

## Letter published in *Local Transport Today*, 6 January 2005

### In favour speed cameras but ...

There is a good case to be made for difficult-to-spot speed cameras, and far more of them, but the case should not be based on the accident reduction claims made for those that have been installed at accident black spots (LTT letters, 2 December).

The regression-to-mean phenomenon at the centre of the debate about the claims may, for some of your readers, be a rather esoteric statistical concept. The table below presents a simple illustration of its large effect. There is a random element to accident patterns that produces ephemeral clusters or “black spots”. Black spot treatments that do not allow for this phenomenon almost always claim too much.

<b>Regression to mean: injury accidents at 2637 unsignalized and unaltered junctions in Sweden</b>			
No. of sites	No. of accidents per intersection during before period, 1972-75	Average no. of accidents per intersection during equivalent after period, 1976-78	% difference
2039	0 (0)	0.19	+
441	1 (0.85)	0.42	-51
119	2 (1.70)	0.71	-59
24	3 (2.56)	1.33	-48
14	4.143 (3.53)*	1.50	-57

E. Hauer and B. Persaud, Transportation Research Record, 1983

\* These sites had four or more injury accidents during 1972-75. Figures in parentheses are exposure adjusted figures to allow for greater length of the before period.

In the last five years large numbers of speed cameras were installed. The installers claim credit for saving many lives. In Britain in 1998 3421 people were killed in road accidents. Five years later the number was 3508. The regression-to-mean effect offers a way of reconciling these claims and numbers. Installing speed cameras at black spots may have been as effective as installing garden gnomes. A statistician in charge of the installation of cameras, or gnomes, would expect a reduction, in the after period, of about 50%.

Accident statistics are not a valid measure of the safety or danger of the nation’s road network. In the early 1920s, with a nationwide 20mph speed limit and hardly any traffic, three times as many children were killed in road accidents – not because the roads are now three times safer to play in but because parents, fearful of traffic and strangers, no longer allow their children out anymore.

Road users are not obedient automatons. People respond to signals of safety and danger. People in big, heavy, SUVs with seat belts, airbags and crumple zones feel safer. Others feel less safe. The balance shifts. The latter retreat. Ubiquitous difficult-to-spot speed cameras, accompanied by serious financial penalties for speeding, would slow motorised traffic down – and other road users, on foot or two wheels,

might be encouraged to reassert their rights. Accidents might not be reduced, but the burden of risk would be redistributed in a fairer way.