

To: Transport & Health Policy Makers, & Practitioners
From: Prof Adrian Davis, TRI, Edinburgh Napier University
Date: 28th July 2020 No 28 Driver yielding rates at crossings by car cost, race and pedestrian gender
Subject: Essential Evidence 4 Scotland

Top line: Drivers of higher cost cars are less likely to yield at pedestrian crossings located away from junctions. Moreover, drivers are less likely to yield to men and more generally people of colour. This supports findings from previous studies.

Pedestrian crashes are not equitably distributed; people of colour and males are overburdened. The literature is largely from North America regarding yielding of drivers to pedestrians at crossings. For example, two field experiments found that driver yielding differed by the pedestrian's race. One field experiment in downtown Portland, Oregon examined driver yielding behaviours at crossings and found that drivers yielded less often for black male pedestrians compared to white male pedestrians at a crossing.¹

Class bias is another understudied factor that may play a role in disparate pedestrian crash rates. Piff and colleagues used multiple experimental and naturalistic methods to examine ethical behaviour.² Two naturalistic experiments examined if upper-class individuals behaved more unethically while driving. They found that upper-class individuals (as indicated by vehicle status – make, age, and appearance) were more likely to violate California state law and cut pedestrians off at a marked junction.

A more recent US study examined driver yielding behaviour by pedestrian skin colour, gender, and cost of car.³ The aim of this study was to examine if driver yielding behaviour differed based on gender and skin colour of the pedestrian, and the estimated car cost at two pedestrians crossing mid-street in the Las Vegas metropolitan area. For the study, one white and one black female and one white and one black male crossed the intersection in a similar, prescribed manner. Crossings were video recorded. Driver yielding behavior was documented. The cost of car was estimated by cross referencing manufacturing websites and averaging the high and low values of estimated private sale.

In terms of results, of 461 cars, 27.98% yielded to pedestrians. Cars yielded more frequently for females (31.33%) and whites (31.17%) compared to males (24.06%) and non-whites (24.78%). Cost of car was a significant predictor of driver yielding and odds of yielding decreased 3% per \$1000 increase in car cost. Drivers of higher cost cars were less likely to yield to pedestrians at pedestrian crossings mid-street. The authors concluded that driver yielding differed by cost of cars. Given previous findings, future research is needed to further examine gender and racial disparities in pedestrian crashes. Findings are significant for public health and pedestrian safety, especially given the upward trend in crash rates. The researchers suggests that interventions should educate drivers of their responsibility to yield to pedestrians. Findings are significant for public health and pedestrian safety, especially given the upward trend in crash rates. As a coda, Sweden passed an Act of Parliament in 2000 to increase driver yielding at unsignalled crossings which increased vehicle stopping numbers from 20 to 50%.

¹ Goddard, T., Kahn, K., Adkins, A. 2015. Racial bias in driver yielding behaviour at crosswalks, *Transport. Research Part F: Traffic Psychology, Behaviour*, 33: pp. 1-6.

² Piff, P., Stancato, D., Cote, S., et al., 2012. Higher social class predicts increased unethical behaviour, *Proceedings of the National Academy of Science*, 109:11, pp. 4086-4091, [10.1073/pnas.1118373109](https://doi.org/10.1073/pnas.1118373109)

³ Coughenour, C., Abelar, J., Pharr, J et al., 2020. Estimated car cost as a predictor of driver yielding behaviours for pedestrians, *Journal of Transport and Health*, 16, <https://doi.org/10.1016/j.jth.2020.100831>