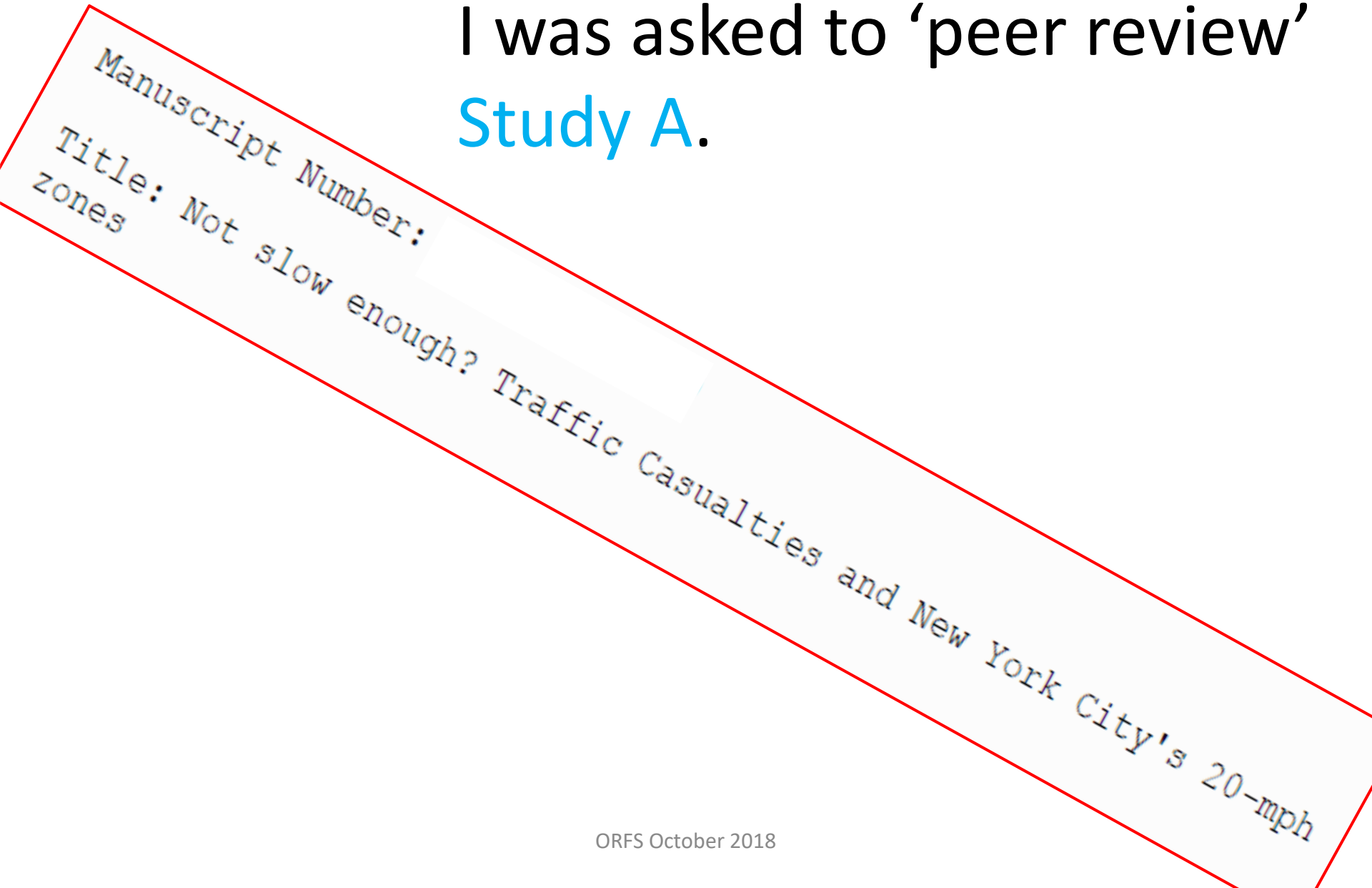

Google
© Google, Inc.

The subject


Google
© Google, Inc.


Girl, 7, fatally struck in Leaside remembered

I was asked to ‘peer review’ Study A.



The author of study A says:

"NSZ… first systematic area-wide traffic calming program in a major US city.

…The 28 NSZs were implemented between 2011 and 2016,

… 540,000 people (about 7% of the city's population)

"…**research question**: Are the Neighborhood Slow Zones associated with reductions in vulnerable user, motorized vehicle occupant, and total traffic casualty rates?"

Background

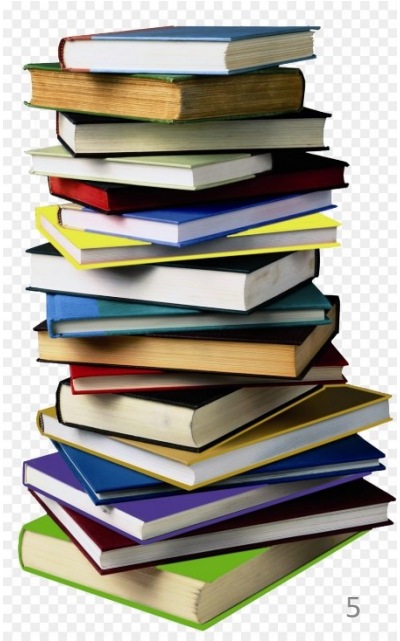
Car going at	Collision Fatal
30 km/h	8%
45 km/h	58%
50 km/h	85%

London Slow zones (20 mph)	24%-42% reduction in casualties
Holland traffic calmed	25%

The author of study A concluded:

"…analyses that include control zones do not find the NSZs to be associated with significant reductions in traffic casualty rates. Pedestrians and cyclists experienced the smallest reductions in casualty rates…"

Method - I know,
But NSZ - I don't

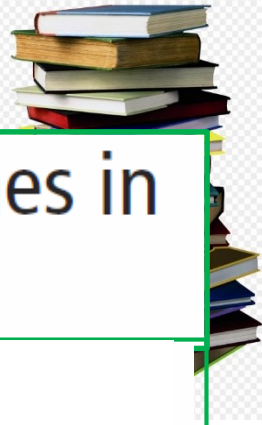


Why is NSZ different?

In Paper: "Additional research is needed discover why New York's 20-mph zones are not witnessing similar benefits as those seen in other places."

In Thesis: "While street designs in London's 20-mph zones included a robust implementation of traffic calming devices, New York's NSZs had a much more skeletal implementation of these devices."

Study B (same NSZ)



Cost-effectiveness of neighbourhood slow zones in New York City

Jiao B, *et al*. *Inj Prev* 2017;

Results After 2011, road casualties in NYC fell by 8.74% (95% CI 1.02% to 16.47%) in the NSZs but increased by 0.31% (95% CI −3.64% to 4.27%) in the control neighbourhoods.

Conclusion "…NSZs appeared to be an effective and cost-effective means of reducing road casualties."

Study A	Study B
"…do not find the NSZs to be associated with significant reductions in traffic casualty rates."	"…NSZs appeared to be an effective and cost-effective."

Same data
Different conclusion

Why?

A closer look

95% confidence interval

	Study A	Study B
Vulnerable	4% (-16%, 24%)	
MV Occupant	8% (-16%, 32%)	
Total	6% (-11%, 23%)	9% (1%,17%)

'A' said (in abstract) "not significant" but in text does 't-test'. (Should have said "not statistically significant".)

Conclusions are different because 'A' 'tested H_0' and 'B' reported 'effect estimate'. Which is right?

Another illustration: Right-Turn-on-Red

Virginia, 1976, 20 intersections

	Before	After
Fatal	0	0
Injury	43	60
PDO	69	72

What would you say?

What the consultant said

What the Commissioner said

Study Number	Expected Without RTOR	Counted With RTOR
2	19	24
3	287	313
4	74	92
5	81	87
And so on	…	…

What would a reasonable person conclude?

What did researchers with statistical education say?
What should practitioners do?

The American Statistician, 2016, Vol. 79, No. 2, 129-133
The ASA statement on p-values, context, process and purpose

We teach it because we do it;
We do it because we teach it

Principle #5: A p-value, or statistical significance, does not measure the size of an effect or the importance of a result

Lessons?


Girl, 7, fatally struck in Leaside remembered