

# Risky behaviours: Preferable to crashes for evaluating road safety mass media campaigns?

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What type of paper is this?

- Review.
- + Interpretation.
- (No new data.)



Advertising, education, training, etc.: controversial.

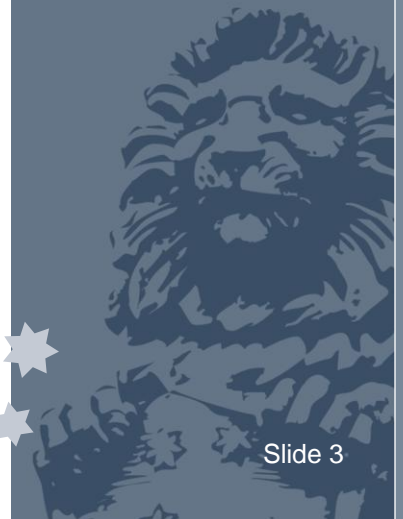
My summary (subjective).

- Decades of research have failed to establish whether or not mass media advertising can reduce road crashes.
- The probable reason is that the effect is small (or perhaps zero) and the random variability in crash numbers is too great.
- Campaigns being very cheap per person reached, even low effectiveness may be enough to be worthwhile.



It's all very well to say that advertising has never proved its worth.  
BUT there are big weaknesses in the case against advertising.

- The evidence is short term. There may be long-term effects.
- Failure in the past is not evidence of failure in the future, when something else is tried.
- Absence of evidence is not evidence of absence of an effect (at least if we are using statistical significance to judge by).



I want to start with this last point, and reframe it as:

- The many findings that are compatible with zero effect are also compatible with a small effect.
- And we are interested in the possibility of a small effect (because advertising is very cheap per person reached).



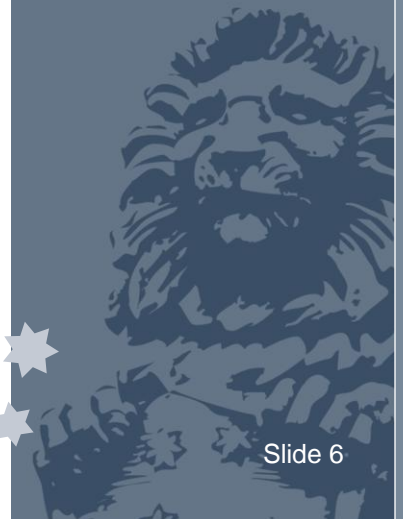
General structure of this presentation:

- We don't know, and we're never likely to know (based on crashes).
- Can we use something else besides crashes?
- How can we judge whether we can use something else?



Three alternatives to before-after comparison of crashes as the method of determining effectiveness of an intervention are discussed:

- real-world experiments of high methodological quality,
- laboratory experiments of the social psychological type, and
- the measurement of safety-related behaviors.



- The third of these, before-after comparison of behaviors or variables that can be objectively observed and are closely linked to safety, is suggested as the most promising.
- However, the behaviors that might plausibly be used as proxies for crashes are quite few in number.
- There is an urgent research need to find more of them, together with theory implying that a change in the behavior does indeed mean a change in safety.





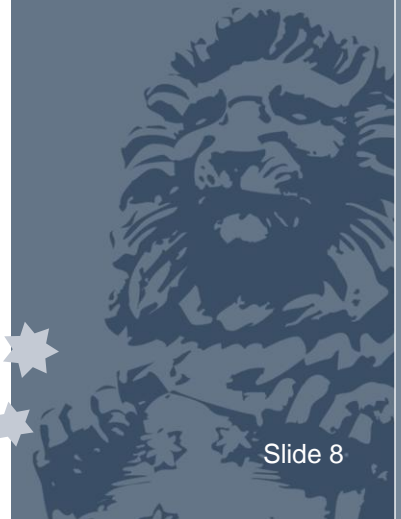
Intervention



Behavior



Crashes



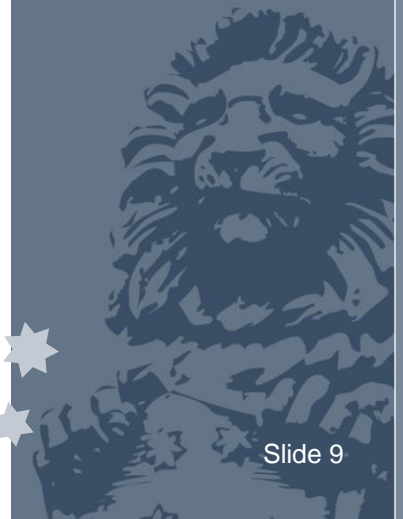
Intervention



Behavior



Crashes



The point I am making is not specifically about interventions, it is about observations also.

Observation



Behavior



Crashes



- Speeds
- Offences
- Traffic conflicts

- alcohol (breath, blood)
- usage of secondary safety devices (e.g., seatbelts)
  
- drivers' head movements at junctions
- gap acceptance
- pedestrians crossing as designated crossings rather than elsewhere
- taking a break on long journeys
  
- scales and questionnaires



- Speeds
- Offences
- Traffic conflicts

Suppose we find an effect on speeds. How do we know there will be an effect on crashes?

Suppose we find an effect on offences. How do we know there will be an effect on crashes?

Suppose we find an effect on traffic conflicts. How do we know there will be an effect on crashes?



The more detailed the theory connecting behavior and safety, the better can its plausibility be judged.

Speed is probably the most broadly plausible indicator of danger or safety: reduce speed, and a reduction of crashes is very likely.

That argument has some force on its own, but it is improved if details are included about the speed range and circumstances in which a lot of crashes happen.

- If a countermeasure is shown to reduce speeds in the speed range within which most crashes occur, there can be confidence that the overall risk of crashing is reduced appreciably.
- If the effect on speeds is confined to a speed range in which crashes are few, its effect on crashes will be small.
- Similarly, a reduction of speed among the types of drivers who have most crashes or at the types of site where crashes are most frequent will suggest a worthwhile reduction of the overall risk of crashing.
- An effect on safe drivers or at safe sites will suggest only a small effect on crashes.



- Suppose it is claimed that some theory --- or perhaps common sense --- tells us that so-and-so change in behaviour will lead to a reduction in such-and-such type of accident.
- How can we judge the correctness or plausibility of the one thing leading to the other?
- It seems that we need some theory about theories.





## In conclusion ....

- Observations.
- Laboratory experiments.
- Real-world experiments.

None of the above will typically involve real-world crashes before and after interventions, if I am right to say there is too much variability.

Yet we certainly want to know what works and what doesn't.

It sounds odd, but I hope I have persuaded you that the most practical contribution would be a theory about theories.



The following refers to mass media campaigns, but may be more broadly true.

- We want to evaluate interventions.
- (And we also want to use observations to predict the usefulness of interventions.)
- Crashes are difficult to use. There is too much random variability in the numbers.
- Alternatives to crashes are surprisingly few in number.
- Need to develop more. Need better theory about the ones we do have.
- How do we judge whether an alternative really is a good proxy for crashes? Need to understand this.

- Speeds
- Offences
- Traffic conflicts

These are perhaps the areas where we can most hope for theory connecting them with crashes.

