of victims in each time period accurately reflects what we know about the conflict. The 2005–8 period includes the dramatic peak in victimization reported after the 2006 bombing of the al-Askari Mosque in Samara – widely cited as a peak point of retaliatory violence in Iraq. Figure 2, showing the distribution over time of economic losses (discussed further below), displays a clear and expected peak in 2006, the year of the Samara bombing, further increasing our confidence in the reliability and validity of the CVI reporting. The timeline of victimization revealed by the CVI, applied in Table 3 to the GP's estimate of prevalence in 2003, leads us to conclude that more than 1 million households were victims of human rights and humanitarian crimes in Baghdad between April 2003 and the end of 2008.

Collateral economic losses

Finally, we use the CVI respondents' comprehensive reports of monetary losses in 2003–8 to estimate the costs of economic conflict crimes associated with the political violence occurring during the invasion and post-invasion period. Respondents reported monetary losses resulting from blackmail, payments for kidnapping/ransom, medical expenses related to violence, expenses related to moving owing to security concerns, losses of businesses, homes, furniture, or cars, and any other large, unexpected expenses since the invasion. Losses were converted into 2008 US dollars. The estimates we present in Figure 2 and Table 4 exclude outlying losses beyond the 99th percentile, removing the
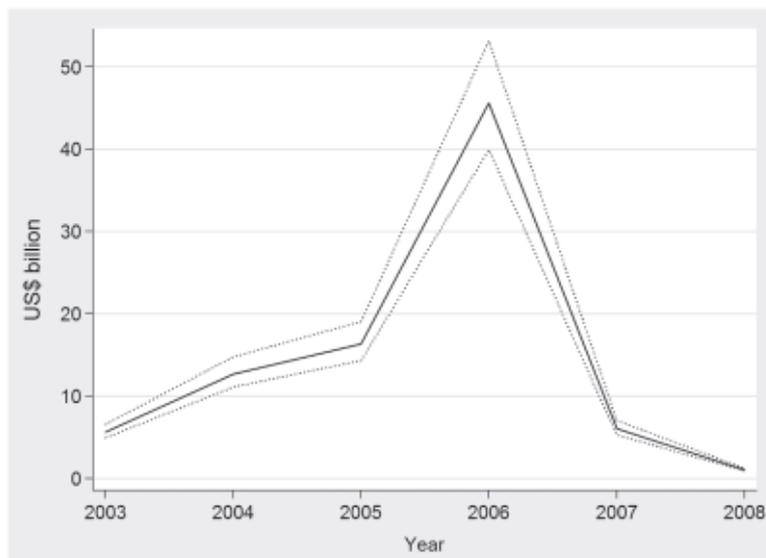
Figure 2. Annual economic losses in Baghdad, by year of first violation.
Note: The dotted lines represent 95% upper and lower bounds.

highest reported losses. The Appendix presents a similar table that includes all outliers. In order to account for the further possibility of unrepresentativeness in estimating monetary losses, we weight the CVI according to each neighborhood's population and proportion of victimization in the GP. Thus, after weighting each observation according to its neighborhood, the adjusted CVI proportions match the GP proportions underlying Table 1.

Since the security situation changed so much in 2006, and since economic losses also depend on district population size, we should not expect the results in Tables 4 and 5 to parallel those in Table 2. As noted above, Figure 2 shows the predictable spike of losses in 2006 (note that the CVI measures only the date of first violation, so estimated losses are likely disproportionately weighted in earlier years). Although Mansour displayed the highest level of victimization in both datasets in 2003–5, the first column of Table 4 shows that Mansour residents reported the lowest level of median economic losses (US$11,750) for the longer period 2003–8. During the latter part of this period, the Coalition Dagger Brigade built barriers and established outposts and joint security stations in Mansour. By early 2007, the authorities claimed that nearly three-quarters of Mansour was 'controlled,' which may account for the relatively low loss figure.

In contrast, several of the districts – Adhamiyah, Nissan, Karkh, and Kadhimiyah – display considerably higher median losses: from more than US$20,000 to over US$40,000. Because the sizes and population density of these districts vary and some included businesses with quite large losses, median losses do not necessarily parallel the total losses calculated in the rest of Table 4. Rusafa is of particular interest: Rusafa's median losses (US$14,337) were not as remarkable as those in other districts, but its

Table 4. Estimate of total economic losses to victims in post-invasion Iraq, 2003–8 (US$)

	Median losses	Sample losses	Estimated total losses to victims[a]		
			95% lower bound	Best estimate	95% upper bound
District					
Rusafa	14,337.00	6,483,646.00	12,475,853,367.00	14,160,814,118.00	16,368,217,671.00
Adhamiyah	21,411.00	5,932,236.75	9,775,304,024.00	11,096,782,250.00	12,827,562,973.75
Thawra	19,010.00	1,456,849.00	8,479,854,681.00	9,624,641,360.00	11,124,775,631.00
Nissan	38,342.50	5,073,346.40	7,873,548,715.49	8,938,569,797.78	10,331,974,197.88
Karadah	14,286.00	3,955,867.12	6,694,468,233.74	7,599,607,469.98	8,783,927,901.59
Karkh	21,677.50	699,237.00	1,157,936,472.00	1,314,565,560.00	1,519,442,001.00
Kadhimiyah	44,854.00	2,948,474.00	4,059,591,264.00	4,608,714,720.00	5,327,484,842.00
Mansour	11,750.00	5,315,763.00	6,906,830,602.00	7,840,776,410.00	9,063,403,021.00
Rasheed	20,010.00	12,537,426.00	20,761,977,456.00	23,570,360,880.00	27,243,826,698.00
Ethnicity					
Shi'a Arab	11,822.50	13,949,855.65	24,149,028,189.66	27,413,206,077.34	31,686,719,554.03
Sunni Arab	25,040.00	20,452,998.00	36,325,109,360.00	41,235,850,466.00	47,663,687,636.00
Other	24,844.50	11,521,597.57	19,282,490,873.86	21,889,806,610.89	25,301,877,495.33
Baghdad total	20,010.00	45,924,451.22	79,756,628,423.52	90,538,863,154.23	104,652,284,685.36
Iraq total	10,672.00	75,671,686.36	272,221,239,745.36	308,972,810,748.70	357,117,069,273.99
No. of households (Baghdad)	675	675	1,299,164	1,474,407	1,704,293
No. of households (Iraq)	1463	1463	5,124,158	5,815,351	6,722,066

[a]Population losses calculated using victimization estimates in Table 3.

Table 5. Fixed-effects models of household economic losses in Baghdad during 2003–8 (US$D)

	Model 1	Model 2	Model 3	Model 4
District (ref. Mansour)				
Rusafa	5099.71* (21022.31)	53702.03* (21063.58)	54672.15** (20530.06)	48540.73* (21167.79)
Adhamiyah	16269.98 (19043.71)	18010.08 (19086.99)	19901.19 (18730.61)	18078.94 (19081.47)
Thawra	-6031.62 (27133.11)	2520.80 (27386.82)	10415.36 (26870.88)	4450.04 (27713.15)
Nissan	27024.90 (20717.26)	23712.14 (20935.21)	25404.83 (20477.27)	24016.83 (20795.03)
Karadah	38879.49 (23554.11)	39662.37 (23785.62)	46292.49* (23240.79)	46808.32 (23940.34)
Karkh	4076.62 (43318.51)	3510.30 (43247.94)	-2258.38 (42287.10)	-864.50 (42445.93)
Kadhimiyah	64432.38* (29158.78)	6913.93* (29247.83)	67124.58* (28448.65)	58085.46 (29636.57)
Rasheed	4521.15 (15684.01)	6605.51 (15785.44)	8468.36 (15492.10)	6416.53 (15824.90)
Ethnicity/religion (ref. Shi'a Arab)				
Sunni Arab		24416.03* (11978.30)	18103.42 (11718.37)	16008.89 (11922.00)
Other		19558.46 (14073.63)	10215.98 (13737.80)	8667.83 (13979.03)
Violations				
Assault			325.45 (13198.94)	4854.06 (13474.36)
Attack/massacre			-18180.28 (11300.09)	-17385.12 (11556.83)
Killing			-5176.46 (10495.51)	-3456.21 (10774.16)
Beheading			104897.62*** (30707.05)	106552.13*** (30778.04)
Kidnapping			50115.11*** (11680.55)	49835.81*** (11869.25)
Property crime			-5355.93 (13335.02)	-7747.41 (13505.33)
Loss of business			34411.70** (11962.76)	31615.01* (12244.04)
Loss of home			18592.67 (10482.55)	17039.85 (10649.55)
Other crime			13877.86 (14270.05)	13619.45 (14852.58)
Gender (male)				22417.17 (11926.04)
Date of first violation				2.31 (13.51)
Constant	51026.58*** (12886.48)	35473.19* (14837.26)	2685.16 (20291.89)	-49905.50 (229313.94)
F	1.72	1.83	3.83	3.56
No. of households	640	640	640	621

Notes: Standard errors in parentheses.
*p < .05, ** p < .01, *** p < .001

reported total sample losses of more than six million dollars (US$6,483,646) are among the highest. Rusafa is where the Green Zone is located, and it also includes large markets and hotels. The ministries and businesses serving workers and residents in the neighborhood were targets for car bombs. The financial losses were therefore predictably high.

Estimated losses for Baghdad's full population, divided by security districts, appear in columns 3–5 of Table 4. Rasheed has by far the highest losses, which is consistent with it being one of the largest and most violent districts following the Samara bombing. Kadhimiyah has relatively high median losses, consistent with its relative affluence; however, the losses are concentrated, limiting its total losses. With its dense population, Thawra (Sadr City) has large total losses, despite its relatively low victimization rate.

The lower part of Table 4 shows that, across Baghdad, Sunnis are estimated to have lost notably more than Shi'as. Weighted according to victimized population, economic losses suffered by Sunnis are over US$40 billion, compared with about US$27 billion for Shi'as and nearly US$22 billion for all others. Total estimated economic losses for the city of Baghdad are approaching US$100 billion (US$90,538,863,154), with a 95 percent confidence interval of US$80–105 billion.

Since the CVI data actually are reported for all of Iraq, we also calculated an estimate for the entire country: about US$309 billion. However, we are less certain about the sampling for this nationwide estimate, and the confidence interval is larger (US$272–357 billion).

Table 6 in the Appendix reports the results including outlying cases beyond the 99th percentile of reported economic losses: a best estimate for Baghdad is over US$254 billion and for the entire country is nearly US$816 billion. Although the top 1 percent of the CVI sample increases the estimates substantially, they are still quite plausible, given the concentration of wealth in the top 1 percent of the population. The upper bound estimate for Iraq is nearly US$1 trillion. This estimate consists entirely of monetary costs to households that were victims of human rights and humanitarian violations and does not include the principal costs to Iraq in terms of lost lives, injuries, infrastructure, civic institutions, and other kinds of public costs included, for example, in Stiglitz and Bilmes' (2008) estimates of US$3 trillion in costs to the US government of the war in Iraq.

Table 5 presents fixed-effects, multilevel regression models that include districts, ethnicity, crimes, gender, and date of first violation. Two districts in column 1, Rusafa and Kadhimiyah, display statistically significant large effects when using Mansour as the reference point. We anticipated Kadhimiyah's significance because of the relatively large median losses and the narrow confidence interval. Kadhimiyah is known for the high peak in the degree of its violence in 2006. The significance of Rusafa also is unsurprising because of the many markets and businesses that were especially vulnerable to bombings. Rusafa's mean losses are US$50,991 more than those of Mansour, and Kadhimiyah had mean losses of US$64,432 more.

Model 2 introduces ethnicity. Again, as in Table 4, we see significantly higher losses for Sunnis compared with Shi'as: on average, and with district fixed effects held constant, Sunni victims lost US$24,416 more than Shi'a victims. Model 3 introduces the crimes that led to the losses reported in Tables 4 and 5. The largest and most statistically significant of the losses are associated with crimes that can involve large ransoms – beheadings and kidnapping. On average, beheadings were associated with losses of

US$104,897 and kidnappings involved losses of US$50,115. Losses associated with businesses are also large and significant, averaging US$34,411. Including the crimes in Model 3 also slightly increases the district-level effects for Rusafa, Kadhimiyah, and Karadah. On the other hand, note that the effect of being Sunni is reduced substantially in size and statistical significance – because Sunni victims were more likely to be the victim of the most costly crimes, including beheadings and kidnappings. Meanwhile, only Rusafa remains statistically significant in Model 4, which also includes gender and date of first violation. Higher proportions of men reported greater losses in Rusafa and Karadah, which is not surprising because men were more often victims of economic crimes in this conflict.

Civilian costs of economic conflict crimes in Baghdad and Iraq

A hierarchy of knowledge exists regarding the consequences of the Iraq invasion. We know with greatest certainty about the thousands of deaths and tens of thousands of injuries of Coalition soldiers. We know with less certainty, but nonetheless from plausible estimates published in peer-reviewed journals, about hundreds of thousands of Iraqi deaths. Nobel prize winner Joseph Stiglitz and Linda Bilmes estimated US$3 trillion of economic costs to the US government from the invasion. And this article provides the first and, so far as we know, only estimates of the costs to Iraqi civilians of the economic conflict crimes associated with the political violence that accompanied the invasion.

We found substantial evidence of the widespread, systematic nature of economic conflict crimes during the Iraq conflict. Total estimated economic losses for the city of Baghdad are almost US$100 billion. These losses peaked in 2006 at about US$50 billion. We estimated that the total monetary losses suffered by members of Sunni groups in Baghdad were over US$40 billion, almost US$15 billion more than the considerable losses to the Shi'as. We also calculated an estimate for the entire country, with the provision that we were less certain about the representativeness of the national sampling: approximately US$329 billion. These estimates were cautiously developed in a number of ways, including eliminating the highest percentile of losses reported. As we note and demonstrate in Table 6 in the Appendix, even larger losses are estimated when the latter are included.

Although our estimates are far from definitive, they convey the enormous extent of the victimization and losses experienced by the residents of Baghdad and Iraq, and the ways in which these losses systematically vary across groups and locations. These costs are a way of understanding the scale of unmet challenges in achieving transitional justice in Iraq. Little research by criminologists or other researchers exists on the economic losses experienced in such conflicts. Perhaps the most closely related work is on 'anti-livelihood crimes' in Africa's conflict zones (Flint and de Waal, 2005; Hagan and Kaiser, 2011; Hagan and Rymond-Richmond, 2009; Young et al., 2005), which makes the essential point that individuals and communities are economically devastated by humanitarian and human rights crimes. Transitional justice requires further knowledge about the scale and distribution of these economic costs. Criminological concepts and methods are uniquely valuable resources for advancing this knowledge.

From a criminological perspective, perhaps the most obvious limitation of our results is the absence of information about perpetrators. We need to develop further knowledge about perpetrators at the individual, group, and state levels. In doing so, we will learn more about the motivations and consequences of the property and anti-livelihood kinds of crimes that we have called economic conflict crimes. For example, to what extent are these crimes motivated by revenge based on prior disputes – or by a desire to provoke further conflict? We also need to learn more about the role of states. Specifically, in Iraq, we need to learn more about the role of the Coalition Provisional Authority that assumed leadership responsibility for providing governance, security, and economic development after the invasion. The battle for Baghdad and Iraq ultimately involves questions about state and non-state crime that both criminology and the world are only beginning to recognize.

Note

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Appendix

Table 6. Total losses, including 99th percentile in estimates (US$)

	Median losses	Sample losses	Estimated total losses[a]		
			95% lower bound	Best estimate	95% upper bound
District					
Rusafa	14,674.00	9,898,646.00	18,886,616,568.00	21,430,568,590.00	24,776,310,938.00
Adhamiyah	22,375.50	15,948,236.75	30,429,235,719.00	34,527,932,563.75	39,918,436,585.25
Thawra	19,010.00	1,456,849.00	2,779,667,892.00	3,154,078,085.00	3,646,493,047.00
Nissan	41,671.25	35,075,346.40	66,923,760,937.07	75,938,124,962.66	87,793,592,046.90
Karadah	16,067.00	7,294,202.12	13,917,337,643.32	15,791,947,587.94	18,257,387,904.21
Karkh	21,677.50	699,237.00	1,334,144,196.00	1,513,848,105.00	1,750,190,211.00
Kadhimiyah	44,854.00	2,948,474.00	5,625,688,392.00	6,383,446,210.00	7,380,030,422.00
Mansour	11,750.00	5,315,763.00	10,142,475,804.00	11,508,626,895.00	13,305,354,789.00
Rasheed	20,617.00	38,888,430.00	74,199,124,440.00	84,193,450,950.00	97,337,740,290.00
Ethnicity					
Shi'a Arab	12,006.00	41,282,113.70	78,766,272,945.56	89,375,776,167.27	103,329,130,598.92
Sunni Arab	25,534.00	60,042,138.00	114,560,399,304.00	129,991,228,770.00	150,285,471,414.00
Other	26,008.00	16,200,932.57	30,911,379,341.83	35,075,019,012.08	40,550,934,220.44
Baghdad total	20,010.00	117,525,184.27	224,238,051,591.39	254,442,023,949.35	294,165,536,233.36
Iraq total	10,939.00	185,068,874.41	714,495,883,178.83	815,848,616,538.91	950,630,380,842.25
No. of households (Baghdad)	681	681	1,299,164	1,474,407	1,704,293
No. of households (Iraq)	1440	1440	5,355,848	6,115,252	7,125,585

[a]Population losses calculated using victimization estimates in Table 3.