

How many people disappeared on 17–19 May 2009 in Sri Lanka?

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12 December 2018

Executive Summary

This is a mathematical estimate of the total number of people disappeared at the end of the Sri Lankan civil war, only including those who disappeared between 17–19 May 2009. To be clear, *this is **not** an estimate of the total number of disappeared people during the war*, only those who disappeared *after surrendering* during the last three days.

Subsequent UN reports described which army divisions and commanders were present accepting the surrenders (Office of the United Nations High Commissioner for Human Rights 2015).

Sri Lanka has a very large number of disappeared people (United Nations Working Group on Enforced or Involuntary Disappearances 2018). Even in the context of the high frequency and great magnitude of disappearances in Sri Lanka, these three days at the end of the war are extraordinary. They represent the largest number of disappearances in one place and time in the country’s history.

As a starting point to estimate the total number of disappeared people in the war’s last days, we collected seven lists identifying the people known to have disappeared. The lists include people whom eyewitnesses saw being handed over to the army, were seen in army custody, were seen crossing the bridge or being detained south of the bridge, were seen at the Omanthai checkpoint, or were on a list specifically designating them as surrendered to the Army. These lists have been linked such that we know which records on which lists refer to the same people.¹ How many people were disappeared but are not documented by these seven lists? This is called the “dark figure.”

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¹Linking unique people across duplicated records in multiple lists is called “record linkage” or “database deduplication.” For a non-technical introduction, see [this page](#); for a more technical explanation, see Christen (2012).

Considering both the disappeared people who have been reported to one or more of these lists, and estimating the dark figure, we estimate that there were 503 total people were subjected to enforced disappearance during these three days.² This includes 443 people on one or more of the available lists, and 60 people whom we estimate to have disappeared but who were not documented by these lists: these are the “dark figure.”

The estimates are made using multiple systems estimation. [This link](#) provides a non-technical introduction, and Ball (2016) provides a non-technical exploration of the method to estimate homicides by the police in the United States. For a very slightly more mathematical explanation and a description of the method’s applications in human rights, see Manrique-Vallier, Price, and Gohdes (2013). The rest of this memo explains what the data are, and how we used the data to make this estimate.

Historical Context

In the last days of the war in May 2009, tens of thousands of Tamils fled the war zone, which was reduced to about 400 metres square of jungle dotted with earthen bunkers, bomb craters, and burnt out vehicles. Among the war debris, there were many severely injured people. Among the last to surrender were the elite of the LTTE’s civil administration, who had run the *de facto* separate state in the north east of Sri Lanka for many years,³ the LTTE military wing leaders and their families, and young people without families whose uniform, injuries, physique, or short hair in the case of women, clearly identified them as fighters.

Surrender involved making their way towards the Wadduvakkal⁴ Bridge – a long narrow causeway crossing the outlet from the Nandikaadal lagoon to the sea. By 17 May, not just the bridge but the area just to the north of it was firmly under army control.

Figure 1 shows the “no fire zones” into which people were concentrated at the end of the war.⁵ During the final months of the war, the army pushed hundreds of thousands of civilians and fighters into a narrow spit of sandy land on the north-east coast of the island. On one side was the sea, and on the other, the lagoon. The Sri Lankan Army cut the spit of land in half in late April 2009, and the people moved south into an ever-shrinking patch of jungle. By the last days, this small area was encircled by the army who controlled the lagoon coast, the beach on the seaside, the bridge to the south, and the area to the north.

Most of those who surrendered to the army walked to the bridge, though some were caught trying to cross the lagoon or surrendered by moving northwards. Those who came across the bridge were searched for weapons or bombs, their names recorded and then held in a barbed wire enclosure (a dried up paddy field) before being put on buses to Omanthai where they were questioned, registered for a second time in more detail and then detained or interned. At all points along the process, Tamil informers were posted to identify their

²The two-tailed equal probability 95% credible interval is [468; 554]. The estimate is explained in the [Estimating the Dark Figure](#) section.

³In their heyday the LTTE had controlled a third of the island and run education, agriculture, medical services and a police and judiciary for hundreds of thousands of people.

⁴Also spelled Vadduvakal.

⁵From International Crisis Group (2010), used by permission (license [here](#)).

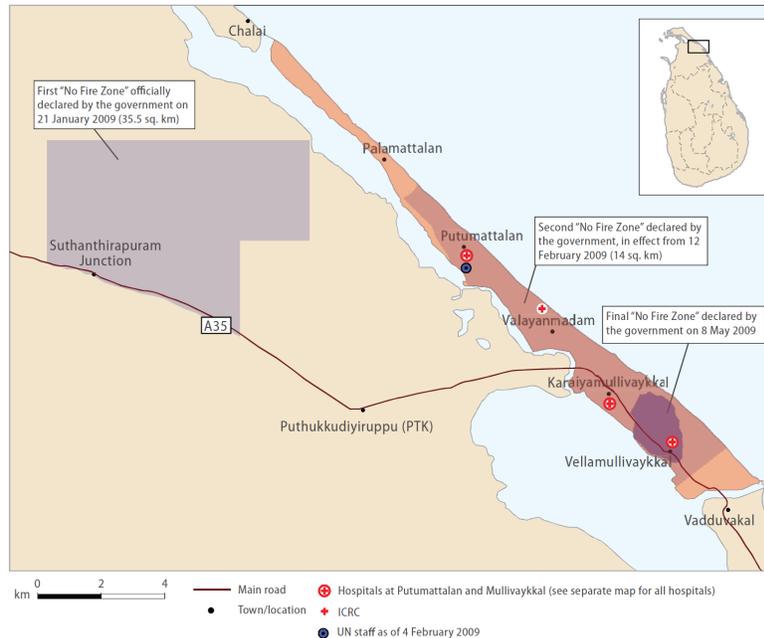


Figure 1: Wadduvakal Bridge and Surrounding Area

erstwhile colleagues to the military authorities and this was how many of the disappeared were identified and taken into custody.⁶ There was no International Red Cross, UN, or NGO presence at the frontline surrender points.

Among the group captured in the estimate of total disappeared persons is a subset of LTTE cadres who came across the bridge starting on 17 May and coalesced on 18 May around an elderly Tamil Catholic priest called Father Francis Joseph. Father Francis thought if he collected a list of the names of these figures and accompanied them into detention then they had a better chance of staying alive. Eyewitnesses, who did not accompany him, have described how he wrote the names of the surrendeers in English on a paper. A soldier called the names over a loudspeaker, and the people were loaded onto buses—these buses were driven by soldiers, not by civilians as in other cases.

The LTTE political wing leaders who surrendered in the “white flag surrender” on the morning of 18 May are not included because they are known to be dead. According to the UN, there are reasonable grounds to believe they were extra-judicially executed and there are photographs of their corpses (Office of the United Nations High Commissioner for Human Rights 2015).

⁶“The tens of thousands of civilians who survived the last phase of the conflict now passed into Government control. Among them were former LTTE leaders and combatants who either surrendered or were identified during an ongoing screening process and taken away.” Office of the United Nations High Commissioner for Human Rights (2015)

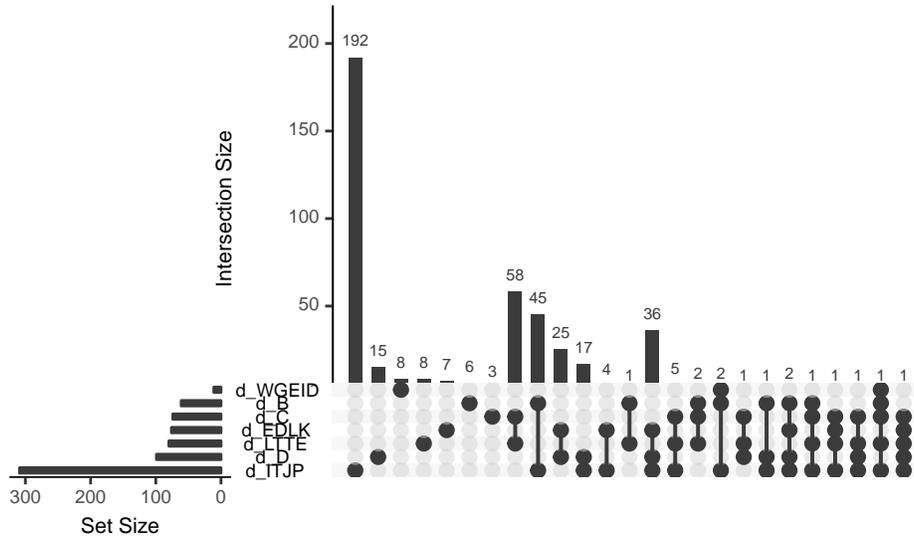


Figure 2: Number of disappeared people on lists, by intersection type

Intersections

Our analysis begins with lists of the missing and disappeared; we first remove all the people noted as simply missing so that this estimate includes only the disappeared people. The largest list was created by the [International Truth and Justice Project](#), and it can be viewed at the [Disappeared Website](#). The ITJP’s initial list was based on the testimony of eyewitnesses who were at the surrender point on or around 18 May 2009 and witnessed their relatives or former comrades in custody. These eyewitnesses were interviewed abroad. This list was first published in 2014 and subsequently supplemented as new information became available.

All the records with dates in the period 17-19 May 2009 were included, and records without dates were included because this project explicitly sought records of people who disappeared after being taken into Army custody during the days following the 17 May surrender; the date focus was part of the project. There are 309 records in the ITJP’s list.

ITJP’s database includes 117 records found in other databases; in addition, there are 134 records in non-ITJP databases that are not found in the ITJP’s list. The other databases include names published by the UN’s Working Group on Enforced and Involuntary Disappearances, lists collected by activists in Sri Lanka who must remain anonymous for their own security, and a list compiled by Northern Provincial Council Minister Anandhi Sasitharan.

A first exploration of the datasets is to look directly at their intersections or overlaps, that is, how many disappeared people were documented by only one list, by two lists but not by the others, or by some other combination of lists. Asked differently, which people were documented on which lists?

Figure 2 shows the number of records found in each of the combination of list overlaps.⁷ The leftmost bar has a dot in the `d_ITJP` row at the bottom of the graph, indicating that this

⁷The graph is from the [UpSetR](#) package, see Lex and Gehlenborg (2014-7AD).

bar shows the number of people documented only by the ITJP (192). This indicates that these data are found in the ITJP list, but the empty circles in the other rows indicate that the people found in this bar are not documented by the other lists.

Note that each list contributes at least one additional documented disappearance that the other lists do not document. Zero people are found on all seven lists, zero people are found on six of the seven lists, and only two people are found on five of the seven lists (though the two people are found on different combinations of the lists, see the rightmost columns of the graph).

There is a reporting bias in the lists towards the well-known LTTE figures specifically because they were well-known and therefore easily recognizable. Many of the late or forced recruits to the LTTE would have been less well known, and consequently, less often reported. Those people who were not reported are part of the dark figure estimated below.

Estimating the Dark Figure

Figure 2 showed how many disappeared people were documented on the seven lists, individually and in combinations. But how many were never documented? What is the dark figure? By definition, this number is not known, so we have to estimate it.

To estimate, we use the following intuition: imagine two dark rooms. We cannot see inside them, and the only tool we have to explore their size is a handful of small rubber balls. The balls do not make any sound when they hit the walls or ceilings, but they make a small sound – *click* – when they hit each other. We throw the balls into the first room, and listen: click, click, click. We gather the balls and throw them into the second room with equal force: click. Our intuition is that the second room is larger because the balls are able to spread out and therefore strike each other less frequently.

Using databases, in some sense we “throw” the databases into the “room” of all disappeared people. When the databases document the same person, it is as if the databases collided, making a click. We can use the number of people documented on more than one list and the total size of the databases to estimate the total number of disappeared people, including those not on any of the lists.

A more technical introduction to this approach can be found in Lum, Price, and Banks (2013). The specific method we will use here was developed by Manrique-Vallier (2016).⁸ Crucially, the estimate below includes an analysis of how certain we can be about the estimate.

The estimate and the uncertainty are shown together in Figure 3. The curve shows the probability at each estimated number of disappeared people. Note that the red line on the left indicates the number of disappeared people were observed on one or more of the lists (443 records). The probability of any number of disappeared people below the observed number must be zero – after all, we observed this number, so there cannot be fewer.

⁸The software used for the estimates is [Bayesian Non-Parametric Latent-Class Capture-Recapture](#) by Indiana University Statistics Professor [Daniel Manrique-Vallier](#).

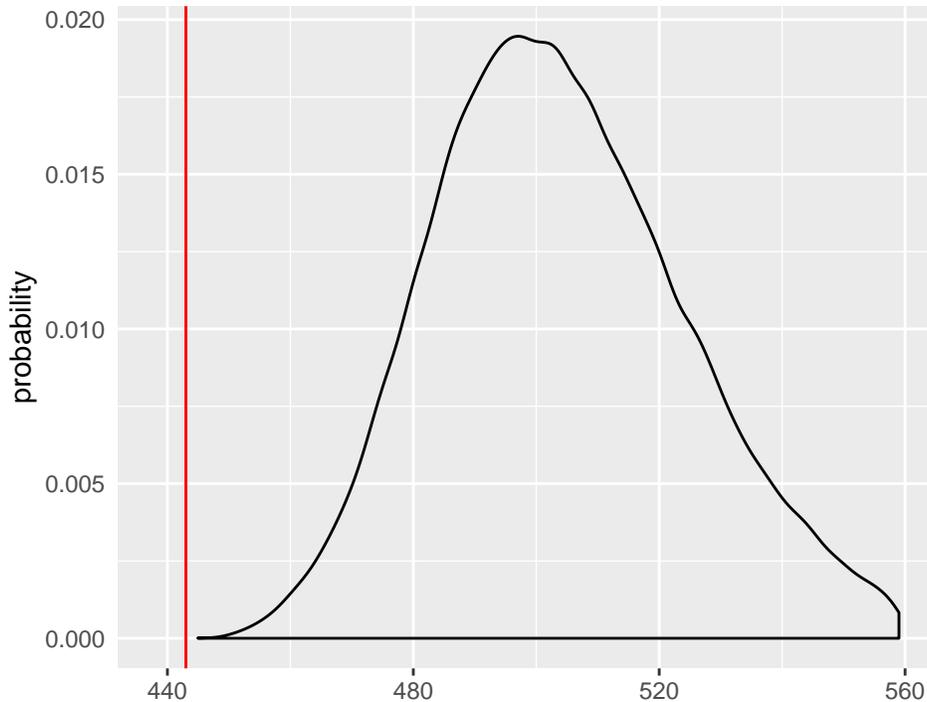


Figure 3: Estimated number of disappeared people, including those never documented

The estimate of the number of disappeared people we present, 503, is the center of the likely values (in this case, the median of the distribution). We don't know how many disappeared people might have been undocumented, so the estimate is in a "credible interval," which is a little bit like what is sometimes called a "margin of error." The interval in this case is [468; 554]. This means that with these data and this approach, there is a 95% probability that the true total number of disappeared people falls in the range from 468 to 554.

The credible interval expresses the technical, mathematical uncertainty around the estimate. In this case, we are certain about the left side of the interval because we know the number of unobserved disappeared people must be no less than zero. However, the right side has more uncertainty, that is, the true number could be considerably larger than our estimate. However, it bears repeating that given these data and this statistical technique, there is a 95% probability that the true total number of disappeared people falls in the range from 468 to 554.

This estimate enables us to make a specific probability statement about the number of undocumented disappeared people. The probability that there were 50 or more *undocumented* disappeared people is 0.69. That is, there is very approximately a 2 in 3 chance that there are 50 or more disappeared people who are not on these lists.

Conclusion

In many countries, disappearances are a form of specific, selective violence, but this circumstance was very different. Although these people are only a small fraction of the people disappeared in Sri Lanka, this event was extraordinary by the number of people disappeared in one location and in a very brief period: approximately 500 people were disappeared in only three days.

These people disappeared not in the fog of war, but after being taken into custody by the Sri Lankan Army and the Government of Sri Lanka. The names of the military divisions and their commanders—some promoted and many still serving in the army—have been known for many years. Almost a decade on, it is time for those military commanders to provide information to the families about the fate of their loved ones.

Appendix on Period 17-19 May 2009

This project estimates the total number of people who disappeared in the custody of the Sri Lankan army after surrendering on the last days of the war in May 2009. The reason for choosing this specific period is that it represents the largest number of enforced disappearances in one place and at one time in Sri Lankan history, and we know which army divisions and commanders were present accepting the surrenders (Office of the United Nations High Commissioner for Human Rights 2015).

There is a large number (309) of disappeared people documented only by the ITJP, and we believe these cases are sparsely documented because prior to the ITJP's call for information, many families have been fearful of coming forward. Indeed, some people have been in hiding since the war's end. Some people have children who were in the LTTE whom they fear could come under scrutiny if they lodge a complaint about disappeared people. There are wives who still believe their disappeared husbands are alive in detention, and they do not want to complain because by doing so, they might reveal information that could identify their spouse's role in the LTTE. In other cases, witnesses now living abroad do not have access to the enumeration mechanisms in Sri Lanka, and they may be unable to access the UN's WGEID processes because of the language barrier (United Nations Working Group on Enforced or Involuntary Disappearances 2018).

We have included only cases of enforced disappearance in the data used for this estimate. The disappeared cases were identified by including those individuals where:

- their families had personally handed them over to the army;
- an eyewitness testified to seeing them in army custody;
- an eyewitness saw them crossing the bridge or detained south of the bridge (i.e., identified by locations under Army control);
- an eyewitness saw them at Omanthai checkpoint;

- a list designated them as surrendered to the Army.

There is also a substantial number of people who went missing in the final months of the war. They could have been subjected to enforced disappearance, or they could have been killed or died of injuries and not recorded or identified. Documenting these cases, and estimating the number of people who remain undocumented, could be the subject of another project.

It is hard to describe the pain of family members who have struggled to get answers for almost a decade. Parents have died without finding the truth about what happened to their children. In some cases, whole families disappeared, including at least 29 children of LTTE cadres, and only the grandparents are left. Many families personally witnessed their loved ones surrender to the soldiers on 17-19 May 2009. Some have been informed if they cannot produce the name of the officer or the number plate of the bus that drove their children away, then nothing can be done to investigate. The blame for the lack of investigation has been put on the victims, not the State which took these people into custody.

Acknowledgements

The authors thank [Michelle Dukich](#) for doing the record linkage; and [Dr Megan Price](#), [Dr Kristian Lum](#), and [Dr Kate Cronin-Furman](#) for their clarifications and comments.

References

- Ball, Patrick. 2016. "Violence in Blue: Police Homicides in the United States." *Granta*, March. <https://granta.com/violence-in-blue/>.
- Christen, Peter. 2012. *Data Matching: Concepts and Techniques for Record Linkage, Entity Resolution, and Duplicate Detection*. Springer Science & Business Media.
- International Crisis Group. 2010. "War Crimes in Sri Lanka." 191. <https://www.crisisgroup.org/asia/south-asia/sri-lanka/war-crimes-sri-lanka>.
- Lex, Alexander, and Nils Gehlenborg. 2014–7AD. "Sets and Intersections." *Nature Methods* 11. Nature Publishing Group: 779. <https://doi.org/10.1038/nmeth.3033>.
- Lum, Kristian, Megan Emily Price, and David Banks. 2013. "Applications of Multiple Systems Estimation in Human Rights Research." *The American Statistician* 67 (4). Taylor & Francis: 191–200.
- Manrique-Vallier, Daniel. 2016. "Bayesian Population Size Estimation Using Dirichlet Process Mixtures." *Biometrics* 72 (4). Wiley Online Library: 1246–54.
- Manrique-Vallier, Daniel, Megan E. Price, and Anita Gohdes. 2013. "Multiple Systems Estimation: Techniques for Estimating Casualties in Armed Conflicts." In *Counting Civilian*

Casualties, edited by Taylor B. Seyboldt, Jay D. Aronson, and Baruch Fischhoff, 165–84. Oxford: Oxford UP.

Office of the United Nations High Commissioner for Human Rights. 2015. “Comprehensive Report of the Office of the United Nations High Commissioner for Human Rights on Sri Lanka.” https://www.ohchr.org/EN/HRBodies/HRC/RegularSessions/Session30/Documents/A_HRC_30_CRP_2.docx.

United Nations Working Group on Enforced or Involuntary Disappearances. 2018. “Report of the Working Group on Enforced or Involuntary Disappearances, a/Hrc/39/46,” July. Geneva: United Nations. <https://documents-dds-ny.un.org/doc/UNDOC/GEN/G18/236/81/pdf/G1823681.pdf>.