

# DISCOUNTING IRAQI DEATHS: A SOCIETAL AND EDUCATIONAL DISGRACE

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*In the absence of any attempt by the occupying forces in Iraqi to document numbers of Iraqi deaths, three studies have produced consistent evidence that these deaths number in the hundreds of thousands. Rejection and acceptance of these data are aligned with political positions, despite the fact that they constitute the most scientific information available. Views expressed by journalists, academics, and politicians show pervasive misunderstandings of basic statistical concepts and methods, an indictment of mathematics education. Ignorance about, and indifference to, the scale of human suffering in Iraq constitute an indictment of our societies.*

## DATA

“We don't do body counts,” says America’s soldier-in-chief, Tommy Franks. That’s a damn shame. (Chernus, 2003)

In a study reported by Roberts, Lafta, Garfield, Khudhairi, and Burnham (2004) the estimate of excess mortality of Iraqis *from all causes* during the 17.8 months after the 2003 invasion of Iraq was 98,000, with a 95% confidence interval of 8,000–194,000 (figures rounded). In a later study (Burnham, Lafta, Doocy, & Roberts, 2006) the corresponding estimate was 654,965, with 95% confidence interval of 392,979 – 942,636. A longer report (Burnham, Doocy, Dzung, Lafta, & Roberts, 2006) provides more detail and context. In both these studies, the estimate of excess mortality was calculated using the difference between mortality after the invasion, based on interviews of a carefully selected sample, and baseline mortality prior to it.

In September, 2007, a British company, Opinion Research Business (ORB), with experience of polling in Iraq, reported on a poll in which a representative sample of 1,499 adults aged 18+ were asked “How many members of your household, if any, have died as a result of the conflict in Iraq since 2003 (i.e. as a result of violence rather than a natural death such as old age)? Please note that I mean those who were actually living under your roof.” On the basis of their data, the point estimate for deaths as a result of the conflict was 1,220,580, with a 95% confidence interval of 733,158 – 1,446,063 (Opinion Research Business, 2007).

## REACTIONS TO THESE REPORTS

Yes, ‘n’ how many deaths will it take till he knows

That too many people have died? (Bob Dylan, 1962)

In the case of the first two studies, which were reported in *The Lancet*, the estimates were widely contested in the media, and dismissed as not credible by government

leaders. I watched on television President Bush being questioned about the second Lancet study. He said that he did not consider the 2006 report credible, that the methodology had been “pretty well discredited” and that he stood by the number 30,000 that he had cited previously. He referred to the estimate in the second Lancet report as “600,000, or whatever they guessed at” (White House, 2006).

A simple search on the Internet will produce many political commentaries on the two reports, in many cases predictable given the stance of the authors and/or the publications (e.g., Hitchens, 2006; Moore, 2006).

By contrast to the rather extensive media coverage of the two studies, the ORB poll received almost none. According to MediaLens (2007), four days after the findings were announced, the poll had been mentioned in just one national UK newspaper – ironically, the pro-war Observer. There don't appear to have been any reports in US newspapers except for the Los Angeles Times (Susman, 2007). MediaLens further reported that the BBC's *Newsnight* programme may have been alone in providing TV broadcast coverage, 34 seconds of it as follows:

More than a million Iraqis have been killed since the invasion in 2003, according to the British polling company ORB. The study's likely to fuel controversy over the true, human cost of the war. It's significantly up on the previous highest estimate of 650,000 deaths published by the Lancet last October. At the time, the Iraqi government described that figure as 'ridiculously high'. The independent Iraqi [sic] Body Count group puts the current total at closer to 75,000. (MediaLens, 2007)

Comprehensive summaries of discussions around these studies, including criticisms and rebuttals, very fully documented, can be found on Wikipedia under the headings “Lancet surveys of mortality before and after the 2003 invasion of Iraq” and “ORB survey of casualties of the Iraq War”.

## **MEDIA BEHAVIOR**

Mr. Garlasco says now that he had not read the paper at the time and calls his quote in the *Post* “really unfortunate.” He says he told the reporter, “I haven't read it. I haven't seen it. I don't know anything about it, so I shouldn't comment on it.” But, Mr. Garlasco continues, “like any good journalist, he got me to.” (Guterman, 2005)

An interesting aspect of media treatment of technical reports is their appeal to accessible experts, whom they typically quote briefly. Divergence in the opinions cited is typical of what happens when statistical experts give opinions on a complex study. There is an irony in that, reporting on studies based on sampling, there is no mention of the implicit samplings whereby the experts quoted are a sample, probably a convenience sample. Secondly, the short quotations are, almost inevitably, sampled on the basis of the journalists' subjective criteria, from longer and more nuanced statements. Interactions with the experts are usually one-shot deals and it is not uncommon for the experts to want to clarify or correct statements attributed to them, but such an opportunity is rarely afforded.

The British group, MediaLens, doggedly pursued a number of reports following the Lancet publications. Their harrying of Mary Dejevsky, senior leader writer on foreign affairs for the London newspaper *The Independent*, is particularly revealing (see Mukhopadhyay & Greer (2007) for a summary and MediaLens (2005a) for the full account).

## **IGNORANCE, DAMNED IGNORANCE, AND STATISTICAL IGNORANCE**

Among those polled for the AP survey, however, the median estimate of Iraqi deaths was 9,890. (Associated Press, 2007)

The above refers to a poll carried out in February 2007 in the US. At that time, just over 3,100 US troops had been killed in Iraq. The median estimate for this number among those polled was about 3,000. However, the same accuracy was not found for estimations of Iraqi deaths (see above).

As an example of the “democratization of stupidity” that discussion groups on the Internet afford, consider the following:[1]

That Lancet study is poorly done. The actual range of estimated civilian deaths was something on the order of about 10,000-100,000. That is a wide range that lends NO credence to the 100,000 number being selected over the 10,000 number. It was a politically biased article and never should have made it to print, at least in the form it was written.

After another contributor pointed out that the report gave a 95% confidence interval of 8,000–194,000 with a point estimate of 98,000 the original contributor persisted as follows:

I didn't bother to look it up because the range was so varied. My point was in a range so large there is no way to pick one number over the other. That the article was flawed is true and that it should not have been published is true.

It is interesting to compare this inanity with the work of a sophisticated writer (Kaplan, 2004). He quotes from the first Lancet report: “We estimate there were 98,000 extra deaths (95% CI 8,000 – 194,000) during the post-war period.” and comments as follows:

Readers who are accustomed to perusing statistical documents know what the set of numbers in the parentheses means. For the other 99.9 percent of you, I'll spell it out in plain English – which, disturbingly, the study never does. It means that the authors are 95 percent confident that the war-caused deaths totaled some number between 8,000 and 194,000. (The number cited in plain language – 98,000 – is roughly at the halfway point in this absurdly vast range.) This isn't an estimate. It's a dart board.

On the evidence of this statement, it seems doubtful that this journalist with a PhD in Political Science understands what a 95% confidence interval means (or that in a scientific journal it is not customary to explain a standard technique).

Another noticeable phenomenon is the number of commentators who prefer to back their own subjective estimates, sometimes based on some data, against data reported in a highly regarded peer-reviewed journal and by an established polling company. For example, the mathematician John Allen Paulos, well known for his books, including *A Mathematician Reads the Newspaper* (Paulos, 1996), wrote in the British newspaper, *The Guardian* (MediaLens, 2005b):

Given the conditions in Iraq, the sample clusters were not only small, but sometimes not random either... So what's the real number? My personal assessment, and it's only that, is that the number is somewhat more than the IBC's[2] confirmed total, but considerably less than the Lancet figure of 100,000.

The most widespread fundamental misinterpretation relates to comparison with other estimates of casualties, in particular those from IBC. When President Bush mentioned a figure of 30,000, it was probably based on this source. However, the methodology used by IBC, and what they measure, is fundamentally different:

Iraq Body Count (IBC) records the violent civilian deaths that have resulted from the 2003 military intervention in Iraq. Its public database includes deaths caused by US-led coalition forces and paramilitary or criminal attacks by others.

IBC's documentary evidence is drawn from crosschecked media reports of violent events leading to the death of civilians, or of bodies being found, and is supplemented by the careful review and integration of hospital, morgue, NGO and official figures.

MediaLens (2007) reported:

IBC only collects records of violent civilian deaths reported by two different (mainly Western) media sources operating in Iraq. Epidemiologists report that this type of study typically captures around 5 per cent of deaths during high levels of violence, such as exists in Iraq. By contrast, the Lancet studies provide figures for all deaths – violent and non-violent, civilian and military, reported and unreported.

Nevertheless, IBC argues on *a priori* grounds that the Johns Hopkins estimates could not be accurate. Zamparini (2007) relates the following:

The Toronto Star informed us today: "The death toll could be twice our number, but it could not possibly be 10 times higher," he [John Sloboda, professor of psychology at Keele University, and a co-founder of IBC] told me, referring to the other studies.

and comments as follows:

**Question:** How can a professor of psychology who collects Iraqi deaths through media reports possibly know what the death toll could be?

We may be guilty of "the soft bigotry of low expectations" in relation to President Bush, but pervasively in media accounts, people who should know better indiscriminately lump together the IBC numbers, the estimates from the Lancet studies and ORB poll, and other numbers derived by a variety of methods. Just look at the 34-second *Newsnight* report quoted above, which implies that the IBC number

and the ORB estimate are comparable. Reynolds (2006) concludes an “analysis” entitled “Huge gaps between Iraq death estimates” thus:

We are then left with the estimate from this report [the second Lancet study] and the various counts by other groups. The figures are now even more divergent than they were.

## **ON SCIENTIFIC PUBLISHING**

... egregious politicization of what is supposed to be an objective and scientific journal (Washington Post editorial, June 23, 2005, referring to *The Lancet*)

It is to be expected that the reaction to politically loaded reports of almost all people (including me – and you) will be influenced by their political views. This reality fundamentally challenges the notion of conclusions being reached, at least partly, on the basis of scientific evidence. Many criticisms of the reports claim that the political views of the authors and of the editor of *The Lancet* discredit the data. At least in the case of Les Roberts, the authors are opposed to the invasion and occupation of Iraq, as is the editor of *The Lancet*, Richard Horton (and as, indeed, is the author of the present paper). What are the implications? Are people with such views considered incapable of carrying out studies of this sort and having the findings taken seriously? Such a position rests on the myth of science and mathematics being value-free, ethically neutral, and apolitical. It is worth remembering that *The Lancet* is one of the most highly respected scientific journals, and that papers published in it are subject to the most stringent peer review. Apparently, however, it should not deal with deaths in war when those deaths are, to a considerable extent, caused by “us”. Consider the editorial opinion of the Washington Post quoted above. Why is it unreasonable that a journal serving a profession whose members take an oath to protect human life should raise issues about the avoidable killing of human beings? As Horton (2006) states:

... if we were talking about the risk of smoking to the population and we published research demonstrating the impact of tobacco on mortality, few would dispute the message or the importance of scientists and medical journals in being actively engaged in a public debate. For Iraq, violence is the public-health priority right now. It is a proper subject for science and it is a proper subject for a medical journal to comment on.

## **IMPLICATIONS FOR MATHEMATICS EDUCATION**

This is a great discovery, education is politics! After that, when a teacher discovers that he or she is a politician, too, the teacher has to ask “What kind of politics am I doing in the classroom?” (Freire, 1987, p. 46)

The lack of “statistical empathy” (Mukhopadhyay & Greer, 2007) documented in this paper is a societal and educational disgrace. It reflects the success of regimes that work hard to keep their subjects in docile ignorance, with the connivance of most of the media/entertainment industry. It also reflects the historical pattern of reducing

others (slaves, indigenous peoples, colonized peoples) to subhuman status as a justification for barbaric acts against them.

It is easy to perceive a chronic lack of the analytical tools that mathematics education ought to equip people with, a particular manifestation of what Macedo (2000, p. 5) calls “education for stupidification”. As Chomsky (Macedo, 2000, p. 24) stated: “The goal is to keep people from asking questions that matter about important issues that directly affect them and others”.

People, in general, have a weak understanding of numerical data, especially how to interpret large numbers. Lack of numeracy is compounded by a lack of understanding of basic statistical principles such as sampling variation, randomness, margin of error. The 2008 presidential race in the US has already started and the media are full of terms such as “statistical dead heat” which (I am prepared to bet) only a tiny fraction of the electorate understands. Shouldn't such understanding be part of what is considered an adequate mathematical education?

Technological advances mean that the amount of information available is swamping people's intellectual and analytical tools for making sense of, and critically evaluating, opposing claims. The irony of the information age is that the increase in information leaves us not knowing what to believe and not believe. Mathematics education should promote skepticism in the face of conflicting information, combined with tools for making better-informed judgments.

Given that this paper is mostly based on material from the Internet, it's appropriate to state some of the ways in which I try to reach a judgment, given the political position I have already declared. While a full treatment of this issue would need (and deserves) another paper, some principles and criteria that I applied in judging what I accessed are the following:

- Judge the standing of the author(s) and the place of publication. For example, a paper in *The Lancet* by investigators with scientific credentials has a higher standing than one in a political magazine by a polemicist – which is not to say that the political position of the authors and/or the editor of a journal should not be taken into account.
- In the case of an issue like that discussed in this paper, if an author shows clear lack of understanding of statistical issues, their analysis is automatically suspect (though it is still possible to consider their conclusions reasonable).
- Triangulate where possible. For example, the consistency of the ORB data with those of the Lancet studies carries weight and follows the basic scientific principle of replication. On the other hand, information on how US citizens estimate deaths in Iraq is based on a single poll.
- Give more credence to analyses that mention, and provide sources for, contrary views. Thus, while Wikipedia is often regarded as a dubiously reliable source, I judge its articles referred to earlier to be excellent, for the reasons stated.

- Try to situate the situation under scrutiny in historical context. The methodology used in the Lancet studies had earlier been used for mortality estimates in war zones such as Darfur and the Congo (Horton, 2006) and the results of those studies were not challenged by politicians.

In this paper, I have not, in any depth, attempted to relate the example discussed to the theoretical frameworks that have been developed to expose the essentially political nature of mathematics education and the ways in which mathematics frames how people think about political and societal issues. The case I have focussed on, in many ways, speaks for itself. One comment I will add is that I suspect that history will document how the neoconservative regime that gained power during the Bush presidency developed the arts, science, and apparatus of propaganda, media manipulation, and the manufacture of consent to unprecedented levels.

Ubiratan D'Ambrosio (2003) has challenged mathematicians and mathematics educators to accept their ethical responsibilities as the world's population seeks survival with dignity. I do not know how many mathematicians, but the number is surely not insignificant, who contributed with varying degrees of direct involvement to the deaths of Iraqis, or how many are currently working in the United States to develop the next generation of weapons of mass destruction. Mathematicians profess a profound interest in truth, and proving Fermat's Last Theorem is an intellectual achievement of the highest order, but citizens knowing truth about the consequences of the actions of their governments in destroying the lives of fellow human beings should also be a concern. Those with a concern for truth, as it directly impacts people's lives, should speak out in a world in which those who can pay the most get to decide what the truth is.

## NOTES

1. Retrieved on 13 November 2007 from: [www.sport-groups.com/board/nextpost/93676/0](http://www.sport-groups.com/board/nextpost/93676/0).
2. IBC is the acronym for Iraq Body Count, an organization that monitors recorded deaths in Iraq.

## REFERENCES

- Associated Press (2007). AP poll finds Americans have no idea of Iraqi toll, Editor and Publisher (February 24). Retrieved on 13 November 2007 from: [www.editorandpublisher.com/eandp/news/article\\_display.jsp?vnu\\_content\\_id=1003550075](http://www.editorandpublisher.com/eandp/news/article_display.jsp?vnu_content_id=1003550075)
- Burnham, G., Doocy, S., Dzens, E., Lafta, R., & Roberts, L. (2006). The human cost of the war in Iraq. Retrieved on 13 November 2007 from: [web.mit.edu/cis/human-cost-war-101106.pdf](http://web.mit.edu/cis/human-cost-war-101106.pdf)
- Burnham, G., Lafta, R., Doocy, S, & Roberts, L. (October 21, 2006). Mortality after the 2003 invasion of Iraq: A cross-sectional cluster sample survey. *The Lancet*, 368(9546), 1421-1428.

- Chernus, I. (2003). Bring back the body count. AlterNet (April 3). Retrieved on 13 November, 2007 from: [www.alternet.org/story/15545/](http://www.alternet.org/story/15545/)
- D'Ambrosio, U. (2003). The role of mathematics in building up a democratic society. In Madison, B. L., & Steen, L. A. (Eds.), *Quantitative literacy: Why numeracy matters for schools and colleges. Proceedings of National Forum on Quantitative Literacy*, National Academy of Sciences, Washington, DC, December, 2001. Princeton, NJ: National Council on Education and the Disciplines. (Available at: [www.maa.org/ql/qltoc.html](http://www.maa.org/ql/qltoc.html))
- Davies, N. J. S. (2006). Estimating civilian deaths in Iraq – six surveys. Online Journal (March 20). Retrieved on November 13, 2007 from: [www.onlinejournal.com/artman/publish/article\\_643.shtml](http://www.onlinejournal.com/artman/publish/article_643.shtml)
- Dylan, B. (1962). Blowin' in the wind. Retrieved on 13 November, 2007 from: [www.bobdylan.com/songs/blowin.html](http://www.bobdylan.com/songs/blowin.html)
- Freire, P. (with Shor, I.). (1987). *A pedagogy for liberation*. Westport, CT: Bergin & Garvey.
- Guterman, L. (2005, January 27). Researchers who rushed into print a study of Iraqi civilian deaths now wonder why it was ignored. Retrieved on 13 November, 2007 from: [chronicle.com/free/2005/01/2005012701n.htm](http://chronicle.com/free/2005/01/2005012701n.htm)
- Hitchens, C. (2006, October 16). The Lancet's slant: Epidemiology meets moral idiocy. Retrieved on 13 November 2007 from: [www.slate.com/id/2151607/fr/rss/](http://www.slate.com/id/2151607/fr/rss/)
- Horton, R. (2006). End the politics of humiliation. Guardian (October 11). Retrieved on 13 November 2007 from [commentisfree.guardian.co.uk/Richard\\_Horton/2006/10/post\\_499.html](http://commentisfree.guardian.co.uk/Richard_Horton/2006/10/post_499.html)
- Iraq Body Count (2007). About the Iraq Body Count Project. Retrieved on 13 November, 2007 from: [www.iraqbodycount.org/about/](http://www.iraqbodycount.org/about/)
- Kaplan, F. (2004). 100,000 Dead – or 8,000? How many Iraqi civilians *have* died as a result of the war? Slate (October 29). Retrieved on 13 November, 2007 from: [www.slate.com/id/2108887](http://www.slate.com/id/2108887)
- Macedo, D. (1994). *Literacies of power: What Americans are not allowed to know*. Boulder, CO: Westview Press.
- Macedo, D. (Ed.). (2000). *Chomsky on MisEducation*. Lanham, MD: Rowman & Littlefield.
- MediaLens (2005a). Burying the Lancet – Part 2 (September 5, 2005). Retrieved on 13 November, 2007 from: [www.medialens.org/alerts/05/050905\\_burying\\_the\\_lancet\\_part1.php](http://www.medialens.org/alerts/05/050905_burying_the_lancet_part1.php)
- MediaLens (2005b). Burying the Lancet – Part 2 (September 6, 2005). Retrieved on 13 November, 2007 from: [www.medialens.org/alerts/05/050906\\_burying\\_the\\_lancet\\_part2.php](http://www.medialens.org/alerts/05/050906_burying_the_lancet_part2.php)

- MediaLens (2005c). Burying the Lancet – update. (September 12, 2005). Retrieved on 13 November, 2007 from: [www.medialens.org/alerts/05/050906\\_burying\\_the\\_lancet\\_update.php](http://www.medialens.org/alerts/05/050906_burying_the_lancet_update.php)
- MediaLens (2007). The media ignore credible poll revealing 1.2 million violent deaths in Iraq (September 18). Retrieved on November 13, 2007 from: [medialens.org/alerts/07/070918\\_the\\_media\\_ignore.php](http://medialens.org/alerts/07/070918_the_media_ignore.php)
- Moore, S. E. (2006, October 18). 655,000 War Dead? A bogus study on Iraq casualties. Retrieved on 13 November, 2007 from: [www.opinionjournal.com/editorial/feature.html?id=110009108](http://www.opinionjournal.com/editorial/feature.html?id=110009108)
- Mukhopadhyay, S. & Greer, B. (2007). How many deaths? Education for statistical empathy. In B. Sriraman (Ed.) *International perspectives on social justice in mathematics education* (pp. 119-136). University of Montana Press.
- Opinion Research Business (2007). September 2007 – More than 1,000,000 Iraqis murdered. Retrieved on 13 November, 2007 from: [www.opinion.co.uk/Newsroom\\_details.aspx?NewsId=78](http://www.opinion.co.uk/Newsroom_details.aspx?NewsId=78)
- Paulos, J. A. (1996). *A mathematician reads the newspaper*. New York: Anchor Books.
- Reynolds, P. (2006). Huge gaps between Iraq death estimates. BBC News International Version. Retrieved on 13 November 2007 from: [news.bbc.co.uk/2/hi/middle\\_east/6045112.stm](http://news.bbc.co.uk/2/hi/middle_east/6045112.stm)
- Roberts, L., Lafta, R., Garfield, R., Khudhairi, J., & Burnham, G. (2004). Mortality before and after the 2003 invasion of Iraq: cluster sample survey. *The Lancet*, October 20.
- Susman, T. (2007). Poll: Civilian Death Toll in Iraq May Top 1 Million. Los Angeles Times (September 14). Retrieved on 13 November, 2007 from: [www.commondreams.org/archive/2007/09/14/3839/](http://www.commondreams.org/archive/2007/09/14/3839/)
- White House (2006). Press conference by the president. (October 11). Retrieved on 13 November 2007 from: [www.whitehouse.gov/news/releases/2006/10/20061011-5.html](http://www.whitehouse.gov/news/releases/2006/10/20061011-5.html)
- Zamparini, G. (2007). The Oracle Iraq Body Count. [uruk.info](http://uruk.info) (September 20). Retrieved on 13 November 2007 from: [www.uruknet.info/?p=m36471&s1=h1](http://www.uruknet.info/?p=m36471&s1=h1)