



IRTAD

International Traffic Safety Data
and Analysis Group



Reviewing the classification of distraction in New Zealand

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4th IRTAD CONFERENCE

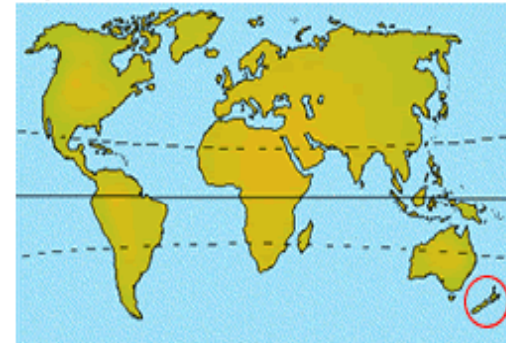
***Road safety data: collection and analysis
for target setting and monitoring performances and progress***

Seoul, 16-17 September 2009

Outline

- Context and background
- Method
- Brief discussion of issues
- Estimate of distraction involvement
- Changes over time
- Summary comments

WORLD MAP



Context and Background

- Requested to provide more detail on distraction involvement in police reported crashes
- Project started in 2003
 - Initially examined two years (2002-2003)
 - Expansion to seven years (2000-2006)
 - Aims: what sources are recorded, how are they coded, estimate of crash involvement
- Information presented based on 2000-2006 analysis

The NZ Crash Analysis System (CAS)

- National police report injury based system
- Descriptions of likely contributing factors are mainly narrative based
- Stored electronically
- Police fill out the form
- Information processed by trained coders from NZ Transport Agency

The image shows a 'TRAFFIC CRASH REPORT' form. It is divided into several sections:

- Section 1:** Local Body (City, District, Manurewa), Date, Time, Location (Road, Lane, etc.), and Date/Time of crash.
- Section 2:** Details of the crash, including direction of travel, vehicle type, and whether it was a collision.
- Section 3:** Details of the vehicle involved, including make, model, year, and license plate.
- Section 4:** Details of the driver, including name, address, and license information.
- Section 5:** A section for 'DRIVER'S STATEMENT' with a large area for handwritten text.
- Section 6:** A section for 'OFFICER'S REPORT' with a large area for handwritten text.
- Section 7:** A section for 'CRASH ANALYSIS' with a grid for recording details.

Method

- In CAS, distraction is coded under a series called diverted attention (with 10 sub-codes)
- Content review conducted
 - Reviewed all crash reports involving the diverted attention series
 - 2000-2006: 7,261 police reported crashes
 - Separate database with filters for classification
 - Coded as much detail as possible (object / activity)
 - 6 summary level filters
 - 32 source filters

Issues – What to include?

- Debate in research on what to include as distraction?
 - Secondary task activity (i.e. eating or drinking, using a cell phone) Yes
 - Driver state (i.e. fatigue, alcohol, emotional state) No
 - Cognitive activity (i.e. thinking/daydreaming) Debated
 - Driving related activity (i.e. using mirrors, checking for traffic, looking at road-users) Debated
- Approach: used filters to identify secondary task activity, cognitive/thinking, driving-related activity and driver state

Issues - In the diverted attention series

- Non-distraction
 - 5.2% of crashes involved emotional state or fatigue
 - 6.2% of crashes did not have sufficient detail to indicate form of inattention
 - 7.3% of crashes were suspected distraction
- Not all distraction is related to drivers
 - 1.6% were pedestrians or cyclists
- The CAS diverted attention series also includes
 - Cognitive – thinking/daydreaming
 - Driving related inattention/distraction
 - Some of these have their own CAS sub-code while others are spread across different sub-codes

Issues – Driving-related activity

- The diverted attention series includes sub-codes involving driving-related activity
 - other traffic, scenery or persons outside the vehicle, trying to find a destination, driver dazzled (or sunstrike) etc
- Specific issues
 - Some of these crashes were secondary task distraction
 - Sunstrike itself is not distraction but the activity in responding (e.g. reaching for sunvisor, shading eyes) could be
 - Similar issues for ‘finding a destination’
- Can’t assume that assignment to these CAS sub-codes means driving-related activity

Estimate of distraction involvement in CAS

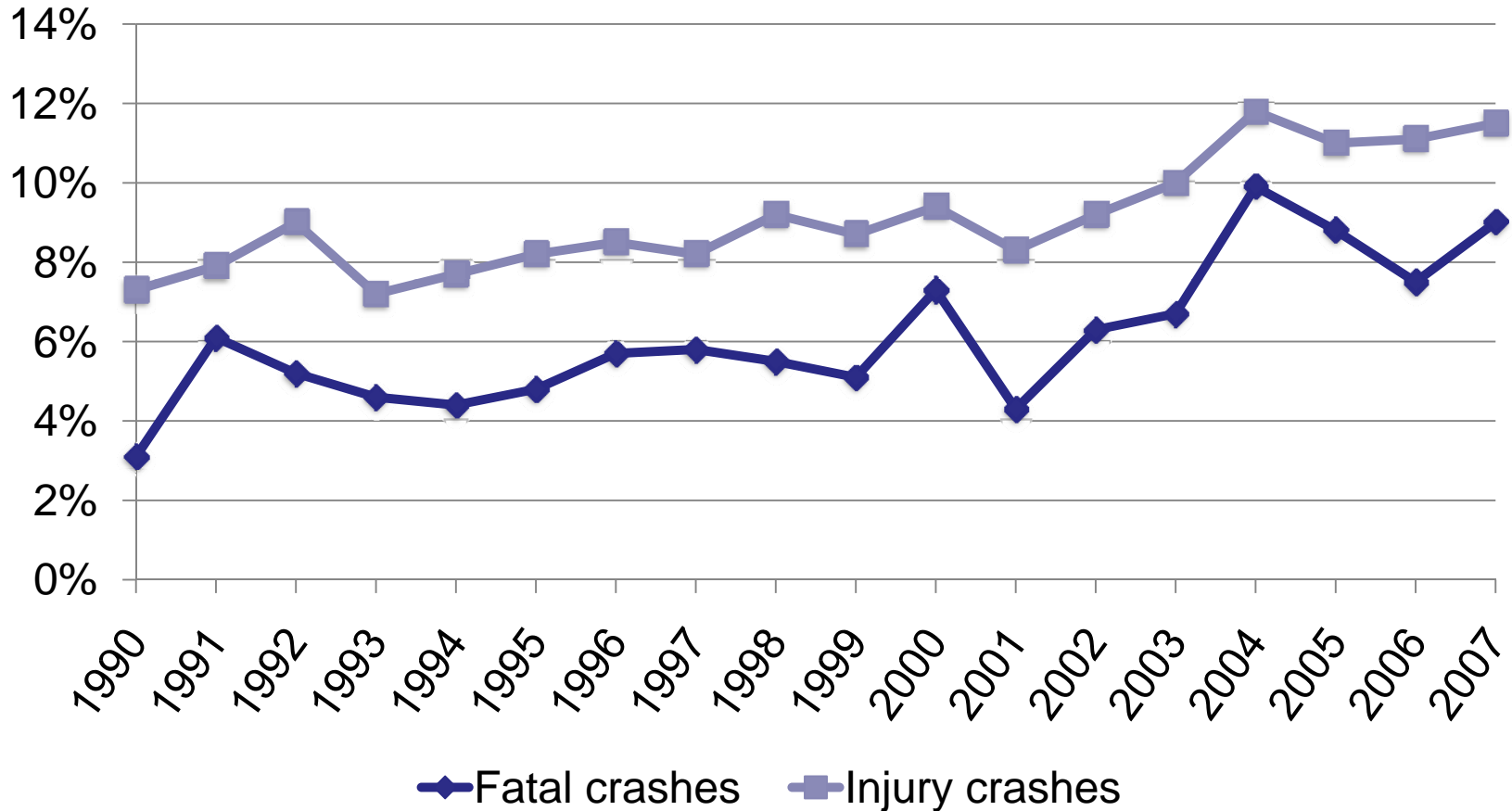
CAS diverted attention series 10.4%

Content review

secondary task driver distraction	5.1%
+ daydreaming and suspected distraction	5.7%
+ driving related activity	9.0%
+ other distracted road-users	<u>9.2%</u>

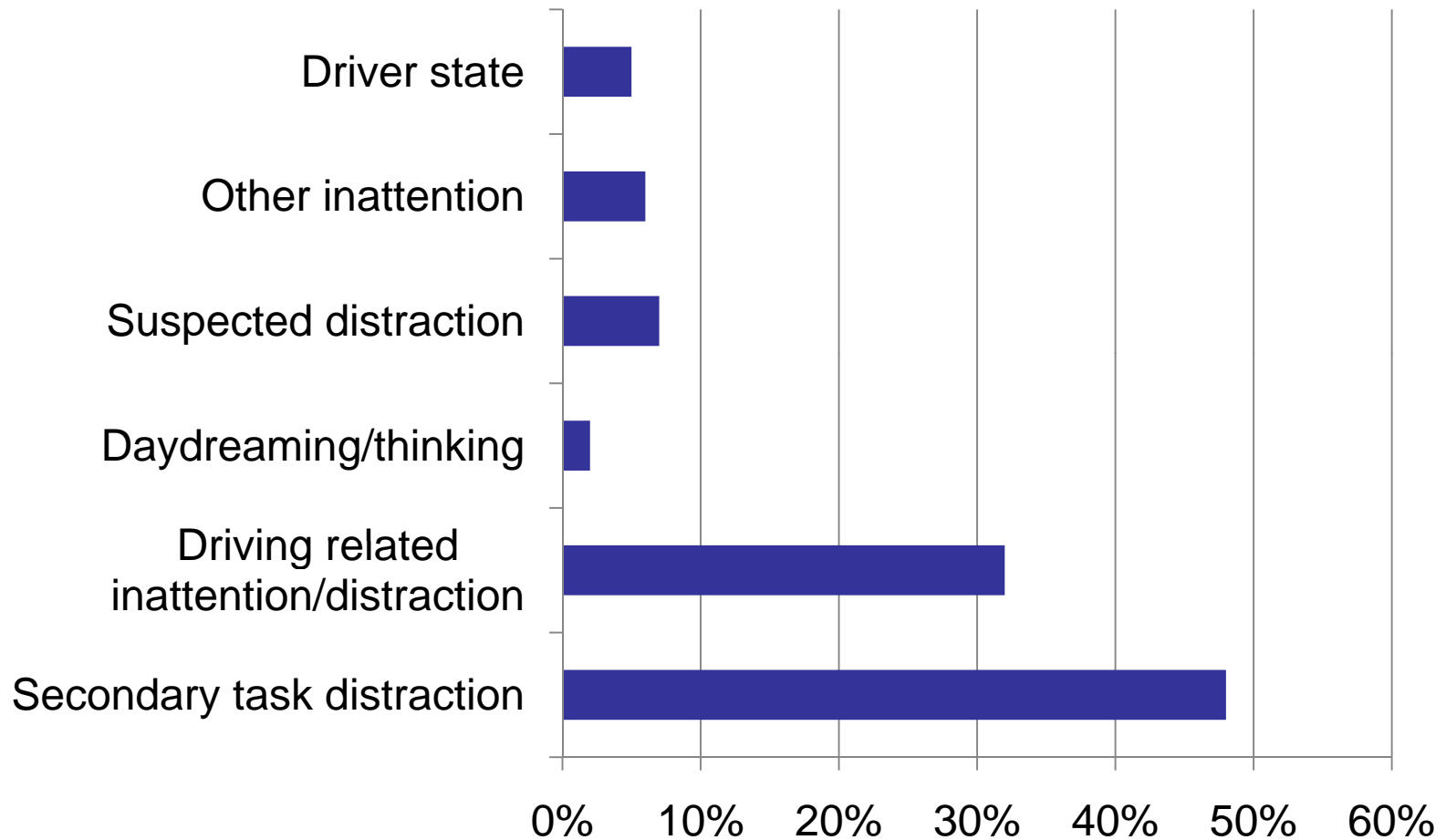
Limitations – police-report based analysis, limited to examination of the diverted attention series only, expected to be an under-estimate

Changes over time – official CAS diverted attention series



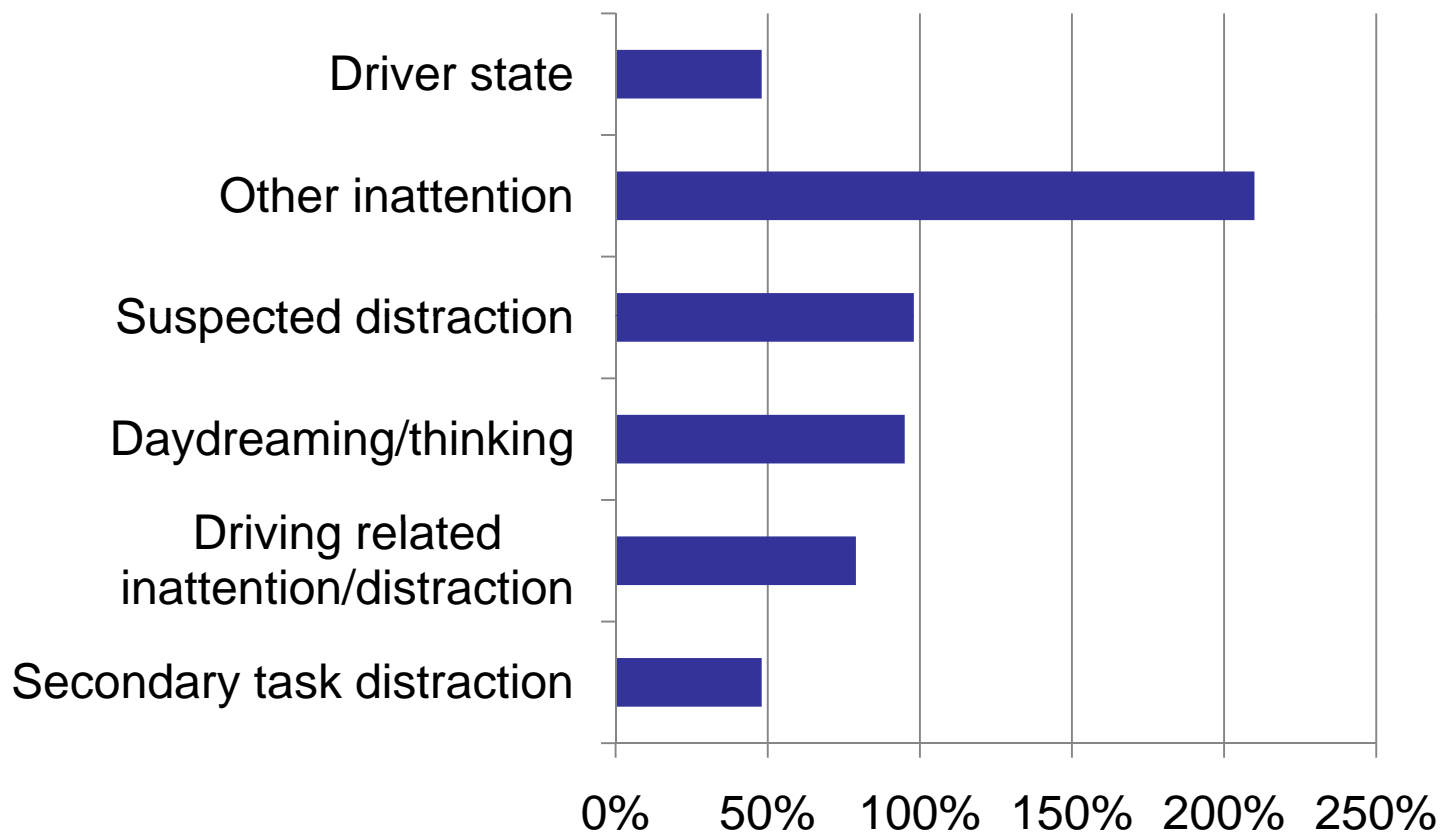
% crash involvement out of all police-reported crashes

Content review – six summary categories



Proportion of crashes from the diverted attention series involving the six main content review categories

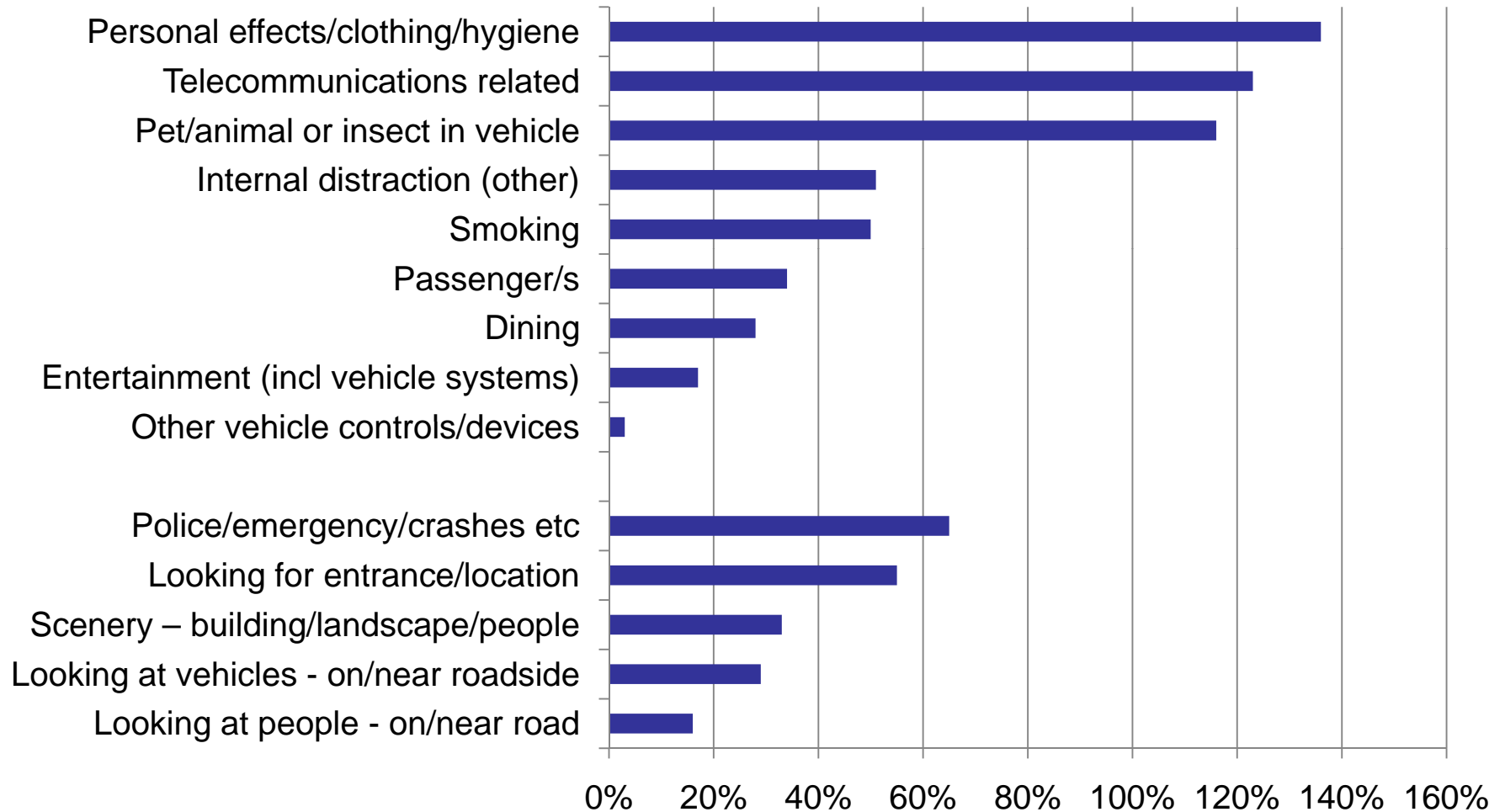
Content review – growth over time for six summary categories



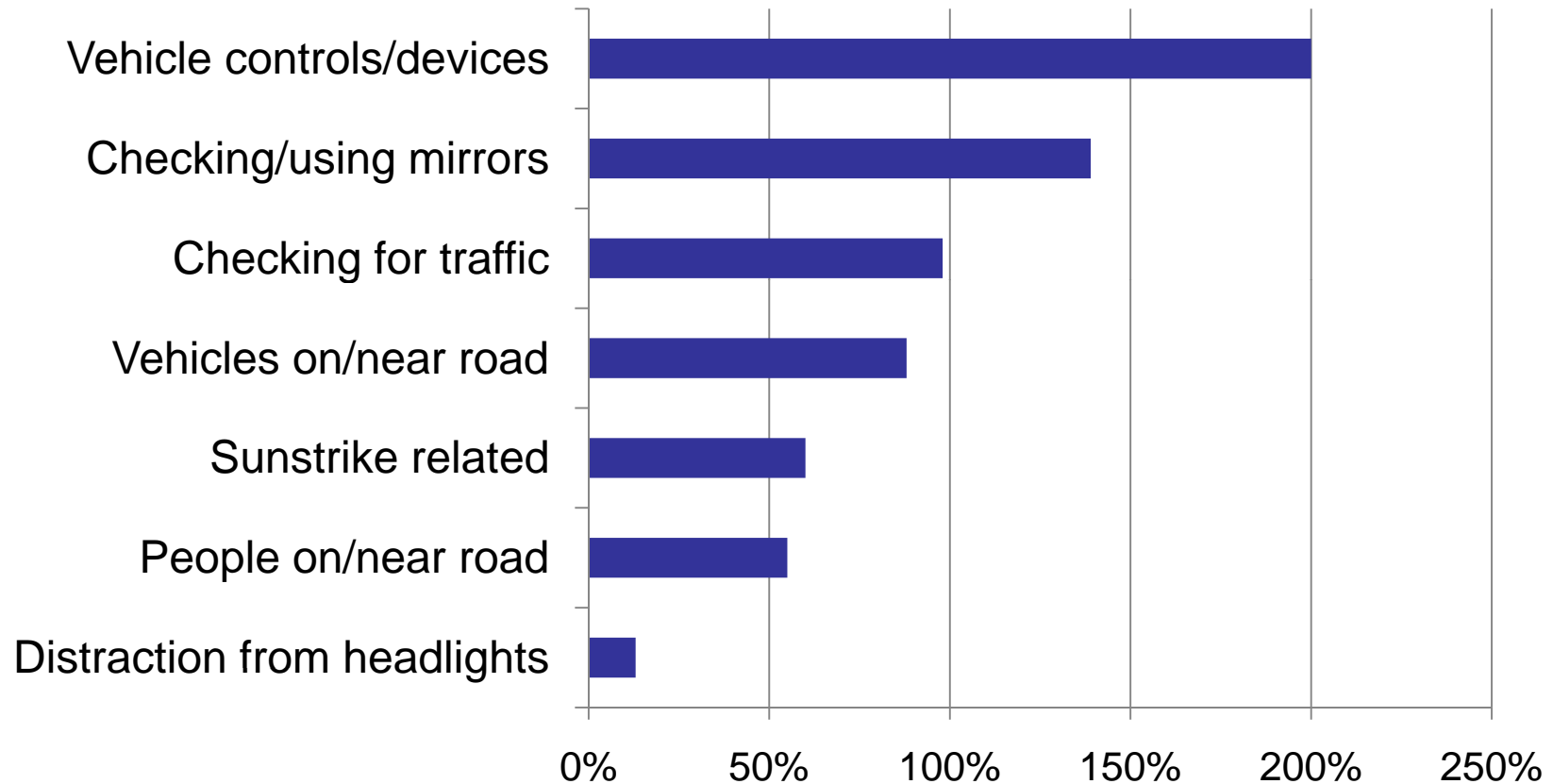
% change over time (2000/2001 vs 2005/2006) for the six main summary content review categories



Content review – growth over time (00/01 vs 05/06) for secondary task distraction



Content review – growth over time for driving-related activity



% change over time (2000/2001 vs 2005/2006) for the driving-related activity identified in the content review

Summary comments

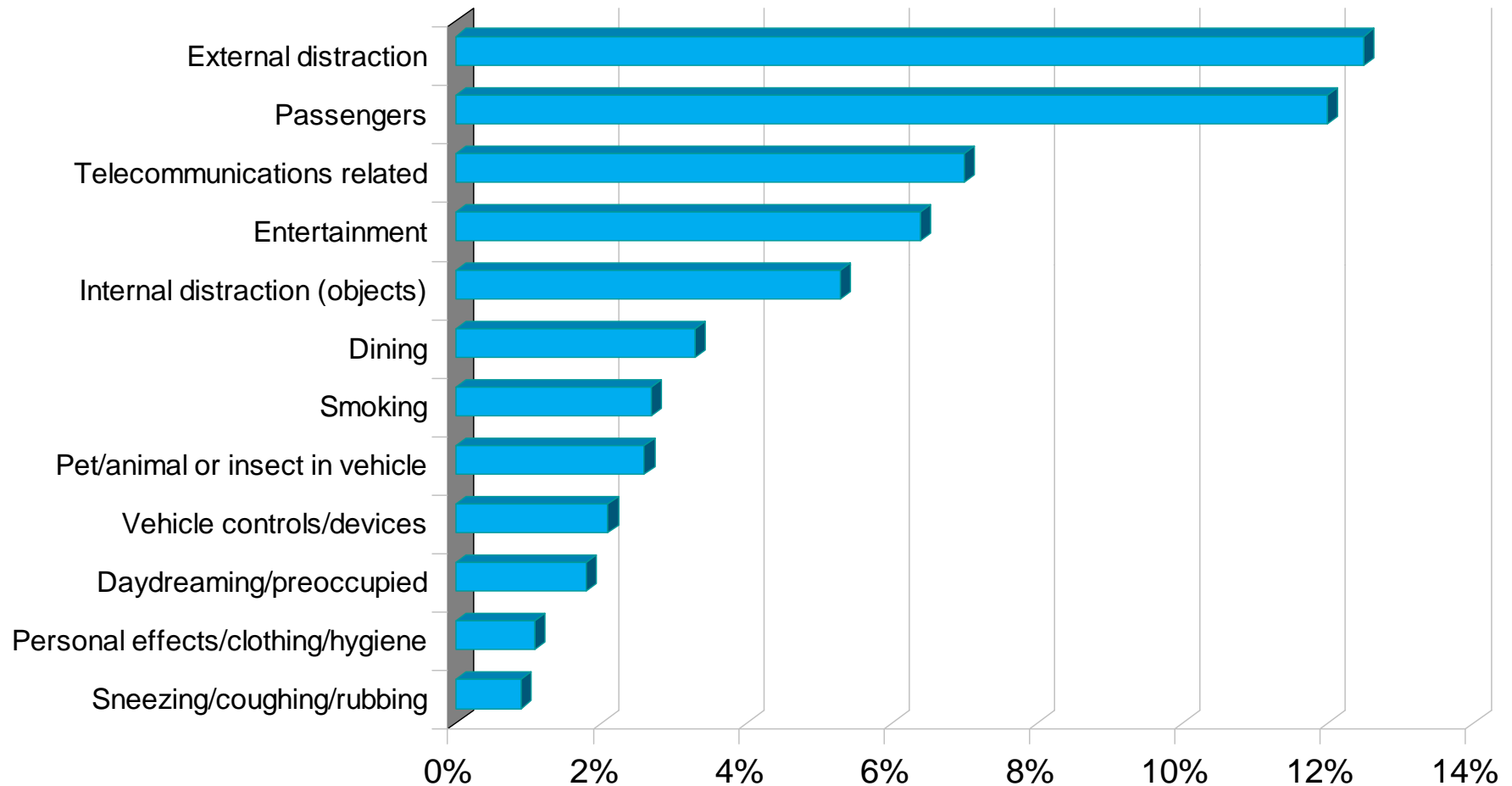
- Content review approach used; still revising our classification approach
- Important to identify driver state, secondary task distraction, daydreaming and driving related activity (these are all within the current diverted attention series and not necessarily separated)
- Current estimate of distraction involvement is 9.2% (includes daydreaming and driving related activity)
- Over time considerable growth has been observed in this series
- Next steps: discuss with NZTA how to improve the existing diverted attention series

Thank you for your attention

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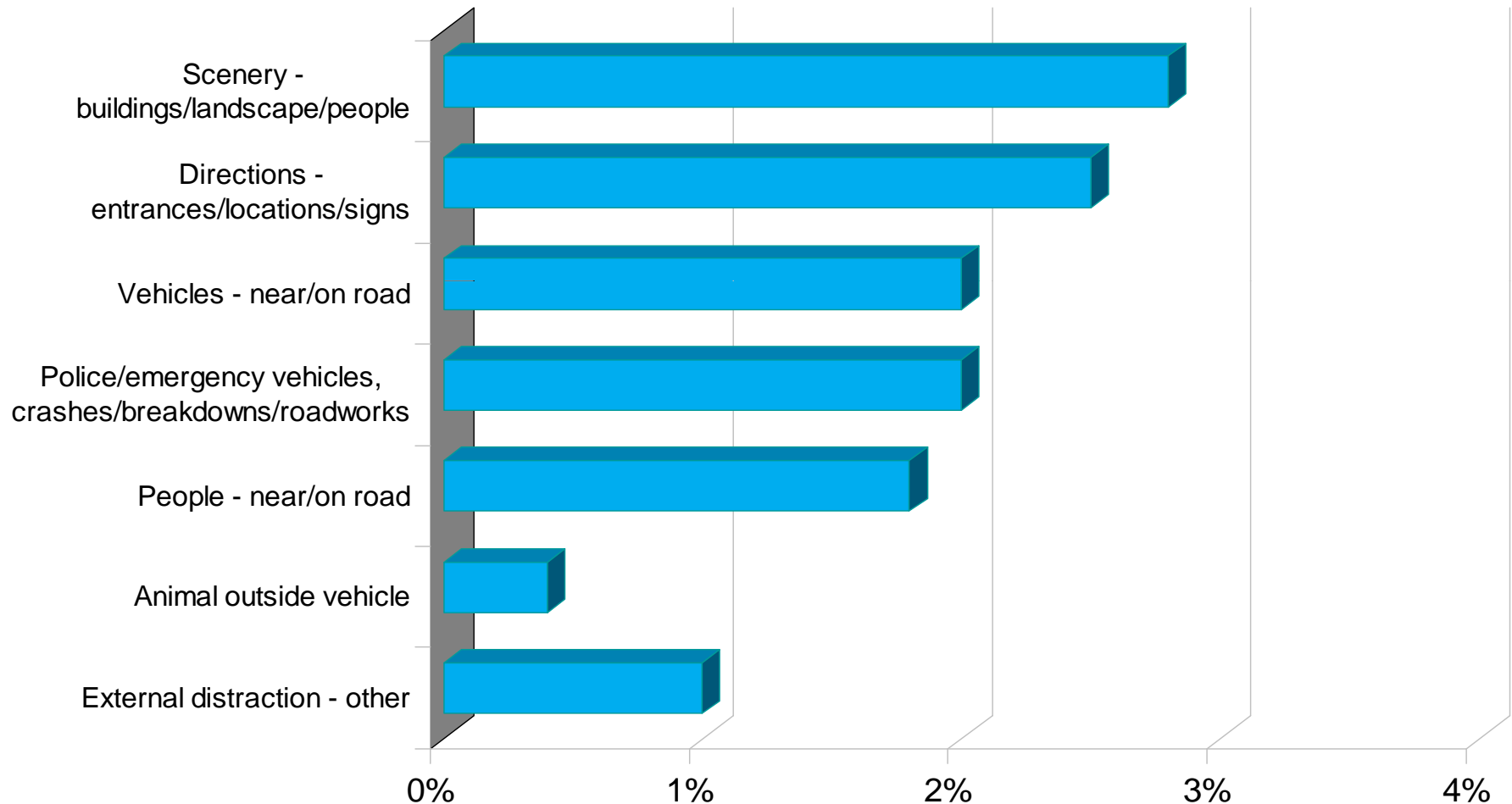
Secondary task distraction source involvement

(From Gordon & Evans, 2008)



Secondary task distraction external involvement

(From Gordon & Evans, 2008)



Driving related source involvement

(From Gordon & Evans, 2008)

