

MIND THE GAPS

WORKERS' COMPENSATION COVERAGE FOR COMMUTING INJURIES IN AUSTRALIA

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ABSTRACT

Work-related transport accidents are a leading cause of work injury and death. A number of these accidents occur while workers are commuting between their home and workplace. Globally, there is dramatic variation in workers' compensation coverage for commuting injuries. This inconsistency creates inequities for workers and contributes to confusion about the burden of injury.

Focusing on the Australian setting, this article identifies a series of dangerous gaps in the debate over workers' compensation coverage for commuting injuries. It illustrates the disconnection between the terms of compensation coverage debates, which emphasise the lack of employer control over worker commuting activity, and public health evidence linking modern work practices and fatigue with commuting injury. The article calls for a genuine interdisciplinary effort to improve the evidence base and better inform decisions about compensation coverage for this neglected category of work injury.

I. INTRODUCTION

Motor vehicle accidents are a leading global cause of work fatalities¹ and account for an estimated 31 per cent of Australian work-related deaths.² Some of these accidents take place during travel between a worker's residence and place of work. Workers' compensation (WC) schemes vary significantly in their coverage of these commuting injuries.³ In Australian compensation parlance, the claims connected with commuting injuries are known as 'journey claims'.⁴ The principal WC schemes in Australia⁵ provide relatively uniform coverage for injuries sustained during journeys undertaken for what are regarded as work purposes. The schemes vary considerably, however, in their coverage of journey claims. For clarity in this article, the coverage of commuting injuries under no-fault WC schemes will be described as 'journey claim coverage' (JCC).

Workers' compensation in Australia is decentralised, with the states, territories and Commonwealth each having their own schemes. The costs associated with this heterogeneity are

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1 See the studies summarised in Martine Hours et al, 'Jobs at Risk of Work-Related Road Crashes: An Analysis of the Casualties from the Rhône Road Trauma Registry (France)' (2011) 49 *Safety Science* 1270, 1270.

2 T Driscoll et al, 'Comparison of Fatalities from Work Related Motor Vehicle Traffic Incidents in Australia, New Zealand, and the United States' (2005) 11 *Injury Prevention* 294, 295.

3 M P Olivier, 'Workers' Commuting Injuries: A South African Perspective' (1995) 16 *Industrial Law Journal* 559, 560; see also International Labour Office, *Recording and Notification of Occupational Accidents and Diseases and ILO List of Occupational Diseases (Report V (2A))* (2002) 31-36.

4 Australian Safety and Compensation Council, *Compendium of Workers' Compensation Statistics Australia 2006-07* (Commonwealth of Australia, 2009) 75. Other examples of travel that are regarded as work-related and enjoy broader coverage include that between work and education and training activities and medical appointments. The discussion here focuses on claims for travel between work and home as these are the subject of the most inconsistent coverage.

5 By this we mean the WC schemes that exist in each of the states and the territories, and the Commonwealth's Comcare scheme.

well documented, and periodically give rise to calls for greater consistency.⁶ Recent attention to regulatory harmonisation in the occupational health and safety sphere, and the effect of economic pressures on scheme viability, has the potential to stimulate increased interest in workers' compensation coverage, including JCC.

This article identifies a range of gaps in the policy conversation about JCC. Firstly, it articulates gaps that cloud understanding of the scale of the problem of occupational commuting injury. Then, taking as its premise that no-fault compensation is the appropriate baseline compensatory response to work-related injury, the article outlines the existing state of no-fault compensation coverage for journey claims. This analysis highlights the patchwork nature of WC and transport accident compensation arrangements operating across Australia, bringing the gaps in coverage for commuting injury into sharp focus.

The article then examines the conceptual gap between compensation coverage debates and public health research evidence relevant to commuting injury. The key tenets of coverage debates in recent reviews are contrasted with the mounting public health evidence connecting work hours, fatigue and commuting injury. The article concludes by considering the responsibility void generated by the recent history of 'rolling back' JCC in Australia, and its implications. Also, the article highlights the room for additional perspectives by locating the weaknesses in JCC discourse. Though the article does not neatly resolve the JCC debate, it seeks to enliven the exchange with evidence in anticipation of reform-oriented discussion.

II. A DATA GAP: CHALLENGES IN IDENTIFYING THE SCOPE OF THE PROBLEM OF OCCUPATIONAL COMMUTING INJURY

A logical starting point in considering JCC is to identify the size of the problem the coverage seeks to address, namely occupational commuting injury. There is, however, a paucity of research investigating work-related transport accidents in Australia and elsewhere, particularly those occurring in commuting circumstances.⁷ Despite the significant burden these accidents impose on workers, their families, employers and the broader community, few studies have investigated their characteristics.⁸ The dearth of research in this area is connected to the limitations of the relevant data sources, which are in turn linked to the variable nature of the compensation coverage.

Workers' compensation statistics provide an unreliable indicator of the extent of work-related injury.⁹ Along with the well-understood phenomenon of under-reporting of work injuries, significant parts of the labour market are not reached by workers' compensation (particularly self-employed and precarious workers).¹⁰ Beyond these sizeable but generic concerns, there are data factors specific to commuting injuries that bear negatively upon efforts to locate and measure the target of JCC.

Official statistics on worker deaths in commuting accidents in Australia are problematic. The annual reports of work-related traumatic injury fatalities published by Safe Work Australia (SWA) are based on several sources of data that, even in combination, are not adequate to capture the scale of occupational commuting fatalities. The *National Dataset for Compensation-Based Statistics* only comprises compensable fatalities, meaning commuting fatalities occurring in states and territories without JCC are excluded.¹¹ Similarly, SWA reports that although the National Coroners Information System contains data on work-related fatalities, 'work-relatedness' is not

6. See the inquiries catalogued in Robert Guthrie, Frances Meredith and Kevin Purse, "'Dust and Sweat" in Australian Workers' Compensation Systems: Policy Challenges for the Gillard Labor Government' (2010) 5 *Public Policy* 40, 41. See also Michael Quinlan, Philip Bohle and Felicity Lamm, *Managing Occupational Health and Safety: A Multidisciplinary Approach* (Palgrave MacMillan, 3rd ed, 2010) 461.

7. Soufiane Boufous and Ann Williamson, 'Work-Related Traffic Crashes: A Record Linkage Study' (2006) 38 *Accident Analysis and Prevention* 14, 19.

8. *Ibid.*

9. See generally Rachel Cox and Katherine Lippel, 'Falling Through the Legal Cracks: The Pitfalls of Using Workers' Compensation Data as Indicators of Work-Related Injuries and Illnesses' (2008) 2 *Policy and Practice in Health and Safety* 9.

10. *Ibid.* See also Michael Quinlan and Claire Mayhew, 'Precarious Employment and Workers' Compensation' (1999) 22 *International Journal of Law and Psychiatry* 491.

11. Safe Work Australia, *Work-Related Traumatic Injury Fatalities, Australia 2008-09* (SWA, 2011) iii (available from http://www.safeworkaustralia.gov.au/AboutSafeWorkAustralia/WhatWeDo/Publications/Documents/583/WorkRelatedTraumaticInjuryFatalitiesAustralia2008_09.pdf). See further Part III below.

coded uniformly, especially for commuting and motor vehicle accident deaths. Finally, the Notified Fatalities Collection reports deaths occurring at work in accordance with OHS requirements, but 'generally excludes incidents occurring on public roads',¹² making it unlikely that commuting fatalities are included. Taken together, these data limitations mean that the SWA statistics are somewhat euphemistically described as a 'known undercount' of occupational commuting fatalities.¹³

Driscoll et al suggest that if the official statistics on work-related traumatic death represent a 'significant underestimate' of the true magnitude of the problem, '[t]he situation is as bad, or worse, for non-fatal injuries.'¹⁴ They also note that police investigating transport accidents are primarily interested in identifying the at-fault party and any breaches of the law, rather than the work-related status of the incident.¹⁵ Such logistical limitations contribute to the patchy and fragmented nature of the collected data, creating a significant impediment for research on work-related transport accident injury.¹⁶ In a notable exception to the evidentiary ambiguity, Boufous and Williamson linked police crash data with workers' compensation records for over 13,000 drivers who had been involved in an accident from 1998–2002 in New South Wales. The authors found that close to three quarters of casualties in the dataset occurred in the course of commuting.¹⁷ Additionally, a report of commuting injuries in jurisdictions with JCC in 2006-07 found an incidence rate of 2.9 journey claims per 1000 employees, compared with 14.2 non-journey claims per 1000 employees.¹⁸ Given the magnitude of the problem of commuting injury, JCC deserves the attention of stakeholders and an appropriate compensatory response. The next part of the article sets out the status of JCC in Australian schemes, moving from the data gap to the gap in compensation coverage for occupational commuting injury.

III. COMPENSATION COVERAGE GAPS: JOURNEY CLAIMS IN CONTEXT

Workers' compensation coverage for journey claims has a long history in Australia. In the 1940s, definitions of work-relatedness were expanded to provide coverage for the worker's commute on the basis of the benefit of the journey for the employer.¹⁹ Starting in the early 1990s however, a number of legislatures removed JCC from WC statutes in the context of the broader winding back of WC benefits. These efforts were inconsistent across Australia, contributing the current status of JCC in WC schemes as 'a complex mosaic of disparate arrangements.'²⁰ This complexity is heightened by the parallel but equally patchy operation of no-fault transport accident compensation schemes, which provide an important alternative source of coverage in a number of jurisdictions.²¹

Locating JCC in the patchwork of parallel transport accident compensation provisions provides insight into the equity and efficacy of current compensation arrangements.²² The overview here focuses on no-fault compensation as it provides the most important and immediate benefits to injured workers in the wake of injury (typically medical and rehabilitation expenses and income benefits). Additionally, in a climate of reform, it is important that stakeholders understand the nature of the available coverage. Table 1 provides an overview of the characteristics of JCC across the nine principal WC schemes in Australia.

12 Ibid.

13 Ibid viii.

14 Timothy Driscoll et al, 'Coverage of Work Related Fatalities in Australia by Compensation and Occupational Health and Safety Agencies' (2003) 60 *Occupational and Environmental Medicine* 195, 195.

15 Ibid 199.

16 Boufous and Williamson, above n 7, 20.

17 Ibid 16.

18 Australian Safety and Compensation Council, above n 4, 75.

19 Alan Clayton, Richard Johnstone and Sonya Sceats, 'The Legal Concept of Work-Related Injury and Disease in Australian OHS and Workers' Compensation Systems' (2002) 15 *Australian Journal of Labour Law* 1, 5-6.

20 Ibid 28.

21 As noted by Clayton et al, the broader range of other alternatives includes third party (fault-based) insurance claims, 'the federal social security system, private disability insurance, occupational sick pay or drawing on personal savings' (ibid at 28-29).

22 Ellen S Pryor, 'Part of the Whole: Tort Law's Compensatory Failures Through a Wider Lens' (2007-2008) 27 *The Review of Litigation* 307, 309-10.

Table 1: No fault compensation coverage for journey claims (as at 1 May 2012)

<i>Jurisdiction</i>	<i>JCC in workers' compensation^a</i>	<i>Year JCC excluded from workers' compensation</i>	<i>No-fault transport accident compensation available in jurisdiction</i>
New South Wales	Yes	-	No ^b
Victoria	No	1992	Yes
Queensland	Yes	-	No
Western Australia	No	1993	No
South Australia	No	1994	No
Tasmania	No	1995	Yes
Northern Territory	No	1991	Yes
Australian Capital Territory	Yes	-	No
Commonwealth (Comcare)	No	2007	Variable ^c

a. *Workers Compensation Act 1987* (NSW) s 10(3); *Accident Compensation Act 1985* (Vic) s 83(2)(b); *Workers' Compensation and Rehabilitation Act 2003* (Qld) s 35(1)(a); *Workers' Compensation and Injury Management Act 1981* (WA) s 19(2)(a); *Workers' Rehabilitation and Compensation Act 1986* (SA) s 30(5) and (6); *Workers Rehabilitation and Compensation Act 1988* (Tas) s 25(6) and (7); *Workers Rehabilitation and Compensation Act* (NT) s 4; *Workers Compensation Act 1951* (ACT) s 36; *Safety, Rehabilitation and Compensation Act 1988* (Cth) s 1(d) and 1C.

b. The NSW transport accident scheme currently has a quasi-hybrid status, providing a range of no-fault and fault-based benefits. In addition to common law benefits for claimants who can prove negligence, the scheme provides a limited level of no-fault benefits at an early stage of all claims up to a maximum of \$5000 (*Motor Accidents Compensation Act 1999* (NSW) ch 3 pt 3.2 ('MACA'); damages for claimants injured in blameless accidents, and a 'special entitlement' in claims involving children (MACA ch 1 pt 1.2); and long term care and support to severely-injured claimants, regardless of fault (see generally *Motor Accidents (Lifetime Care and Support) Act 2006* (NSW)). In principle, however, the NSW scheme remains a predominantly fault-based compensation scheme.

c. Workers under the Comcare scheme could potentially be located in any Australian state or territory. In the event of occupational commuting injury workers under the Comcare scheme are generally reliant upon the transport accident compensation available in the jurisdiction in which they sustained their injury.

In jurisdictions where JCC is provided, there is variety in the precise terminology used to describe the worker's residence in the coverage rules.²³ The coverage is fettered by a number of common restrictions. For example, schemes with JCC typically limit coverage for injuries sustained when workers have substantially deviated from the journey between their residence and workplace.²⁴ Limitations also arise where the worker has engaged in misconduct involving the consumption of alcohol or prohibited drugs.²⁵ Nonetheless, the objective in schemes with JCC is clear – to recognise the work commute as an element of the work relationship and to provide coverage accordingly.

Table 1 shows the uneven nature of the coverage available in the most straightforward situation of a worker injured while commuting between their regular residence and place of

23 See for example the definition of the worker's 'home' provided in *Workers Compensation Act 1951* (ACT) s 36(5) and *Workers' Compensation and Rehabilitation Act 2003* (Qld) s 35(4); cf the definition of 'place of abode' in *Workers Compensation Act 1987* (NSW) s 10(6).

24 See for example *Workers Compensation Act 1951* (ACT) s 36(3) and *Workers Compensation Act 1987* (NSW) s 10(2).

25 See for example *Workers' Compensation and Rehabilitation Act 2003* (Qld) s 36(2) and *Workers Compensation Act 1987* (NSW) s 10(1A) and (1B).

work.²⁶ Currently, the WC arrangements in Victoria, Tasmania, Western Australia, South Australia, the Northern Territory and the Commonwealth Comcare scheme exclude these most basic journey claims. Journey claim coverage is available in the WC schemes in New South Wales, Queensland and the Australian Capital Territory.

For workers in jurisdictions without JCC, the optimal compensation pathway for commuting injury is the parallel transport accident injury compensation arrangements. Table 1 demonstrates that in three jurisdictions where JCC has been abolished (Victoria, Tasmania and the Northern Territory); the no-fault transport accident compensation system provides a ready alternative source of coverage. None of the jurisdictions that have preserved JCC through the WC system (New South Wales, Queensland and the Australian Capital Territory) have a no-fault transport accident scheme for workers with commuting injuries to rely upon. Finally, in Western Australia and South Australia, the worst-positioned states for workers injured in commuting accidents, in the complete absence of no-fault compensation coverage claimants must fall back on fault-based claims, private insurance, social security and other like measures in the event of commuting injury. In summary, the JCC landscape is heavily dependent on sources of support beyond WC schemes to fill its coverage gaps. It is therefore beset by inequity for workers. Given the lack of no-fault transport accident coverage in jurisdictions that currently provide JCC, if the harmonisation of JCC involves taking a 'lowest common denominator' approach consistent with the trend of curtailing JCC, many workers will be substantially disadvantaged.

IV. A CONCEPTUAL GAP: THE GULF BETWEEN COMPENSATION COVERAGE DEBATES AND PUBLIC HEALTH EVIDENCE

The above overview of the Australian JCC landscape illustrates the irregularity and capriciousness of the benefits available to workers injured in commuting accidents. To understand why this is so, and as a means of forecasting future reform debates, it is useful to consider the terms of the JCC discourse in its most recent iteration. By contrasting these terms with the public health evidence of the role of fatigue in commuting injury, the value of an engaged interdisciplinary approach to the issue of JCC becomes apparent. The article next considers the way JCC has been discussed in law reform debates, before focusing on the parallel discussions about work hours, fatigue and commuting injury in sources of public health evidence.

A. Evidence from recent law reform debates

The most recent contest over JCC occurred when the coverage was removed from the Commonwealth Comcare WC scheme in 2007. The terms of the debate over JCC in the Comcare scheme reflect the traditional stances adopted by employers and workers in recent decades. The evidence of these terms discussed below is drawn from the Senate Committee review of the amending legislation, and the earlier recommendations of the Industry Commission and Productivity Commission upon which the relevant reforms of the Comcare scheme were largely based.²⁷

The key argument consistently put by unions and individual employees in favour of JCC is that the journey to and from work is a fundamental feature of the work relationship and activity: were it not for the employment contract, the worker would not commute to the workplace and home again.²⁸ Employers, employer groups and, ultimately, the reports of the Industry Commission, Productivity Commission and the Senate Standing Committee on Employment,

26 Note that although the South Australian scheme gives the appearance of providing JCC, the provisions in that jurisdiction effectively exclude the most basic journey claim by specifying that 'the fact that a worker has an accident in the course of a journey to or from work does not in itself establish a sufficient connection between the accident and the employment' (*Workers' Rehabilitation and Compensation Act 1986* (SA) s 30(6)). For a more detailed discussion of the terms of and exclusions from JCC in the different schemes, see Clayton et al, above n 19, 29-31.

27 These arguments were reiterated in the Federal Government's recent review of the Comcare scheme (Department of Education, Employment and Workplace Relations, *Report of the Review of Self-Insurance Arrangements Under the Comcare Scheme* (Commonwealth of Australia, 2009) 24-25).

28 See for example the Queensland Council of Unions submission to the Productivity Commission's Interim Report 'National Workers' Compensation and Occupational Health and Safety Frameworks' (2004), 6 (available from http://www.pc.gov.au/data/assets/pdf_file/0013/21037/subir241.pdf).

Workplace Relations and Education, justified the abolition of JCC in the Comcare scheme on two bases. Firstly, they argued that the presence of alternative sources of insurance or coverage obviates the need for JCC in WC. The reports referred to the presence of transport accident compensation schemes in some jurisdictions; the wider availability of third-party fault-based claims; and the option for employees to negotiate coverage at the enterprise level or obtain private insurance policies at their own expense, on an individual basis. These alternative coverage arguments reflect the cost-shifting imperative associated with the abolition of JCC, in that the costs are effectively shifted away from employers and WC schemes and onto alternative payers such as transport accident compensation schemes, social security, individual employees, and their families and communities. As the Productivity Commission conceded however, the availability of alternative forms of coverage 'is not relevant to the basic rationale underlying compulsory coverage for employees under employer-financed schemes', but rather 'provides an added rationale' for the removal of JCC.²⁹

The second and more dominant argument in favour of the elimination of JCC seeks to construct commuting activity as being outside the 'prism of employer controllable risk'.³⁰ Employers argue that they have little control over the safety of a worker's journey to and from work, and therefore injuries sustained in such journeys should not fall within the scope of 'work-related' injury for the purposes of WC.³¹ By extension, the Industry Commission also suggested that JCC is hard to justify from a 'prevention perspective': on this view, the employer's lack of control over worker journeys means that '[m]aking employers liable for such losses is unlikely to lead to greater preventive effort in avoiding journey accidents.'³² The denial of employer control over worker safety during the commute has become the entrenched and tireless justification for the restriction of JCC, along with its cost-containment ramifications. Interestingly, reference to long and irregular working hours, shift work and fatigue are conspicuously absent from the recent debates over JCC. In particular, there was no discussion of the circumstances that give rise to commuting injuries and journey claims in the Productivity Commission and Parliamentary Committee reports in connection with JCC.³³

B. Making the connection: Public health perspectives on the links between shift work, fatigue and commuting injury

Though the connection of working hours, fatigue and commuting injury has been neglected in JCC debates, these topics have come to increasing prominence in sources of public health evidence. The trend of eliminating JCC from Australia's principal WC schemes in the last 20 years has been paralleled by developments in research and debate on the public health and safety problems associated with declining quantity and quality of sleep in modern society.³⁴ Recent

29 Productivity Commission, *National Workers' Compensation and Occupational Health and Safety Frameworks* (Commonwealth of Australia, 2004) 186-7.

30 Clayton et al, above n 19, 6. See also the restrictions on JCC described in Part III above.

31 Industry Commission, *Workers' Compensation in Australia* (Commonwealth of Australia, 1994) 97; Productivity Commission, above n 32, 186. This argument has long been a feature of JCC debates. See for example Hanks' discussion of the removal of JCC from the Victorian WC scheme in 1992 'on the basis that the employer could not control or take responsibility for accidents that occurred while a worker was not at work' (Peter Hanks, *Accident Compensation Act Review: Final Report* (2008) 64). Internationally, see the parallel arguments reported in South Africa (Olivier, above n 3 at 576) and Japan (Masahiro Ken Kuwahara, 'Workers' Compensation on Commuting Injuries in Japan' (1995) 27 *Journal of Law and Politics* 1, 3-4).

32 Industry Commission, above n 34, G5-6.

33 Brief reference was made to shiftwork and fatigue in some trade union submissions to the Senate Committee review of the amending legislation. See, for example, the submission of the Construction, Forestry, Mining and Energy Union (submission dated 22 January 2007, 2), which noted that

[t]he CFMEU has seen many examples where its members have been seriously hurt, maimed or even killed going to work or coming home from work when fatigued from long hours of overtime or after arduous work or as a result [of] being required to travel outside "normal" work hours.

This submission was reported without elaboration in the Opposition Senators' report (Senate Standing Committee on Employment, Workplace Relations and Education, *Safety, Rehabilitation and Compensation and Other Legislation Amendment Bill [Provisions] Report* (2007) 20).

34 Francesco P Cappuccio, Michelle A Miller and Steven W Lockley, 'Sleep, Health, and Society: The Contribution of Epidemiology' in Francesco P Cappuccio, Michelle A Miller and Steven W Lockley (eds), *Sleep, Health, and Society: From Aetiology to Public Health* (Oxford University Press, 2010) 1, 5.

Australian Bureau of Statistics reports indicate that 16 per cent of Australian employees perform shift work, with particular concentrations in mining, accommodation and food services and healthcare and social assistance.³⁵ The findings of recent coronial inquiries and the epidemiological literature call attention to the connection between shiftwork, extended work hours and the increased accident risk faced by the fatigued and commuting worker. These sources of evidence cast doubt on the purported disconnection between work practices and commuting injury risk, and therefore challenge the dominant frame of the JCC debate.

The elevation in worker fatigue levels with around-the-clock industrial operations and provision of goods and services³⁶ is a subject of intense interest in public health research. Fatigue is increasingly regarded as 'a major cause of workplace and transport-related mortality and morbidity.'³⁷ While it has long been established that driver sleepiness and decreased alertness are associated with transport accident injury,³⁸ the connection between worker fatigue and the changing nature of modern work practices potentially provides a new rationale for JCC in WC schemes.

The relatively limited published research on work-related transport accident injury highlights worker fatigue as an important risk factor. Robb et al report that the most consistent evidence regarding risk factors for work-related road traffic injuries relates to 'fatigue- and sleepiness-related factors', highlighting the need for more attention to shift work, hours of work and adequate rest breaks.³⁹ In the healthcare sector, researchers have paid particular attention to the increased risk of commuting injury associated with shift work performed by nurses⁴⁰ and junior doctors.⁴¹ A recent coronial inquest in Western Australia into the death of a young nurse in a single vehicle accident following a series of night shifts identified fatigue as 'a major contributor to the fatal collision'.⁴² The Coroner made a series of recommendations about the need to implement policies to address the safety of staff engaged in shift work.⁴³ Similarly, a coronial inquest into the deaths of three mine workers in two separate accidents involving drivers commuting home following night shifts connected the fatalities to driver fatigue.⁴⁴ Commentators have highlighted that such industries as medical and emergency services, transport, manufacturing and defence have the characteristics that particularly give rise to worker drowsiness and the concomitant safety risks.⁴⁵ As Quinlan, Bohle and Lamm have suggested however, 'both long and irregular hours have more deeply infiltrated white-collar and professional occupations, when previously they had been largely confined to unskilled and semi-skilled occupations.'⁴⁶ Recognition of such trends adds weight to the need to consider the way work organisation and practices contribute to the incidence of commuting injury.

35 Australian Bureau of Statistics, *Australian Labour Market Statistics* (ABS, October 2010) 20, 22.

36 Christopher Jones, Jillian Dorrian and Drew Dawson, 'Legal Implications of Fatigue in the Australian Transportation Industries' (2003) 45 *Journal of Industrial Relations* 344, 344; see also J Axelsson, G Kecklund and M Sallinen, 'Sleep and Shift-Work' in Cappuccio, Miller and Lockley (eds), above n 37, 325, 325.

37 William J Horrey et al, 'Research Needs and Opportunities for Reducing the Adverse Safety Consequences of Fatigue' (2011) 43 *Accident Analysis and Prevention* 591, 591.

38 Jennie Connor et al, 'Driver Sleepiness and Risk of Serious Injury to Car Occupants: Population Based Case Control Study' (2002) 324 *British Medical Journal* 1125, 1127; see also Ann Williamson et al, 'The Link Between Fatigue and Safety' (2011) 43 *Accident Analysis and Prevention* 498. Note that Dawson and Reid report that 'moderate levels of fatigue produce higher levels of impairment than the proscribed level of alcohol intoxication' (Drew Dawson and Kathryn Reid, 'Fatigue, Alcohol and Performance Impairment' (1997) 388 *Nature* 235, 235).

39 G Robb et al, 'A Systematic Review of Epidemiological Studies Investigating Risk Factors for Work-Related Road Traffic Crashes and Injuries' (2008) 14 *Injury Prevention* 51, 52-57.

40 Jillian Dorrian et al, 'Sleep and Errors in a Group of Australian Hospital Nurses at Work and During the Commute' (2008) 39 *Applied Ergonomics* 605; Linda D Scott et al, 'The Relationship Between Nurse Work Schedules, Sleep Duration, and Drowsy Driving' (2007) 30 *Sleep* 1801.

41 Laura K Barger et al, 'Extended Work Shifts and the Risk of Motor Vehicle Crashes Among Interns' (2005) 352 *New England Journal of Medicine* 125.

42 *Inquest into the Death of Annemarie Evelyn Sweeny* (Western Australia, State Coroner A N Hope, 20 December 2010) 23.

43 *Ibid* 28.

44 *Inquest into the Deaths of Malcolm MacKenzie, Graham Peter Brown and Robert Wilson* (Queensland, State Coroner Annette Hennessy, 23 February 2011) 31.

45 CB Jones, CJ Lee and SMW Rajaratnam, 'Sleep, Law, and Policy' in Cappuccio, Miller, and Lockley (eds), above n 37, 417, 417-8.

46 Quinlan, Bohle and Lamm, above n 6, 280.

It is important to acknowledge that the empirical evidence of the relationships between work, fatigue and commuting injury has its shortcomings. Further research is required to better understand the ‘relatively invisible hazard’ of working shifts.⁴⁷ The scientific literature has not yet agreed upon a consistent definition of fatigue.⁴⁸ Additionally, the role played by fatigue in accident causation is often difficult to identify, owing to the lack of an objective or ‘gold standard’ test.⁴⁹ Despite these challenges, the evidentiary trend gives rise to a more complex understanding of commuting injury than has been evident in JCC debates to date. Rather than being beyond the control of the employer, the safety of a dangerously-fatigued worker’s commuting activity may be connected to the employer’s responsibility to provide safe work systems and conditions. There is therefore a legitimate role for public health research to inform the way the coverage of journey claims is conceptualised. These developments have the potential to open up a valuable field of dialogue between disciplines including occupational health and safety, injury epidemiology, sociology and law to improve the evidence upon which JCC is based.

V. CONCLUSION: A RESPONSIBILITY GAP AND ITS IMPLICATIONS

This article has identified empirical and conceptual gaps in the JCC discourse in Australia, though they are also likely to exist elsewhere. The paucity and limitations of data effectively obscure the scale of the problem of commuting injury,⁵⁰ robbing it of the policy attention it deserves. The gaps in coverage for commuting injury create a reliance on alternative compensation schemes or leave workers without no-fault coverage in the event of injury. Additionally, the terms of the recent policy debates over JCC are disconnected from the public health evidence of the impact of work-related fatigue on commuting injury. In combination, the identified gaps in data, compensation coverage and interdisciplinary understanding create a further gap – in responsibility for worker safety in commuting activity. Without a more considered approach, commuting injuries and JCC may be destined to remain a casualty of the artificially bright line drawn between the work and home domains.

Johnstone has suggested that it is necessary to draw on the research perspectives and findings of different disciplines in order to ensure optimal regulation of workplace hazards.⁵¹ The same can be said of the most appropriate way to develop the evidence base for compensation law and policy. Failure to recognise the disciplinary complexity of injury compensation systems and value of contributions from different disciplines has previously contributed to the production of flawed evidence in compensation research settings.⁵² Admittedly, some commentators argue that the recent course of the JCC debate simply ‘highlights the role of interest groups and cost considerations in determining what types of claim are covered by workers’ compensation.’⁵³ Though optimistic, this article has demonstrated that recognition of the empirical challenges and value of public health perspectives could create a stronger basis for JCC reform. Currently, the incomplete understanding of commuting injury, patchwork compensation coverage and deficient debate are mutually reinforcing, conspiring to inhibit evidence-based policy and reform in this important but maligned area of work injury.

47 Institute for Work and Health, *Scientific Symposium: The Health Effects of Shift Work: Summary Report* (2010), available at http://www.iwh.on.ca/system/files/documents/shift_work_2010_summary_report.pdf, 1, 13.

48 Lee Di Milia et al, ‘Demographic Factors, Fatigue and Driving Accidents: An Examination of the Published Literature’ (2011) 43 *Accident Analysis and Prevention* 516, 517-518.

49 Igor Radun and Jenni E Radun, ‘Convicted of Fatigued Driving: Who, Why and How?’ (2009) 41 *Accident Analysis and Prevention* 869, 869 (noting that ‘there are no criteria for the unambiguous detection of fatigue/sleepiness as a major or contributing factor in accident causation. Whether the particular accident will be coded into official statistics as sleep related or not depends solely on police officers’ subjective opinions’); see also Williamson et al, above n 41, 512.

50 See the similar observations made by Olivier, above n 3, 575.

51 Richard Johnstone, *Occupational Health and Safety Law and Policy: Text and Materials* (Law Book, 2nd edition, 2004) 23; see also Jones, Lee and Rajaratnam, above n 48, 430-1; and Quinlan, Bohle and Lamm, above n 6, 69 and 234 (noting the increasing evidence of multidisciplinary research and discourse since 2000).

52 See for example Genevieve Grant and David M Studdert, ‘Poisoned Chalice? A Critical Analysis of the Evidence Linking Personal Injury Compensation Processes with Adverse Health Outcomes’ (2009) 33 *Melbourne University Law Review* 865.

53 Quinlan, Bohle and Lamm, above n 6, 424.