

Violent Deaths in Kosovo:
Validation of Counts and a Dirty-War-Index Analysis

A Presentation given at the 2012 AAAS Meetings in Vancouver

by

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Note: So far we only have the following presentation.
Eventually we will have a full paper that is meant to include as co-authors Sandra Orlovic of Kosovo Memory Book, Nicholas Jewell of School of Public Health of UC Berkeley and possibly some other people.



Approximate dates are March 1998 through September 1999



Some of the Protagonists



World news

Serb killings 'exaggerated' by west

Claims of up to 100,000 ethnic Albanians massacred in Kosovo revised to under 3,000 as exhumations near end

Special report: Kosovo

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Jonathan Steele

The Guardian, Friday 18 August 2000 01.48 BST

Article history





Hmmmm... Maybe someone can sort this out...

It turns out that there have been three major attempts to try to figure out how many people were killed in the Kosovo war, using three different methods.

This diversity of efforts provides us with a scientific opportunity to see how the different methods perform.

A major issue is that the literature contains hardly anything that could be viewed as a validation study for any of the methods that are used to count or estimate the number of people killed in armed conflicts. The problem is that validation requires that you have some kind of gold standard to compare against.

We have various methods that can be shown theoretically to perform well under certain ideal circumstances. But there is little or no evidence suggesting that these methods actually do perform well under real conditions.

Method 1 – Household Survey

Lancet. 2000 Jun 24; 355(9222): 2204-9.

[War and mortality in Kosovo, 1998-99: an epidemiological testimony](#). Spiegel PB, Salama P.

Estimate – 12,010 deaths due to war trauma with a 95% confidence interval of 5,500 to 18,300 for the period February 1998 through June 1999.

[When Numbers Lie](#)

[Why isn't there an accurate death toll in Libya?](#)

James Downe

“The answer is surprisingly complicated. The science of counting deaths in war is a subset of epidemiology, the science behind the cause and spread of disease. The ideal method, according to Paul Bolton, a professor at the Bloomberg School of Public Health at Johns Hopkins, is to conduct surveys by going door-to-door and tabulating the number of deaths in each household. Perhaps the best known report to use this method was the 2006 Iraq casualties report issued by the British medical journal *The Lancet*, which put combatant and non-combatant deaths from March 2003 to June 2006 at over 600,000, a far higher figure than American military or Iraqi government estimates. Though *The Lancet*'s report was questioned by many supporters of the war—including President George W. Bush—academic epidemiologists and statisticians widely praised it as rigorous and thorough.”

But wait...didn't [another household survey estimate the same number as 150,000](#) and didn't [many statisticians and other scientists](#) think that the estimate Downe refers to was a gross overestimate?

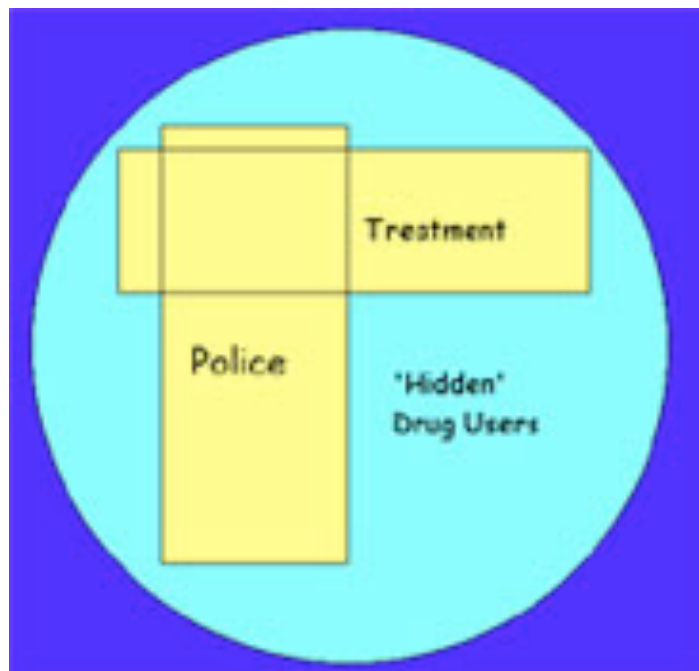
Method 2. Capture-Recapture

Killings and Refugee Flow in Kosovo March - June 1999

A Report to the International Criminal
Tribunal for the Former Yugoslavia

3 January 2002

Patrick Ball, Wendy Betts, Fritz Scheuren,
Jana Dudukovich, and Jana Asher



Estimate - 10,356 with a 95% confidence interval of 9,002 to 12,122 for March 20, 1999 through March 22, 1999,

Method 3. (Attempted) Exhaustive Documentation



1	ABAZAJ Missing	BASHKIM NURADIN M 1999-06-01 DrsNIK/Dresnik	1976-01-01 Civilian
2	ABAZAJ Murder	BESAQAMIL F 1999-05-04 Domanek	1985-08-20 Civilian
3	ABAZAJ Missing	EDISON HAMDIIJA M 1999-06-01 DrsNIK/Dresnik	1997-01-01 Civilian
4	ABAZAJ Missing	GAZMIR NURADIN M 1999-06-01 DrsNIK/Dresnik	1980-01-01 Civilian
5	ABAZAJ Missing	GZIMNURADIN M 1999-06-01 DrsNIK/Dresnik	1974-01-01 Civilian
6	ABAZAJ Missing	HAMDI NURADIN M 1999-06-01 DrsNIK/Dresnik	1972-01-01 Civilian
7	ABAZAJ Missing	HUMRIJE HYSEN F 1999-06-01 DrsNIK/Dresnik	1973-01-01 Civilian
8	ABAZAJ Missing	KENEDIN NURADIN M 1999-06-01 DrsNIK/Dresnik	1981-01-01 Civilian
9	ABAZAJ Missing	LULZIM NURADIN M 1999-06-01 DrsNIK/Dresnik	1974-01-01 Civilian

10	ABAZAJ	MIMOZA	NURADIN F	1984-01-01	Civilian
	Missing	1999-06-01	Drsnik/Dresni		

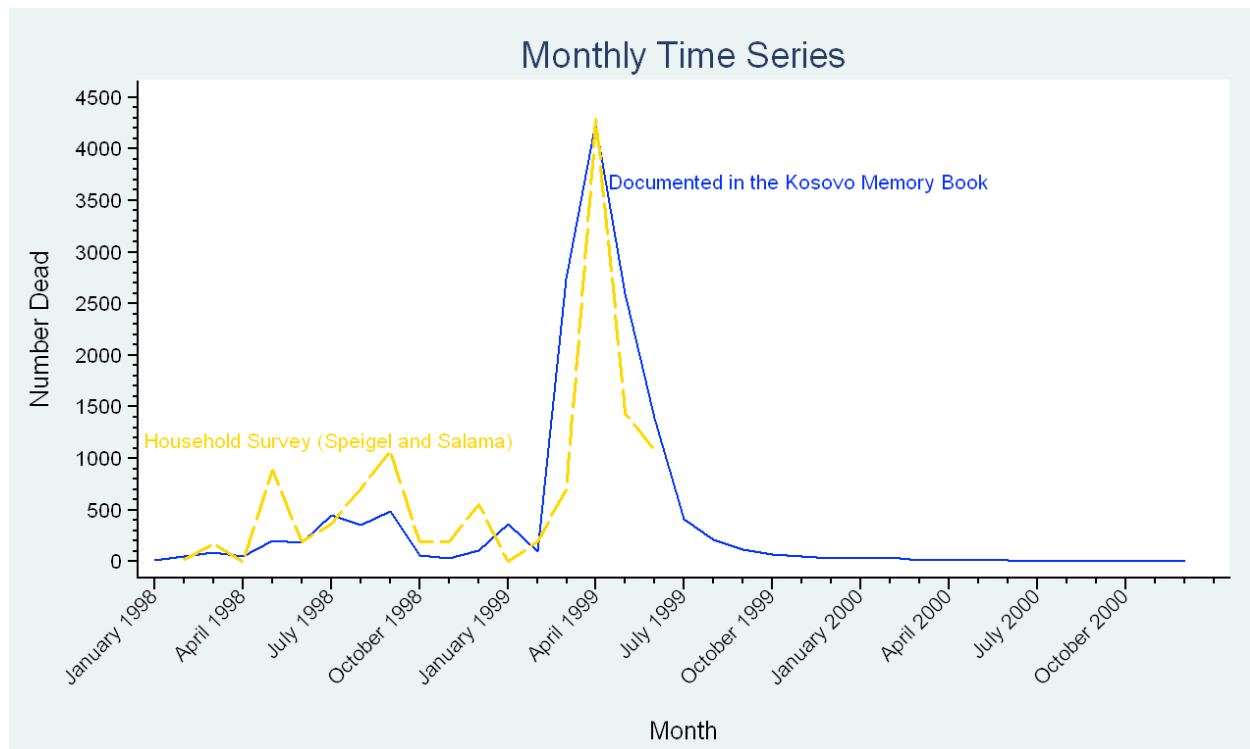
And on and on and on and on and on...

Total murdered plus missing 14,627 for the period Janurary 1, 1998 through December 31, 1999.

Two technical notes:

1. All numbers below for Kosovo Memory Book are adding together what they called “murdered” and what they call “missing”. The difference between the two categories is whether or not a body has been found. At this point in time it is close to certain that all the missing people are actually dead.
2. Dates of death are unknown for some victims and these are all listed as having January 1, 1998 as their date of death. So we should not read a lot into Kosovo Memory Book’s numbers for January, 1998.

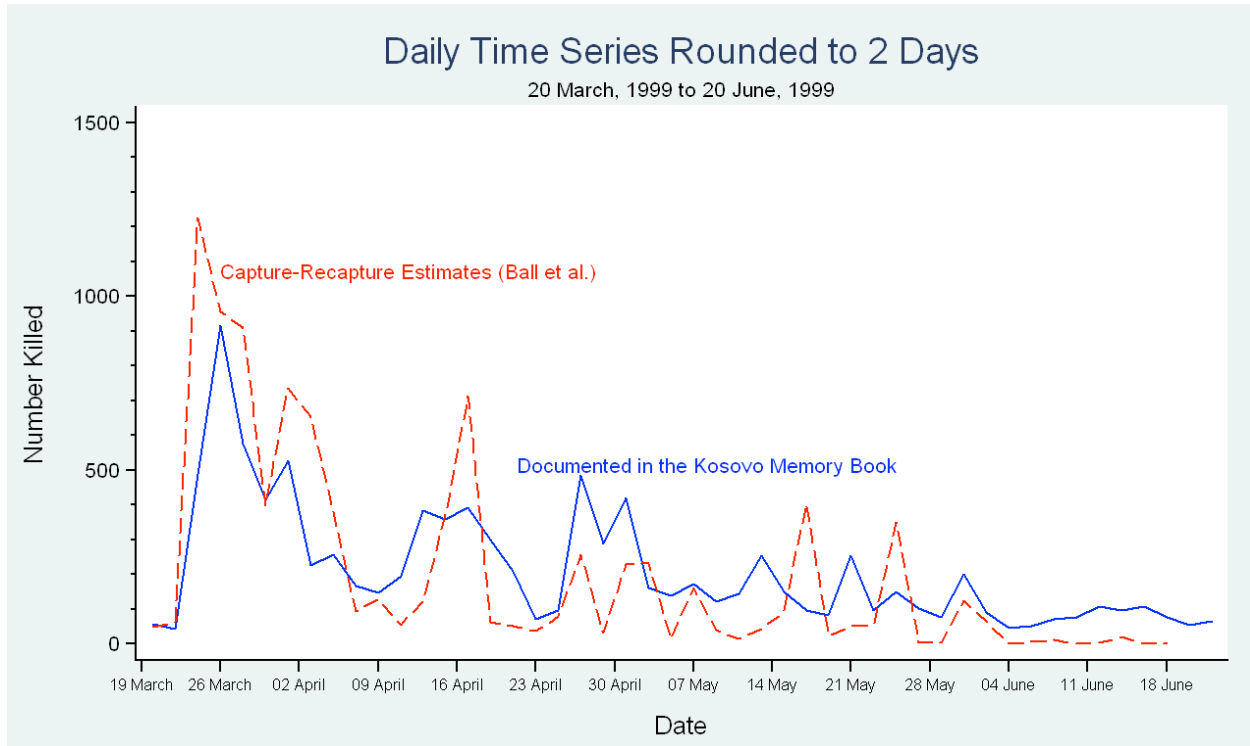
Household Survey versus One-by-One Documentation



I note in passing that a problem with surveys is that they stop at some point unless you do another survey.

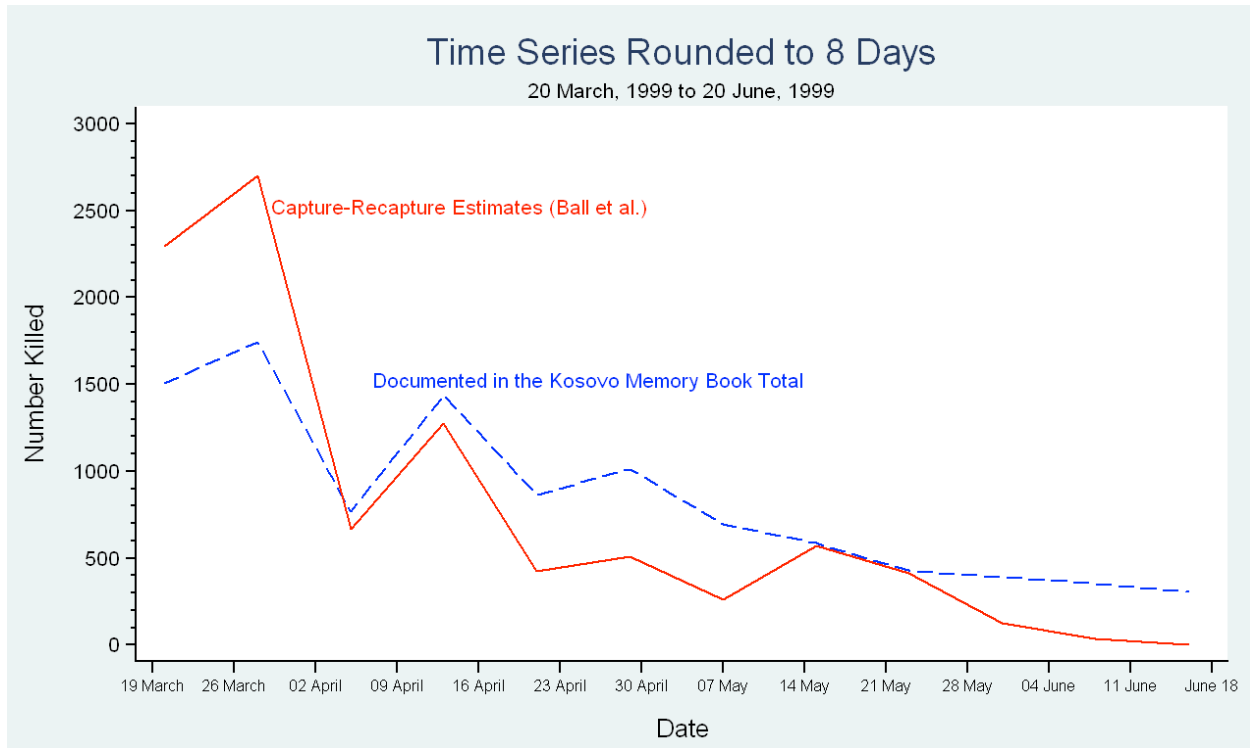
In any case, these certainly track each other pretty well although the survey has a few sudden jabs up that do not seem to have really happened.

Capture-Recapture versus One-by-One Documentation



At first glance it might seem like these two series track each other less well than those in the first picture. However, notice that we are now looking at much higher frequency data.

This picture is based on the same data as the previous one but it is smoothed into 8-day chunks.



Again this is not bad although now it is clearer that the capture-recapture is well above the Kosovo Memory book for a few weeks in the beginning before cutting below for the rest of the period.

Number Killed: Kosovo Memory Book versus Household Survey:
February 1998 through June 1999

Demographics	Kosovo Memory Book	Household Survey	Ratio
0-14 Years Old	597	362	1.7
Male	373	161	2.3
Female	224	201	1.1
15-49 Years Old	7778	5931	1.3
Male	7157	5421	1.3
Female	621	510	1.2
50+ Years Old	4382	5717	0.8
Male	3584	5176	0.7
Female	798	541	1.5
Total	12757	12010	1.1

One of the most interesting points in the household survey paper (Spiegel and Salama) was that males beyond military age seemed to have been targeted particularly. The Kosovo Memory Book data basically confirms this finding although it suggest that the survey numbers exaggerated the extent to which this happened to a certain extent. (The ratio of 0.7 is clearly lower than other ratios in the table.)

Still, the demographics are reasonably consistent between the two sources.

Number Killed: Kosovo Memory Book versus Documented Deaths for Capture-Recapture Estimate: March 20 through June 20 1999

Demographics	Kosovo Memory Book	Documented for Capture-Recapture	Ratio
0-14 Years Old	489	114	4.3
Male	304	68	4.5
Female	185	46	4.0
15-49 Years Old	5989	1094	5.5
Male	5492	962	5.7
Female	497	132	3.8
50+ Years Old	3534	855	4.1
Male	2882	694	4.2
Female	651	161	4.0
Total	10012	2063	4.9

So far as I am aware we do not have capture-recapture estimates broken down by the demographics. However, we can still look at the demographics on the documented deaths that underlie the capture-recapture estimates.

I should mention that the capture-recapture dataset has a very large number of victims with ages listed as “0”. There are far too many to be plausible in our opinion. We will investigate this further but for the above table we dropped those deaths.

Breakdown by Municipality: Kosovo Memory Book versus Documented Deaths for Capture-Recapture Estimate

Regions	Documented for Capture-Recapture	Kosovo Memory Book	Ratio
Vitina	77	42	0.5
Gnjiline	182	132	0.7
Kacanik	250	190	0.8
Urosevac	167	135	0.8
Lipljan	197	165	0.8
Stimlje	69	61	0.9
Zubin Potok	5	5	1.0
Srbica	507	751	1.5
Istok	127	189	1.5
Pristina	350	542	1.5
Orahovac	526	853	1.6
Suva Reva	347	571	1.6
Strpce	3	5	1.7
Obilic	49	84	1.7
Kosovska Kamenica	9	16	1.8
Leposavic	9	17	1.9
Total	4725	8938	1.9
Prizren	284	578	2.0
Vucitrn	203	429	2.1
Pec	314	669	2.1
Glogovac	285	615	2.2
Zvecan	5	12	2.4
Klina	100	267	2.7
Kosovska Mitrovica	150	447	3.0
Podujevo	116	416	3.6
Nova Brdo	4	15	3.8
Djakovica	293	1160	4.0
Decani	41	170	4.1
Gora	2	10	5.0
Kosovo Polje	54	392	7.3

Note: This is a work in progress. We haven't yet resolved all the deaths in the Kosovo Memory Book into Municipalities.

Conclusion

Honestly, I am surprised that there is so much consistency between the numbers arrived at using such different methods. I was expecting to find a lot of glaring inconsistencies.

On slide 8 I allude briefly to strongly conflicting results of two household surveys that were done in Iraq. There are, in fact, a number of other examples of this “dueling surveys” phenomenon. However, here the household survey results appear to come out just fine.

We should bear in mind that the Kosovo Memory Book is not just, or even primarily, about figuring out the number of people killed in the war. Rather, it is about preserving some aspect of the humanity of every single victim. Visit the web site of the [Every Casualty project](#) for more information on these ideals.

But the Kosovo Memory Book project is still ongoing more than a decade after the war finished whereas the two estimates covered above were able to provide instant estimates. So the different methods are far from interchangeable but, at least in this particular case, seem to all converge on very similar pictures of the war.