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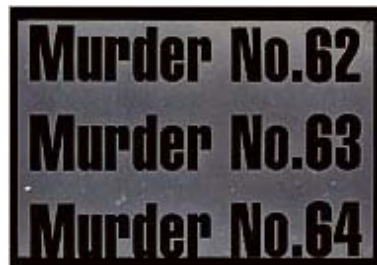
IDEA LAB

## The Forensic Humanitarian

By JIM GILES  
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**international human rights work** attracts activists and lawyers, diplomats and retired politicians. One of the most admired figures in the field, however, is a ponytailed statistics guru from Silicon Valley named Patrick Ball, who has spent nearly two decades fashioning a career for himself at the intersection of mathematics and murder. You could call him a forensic humanitarian.

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To understand Ball's accomplishments, you might start with the problem of counting rattlesnakes. For some time, a retired biology professor from Skidmore College named William Brown has gone hiking in the Adirondacks every summer with the aim of surveying timber rattlesnakes. When Brown finds a rattlesnake, he flips the animal over

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and checks its underside. If it's one he hasn't seen before, he'll mark it by removing a rectangle of skin from its underbelly. Each new snake is added to a list and returned to the wild. It is a good start. But to help guide conservation efforts, Brown needs a more complete census. To compile that, he has to answer an odd question: how many snakes has he *not* counted?

A statistical sleight of hand provides the answer. If the snake population is large, Brown will rarely see the same one twice. But if he catches the same animals repeatedly, chances are he is plucking them from a small group. Brown records the numbers of different snakes he finds and the frequency with which the same animals reappear. Plug those figures into the appropriate formula and out comes an estimate of the number of snakes he has missed.

In other words, it's not just what you've counted that matters, but what you haven't counted, and there are ways to count what you haven't counted. Biologists have fine-tuned the implications of this point. But, at least in the field of human rights, Ball has made it his own. In the trial of [Slobodan Milosevic](#), for instance, international prosecutors made use of the death tolls Ball had put together by comparing records from exhumations, human rights reports and other sources. When Ball and colleagues took on another project, a study of the violence that gripped [Peru](#) during the 1980s and 1990s, they started with a Truth and Reconciliation Commission report that listed 24,000 deaths. After examining the overlap with other sources, including government data, they put the true number of victims at nearly 70,000.

From his base at Benetech, a literacy and human rights organization in Palo Alto, Calif., Ball now has his methodological lens trained on Colombia. On the face of it, the country's crime figures look good for President [Álvaro Uribe](#). The paramilitary groups that earned Colombia its violent reputation began to demobilize in 2004. Since then, homicide data suggest that the country is a safer place to live — and Uribe has become one of Latin America's most popular leaders, even though critics charge that he has given the former militia leaders too much immunity and too much influence. In some regions, the murder rate has dropped by almost half. Both media reports and police records show substantial declines — surely the number of murders must be going down?



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Ball isn't so sure. By looking at several years' worth of police and media records, as well as at other sources, he is working up an estimate of the number of murders that fail to make it on to any of the lists. When he sees less overlap from year to year, it is likely that a greater number of deaths are failing to appear in any of the ledgers.

Ball's analysis is several months away from completion. But on the basis of data from just a few regions, he says it appears that the overlap between media and police reports is diminishing. Ball notes that there could be several explanations for this decline. One possible explanation is that both lists are missing more and more deaths, perhaps because murders are increasingly taking place in remote areas. If so, homicide rates may not be improving. It is too early to know if this phenomenon applies to the whole country, stresses Ball, but it seems that "the demobilization process is not affecting homicide rates."

One person who is likely to object is Michael Spagat, an economist at Royal Holloway, a university near London, who also studies Colombia and who has previously clashed with Ball. Spagat says that the trends in the data are too clear to be overturned by Ball's analysis: "He will have a mountain to climb to convince any reasonable person."

Still, Ball is undaunted. While prepared for attacks, his confidence in his methods is strong. In their Peru study, he and two colleagues wrote, "Statistical methodology has parted the veil of indifference and ignorance, and the true state of affairs . . . has begun to emerge."

*Jim Giles is a freelance writer who lives in San Francisco.*

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