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What's in a Number?
Act one. Truth, damn truths, and statistics.

[5:34]

Ira Glass (IG): The number we're going to talk about right now is not how many Americans have died in the Iraq war, but how many Iraqis have. The fact is we have no idea how many civilians have died as the result of the war. Nobody counts, not the military, not the state department. The Iraqi Ministry of Health for a good while early on the war was compiling morgue figures from across the country and making them public every week, but that practice was stopped. These days the place that most people go when they need a figure is a privately run non-profit website called iraqbodycount.net. It gets its figures by going through newspaper articles and other press accounts and simply counting the number of people reported dead in those articles. Even the people who started this site and who run it today freely admit that this method gives you a huge under count. At best it's a minimum; the true number could be much much higher. One of the producers of our radio show, Alex Blumberg, started looking into all of this, and he found something surprising and disturbing about the death figures and what we know about them. Here he is:

Alex Blumberg (AP): Everyone will tell you counting civilian casualties in wartime is hard. First of all you need to do something called a large scale mortality study and second of all, you need to do it in the middle of a war zone. To date in Iraq there's only been one attempt. There's a John Hopkins university study published in *The Lancet*, a British medical journal, in late October 2004 a couple of days before the US presidential election. It concluded that probably a 100,000 thousand Iraqis have died as a result of the war. This figure was astonishingly high - ten times higher than any casualty estimates at a time. Even today, a year later, with all the extra deaths that have happened this year, no other estimate comes close. Just this week the *New York Times* ran a story based on the Iraq Body Count website that's estimating civilian casualties at a fraction of that number - just 30,000. Since *The Lancet* study's figure was so high, and the study itself got almost no attraction from the press. I remember thinking at the time it came out that it was probably bogus and slanted. I'm guessing a lot of people, if they had even heard of the study, would have felt the same way. But recently, in trying to figure out how many civilians have died in the war, I've learned more about *The Lancet*'s study and the more I learned about it and the remarkable story of how it was done the more likely it seems that the 100,000 figure is actually the best estimate and if anything - low.

Les Roberts (LR): Before the Iraq study the main thing I was known for and that I had testified in front of Congress for was documenting how many people had died in the war in the Congo.

[7:56]

AB: This is Les Roberts, the lead author on *The Lancet* study, and one of a handful of scientists in the world who can be called an expert in counting war dead. In the Congo study he found that 1.7 millions civilians had died from the war. A figure cited by Colin Powell when he was the Secretary of the State and Tony Blair on the floor of the British Parliament. Les has also done studies in Burundi, Rwanda and Sierra Leone. To a guy in Les Robert's line of work the war in Iraq had a number of unique and interesting things that deserved study. The main thing that distinguishes this were that the military took unprecedented care to avoid civilian casualties. Almost two thirds of the bombs dropped were precision guided,

as compared to just 8 percent in the first Gulf war, and 0 percent in World War II. They limited day time strikes and avoided civilian infrastructure like power and sewer plants. Compare that to World War II, where American forces fire bombed entire cities as part of the military strategy - killing up to a hundred thousand people in Tokyo alone and upwards of half a million civilians in Europe - and you can see why George Bush called the Iraq War one of the "most humane military campaigns in history". But Les knew that it's not often bombs and bullets that kill people in war, it's the other things that happen when society falls apart: clean water and medical supplies get scarce. In a lot of the studies he did in Africa diarrhea killed more people than weapons did. Women can't get to the hospital to deliver their babies, so infant mortality rates go up as well. It took Les a long time to get to Iraq and see if the same things were happening there. First , an Iraqi doctor who he had planned to work with died in an auto accident. Another social ill by the way that tends to increase during war time. And then insurgent violence spiked. It wasn't until August of 2004, five months after he originally planned to go, that he finally landed in Amman, Jordan. He had 24,000 dollars of foundation money in his pocket, his passport , and a letter of invitation from the Iraqi Ministry of Education. He found a driver, a retired Iraqi Army officer names Wahid who agreed to take him to Baghdad. Problems started at the very first check point on the border between Jordan and Iraq.

LR: Wahid takes my passport, he takes my letter of invitation, and in he goes. And he comes out just a few minutes later, and he is just terrified. Turns out he bumped into a former friend of his from his military days, and he pulled out my passport in front of him. And his friend just like blanched and pushed the passport back into his pockets and said, "You have an American here? Are you crazy? Don't let anyone see that. Just get the hell out of here, and don't let see you again and... oh, you idiot".

AB: Fortunately for Les, Wahid was something of a Han Solo figure - an unenthusiastic but talented smuggler who didn't look for trouble but didn't run away from it once it found him. He talked his way through that first check point.

LR: And we drive up a couple of miles, and he pulls off the road behind this abandoned old gas station. And in the upholstery of his car he's got hidden another pair of license plates with a different color and he's got another registration form to go with those license plates. So quickly he gets out and he changes his license plates, and he says: "Look, you must lie down, you must stay hidden." So, I spent the next, whatever, eight hours on the floor, and we actually had to go through like two extra points where they stopped and looked around in the car, and he chatted with folks and here I am lying down behind the back seat on the floor.

AB: So, when they stopped and looked around you were actually hiding from them?

LR: That's right.

And were you scared?

LR: That's a funny thing. I had consciously made the decision that it was worth trading my life for a chance at getting a realistic estimate of how many Iraqi civilians have died and how they've died. So, I was quite at peace with the notion of dying when I went.

AB: Les finally made it to Baghdad, where he met for the first time in person his Iraqi co-researcher, the man with whom he would be working with the next month. His name was Riyadh Lafta, and he was a doctor of community medicine at the Al-Mustansiriya University in Baghdad. Riyadh had hired a team of researchers, mostly doctors from his university. All of them native Iraqis but fluent in English. Let's pause here a moment to talk about their

methodology, because when the study came out later a lot of people wanted to believe that it was flawed or biased. In fact, the survey team used the standard methodology for measuring health and mortality over a geographic area. It's called a cluster sample survey and it works like this: Using the most recent census figures available on Iraq, the team made what was essentially a map of the population. They then used a random number generator to pick thirty three points on that map. Baghdad was the biggest population center so it got several points by itself, but the other points were spread all over the country: from the Kurdish North to Shiite South, from small towns to big cities. Once they picked a town though, they still had to figure out who they would interview there. Here again they tried to leave everything to chance. Using GPS units, they would drive around the outskirts of the town and store the coordinates creating a rough outline of the town border. They would then generate a random point within that border, drive to it, and interview the thirty nearest households. It was such a commitment to random sampling that the first few times that the team did it, even the researchers Les and Riyadh were working with found it obsessive.

[13:03]

LR: It was very annoying to them, cause here they are in the car. They're out there feeling like they're at risk, and they've been driving around a long time to get to the extremes of the city and draw their map before they'd interviewed the first house. They are like driving around and not getting any work done they felt. So -

AB: And this is all just to make it as scientifically valid as possible? Right?

LR: This is a way of picking houses without any sort of preference for safe neighborhoods, dangerous neighborhoods, near the highway, far from the highway. It was a way of sort of transcending human laziness so that in essence, every household in Iraq had an equal chance that we would visit them, and that is in essence the definition of random.

AB: The survey went smoothly, at least for the first couple of days. People, as it turned out, were much more willing to answer questions, even to provide death certificates as verification, than the researchers had initially thought they would be. In fact the trouble - when it came - came from Les himself.

LR: Must be the fifth day I was out with them, the eight cluster I attended. I and two of the interviewers were up in a town to the North called Balad, and there was a huge picture of the cleric Sadr as you rolled into Balad. So clearly it was an anti-coalition city in a big way.

AB: Sadr of Sadr militia?

LR: Of the Sadr militia, that's right. And - and as fate would have it, the first or the second door they knocked on was the governor's house. And so somebody calls the police.

AB: Les watched from the car as the police took the two researchers, both doctors, one a dignified man in his fifties and the other a single mother, and drove them away. He was terrified that somehow the police would find out that they were working with him, an American. But he could nothing but sit in the parked car and hope that no one discovered him.

LR: I had done everything I could to be invisible. I wore like boring Iraqi clothing. I had dyed my hair black. I had grown a beard so I would look right, but it still didn't look right. They had made up a fake business card that said doctor Abdul Salaam from - the guy was from Bosnia. Cause that would explain me being blue-eyed, non-Arabic speaking, but I

could still be a Muslim, and that would make me OK. And I was just so worried that sitting there for an exorbitant length of time would draw attention that I put the back of the passenger seat down, and I sort of laid down on my side to pretend that I was asleep so I wouldn't have to speak to anyone if anyone came up to the window of the car. And I had probably been lying on my side about - I don't know - 20, 30 minutes and these two little kids, they might have been 10. They came up to the window beside where I was, they stuck their head in the car, they looked around - and I'm pretending to be asleep - and they said to me in English, "Hello, mister!" And you know, even with my eyes closed pretending to be asleep there was no way I could pretend that I was an Iraqi and there was no way around it. So that was just a pretty horrifying experience all around. And I was wondering if I had gotten these two lovely interviewers arrested or killed, and after an hour or a little more a car brought back the two interviewers and they went right back to work. They didn't come back to the car. They didn't look at us. They didn't acknowledge us. They just went right back to work and finished out the 30 houses randomly picked in that neighborhood and off we went. But after that day no interviewer ever spoke to me again - not in person.

AB: Riyadh and Les decided that for everyone's safety he should lay as low as possible. So for the next 16 days straight, he didn't leave his hotel. To pass the time he crunched the numbers that the survey teams were calling into him every night. The surveyers were basically getting two pieces of information from each household: how many people in that household had died in the 14 months before the invasion and of what and when, and how many had died in the 17 months after the invasion and of what and when. By the time the teams had completed their 32 out of 33 clusters, over 900 households and over 7,000 people - the results were pretty shocking. The death rate itself had gone up about 60 percent, a large increase, but one that Les had expected from the other surveys. The shocker was how people were dying. For the first time of any of his surveys the leading cause of death was not disease - it was bombs and bullets. In the 32 of the 33 clusters sampled, 21 people died of violence; that's compared to just one violent death during the period before the war. There was a second shocker. Of those 21, two people died in fire fights where it was unclear where the bullet came from, three were killed by the insurgents or Saddam loyalists, seven died from criminal violence, carjacking, revenge killings and that sort of thing, and the biggest number, nine, were killed by the American led coalition.

LR: I just didn't expect violence from the coalition to have dominated the causes of death in Iraq. No way reading the New York Times and listening to National Public Radio would I have believed that the coalition killed far, far, far more people than did the insurgents setting off car bombs. I should mention that only three of them involved guys with guns. All the rest were helicopter gun ships and bombs from planes. So, it's not about individual soldiers doing bad things. In fact, two of those three cases when soldiers shot civilians with their guns, they actually went to the houses of the deceased and apologized to their families. So there is no evidence here of soldiers running amuck. There is evidence here of style of engagement that has probably relied very heavily on air power that has resulted in a lot - a lot of civilian deaths. I was at a presentation last November and a Pentagon spokesperson said that they've dropped about 50,000 bombs in Iraq. 50,000 bombs. A very, very small fraction of them would need to miss their target or be based on bad information to explain 100,000 civilian deaths.

AB: At the end of three weeks there was only one more cluster to survey. The team had saved it for the end because it was the most dangerous one, Fallujah. Remember this is September 2004 and insurgents controlled the city, and it's basically under siege from the coalition; they're shelling it regularly.

LR: It just seems crazy to go there. And I said to Riyadh: "Riyadh, we have been to 32 of our 33 picked neighborhoods. We actually only thought in the end we would get to 30. We -

we had aimed for 30 and picked 33 with a thought that 10 percent of the places would be too unstable for us to get to. So we've done better than we've expected, we have a terrible story to tell, mortality is way up, what ever you find in Fallujah is not going to change the story. Think of what we are going to gain - we're going to gain nothing." And he said: "God picked those random locations. God wants me to do this work. I must do this." And we went back and forth and back and forth and back and forth, and I was brought up a Catholic, and I had never really thought about it or understood until that moment in time, but in my head I actually sort of built up a weight of what's the likelihood that something bad is going happen these guys and how bad is that. What is the likelihood of something good coming from what they do and how good is that. I sort of put a weight on each of them. As I spoke with Riyadh he actually did not have the capacity to do that because for him doing God's will and this work were inseparable. He couldn't separate out risk because that was separating out sort of faith. The more we spoke the more I understood that like, on some very very fundamental level, that we couldn't communicate with each other about our motives here and in the end he went.

[21:33]

AB: Only one other interviewer agreed to go to Fallujah with Riyadh, a doctor who had relatives there he wanted to check up on. Their car was stopped three times on their the way into the city. Heading to their random spot they saw devastation everywhere: houses were bombed, rubble laid on the streets. The block they stopped on was no different. They had to visit 52 households to get the requisite number of interviews. 23 homes were either temporarily or permanently abandoned. Neighbors said that in the abandoned houses most people had died, but this data could not be substantiated so it wasn't even included in the survey results. In the 30 households they did survey, there were 53 deaths. 52 of these were violent deaths. All but one caused by Coalition weapons. 24 of the people killed by Coalition bombs and bullets were children under 12 years old, and with that the survey was over.

Fox: *Music* Five days in counting tonight the newest polls the latest trends and breaking developments from the campaign trail on America's News Live.

AB: This is Fox evening news October 28, 2004 on the day the results of Les's survey - that just shy of 100,000 Iraqis had died as result of the war - were released. Les had not even considered the Fallujah data in coming up with this number. Fallujah has so many deaths that it was too much of a statistical outlier to even include. Fox never mentioned the study, neither did ABC or CBS. The only national network that carried this story was NBC for 21 seconds.

NBC: Tom thanks, and we begin here with Iraq watch tonight and one measure of the high cost of war; a new study from Johns Hopkins University estimates that 100,000 Iraqi civilians have died since the start of the war - the majority as a result of US air strikes. This is a much larger figure than some previous estimates. The Pentagon had no comment on the number but said it had taken great care to prevent civilian deaths. And there is one

AB: Morning Edition and All Things Considered on NPR devoted 45 seconds to the survey, and it didn't make the front page of the New York Times, the Washington Post, or any national newspaper. The Iraq study had provided information about the war that up to that point no one had been able to provide. The number they were getting was much higher than anyone would have expected. It was just as accurate as Les's previous studies in Africa that he had done using the exact same methods and which were widely reported in the press and quoted by lawmakers. His Congo study was page one in the New York Times. The only difference with this study were that he risked his life to do it and it was about Iraq, which if

anything should have made it more interesting to the media. So why didn't it get any press? Partly, it was the timing. The study came out five days before the US election, so the media was pretty preoccupied. Plus there was a suspicion that the team had timed the release of the survey specifically to influence the election - a suspicion that Les didn't really help dispel. He said to an AP reporter about the study, "I emailed it on September 30th under the condition that it come out before the election. My motive in doing that was not to skew the election. My motive was that if this came out during the campaign both candidates would be forced to pledge to protect civilian lives in Iraq. I was opposed to the War, and I still think that the War was a bad idea, but I think that our science has transcended our perspectives. As an American I am really, really sorry to be reporting this." One desk editor at a national news organization told me that when the study came out he sent an email to one of his colleagues saying that The Lancet had in the past published some studies with a political slant, but that this study seemed sound and maybe they should report on it. Then he saw Les's comments and he didn't follow up. This is exactly the type of story that those who believe that the media has a liberal bias left a pounce on. So in essence, if the research turns out to be flawed, this desk editor's organization gets the heat for it. In a very small window of time during a very busy news cycle to decide whether the study was legit or just an angry and easily debunked researcher pushing an agenda, and Les's comments seemed to be all the evidence he needed. And there was one other thing that made it easy for the media to dismiss the report. A researcher at Human Rights Watch, who himself had done studies of civilian casualties during wartime, said he didn't believe the study. The researcher's name was Mark Garlasco and he told the reporter from the Washington Post, "The number seems high to me" and, "it seems like a stretch".

Mark Garlasco (MG): I was actually on the Long Island railroad when he called me. It was sometime in the evening, and I had yet to read Les's report.

AB: This is Mark Garlasco. He said he told the reporter from the Post that he hadn't read the study. But the reporter said he really needed to quote and could he just respond to the number? Garlasco's quote was cited elsewhere and he appeared on CNN. Although none of the authors of the study were interviewed on CNN or any of the major networks. Here is what Mark Garlasco says now:

[26:09]

MG: First of all I am not a statistician. I know absolutely nothing about it. And when I then went and spoke to statisticians they said: "You know, the method that he's using is a really accurate one. This is something that we use in - in studies all throughout the world and it's a generally accepted model. And that kind of made me think about it, think about, you know, my prejudices going into reading his report because you know I have been on the ground in Iraq immediately after the war, but I had also taken a part in the targeting of the war.

AB: Ok, let's just stop here for one minute. You heard what he said. He had taken apart in the targeting of the war. Get ready because this story is about to take a turn. Mark Garlasco is not a typical Human Rights advocate.

MG: Well, I worked in the Pentagon almost seven years, and my last job there was Chief of High Value targeting on the Joint Staff. And basically that means that I was one of many people that was involved in the tracking and attempted killing of Saddam Hussein and all those people in the deck of cards. And -you know - I would sit there with my compatriots and we would x's on buildings one day and the next day those buildings are gone.

AB: So you were literally in this last - in this invasion?

MG: Absolutely. I was involved in the war planning. In January of 03 I was involved in the final targeting of Iraq. When we put the final target list together and of course those got brushed up as we got closer to the war. During the war I was working, I don't know, 18 hours a day at least, in the Pentagon. You know, putting in hours trying to get and kill Saddam Hussein and others. And after Baghdad fell and then on April 11th I walked out of the Pentagon, it was a Friday, and then on Monday morning I walked into Human Rights Watch, and suddenly now I'm a human rights advocate. Got on a plane and flew to Iraq to see my handy work.

AB: That literally - like - how soon after?

MG: Literally it was just the next week. I got onto a plane and went to Iraq and I was standing there, you know, in craters that I helped cause.

AB: Mark doesn't see moving from the Pentagon to a human rights non-profit as the 180-degree flip that most people might. He says all he's ever wanted to do was fight bad guys and both organizations do that - just in different ways. He'd been thinking about leaving the military before the war began, and he hadn't supported the war itself. But he stayed through the fall of Baghdad because he knew the targets better than anyone else, and he figured that if there was going to be a war anyway it might as well be him targeting the bombs other than someone else who might not know or care as much as he did. The thing that finally prompted him to leave, he says, didn't have anything to do with the war. His wife got a great job offer at the Bronx Zoo and they had always wanted to move back to New York. When Mark went with Human Rights Watch to Iraq, it was not to get a comprehensive count of civilian casualties. His mission was to look at specific attacks and see which kinds of attacks caused high civilian death tolls. Because Mark had planned many of the strikes he was now going to investigate, it was a little complicated.

MG: There was the attack on Chemical Ali in Basra, and I'll never forget, you know, sitting in this tiny cubicle in the bowels of the Pentagon watching it on the television as we had the Predator overhead. And you - you know you're watching this black and white screen because it's a night shot and you know anything that is white is hot and black is cold. And we're watching people walking in front of it. And all of a sudden this building just erupts and was gone. And we watched as bodies just flew out of it, and you could see the legs kicking in the air like rag dolls. And we just erupted in cheers. We were ecstatic. You know, here we are, we killed the Chemical Ali - this is great. And what is it, three weeks later, I'm standing in the crater with this 70-year old man who's got tears in his eyes and he's telling me how 17 members of his family, including his grandchildren were killed. And - and I still feel very - very mixed emotions about the whole situation - the whole experience.

AB: What are those mixed emotions, I mean on the one side and the other?

MG: Well, on the one side I felt like I took part in this, you know, this wholesale slaughter of this guy's family which is very difficult to swallow. But on the other side I know that we truly, truly did what we could. We were going after some very bad people. You know, war criminals. Chemical Ali had gassed the Kurds. He was singularly responsible for thousands of deaths and so, you know, he was certainly a legitimate military target. But I think this just goes to show that how difficult the job really is. You know, this is one of those strikes where we did everything right, where we thought we had the bad guy, where it was weaponized correctly and yet it was just the wrong place to hit it at that time and people died for it.

AB: The attack had hit the intended building but it had also destroyed the two neighboring buildings. That's where the man's family had died. Also Chemical Ali hadn't been in the targeted building anyway. It's unclear who died there. Mark went to lots of places in Iraq he had studied on maps and aerial photographs and heard about from defectors. And there's no way around this, after all those years of imagining these places, what they must be like, it was exciting to be there.

MG: I was walking through, you know, bunkers that I knew about. I went to Saddam - Saddam Hussein's bunker and I went to his family's bunkers. One of my favorite moments was when I actually met one of the bunker builders and hired him as a translator. And he took us into Sajida's palace, and Sajida was Saddam's wife. And we knew there was a bunker under the building, and we targeted it and dropped a weapon into it. And he took me in, and we go into to the building and I'm seeing the inside for the first time which had before only been described to me by defectors. And here it is, you know, this picture that has been painted into my mind. And we get there and the guy says, "Now I will walk you to down to the bunker." And we walk down to it and we get to the bunker. And when we look down at it from the top, there's a hole as the penetrator went in through four floors straight down to the bunker. And he looks at me and says, "Whoever did this was a very smart man." And I just lost it - I just completely lost it. Because you were like, "I did that". Cause I was like, hey, you know, thanks. I appreciate it.

AB: The military denied my request to talk on the record about civilian casualties. But Mark Garlasco says that civilian casualties are one of the primary factors he and his colleagues considered when planning the war. Say he had a target he wanted to take out, the headquarters of the Iraqi Secret Service maybe or one Saddam's palaces. He'd work with the weaponeering guys to figure out how many and what kind of bombs to use. And then:

MG: And once that's established, they'll work out these collateral damage estimates, and tell you, OK, in this strike 10 people are anticipated to be killed, civilians, or 20 civilians or whatever. And in this war in Iraq there was a magic number, and the magic number was 30. And for any target where it was anticipated that 30 civilians or more would be killed it required the signature of either the President or the Secretary of Defense for that strike to actually occur.

[33:16]

AB: How was that magic number arrived at, you know?

MG: I have absolutely no idea how the magic number came to be 30.

AB: A lot of times when the collateral damage estimates came back too high they tried to get it lower. For example, a strike mark planned early on in the invasion; an Iraqi division was holed up in a multi-building convention center in Baghdad, which unfortunately, was right across the street from a hospital.

MG: Now because of the amount of guys there and - and the construction of the buildings we knew that they needed to use 2,000 pound bombs. The problem with this is that a 2,000 pound bomb has a very large destructive radius. And it certainly would have enveloped the hospital. But there are things that you can do, even when you're dropping large munitions, to reduce civilian casualties. One of those is to change the angle of the attack. So, imagine if you will, a plane is coming in and drops bombs in such an angle that they actually push the debris away from the direction of the hospital. Additionally you put a - a time delayed fuse on it. And in this case I think it was maybe five nano seconds, which is an incredibly short period of time, but it's enough that allows the bomb to bury itself in the ground. And

what this does is it basically lets the building implode. It falls in upon itself. It contains a lot of that blast and fragmentation damage that would come out and - and injure civilians or destroy, you know, some of the hospital. And additionally you are using a penetrating warhead so it's burying into the ground. So you're not just willy-nilly dropping bombs like in the Second World War. When I got there I went in to the hospital and I spoke to the director and all the people in there, and nothing worse than a few broken windows. I was like, "Wow! This is great, you know. We did really good job on this one".

AB: What got Mark thinking about civilian casualties in the first place was a battle damage assessment he did after the war in Kosovo. He targeted the bombs for that war and then afterwards the military send him over to see how well he'd done. He measured how often the bombs hit their targets, whether they destroyed what they were supposed to destroy. Pretty much the only thing he didn't check the accuracy of were the the collateral damage estimates.

MG: That's what got me - that's what really surprised me. At no point in time did we ever have to report back on civilian casualties. And so my question has always been, if you're looking, if the weapons were aimed correctly, if targets are correct, shouldn't you also be asking were your civilian casualty estimates correct? I mean shouldn't that be factored into it to make sure that your models are accurate? Because if your models are not accurate, what are they worth? You know, why do you even bother doing it? Because it's just, you know, throwing darts at the board at that point. Yeah, wow.

AB: Did you ever find an answer to that question?

MG: No, but it's something that I keep asking the military now that I'm in Human Rights Watch. You know when I was there I was wondering why isn't it done, and now I ask them why isn't it done and why don't you do it. And, you know, I guess the answer that I get back just hasn't just satisfied me. It's look, we're still fighting a war in Iraq and it's really hard to do, or it's very difficult to account for civilian casualties for a variety of reasons and you get kind of the bureaucratic double talk. And it is just not good enough. You know, because I've been there, and I know that people care and want to do the very best they can. And they don't wanna kill civilians, and - and here's an opportunity to, you know, really make a difference and to show that you're doing your utmost best to make sure that you're - you're upholding the Geneva Convention, and - and not killing people unnecessarily.

AB: In talking to people in the military off the record I heard a couple of arguments against counting civilian deaths. First they say, it's not the military's job. What you're trying to do is win a battle, it could be a dangerous and in the long-run, counter productive distraction to worry about counting all the civilians you accidentally killed on the way. Second, and perhaps more persuasively, they say no one would believe them anyway. Just ask Les Roberts. Even though Les's study did not get much main stream attention, it did provoke like so many things these days, a bitter debate on the Internet. The attacks came mainly, but not exclusively from right wing blogs. Several charges leveled at the study were simply untrue and seemed designed to willfully muddy the waters. For example, there was a claim repeatedly made, both in the press and online, that the data weren't random because the researchers had been blocked from going to certain places or decided against certain places because it was too dangerous. This is simply false. A couple people suggested that the researchers had gone to Fallujah on purpose to boost their numbers even though exactly the opposite was true. Les had wanted to skip Fallujah altogether and they hadn't even included the data in the their final casualty estimate. Several objections had merit though. First of all, the study makes no distinction between combatants and civilians. Les actually acknowledged this in his study itself and went in great lengths not to claim as others went on his behalf that the study was was a measure of civilian mortality. Certainly, some of the

people the coalition killed, they intended to kill, but half of all the casualties were women and children. So even in the unlikely event that 50 percent of the men who died were actually fighting us, it's still a large number of innocents. The critique that got the most attraction on the Internet though, has something to do with something called the "confidence interval". Let's take an election poll as an example. Candidate X is projected to receive 55 percent of the vote. What that really means is that he's projected to receive some percentage within two numbers, let's say 52 and 58 percent. That range is called the confidence interval. The confidence interval in Les's survey was very wide, between 8,000 and 194,000. It was this wide for a lot of reasons, but mainly because the sample is relatively small relative to the population. And because violent death, unlike death due to malaria or diarrhea, isn't very uniformly distributed. So you have Kurdish areas, where mortality actually went down during the war versus Fallujah which averages almost two violent deaths per household. Such a wide confidence interval means that statistically speaking, Les's estimate of 100,000 dead isn't very precise. The number could be thousands or tens of thousands smaller or equally likely bigger. But a lot of people made wrong conclusions from the wide confidence interval. They interpreted it to mean that it was just as likely that 8,000 people had died as it was that a 100,000 had. The online magazine Slate wrote, "This isn't an estimate, it's a dart board." In fact, the likelihood follows a bell-curve, with 98,000 being at the top of the curve, the most likely number. So actually there's only a 2.5 per cent chance that the number is 8,000 or below. But a 90 percent chance that it is 44,000 or above. Here's Les:

LR: A couple of people told me that that Sunday before the election their minister from the pulpit had said that this study in The Lancet was flawed and wrong. And my next door neighbor, who - who was listening to talk radio spoke to me the day of the election and she said: "Well I just heard on talk radio today that the Lancet study finding 8,000 Iraqi deaths was flawed and wrong." And so, it was disgust, but I don't think it was disgust in a sort of scientifically rigorous process.

AB: Clearly the people on talk radio weren't attacking the study out of a commitment to experimental rigor. They were attacking it for the same reason that the news media was hesitant to report it; because the very act of counting civilian casualties is political. The moral logic of war is this: we're willing to undergo X number of costs in lives, money, resources to accomplish some goal. The goal we hope will be worth it in the end. So assuming that the goal in Iraq is good, is it wrong to kill a 100,000 civilians? Saddam himself probably killed 230,000 of his own people, a number by the way that nobody has gone out of their way to dispute. If you add the million or so lives he lost in the futile war he launched against Iran, 100,000 seems like a bargain in comparison. Maybe he would have gone on another killing spree and this 100,000 is insurance against a later far worst death toll. Or maybe a 100,000 lives is worth it if in the end democracy does blossom in the Middle East. After all, we killed far more Japanese with just two atomic bombs than according to Les we did in a year and a half in Iraq. If we don't count civilian casualties, we don't have to get into this kind of horrible math, and most of us don't want to. So, instead we leave it to the professionals. The military are the only one who even try to come up with a formula: the collateral damage assessment, 30 dead civilians for one bad guy. For Les, he doesn't really care who counts just so long as someone does.

LR: Under the Geneva Conventions, an occupying army's relationship to the occupied is roughly the same as a police department's relationship to its population. And, you know, in my hometown if a policeman pulls out his gun and shoots six shots at someone, another policeman will come and try to find where each of those six bullets landed and decide was this excessive use of force and - Well, how can we say that we are really looking after the well-being of the Iraqi folk - people if we don't go sort of through some sort of minimum

effort to decide what we are doing to them, and what can we do to limit the adverse consequences.

AB: One of the most surprising things Les discovered in Iraq is that despite what everyone says about the difficulty of counting civilian casualties during wartime, it's actually not that hard. The survey teams got participation rate that most American pollsters would kill for. Only five of the 988 households the teams surveyed refused to answer the questions. And people were able to provide death certificates over 80 percent of the time. And that confidence interval? Les is sure that based on the results of the first survey that with a little more money, remember this whole thing cost only 40,000 dollars, he could design a follow-up survey that would narrow that interval way down. We can count civilian casualties during wartime. We just have to want to.

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