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10 Jun 2015

Assessment of

LIFE SAVERS NOT REVENUE RAISERS, SAFETY CAMERAS IN IRELAND. A COST BENEFIT ANALYSIS

<http://rsa.ie/Documents/Road%20Safety/Crash%20Stats/Safety%20Cameras%20in%20Ireland.pdf>

Section 1 – false, misleading or meaningless statements in the analysis

Irish and international research indicates that up to 30% of road collisions have speed as a contributory factor.

Comment - As stated, the claim is nonsense as all collisions, on the road or anywhere else, involve speed. The recent sad case of a child killed by his mother reversing over him at 3mph is a case in point, one of the 85% of fatal accidents that no speed camera could do anything to prevent. Indeed, 95% of all reported road injuries do not involve speed above limits even as a possible contributory factor, let alone a likely one, so why quote that misleading 30% figure, unless to mislead the reader about the potential benefit of cameras?

For the record, in Britain according to police Stats19 reports from 2005, speeds above limits contribute at least to some extent to 5% of all, 9% of serious injury and 15% of all fatal reported road accidents and it is unlikely that Irish figures are significantly different. Note however these figures include both “likely” and “possible” contribution and are therefore bound to be overstated. They also include all degrees of contribution from primary to minor, hence even if no speeding element had been involved many would still have happened. That cameras cover only single figure percentages of road length further reduces the maximum effect of cameras to well below 1% of national totals, and at wholly disproportionate cost. The 30% claim is therefore a snare and a delusion.

Measures to reduce traffic speed are considered key to reducing casualties on the road. Increasing use of technology is seen as the way forward in the battle against road deaths.

Comment - Perhaps they are, but as will become clear, they most certainly should not be, they are worse than useless.

Studies have been carried out around the world and have consistently shown that considerable road safety benefits are achieved with safety camera programmes.

Comment - Many studies have indeed come to that conclusion but as explained in detail elsewhere, only because they have ignored basic statistical principles, ignored the vital importance of accident timing relative to camera installation and made astonishingly naïve assumptions. Unfortunately Mr. Rafferty failed to identify any of the often bizarre errors, assumptions and omissions in those documents and so perpetuated those false claims while adding nothing whatever to the debate.

Curiously too, given that they can be found easily on the Web, Mr. Rafferty failed to find any one of at least three serious analyses which established that cameras provide no meaningful benefits? One, *Speed Traps Saving Lives or Raising Revenue?* (2003, <http://www.safespeed.org.uk/buckingham.pdf>) determined that cameras have failed abjectly in Australia, the second and third by Dave Finney in 2010 and 2014 (<http://speedcamerareport-co-uk/>) not only set out in crystal clear terms the many failures of understanding and grievous factual errors common to most earlier reports but also showed beyond rational dispute that all of the accident reductions claimed by Thames Valley Police actually occurred immediately after the site selection periods ended, well before the cameras were even installed.

Time trend, seasonality, traffic levels and regression to mean were controlled for.

Comment - As will become clear below, the methodology was seriously flawed in all four.

The costs of installing and operating safety cameras were contrasted with the monetary value of benefits brought about by their presence on the Irish road network. This included the annual income generated by speeding fines and the value of lives saved and injuries prevented..... they generate a significant benefit to Irish society of over €70 million each year.

Comment - The Irish estimates of monetary value of lives saved and injuries prevented are broadly similar to the fantasies of Britain's Department of Transport, figures that are grotesquely overstated as set out in detail elsewhere. But nowhere else, not even in our DfT's La-La Land, have I seen the claim that fines paid by drivers to the State represent a benefit to society – as ludicrous a proposition as claiming that transferring cash from one trouser pocket to another makes the wearer better off! That is the economics of the madhouse, as plain daft as lifting oneself off the ground by pulling on the handle of the bucket in which one is standing.

And if that were true – why not fine everyone in the country to the full extent of their income and capital and make the State immensely wealthy?

However, these safety cameras do save lives in a cost effective way. Thus, continued expansion of the safety camera programme is a worthwhile objective.

Comment - Absolute Nonsense. As will become clear elsewhere, cameras provide no meaningful benefit in terms of accident reduction and therefore no financial benefit, even at the above grossly exaggerated value estimates, let alone in real terms. Instead they waste public money to achieve nothing and as a direct consequence divert funding away from effective methods.

At <http://www.fightbackwithfacts.com/cameras-versus-activated-signs/> you will find my detailed correspondence with our DfT starting with their absurd claim that cameras were more cost effective than other methods and ending with the Minister's letter admitting that their figures were wrong and that vehicle activated signs were nine times more effective than cameras.

Benefits Accident Savings e80,070,395 (and many similar numbers)

Comment - It is fifty years since this writer had his knuckles rapped by his physics teacher for showing the results of an experiment to an accuracy of 4 significant figures when his measurements could not have been accurate to more than 2. Now, it seems, M.Sc. dissertations are being awarded for thesis purporting to show to an accuracy of 9 significant figures results of calculations based on subjective estimates, assumptions, data unlikely to justify 2 significant figures (if that) and liberal doses of wishful thinking!

As an electronic engineer running his own company for thirty years this writer would have fired any engineer reporting such results, on the grounds that he clearly did not understand what he was doing!

Benefit - Cost Ratio 5.24

Comment - Think of a number, multiply it by an estimate, divide it by an approximation – and quote the result to 3 significant figures! As above, nonsense which implies that the author simply does not understand the limits of the accuracy of either the changes in accident numbers or their real values.

According to the OECD's International Road Traffic Accident Database (IRTAD) (2014), the main changes in policies and legislation in the past decade that have influenced road safety in Ireland were the ...Introduction of the penalty points system for speeding offences in November 2002; Operation of the Safety Camera Network, and the.....

Comment - The statement might well be true in the literal sense, but what is missing is any comment about the scale of “influence” those policies actually had on accident and injury trends. As it stands it is therefore meaningless, and if elsewhere the document claims significant and cost effective influence that could only have been that the authors had no idea what they were doing either.

Table 2 Economic Costs of Road Accidents

Comment - The figures being of the same order as those for Britain suggests that the same invalid assumptions and methods are used. For example:-

- whatever value may be placed on the pain and suffering of accident victims, none of it exists in any known ledger as a cash sum – it is notional and subjective and (as the UK National Audit Office has stated) should not be portrayed as a cost or a saving of expenditure.
- The loss of output resulting from a road fatality: In Britain at an average age of a road fatality is 43 and according (other things being equal) that individual's output would be lost for about 20 years, But on the other side of the ledger (surely any economist should know that there is always the other side?) 40 years or so of consumption is also eliminated. Given that some 60m workers support some 30m not at work, in broad terms the two cancel out. Accordingly the “lost output” element of the e2.706m figures (note again the absurd 4 figure accuracy) should be zero or less or more likely negative. Indeed, in purely economic terms and bearing in mind the huge problems arising from ageing populations, the State would be far better off if everyone in a country died the day they retired so that pensions, old folks homes, nursing and medical care would be massively reduced!
- Anyone who believes that road injuries lead to lost output over and above transient effects should ask this question of anyone who has run a business: “The production manager's telephone rings and he is told that an employee has been injured in a road accident and will not be able to work for months, if ever. Does the manager (a) reach for his spreadsheet to downgrade production schedules according to the contribution of the injured party (b) ring Personnel to hire another employee, increase overtime or (c) take any other necessary step to maintain production to meet demand? As owner and managing director of a manufacturing business for 30 years I knew without having to think about it what my answer was, whatever the reason for the reduction in man-hour, and I have asked that question of at least 10 people familiar with running business. The response was always the same – first a blank stare of astonishment that anyone would need to ask that question, followed by the reply that they would find replacements to be able to meet demand. And that if they didn't their competitors would.

In other words - and as any economist should surely know - output is, overall, determined by demand, not by supply of labour. (Of course I recognise that there are very small numbers of irreplaceable people – but there are also (probably larger) numbers of crooks, villains and thugs whose “output” we could all do without).

- In the case of slight injuries, with even less effect on output, the idea that large numbers of people would choose to pay many thousands of pounds to avoid the risk of slight injury is surely preposterous given the amounts of money millions pay to experience risks such as motor cycling, racing, roller coasting, mountaineering, parachuting etc.
- In summary – those figures are utterly preposterous – the obvious cost to the British State of a fatal accident, of the order of £20,000 is no more than a rounding error on intangible costs, and effectively nil.

The Crucial Role of Speed

There is a consistency in road safety research findings throughout the globe over the past decade when it comes to the relationship between speed and road accidents. In terms of actual fatalities and injuries experienced worldwide, it is suggested that speed contributes to around one third of all fatal crashes (OECD 2006)

Comment - Indeed so – but as before, that 30% figure is split more or less evenly between speeds below and above limits, so the figure relevant to speed camera analysis is no more than 15% - and probably rather higher as most drivers take advantage of official margins of 3% plus 2mph. To quote 30% is seriously misleading.

In the UK it has been established that excessive or inappropriate speed is a major contributory factor in at least one third of all road crashes, making it the single most important contributory factor to casualties on UK roads (Butcher 2013)

Comment - Plainly wrong– in fact speeding is so low down the UK list of causal factors that it does not appear in the top 10 – see Table 2 in Causation 2005 attached showing 12% for fatal, 7% for serious and 4% for slight.

The RSA (2014) reported that of all fatalities and serious injuries recorded between 1997 and 2011, speed was a contributory factor in 22% of fatalities and in 19% of serious injuries

Comment - Again misleading as it fails to differentiate between speeds above and below limits

The UK's Transport Research Laboratory (TRL) (2005) suggested that each one mile per hour reduction in average speed can produce a 5% reduction in road deaths. Elvik (2004) concluded that there is a definite causal relationship between speed and road safety

Comment - These infamous claims are yet more abject nonsense and have long been recognised as such. For example, the average speed of 49 cars doing 49mph and 1 doing 99mph is the same as that of 50 cars doing 50mph - but the risk is clearly not the same. Does that not demonstrate that average speeds are no meaningful indicators of risk? And that, at least as important, are speed differentials, leading to tailgating, overtaking and road rage.

Professor Allsop admitted in correspondence that the analyses in question carry warnings about not to use them out of context – but that is what has been done ever since the nonsense was published. The main errors in the two claims are (a) while the correlation might exist for a two sets of roads, correlation does not prove causation and (b) assuming that measures which then drive down speeds on the faster roads will automatically reduce accidents fails totally to allow for the Law of Unintended Consequences, i.e. the often negative effects of those measures such as compliant drivers slowing down but others not, leading to greater speed differentials, tailgating, overtaking (locally, even across double white lines) road rage – and hence more accidents.

In any case traffic engineers have known for many decades that the safest speed limit for any given road is the 85th percentile speed, the speed which 85% of drivers do not exceed even if the limit allows them to do so. All that forcing speeds down on those roads does is to increase risk.

It follows that all else in the analysis is seriously flawed because the significance of speeding is much overstated, the economics can only be described as a basket-case and in any case the practical reality, as will become clear, is that cameras do not cut accident numbers.

This is a view formally endorsed in Ireland by the Department of Justice (2005) who recommended that modern camera technology should play a greater role in the context of traffic law enforcement in Ireland

Comment - And what, precisely, does any Department of Justice know about the effectiveness and cost effectiveness of cameras, other than what they have seen in flawed and incompetent analyses since 2001? Would I take dietary advice from a lawyer or woodworking tips from an electrician? Their view is of no significance, as it is merely an echo of the information they have been given by those who have no idea what they are doing.

This was a position fully supported by the Garda Inspectorate (2008) who, based primarily on experiences in France, "...enthusiastically endorses the Irish Government's decision to proceed with the purchase of safety cameras." They maintained that the cameras, coupled with a strong public information campaign, would deter speeders and serve as an effective collision prevention tool.

Comment - I understand that in the UK no police officer, even at the very highest level, is ever given training in statistics – perhaps the same applies in Ireland, so that their second-hand opinions are worth no more than those of the above lawyers? In any case I have read that claims of success in France were based on the same trick as in Thames Valley – claiming credit for reductions that happened after site selection but before installation.

As of July 2014 there are 727 stretches of road identified as speed enforcement zones. These account for 2,354 km of road network – or 2.5% of the 96,000 km in the country. These same stretches of road accounted for 48% of all fatal collisions in the years 2006 to 2011

Comment - By selecting for cameras roads that experienced a wholly disproportionate share of national accident numbers, and because by their very nature, accidents tend to happen somewhere else next year, the authorities effectively guaranteed large reductions in following years.

Safety Camera Policy Issues

The objective of the overall safety camera project was set out clearly by the Department of Justice (2005) as being to reduce the number of speed related collisions by:

- 1. increasing compliance with speed limits across the entire road network;***
- 2. reducing the speed of vehicles at locations that have a speed related collision history; and***
- 3. Acting as a deterrent to driving at excessive speeds.***

Comment -

1. After 15 years there has been no significant change in average speeds across the whole of the UK.
2. Further, while speeds at camera sites have fallen, to an extent, accident numbers have not fallen any faster than where there are no cameras.
3. But only in any case cameras, covering only 2% to 3% of roads

Paul Smith and Safe Speed the self - exposure of a crank - the Guardian 2005. Available from: <http://www.monbiot.com/2005/12/22/paul>

Comment I knew Paul Smith well before his untimely death, and his analysis was the best available in those years – all-but flawless. George Monbiot in contrast is an absurd figure, consistently wrong about almost everything, as he is in that deeply offensive article. Furthermore, when I challenged him repeatedly about the many factual errors in that article - he did not even have the integrity to reply. Anyone who quotes his ill-informed nonsense to support this or indeed any other argument is out of his depth.

CHAPTER 2

Research Aims and Methodological Approach

2.1

Study Objectives

This study is an attempt to assess the overall value of the safety camera system to Ireland and its citizens. The aim of the study is:

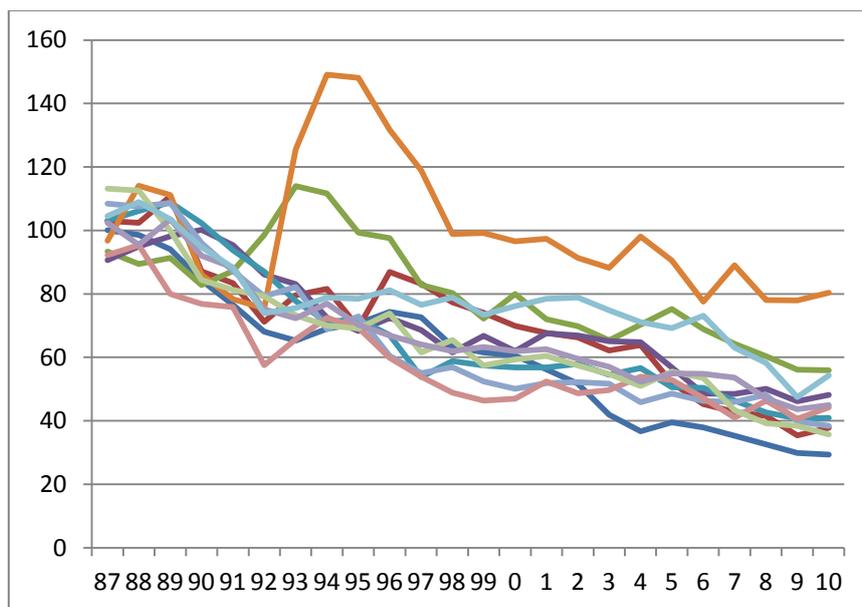
“To provide a detailed and rigorous cost benefit analysis in relation to safety cameras, by identifying and quantifying the whole range of relevant factors and producing a comprehensive and clear account of the analysis process”

Comment - An abject failure, littered with fundamental statistical and economic errors. The author appears to have reviewed the many seriously flawed analyses published from 2001 onwards, failed to identify any of those errors and then regurgitated them in this “me too” thesis, whose only achievement is to lend unjustified credence to what had gone before. By doing so he has helped further damage road safety by encouraging the spending of necessarily limited funds on cameras that achieve little or nothing and come nowhere near covering their costs.

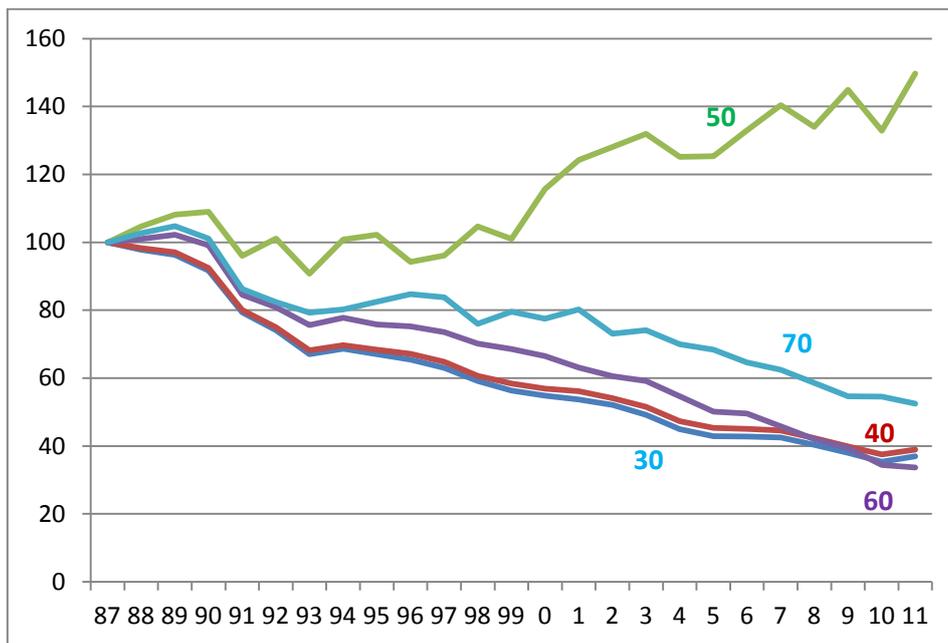
These errors are identified and explained below in the sequence in which they occur but the main ones are these (based on UK patterns and data as the Irish data is not available)

Before and after site data had been adjusted for trend using the national trend regardless of speed limit, apparently unaware that trends vary significantly by area and by speed limit – see graphs below

Differing FSC trends in 10 UK police areas



Differing FSC Trends by Speed Limit - GB

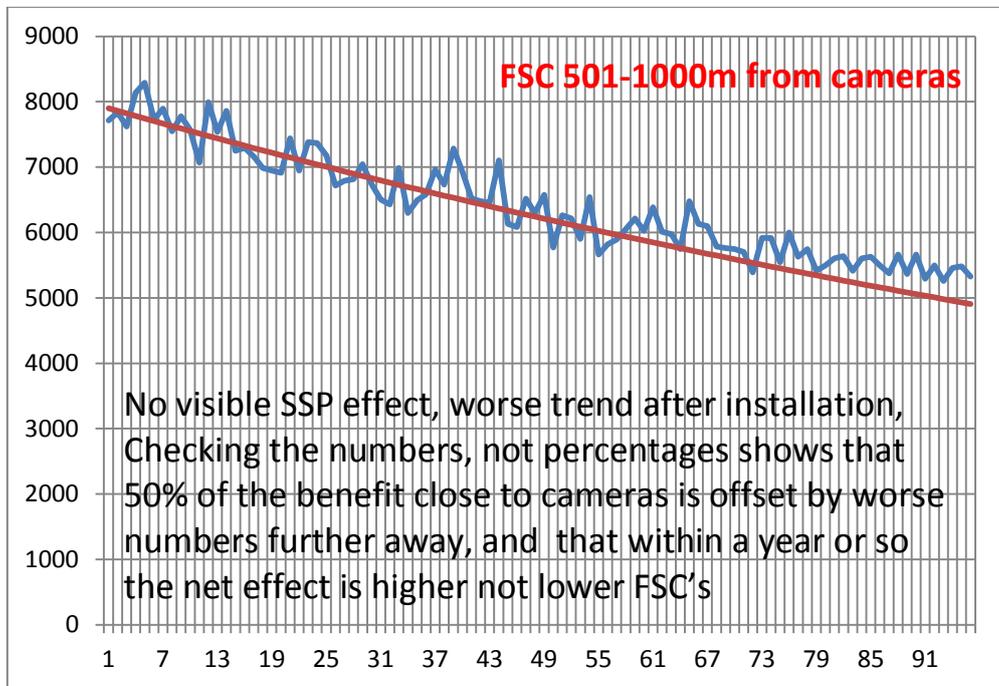


Is Mr. Rafferty unaware of these huge variations that can change his data far more than cameras ever could?

Because cameras are installed at point in the calendar year, annual accident data is simply not precise enough to determine accurately which accidents occurred before installation and which afterwards – a vital difference for obvious reasons – see the Finney Report for the critical importance of timing.

As statisticians have known for more than a hundred years, regression to mean changes occur the instant the selection period ends. This is one of many graphs I have available, for month-by-month FSC totals for notional sites selected for at least 4 KSI in a 3 year period – similar to the way most real sites are selected. Months 1 to 24 involve no selection, months 25 to 60 involve selection and months 61 onwards again no selection, As you see, and as every one of the many graphs I have available confirms, there is a large and sudden fall in month 61 – and indeed in the first few minutes of month 61. Why? By definition – because those sites, not selected for abnormality, must by definition be normal, with normal rather than abnormal numbers. And using annual data makes it impossible to see how sudden those RTM falls really are, and that they happen well before the cameras can be installed.

No one can accurately define the geographical limits of camera effects because drivers often do not know where they are, some will divert to avoid them when they can, some will slow down for cameras but accelerated again once past them, others may fear cameras where there are none and yet others will spend too much time looking at their speedometers or for cameras instead of at the road ahead. By limiting analysis to official site boundaries and data this thesis cannot provide any evidence whatever of what happens to accidents near but outside site boundaries – and this writer has compelling evidence that minor reductions near cameras are more than cancelled out by increases in surrounding areas, for example the following graph of FSCs by month relative to installation date in month 61



How can Mr, Rafferty base his claims only on data within the official site boundaries, with no idea what happens nearby?

Crucially, though, the comparisons will only be made after controlling for as many of the typical cofunders

Comment - Surely he means “confounders”?

The Transportation Safety Council stated that the following three causal factors or effects must be fully quantified and isolated

Exposure.... Trend..... Random effects

Traffic patterns and accident frequencies have direct relationships.

Comments – “Traffic patterns” is a phrase new to this writer in the 14 years he has studied this subject, nor is there any known method to define or analyse them. If what they meant was “traffic volume” as Mr. Rafferty seemed to believe when wrote **“The expected number of accidents at a road site is proportional to the traffic flow”** then they and he are plainly wrong:

- When traffic levels are very low almost all accidents involve single vehicles. As levels slowly rise then the probability of accidents rises faster than in proportion to traffic level because the risk of collision with another vehicle is added. However when traffic volumes become quite high drivers find that they have to concentrate much more with the result that accident numbers due to daydreaming first level off and then to fall until ultimately there are no accidents of any significance as nothing moves fast enough to cause one. Call that “proportional”? I think not!
- It is also important to note that traffic flow, defined as the number of vehicles passing a given point in a given time – on busy 3 lane motorways up to 18,000 per hour – tells us nothing whatever about risk unless we also know the relevant speeds. This is because drivers automatically adjust their following distance according to their speed – ideally to maintain the recommended minimum interval of 2 seconds. For example – the risk involved in driving at 70 mph at the recommended minimum spacing of 68 feet is clearly very different driving at 10mph 10 feet behind the next car – but traffic flow, as defined, is the same. Not that it matters, as traffic volume/flow numbers are never measured accurately anyway, so no such adjustment can be made.

- All that can safely be said is that very few drivers indeed deliberately change their routes to pass speed cameras but that it is quite likely that at least some drivers will choose routes without cameras in preference to those with them, resulting in a false impression of falling accident numbers when all that happened was that they moved elsewhere.

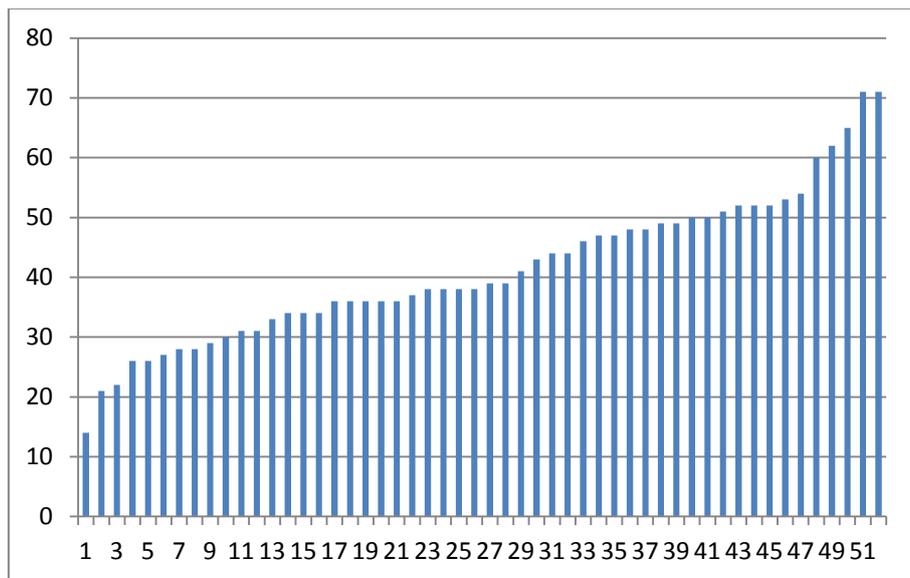
Trend – covered above

Random Effect: This occurs because of the phenomenon of RTM

Comment – this curious statement provides further evidence, if any were needed, that Mr. Rafferty does not properly understand Regression to Mean (RTM) Random effects occur because accidents, normally caused by the near random coincidence of two or more causal factors, are themselves close to random (at least in terms of precisely where and when they occur, though clearly not in terms of annual totals.)

RTM is therefore a long and well understood consequence of the near-random nature of accidents, combined with the selection of camera sites being biased towards locations which recently suffered accidents, rather than where there had been none. As stated elsewhere, the same RTM effects that apply to pure chance, such as in card games, dice-throwing or lotteries, inevitably results (given large enough numbers in all examples) in accident reductions at those sites even if no cameras were installed.

This graph, for example, shows the KSI % fall from the 3 year totals of notional sites selected for a minimum of 4 KSI, to the totals in the following 3 years:



As the total number of 1km sq sites contributing to this graph was 131,303 it is clear that very, very few of them ever had cameras installed even though they would have qualified for them under the most common rules. Highly congested areas are at the left hand end; remote areas like North Wales and Scotland are at the right hand end. The significance of this graph is that it shows very clearly that the large reductions often claimed for cameras – far greater than they could ever achieve by slightly slowing traffic – occur right across the country without cameras. That is why RTM needs to be fully understood and accounted for, which Mr. Rafferty clearly failed to do.

The expected number of accidents at a road site is proportional to the traffic flow

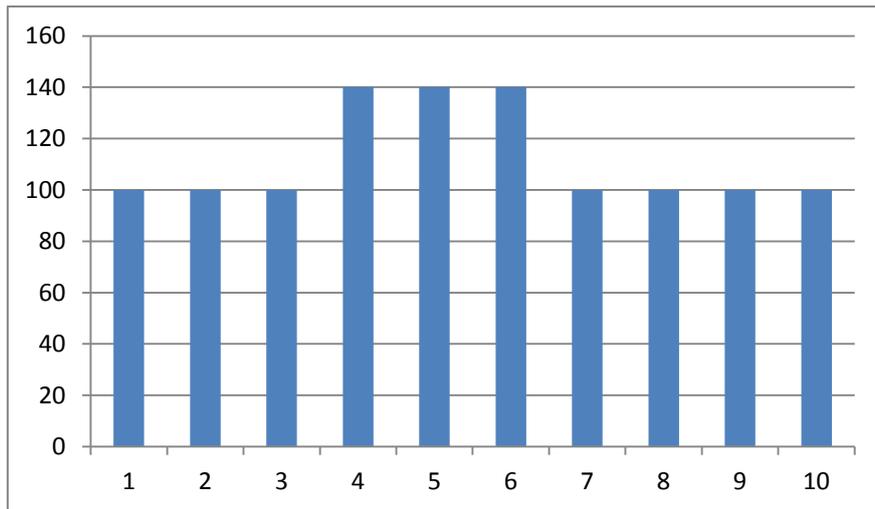
Comment – see above, simply not true

The sundry number of factors that exerted a downward influence on road safety casualties at a national level would have had an identical impact at sites where cameras were installed.

Comment – as above, simply untrue, these effects give rise to trends that vary substantially from one area to another and from one speed limit to another. Adjusting data for the wrong trend is arguably worse than not adjusting them at all.

Using data for a period of six years before the introduction of safety cameras eliminates or severely dilutes any possible RTM effects

Comment - If much else in the analysis is nonsense – as it is – this sentence is nonsense on stilts, for these reasons:



Assume that the normal average level of accidents at this group of sites is 100 but that site selection bias lead to an average level of 140 in the 3 year selection period. Ignore trend and assume no camera effect. Clearly, comparing post-installation numbers to site selection period numbers (astonishingly and unforgivably this is how many analyses were done) there would be a spurious camera benefit of 140 down to 100 of 29% - assuming that cameras were installed in year 7.

However most cameras become operational a year or more after site selection due to data acquisition and logistic delays. Mr. Rafferty seems unaware of these delays when he assumes that site selection immediately precedes installation, so his false camera effect for cameras installed in year 8 would be $(140 + 140 + 100) / 3$ to 100 = 21%

But using his “average of 6 years before installation” it becomes $(100 + 100 + 140 + 140 + 140 + 100) / 6$ to 100 = 17%

However, anyone who has studied UK data soon finds that the site selection periods vary all over the place – and up to 15 years before installation! (This presumably happens because priority is given to some sites over others, and the others are then added in later years as funds become available). It is therefore possible and even likely that many of the selection periods will have been in years 1/2/3 – when false camera effect will again be 140 down to 100 or 29%, or 2/3/4 when it will again be 21%.

Mr. Rafferty’s 6 year average method therefore has an entirely unpredictable effect which depends on the timing of the site selection periods and the numbers within them. The most likely effect is that when selection periods range across those 6 years and levels vary randomly his method merely halves the false camera benefit figure, by no means “eliminating or severely diluting any possible RTM effects”. As a consequence his results are simply invalid.

The level of driver education and associated publicity campaigns particularly with respect to speeding did not appreciably change.

Comment – another extraordinary assumption as, surely, the primary purpose of cameras is to change drivers' behaviour?

Every step shown in **Box 1** has already been exposed here as seriously flawed, the only one needing further comment is

Step 3, Adjust the figure found under Step 2 to take account of changes in traffic levels and flows between the two periods.

Comment – In GB there is not remotely enough traffic volume data for sites to be able to carry out any such adjustments, nor is it at all clear to this writer what the difference is between “levels” and “flows”.

In the absence of a full CBA or other formal appraisal tool it appears as if the decision to use safety cameras on a wide scale on Irish roads was taken on the basis of their perceived success in other jurisdictions as set out in Smith et al

Comment – yet another example of the blind leading the blind? The plain truth about the spread of cameras around the Western world is that it has been due to seriously flawed analysis, the failure of almost all later analyses, including this Thesis, to identify those flaws and expose them, and to the wilful refusal of the authorities ever to admit that they have been wrong all along.

For those reasons this writer sees no point in reviewing any of the papers referred to, many of which he is already familiar with, all of them being incompetent nonsense – as should be perfectly clear from their claims of accident reductions achieved that were far higher than the proportions ever attributed to speeds above limits. Most of those errors will have been due to abject failure to understand RTM and how to adjust for it or for trends.

Professor Allsop might have thought that his methods excluded RTM effects but Mr. Rafferty's document searches failed to find his two updated reports in which he more or less used Mr. Finney's method and by substantially reducing his estimates of benefit effectively confirmed that he had been wrong in 2010.

This writer was one of two campaigners who provided data and analysis to the UK Statistics Office that helped them reject out of hand the absurd claims of the Scottish Camera Partnership that resulted in Professor Maher being called in to advise them on how to do it better. They still have not done so, primarily because they have no one who understands the problems.

All other things being equal the more traffic there is the more accidents that are likely to happen.

Comment – as above, by no means always the case, in heavy traffic accident numbers may fall because of much lower speeds and greater driver concentration.

To isolate the camera effect on accidents the effect of different traffic levels must therefore be acknowledged and accounted for.

Comment - This cannot be done in GB because there is nothing like enough traffic data, and it is likely that the same applies in Ireland

Thus, a correct study must ensure that account is taken of national trend.

Comment – as above, plainly wrong because local trends can be very different from national trends, and different again at different speed limits.

Professor Stephen Glaister Director of the RAC Foundation, who commissioned the work asserted in the foreword to Allsop's work that "...the overwhelming evidence is that if safety camera s0 were decommissioned across Great Britain then about 800 more people per year would be killed or seriously injured".

Comment – absolute nonsense, and indeed Allsop subsequently lowered his estimates substantially, once when this writer pointed out that he could find the same reductions in North Yorkshire – years before it had any cameras at all!

An effort was made during the course of this research to identify other, less obvious costs which might be associated with the introduction of camera technology. This issue was discussed with all the key agencies involved, but no additional costs of any significance were identified

Comment – “They would, wouldn't they?” to quote a famous witness reply! How about these costs:

- Accidents caused by cameras
- Time, legal fees and other costs borne by drivers, keepers and others in dealing with charges and defending themselves in court
- Jobs lost and business destroyed by driving bans
- Accidents and injuries that could have been prevented had the money been used on effective methods.
- Longer journey times and greater congestion as a result

And many others.

AGS and GoSafe reported that the communities in the areas where the camera sites were located were quite welcoming to the GoSafe cameras and their employees.

Comment -“They would, wouldn't they?” to quote a famous witness reply! Anyone who thinks the majority of the public should read comments on newspaper web sites reporting on them! To the extent that some do approve of them, that is only because they have been systematically misled about their benefits for years.

There is no reason to believe that the combination of all these measures would not have had a similar level of impact on safety camera locations as they did on all other locations across the country.

Comment – as before, there are huge local variations in local trends compared to national, and again by speed limit so adjusting local data for national trends is problematical to say the least.

This calculation will be carried out on the traffic adjusted figures for all national sites excluding camera sites. This is because using the full national figure which includes the camera site data, would in effect lead to a double counting of the benefits of the camera regime

Comment – simply untrue. It is of course better to compare changes at sites with changes elsewhere rather than everywhere, but the effect of the latter does not remotely approach “double counting” because site numbers are always far smaller than non-site numbers.

The monetary benefit of accident savings.....insurers (who may have to meet costs associated with the accident)

Comment. It seems that Mr. Rafferty no more understands insurance than he does RTM – including costs borne by insurers would indeed amount to double counting! The basic principle of insurance is that large numbers of people club together to pay into a pool that can afford to pay claims that individuals could not. Whether the costs of an accident are paid by an individual or by his insurance company is irrelevant here, because whatever sum is paid is paid only once, not twice!

as well as the economy as a whole (in terms of lost output if the injured cannot work)

Comment – as before, there are no such costs because the output no longer produced by the casualty is taken up by others, to meet demand that determines output. It's nonsense! Most of Table 12 is therefore fantasy.

Value of accident reductions

Comment – more fantasy, because cameras do not bring about those reductions and the values allocated to those reductions are absurd. Cameras do not remotely cover their costs, never could and never will.

Value of fines and penalties

Traffic cameras also generate revenue in terms of fixed penalty income and the recovery of fines and costs awarded by the courts against offenders. These payments represent what can be described as a "transfer" between one section of the community and another i.e. the benefit to the Exchequer of additional income is offset by costs to offenders.

Strictly speaking, transfer payments should be excluded from a cost benefit analysis, since they do not represent an additional gain to the community as a whole

However, it is arguable that fines should be treated as a benefit for the purpose of this cost benefit assessment,

Comment – as previously, that statement is not remotely arguable, it's false accounting by any sane standard.

it would seem perverse to treat the consequence of law enforcement as a 'cost' to offenders.

Comment – further and further into Alice in Wonderland! Of course fines **are** costs to defendant, in exactly the same way as lost wallets, and every other cost they bear. What is perverse is to claim that they are not, and then include those sums in "camera benefits"

The actual amounts generated followed the expected pattern of starting off at a high level and then beginning to drop significantly as the deterrence effect took hold.

Comment - The primary effect of being caught by a camera is increased determination not to be caught again, and buying camera warning devices that cost no more than one fine!

Feedback from AGS suggested that the introduction of camera technology had released traffic officers to undertake alternative duties. This suggests that practical – and not simply theoretical – benefits were already being experienced by those agencies which bear the cost of accidents

Comment – The great majority of UK drivers see the reduction in police patrols brought about by cameras. Patrols that can monitor all sorts of bad driving not just speeding, as a problem not a benefit and most newspapers seem to agree.

Estimation of overall costs and benefitssafety cameras yielded a surplus of benefits over costs. The surplus was very significant due to high level of accident reductions estimated to have been achieved by, and attributable to the cameras

Comment – yes indeed, estimate the total value of accidents prevented using wildly inflated figures both for the number prevented and their individual values, and deduct from that total less than comprehensive estimates of costs incurred and it is always possible to come up with the desired result – but it's still garbage – and that's even before the estimates and guesses are quoted to 9 figure accuracy!

Traffic levels at camera sites fell by 5.69% between the before and after periods.

Comment – did they indeed! To one part in 569 I wonder how they arrived at such an accurate figure, given for example that the data is rarely measured (presumably for cost reasons) and then only for relatively short periods, the before and after of which might well have suffered or enjoyed very different weather or local events?

Substantial net benefits are generated for all scenarios.

Comment – but only because substantial errors and false assumptions occur throughout the data

Conclusions The cost benefit analysis (CBA) carried out in this Study has clearly demonstrated that the use of safety camera s has generated substantial net benefits to Ireland. In addition their payback period is practically immediate. From the first year of their operations the overall monetary value of the benefits they delivered far exceeded their costs. This was the case even when the data was remodelled using more pessimistic assumptions about the various values of costs and benefits.

Comment – but only because substantial errors and false assumptions occur throughout the data, the single most important being to claim that cameras reduce accidents by a far higher proportion than ever involve speeding in the first place. **As computer users say “Garbage in, Garbage out”.**

The model followed by Transport for Scotland where they publish an annual statistical assessment of the impact of safety camera s is one worthy of consideration in an Irish context

Comment – Mr. Rafferty seems unaware that the claims of the Scottish Camera Partnership were comprehensively rejected by the UK Statistics Authority -. Despite the claims having been defended by the head of the Scottish Statistics body! See <http://www.fightbackwithfacts.com/false-claims-scotland/>

Concluding Comment

Never in my long career as an electronic engineer, and not often in the devious and dishonest world of speed cameras, have I read any analysis so at odds with the facts and so devoid of understanding of the main issues at hand.

Idris Francis

16 June 2015