MedicalXpress

UCLA demographer produces best estimate yet of Cambodia's death toll under Pol Pot

April 17 2015

The death toll in Cambodia under Khmer Rouge leader Pol Pot was most likely between 1.2 million and 2.8 million—or between 13 percent and 30 percent of the country's population at the time—according to a forthcoming article by a UCLA demographer.

April 17 is the 40th anniversary of the Khmer Rouge's capture of the capital of Cambodia—beginning a four-year period that many consider to be a genocide. For decades, researchers have sought to pinpoint the death toll from political executions, disease, starvation and forced labor inflicted under the Khmer Rouge.

Conventional wisdom has placed the count between 1 million and 2 million, but estimates over the years have widely diverged, casting doubt on their validity.

"Most people who write about the Pol Pot regime deaths will come across a few numbers that range between a couple of round numbers—such as 1 million to 2 million—and they'll report the range without reflecting the uncertainty attached to it," said Patrick Heuveline, a professor of sociology at UCLA who is affiliated with the California Population Research Center at UCLA and UCLA's International Institute. "I wanted to provide a sense of how confident we can be that the actual death toll is within a particular range."

The research is aimed at determining a certain degree of confidence in the death toll figures, much like political pollsters do when they provide

a margin of error in predicting election outcomes.

The magnitude of death toll has taken on renewed importance because of an ongoing tribunal, backed by the United Nations, of three Khmer Rouge leaders on broad charges of genocide and crimes against humanity. Last summer two of the leaders were sentenced to life in prison in separate proceeding, on charges they masterminded mass evacuations of Cambodians from their homes.

For the past 20 years, Heuveline has conducted research on the demographic consequences of Pol Pot's regime and its aftermath.

Writing for *Populations Studies*, Europe's leading demographic journal, Heuveline evaluated the methodology behind the 12 most cited estimates of the death toll. His efforts uncovered what he called "striking" methodological errors in two of the estimates, which happened to be the highest (3.3 million) and lowest (700,000) ones. He concluded that the remaining 10 estimates were plausible but that each was based on a limited series of inputs among equally acceptable alternatives, meaning that none is any more credible than the other.

Like his predecessors, Heuveline set out to take into account factors that would have determined the Cambodia's post-war population had the Pol Pot regime not occurred, including pre-war census figures for fertility rates and the ages of Cambodia's citizens. Also like them, he took into account factors other than Pol Pot's reign of terror that could reasonably have diminished Cambodia's population. By subtracting the country's population count as derived from the first post-war census from what the population might have been expected to be had the war not occurred, he reasoned he could arrive at the toll that could be attributed to the conflict.

"It's like putting together a puzzle," said Heuveline, whose UCLA

research is focused on demography and population dynamics. "Once you get all but a single piece into place, you can see the shape of that final piece."

But where Heuveline's predecessors ultimately took into account no more than five variables, he incorporated 47 of them, including a range of possible permutations of migration in and out of the country, deaths by non-political causes and factors that might have affected the fertility rate, such as the adoption of birth control.

In all, Heuveline took into account 10,000 combinations of the 47 variables, and ran them through computer simulations, which revealed that there is a 95 percent chance that the death toll was between 1.2 and 2.8 million. (The frequency with which the simulations produced a specific death toll increased the probability that the number was correct.)

The simulations also revealed that a range of 1.5 million to 2.25 million has nearly a 70 percent chance of containing the actual death toll, he found. The probability that the figure was less than 1.5 million is about 15 percent, and the probability that it was more than 2.25 million is also about 15 percent, he found.

"If the death toll appears untrustworthy, people are more likely to question the extent of the evil that occurred," said Heuveline, who devoted six years off and on to the project. "The trustworthiness of the scale is important because the scale was so massive."

Provided by University of California, Los Angeles