



The relative risk of nearside accidents is high for the youngest and oldest pedestrians

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ABSTRACT

Police road accident data from Great Britain for 1990–2009 were analysed. RR_{NF} is the risk of a casualty occurring in the first half of road crossing, the half nearest to the pedestrian's starting position at the roadside, compared to the risk of it occurring in the second half. Children and younger adult pedestrians had a high relative risk of being killed or seriously injured in the nearside of the road (RR_{NF}). RR_{NF} decreased with age, for men and women, but rose again for people aged over 85 years. It was also substantially lower for children under 10 years old. Three possible explanations for lifespan changes in RR_{NF} were evaluated: that change results from slower walking speeds, from a specific failure to attend to the far side before beginning to cross, or from generalised attention control failure. Young people's higher RR_{NF} is consistent with evidence that they are prone to generalised attention control failures.

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1. Introduction

Across the world, people travelling on foot in the road environment are vulnerable to injury as a result of collisions with vehicles. A recent World Health Organization report places pedestrian casualties in the context of traffic safety generally across low and high income countries (WHO, 2009). In Great Britain (Wales, Scotland, and England) in 2009, the police recorded 26887 pedestrian casualties, with 22.5% involving death or serious injury (data calculated from RAGB 2009). For car occupants, only 7.8% of casualties were killed or seriously injured. This paper analyses one derived feature of the British data in depth, to gain a greater understanding of the specific factors that make pedestrians vulnerable to involvement in an accident. That feature is the relative risk of a nearside injury accident when crossing a road.

In the UK, the term 'offside' is used to refer to the side of the car furthest from the edge of the road, the side in which the driver usually sits. The term 'nearside' refers to the side nearest the kerb. A pedestrian approaching from the nearside has stepped from the kerb and is crossing the first stream of traffic. A pedestrian approaching from the 'offside' has crossed one stream of traffic, and has passed the middle of the road. They are in what, to them, is the second half of road crossing. Researchers have been interested in why older people apparently have a higher proportion of accidents in the far side of the road, after they have crossed the first stream of traffic.

The relative risk of a nearside casualty, a casualty occurring in the first half of the road, has been commented on frequently in the literature on older pedestrian accidents (Carthy et al., 1995; Fildes et al., 1994; Fontaine and Goulet, 1997; Grayson, 1980; Oxley et al., 1997; PCA, 1999; RAGB, 1981; TRRL, 1972; Ward et al., 1994. See Dunbar, 2005 for a summary of the data from these studies). It has been suggested that older people are more likely than younger people to be involved in accidents in the second half of road crossing, the far side. Two views have been put forward (e.g. Fontaine and Goulet, 1997; Oxley et al., 1997). One view notes that this increased far side risk is consistent with studies that have shown older people find wider roads more challenging, and have more accidents crossing wide roads (Hoxie and Rubenstein, 1994; Zegeer et al., 1993). Because older people walk more slowly, it has been argued that they are less able to complete the road crossing before new traffic arrives or before traffic signals change. An alternative explanation has been that older people, because of diminished attention capacity, are, as a population, less able to consider two streams of traffic at the beginning of road crossing (Carthy et al., 1995; Oxley et al., 1997). They may therefore check only traffic approaching in the nearside lane before starting to cross. As a result, they may find, when they reach the middle, that in fact there are cars approaching in the opposite direction that they had failed to take into account. Both the walking speed and one lane judgement candidate explanations predict that the relative risk of far side casualties should continue to increase as people age, in line with continuing declines in average walking speed and attention capacity.

I use the term 'attention control' to refer loosely to a class of experimental phenomena demonstrating that younger children and older adults have a lowered capacity to perform well on

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