

Feeding the five thousand -- or was it three? Researchers claim most crowd estimations are unreliable

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The public should view crowd estimation with scepticism, say the authors of a study published today in *Significance*, the magazine of the Royal Statistical Society and the American Statistical Association, as they suggest more reliable alternatives to current estimating methods.

Estimates of [crowd](#) sizes vary greatly, and the success of an event is often measured by the size of the crowd. Organisers of the 2007 "Stop the War" demonstration in London reported crowds of 60,000, whereas the police reported just 10,000. The US Government's estimate of the crowds at Obama's inauguration ceremony was 1.8 million, while other [estimates](#) were much less, closer to one million. "In the absence of any accurate estimation methods, the public are left with a view of the truth coloured by the beliefs of the people making the estimates," claims Professor Paul Yip, of the University of Hong Kong, one of the authors of the study.

Such a huge [discrepancy](#) in estimates is currently not unusual and suggests the use of crowd sizes as a political tool. Larger crowd sizes are a means of recruiting others to the cause, and it is more difficult for the authorities to ignore demands. "The authorities are sometimes put in a difficult position," says Yip. "It is important to highlight the shortcomings of existing estimating methods."

In today's study, the authors reveal several more accurate, more reliable

methods of estimating crowd sizes. Currently, even when searching for the truth, there is a wide margin of error. The authors recommend organisers and authorities use an area x density estimating method for static crowds, which reduces the margin of error to less than 10%. Furthermore, they have devised an entirely new method of reliably estimating mobile crowds. Two inspection points are placed along the route where the number of participants is estimated, not too close together and with one near the end. In applying this two-inspection-point method to the Hong Kong 1st July march (a demonstration of widely-varying claimed size and of great political sensitivity) since 2003, more reliable estimates can then be obtained.

"It is important to rectify the myth of counting people. The public would be better served by estimates less open to political bias. Our study shows that crowd estimates with a margin of error of less than 10% can be achieved with the proposed method," Yip concludes.

Provided by Wiley

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