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Heba Fatma Morayef

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**THE POLITICS AND LIMITATIONS  
OF COUNTING THE DEAD:  
A REVIEW OF TWO MORTALITY STUDIES ON IRAQ**

*Heba Fatma Morayef* \*

**INTRODUCTION**

*'We don't do body counts'*—General Tommy Franks, March 23, 2002<sup>1</sup>

Any discussion of mortality rates in Iraq is destined to be a highly politicized and controversial one. The publication of every new study on the death toll in Iraq is greeted with strong denials or enthusiastic media coverage by pro-war and anti-war camps, as well as vigorous debate in the scientific community. As the legitimacy of US and UK intervention in Iraq continues to be called into question, the political implications of high civilian casualties in post-war Iraq are especially significant due to the ongoing lack of security and deepening humanitarian crisis. Yet, those governments best-placed to release statistics on civilian casualties refuse to do so.

In light of the lack of a comprehensive health information system in Iraq to provide data on mortality rates, epidemiological household surveys are the best available mechanism. The following is a review of two of the most prominent mortality studies conducted in post-war Iraq: the first is *Mortality After the 2003 Invasion of Iraq: A Cross-Sectional Cluster Sample Survey*, along with its supplement *The Human Cost of War*,<sup>2</sup> conducted by the Bloomberg School of Public

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\* Heba Fatma Morayef is a researcher in human rights, specializing in the Middle East. She holds an LLM in Public International Law from the London School of Economics and a B.A. in Political Science with Specialization in Public International Law from the American University in Cairo.

<sup>1</sup> Edward Epstein, *Success in Afghan War Hard to Gauge*, SAN FRANCISCO CHRON., Mar. 23, 2002, at A1.

<sup>2</sup> Gilbert Burnham, Riyadh Lafta, Shannon Doocy, & Les Roberts, *Mortality Before and After the 2003 Invasion of Iraq: A Cross-Sectional Cluster Sample*, 368 LANCET 1421, 1421-1428 (Oct. 2006) [hereinafter "Lancet Study"]; GILBERT BURNHAM ET AL., JOHNS HOPKINS UNIVERSITY BLOOMBERG SCHOOL OF PUBLIC HEALTH & THE MIT INSTITUTE FOR INTERNATIONAL STUDIES, THE HUMAN COST OF THE WAR IN IRAQ: A MORTALITY STUDY, 2002-2006, available at <http://mit.edu/humancostiraq/reports/human-cost-war-101106.pdf> (Oct. 11, 2006) (last visited April 5, 2008) [hereinafter "The Human Cost of War"].

Health at Johns Hopkins University together with the School of Medicine at Al Mustansiriya University and published in *The Lancet* on October 2006 (hereinafter *The Lancet* study). The second is the *Violence-Related Mortality in Iraq from 2002 to 2006* study, which was conducted by the World Health Organization (WHO)–Iraqi Ministry of Health sponsored Iraq Family Health Survey Study Group (hereinafter the IFHS study) and published in the *New England Journal of Medicine* on January 9, 2008.<sup>3</sup> Another project, the Iraq Body Count which relies on passive surveillance of the media will be examined below for comparative purposes.

## I. THE HUMAN COST OF WAR IN IRAQ- A MORTALITY STUDY

### A. Background

The successor to a 2004 survey also published in the *Lancet*,<sup>4</sup> this study was commissioned by the Centre for International Studies at the Massachusetts Institute of Technology and was approved by the Committee on Human Research at the Johns Hopkins Bloomberg School of Public Health. A group of male and female Iraqi medical doctors from Al Mustansiriya University in Baghdad conducted the survey between May and July 2006 under the supervision of one of the authors, Riyadh Lafta. After obtaining the consent of the head of each household, they made queries about births, deaths, and migrations into and out of the household since January 1, 2002, recording deaths which had occurred between January 1, 2002 and the day of the interview in July 2006, only if the person had lived in the household for three continuous months. Some of the supporting data was made available subsequently; however, the security risk to the interviewees meant that no data that would identify them was released

### B. Methodology

The authors argue that population-based survey methods, in this case a standard cluster survey method, are the recommended method for measuring deaths in conflict situations. Fifty households were identified through random selection based on population size, with

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<sup>3</sup> Iraq Family Health Survey Study Group, *Violence-Related Mortality in Iraq from 2002 to 2006*, 385 NEW ENG. J. MED. 483 (2008) [hereinafter “IFHS study”].

<sup>4</sup> *Lancet* Study, *supra* note 2.

Baghdad's population 6,500,000<sup>5</sup> being assigned twelve clusters, while Basra and Sulamaniyah had three clusters each. Forty households in each of the forty-seven cluster sites in sixteen of the eighteen governorates in Iraq were visited and interviewed about household deaths which occurred between January 2002 and July 2006. Three were subsequently excluded from the study when it was discovered that they had been misattributed. The total number of households interviewed was 1849; they contained 12801 individuals. The interviewers would start at the identified house and would then move on to the nearest thirty-nine houses.

### C. Findings

The standard cluster survey method was used to determine a death rate for the entire country, which was found to be an average of 13.2 deaths per 1000 persons per year for the period of 2002-2006.<sup>6</sup> This number, the 'crude death rate' of all deaths from all causes, was then modified by subtracting the 'baseline' death rate in order to determine 'excess deaths,' *i.e.* those which would not have been expected to take place had the war not happened. The baseline death rate of 5.5 deaths per 1000 persons per year was based on the survey of the period between January 2002 and the invasion in March 2003. Excess deaths in post-invasion Iraq were found to be:

March 2003-April 2004:	2.6 deaths/1,000/year
May 2004-May 2005:	5.6 deaths/1,000/year
June 2005-June 2006:	14.2 deaths/1,000/year
Overall post-invasion:	7.8 deaths/1,000/year <sup>7</sup>

This rate yields an average of 7.2/1000/year, which when applied to the population of 26.1 million, produces the estimate of 654,965 excess deaths in Iraq as a consequence of the war from all causes.<sup>8</sup> When non-violent deaths are subtracted from this total, the number of deaths in post-war Iraq due to violent causes becomes 601,027, which is

<sup>5</sup> The authors relied upon 2004 estimates from the *Living Conditions Survey*, United Nations Development Program, Iraq Ministry of Planning and Development Cooperation. Iraq 2004, Vol 1: Tabulation Report (UNDP 2005).

<sup>6</sup> The death rate for every 1000 persons per year was the following: between March 2003-April 2004: 7.5 deaths/1,000/year; May 2004-May 2005: 10.9 deaths/1,000/year; June 2005-June 2006: 19.8 deaths/1,000/year; Overall post-invasion: 13.2 deaths/1,000/year.

<sup>7</sup> THE HUMAN COST OF WAR, *supra* note 2, at 7.

<sup>8</sup> Lancet Study, *supra* note 2, at 1426.

approximately 2.5% of Iraq's population.<sup>9</sup> The range of plausible values lies between 426,369–793,663.<sup>10</sup>

The proportion of violent and non-violent death rates was examined with 'non-violent' defined as "not due to intentional violence," which would include death in traffic accidents. The authors write that pre-invasion deaths were "almost entirely non-violent deaths;"<sup>11</sup> however, this would need to be verified by comparison with murder rates and the incidence of honor killings and extra-judicial executions in pre-invasion Iraq.<sup>12</sup> Apart from the expected sharp increase in violent deaths post-invasion, what is interesting to note is an increase in non-violent deaths starting in June 2005 at a rate of 1.2 deaths/1000/year.<sup>13</sup> While this may not be a dramatic increase, the authors suggest that this may point to deterioration in health services and access to these services. Deterioration in health services is caused in part by the violence against medical staff that has been occurring, and the gap caused by the brain drain of medical staff during the Saddam Hussein regime. A recently released report by the International Committee of the Red Cross (ICRC) notes that more than 2,200 doctors and nurses have been killed since 2003, and 20,000 of the 34,000 doctors who were registered in 1991 have left the country.<sup>14</sup>

## 1. Causes of Death

The team conducting the survey also asked household members about the cause of death of the individual. The most common cause throughout was gunshots, with air strikes accounting for a high proportion of deaths at the beginning, and then later, car bombs becoming increasingly frequent.<sup>15</sup>

The authors' assertion that "from the accounts of households, it was almost always possible to identify the weapon or type of ordinance

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<sup>9</sup> *Id.*

<sup>10</sup> *Id.*

<sup>11</sup> THE HUMAN COST OF WAR, *supra* note 2, at 7.

<sup>12</sup> See e.g. *Iraq: Victims of Systematic Repression*, Amnesty International, November 24, 1999, available at [www.amnesty.org](http://www.amnesty.org) and Human Rights Watch World Report Entries on Iraq, available at [www.hrw.org/doc?t=mideast&c=iraq](http://www.hrw.org/doc?t=mideast&c=iraq) (last visited April 15, 2008).

<sup>13</sup> THE HUMAN COST OF WAR, *supra* note 2, at 7.

<sup>14</sup> International Committee of the Red Cross, *Iraq: No Let-Up in the Humanitarian Crisis*, March 17, 2008, available at [www.icrc.org](http://www.icrc.org) (last visited April 24, 2008).

<sup>15</sup> Lancet Study, *supra* note 2, at 1423.

responsible for the death of the household member”<sup>16</sup> is problematic. It is not clear how the household members would have known for certain what had caused the death of their relative with the possibility of lack of information or potential bias of the interviewee putting their responses into question. Although the authors were conscious of the limitations of trying to identify the cause of death in this manner, stating that there were many cases where the cause was unclear, their solution of only recording deaths “when the household was certain that the death was a consequence of coalition action”<sup>17</sup> is not sufficiently convincing, since, as they said themselves, they had “no independent method for identifying the parties responsible for these deaths.”<sup>18</sup> The extent to which one can rely upon the findings with regards to the increase in the proportion of deaths attributed to groups other than the coalition forces may be subject to the same risk of bias depending on the political affiliations of the household.

## 2. Attribution of Responsibility for the Deaths

While the question of who is responsible for these ‘excess deaths’ was not properly examined by the authors because it was not the main focus of the study, some observations can be made based on the responses on the findings as to the causes of death. The study included statistics on coalition-related deaths, which represented 31% of all violent deaths, with gunshots amounting to 56%, airstrikes to 13%, while the source of 45% remains unknown.

Ultimately, correlating deaths to operations conducted by coalition forces or irregular Iraqi forces is very difficult, because the information is not made public by either. Coalition forces “don’t do body counts”<sup>19</sup> but what is known, as John Tirman writes in Annex F to the *Lancet* study, is that coalition forces continue to conduct large scale “close air support” of ground operations although it is not known how much ordnance is dropped.<sup>20</sup> This, combined with reports of assertive rules of engagement, could provide substantiation to the high death rates reported. While little is known about the military capabilities of the militias and insurgents, the clear increase in gunshot wounds from June 2005 onwards may lead to the conclusion that an increasing

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<sup>16</sup> THE HUMAN COST OF WAR, *supra* note 2, at 8.

<sup>17</sup> *Id.* at 9.

<sup>18</sup> *Id.* at 9.

<sup>19</sup> Epstein, *supra* note 1.

<sup>20</sup> THE HUMAN COST OF WAR, *supra* note 2, at Annex F.

proportion of excess deaths is due to the rise in sectarian violence. This conclusion is due to the use of small arms and the practice of assassinations that are characteristic of the irregular forces in Iraq.

## II. VIOLENCE-RELATED MORTALITY IN IRAQ FROM 2002 TO 2006

### A. Background

In November 2006, Iraqi Health Minister Ali al-Shemari disputed the findings of the *Lancet* study saying “this is an exaggerated number. I think 150 is ok.”<sup>21</sup>

The study *Violence-Related Mortality in Iraq from 2002 to 2006* was conducted by the Iraqi Ministry of Health together with the Ministry of Planning and development and was given technical support by the WHO. The *New England Journal of Medicine* published it on January 31, 2008.<sup>22</sup> The survey was carried out by employees of the Iraqi Health Ministry and coordinated by the WHO office in Baghdad. The period examined was January 2002 to June 2006, to allow for comparison with the results of the *Lancet* study.

### B. Methodology

The study looked at violence-related death rates asked household members for the sex, age, and time and place of death of the individual. They also inquired whether the individual had received medical attention prior to death and what the main cause of death was.<sup>23</sup>

The study relied upon the same cluster methodology with a larger target sample size of 10,860 households in 1086 clusters, which were nationally representative. The team of surveyors successfully visited 89.4% of the identified household clusters, with a response rate of 96.2%.<sup>24</sup> Of the remaining 3.8%, 0.7% were absent, 0.4% did not wish to complete the questionnaire, and 1.1% were vacant.<sup>25</sup>

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<sup>21</sup> Steven R. Hurt, *Iraqi Official: 150,000 Civilians Dead*, ASSOCIATED PRESS, November 10, 2006.

<sup>22</sup> See generally, IFHS study, *supra* note 3.

<sup>23</sup> *Id.* at 485.

<sup>24</sup> *Id.* at 486.

<sup>25</sup> *Id.*

### C. Findings

The survey produced a violence-related death rate of 1.67 per 1000 persons per year which translates into 151,000 deaths from March 2003 to June 2006.<sup>26</sup> The range of statistical uncertainty lies between 104,000 to 223,000. The average rate for death from any cause post-invasion was 5.73/1000 persons/year, which increased by 5% after adjustment for missing clusters in Anbar and Baghdad to 6.01/1000 persons/year.<sup>27</sup> Adjustment of violence-related death increased it from 0.80 to 1.09 per 1000 person-years, which represents a 13.6% increase.<sup>28</sup> The survey determined a more significant increase of around 60% in the non-violent death rate from 3.07/1000 persons/year in the pre-invasion period to 4.92 for the post-invasion period, but did not provide any further explanation.<sup>29</sup>

### III. THE IRAQ BODY COUNT

For comparative purposes, a third project, which must be looked at in conjunction with the two under examination here, is the Iraq Body Count (IBC), an independent UK-based project, which counts only civilian deaths reported in the media.<sup>30</sup> Their goals are to make the knowledge of war deaths available to all, since “war is an abomination whose defining characteristic is the organized killing of humans and our common humanity demands the recording of war deaths.”<sup>31</sup>

The IBC records deaths of civilians caused by violence; this includes deaths as a result of military action and attacks by insurgents, as well as a result of criminal action in the context of the breakdown of law and order after the invasion. The IBC records a death only when the incident is recorded by at least two independent media sources.<sup>32</sup>

The Iraq Body Count’s latest figure for documented civilian deaths from violence since 2003 until this day is 82,408–89,928.<sup>33</sup> For

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<sup>26</sup> *Id.* at 484.

<sup>27</sup> *Id.* at 489.

<sup>28</sup> *Id.* at 489.

<sup>29</sup> *Id.* at 490.

<sup>30</sup> Iraq Body Count Website, *About Us: Methods*, [www.iraqbodycount.org](http://www.iraqbodycount.org) (last visited April 6, 2008).

<sup>31</sup> *Id.*

<sup>32</sup> *Id.*

<sup>33</sup> *Id.*

the period comparable to the IFHS and *Lancet* reports, the IBC's total was between 43,546 and 48,343.<sup>34</sup>

As they freely admit, the majority of civilian casualties go unreported by the media and also by officials. In the case of Iraq, however, the IBC faces additional challenges due to the over-centralization of the media in Baghdad and lack of media in certain other areas of Iraq due to security concerns. While American and British casualties are immediately reported and given wide media coverage, with the most recent estimate of US casualties being 4000,<sup>35</sup> news of civilians dying in Iraq is no longer newsworthy, unless it occurs on a significant enough scale to interest the media.

An additional potentially limiting factor is the fact that the IBC relies mainly on the Western media and only certain Arabic media sources that are translated into English. This creates an imbalance, because it excludes possible local Arabic media, which report on Iraqi casualties in the less accessible areas. As the IBC's July 2005 report states, three press agencies Reuters, Agence France Presse, and Associated Press, provide over one third of all reports.<sup>36</sup> While these are reputable wires, they do not have enough correspondents on the ground spread out across Iraq to be providing accurate and representative reporting on civilian casualties, let alone to be reporting on the same incidents to fulfill IBC's requirement of confirmation by two independent sources.<sup>37</sup>

What it can be useful for, however, is for identification of trends in death rates, by comparing the reported death rates since the invasion. It is also interesting to note the list of primary sources most frequently relied upon by the media in reporting deaths. These are primarily mortuaries, medics, Iraqi officials, eyewitnesses and police, followed by relatives, coalition, journalists, and non-governmental organizations (NGOs).

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<sup>34</sup> See Table on Iraq Body Count Website, *Analysis: From the Numbers: Civilian Deaths from Violence in 2007*, <http://www.iraqbodycount.org/analysis/numbers/2007/> (last visited March 21, 2008).

<sup>35</sup> *US Military Iraq Toll Hits 4,000*, BBC NEWS, March 24, 2008.

<sup>36</sup> Iraq Body Count, *A Dossier of Civilian Casualties 2003-2005*, available at [www.iraqbodycount.org](http://www.iraqbodycount.org) (last visited May 12, 2008).

<sup>37</sup> *Id.*

## IV. DISCUSSION POINTS FROM THE TWO STUDIES

### A. Limitations of the methodology in times of conflict

Epidemiological cluster sample studies are resorted to in countries in conflict where a systematic registration of deaths does not exist and have been used in the Democratic Republic of Congo, Kosovo, and Darfur,<sup>38</sup> by United Nations agencies and also by the US government. Simple random sampling would yield more accurate results; yet, this is usually not feasible in times of conflict because of the heightened security risk. Cluster sample studies are more accurate the larger the number of households surveyed and as long as the selection of clusters is done methodically.

The IFHS study acknowledges the fact that household surveys are always subject to biases, even in peacetime, and that in times of conflict limitations on movement due to security risks makes data collection even more difficult, making traditional models of adjustment inapplicable.<sup>39</sup> In the case of Iraq, security risks are a major consideration and surveyors have died while performing their tasks, including one of the IFHS study co-authors, Louay Hakki Rasheed, who was killed on August 2, 2007 while on his way to work.<sup>40</sup>

The IFHS team was unable to visit 10.6% of the selected clusters because of security problems; 61.7% of these clusters were in Anbar and 26.9 in Baghdad. To address this deficiency, the team relied upon figures from the Iraq Body Count to estimate a ratio of the death rates in different provinces.<sup>41</sup> This is problematic because, as mentioned above, the Iraq Body Count itself suffers from disproportionate reporting since the media tends to be based in certain areas.

In addition, the clustering of violent deaths creates the risk that samples are not necessarily representative because certain streets of a particular town may be more dangerous than others. A research team

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<sup>38</sup> Les Roberts et al., *Mortality in Eastern Democratic Republic of Congo* (International Rescue Committee, 2001); P. B. Spiegel & P. Salama, *War and mortality in Kosovo, 1998-99: an epidemiological testimony*, 355 LANCET 2204, 2204-09 (2000).

<sup>39</sup> IFHS study, *supra* note 3, at 485.

<sup>40</sup> Lawrence K. Altman & Richard A. Oppel, *W.H.O. Says Iraq Civilian Death Toll Higher Than Cited*, N.Y. TIMES, January 10, 2008, available at [www.nytimes.com/2008/01/10/world/middleeast/10\\_casualties.html](http://www.nytimes.com/2008/01/10/world/middleeast/10_casualties.html).

<sup>41</sup> IFHS study, *supra* note 3, at 486.

composed of physicists Sean Gourley and Neil Johnson at Oxford University and Michael Spagat at Royal Holloway University criticized the *Lancet* study for “main street bias,”<sup>42</sup> since houses on the bigger streets were at a higher risk of exposure to violence and this would therefore result in an inflation of casualty rates. *Lancet* study author Gilbert Burnham denied that this was a factor saying that 28% of the households surveyed were in rural areas, in keeping with the population spread.<sup>43</sup>

## B. Implications of Lack of Stability of the Population

One of the main problems with household surveys conducted in times of conflict is that the basic assumption of a stable population does not exist. The random selection of clusters will only yield representative results if data on population is up to date and if the population is stable. The United Nations High Commissioner for Refugees (UNHCR) estimates that at least 4.2 million Iraqis have left their homes; 2.2 million remain internally displaced within Iraq; and at least 2 million have crossed the border to neighboring states such as Syria and Jordan.<sup>44</sup> For purposes of any household survey, the overall figure of 4.2 million is relevant not only, because it affects the overall population but also since the distribution of clusters relies on population data for the different governorates.<sup>45</sup> If these are no longer accurate, with as much as 15 % of the total population in movement, then the extent to which the clusters are representative becomes questionable.

Both studies relied upon statistics on population obtained from the Iraqi Ministry of Planning based on the 1997 census, which had been updated in 2004 for the Iraq Living Conditions Survey.<sup>46</sup> For Kurdistan, the IFHS obtained data from the Statistical Offices in the region. The *Lancet* study acknowledges that the population size it

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<sup>42</sup> Sean Gourley et al., *Conflict Mortality Surveys*, available at <http://www.rhul.ac.uk/Economics/Research/conflict-analysis/iraq-mortality/> (last visited March 17, 2007).

<sup>43</sup> Sarah Boseley, *UK Scientists Attack Lancet Study Over Death Toll*, THE GUARDIAN, October 24, 2006.

<sup>44</sup> UNHCR Iraq Website, <http://www.unhcr.org/iraq.html> (last visited March 17, 2007).

<sup>45</sup> See *Lancet* Study, *supra* note 2, at 1422, Table 2.

<sup>46</sup> *Living Conditions Survey*, United Nations Development Program, Iraq Ministry of Planning and Development Cooperation, Iraq 2004, Vol 1: Tabulation Report (UNDP 2005).

obtained from the Ministry of Planning does not reflect migration, however, they do not consider this a factor, which would put their findings into question saying that “it is unlikely that this would have occurred at a scale necessary to affect findings.”<sup>47</sup>

The IFHS study factored in migration by adjusting projected midyear population numbers for net migration; however, this would not have addressed the internal movement of displaced people, which would affect the cluster samples.

Household dissolution is another common challenge for household surveys in the context of a conflict, when the death of one or several members of a household causes the family to move. The *Lancet* team sought to identify any household, which had ceased to exist in the survey period to come up with an estimate of “survivor bias” and adjust the results accordingly.<sup>48</sup> The IFHS study recognizes that underreporting is a common limitation of household surveys, especially with regards to household dissolution, and in this case they estimated 62% completeness in the level of reporting by looking at the age distribution of the households and applying the growth balance method.<sup>49</sup>

### C. Accusations of Under-Reporting and Inflating Findings

Hospitals and morgues in post-war Iraq are not equipped with a comprehensive registration system to ensure that all deaths are recorded. Not all those who die are taken to the morgue, and the only morgue that regularly releases information is the one in central Baghdad. In addition, the bodies of those who die in bombings are given to the family to bury in keeping with Muslim custom of immediate burial.

On November 10, 2006, Iraqi Health Minister Ali al-Shemari told *The Associated Press* (AP) that there had been a total of 150,000 deaths since 2003, based on an estimate of 100 bodies per day brought to morgues and hospitals.<sup>50</sup> In the same report however, AP quoted Dr Abdul-Razzaq al-Obaidi, the head of the Baghdad central morgue as saying that he was receiving “as many as 60 violent death victims each day at his facility alone and this did not include those taken by relatives

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<sup>47</sup> THE HUMAN COST OF THE WAR IN IRAQ, *supra* note 2, at 11.

<sup>48</sup> *Id.* at 5.

<sup>49</sup> IFHS study, *supra* note 3, at 486.

<sup>50</sup> Steven R. Hurst, *Iraqi Official: 150,000 Civilians Dead*, THE ASSOCIATED PRESS, November 10, 2006.

from the scene of attack and buried immediately.”<sup>51</sup> Gilbert Burnham and Les Roberts state that “surveillance by monitoring media reports or bodies in the morgue captures only a small percentage of the deaths occurring, particularly when the Iraqi health-information system and infrastructure are practically nonexistent,” pointing out that in July 2006 the Iraqi Ministry of Health reported 0 violent deaths in the Anbar Province, in spite of evidence to the contrary in footage in media reports.<sup>52</sup>

While both studies have relatively similar findings on the overall excess death rates, the *Lancet* study attributes 91% to violence, while the IFHS study sets that only at 18%.<sup>53</sup> Les Roberts, co-author of the *Lancet* study, believes this might have been due to the fact that the study workers were government employees and that this may have deterred some households from reporting all the violence-related deaths that had occurred,<sup>54</sup> a fair point given the fact that it is conceivable that many families may not have wanted to report the death of relatives in an incident which involved the insurgency. John Tirman, director of the Centre for International Studies at MIT who commissioned the study, also points out that the Minister of Health was known to be an affiliate of Shiite cleric Muqtada al-Sadr.<sup>55</sup>

In terms of the rate of violence, the findings of the IFHS study show a steady increase from 2003 to 2006, while the *Lancet* study shows a sharp increase in the years of 2005-2006. Roberts argues that a comparison of the degree of increase with other sources, such as Baghdad morgue data and Pentagon data on operations in the last year points towards the accuracy of the *Lancet* study.<sup>56</sup> The authors of the *Lancet* study argue that they are confident they did not record any deaths which did not occur because in 92% of the cases the household was able to show the team a death certificate.<sup>57</sup>

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<sup>51</sup> *Id.*

<sup>52</sup> Gilbert Burnham & Les Roberts, *Counting Corpses: The Lancet number crunchers respond to Slate's Fred Kaplan*, SLATE, November 20, 2006.

<sup>53</sup> IFHS study, *supra* note 3, at 48.

<sup>54</sup> Les Roberts, *Comment on new Iraq mortality study*, PSYCHE, SCIENCE, & SOCIETY, January 10, 2008, <http://psychoanalystsopposewar.org/blog/2008/01/10/les-roberts-on-new-iraq-mortality-study/>.

<sup>55</sup> Hurst, *supra* note 50.

<sup>56</sup> *Lancet Study Author Assesses New Report on Iraqi Death Toll*, INSTITUTE FOR PUBLIC ACCURACY, January 11, 2008, <http://www.accuracy.org/newsrelease.php?articleId=1627>.

<sup>57</sup> *Lancet Study*, *supra* note 2, at 7.

The findings of the IFHS survey result in an estimate of 128 violent deaths per day in the first year of the invasion, 115 per day in the year following May 2004, and 126 per day from June 2005 to June 2006.<sup>58</sup> The *Lancet* study set violence-related daily death rate at 231 per day in the first year after the invasion, which by 2005 had risen to 491 per day.<sup>59</sup> The criticisms leveled at the *Lancet* study were mainly that its pre-invasion death rate is too low, which then artificially increases the excess death rate post-invasion,<sup>60</sup> that the cluster sample was too small,<sup>61</sup> and that the inadequacy of the timeframe has problematic ethical implications for the team's relationship with the interviewees.<sup>62</sup> Others, however, have defended the methodology itself and the findings in the *Lancet* study,<sup>63</sup> arguing that this is the best estimate it is possible to obtain in the context of Iraq. Dr. David Rush, an epidemiologist at Tufts University in Boston, said that "over the last 25 years, this sort of methodology has been used more and more often, especially by relief agencies in times of emergency."<sup>64</sup>

Interestingly, a memo by the UK Ministry of Defense's chief scientific advisor Sir Roy Anderson obtained by the BBC World Service's Newshour program under the Freedom of Information Act, advises the government not to dismiss the report, saying that "the study design is robust and employs methods that are regarded as close to 'best practice' in this area, given the difficulties of data collection and verification in the present circumstances in Iraq."<sup>65</sup>

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<sup>58</sup> See IFHS study, *supra* note 3, at 491, table 4.

<sup>59</sup> *Id.* at 491, figure 1B.

<sup>60</sup> Fred Kaplan, *Number Crunching Taking another look at the Lancet's Iraq study*, SLATE, October 20, 2006.

<sup>61</sup> Steven E. Moore, *655,000 War Dead? A Bogus Study on Iraq Casualties*, WALL ST. J., October 18, 2006.

<sup>62</sup> Madelyn Hsiao-Rei Hicks, *Mortality after the 2003 invasion of Iraq: Were valid and ethical field methods used in this survey?*, Households in Conflict Network Research Design Notes, University of Sussex Institute of Development Studies, December 1, 2006.

<sup>63</sup> Sir Richard Peto, Professor of Medical Statistics and Epidemiology in the University of Oxford, qtd in BBC Newsnight October 11, 2006; see *The Iraq deaths study was valid and correct*, THE AGE, October 21, 2006; David Brown, *Study Claims Iraq's 'Excess' Death Toll Has Reached 655,000*, WASHINGTON POST, October 11, 2006 (quoting Ronald Waldman & Sarah Leah Whitson).

<sup>64</sup> *Iraq death rate estimates defended by researchers*, REUTERS, October 21, 2006.

<sup>65</sup> See Owen Bennett-Jones, *Iraqi Death Survey "Was Robust,"* BBC WORLD SERVICE, March 26, 2007.

#### D. Who are the Dead?

The *Lancet* study notes that men account for almost all of the violent deaths, which is echoed by the IFHS study that found that violence is the main cause of death for men between fifteen and fifty-nine years of age with death from injuries becoming the main cause of death in the years after the invasion.<sup>66</sup> One of the reasons the IBC's figures will always be much lower than that of the household survey-based estimates is that it records only civilian deaths, where in the case of the *Lancet* and IFHS studies it was not possible to distinguish between civilian and combatant deaths. This fact was cited by Pentagon officials in their rejection of the findings of the *Lancet* study was the fact that it did not distinguish between combatants and non-combatants,<sup>67</sup> thereby implying that it would be legitimate if combatants died as a result of coalition action.

#### E. Acknowledging Inherent Biases

Due to the politically-fraught nature of the conflict and the different agendas of the various parties, estimates that are free of bias are virtually impossible to come by, since all households will have been affected by the war in one way or another and have lost a relative as a result. Therefore, it is highly likely that they will have strong feelings about the conflict and possible that in interpreting the causes of the death of their relative, these feelings might affect their perception of the truth. This does not mean that the entire study is tainted, but it is not realistic to expect a household survey to be free of bias.

Military forces and governments are in the best position to provide the statistics; yet, they have a vested interest in not providing data that shows they caused the death of large numbers of people. The image of a democratic Iraq newly liberated by coalition forces is tarnished by news of mass civilian deaths, and it is arguable that the US and UK governments might wish to downplay the findings of the *Lancet* report. Equally conceivable is that the current government of Iraq would not welcome findings on a very high level of non-coalition-

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<sup>66</sup> IFHS study, *supra* note 3, at 487.

<sup>67</sup> Vince Crawley, *U.S. Questions High Estimate of Iraq Civilian Casualties: Pentagon says 50,000 Iraqis - not half a million- have died since March 200*, WASHINGTON FILE, October 13, 2006, available at <http://www.america.gov/st/washfile>.

related violent death rate, since this would point to an inability to protect the Iraqi civilian populations and a lack of effective control.

For the US and the UK, figures as high as those of the *Lancet* would put into question the legitimacy of their campaign. President Bush was dismissive of the *Lancet*'s: "six hundred thousand or whatever they guessed at is just, it's not credible."<sup>68</sup> Earlier, in December 2005, President Bush had said that around 30,000 Iraqi had died in the war. At a Pentagon briefing on October 11, 2007, General George Casey, commander of multinational forces in Iraq, said "that 650,000 number seems way, way beyond any number that I have seen . . . I've not seen a number higher than 50,000. And so I don't give that much credibility at all."<sup>69</sup> While Tony Blair's spokesman was immediately critical of the report saying it was not accurate, in the documents obtained by the BBC chief advisors warned that the methodology itself was tried and tested and the implication in the brief was that the *Lancet* estimate was likely to be right.<sup>70</sup>

#### IV. CONCLUSION: THE FULL HUMAN COST OF WAR

Although wars are often measured by the number of civilian casualties that are very difficult to obtain, the full human cost of war is even more difficult to assess. The humanitarian crisis in Iraq is a complex one and cannot be quantified into a number, which would reflect the overall decrease in the quality of life that Iraqis have experienced since 2003. A mortality study cannot reflect the full human cost of war because it only attempts to count the dead and does not address those who may have been wounded, including those who may have lost all quality of life as a result of those wounds, or the damage to civilian property or the overall affect on the lives of Iraqis due to the lack of security. A recently published Amnesty International report states that "today, more than two in three Iraqis do not have access to safe drinking water, more than four in 10 live on less than a dollar a day, half the population of working age is unemployed, and eight million people need emergency aid to survive."<sup>71</sup> A rare ICRC

<sup>68</sup> See Anna Badkhen, *Critics say 600,000 Iraqi dead doesn't tally*, SAN FRANCISCO CHRONICLE, October 12, 2006.

<sup>69</sup> Crawley, *supra* note 67.

<sup>70</sup> *Ministers were Told Not to Rubbish Iraq Deaths Study*, THE GUARDIAN, March 26, 2007.

<sup>71</sup> *Carnage and Despair: Iraq five years on*, AMNESTY INTERNATIONAL, March 17, 2008, <http://www.amnesty.org/en/news-and-updates/report/carnage-and-despair-iraq-20080317>.

report says the Iraq crisis “remains among the most critical in the world.”<sup>72</sup> Reports by the United Nations Assistance Mission for Iraq (UNAMI) on the human rights situation list incidents of targeted killings, of illegal detention and of unfair trial.<sup>73</sup> The numbers we do have, that of 4.2 million refugees who have fled Iraq, of those who do not have access to health care or water and of those who have died from violence be it 150,000 or 600,000 are enough to paint a bleak picture of the reality of Iraq today and should serve as a reminder of responsibility to the governments involved; the responsibility to maintain security, to provide for basic needs, and to respect and ensure human rights.

An estimate closer to the truth in Iraq might be obtained one day, through improvement of the methodology and a decrease in security risks to surveyors and through de-classification of information in the hands of the US military and the Iraqi authorities. Until that time, every new attempt to come up with an estimate that is closer to the truth should not be dismissed out of hand but taken seriously and examined respectfully. As Mohamed Ali, a WHO statistician and one of the authors of the IFHS study, puts it: “assessment of the death toll in conflict situations is extremely difficult and household survey results have to be interpreted with caution ... however, in the absence of comprehensive death registration and hospital reporting, household surveys are the best we can do.”<sup>74</sup> The number of casualties is not the only indicator of the suffering that has been inflicted on a civilian population, which is supposed to be protected in any war and in whose name the Iraq war has been justified, but it tends to be the indicator which is cited most. The conflict in Rwanda is most often referred to as the genocide in which 800,000 people were killed, although there is some debate about the estimate there also.<sup>75</sup> One could argue that it did not matter whether genocide had occurred or whether it was ‘merely’ a war crime or a crime against humanity. Yet one of the main reasons

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<sup>72</sup> *Iraq: No Let-Up in the Humanitarian Crisis*, INTERNATIONAL COMMITTEE OF THE RED CROSS, March 17 2008, available at <http://www.icrc.org/web/eng/siteeng0.nsf/htmlall/iraq-report-170308?opendocument>.

<sup>73</sup> UN ASSISTANCE MISSION FOR IRAQ, HUMAN RIGHTS REPORT: 1 JULY-JULY 31 DECEMBER 2007, available at <http://www.uniraq.org/FileLib/misc/HR%20Report%20Jul%20Dec%202007%20EN.pdf>.

<sup>74</sup> *New study estimates 151 000 violent Iraqi deaths since 2003 Invasion*, WHO MEDIA SERVICE, January 9, 2008, <http://www.who.int/mediacentre/news/releases/2008/pr02/en/>.

<sup>75</sup> *Leave None to Tell the Story: Genocide in Rwanda*, HUMAN RIGHTS WATCH, March 31, 1999, <http://www.hrw.org/reports/1999/rwanda/>.

international criminal tribunals spend several years studying individual cases to determine the nature of the crimes committed. It is that they believe that victims have a right to truth, to an accurate historical account of the full extent of the crimes that took place and that inflicted suffering on them. By the same token, the Iraqi people have the right to know how many people have died, since the majority of the population have been helpless bystanders, while first a dictator, then multi-national forces, and now insurgents and irregular forces cause the death of large numbers of people.

