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Key findings from focus group research on inside-the-vehicle distractions in New Zealand

Chad Barker
New Zealand Ministry of Transport

Overall, participants did not see inside-the-vehicle distractions as an important road safety problem. Inside-the-vehicle distractions are seen as part of a larger set of distractions that drivers have to contend with everyday, and these distractions are accepted as a normal part of driving. Many participants thought these distractions were 'within the driver's control', and could be stopped at any time to deal with a traffic situation posing more risk. Some distractions like disruptive passengers were thought to be outside of a driver's control. The participants perceived safety issues to be related to a driver having their eyes off the road and sometimes only one hand (or no hands) on the steering wheel. There was some understanding of the role cognition plays in being able to complete tasks. The participants thought distractions posed more of a risk and reduced their ability to concentrate on driving when they were 'overloaded' and/or feeling 'emotional'. Other factors such as their familiarity with the road being driven affected the amount of attention required for driving. The participants discussed a wide range of inside-the-vehicle distractions while driving and the associated behaviours (e.g., text-messaging, interacting with a passenger, reaching for an item, rolling a cigarette, selecting a CD, adjusting the climate control, eating and drinking etc.). Some of the behaviours such as text-messaging and rolling a cigarette were very concerning from a road safety point of view. However, the participants did use strategies to minimise the risk, for example, pre-selecting a CD, using a hands-free cell phone kit and choosing a time to engage in a distracting task when there was less traffic, the traffic was still or moving slowly. The researchers concluded that certain behaviours such as dialling and text-messaging on a cell phone, reading a map, and rolling a cigarette while driving were more likely to be affected by a public awareness campaign as there was a greater understanding of their road safety implications. The researchers recommended that a public awareness campaign should focus on the attention required for driving, as this was more meaningful for drivers and would stop them from classifying distractions into things they can and cannot control.

Background

As a result of a Cabinet decision in 2004 not to proceed with a ban on hand-held cell phone use, and a request to consider this issue in the context of the overall risks of inside-the-vehicle distractions, a project was set up to:

- assess the risks of inside-the-vehicle distractions; and to
- identify potential countermeasures to minimise the effects of driver distraction.

An important part of this project was to find out what New Zealand drivers think about these distractions and the sorts of behaviours that are occurring to help formulate some key messages that could be used to improve public awareness about driver distraction.

Consequently, the former Land Transport Safety Authority (now Land Transport New Zealand) commissioned a research company based in Auckland (Research International) to undertake this research. This paper summarises the findings from this research. The full report is attached as Appendix 1.

Objective

The objective of the research was to:

- find out the attitudes and perceptions different categories of drivers had to inside-the-vehicle distractions, and the behaviours involved; and to
- suggest key messages that could be used to improve public awareness about driver distraction.

Methodology

A qualitative methodology was used to explore the participants' beliefs and attitudes, perceptions and experience of inside-the-vehicle distractions. A total of six focus groups were facilitated, and the total number of participants was 37 (21 Male and 16 Female).

Two participants from each focus group received a follow up telephone interview to find out whether they were more aware of the effects of their distracting behaviours, and whether their participation in a focus group had altered their behaviour.

There were six categories of drivers of interest:

Teenagers (16-19 years old)

Young adults (20-24 years old)

Parents/caregivers

Business people

General (urban)

General (rural)

These groups were determined after considering the size of the inside-the-vehicle crash problem and after sampling some of the crash reports and considering them in detail. The knowledge and experience of the research company was also used in the categorisation of the groups. In addition, some thought was given to the types of distractions these groups may more frequently engage in.

The participants were randomly recruited over the telephone and screened on a variety of criteria to ensure they fitted one of the groups and so that there was a spread of demographic variables across the groups. The participants had to agree to engaging in some distracting behaviours at least sometimes, for example, changing a CD, smoking a cigarette, using a cell phone, interacting with a passenger, eating and drinking and reading a map.

For the general groups, the intention was to capture a range of drivers (age and other demographic variables). It was also thought that a rural group should be conducted to see if there were any differences between rural and urban dwellers.

Findings

Beliefs and attitudes

A key finding from the research was that drivers consider inside-the-vehicle distractions as part of a larger set of distractions that drivers have to contend with everyday (including difficult weather and other traffic etc.), and these distractions are accepted as a normal part of driving.

The participants did not consider inside-the-vehicle distractions to be a significant road safety issue because they had engaged in these activities many times and had not suffered any serious negative consequences. Although many participants described near misses and situations where their driving performance was negatively affected. If a crash did occur, the participants expected it to be more of 'hassle' than a danger to their physical wellbeing.

In general these behaviours were seen to be within the driver's control, that is, the driver could stop the behaviour when necessary to deal with a traffic situation posing more risk. Although activities such as eating and drinking, smoking a cigarette and changing a CD could be distracting if something went wrong, that is, if the food being eaten spilled on the driver while driving or if another driver made a bad driving decision and they could not react to that decision in time.

Some distractions were considered to be outside of a driver's control, for example, the behaviour of a passenger (young adult/adult), pet or child, and for these distractions, the driver often did not have a choice but to respond immediately to the situation.

Perceptions

The participants considered any safety issues to be related to a driver having their eyes off the road and sometimes only one hand (or no hands) on the steering wheel. There was some understanding of the role of cognition in being able to complete tasks. The participants were able to discuss examples of 'looking but not seeing' incidences, driving on 'autopilot' and being delayed in their reaction when they had their eyes on the road. The participants also acknowledged that there are occasions when distractions posed more of a risk and reduced their ability to concentrate on driving:

- when they are feeling emotional – when distressed or angry
- when they are overloaded – having to deal with too many tasks at once.

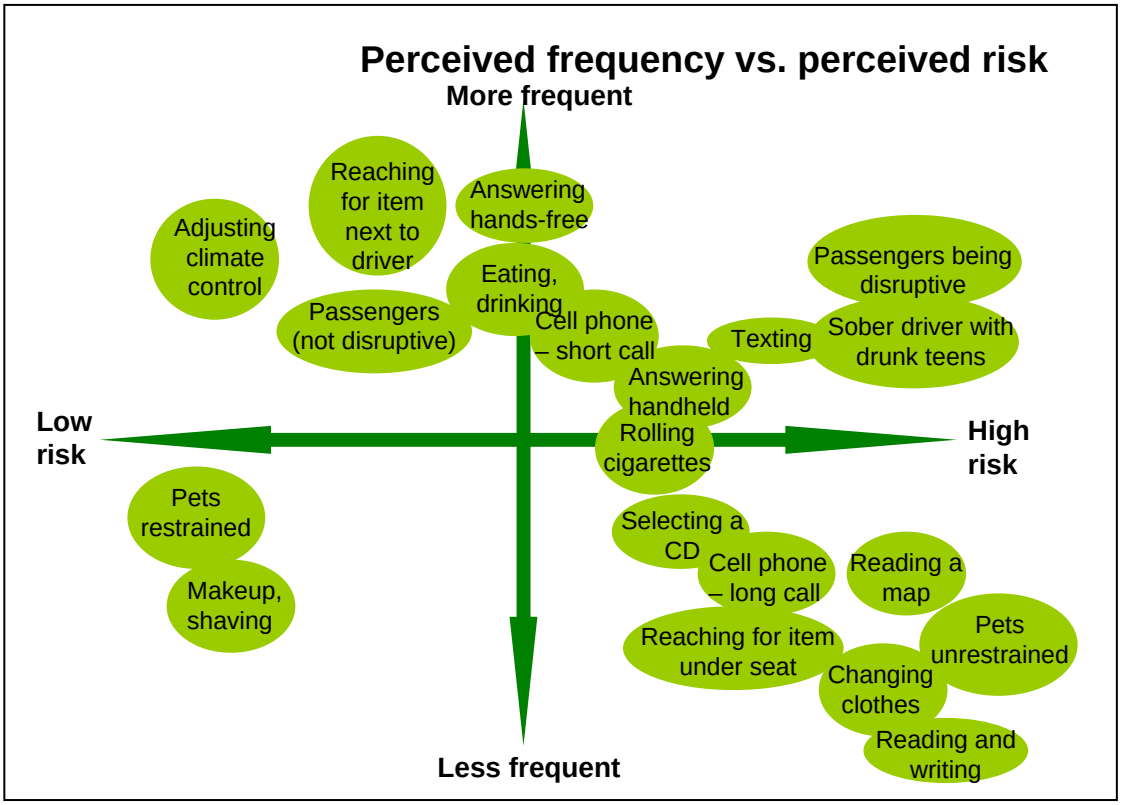
Both occasions are exacerbated if driving in an unfamiliar environment.

The participants commented that this was because they did not require as much attention when driving on familiar roads compared to unfamiliar roads. This left more attention resources free for other tasks than when driving on unfamiliar roads.

The participants are comfortable completing multiple tasks at once providing there is adequate spare attention resources.

Irrespective of the participants not considering inside-the-vehicle distractions as a significant road safety problem, the facilitators had them rank the distractions by risk (between low and high risk) and frequency (between less and more frequent). Figure 1 illustrates the results of these rankings:

Figure 1: Perceived relative risk of different inside-the-vehicle distractions in New Zealand



Behaviours

The key findings relating to the behaviours associated with the inside-the-vehicle distractions were:

<u>Cell phone</u>

- Many people consider using their cell phone while driving to be essential, and as a right
- Most people do not consider it safe to make a call while their vehicle is moving unless the call is to someone in their cell phone address book (where dialling involves two or three buttons) or they have a voice-activated cell phone
- Holding a brief conversation is considered safe, while holding a longer or complex conversation is considered unsafe
- Younger participants felt that it was safe to construct a text-message as they did not have to look at their cell phone while doing it, older participants felt the opposite
- Hands-free cell phone use (through hands-free kits) is considered safe, particularly by business people
- It would be difficult to convince people that hands-free use while driving was unsafe
- Participants acknowledged using a cell phone while driving may distract them cognitively but do not think it is worse than conversing with a passenger

Passenger

- Transporting passengers is a normal and frequent occurrence when driving
- Passengers can be unpredictable and their behaviour outside of the driver's control (e.g., young children opening their car door, a drunk passenger interfering with car controls)
- Children, a driver's peer group and drunk passengers cause the most distraction
- Children are considered the most unpredictable passengers and require constant monitoring
- Some parents use rules or set phrases such as 'not now' to influence a child's behaviour when necessary
- Parents feel there is an opportunity to educate children about safe driving behaviour through school programmes
- Participants from all age groups reported that being a sober driver with drunk passengers can be very distracting
- The most dangerous behaviours tended to come from teenagers (e.g., pulling on the handbrake, playfighting etc.)
- Sober teenage drivers described adopting a strategy of ignoring the passengers or being hypervigilant
- Having an argument with a passenger was considered to be very distracting but was not thought to be something that could cause a crash

Changing a CD

- Adjusting a CD player is considered safe by most drivers providing it does not involve pressing a lot of buttons
- Selecting and changing a CD is considered highly distracting as it takes a considerable amount of attention to look away, read the CDs, choose one, then place it in the CD player
- Pre-selecting a CD and placing it on the seat beside them, ready for retrieval, is not considered unsafe
- Participants thought new technology was mitigating the distraction involved with CD players, e.g., CD stackers, MP3 players and CD controls on the steering wheel

Smoking

- Smokers felt that their car was a place they could smoke without being subject to criticism
- Those who smoked roll-your-own cigarettes often used their forearms or knees to steer while rolling a cigarette
- Smokers acknowledged rolling a cigarette while driving was unsafe
- Smokers occasionally pre-rolled their cigarettes before driving

Eating and drinking

- Eating and drinking while driving was a common behaviour reported by the participants
- Participants found eating and drinking while driving perfectly acceptable
- Participants acknowledged some food was better to eat while driving than others, e.g., snack bars, processed food and fruit were better than hamburgers or other hot food
- The major distraction with eating was thought to result from spilling it
- Most drivers drink intermittently (often using sipper bottles), and at safer moments such as when their vehicle is not moving
- Hot drinks were considered the biggest concern

Other distractions

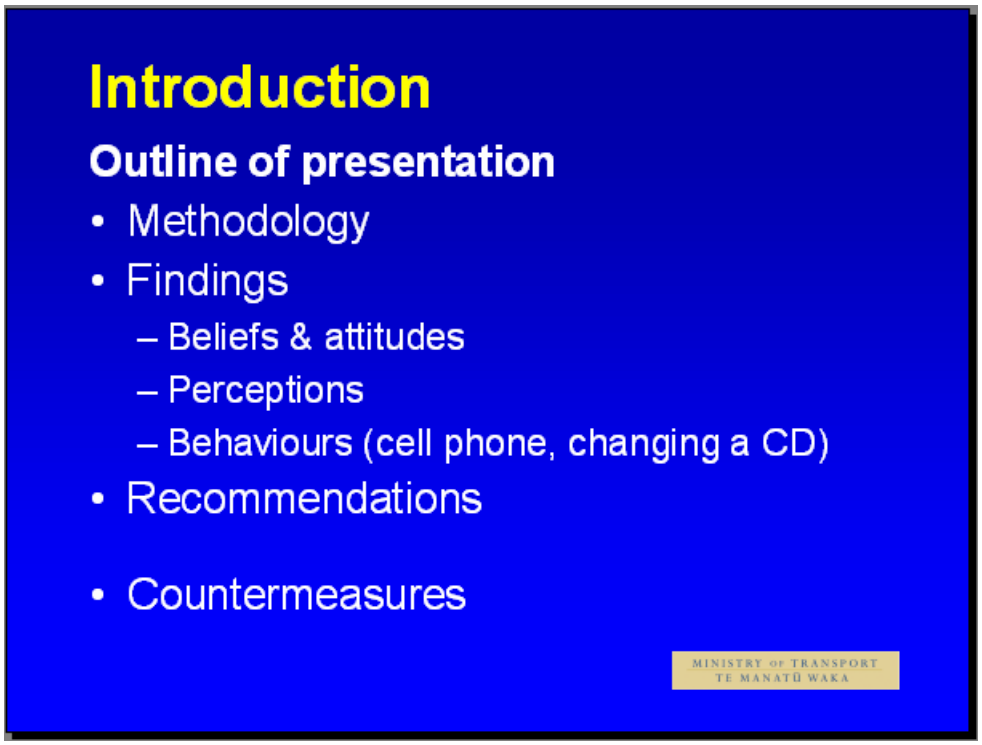
- Auditory distractions such as loud music or loud passengers were mentioned as a problem at times but were not considered particularly unsafe
- Participants did not see these distractions as affecting their ability to process other information

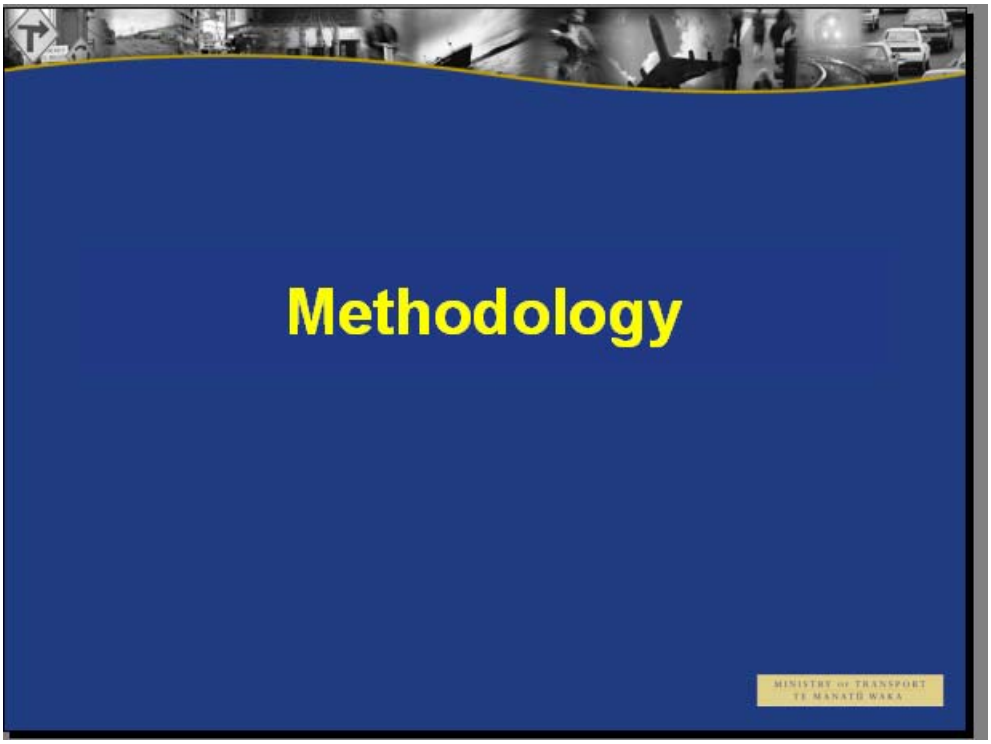
Recommendations

It was recommended that any potential public awareness campaign should focus on the necessary attention required for driving, as this was more meaningful for drivers and helped to stop them from classifying distractions into things they can and cannot control. The researchers felt that drivers needed a reason why full attention was important. It was suggested that crash statistics and other information be used to highlight driver distraction as a road safety issue, and that examples of increased reaction time (for example) to respond to a hazardous traffic situation were used to demonstrate how driving performance can be negatively affected.

The researchers concluded behaviours involving dialling and text-messaging on a cell phone, reading a map, reaching for an item away from the driver and rolling a cigarette while driving are more likely to be changed as there is a greater understanding of their road safety implications. Other behaviours involving interacting with a passenger, eating and drinking, smoking, adjusting a car setting and using a CD player/radio were considered a completely normal, regular part of the driving experience and are unlikely to be changed.

PRESENTATION SLIDES




Methodology
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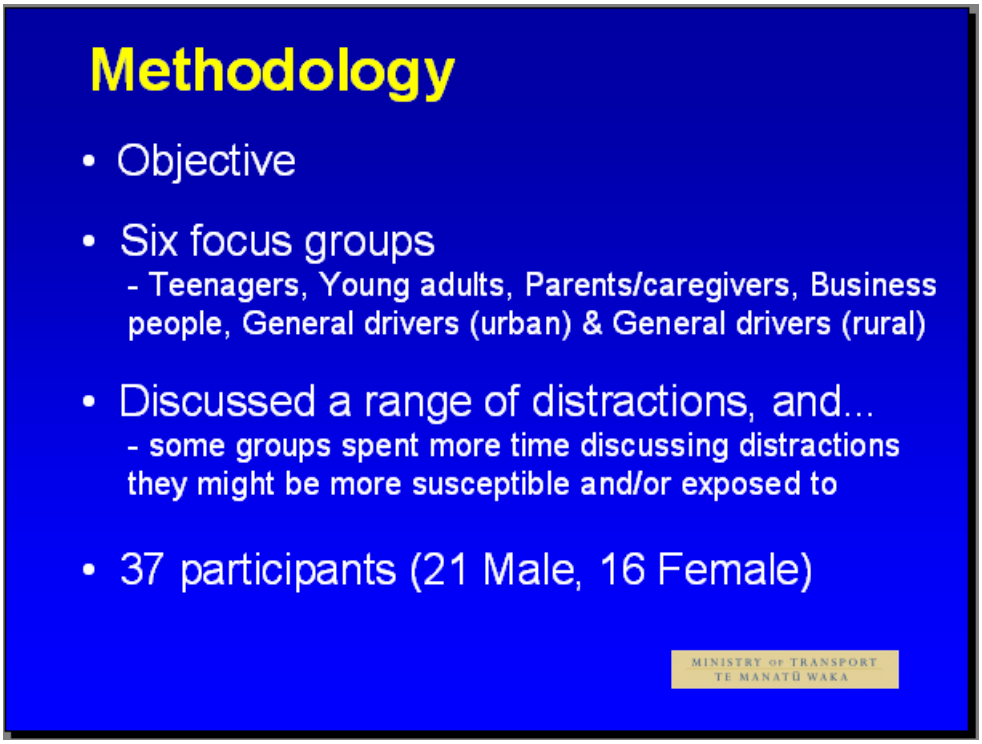
Methodology
• Objective
• Six focus groups
- Teenagers, Young adults, Parents/caregivers, Business people, General drivers (urban) & General drivers (rural)
• Discussed a range of distractions, and...
- some groups spent more time discussing distractions they might be more susceptible and/or exposed to
• 37 participants (21 Male, 16 Female)
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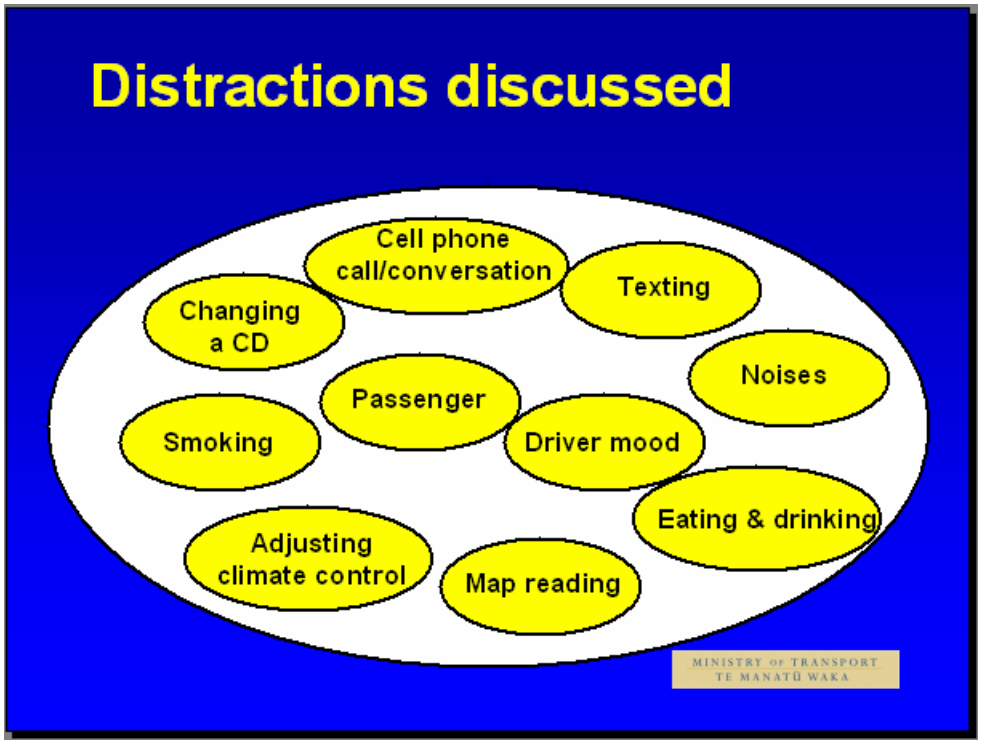
Distractions discussed
Cell phone call/conversation
Texting
Changing a CD
Noises
Passenger
Smoking
Driver mood
Eating & drinking
Adjusting climate control
Map reading
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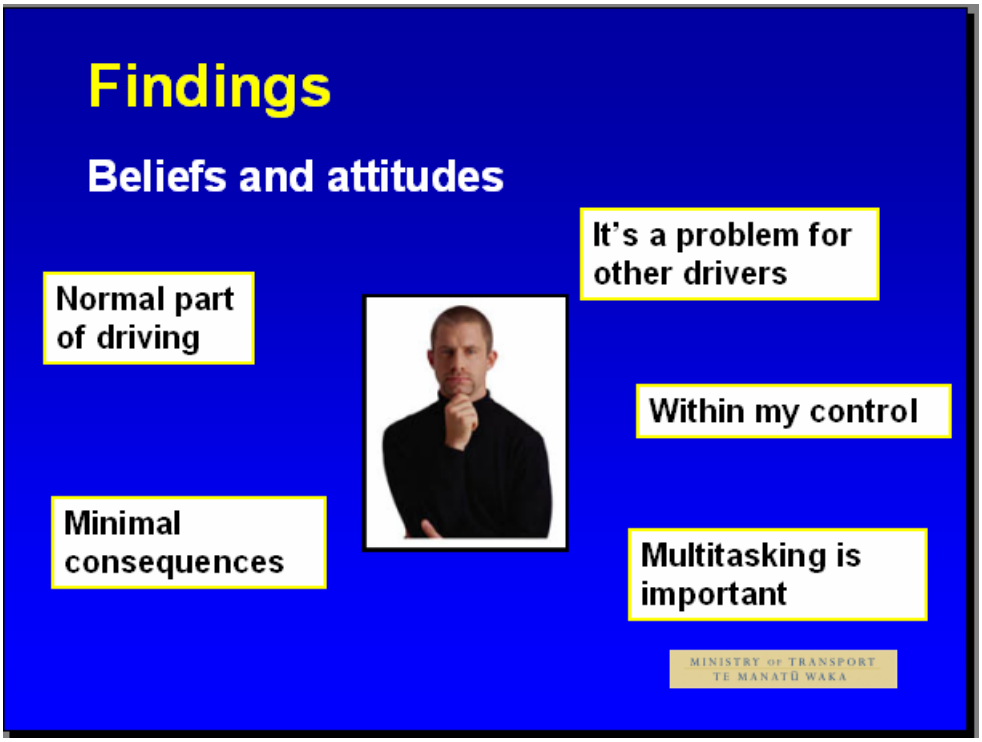
Findings


Findings
Beliefs and attitudes
It's a problem for other drivers
Normal part of driving
Within my control
Minimal consequences
Multitasking is important
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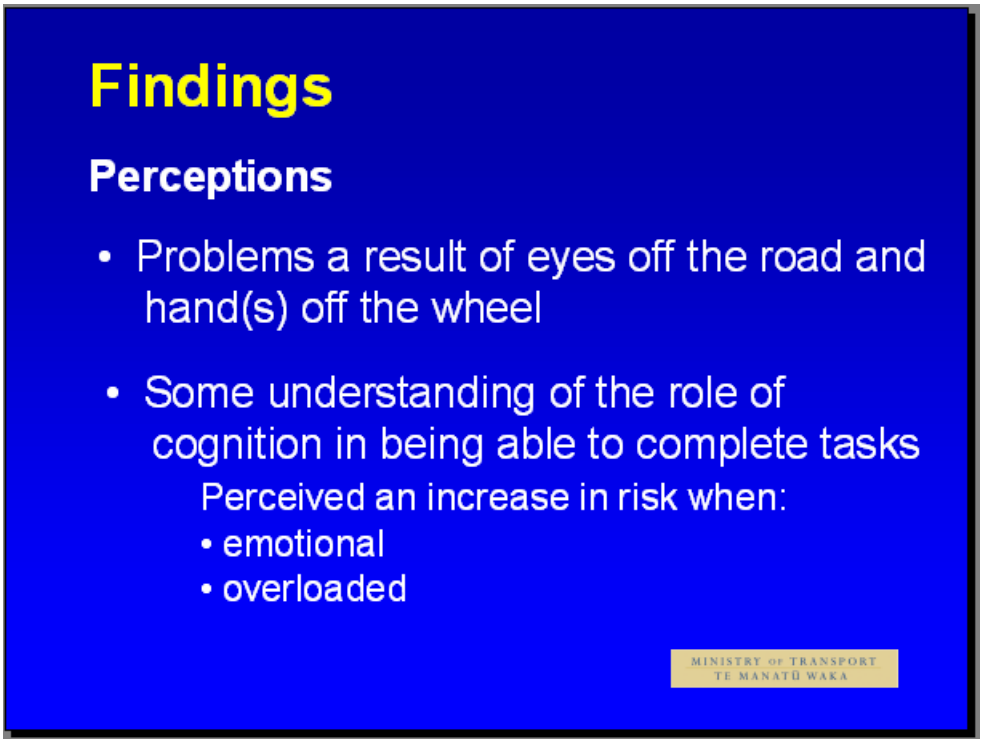
Findings
Perceptions
• Problems a result of eyes off the road and hand(s) off the wheel
• Some understanding of the role of cognition in being able to complete tasks
Perceived an increase in risk when:
• emotional
• overloaded
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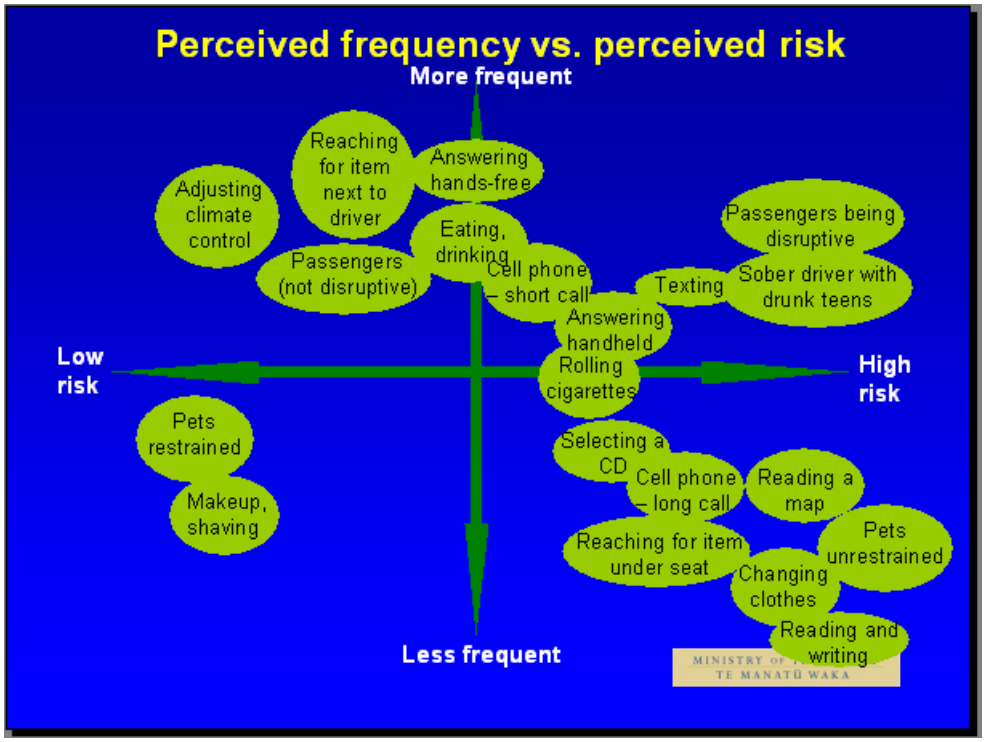
Perceived frequency vs. perceived risk
More frequent
Less frequent
Low risk
High risk
Adjusting climate control
Reaching for item next to driver
Answering hands-free
Eating, drinking
Passengers (not disruptive)
Cell phone – short call
Texting
Passengers being disruptive
Sober driver with drunk teens
Answering handheld
Rolling cigarettes
Pets restrained
Makeup, shaving
Selecting a CD
Cell phone – long call
Reading a map
Reaching for item under seat
Pets unrestrained
Changing clothes
Reading and writing
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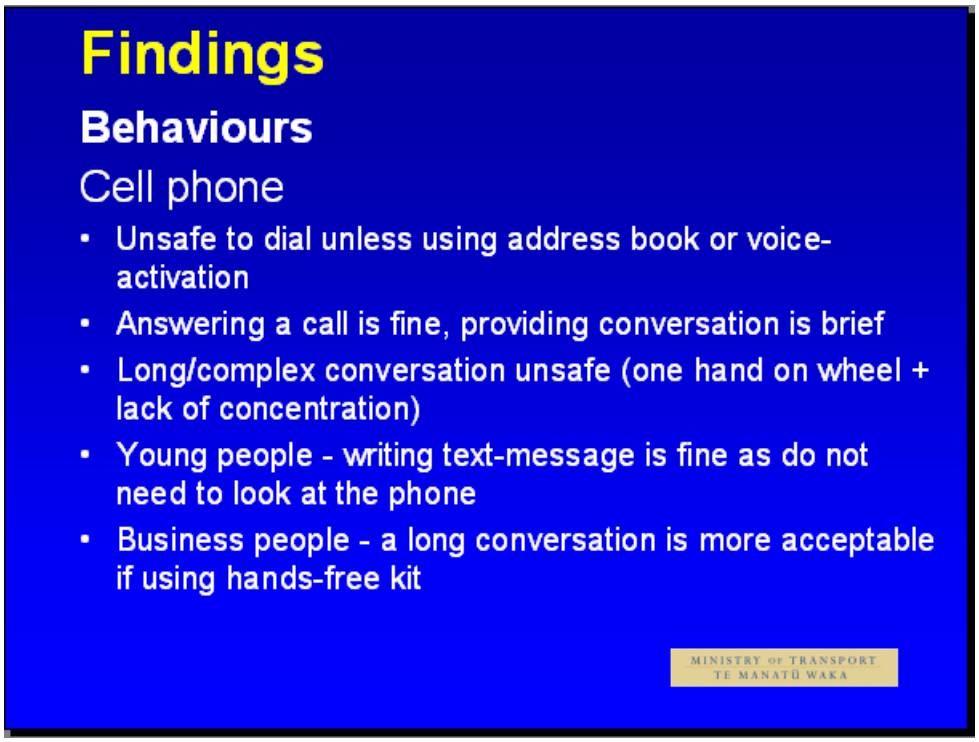
Findings
Behaviours
Cell phone
• Unsafe to dial unless using address book or voice-activation
• Answering a call is fine, providing conversation is brief
• Long/complex conversation unsafe (one hand on wheel + lack of concentration)
• Young people - writing text-message is fine as do not need to look at the phone
• Business people - a long conversation is more acceptable if using hands-free kit
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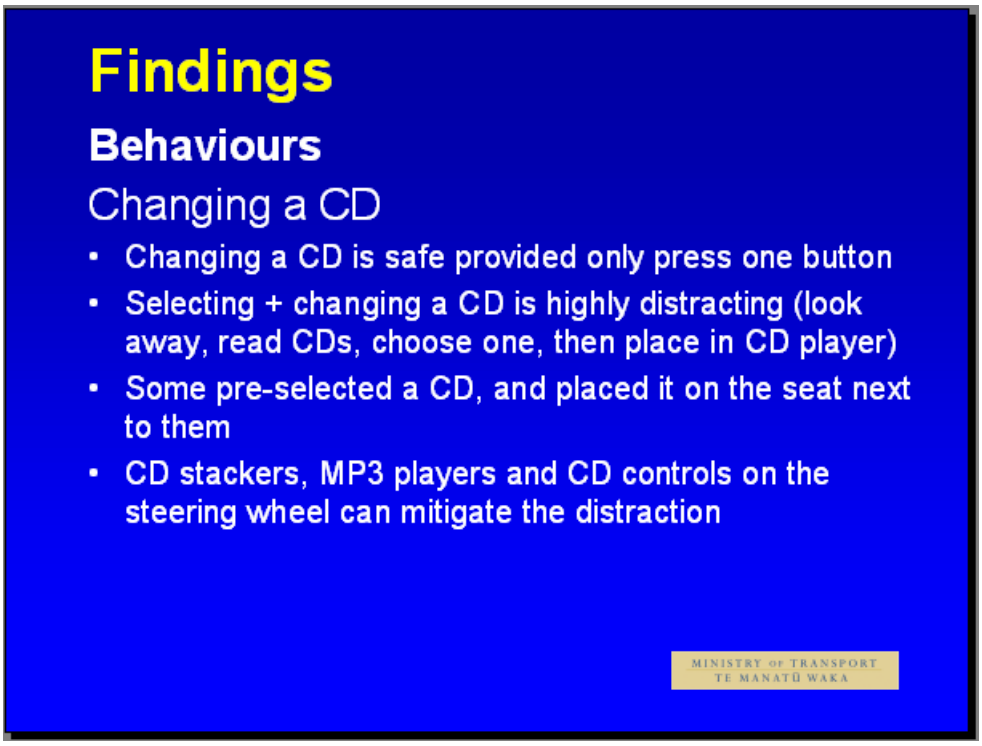
Findings
Behaviours
Changing a CD
• Changing a CD is safe provided only press one button
• Selecting + changing a CD is highly distracting (look away, read CDs, choose one, then place in CD player)
• Some pre-selected a CD, and placed it on the seat next to them
• CD stackers, MP3 players and CD controls on the steering wheel can mitigate the distraction
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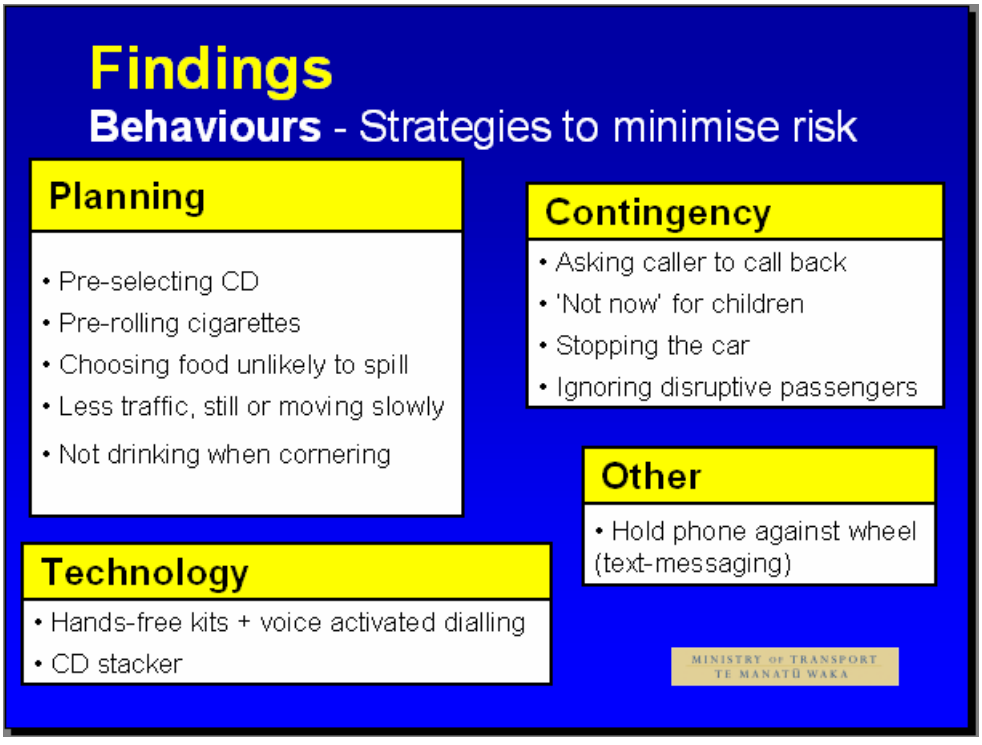
Findings
Behaviours - Strategies to minimise risk
Planning
• Pre-selecting CD
• Pre-rolling cigarettes
• Choosing food unlikely to spill
• Less traffic, still or moving slowly
• Not drinking when cornering
Contingency
• Asking caller to call back
• 'Not now' for children
• Stopping the car
• Ignoring disruptive passengers
Other
• Hold phone against wheel (text-messaging)
Technology
• Hands-free kits + voice activated dialling
• CD stacker
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Recommendations

- Any public awareness campaign should focus on *attention* required for driving
  - more meaningful to drivers; and
  - stop drivers classifying distractions into things they can and cannot control
- Highlight problem using crash statistics and other information
- Behaviours most likely to be changed:
  - dialling and text-messaging, reading a map, reaching for an item away from the driver and rolling a cigarette

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Summary of research
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Summary of research
• Overall, didn't see inside-the-vehicle distractions as an important road safety issue
• Some understanding of the effects of driver distraction
• Whole range of behaviour, some very concerning from safety point of view, but some strategies to minimise risk
• Some behaviours more amenable to change than others
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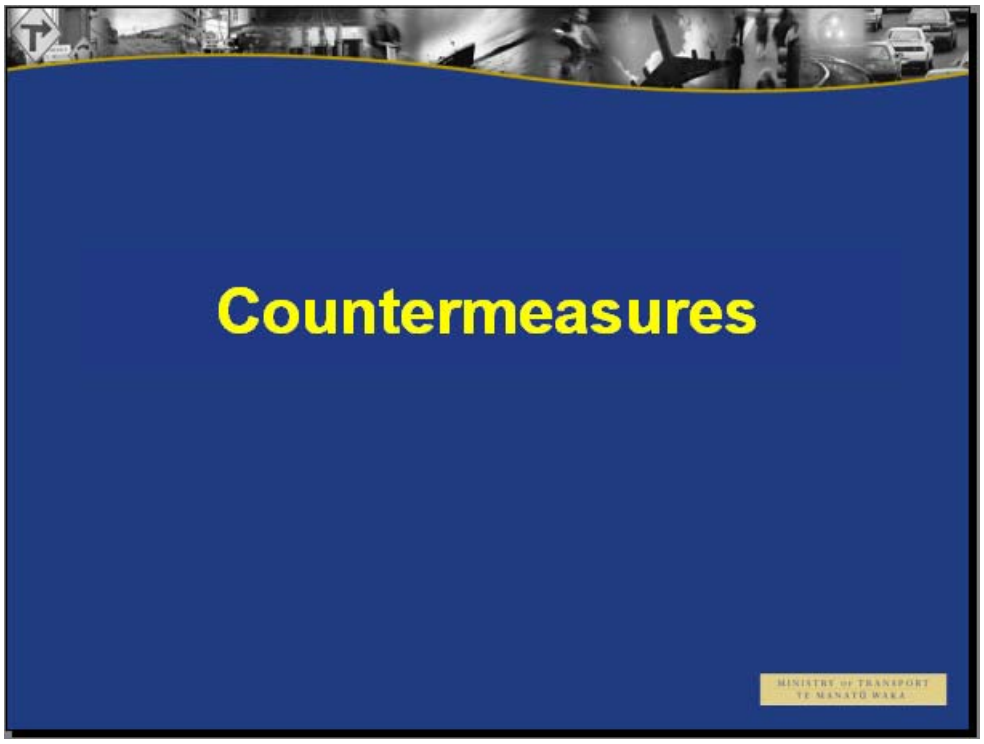
Countermeasures
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Countermeasures
Legislation and enforcement
• Driver must have proper control of the vehicle
• Monitor hand-held cell phone bans for effectiveness
Education and communication
• Raise awareness
• + theory test questions, enhancing Road Code, driving instructors to teach as part of training syllabus etc. (injury prevention programmes?)
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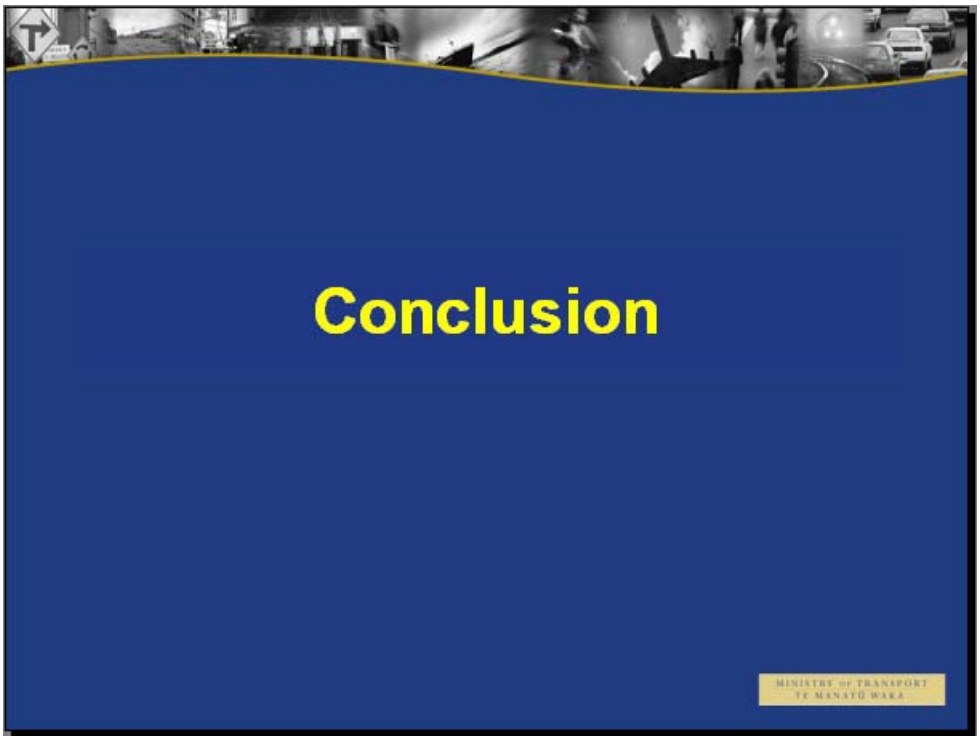

Conclusion

- Low level of awareness of driver distraction as a road safety problem in New Zealand
- A lot of effort required to affect the beliefs and attitudes of drivers before we can expect a behaviour change

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Appendix 1. Project Distraction

Ruth Sutherland, Tanya Parkinson & Steve Gilmore
Research International Ltd
(October 2004, Project No. 400457)

Contents

Background

Driver distractions, both inside and outside the vehicle, were a contributing factor in 8.4% of all fatal and injury crashes in New Zealand between 1998 and 2002. Although this is a lower percentage than crashes caused by speed and alcohol, (15.9% and 14.7% respectively) the number is a cause for concern for the Land Transport Safety Authority.

- There are statistics about driver distractions available from crash data but the full extent of the problem is not known. One contributing factor may be drivers misreporting or not reporting the contributing factors of accidents.

- There is no New Zealand research available that focuses specifically on the issue of driver distraction.

- This project aims to understand current driver behaviours and attitudes to in-car driver distractions, so that relevant and credible messages can be developed by the LTSA to address the issue.

Methodology

A qualitative methodology was used, in order that full exploration of issues could be undertaken.

- A total of 6 focus groups were facilitated.

- The rural group was completed in Morrinsville, with all other groups done in Auckland.

- Two respondents from each group participated in follow-up phone calls approximately a week after the group, to:
    - check if participants had become more aware of completing distracting behaviours
    - discuss what, if any, influence group participation had on behaviour change for them.

Sample

- The following groups of drivers were recruited:
    - 2 youth groups - teenagers (16-19yrs) and young adults (20–24yrs)
    - 1 group of parents
    - 1 group of business people
    - 2 groups of general drivers - 1 urban and 1 rural (Morrinsville)

- Participants were randomly recruited over the telephone, and then screened on a variety of criteria to ensure they fit one of the groups described above and that there was a spread of demographic variables across groups
    - In addition, participants had to agree to completing some distracting behaviours, such as using a cell phone, driving passengers, eating etc at least sometimes.

- A total of 21 Males and 16 Females participated in the groups.

Summary of key findings

Key points

- Drivers do not necessarily see the behaviours that this project focused on as distractions
    - Part of a larger set of potential distractions which all drivers have to deal with
    - Have become part of the normal repertoire of driving
    - Perceived safety of these behaviours is reinforced by previous experiences where outcomes have been positive
    - These behaviors are seen to be within the driver's control
    - Not all in-car distractions are seen as negative, with some behaviours reported to help the driver remain alert (eg. passengers and listening to stereo)

- Drivers perceive that the main safety issue is that these tasks take away *physical* resources to drive (ie. eyes off road, hand/s off wheel)
    - Drivers believe they can always cease any additional behaviour if the driving situation changes (ie they need that physical resource).

- However, there is recognition that there are occasions where these behaviours have a greater risk, with two key reasons for this occurring:
    - Emotive responses – when emotionally aroused (especially being distressed or angry) there is understanding that their ability to cope with normal tasks is reduced

    - Attention overload - most likely generated with having to deal with too many tasks

- Therefore, drivers do understand that there are a number of factors which integrate to allow for completion of the task, but do not understand the full role of cognition in mediating these.

- There are times where competing tasks are required to be prioritised over driving – usually because the distraction is seen to be unpredictable or a maintenance behaviour has 'gone wrong', such as
    - A cigarette falling on the drivers lap
    - Children opening doors
    - Small animals getting under the drivers' feet

- In these cases the driver usually pulls over as it is recognised as an unsafe driving situation.

- Drivers feel that distractions are a low priority in terms of overall driving safety for two key reasons
    - On their own, maintenance behaviours are unlikely to cause an accident – However in the case of someone else's bad driving, the driver may not have adequate resources to avoid the accident
    - If an accident did occur, consequences are expected to be more of a hassle than a danger to life or limb

- Having said this, there is some awareness of danger, as evidenced by strategies to minimise risk.

What is a distraction?

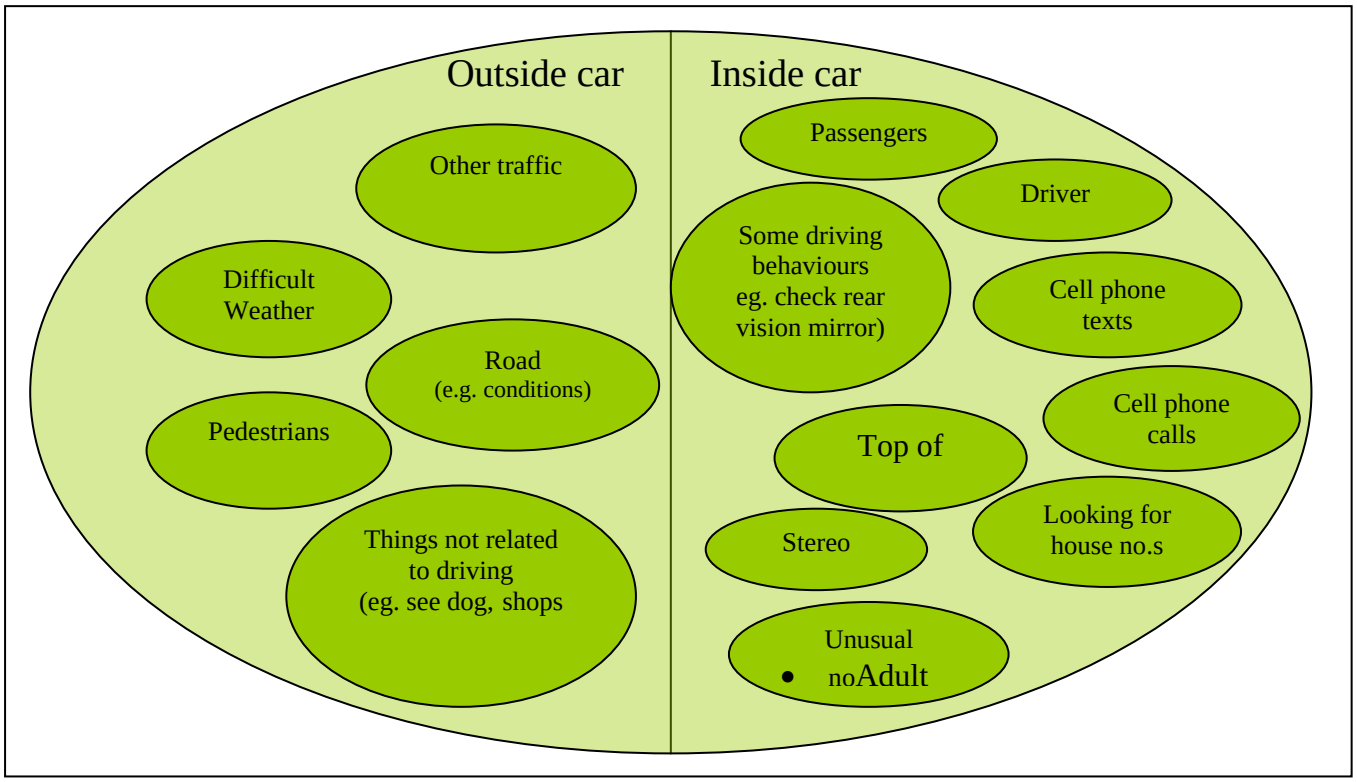
Definition and scope of this project

- The American Automobile Association Foundation for Traffic Safety definition of driver distraction:

    > "When a driver is *delayed* in the recognition of information needed to safely accomplish the driving task because some event, activity, object or person within or outside the vehicle compelled or tended to induce the driver's shifting attention away from the driving task" (Treat, 1980, p.21)

- The scope of this particular project was to focus on those factors which are categorised as distractions that occur inside vehicles and are contributing factors in a significant number of crashes.

- The Land Transport Safety Authority identified a number of distractions as worthwhile of further analysis from a driver perspective (see Figure 1), including
    - interacting with passengers
    - smoking cigarettes
    - eating and drinking
    - using a cell phone



However, drivers don't differentiate between distractions in and outside of the car.

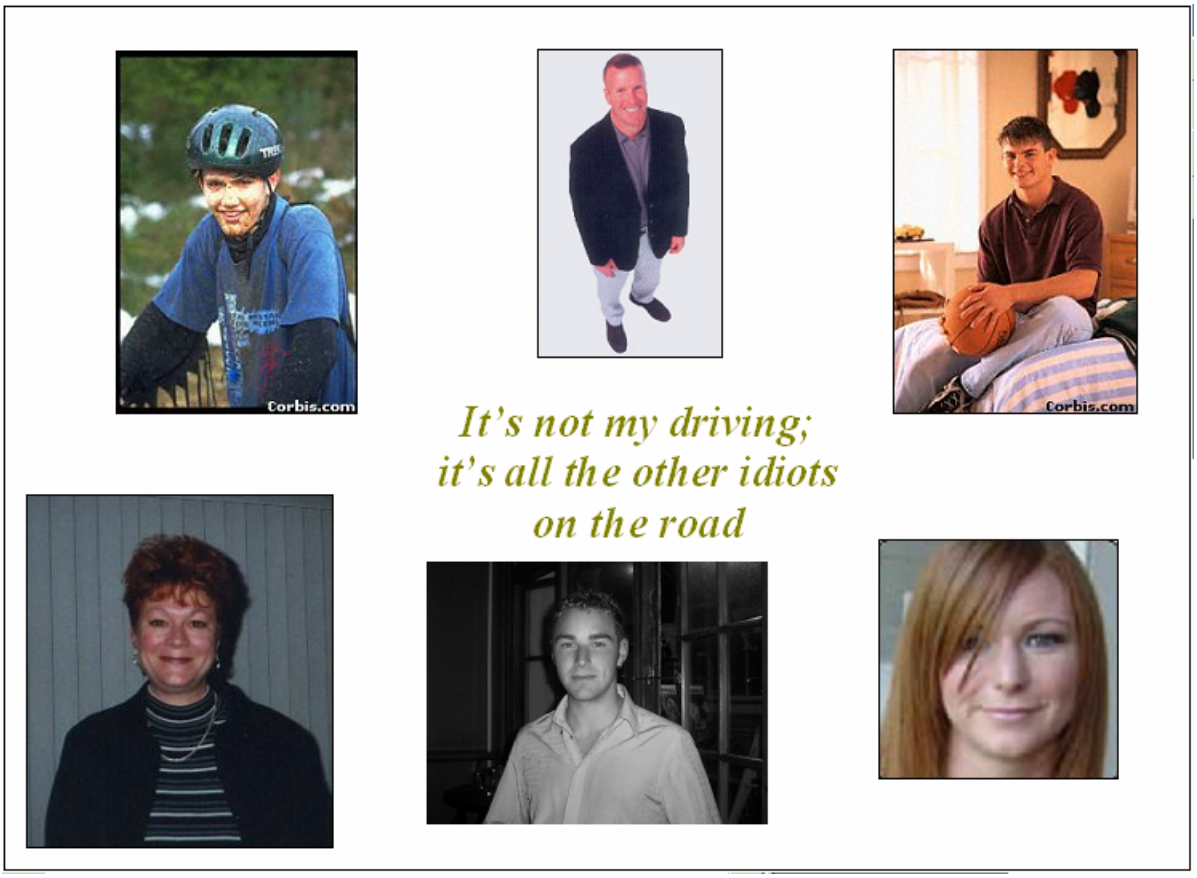
Activities such as eating and drinking, smoking, changing CDs, etc., are seen as distracting only when they go wrong, such as a food spill.

Driver attitudes towards distractions

Drivers are more aware of distractions in other drivers

- Drivers are generally unaware of what distracting behaviours they complete while driving.
- These behaviours are more easily remembered if:
    - Drivers knew they shouldn't really be attempting them ie. tasks that require more concentration (e.g. reading) or two hands

      "I try so hard not to do scratchies in the car"



- They have had a close call or accident whilst completing that behaviour

  "I did once have a pie spill on my lap and just avoided rear ending the car in front"

  "I was getting my water bottle from the foot well on the passenger side and somehow managed to completely flatten a blue arrow sign – quite embarrassing"

- Their top of mind thoughts regard the inattention *in other drivers* due to them completing tasks other than driving.

  "My car has been rear-ended twice because drivers behind me were using cell phones"

  "You see these older people trying to text while they are driving; they're not nearly as good as people our age"

Our busy lifestyles give us a perceived need for multi-tasking

- In addition to not noticing what we get up to when driving, our busy lifestyles and increasing time poverty (both perceived and real) has resulted in multi-tasking being strongly valued across all segments of the community.

"When I go to pick up the kids from school I see all the other Mums having a snack as they drive up, we've generally been on the go the whole day"

"*When else do I get the time to do half the stuff I have to do?!!"*

- Specific tasks are prioritised differently across different groups of people, based on their understandings of their own needs

- There is agreement that their most highly prioritised distraction tasks are essential

    - "Driver at work" -
      "That's why I have a phone - so people can get hold of me"
      "The car is my office"

    - "Busy Mum" –
      "Chance to have a chat, see how their day was as we go to the next thing"
      "I am running around so much, the only quiet time I get is in the car"

    - "Social teen" –
      "If I don't reply straight away, she'll text again to see why" (Mum talking about her teenage daughter)

- However, those without that need do not always agree with this prioritisation, and have clear rationales for why the distracting behaviour is dangerous.
  "Why would you call on your phone when you are driving?" (general group)

  "People should never text when driving, that's really dangerous"

  "I think younger people have quicker reactions, so doing these things is not such a problem for them" (teenager)

  "You sometimes see Mums, obviously at the end of their tether, pull across 3 lanes of motorway to stop the car and growl at their kids – just about collecting other cars on the way"

- Drivers feel that they have a real need to complete potentially distracting tasks, and complete them immediately.

  "If I don't do it straight away, I'll forget"

- Multi-tasking in the car provides a number of instant gratifications to drivers
    - Time saving – not wasting time, 'working smarter not harder' concept
    - Relief – to get jobs ticked off, 'get the monkey off my back'
    - Self esteem – Others will perceive me as an important person as I'm always on the go
    - Recognition (particularly for work reasons) – for extra effort, being seen to have commitment, with potential financial rewards in the long term

Driving distractions are perceived to be inevitable, and not necessarily negative to driving

- Drivers have an expectation that they will be able to complete other tasks when driving

  "You would hardly ever get a trip where none of these things would happen"

- However not all of these activities are considered to have a negative impact on driving itself or even be 'distractions'.
  - Potential "distractions" may in fact assist the driver remain alert

    "It can be good to talk with passengers, they can help keep you focused especially on long trips"

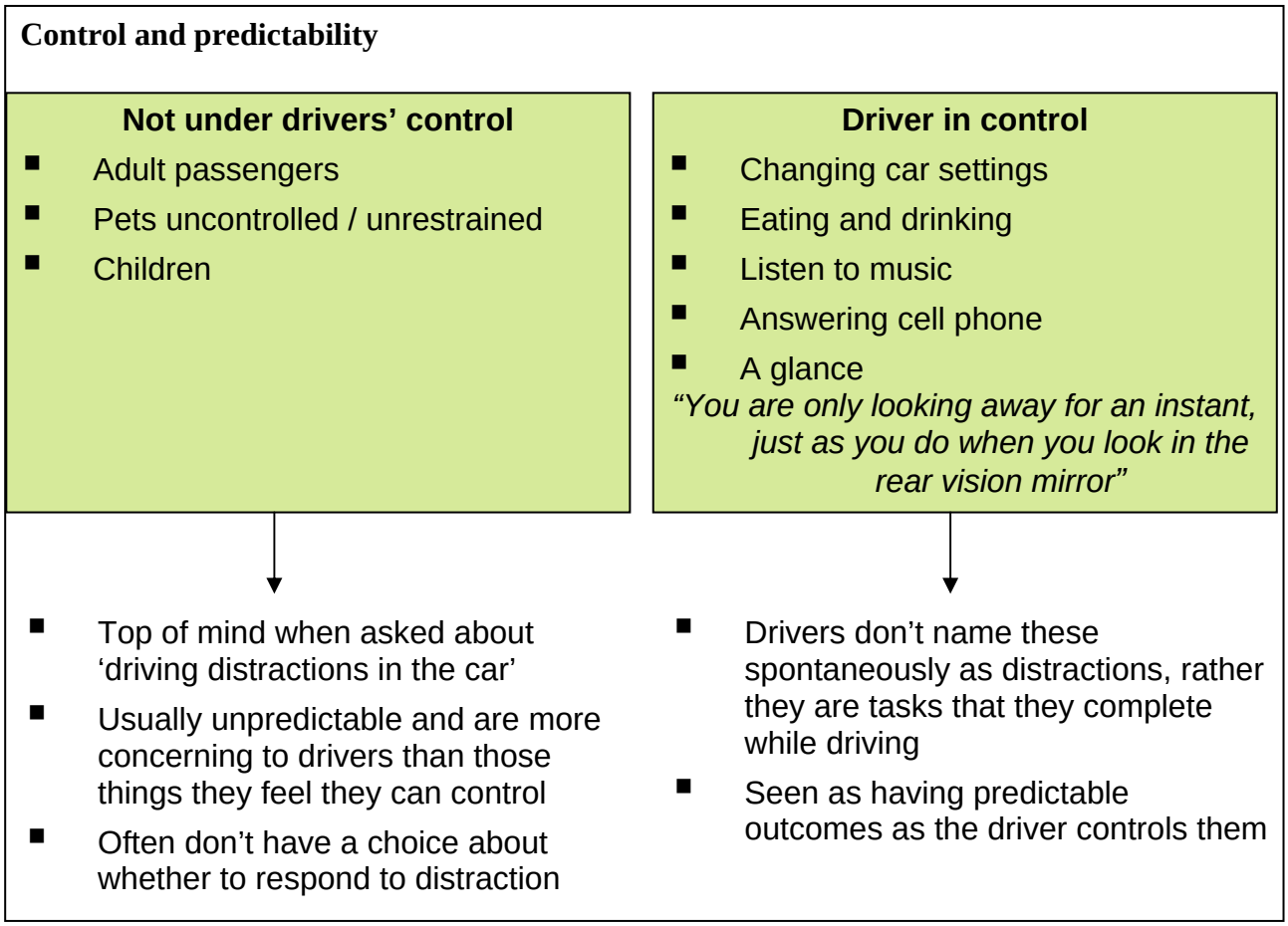
  - Many of the LTSA defined 'in-car distractions' are seen as part of normal everyday driving that have no effect on their ability to react to emergency situations.

    "Adjusting my aircon isn't a distraction, I do automatically without even thinking about it"

The drivers' ability to control the task is seen as the most important factor

"If anything came up, I'd just throw the phone down"

"I only do it when the circumstances allow it"



Summary of driver perspectives on distractions

- Distractions are inevitable and a normal part of driving.
- Most distractions that this research focused on are predictable, in that the driver initiates a highly automated behaviour, and can usually cease this behaviour if necessary
- In fact, these behaviours are not seen as "distractions" by the general population
- These could more accurately be described as "maintenance tasks", as the motivation of the driver is to:
  - Maintain the comfort of the driver or passengers (e.g. eating, climate control, stereo)
  - Multi-task to make use of driving 'downtime'

A framework for understanding distractions/maintenance tasks

'Driver resources' to deal with multitasking whilst driving

Driver understanding of driving requirements

- Initially respondents' understanding of driver requirements for driving is very superficial and relates to external (physical) events such as simply having their eyes on the road and hands on the wheel.

- All agree that the driver's eyes on the road is of primary importance, however the requirement to have one or two hands on the steering wheel is debatable.

    - Eg. smokers who used their knees to steer while rolling a cigarette

      "You have to use both knees to be safe, one knee is too dangerous."

      "You can do much more with an automatic, because you have a spare hand"

- Although physical requirements top of mind, most drivers can recognise that there is more involved than simply the physical actions required:

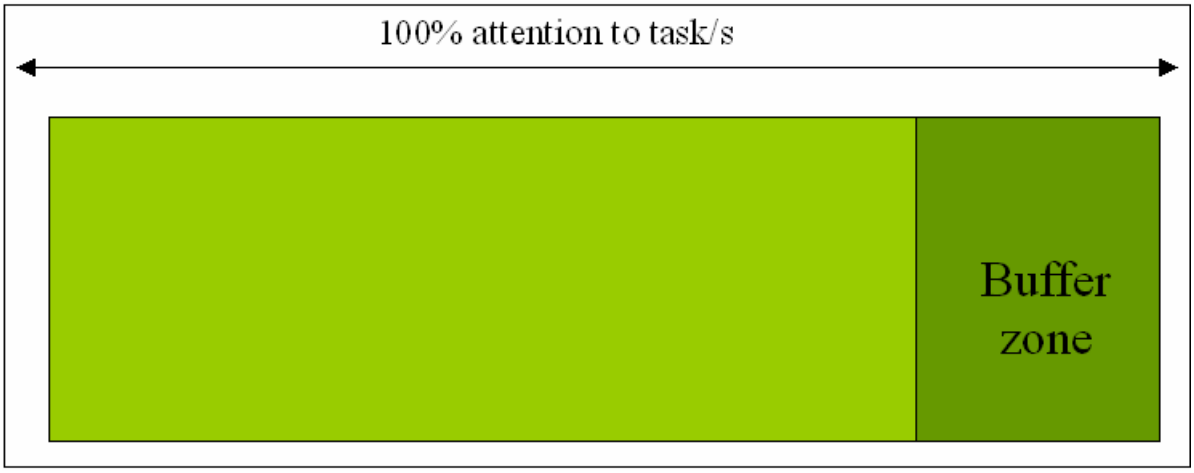
    - Emotive

      "My boyfriend crashed after we had just had an argument…yeah, I would say that the argument had something to do with it, although there was alcohol involved as well"
    - Attention / concentration – although often understood from a physical point of view, although other cognitive requirements are not understood

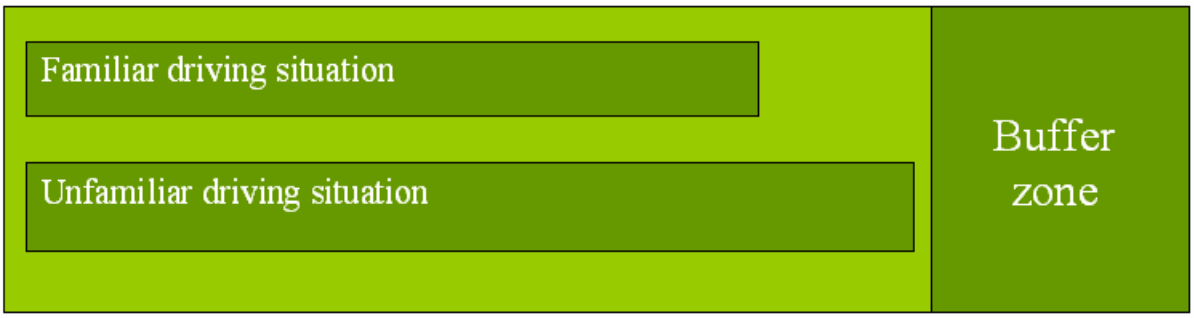
- Drivers perceive that there is a finite load of "personal resource" that an individual can draw on at any one time and that they can calculate how much attention is required for each task being completed simultaneously.

Consumer understanding of attention as a resource

At any one time, people appear to view 'full attention' at about 80%
– this appears to work as a 'buffer zone', allowing for additional resource
if changes (eg. environmental) occur



Driving attention required



- Drivers feel comfortable about not needing as much attention when on familiar roads because driving is more automated

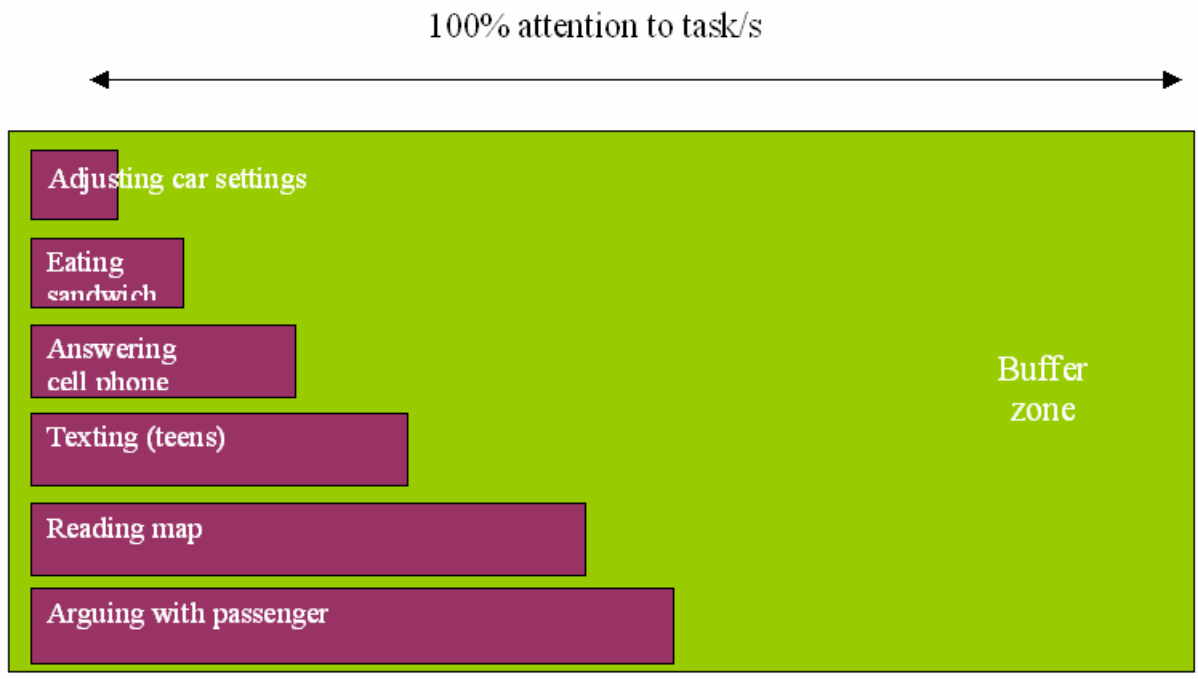
  "I know how fast to go around the corners"

- Familiarity means that it is easier to notice a potentially dangerous situation

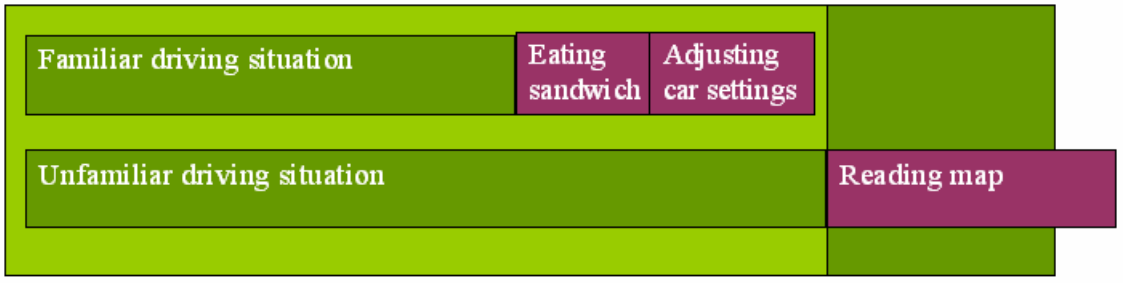
  "If something changed, I'd see it straight away and be concentrating fully"

- Therefore, this leaves some 'attention resource' free for other tasks

Attention required for maintenance tasks



The ‘attention load’ is calculated

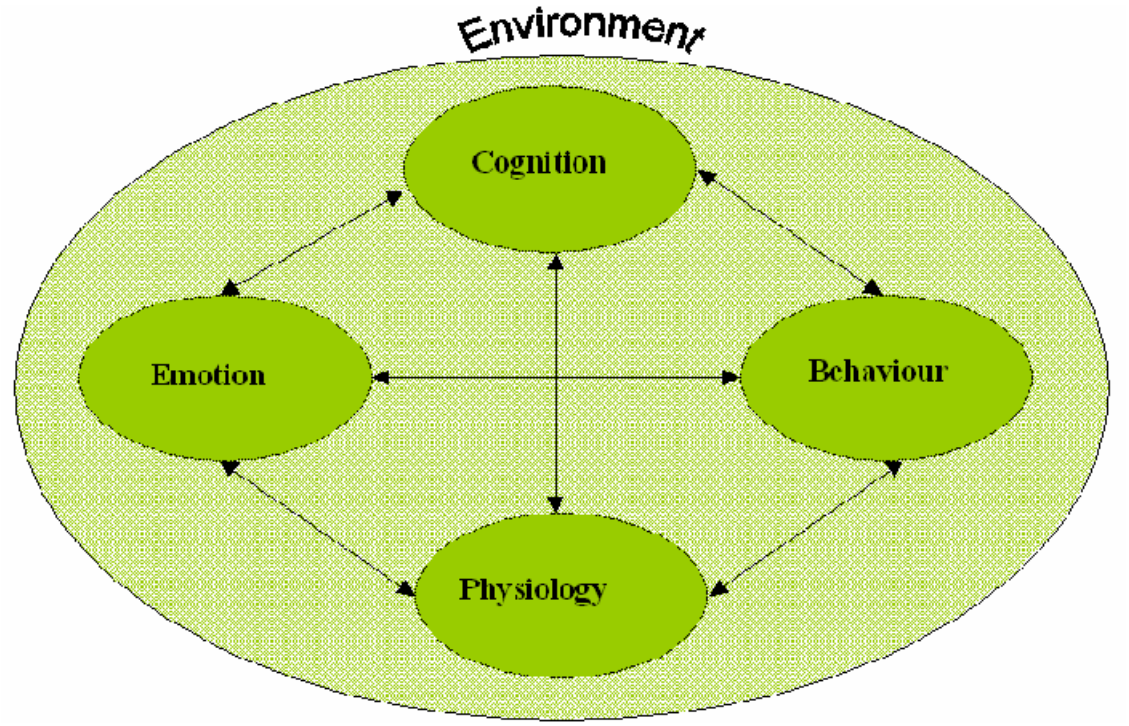


-
- Most drivers feel very comfortable with completing multiple tasks, so long as there is still some ‘attention reserve’ there
- Overload occurs where
  - Too many tasks are attempted at once, or environment is unfamiliar
  - A highly emotional event occurs, eg, arguing with passengers
  - Completing something which, on its own, takes a full attention load (usually in combination with physical resources, such as reading)
- Overload doesn’t necessarily mean that an accident is imminent, but rather that if something unpredictable were to occur, reaction time would be compromised (ie failure to avoid an accident)

However, the process needs integration

- Drivers are unable to label the resources (physical, emotive, attention) in an integrated way, however analysis of their own descriptions of decision making indicates that they have an internal “resource management” system.
- A useful model for describing this complex process is Padesky’s five-part cognitive behavioural model of human behaviour, which includes all the elements which are required to complete a task, both simple and complex.
- The advantage of this model is that it defines
  - All elements as continually interacting with each other
  - The cognitive element as a mediating factor for all events that take place, of which attention is a component rather than the principle factor
- This model is described on the following page.

Five-part cognitive behavioural model of human behaviour



Driver understanding of cognition

- Drivers don't think about cognitive processes involved spontaneously, they are able to understand and discuss attention and concentration, as well as experiences where cognition is less than optimal:
    - 'Look but didn't see' incidences
    - Driving on autopilot

      "I've thought 'I should be up to Huntly by now', and realised that I have already driven through it!"
    - Daydreaming
    - Delays in reacting when their eyes are on the road
    - Their mind being busy although their eyes are on the road

      "When the kids are mucking around in the backseat, your mind is in the back as well"
- Therefore, drivers do not consider cognitive processes; however information on it is believable and relevant in terms of practical experiences.

Cognition as mediating factor

- In addition to the cognitive *processes* required to multitask, cognition is also the mediating factor in terms of a driver's decision whether or not to engage in a maintenance behaviour.

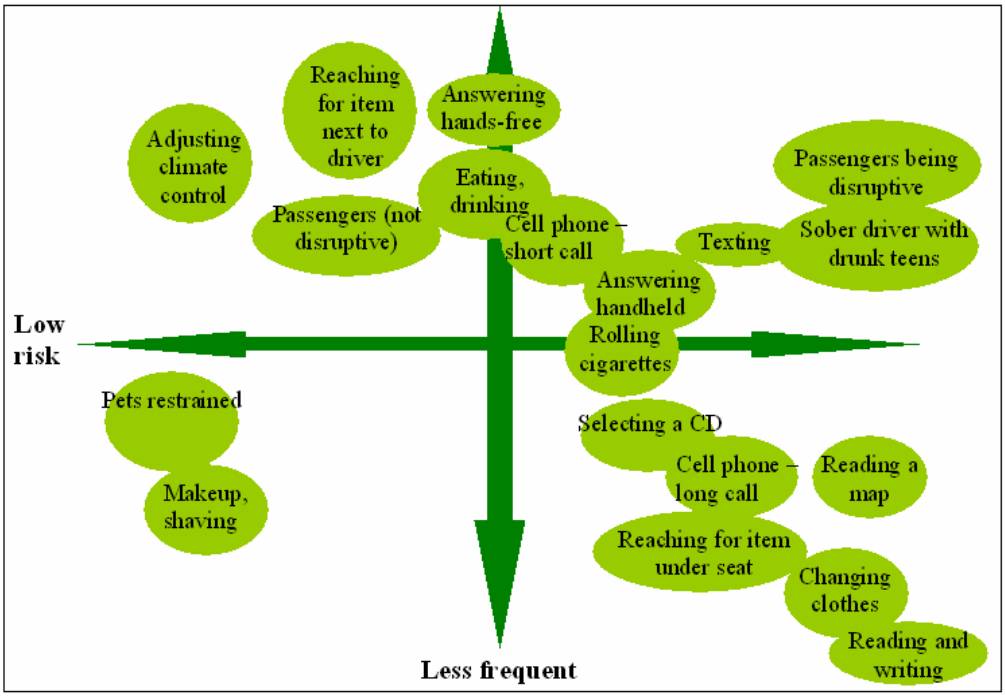
  "I try not to text, but I have done it a couple of times"

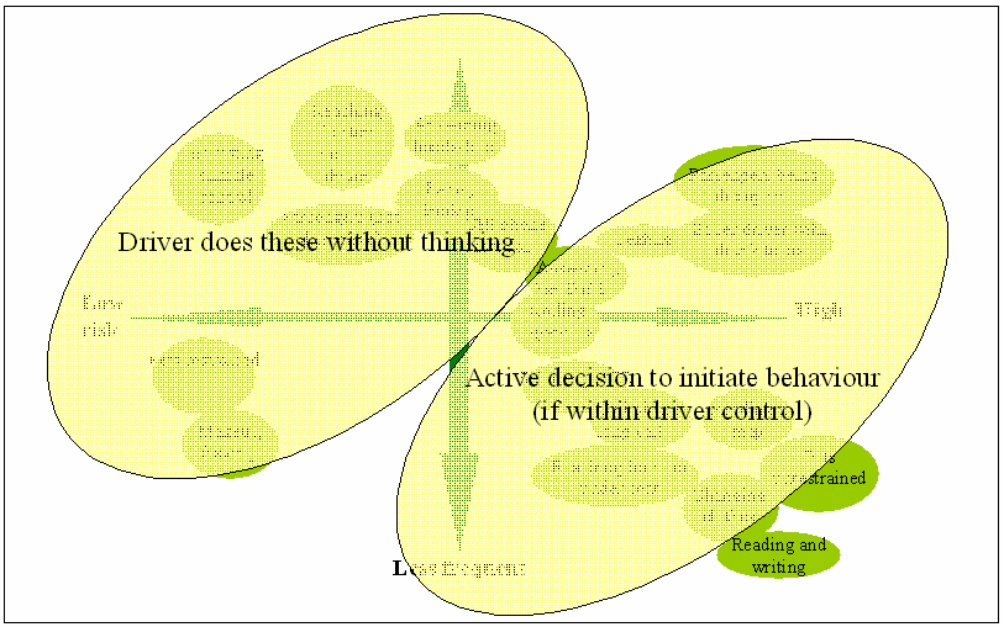
- The cognitive decision on whether to complete the task or not rests on
  - How automated the behaviour is (how frequently the task is undertaken)
  - The perceived 'riskiness' of the maintenance task
  - What compensatory strategies they believe will minimise any risk
  - Plus feedback from the other 4 parts of the model (such as feeling a bit tired and therefore not completing another task)

Reducing risks

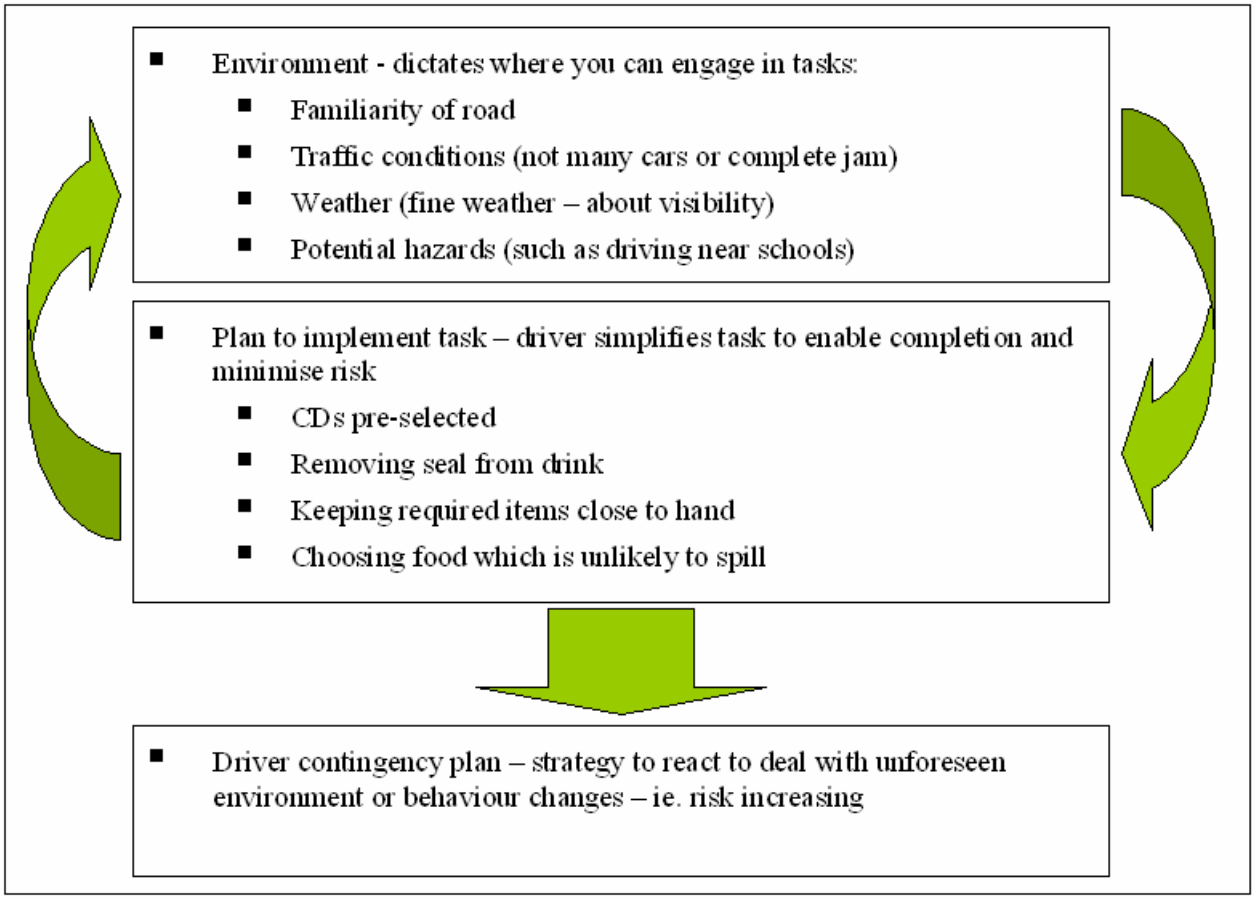
How and when drivers attempt maintenance tasks while driving

Perceived frequency vs. perceived risk





Elements which increase or decrease risk perceptions



Driver strategies – for maintenance tasks

- Part of how drivers rationalise what they are doing is safe is by using strategies to:

- Minimise attention load required:
    - Getting everything ready beforehand

      "I always roll my cigarettes before I drive so I don't have to when I drive"

    - Phone in hand whilst using steering wheel
- Maximise use of available physical resources:
    - Using knees to drive
    - Choosing to buy an automatic car rather than manual

      "When you are driving a manual you can't do nearly as much as you need your second hand"
- Minimise physical resource requirements of maintenance task:
    - Hands free car kit
    - Within reach

      "*I always make sure I put my water in the holder so I know where it is, and I put out the CD's I want to listen so I can get them easily."*
    - Organising for driving -.

Two key factors which justify behaviours

Factor 1:

- Drivers feel confident that they can complete maintenance behaviours safety as they have strategies and contingency plans in place…although the likelihood that they could implement this plan sometimes appears unlikely.

  "I'll answer my phone, but I always keep my eyes on the road and if anything went wrong I'd just throw it down"

  "If a gherkin fell out of my burger I wouldn't look down at it"

  "I would only check a map when I had seen that the road was clear and I was slowing down for an intersection anyway"
- However, they recognise these strategies in other drivers as false confidence

  "I can't believe the women that you see putting on make up on the motorway, I only do this when the traffic has jammed"

Factor 2:

- Although drivers report being intolerant of others completing these tasks, social acceptance of these behaviours is driven by the sheer numbers of other drivers engaging in these tasks.

- For behaviours which are perceived as being more 'risky' this social acceptance is driven through those with a similar needs set

  "I think we are safer than the business people you see texting and driving, because young people don't have to look at their phones when we text"

- This provides additional justification for them, particularly given the lack of compelling information that these behaviours have significant road safety implications.

Driver strategies – for unpredictable distractions

- Drivers will also have some set plans for minimising what are seen to be 'true distractions', such as passengers (ie those unpredictable distractions that the driver doesn't have control over)

- These include:
  - Getting things ready beforehand
  - Being vigilant or hyper-alert
  - Getting kids seatbelts on before moving
  - Family rules and reminders, e.g. not talking if Mum says 'not now' when driving, not throwing balls in the car

- Although there may be some contingency planning, there is general agreement that the unpredictability of these distractions means that risks can't be significantly minimised.

Gender differences

- No gender differences came through which related particularly to the in-car distractions being focused on.

- Some mothers professed to being very concerned about road safety since having children….but were doing all the behaviours that others were.

Specific behaviours

Cell phones

- More and more people now have cell phones and many now consider using their cell phone in their vehicle as essential and as a right.

- However, there are obviously different ways of accessing phones (such as handheld and hands free) and varying ways that people use their phones

- Handheld cell phones:

- *Making a call*: Most drivers do not consider it safe to make a call while moving unless they are calling someone in their cell phone address book (so they could press one button to dial) or they have a voice activated phone.

- *Holding a brief conversation* e.g. answering a call. Most drivers feel this is fine provided the call is quick, such as asking the person to wait while you stop the car.

  "I wouldn't talk on my phone while driving…oh well, I do pick the phone up and say 'can you just hold on while I bring this vehicle to a halt'"

- *Holding a longer, or complex, conversation*: Most people do not think this is safe due to it utilising one arm for a long period of time and taking their concentration off the road.

- *Texting:* There is polarisation depending on age with younger people thinking it is safe as they do not need to look at their phone when they text. Older people generally considered it a serious distraction.

  "I just hold the phone up against the steering wheel, but I don't take my eyes off the road"

Handsfree kits

- *Holding a brief conversation*: Most people consider this to be less distracting if using a hands free, particularly business people.

- *Holding a longer conversation*: More acceptable if a hands-free is used with business people considering it to be essential for their work.

  "It's no different to having a passenger in your car and talking with them, in fact, it could be safer as you aren't glancing at them"

- Hands free is considered more acceptable than using a hand held cell phone as this allows the driver to have both their eyes on the road and their hands on the wheel.

  - The introduction of voice activated calling also allows for "safe" calling out as well, as it reduces searching for numbers.

- Whilst most acknowledge a conversation on a cell phone may distract them cognitively, they believe this is no more so than holding a conversation with a passenger which is considered acceptable driving behaviour.

- It would be difficult to change drivers' current opinions to thinking that handsfree is not safe.

Passengers

- Having passengers in the car is a normal part of driving, and not something that a driver could necessarily have a lot of control of (particularly if not their own children).

- There were three main types of passengers which caused the greatest problems: Children, Peer group; and Drunk passengers

Passengers – children

- Children are considered to be the most unpredictable passengers
    - They are another factor which requires ongoing monitoring

      "I can strap the kids in, and they sometimes just undo the belt"
    - When things go wrong, an emergency stop may be required

      "My son threw a ball which landed right under my pedals and I couldn't brake"

      "My 3 year old opened the car door when we were going 100km – she's never touched it before"
- However, when something out of the ordinary happens, children may assist the parent by becoming quiet

  "We don't talk much on foggy mornings, its like they sense that I need to concentrate"
- Parents generally feel that they only strategies that are practical to implement are having rules, or set phrases ('not now') to use.
- They feel that the greatest gains in reducing distractions would be to educate children about being safe passengers (eg, through school programmes)

Passengers – Peer groups

- Drivers also discuss how conversations with friends can be distracting, even if they are not as unpredictable as children.

  "Its funny, even though I'm not young, your behaviour does change when you have a group of men in a car together"
- However, drivers often don't understand how distracted they are (eg cognitive processes), given their 'physical resources' are all available, unless something goes wrong

  "I got a speeding ticket when driving with two friends, I just wasn't looking how fast I was going, I was too caught up in the conversation"

  "If you are talking about something really interesting you sometimes miss your turnoff"

Passengers – drunk adults

- All age groups report that being a sober driver can be very difficult with passengers who have been drinking

  "Even the noise puts you off"

- It is hard to have a strategy for dealing with the situation, given the offenders are adults

  "I once stopped the car and said 'right, I'm not driving any further until you settle down' and for the rest of the trip they were making fun of me"

- The most dangerous behaviours came from teenagers, who describe drunk passengers who
  - Turn knobs and switches
  - Pull on the handbrake
  - Smoke after being asked not to
    "So I was grabbing at these cigarettes while driving as well"

- The general strategy of teenagers in that situation is to attempt to ignore the person and to be hypervigilant – and many were aware that they will do the same behaviours when their friend is the sober driver.

Passenger interactions

- One other specific interaction which is reported, is having an argument with a passenger whilst driving.

- This is acknowledged to be a mildly risky driving situation, but not one that they felt they could do anything about

  "You don't want to stop the car to argue, as you don't want the trip to be even longer"

- However, most felt that they are still in enough control that they wouldn't cause an accident – for example, they did not find a scenario where the driver accidentally drove through an intersection when arguing believable.

- There is an age difference in behaviours shown in this situation, with some younger respondents having physical fights whilst driving, in addition to verbal arguments.

Changing CDs

- Adjusting a CD player is only considered safe by most drivers if it involves simply pressing a button.

- Selecting and changing CDs is viewed as highly distracting as it takes a lot of attention to look away, read the CDs, choose one, then place it in their CD player.

- However, pre-selecting a CD and placing it on the seat next to them is not perceived to be very risky or distracting.

- Respondents mentioned technology is assisting in reducing this behaviour through CD stackers, MP3 players and CD controls located on the steering wheel.

Smoking

- For those who smoke driving is seen as a place that they could engage in this activity without criticism especially if driving alone.

- Most respondents who smoked roll-your-own cigarettes report that they realise it takes some resources to roll while driving but had developed some behaviours to attempt to cope with this such as using their knees to drive or rolling with fingers while trying to steer with forearms.

- All acknowledged these were unsafe practices but felt they had strategies in place to ensure safety, particularly that their eyes were on the road.

    - However, there was some minority reporting of pre-rolling cigarettes before the journey to avoid 'knee driving'.

Eating and drinking

- Eating and drinking while driving is a common behaviour which people find completely acceptable.

- However, there is acknowledgment that certain types of food are not good to eat while driving, such a hamburgers, unless well wrapped, but snack bars, other processed foods and fruit are seen as acceptable.

  "Anything which is in one piece and doesn't need a lot of unwrapping, an apple is OK"

  "*There is good car food and difficult car food"*

- The major problems with eating are spilling and dropping food, with many respondents spontaneously discussing the Cargo drink ad (with a man losing the filling from a pie) as a good example.

- Drinks are commonly combined with driving, mostly using cup holders or sipper bottles.

- Because drinking occurs intermittently, most drivers wait for safer conditions eg. when stopped at a stop light, or avoiding drinking while going around a corner.

- Respondents report that the greatest problem with hot drinks is that they are more likely to spill when full and hot, causing a potentially dangerous situation.

    - Some were compensating for this with the use of a sturdy thermos mug

Other distractions

- Auditory distractions such as loud music (or loud passengers) is mentioned by some, but is not seen as particularly dangerous – and drivers do not see any potential link to the auditory distraction taking up some of their 'cognitive load'.

- However, it is acknowledged that could potentially reduce ability to hear other traffic, such as emergency services or a car horn

Accidents and consequences

Likelihood of causing an accident

- The types of in-car distractions discussed are not perceived to have significant road safety implications, for two key reasons.

1. Belief that maintenance behaviours are unlikely to cause an accident

- As the driver feels that they have control, they are still able to drive to the same ability level as if they weren't completing the maintenance task (and if they couldn't, they would stop it)
- However in the case of someone else's bad driving, the driver recognises that may not have adequate resources to avoid an accident
  "They have got the first fault and the legal fault because they didn't indicate and should have looked for oncoming traffic, but I guess the one reading the text might have reacted a bit more quickly and swerved"
  "You would feel bad, because you will never know if you might have been able to avoid the other car"

Consequences

2. Consequences are unlikely to be severe

- If an accident did occur, consequences are expected to be more of a hassle or an embarrassment than a danger to life or limb.
  - Eg. rear ending another car – an insurance type of consequence rather than something that has long term ramifications.

- Therefore, there is reduced concern about these types of behaviours as compared with other road safety issues
  "Fatigue is still got to be a bigger issue, I mean if you fall asleep at the wheel you are guaranteed to crash as you have no control"

- Respondents are surprised when shown some LTSA statistics of specific distractions which have caused major injury accidents or even fatalities
  "It really makes you have a rethink, to see it on paper"

Changing drivers' behaviours and communication messages

Propensity to change behaviour

- Callbacks to group respondents following the groups indicate that there is potential to change some behaviours.

- Simply raising awareness of the issue did have effect some respondents' driving behaviours, although some took a more generalised 'be careful when you drive' message from the group discussion

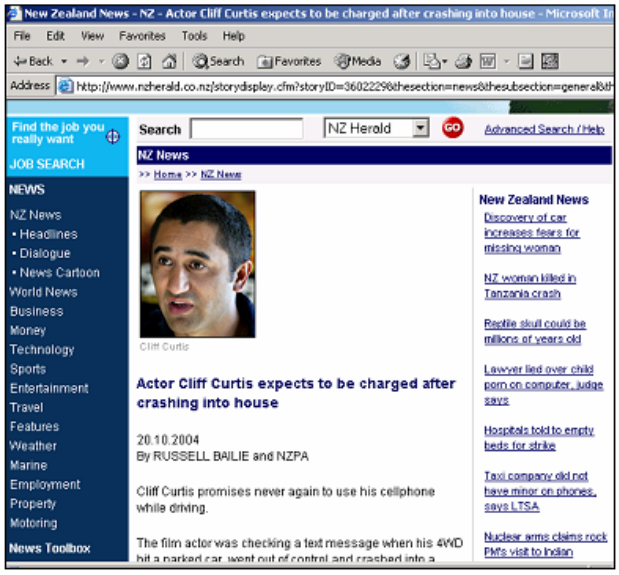
- Maintenance behaviours which reduced tended to be the ones which groups identified as
    - More risky, such as rolling cigarettes and texting

      "I realised that it is taking my concentration off driving and just for a cigarette"

    - Having a potential alternative, particularly with regard to cell phones

      "I used to think my hands free was a big hassle, but I am using it now"
- However, some respondents do acknowledge that this is likely to be a short term change

  "I think I'll just get used to doing it again eventually"



"As for using his cellphone in his vehicle, Curtis has got the message.

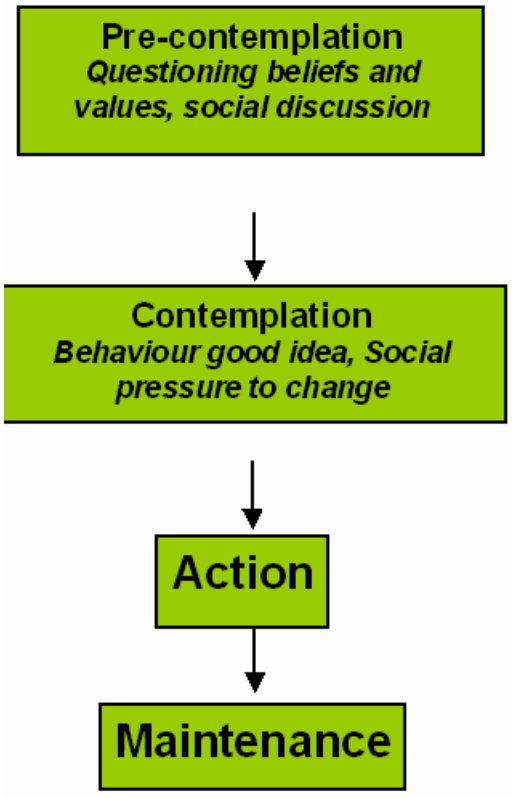
"It's not complicated, eh? If you want to use the phone while you're driving, you know the rules - you pull over and use the phone.""

NZ Herald, 20/10/04

Some behaviours are easier to change than others

■ Those tasks with potential to be modified or extinguished ■ Cellphone behaviours, particularly ringing others, long calls and texting ■ Rolling cigarettes ■ Map reading or reading directions ■ Selecting CDs (although technology may be reducing this on its own) ■ Reaching under the passenger seat	■ Those tasks which are unlikely to be changed ■ Passengers* ■ Eating and drinking ■ Smoking cigarettes ■ Adjusting car settings, such as climate control or stereo volume ■ Shaving and makeup ■ *Drivers feel that this needs to be a 'passenger behaviour' programme eg. potentially could educate child passengers through school or kindergarten programmes

Andreassen model for social change:

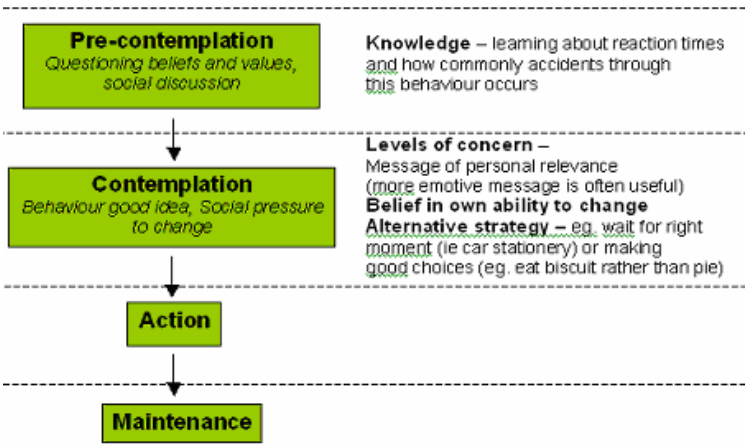


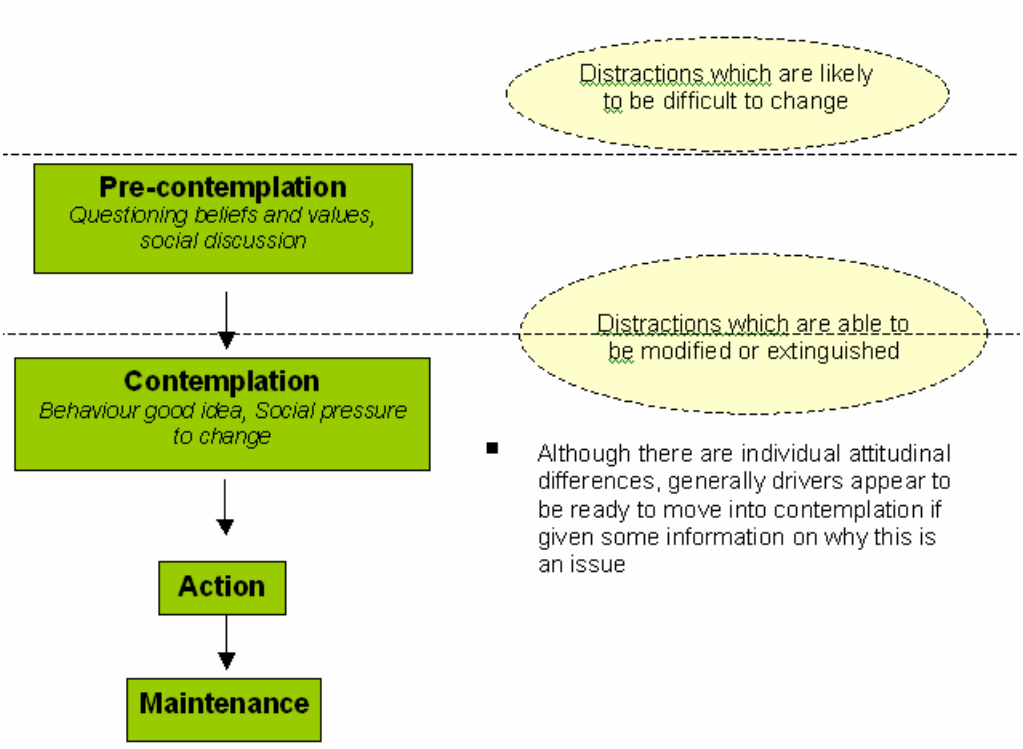
- This model describes the different stages that individuals need to go through before making a behaviour change.
- Each person has to go through each stage before they will be able to actually change the behaviour in a consistent way.
- It can be useful to look at where people sit currently with regard to attitudes to better understand
  - How far drivers are from being able to make a behaviour change
  - What messages are more likely to move people towards Action (actual behaviour change)

Andreassen model—where are drivers currently?

There are some key factors which need to be addressed to assist with moving people down to the next stage

Andreassen model—where are drivers currently?





Communications to drivers

- The focus for this issue needs to be on attention for driving rather than distractions as this is more meaningful to drivers (and avoids them fitting these behaviours into other distractions that they can't control like weather).
- As a first step – drivers need to a reason why full attention is important:
    - Concrete information that this is a road safety issue (eg. statistics that people do have accidents that aren't necessarily minor

    - Difference in stopping distances or reaction times if other tasks are being undertaken while driving

      "You need a comparison, that if you are doing something else it takes this much longer to switch your brain back and this is what could happen in that time"

- Any comparisons are likely to be understood as specific to that maintenance task, with little generalisation to other tasks

- Following the initial step, the issue needs to become personally relevant, such as communicating the impact of consequences, especially given these are currently not perceived to be as severe as those of other road safety issues.

- Any comparisons in reaction times will be understood as specific to that maintenance task, with little generalisation to other tasks

- Following the initial step, the issue needs to become personally relevant, such as communicating the impact of consequences, especially given these are currently not perceived to be as severe as those of other road safety issues.

Recommendations

- Some specific behaviours may be able to be modified, however it would be difficult to alter drivers' perceptions of a number of the LTSA identified distractions, such as eating and drinking.

- However, it may be more useful to talk to drivers about their need for attention in driving rather than distractions per se, given their perceptions of the scope of these.

- Any communications need to focus on one or two key behaviours as drivers are not good at generalising across behaviours, and recognise each of these tasks as requiring a different set of 'resources' (eg. physical, emotive, attention)

- Behaviours such as cellphones (calling out and texting), reading maps, reaching a long way and rolling cigarettes will be more easily changed as there is a greater understanding that these may have road safety implications

- Talking to drivers about the cognitive loads required to complete apparently automatic behaviours introduces new, but believable, information

- As a first step – drivers need a reason why full attention to driving will make a difference

    - Difference in stopping distances or reaction times if other tasks are being undertaken

    - Concrete information that this is a road safety issue

- Following this, the issue needs to become personally relevant, such as communicating consequences as these are currently not perceived to be as severe as those of other road safety issues.