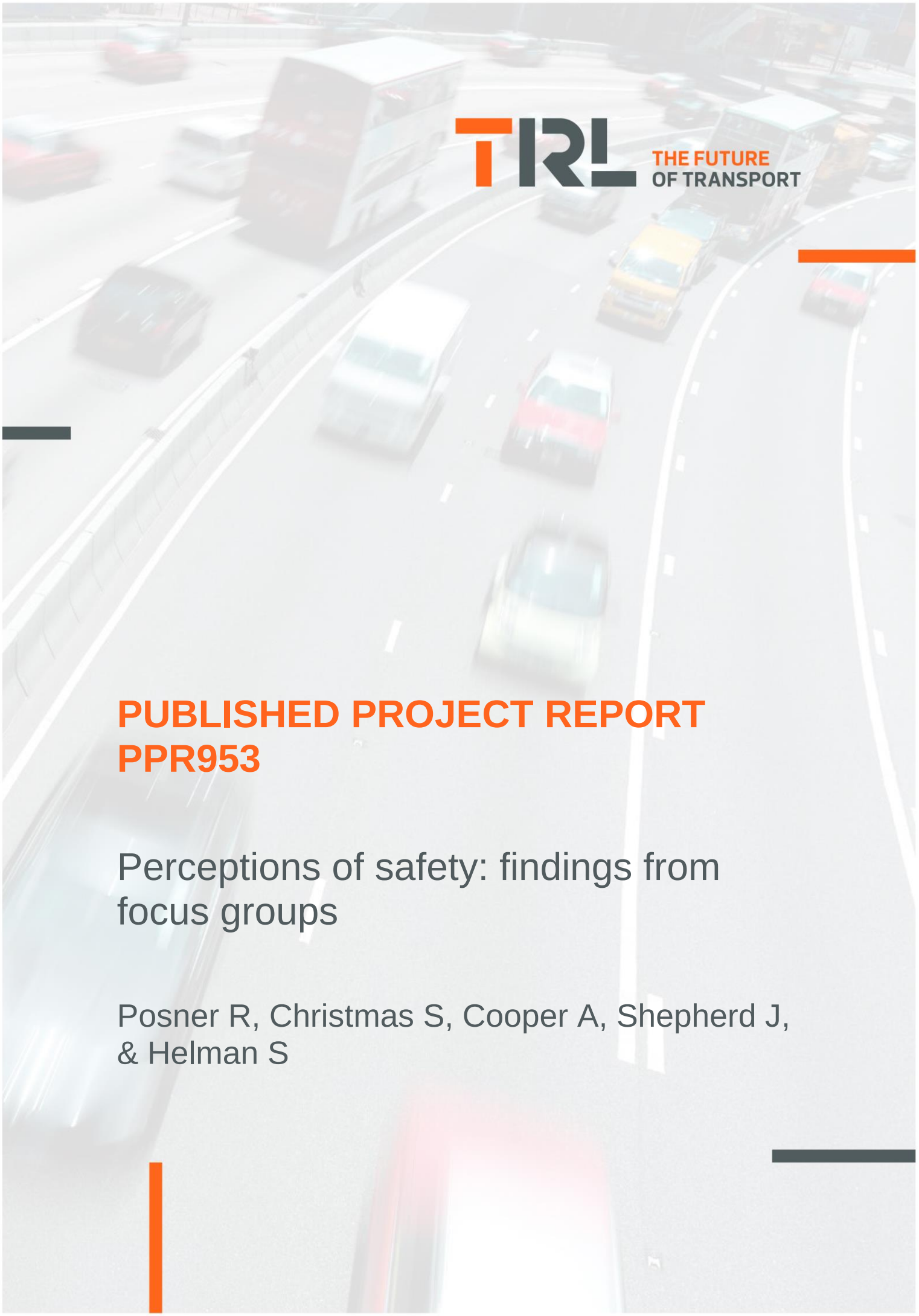

THE FUTURE OF TRANSPORT

PUBLISHED PROJECT REPORT PPR953

Perceptions of safety: findings from focus groups

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Executive Summary

Highways England strives to ensure the satisfaction of its customers who use the strategic road network (SRN). A key component of customer satisfaction and experience is how safe people feel on their journey. Ensuring that customers feel safe while on the network goes beyond simply meeting the customer satisfaction key performance indicator (KPI). It is also about making the network accessible by helping customers to have and know they have the skills to use it.

How safe drivers actually are (measured by objective metrics such as number of collisions per billion vehicle km) does not always directly relate to how safe they feel (this being a more subjective metric, typically answered through responding to survey or interview questions). Nevertheless, by understanding the ways in which people subjectively perceive safety, it should also be possible to raise overall levels of objective safety. For example, understanding when and why people feel unsafe will also help us to understand why they may *fail* to feel unsafe in situations when objectively they may be at more risk.

For Highways England to improve perceptions of safety it is necessary that they understand what influences how safe customers feel when travelling on the SRN, and how this impacts them. To this end a four-part research design was carried out to provide a better understand the feelings and experiences of drivers and motorcycle riders. More specifically it was designed to:

- Understand what impacts road users' perceptions of safety
- Explore whether there are differences across road user groups
- Identify the actionable insight that will support Highways England to improve perceptions of safety on the SRN

The core element of this research aimed to use qualitative research to explore in detail the factors influencing perceptions of safety. This involved focus groups with drivers and riders to explore, in-depth, the factors influencing perceptions of safety when travelling on the SRN. Participants' responses to scenarios presented (as photos) in these focus groups provided insight into how perceptions of safety can vary across different groups and situations, as well as the factors that might influence feelings of safety.

How do road users respond to the driving environment?

At first sight, 'feeling safe' appears to be a relatively simple idea – one that could be represented by a single, linear scale running from, say, 'not at all safe' to 'very safe'. However, the ways in which participants responded to scenarios suggest that 'feeling safe' is in fact more complex than this.

First, 'feeling safe' does not appear to be a 'feeling' at all. Rather it appears to describe an absence of negative experiences associated with believing oneself to be at risk. We use the shorthand 'feeling unsafe' as a catch-all term to describe these negative experiences (although such experiences are not necessarily emotional in character). In order to understand the underlying structure of 'feeling safe', we need to shift our attention to the feelings of unsafety which are absent when people feel safe.

The responses of our participants also suggest that these feelings of unsafety vary in three important ways; instead of thinking of 'feeling safe' as a single, linear scale our evidence suggests that we need to recognise three underlying scales which describe different ways of 'feeling unsafe':

- **'Emotional – Cognitive' scale**

  Feelings of unsafety may be more emotional or more cognitive in character – in line with dual processing models of human psychology.

- **'Unknown risk – Identified' risk scale**

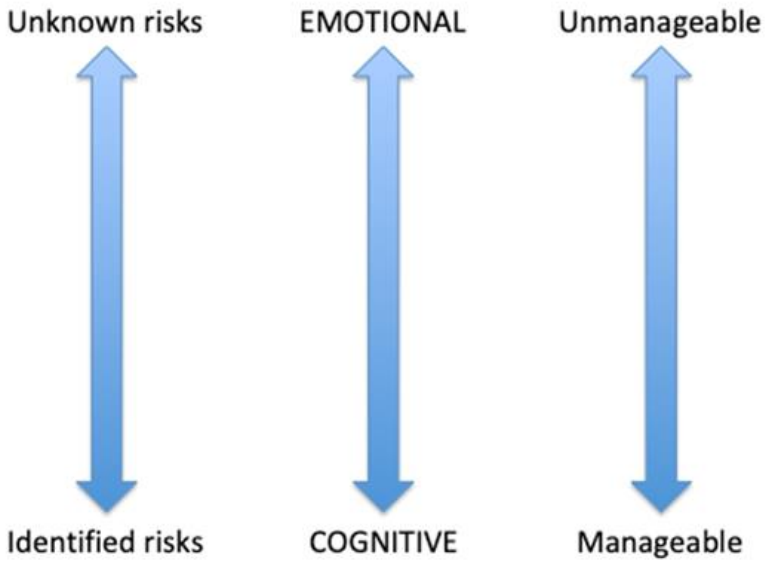
  Feelings of unsafety vary depending on how known and predictable the sources of the perceived risk are.

- **'Unmanageable – Manageable' scale**

  Feelings of unsafety vary depending on an individual's perceived ability to mitigate or manage the perceived risk – with ability here covering both capability (physical and psychological) and opportunity (physical and social)[1].

These three scales are partly independent, in that feelings of unsafety may take any combination of positions across the three scales. However, they also appear to interact, in that the position of a feeling of unsafety on one scale makes it more likely to be at a similar position on the other scales.

The diagram below represents the overall structure as a set of simple 'scales'. In principle, any given experience of believing oneself to be at risk could be profiled by mapping where it sits on each of these three scales.



[1] The COM-B model maps out the factors related to the **C**apability, **O**pportunity and **M**otivation to perform the target **B**ehaviour (Michie, Atkins & West, 2014)

What do road users respond to?

The findings from the qualitative analysis identified several overarching themes that influenced road users' experiences and feelings of unsafety. These can be grouped into four broad categories, that map onto three of the pillars of the 'safe system' approach to road safety:

- Safe people: **The other road users** moving through the environment, including both the observed and anticipated behaviour of individual road users AND the observed or perceived expectations of drivers within a community
- Safe roads: **The physical environment** through which the road user moves, including the road type, familiarity of the road, physical space, information provision, visibility and weather conditions
- Safe people: **The driver/rider** themselves, including confidence in their driving skills, experience and exposure to a range of different road environments
- Safe vehicle: **The vehicle the road user is in**, including the size of vehicle and features of new vehicles such as new types of headlights

What are the implications for Highways England?

The findings from our research have a number of implications for Highways England that fall into three main categories:

- What should Highways England be trying to achieve?
- How should Highways England track progress?
- How should Highways England intervene?

Firstly, when considering how to improve perceptions of safety and reduce feelings of unsafety it is important to always think about the Highways England imperatives of customer experience and road safety. When trying to reduce feelings of unsafety it is essential that both perspectives are always considered. It is important to realise that it is **not about choosing between road safety and customer experience** but instead about **considering how they interact and striking a balance between the two.** Seeking to minimise the more distressing emotional feelings of unsafety and to better match customers subjective experiences unsafety more closely with the objective risk are key areas to consider**.**

In order to track progress and monitor feelings of unsafety there are three recommendations:

- Don't just ask customers how safe they felt: **ask about occasions they felt unsafe**
- Ask customers about **all three dimensions of unsafety** (Emotional – Cognitive; Unknown – Identified risk; Unmanageable – Manageable) and their components

  Allow a comparison with objective risk by asking customers **when, where and why they felt unsafe**

Finally, to start working **towards reducing feelings of unsafety** there are three recommendations:

- **Use the framework** to get to grips with the complexity of unsafety

  The findings from this research highlighted both the complexity of 'feeling safe' and the complex way in which interventions can impact on experiences of unsafety. Some of these impacts are indirect. These indirect impacts make it more complicated to develop specific recommendations, but understanding these impacts can provide Highways England with the tools to assess the possible impacts of their interventions. Using this framework will enable Highways England to understand the complex ways through which unsafety is experienced and assess whether their intervention could be successful, and how.

- **Develop 'golden rules'** to design for better experiences

  One way to ensure that feelings of unsafety are considered is to develop 'golden rules' that relate to customer experience that should always be taken into consideration when designing roads. Some of these golden rules could include:

- **Space** – design to give people a sense of space around them
- **Visibility** – provide users with the ability to see ahead
- **Normative clarity** – ensure everyone knows where to be and what to do
- **Familiarity** – try to maintain consistency

- Start by focusing on **moments of change**

  A theme running through the findings of this research is that what is more familiar also feels safer. Experiences and feelings of unsafety were linked by many participants to unfamiliar contexts. Consistency across space and time therefore seems likely to be a key component in minimising experiences of unsafety. Therefore, moments when the network is being changed in some way are the moments when an analysis of the impact on experiences of unsafety will be most called for.

1 Why do we need to understand perceptions of safety?

Highways England strives to ensure the satisfaction of its customers when travelling on the strategic road network (SRN) and has a customer satisfaction key performance indicator (KPI) to achieve[2]. A key component of customer satisfaction and experience is how safe people feel on their journey. Analysis of the Strategic Road User Survey (SRUS) and HighView survey shows that while the vast majority of drivers surveyed reported feeling safe on their journey (around 90%) a reduction in perceived safety can be detrimental to overall satisfaction.

Ensuring that customers feel safe while on the network goes beyond simply meeting the customer satisfaction KPI. It is also about making the network accessible by helping customers to have, and know they have, the skills to use it. Highways England also has a safety imperative and KPI. This relates to objective levels of safety on the network, as measured by the number of people killed or seriously injured while using the network.[3]

How safe drivers actually are (measured by objective metrics such as number of collisions per billion vehicle km) does not always directly relate to how safe they feel (a more subjective metric, typically measured through surveys or interviews). However, by understanding the ways in which people perceive safety, it should also be possible to raise overall levels of objective safety. For example, by trying to ensure that people perceive risk at times when risks are genuinely higher, Highways England could encourage people to take a more cautious approach when the driving situation requires it.

The current survey-based ratings of perceptions of safety do not full capture how customers are really feeling and how they are experiencing the network. In order to improve customer perceptions of safety when travelling on the SRN, Highways England must understand what factors influence these feelings, as well as how these factors impact customers. This understanding will help Highways England make decisions that optimise safety – both subjective and objective.

This research was commissioned by Highways England to better understand the feelings and experiences of drivers and motorcycle riders. More specifically it is designed to:

- Provide improved understanding of what impacts these road users' perceptions of safety
- Explore whether there are differences in the above across these groups

[2] For the period 2015 to 2020 Highways England had a customer satisfaction KPI, as measured by the National Road User Satisfaction Survey (the predecessor of SRUS). A similar KPI will in place for the next period 2020-2025, with SRUS providing the measure.

[3] Reducing the number of killed and seriously injured is a KPI for Highways England. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/792691/Road-Safety-Performance-Overview.pdf

- Identify the actionable insight that will support Highways England to improve perceptions of safety on the SRN

Given the complexity of subjective perceptions of safety, an integrated research design was used that included four stages (see Figure 1).

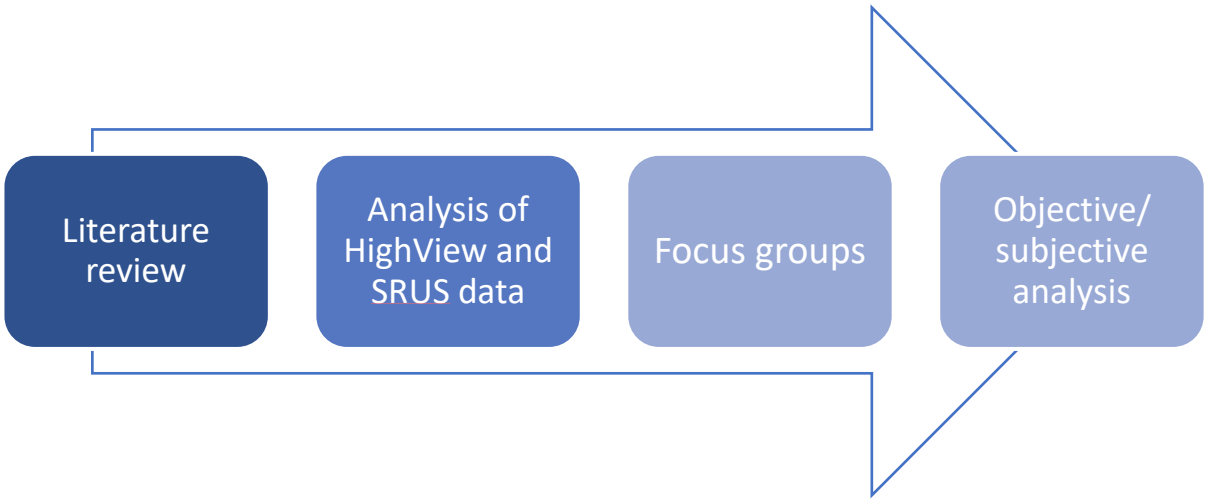


Figure 1: Overall research design

The core element of this research used a qualitative approach (focus groups with drivers and riders) to explore in-depth the factors influencing perceptions of safety when travelling on the SRN. The approach used was informed by an initial 'Think Piece' (Helman, 2019a), a subsequent evidence review (Shepherd & Helman, 2019) and an analysis of the HighView and SRUS data (Kent, 2019). These provided insight into how perceptions of safety can vary across different groups and situations, as well as the factors that might influence feelings of unsafety. The key insights from these preceding stages are summarised below:

- The Think Piece and literature review identified specific issues for consideration in the qualitative stage of the research. These included:
    - The importance of understanding the difference between 'gist' and 'episodic' memory representations in the perception of safety
    - The concept of 'worry' in safety perceptions
    - The importance of gender, and age, in group differences
    - The potential influence of driver 'space' in safety perceptions
    - The potential impact of road design and markings in some locations on safety perceptions
    - Insights into reducing mobile phone use, which may be helpful for improving safety perceptions
- SRUS and HighView analysis of how safe drivers said they felt on their last journey on the SRN found that:

- Male drivers were more likely to feel safer than female drivers
- Drivers of new vehicles (less than three years old) feel safer than drivers of older vehicles
- Drivers who feel confident and/or enjoy using the SRN feel safer than those who are less confident and/or do not enjoy driving as much
- Drivers are more likely to report feeling safe driving at off-peak times of the day than at peak times
- Drivers undertaking longer journeys feel less safe
- In addition to journey and driver characteristics there was also evidence that other factors were related to how safe drivers felt, including having a high opinion of Highways England, trust in road signage, and general preferences for certain road types (specifically smart motorways over standard).
- The perception of safety question does not appear to measure subjective safety exclusively, with several other items within SRUS and HighView surveys appearing to be linked to perceptions of safety
- There were also indications that HGV drivers and motorcyclists are less likely than other groups to report feeling 'very safe' or 'fairly safe'; this information was used in deciding the composition of focus groups (see Section 2).

1.1 This document

This document presents the findings of the qualitative work undertaken. It is divided into four sections:

- Method (Section 2): this section provides a summary of the methodology used.
- What does 'feeling safe' mean? (Section 3): this section explores the meaning of 'feeling safe' as described by our participants. It also presents a framework to help understand ***how*** participants respond and experience the driving environment.
- What drives customers' experience? (Section 4): this section explores the factors (***what)*** that participants respond to in the driving environment and that contribute to experiencing 'unsafety'.
- What are the implications for Highways England? (Section 5): the final section discusses the implications for Highways England.

2 Method

This section provides and overview of the study research design. A more detailed account is provided in Appendix A. For this study focus groups were used. Focus groups, where participants discuss their thoughts and personal experiences on a given topic (Gibbs, 1997), are a highly effective investigatory tool for looking at unexplored or complex areas. They provide an opportunity to explore different points of view and to explore differences and similarities between group members' points of view (Braun & Clarke, 2013).

Unlike quantitative research, qualitative research does not seek to be representative of the population of interest, in this case drivers and motorbike riders who use the SRN. Instead it seeks to capture a range of people with diverse experiences or views to provide a more in-depth understanding of complex topics.

One of the key elements of an effective focus group is ensuring that participants feel at ease with the rest of the group members. This helps facilitate open and honest discussion. When discussing topics that are personal and complex, such as safety, focus groups made up of participants that have key similarities (e.g. HGV drivers) are often preferred as this can improve participant openness.

For this study six primary groups of interest were identified based on the SRUS and HighView analysis of road users' self-reported perceptions of safety (i.e. groups with lower self-reported perceived safety and groups with higher self-reported perceived safety[4], for full details see Kent, 2019). The six groups were:

- Young male drivers (under 35 years old)
- Young female drivers (under 35 years old)
- HGV drivers
- Older drivers (over 60 years old)
- Motorcyclists
- Low confidence drivers (two focus groups)

Participants were recruited using a range of recruitment techniques[5], in order to reduce biases that can be encountered at the recruitment stage, particularly around self-selection. Low-confidence and non-SRN users are often harder to engage with on this topic; to ensure that their opinions were considered, additional efforts were made to recruit this group. Although most participants lived in and around the Berkshire area (five of the seven focus groups were conducted in Wokingham, Berkshire) many of

[4] Overall self-reported perceived safety is high across all SRN users.

[5] These techniques included: TRL's participant database (this is a database of over 1,000 people in the Thames Valley area who have expressed an interest in undertaking research into transport-related research); Facebook advertising; Local community centres; Local colleges; Universities; Local businesses; Specialist recruitment agencies (support was sought to recruit harder to reach groups such as low confidence drivers). These techniques were used in both the Berkshire and Birmingham areas. This ensured a wider coverage of Highways England's areas.

those involved had experience of driving across a number of SRN areas. It was assumed that this would not be the case for low-confidence and low-mileage drivers and for this reason two focus groups were carried out with this group (in Wokingham and central Birmingham).

Leaflets and emails contained a link to a short survey to register an interest in the research (Appendix C). The survey included demographic questions as well as items focusing on driving habits, allowing potential participants to be categorised into the appropriate group.

In total there were 44 participants across the seven focus groups conducted (including two 'low-confidence' groups). See Appendix B for a summary of the make-up of each group.

The topic guide (see Appendix D) was developed around the objectives of the study, while considering the existing evidence. The focus groups were divided into three sections:

1. Emotions and driving: using a series of images, participants discussed the emotions that they experienced across a range of different driving environments, and the specific elements within the road environment that influenced those emotions.
2. Perceptions of safety: participants discussed more specifically their experiences and the elements that could impact on how safe or unsafe they felt when driving on the SRN, as well as elements that could lead to avoidance of the SRN.
3. Solutions: participants discussed the possible solutions that could address the points raised throughout the discussion, as well as the role that Highways England could play in creating a safer driving environment and encouraging safer driving behaviour.

Upon completion of the focus groups the recordings were transcribed and analysed using inductive thematic analysis (TA). TA allows researchers to identify, analyse and report patterns within a dataset as well as to highlight how themes might differ across the different road user groups. An inductive approach ensured that the findings were based entirely within the data and generated by the respondents themselves, not driven by any previous theoretical ideas (Smith, 2008). The chosen methodology allowed us to explore and understand the intricacies of meaning within the data and achieve the aims of the research. It is important to remember that these findings are based on qualitative research and reflect the sentiment of those who participated in the research. While inferences can be made these cannot be generalised to the wider driving and riding population.

3 What does ‘feeling safe’ mean?

In this section of the report, we explore the underlying structure of the idea of ‘feeling safe’.

At first sight, ‘feeling safe’ appears to be a relatively simple construct – one that could be represented by a single, linear scale running from, say, ‘not at all safe’ to ‘very safe’.

However, the ways in which participants responded to scenarios in the focus groups suggest that ‘feeling safe’ is more complex than this. The aim of this section is to offer a framework to make sense of this complexity[6].

The content of this section is necessarily conceptual in nature. This conceptual work, however, has very practical consequences. We need to be clear what it means to ‘feel safe’ before we can address other questions that assume an understanding of that construct – such as how to track how safe customers feel, or how to intervene to make them feel safer. The practical implications of the framework are discussed further in section 3.5.

3.1 Feeling safe as an absence of negatives

At first sight, the phrase ‘feeling safe’ appears directly analogous to other phrases like ‘feeling anxious’, ‘feeling angry’ or ‘feeling happy’.

On closer inspection, however, there is good reason to doubt this parallel. In relation to anxiety, anger or happiness it clearly makes sense to talk about a feeling – a conscious, subjective, qualitative experience. It feels like something to feel these emotions. What, by contrast, does ‘feeling safe’ feel like?

In fact, ‘feeling safe’ does not appear to be a ‘feeling’ at all. Rather it appears to describe an absence of negative experiences associated with believing oneself to be at risk. We will use the shorthand ‘feeling unsafe’ as a catch-all term to describe these negative experiences – although the use of the term ‘feeling’ here should not be taken to imply that such experiences are necessarily emotional in character (see section 3.2). Using this shorthand, our contention is that ‘feeling safe’ describes an absence of feelings of unsafety. While we heard participants talk about occasions of ‘feeling unsafe’, what we did not hear was participants identifying a positive state of ‘feeling safe’.

For clarity, the contrast being drawn here is not just a contrast between negative and positive states. Positive feelings, such as ‘feeling happy’, clearly exist as well, and can be experienced on the road. Participants in our focus groups identified such positive feelings in their own responses to some scenarios: for example, a motorcyclist linking a clear and sunny day with pleasure and enjoyment. What we did not hear was participants identifying a positive state of ‘feeling safe’.

Interestingly, other words associated with feeling safe in participants’ responses also point towards an absence of experience. ‘Feeling relaxed’, for example, suggests an

[6] Although based on findings from the focus groups and in line with existing psychological theories, this framework should be considered provisional. Further research could test and enhance the framework.

absence of tension. One possible exception is the idea of 'feeling confident' (see also section 3.4).

In order to understand the underlying structure of 'feeling safe', we need to shift our attention to the feelings of unsafety which are absent when people feel safe. The responses of our participants suggest that these feelings of unsafety vary in three main ways. That is, instead of thinking of 'feeling safe' as a single, linear scale running from, say, 'not at all safe', we need to recognise three underlying scales which describe different ways of 'feeling unsafe'.

These three scales are discussed below.

3.2 Emotional – Cognitive scale

Compare and contrast the following two experiences of believing oneself to be at risk which illustrate an important distinction between emotional and cognitive feelings of unsafety:

- Being passed very closely by a much larger vehicle in wet conditions, prompting a visceral feeling of danger (a example of a feeling of unsafety that is more emotional in character).

  "Terrifying. Unsafe. Tense. It's all the spraying with the big lorries on the motorways. It's horrendous if you get next to one of those when you drive." (Low confidence driver)

- Seeing a sign that states that there is an upcoming junction prompting the reflection that there will be traffic joining and more attention will be required (an example of a feeling of unsafety that is more cognitive in character).

  "'Wary' because there's a lot of traffic there, and there's signs going different ways there. 'Cautious' because it's building up with traffic, and we're confident that we can deal with it." (Older driver)

Rather than being an absolute distinction, the emotional-cognitive scale should almost certainly be seen as a continuum. For example, a road user being passed by a much larger vehicle may also be prompted to respond cognitively to the risks and their mitigation, while anticipation of traffic joining ahead may also prompt an emotional response for some. Nevertheless, the responses of participants suggest that any given feeling of unsafety will be more emotional or more cognitive in character.

In this study we have seen this distinction at play in the responses offered by participants to scenarios in a focus group setting, rather than in an on-road context. Nevertheless, it is highly plausible that this variation also occurs on-road. This view is also in line with wider understanding of human psychology and in particular dual processing models (Orbell & Verplanken, 2015; Fazio, 1990).

Importantly, such models also suggest that these different modes of feeling unsafe are likely to have an effect on outcomes. Specifically:

- SRN users may respond differently to feelings of unsafety depending on whether those feelings are more emotional or more cognitive, with possible consequences for safety outcomes.

- Feelings of unsafety may be more or less unpleasant or distressing depending on whether they are more emotional or more cognitive, with consequences for customers' overall experiences of the SRN, and even for decisions about whether to use it in the first place.

3.3 Unknown – Identified risk scale

A second distinction in the feelings of unsafety described by participants relates to how known and predictable the sources of the perceived risk are. For example, compare and contrast:

- The feeling of danger experienced when being passed very closely by a specific vehicle
- The more generalised feeling of threat experienced in conditions of very poor visibility

Again, this distinction should almost certainly be seen as a matter of degree, with varying degrees of uncertainty in different situations. It is also plausible that these differing experiences will have a bearing on how SRN users respond in different situations, on safety outcomes, and on customers' experiences and decisions about SRN use more widely.

3.4 Unmanageable – Manageable scale

The third distinction in the feelings of unsafety described by participants relates to their perceived ability to mitigate or manage the perceived risk.

> *"Some people, because they are not used to driving or they haven't done a lot of driving, some people may only go on the motorway every three or four months. And if they have hardly ever driven in conditions like that they don't know how to react." (Young male driver)*

> *"When I start going there, I don't feel very confident. But I think after repeating it many times, I think you get used to it" (Low confidence driver)*

The situational factors which drive feelings of unsafety are described in detail in Section 4. However, it is worth pointing out in advance that factors which have an impact on perceived manageability relate not only to capability (e.g. driving skill) but also to opportunity (e.g. social permission to take mitigating action).

> *"Should I be speeding up? So, kind of feel a bit pressurised [referring to driving in poor weather conditions]." (Low confidence driver)*

> *"Good confirmation that it's okay to be slower [referring to signs instructing drivers to slow down]." (Young female driver)*

One way in which a perceived ability to mitigate or manage perceived risk is expressed is in terms of *confidence*. 'Feeling confident' could be interpreted as the mitigation of negative emotional experiences to perceived risk by a belief that those risks are manageable. Or, as noted in section 3.1, it could be interpreted as an affective state in its own right – and therefore an exception to our general statement that 'feeling safe' is merely an *absence* of negative experiences associated with believing oneself to be

at risk. This is an issue which would benefit from further investigation as the framework offered in this report is further developed and tested.

3.5 'Feeling safe': a simple framework

In this section, we have argued that 'feeling safe' is in fact not a 'feeling' at all. Rather it describes an absence of 'feeling unsafe'.

Those feelings of unsafety also vary, with three key scales being identified in our participants' responses. The diagram below represents the three scales graphically. In principle, any given experience of believing oneself to be at risk could be profiled by mapping where it sits on these three scales.

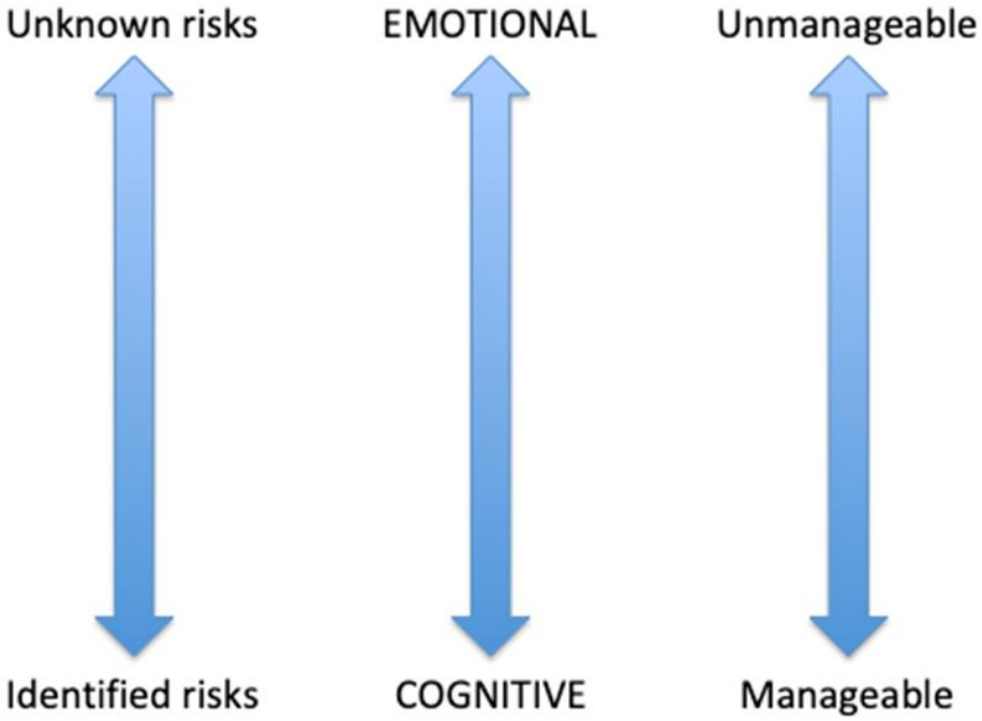


Figure 2: Three scales of 'feelings of unsafety'

Participants' responses suggest that the three scales are at least partly independent, in that feelings of unsafety may take any combination of positions across the three scales. However, there was also evidence that the scales interact: that is, the position of a feeling of unsafety on one scale may make it more likely to be at a similar position on the other scales. For instance, unknown sources of risk were linked by some participants to a more emotional response, while identified sources of (perceived) risk were seen as being easier to respond to cognitively.

> *"I was anxious, because of the unpredictability of the situation, because… Well, you just don't know what's going to happen." (Older driver)*
>
> *"It's not an uncommon occurrence. It's a thing you see every day. You have to expect it, I think." (Young male driver)*

> *"You always expect something like picture number two [referring to stimulus photo]. There's a 50/50 chance that person could pull out. However, you're already predicting that prior to getting there." (HGV driver)*

In a similar vein, there were indications that perceived risks seen as unmanageable may be more likely to elicit an emotional response, while perceived risks seen as manageable may be easier to respond to cognitively. There were also indications that unknown sources of risk may also be more likely to be seen as inherently less manageable.

Although the content of this section is conceptual in nature, the points made have very practical consequences. Understanding the underlying structure of 'feeling safe' matters:

- It matters to the discussion of situational factors in Section 4, because we need to ask, in relation to each factor, not just whether but also how it can make an SRN user feel unsafe.
- It matters when understanding differences between SRN users, because some such differences would be overlooked by a single, simplistic 'more or less' scale of 'feeling safe'.
- It matters to attempts to improve SRN users' perceptions of safety (and to track these improvements), because different interventions and questions may be needed in respect of the different scales.
- It matters at a strategic level, because it requires us to ask not 'Do we want customers to feel safer?' – a question which perhaps does not need asking – but 'In what ways do we want customers to feel safer?'

4 What drives people's experiences?

The previous section focused on understanding **how** participants responded to the driving environment. The next section will focus on **what** participants respond to. The findings from the qualitative analysis identified several overarching themes that influenced road users experience feelings of unsafety. These can be grouped into four broad categories, which are discussed in the sections that follow:

- **The other road users** moving through that environment
- **The physical environment** through which the road user moves
- The **driver/rider themselves**
- The **vehicle** the road user is in

These four categories are similar to three of the categories in the safe system approach that is frequently used within Highways England (as seen in Figure 3).

Factors of within these categories may be more or less easy for Highways England to influence in practice. For example, the physical environment includes factors which Highways England directly controls, such as road markings, and factors over which it has no control, such as the weather. The responses of participants also suggest that experiences of unsafety result from complex interactions between these factors (section 4.5), which further complicates the task of trying to influence experiences of unsafety. Nevertheless, understanding how the key factors influence experiences of unsafety through the framework presented above will provide Highways England with a pragmatic framework to start thinking about how to improve the experience of SRN users could potentially be improved.

Throughout this section we will refer to the framework presented in Section 3 to show how the factors reported by participants are linked to each of the scales. We have also emboldened key points to help the reader. Suggestions that could be considered to address the issues identified by participants are also highlighted – these should be treated as tentative and for further consideration by Highways England.

Figure 3: Themes impacting feelings of unsafety

4.1 Other road users

Other road users were the factor most frequently discussed across all groups as influencing the experience of unsafety. Participants reported that other road users could impact on experience of unsafety through two main mechanisms:

- As individuals, through their actual or anticipated behaviours
- As a community, with actual or perceived expectations about the behaviour and attitudes of its members

4.1.1 Individuals

Participants reported that the presence of specific road user groups could impact experience of unsafety. This was due to pre-conceived attitudes towards these different groups of drivers, that were either based on their own personal experience (e.g. being involved in an accident with an HGV driver) and observed behaviours or

more socially driven perceptions/stereotypes (e.g. young male drivers who are perceived to be the ones driving too fast).

4.1.1.1 Observed behaviour

The actual observed behaviour of other road users could lead to feelings of unsafety – for example if it is judged to be erratic, aggressive or otherwise dangerous. Speeding, and inappropriate speed (too fast or too slow) were some of the behaviours reported by participants. Participants described instances where other road users drove too slowly in the 'fast lane' or too quickly in poor weather conditions, leading to participants questioning their own behaviour, feeling pressured and even engaging in risky behaviours themselves (Unmanageable – Manageable scale in our framework).

> *"If you're on the fast lane and overtake or whatever, going at a perfectly acceptable speed and then someone is flying behind in the wing mirror, it causes people to panic at times and just feel under pressure and…do things they [otherwise] wouldn't."(Young male driver)*

Other behaviours reported as contributing to feelings of unsafety included poor lane use (e.g. middle lane hogging) and distracted driving (e.g. mobile phone use, applying make-up). Distracted driving was a particular concern for motorcyclists and HGV drivers. Motorcyclists were concerned about what they perceived as high rates of distracted driving amongst car drivers making their behaviour less predictable as well as increasing the likelihood of them failing to see motorcyclists all together. Participants reported that this unpredictability could make it harder for them to identify and anticipate risks (Unknown – Identified risk scale in our framework).

> *"When I come to overtake them they're trying on a new pair of sunglasses and posing and they're not paying attention. But generally truck drivers are a bit more observant than car drivers." (Motorcyclist)*

Participants across all groups felt that car drivers showed a lack of empathy towards others on the roads. Young male and female drivers discussed the lack of awareness of the needs of other types of road users, particularly motorcyclists and HGV drivers. As a result of this car drivers were often seen as failing to recognise when they might need to adapt their behaviour to ensure the safety of others or even thought to engage in behaviours that could pose a direct threat to others (Unknown – Identified risk scale in our framework) .

> *"On a bike you might have to be going slower than everyone else because you're just on two wheels and you can't, your tyres aren't going to grip, if you go a bit more than, but other vehicles might not be taking that into account if they're only just coming into rain." (Motorcyclist)*

> *"I think literally you have to be the person that's potentially in danger to be more considerate I guess." (Young female driver)*

HGV drivers themselves were seen as being more empathic towards the needs of other road users (Note however, that the size of HGVs can create other issues – see section 4.4.). Despite participants suggesting that the presence of HGVs could lead to feelings of unsafety, they felt that HGV drivers were more considerate towards others

on the road, adapting their behaviour to ensure the safety of those around them. This was attributed to their additional training; the longer hours spent on the road and therefore greater exposure to different road environments. These factors were seen to provide them with the tools to anticipate, identify and respond to potential risks more quickly and in a more cognitive way (all three of the scales within our framework). This is supported by the wider academic literature that suggests that repetitiveness of a behaviour and familiarity with context can make it easier for individuals to rely on 'automatic processing' of many basic task elements. This leaves spare cognitive capacity to make decisions in a more 'thought-out' way regarding tactical and strategic processes (Aarts, Verplanken & Van Knippenberg, 1998; Triandis, 1977).

> *"And I think when they're [HGV drivers] annoyed they're quite rightly annoyed, it's like people that cut straight back in front of them or something, or do a dangerous move around them, because it takes so much longer for them to stop and manoeuvre. But yeah, HGV drivers are definitely more considerate as drivers" – (Young female driver)*

Improving road users understanding and empathy towards other types of road users could encourage more considerate behaviour reducing feelings of unsafety by helping road users to identify and mange risks**. Participants suggested that one way to do this could be through increasing exposure to, or experience of using other modes of transport** (e.g. being a motorcyclist; driving or being a passenger in an HGV**) or improved public information about the different needs of different customers.** There is some evidence that experience with a given mode can have some impact on safety; for example, car drivers who are also motorcyclists have been shown to have a lower likelihood of being in a collision with another motorcyclist (Magazzù, Comelli & Marinoni, 2006). However, we are not aware of any robust evaluation of the outcomes of interventions which seek to force this experience on people (for example so-called 'trading places' schemes).

4.1.1.2 Anticipated behaviour

While the actual behaviour of road users could impact experience of unsafety, it was the anticipated behaviours of other road users that seemed to have the greatest impact. The unpredictability of other road users' behaviours was reported by all groups. **Unpredictability can lead to experiencing unsafety as it does not provide road users with the ability to identify possible risks and respond accordingly** (Unknown – Identified scale in our framework). It can also increase the likelihood of emotional reactions (Emotion – Cognition scale in our framework).

> *"The best way to describe traffic is like a living animal because it's so unpredictable things can change in a snap." (HGV driver)*

Participants reported a number of elements that could increase, or reduce, the unpredictability of others' behaviours. Some related to the types of roads that they were on. Road layout, road works and on-road information provision (e.g. location, type and content of signs) were reported as factors that could increase the unpredictability of other road users' behaviour. The unpredictability comes from an uncertainty of how other road users are going to respond to the driving conditions, particularly if they are unfamiliar or more complex (Unknown – Identified scale in our framework). For example, variable message signs can increase unpredictability as

they are perceived as being able to change at any time making it harder for road users to confidently anticipate the future behaviour of others.

> *"[Referring to smart-motorways]. In my view, it relies upon everybody being very aware of what the signs are saying and reacting accordingly. So if somebody has broken down in the … in lane one, they apparently switched the signs to close that lane. That immediately relies upon everybody reacting correctly to keep that person that's broken down safe." (Older driver)*

Participants discussed how changes to familiar roads, such as roadworks or reduced speeds, could increase the perceived uncertainty of other road users' behaviours as the road environment would no longer match their expectations. In those circumstances, drivers might not automatically adapt their behaviour to the new environment making it harder for others to anticipate their behaviour. This is supported by the wider academic literature that suggests that familiarity with an environment can lead to habit formation with an individual then automatically engaging in a specific behaviour when placed in that context (Aarts, Verplanken & Van Knippenberg, 1998). Unexpected changes to that environment can in the first instance lead to individuals failing to adapt their habitual behaviour.

> *"I think people tend to drive how the road should be, not to how it is currently." (Young female driver)*

> *"You go up the M1, one minute you're all lanes running, then you've got a hard shoulder, and then it's no hard shoulder and that's in the space of five miles. How can anybody know what they're doing on that road?" (HGV driver).*

Participants across all groups suggested that familiarity played an important role in reducing unpredictability. If a person is unfamiliar with the road environment, their ability to anticipate and identify risks is reduced as they are focusing on their own driving behaviour, reducing the time available to read the road environment.

> *"The unknown's always a lot worse, isn't it, when you're coming across something new." (Young female driver)*

Skills and experience were seen as being associated with the ability of drivers both to manage their own driving in an unfamiliar environment, and to be able to respond to the unpredictability of others. For example, young male participants described instances where some types of driver (learner, novice or less confident drivers) might behave unpredictably as they lacked the necessary skills to manage the new driving environment. This unpredictability reduces other drivers' ability to identify and respond to any possible risks, increasing experiences of unsafety (Unknown – Identified scale in our framework). This is supported by the wider academic literature suggesting that drivers can believe risks to be more manageable if they believe they are skilled and experienced drivers, even if this is not the case (see review in Shepherd & Helman, 2019).

> *"You know what you'd do in this situation and what…most people would do, but there's always one person." (Young male driver)*

> *"It is incredible, […] people don't react quickly enough, not enough anticipation maybe." (Young male driver)*

Participants suggested that one way to reduce feelings of unsafety would be to provide additional training on how to identify risks on a wider range of road types, particularly for low-confidence drivers. **This could reduce the unpredictability of other road users' behaviour and increase confidence in one's ability to manage risks across a wider range of road types.**

As well as skill, participants believed that the mindset of other road users could increase the unpredictability of their behaviour. Participants described how the time of the day or the purpose of a journey could impact how others might drive. For example, if it was morning rush hour the perception is that other road users are going to be in a hurry and therefore may be more likely to engage in risky or unexpected behaviour. Participants suggested that the pressures that other road users may be under, such as going to work or an appointment, could lead to them engaging in more unpredictable behaviours such as driving more aggressively, poor lane use or speeding. For example, weaving through traffic without providing other road users with any indication of their intended behaviour. In addition, it was reported that the density of the traffic can make it hard to identify possible risks even for participants who believed they were skilled drivers (Unknown – Identified scale in our framework).

> *"I think in terms of other drivers, like you said about cutting in and out, I think people drive more aggressively in rush hour, if people have got a purpose and somewhere to be." (Young female driver)*

> *"[Regarding one of the images used in the focus group] It's just unpredictable, you don't know what he's going to do, how slow is it going to be, we're all a bit rushed to get where we are, anxious, can we squeeze through or do you wait, it's just the unknown really" (Young female driver)*

Participants reported that the amount of traffic on the road could impact on the behaviour of others and how well they could deal with unpredictability. **Space, both physical and mental, was seen by participants as important to reducing the experience of unsafety as it provided road users with the ability to process their road environment and respond accordingly** (Unmanageable – Manageable scale in our framework).

Participants suggested that the absence of space might lead to other road users engaging in unpredictable behaviour as the belief is that they are solely focusing on reaching their destination as quickly as possible. Motorcyclists in particular described these instances as leading to a feeling of unsafety as other road users failed to pay attention to their surroundings, changing lanes without checking their mirrors and blind spots.

> *"Very rarely do they, you see anyone check their blind spot. They always are just checking to make sure that there's a space for them to go into, they're not looking at what might be coming up the inside." (Motorcyclist)*

> *"They are focussing more on how they can advance their journey rather than what's going on." (Motorcyclist)*

The need for 'mental space' is supported by the wider academic literature that suggests that for individuals to respond to an environment in a more rational way they need to have sufficient cognitive capacity as well as the personal motivation to process their environment and respond accordingly. In environments that may seem less

predictable, or where individuals may feel a heightened sense of stress, individuals can find themselves unable to respond in a rational way (Orbell & Verplanken, 2010). **Finding ways of giving drivers the physical and mental space to identify and manage risks has potential to reduce feelings of unsafety.** For example, encouraging drivers to keep a safe driving distance potentially not only addresses objective safety but also how people experience feelings of unsafety by creating more physical and mental space.

4.1.2 Community with expectations

Participants suggested that feelings of unsafety could come from behaving in a way that does not match the expectation (actual or imagined) of other road users. Participants described instances where **the behaviour of others could lead to them doubting their own behaviour, even if in practice they knew they were engaging in objectively safe driving**. Participants reported experiencing social pressures from other road users that would lead to them speeding or maintaining inappropriate speed even if they believed they should not be engaging in such behaviour. This pressure was reported by participants across all groups, but low confidence drivers were the ones that seemed to be most affected by it. Low confidence drivers described how this pressure led to them doubting their own behaviour and increasing the likelihood of more emotional reactions when driving (Emotion – Cognition scale in our framework). Other participants who reported being more confident drivers also recognised the impact that these social pressures could have but felt that they had the tools to resist being affected (Unmanageable – Manageable scale in our framework).

> *"Am I fast enough? People want to go fast and I feel like I'm not catching up or fast enough and it's anxiety." (Low confidence driver)*

> *"Well they've got the slip road and that lane and going into Reading you've only got that lane on the right. The trouble with that is, again I feel pressurised to get a move on." (Low confidence driver)*

> *"I feel like I'm quite confident as a driver anyway, it wouldn't really bother me if someone is speeding past me, but I'm just aware that it might affect other people if they feel pressured into moving the other way or doing something they wouldn't normally do." (Young male driver)*

Some participants felt that improvements to the environment could help reduce this pressure and these feelings. Some of the young female drivers described how signage could reduce these pressures by validating the challenged behaviour. For example, **signs informing road users to slow down during poor weather condition provide the social validation required** to not succumb to the perceived pressure and norms imposed by other road users.

> *"Good confirmation that it's okay to be slower [referring to signs instructing to slow down]." (Young female driver)*

Participants across all groups suggested that **increasing drivers' confidence in their own skills could help to reduce these pressures, by encouraging them to recognise when they are engaging in safe behaviour and providing them with tools to identify and engage in mitigating behaviours.** Some participants described how they had already started to achieve this by creating their own norms. For example,

some of the low confidence drivers chose to only drive in the inside lane which they referred to as the 'slow lane'. By staying in this lane, they believed they were distancing themselves from other road users and therefore removing the social pressure that they could experience, in turn reducing the feeling of unsafety (Unmanageable – Manageable scale in our framework).

> *"If you're in the slow lane... you're expecting people to overtake you... we're just plodding along… the other two lanes they can do whatever." (Low confidence driver)*

The perceived norms, which were often referred to as the 'unwritten rules of the road' were often fuelled by the perceived absence of enforcement on the SRN. This led to the belief that non-compliant drivers had 'carte blanche' when travelling on the SRN, with no one questioning or reprimanding these beliefs and behaviours. This reinforced the notion that other road users' risky behaviour is acceptable, or 'normal', and added to the pressure felt by participants to obey these norms, regardless of whether or not they saw them as acceptable. This is supported by the wider literature that suggests that drivers might feel pressured to behave in a way that is in accordance with the social norms of a group that they belong too or think that they belong too, particularly in relation to speeding. (Geber, Baumann & Klimmt, 2019).

> *"There are rules and you are breaking them and it will go unpunished because there are no police officers" (HGV driver)*

> *"I've talked about a 70 mile an hour sort of maximum speed...it's like a carte blanche and it's a free for all, and i think that is what frightens me the most, is there seems to be no police measures...I just feel that you are really taking a gamble and your life in your hands." (Low confidence driver)*

4.2 The physical environment

4.2.1 Road type

Participants described how the type of road could automatically impact feelings of unsafety. **Low confidence users described how they felt inherently uncomfortable on motorways. These feelings of unsafety came from the uniqueness of these types of roads and their lack of exposure to behaviours and events that occur on them** (e.g. joining and merging onto a fast road; higher speeds; number of road users in such close proximity). Low confidence and older drivers described how the unpredictability of behaviour on these roads was the cause of feelings of unsafety (as explored in Section 4.1.1.2). Other types of roads were seen as more enjoyable and less hectic by these participants.

> *"I kind of avoid motorways just because in my head I think there's more accidents, people don't concentrate. Motorway drivers are normally people that use it quite a lot, so like lorry drivers, people that commute, and I think if they're comfortable with the road, you don't pay attention as much." (Low confidence driver)*

> *"I think [I feel safe] because it's not a motorway." (Older driver)*

Similar experiences were described for smart motorways amongst older and low confidence drivers. The feeling of unsafety was also associated with the perceived absence of dedicated spaces that could be used in the event of an emergency and concerns over whether the appropriate emergency services would be able to access in the event of an emergency. The **feeling of unsafety was influenced by the absence of knowledge over what to do in the event of an incident or possible breakdown**. The unfamiliarity of these 'new' road designs, and the perceived absence of instruction over what to do meant that road users felt that they were not able to transfer their prior knowledge of how to react to risk to these new road types. This has led to participants feeling that they are not able to anticipate the types of risks that could occur as well as the appropriate mitigations they should adopt (Unknown – Identified scale and Unmanageable – Manageable scale in our framework).

> *'I am always scared [of] the smart-motorways, that if I breakdown, I'm not near this get off lane [referring to the hard shoulder], what am I going to do? It's a huge risk if you've broken down... especially when it's raining hard and there's a car up front." (Low confidence driver)*

However, this was not the case for all participant groups. **Some participants identified features of motorways that they felt reduced experiences of unsafety.** The motorcyclists from our sample particularly enjoyed motorways. This was associated with the speed of these roads. Motorcyclists reported that the faster speeds reduced feelings of unsafety as they felt they were able to 'make progress', a key aspect of riding. Reduced speed, or standing still, increased feelings of unsafety as motorcyclists described feeling more vulnerable (e.g. harder to maintain balance). Other evidence suggests that motorcyclists are more like likely to respond to risk in a more cognitive way as they have lower feelings of worry and concern and have higher risk identification skills (Cordellieri et al, 2019).

> *"I can enjoy the motorway because everybody's flowing, the traffic is flowing, probably no racy drivers." (Motorcyclist)*

Similarly, for smart motorways young male and female drivers from our sample both enjoyed these road types as they improved traffic flow. Young females reported that the way through which information is provided on smart motorways reduced experience of unsafety as it is made it easier to process and reduced the amount of time that attention has to be taken away from the driving task.

> *"I think I prefer those signs where there is like above each lane, you've got them separate, rather than all the line signs, lane signs, I just think one digital sign." (Young female driver)*

These findings that a specific road type can influence feelings of unsafety are supported by the wider academic literature. Jansen and colleagues (1995) suggest that individuals will try to avoid environments that they associate with intense negative emotions such as stress, as they can pose a threat to health and can trigger an individual's automatic fight or flight response. If a specific environment has led to negative experiences, such as unsafety, it seems plausible that individuals are likely to avoid putting themselves in those situations to avoid re-experiencing such emotions. This may have implications for how Highways England goes about addressing the needs of potential users who are avoiding SRN use, and therefore unlikely to gain the experience they need to grow their confidence.

4.2.2 Familiarity of road

Familiarity of the road environment could impact experience of unsafety particularly in complex driving environments. **If a driver is familiar with the environment this will reduce their experience of unsafety and they are able to identify with more certainty the types of risks that could occur and take the appropriate actions**. However, all participants believed that in complex environments, whether familiar or not, increased attention was required as other road users, who may not be familiar, can be unpredictable.

> *"If I didn't know that junction, I would be confused[…]so it depends on how you're approaching that junction, whether it's local or unfamiliar, as to how you would be and how you would feel." (Low confidence driver)*

> *"You can't see, you've got to hazard a guess at where you're going, and if you're not familiar with that bit, I'm sure if you drove it every day, absolutely fine, but if it's something that you're unfamiliar with." (Young female driver)*

Familiarity with the driving environment impacts experience of unsafety by impacting a driver's feeling of control over their own behaviour. If a driver is familiar with the road environment, they are more likely to feel that they are able to anticipate future risks and the behaviour of others. This familiarity allows road users to respond to events in a more thought out way (Emotion – Cognition scale in our framework), allowing them to identify and adopt mitigating behaviours if required (Unmanageable – Manageable scale in our framework). This was the case for all participant groups, but was a more prominent factor amongst motorcyclists, older and low confidence drivers.

> *"[Referring to a motorway with reduced speed limit but little traffic] I will go down confidently at 60 mph because I know it…I don't worry about lanes and people crossing, you know, because I know it." (Motorcyclist)*

> *"Some people, because they are not used to driving or they haven't done a lot of driving, some people may only go on the motorway every three or four months. …and if they have hardly ever driven in conditions like that they don't know how to react." (Young male driver)*

The wider academic literature also suggests that familiar environments can in turn improve predictability. This predictability can increase feelings of control and reduce intense emotional responses to an environment. This can provide individuals with the cognitive capacity to respond to an environment in a more rational way (Jansen et al, 1995). **One way to enhance a sense of familiarity would be to use consistent and intuitive road designs.** Then even if someone is not familiar with the particular road they are on there, will be elements that they are familiar with.

4.2.3 Non-inclusive road design

Motorcyclists and HGV drivers felt that roads are in general primarily designed for the needs of car drivers. There were certain features of design or maintenance that these groups felt were a particular risk in their driving/riding, but less of a risk to car drivers. For example, while participants that were car drivers described their experiences of navigating narrow lanes, these road designs could have an even greater impact on

the experience of HGV drivers by creating an environment where they may have insufficient space to manoeuvre and therefore to respond to risk. **HGV drivers discussed how they had to deal with road design that did not consider their needs by taking additional precautions. They felt they needed to apply higher, and continuous, mental alertness** to manage the risks they may encounter (Unmanageable – Manageable scale in our framework).

> *"In my opinion the whole network is set up for car drivers. If I was [near] that car that road sign there would be right in my window blocking my view down the road. Every junction you come up to there's a road sign, it's always in your way. So, that's all part of the, it's just all kind of set up." (HGV driver)*

Motorcyclists commented on the features that they felt put them at particular risks such as the paint used for road marking or presence of potholes, both of which could have significantly greater impact on their physical safety than on the safety of car drivers. These perceived design flaws meant that **motorcyclists had to take additional precautions to manage the risks that they might encounter. This was exacerbated by the sense that car drivers were unaware and therefore failed to adapt to the mitigating actions motorcyclists had to take in some situations** (Unmanageable – Manageable scale in our framework).

> *"Not to contradict you but I've got a caveat with clear road markings because most of the time, it's too much paint on the road is what makes me slip about […] Drivers aren't going to spot that; they're just going to think oh has he been drinking or he's not a very good driver […] You've got effectively the roads aren't designed for motorcyclists." (Motorcyclist)*

This raises clear questions for road design. Thinking holistically about different groups is important, as not all design features will be optimal for all groups.

4.2.4 Visibility and weather conditions

Visibility impacts the extent to which risks are knowable or remain unknown (Unknown – Identified scale in our framework). **Weather conditions can directly impact feelings of unsafety** with poor weather conditions such as heavy rain, spray or fog increasing such feelings. Weather conditions which reduced visibility could prevent road users from being able to identify risks (Unknown – Identified scale in our framework). Poor weather was associated with strong emotional reactions with participants reporting intense emotions such as feeling 'terrified' (Emotion – Cognition scale in our framework) These situations were seen as inherently riskier (i.e. heightened sense of threat as risks cannot be identified). Orbell and Verplanken (2010), suggest that in certain environments individuals respond in a more automatic, or emotional way. This is particularly the case in environments that are perceived as higher risk, or require a higher mental workload (e.g. environments with reduced visibility).

> *"[I feel] stressed', 'unsafe' and 'rushed', because the visibility is rubbish […] there's always lights coming at you, when it's just getting that bit dark, it's not fully dark." (Young female driver)*

> *"Terrifying. Unsafe, tense. It's all the spraying with the big lorries on the motorways, it's horrendous if you get next to one of those when you drive." (Low confidence driver)*

This initial intense emotional reaction was expressed by participants across each group, however young males and HGV drivers felt that they would typically be able to manage those emotions (Emotion – Cognition scale in our framework) to respond in a more rational way and without letting their emotions 'get the better of them'.

Motorcyclists in the group described these conditions as particularly unsafe for them, with their visibility to others being reduced. They also felt that their helmet design could reduce their vision in poor weather conditions. This reduced their ability to identify the provenance of the risk (Unknown – Identified scale in our framework).

> *"Our helmets, you get the mist and it sits on your visor and when bright lights shine through it, it lights up every little droplet on your visor…it's irritating it makes you nervous because you can't see well…I'm cold." (Motorcyclist)*

> *"Visibility is a two-way thing, it's how much I can see but how much people could see me, because if they can't see me then I don't stand a chance." (Motorcyclist)*

Just like poor weather conditions could increase experiences of unsafety, good weather conditions could reduce them. Driving in good weather was seen as enjoyable and relaxing and even impacted the anticipated behaviour of others. In good weather conditions participants did not discuss the unpredictability of other road users but instead focused on their own self and the positive emotions that they associated with the driving experience.

> *"The environment seems to be an important factor in my conception of my wellbeing when driving. People seem more relaxed when driving in a more green and open area." (Low confidence driver)*

Participants suggested that visibility was associated with road design more widely. Participants reported increased experience of unsafety on roads that may have hidden dips, hills or long stretches of roadworks where the end is not visible. This was once more due to the reduced ability to identify risks (Unknown – Identified scale in our framework).

> *"There's no signage, there's poor visibility, you can't see how far on it goes [discussing roadworks]." (Young female driver)*

> *"But I feel safe here because it's open, it's not busy, I've got clear, I can see at the junction, I can see things coming…It's not cluttered." (Low confidence driver)*

The importance of visibility suggests that helping drivers moderate their behaviour in situations of poor visibility (whether due to the weather or the road itself) could mitigate against feelings of unsafety. Identifying parts of the network with poor visibility may also be worth considering.

4.2.5 Physical space

The space afforded by the physical environment through which the road user moves can be a key factor in impacting feelings of unsafety. Participants across all groups

mentioned lane width as a concern. Narrow lanes led to participants feeling 'stressed'. They felt that they needed to concentrate more in order to process the driving as they believed it required a higher workload required as they had less physical space to manoeuvre in. **The absence of physical space was linked to more emotional responses and made it harder for participants to respond in a rational way** (Emotion – Cognition scale in our framework). This is supported by the wider academic literature that suggests that the amount of physical space around a vehicle can influence feelings of unsafety (Zhang et al., 2019).

> *"I mean, I drive on the M23 a lot, you've got narrow lanes, 50-mile-an-hour limit all the way down. It is tedious. You have to be more alert, as everybody said. It's a stressful situation, but it is tedious." (Older driver)*

The presence of larger vehicles, such as HGVs, on narrow lanes increased feelings of unsafety by increasing emotional responses in participants. They described instances in which they felt choked or trapped regardless of their experience and perceived driving skills.

> *"Generally, even though I feel I'm quite a confident driver, experiences on those sort of roads where it's 30 mph and very tight with two lanes, by the looks of things, aren't enjoyable at all." (Young male driver)*

Participants suggested that traffic flow could impact feelings of unsafety. **Reduced traffic flow seemed to provide participants with both the physical and mental space required to think and navigate their driving environment.** This mental space was important in reducing the likelihood of intense emotional reactions when driving, by seemingly providing participants with the time to process the driving environment and respond in a more rational way (Emotion – Cognition scale in our framework). The physical space was also important as it seemed to provide participants with the ability to manoeuvre without pressure (either imposed by themselves or other drivers) and adapt their driving behaviour (Unmanageable – Manageable scale in our framework).

> *"We just felt calm and changed lanes. But there was space to do it, so…yeah. You weren't having a fight for a space to get into." (Older driver)*

> *"I think because it's less traffic and you can take your time, you're not rushed with people behind you or there's not too many cars in front of you, so you can just take it at your own pace, but that'll be the day when you're not in a rush." (Low confidence driver)*

Increased traffic flow could lead to some participants feeling pressured to engage in certain driving behaviours that they would not normally feel comfortable doing**. Some changes to road designs could reduce experiences of unsafety.** For example, young female participants described how roads with a shared middle lane could reduce those emotional reactions **by allowing them the space and time to process the road environment and respond accordingly**.

4.2.6 Roadworks

All of the road user groups described how roadworks could lead to feelings of unsafety, regardless of road type. Roadworks seemed to increase uncertainty

through the additional information that had to be processed, the increased attention required from both participants and other road users around them because of the change in road layout and the changes in regulations that could occur regularly throughout the journey (e.g. variable speed limits, lane closures). This uncertainty could lead to more emotional reactions (e.g. aggression, frustration or anxiety (Emotion – Cognition scale in our framework).

> *"Everything is so much busier, so more cars on the road and more to sort of look out for, it's just all extra hassle really and it's going to get worse." (Low confidence driver)*

One specific element of roadworks that could impact the experience of unsafety was information provision. Participants felt that there was often an absence of information through roadworks (e.g. no information about the length, duration or reason for the roadworks), leading to increased uncertainty when travelling on the network as the type of risks, expected behaviours and the behaviour of others becomes increasingly unpredictable.

> *"Worried' and 'stressed', again because you don't necessarily know what's going on at the roadworks." (Young female driver)*

Participants suggested that some changes to roadwork design could help to reduce feelings of unsafety. One of these was the use of concrete barriers over more temporary separation as it could reduce the perceived likelihood of certain risks occurring (Unknown – Identified scale in our framework). Similarly, all participant groups suggested that motorways where only a single lane was narrowed could reduce feelings of unsafety. These changes could work towards creating an environment where the uncertainty of risks is reduced and where the intensity of emotional reactions can then also be reduced, with road users having sufficient mental space to identify and action mitigating behaviours if required (all three scales in our framework).

> *"It just feels a bit safer if there's something more concrete rather than just grass. Especially if you go in the opposite way. If they're going to come over there's something there stopping them, whereas that's not going to stop anything [referring to cones in contraflow]." (Low confidence driver)*

4.2.7 Information provision/signage

When we look at the role played by signage and information, we see a number of the themes already touched upon. **Poor information provision could impact participants' driving experience. Participants suggested that poor signage with too much information, or information not being provided at most appropriate time or in the best format, could lead them and other road users to be distracted and to behave in unpredictable ways**. This was particularly the case in roadworks, with other road users' behaviour being harder to anticipate, thus increasing the uncertainty of risks (Known – Identified scale in our framework).

> *"I would be distracted…I would be more worried about what everyone else is [doing], everything else I'm seeing and I'd be distracted." (Motorcyclist)*

> *"Yeah, there's too many signs because you can't expect to take it." (Older driver)*

"If there's too much to look at it's distracting, it's encouraging you [to] actually take your eyes off the road isn't it?" (Low confidence driver)

The position of the signage could impact experience of unsafety. Signs at the side of the road were disliked by some participants as they could often be blocked from view by other vehicles. This meant that some participants were unable to access the information they needed at key decision points (e.g. roundabouts, junctions). The feeling of unsafety came from not being able to make informed decisions in a timely way, or concerns over other drivers engaging in risky or unpredictable behaviours due to missing information (e.g. harsh braking, lane change) (Known – Identified scale and Unmanageable – Manageable scale in our framework). Some participants suggested that the position of signs could lead to incorrect behaviours, particularly in roadworks, where poorly positioned signs might lead to road users incurring into the roadwork area.

"Think the first thing that kind of came to me is the free recovery sign being within the roadworks, it's not clear that it's there, so it would be like you're supposed to pull into the roadworks." (Young female driver)

"I think it's a very dangerous scenario, and it plays out far too often. You've got directional signs, and too many of those, as we agree. The lane management signs are after the point of decision. They're obscured, in part by the vehicles on there anyway, so, yes, the number of times that you…well, I've had this experience myself; we all have, of being stuck in lane one and finding out at the last moment that the markings on the road…which are clear there, and they're frequently not…but now you end up going down to your left. I would go down to my left to avoid an accident, but other people will immediately cut back in." (Older driver)

While some smart-motorway signs were liked by some participants (particularly young female drivers who found signs that provide information for each lane easier to read and therefore easier to process), the nature of variable message signs was also mentioned as contributing to feelings of unsafety. **Some participants suggested that the fact that variable message signs can change at any time requires all road users to be aware of all of their surroundings in order to adapt their behaviour accordingly** (Unmanageable – Manageable scale in our framework). However, as described earlier participants reported that this increased awareness was often not the case. Therefore variable messages could increase the unpredictability of other road user's behaviour making it harder to anticipate possible risks (Unknown – Identified scale in our framework).

"I said more alert is because these signs can change in an instant." (Older driver)

"I mean it is clear but these flash up really quick and they change all the time and you start to panic and think am I in the right lane, do I have to move over, where's the cross, where's the green light, it can be confusing." (Low confidence driver)

The perceived accuracy and reliability of information more generally could make it harder to predict the behaviour of other users and therefore to identify risks with certainty [Unknown – Identified scale in our framework). Participants described instances where the signs were either irrelevant to them, too confusing to understand

or even incorrect leading to other road users disregarding the signs all together. These perceived issues in signage could make it hard for participants to anticipate changes in the road environment and adapt their behaviour (Known – Identified scale and Unmanageable – Manageable scale in our framework). **This could also lead to a lack of trust in the information provided on the network leading to participants and other road users failing to adapt their behaviour, increasing perceived risks.**

> *"Another thing is smart motorway signs could be more specific when it came to saying which roads are closed, so like A12 junction two makes no sense for me." (Young male driver)*

> *"Because when it's outside your control it's the unknown, things like the roadworks. So it's an unknown. And the signings are an unknown, so if you don't understand the signs that's an unknown and it's all out of your control." (Low confidence driver)*

Participants suggested that good information provision could help to reduce feelings of unsafety by reducing the uncertainty of risks and by **providing them with more tools to identify risk and therefore identify and adopt mitigating behaviours**. Suggestions on how to improve information provision included signage that was well located, such as on overhead gantries as opposed to on the side of the carriageway to ensure that it was always visible. Similarly, participants suggested that providing sufficient early warning of any changes to the road environment could help by providing sufficient time to process the information and adapt their behaviour accordingly. Participants suggested that where possible information that is action based, clear and cannot be misinterpreted would be preferred. Good information provision could play an important role in reducing the unpredictability of the driving environment.

> *"Well, we were fairly confident. We thought the signage was very clear; they probably had one further back so that we'd be knowing it's coming up. We were alright with that one." (Older driver)*

> *"[We feel] confident because we like the fact that you're given pre-warning of the lane closure, there's plenty of time to move around before any kind of hazard is going to appear." (Young female driver)*

4.3 The driver/rider themselves

The self plays an important role in determining experience of unsafety. While external factors can influence the driving experience, the way an individual process these factors is ultimately what determines how it will impact them.

Confidence in one's own driving skills seemed particularly important in determining whether participants felt able to mitigate risks. Participants across groups suggested that familiarity with the road environment, or exposure to a range of road layouts, could increase perceived skill and confidence in their ability to identify and mitigate risks.

As described earlier familiarity with the road environment could reduce feelings of unsafety as it allowed participants to anticipate future risks and have the mental space to identify and adopt mitigating behaviours (Unmanageable – Manageable scale in our

framework). **Improving the consistency of the road designs across the SRN could help improve drivers' confidence by allowing them to recognise different road designs, even on roads that they have not previously used**. **Improving the consistency of road designs could help to reduce the 'unknown'** that leads to experiencing unsafety on the network (Unknown – Identified scale in our framework).

> *"It's consistency I think is my big thing about it. Even if it's consistently wrong at least you know where you stand. It's the not knowing." (HGV driver)*

Confidence was also impacted by driving experience more generally. Participants who believed they had more driving experience (longer time since licensure, higher mileage or greater exposure to different roads, particularly) felt that they had the skills to deal with any situation, including complex situations. Participants suggested that exposure to the SRN was one of the ways of becoming a confident driver, as it provided them with the opportunity to review their own behaviour and in their opinion allowed them to develop the necessary skills to mitigate potential risks, regardless of the situation (Unmanageable – Manageable scale in our framework) and to respond to risk in a more rational, or less emotional way (Emotion – Cognition scale in our framework).

> *"So it's giving other road-users space, and you're anticipating what other road-users would do as well, but giving yourself time … you know, it's time and space to move around as necessary to keep the situation … safe, really." (Older driver)*

> *"It is really interesting; it makes you think about how you behave as well as a driver, so it's good having that experience and loads and loads of hours on motorways." (Young male driver)*

Participants suggested that feelings of unsafety could be reduced by a person's belief in their own ability to identify and process risk as early as possible and have the confidence to take the necessary mitigations to avoid that risk (Known – Identified scale and Unmanageable – Manageable scale in our framework). **Ensuring that drivers believe that they have the ability and confidence to identify and mitigate risks whatever those may be, and wherever they may occur, can reduce experience of unsafety** (Unknown – Identified scale and Unmanageable – Manageable scale in our framework). Participants suggested that those who did not have these tools could feel unconfident in their choices (e.g. maintaining a reduced speed and giving into social pressures), increasing feelings of unsafety.

> *"You always adjust how you drive for each of these 15 scenarios [referring to the images used as part of the focus group]. So, you always expect something like picture number two there's a 50/50 chance that person could pull out however you're already predicting that prior to getting there. Picture eight, yeah numpty has pulled out in front of the traffic but again you're always going to get that happen so there is no, for me, there is no safe or unsafe picture, you just adjust your driving per each scenario to the conditions therefore I don't have no safe or unsafe." (HGV driver)*

> *"When I start going there I don't feel very confident but I think after repeating it many times, I think you get used to it." (Low confidence driver)*

One suggestion to help reduce feelings of unsafety was through improved driving skills as a result of improved driver training. Indeed, participants

suggested that one of the reasons for unpredictable behaviour could be the absence of motorway driving experience prior to obtaining a driving licence. Participants believed that the lack of exposure to these types of road could lead to road users engaging in objectively riskier behaviours as they are unable to manage the driving situations that they encounter.

> *"I think tons of people don't have enough experience on motorways." (Young male driver)*

> *"I've seen people slow down to like 30 or 40 mph on a motorway to let merging people in…rather than changing lanes themselves they slowdown." (Young male driver)*

Motorcyclists and HGV drivers, who receive additional training, suggested that all road users should have continuous driver training to support them with the new types of roads that are being introduced. This could provide road users with the opportunity to improve their knowledge and feel more confident in their own skills and that of others when on the road. HGV drivers and motorcyclists felt that as a result of their additional training it was their responsibility to anticipate and assess the risks as they could not rely on the skills of other road users.

> *"From a lorry driver's perspective, we have to attend a course every year to keep our licence so we can go on the road. Why, as lorry drivers, do we do that but car drivers don't?" (HGV driver)*

> *"It's like a micro risk assessment – we have to do that all the time because we are vulnerable." (Motorcyclist)*

> *"Do you think that's because we're lorry drivers and we see so much more, we spend so much more time on the road? I think we are more aware, we have to expect the unexpected." (HGV driver)*

Findings from this section are supported by the wider academic literature suggesting that increased experience and exposure to certain environments can reduce the perceived mental workload required to process and respond to a task, therefore making it easier for individuals to respond in a more 'thought out' way (Orbell & Verplanken, 2015).

4.4 Vehicle

Vehicle design could influence feelings of unsafety. Participants suggested that some of the features on new vehicles could impact how road users experienced a journey. For example, while new LED headlights could reduce feelings of unsafety for some by improving visibility to others, they were also seen as dazzling and could lead to confusion by reducing the vision of oncoming drivers.

> *"Yeah, and even LED headlights that they have now that just look like people constantly have their full beams on, stuck in that sort of...where they're like this high, yeah. Yeah, I would say that this just makes me feel like 'pretty much I just want to get over this part of driving." (Young female driver)*

HGVs could lead to experiencing unsafety when on the network due to their size (width and height) and the number of blind spots that they had. Overall most

participants across the groups (other than HGV drivers) reported feeling inherently uncomfortable when driving around larger vehicles such as HGVs. Participants described experiencing quite intense emotional reactions when driving around these vehicles (Emotion – Cognition scale in our framework).

> *"I personally feel vulnerable around lorries on motorways...so the lane I would be in would be the far left which tends to be the one the lorries are in as well...so I just hate, I always feel vulnerable amongst the lorries...I'm not confident there is enough space between a car and themselves to be able to brake before hitting you." (Low confidence driver)*

HGV drivers themselves recognised that their vehicles could impact other road users. However, HGV drivers also raised how other road users' misunderstanding of their limitations led to them experiencing unsafety. They reported that there were a number of misconceptions about the perceived visibility of HGV and their actual visibility, with other road users not being aware of the different blind spots. This lack of understanding about the limitations of these vehicles could lead to car drivers engaging in risky behaviour (sitting in an HGVs blind spot or cutting in front of them).

> *"You're also aware as a lorry driver you cause a lot of that spray because to be quite honest some of the spray, especially on these lorries is absolutely abysmal." (HGV driver)*

> *"We have very big mirrors on the side and you've got the metal barrier on your left and it doesn't matter how good you are you're always, because you can't see it because down on your blind, when you're sitting up high you can't really see that. You need to know where it is but it's more by feel rather than actually being able to see it." (HGV driver)*

Aspects of vehicle design were not much commented on in the groups. However, this may be an artefact off the research process. In particular, the photographs used as stimulus material were *not* taken from a viewpoint inside a vehicle, meaning that they lacked various features of a visual experience on road (e.g. the dashboard, the windscreen) which could potentially have cued greater attention to the vehicle itself.

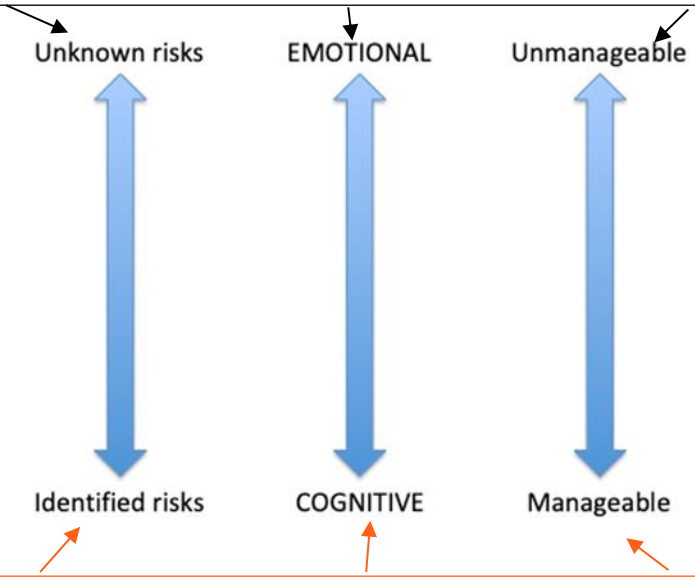
4.5 Interactions between factors

In order to illustrate the dynamic element of the framework and how the factors interact with the different scales two examples are provided below.

Figure 4 highlights how signage can lead to feelings of unsafety and Figure 5 highlights how roadworks can lead to feelings of unsafety.

Poor placement of signage: instances where too many signs are used in a very short space, such as through roadworks can lead to road users feeling anxious, stress, confused and panicked. This emotional reaction will lead to feelings of unsafety. This increases the uncertainty of the risks that could occur and where the risk could come from by increasing the unpredictability of other road users' behaviours – who are also feeling confused and may be distracted therefore paying less attention to the road and the behaviour of others.

Poor information provision will also reduce mitigations as a person will not have access to information that will provide them with the knowledge required to adopt mitigating behaviours (e.g. reduce speed or stay in lane)



Good signage: information that is provided on overhead signage reducing the need to take attention away from the road and allowing drivers more time to process the information while reducing the likelihood of drivers being distracted. Overhead signs also ensure that the signs are not blocked from view ensuring that the information is always accessible and providing road users with the ability to adopt mitigating behaviour.

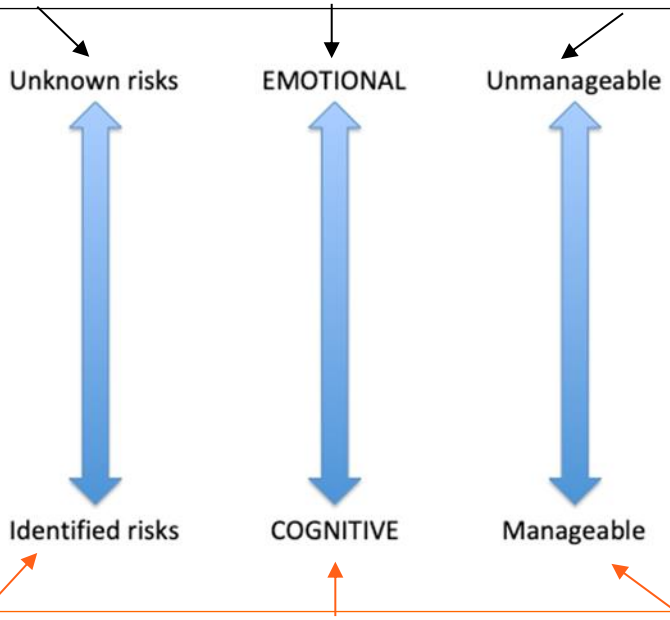
Signage that provides clear instructions about reduced speed limits, time and distance to next junction as well as recommendations for mitigating behaviours allows road users to have the time and space to identify sources and develop mitigations.

Figure 4: How the framework of unsafety works in practice – an example with road signage

Roadworks: The changes in road environment can increase the uncertainty of risk. Lane width can impact experience through roadworks, particularly with the presence of larger vehicles such as HGV. Narrow lanes and HGVs can lead to very physical and intense reactions reducing the likelihood of drivers being able to respond rationally.

The actual, and anticipated, changes in regulations while driving through roadworks make it harder for road users to identify the types of risks that could occur as other road users' behaviour becomes more unpredictable. This unpredictability can lead to more emotional reaction from all drivers (e.g. frustration; aggression).

This uncertainty reduces their ability to identify and adopt mitigations.



Good roadwork design: When roadworks are designed with the customer in mind this can reduce experience of unsafety in an inherently complex environment. The use of permanent barriers to separate the different carriageways from each other, as well as from the road work area can reduce perceived likelihood of risks.

Reducing the uncertainty of risks can reduce the likelihood, or the intensity, of any emotional reactions, providing road users with the mental space required to identify and adopt mitigating behaviours.

Figure 5: How the framework of unsafety works in practice – an example with roadworks

5 What are the implications for Highways England?

5.1 What should Highways England be seeking to achieve

Highways England wishes to improve how safe their customers feel when travelling on the SRN. This research aims to understand those factors which impact how safe customers feel when travelling on the SRN. The findings highlight the complexity of 'safety'. This complexity raises an important question: on which aspects of feeling safe should Highways England focus its efforts?

Firstly, we suggest that road users do not experience feeling 'safe', but rather experience feelings of 'unsafety'. A feeling of 'safety' is really the absence of feelings of unsafety. Highways England's aim should therefore be to reduce experiences of 'unsafety'.

We have identified three key scales of variation in feelings of unsafety:

- **Emotional – Cognitive scale**: Feelings of unsafety may be more emotional or more cognitive in character – in line with dual processing models.[7]
- **Unknown risk – Identified risk scale**: Feelings of unsafety vary depending on how known and predictable the sources of the perceived risk are.
- **Unmanageable – Manageable scale**: Feelings of unsafety vary depending on an individual's perceived ability to mitigate or manage the perceived risk – with ability here covering both capability (physical and psychological) and opportunity (physical and social).

These scales can be used as 'graphic equaliser', with feelings of unsafety registering higher or lower on each of the three bars. For feelings of unsafety to change it will be necessary to take into consideration each of the scales, as well as their key components (see Figure 6).

[7] 'Dual processing models' is a ubiquitous term used in psychology to describe two broad 'systems' in human mental activity. 'System 1' is typically conceptualised as being fast and intuitive, large in capacity, evolutionarily old and largely linked to emotions; it is 'gut feeling'. 'System 2' on the other hand is slow and deliberative, limited in capacity, evolutionarily recent, and largely detached from emotions; it is 'thinking hard'.

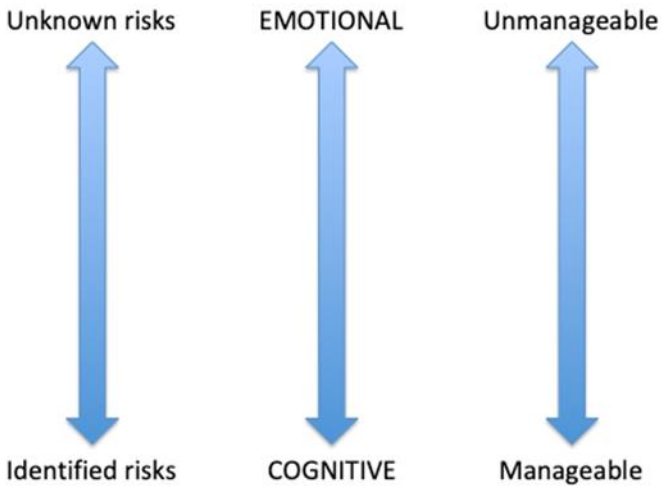


Figure 6: Three scales of experience of unsafety

What stance should Highways England take on these three aspects of experiences of unsafety? The answer to this question is further complicated by the fact that experiences of safety may matter in at least two different ways.

5.1.1 Customer experience

Experiencing feelings of unsafety matters to Highways England because they are one element of customers' wider experience of the SRN. Feeling unsafe can be unpleasant or distressing. Indeed, some people may be deterred from using the SRN entirely by the expectation of such feelings.

However, caring about customer experience does not necessarily mean eliminating experiences of unsafety altogether, since those experiences need not necessarily be unpleasant or distressing. For example, some of our participants described the experience of identifying risks on the road which they felt confident they could manage. These experiences – in contrast to the experience of participants who did not feel they could manage – were not especially negative. That is, the position of a specific experience of unsafety on the manageable-unmanageable scale makes a significant difference to the role it plays in a customer's overall experience.

There is a good argument to be made that the same applies to the other two scales as well, with emotional response to risk, and unknown risks, being worse from an overall customer experience perspective.

From a customer experience perspective there's a case to be made that Highways England's aim should be not to eliminate experiences of unsafety, but to prevent unsafety being experienced in more distressing ways. In practice, this might mean ensuring that, when they do occur, experiences of unsafety are at the bottom of the three scales, as shown below.

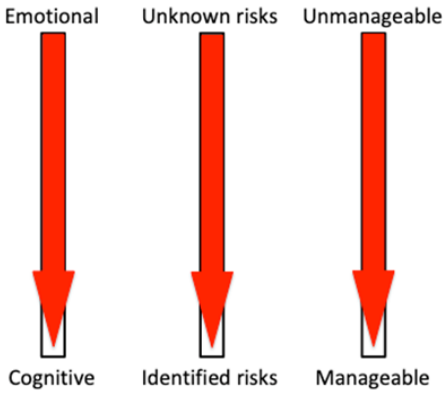


Figure 7: Three scales of experience of unsafety driven by customer experience

5.1.2 Road safety

Experiencing feelings of unsafety also matters to Highways England because of the role they play in delivering the objective safety of the system as a whole. It is, after all, only by feeling unsafe in their environment that users of the SRN are able to respond, and thereby play their role as agents in the system.

Experiences of unsafety, however, do not necessarily correlate to objective risk. On the one hand, people may objectively be at risk but fail to have the experiences to match. An 'over-confident' driver who believes they can pull off risky manoeuvres at high speed is an example of this. What is striking about such a driver is not that they think there are no risks in their behaviour, but that they think they have identified these risks and are able to manage them. Their experience of unsafety is at the very bottom of the three scales.

With examples such as this in mind, there is an argument to be made that, from a road safety perspective, some emotion, some recognition of the unknown and unmanageable, is a good thing. This aligns well with models of driving which focus on matching driver capabilities to task demand; people need to experience task demand if they are to control it (for example see Fuller, 2000).

From a road safety perspective there's a case to be made that Highways England's aim should be not to eliminate experiences of unsafety, but i) to ensure that experiences of unsafety match more accurately the objective risk in situations while ii) minimising (and if possible eliminating) those situations which result in more distressing reactions. In practice, this might sometimes mean shifting some experiences of unsafety, for some drivers, up the three scales, as shown below.

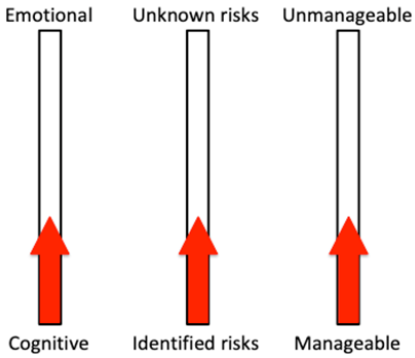


Figure 8: Three scales of experience of unsafety driven by road safety

Of course, experiences of unsafety may also be misaligned in the other direction; that is, people may experience unsafety in situations where objectively they are in fact not at risk. For example, people might feel unsafe in narrower lanes even if, objectively, these do not put them at risk. At least two approaches to this are possible:

- Change the situation – that is, avoid the narrower lanes on grounds of customer experience, even though there is no objective risk
- Change the experiences – that is, seek in some way to change the perspective of road users so that they no longer experience unsafety in these contexts

It is worth noting that the latter goal is unlikely to be achieved by simply telling people the facts about objective risk, especially for those experiences of unsafety which are more emotional.

It is important to realise that it is **not about choosing between road safety and customer experience** but instead about **considering how they interact and striking a balance between the two**.

5.2 How should Highways England track progress?

The findings of this research should enable Highways England to enhance the ways in which it monitors how safe customers feel. Exactly how this is done will depend on the answers to the questions in section 5.1. However three key issues will need attention in any circumstances, and these are expanded in the sub-sections below.

5.2.1 Don't just ask customers how safe they felt: ask about occasions on which they felt unsafe

A key finding from this research has been that participants do not experience 'feeling safe' but instead experience feelings of unsafety. Therefore, asking customers about the instances where they experienced unsafety would provide Highways England with more accurate and valuable insight into their journeys and the factors impacting their experience.

5.2.2 Ask them about all three dimensions of unsafety (Emotional-Cognition; Unknown – Identified risk; Unmanageable – Manageable) and their components

While it is important to understand whether customers are experiencing unsafety, it is equally as important to understand why and how they are experiencing this. Using measures that can gather insight on the three dimensions, as well as their components will allow Highways England to explore the 'why' (e.g. uncertainty of risk, social pressure of other drivers) and 'how' (emotional or cognitive).

5.2.3 To allow a comparison with objective risk ask customers when, where and why they felt unsafe

Calibrating the experiences of unsafety reported by road users against the objective risk they faced in those situations is no easy task. As a first step, however, it suggests a need to identify not just whether people experience unsafety, but also when and where they experience it. Suggestions on how to use sources of objective data to help in understanding this can be seen in the objective/subjective report carried out as part of the wider 'Understanding perceptions of safety' stream (Helman, 2019b).

5.3 How should Highways England intervene?

Once again, the specific interventions that Highways England makes will depend on the focus and the balance between customer experience and objective road safety perspectives. However, the findings of this research again suggest some principles which could be applied.

5.3.1 Use the framework to get to grips with the complexity of unsafety

The findings from this research highlighted both the complexity of 'feeling safe' and the complex way in which interventions can impact on experiences of unsafety. Some of these impacts are indirect. For instance, the findings suggested that when faced with a change to a familiar road layout, customers will react to the change itself and will also react to the anticipated behaviours of other road users. Even if they understand the road themselves, they may still experience unsafety as they anticipate that others will not understand the road and may therefore engage in unpredictable behaviour.

These indirect impacts make it more complicated to develop specific recommendations but understanding these impacts can provide Highways England with the tools to assess the possible impacts of their interventions. Using this framework will enable Highways England to understand the complex ways through which unsafety is experienced and assess whether their intervention could be successful, and how.

5.3.2 Develop 'golden rules' to design for better experiences

Design is an intervention that is at the heart of Highways England activities. Roads have to be designed, and choices made during the design process will have a

significant impact on customers' experiences of unsafety – whether or not that has been a consideration in the design process or not.

One way to ensure that feelings of unsafety are considered is to develop golden rules that relate to customer experience that should always been taken into consideration when designing roads. Some of these golden rules could include:

- **Space** – Design which gives people a sense of space around them may help to reduce more extreme emotional responses, while also increasing the experienced manageability of risk.
- **Visibility** – Being able to literally see ahead may reduce the sense of unknown risk in the environment. 'Virtual' ways of seeing ahead, e.g. via signage, may offer a similar benefit.
- **Normative** clarity – Knowing where one is meant to be and what one is meant to do, and believing that everyone else knows the same, may play a vital role in making risks known and manageable.
- **Familiarity** – Trying to maintain consistency in the road environment, either between different roads, or within the same road can help to reduce the sense of unknown risk in the environment and make environments seem more manageable.

5.3.3 Start by focusing on moments of change

A theme running through the findings is that what is more familiar also feels safer. Experiences of unsafety were linked by many participants to unfamiliar contexts. Consistency across space ('this road is the same other roads I've been on') and time ('this road looks the same as the last time I drove along it') therefore seems likely to be a key component in minimising experiences of unsafety. Of course, this does not – and cannot – mean that there should be no innovation or change on the SRN. But it does suggest that moments when the network is being changed in some way – whether to improve it (e.g. the introduction of smart-motorways) or remedially (e.g. remedial roadworks) – are the moments when an analysis of the impact on experiences of unsafety will be most called for.

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Appendix A Method

A.1 Participants

Following the review of the SRUS and High View six different groups were identified based on their self-reported perceptions of safety (i.e. groups with low self-reported perceived safety and groups with high self-reported perceived safety, for full details see Kent, 2019). The six groups were:

- Young male drivers under 35
- Young female drivers under 35
- HGV drivers
- Older drivers, over the age of 60
- Motorcyclists
- Low confidence users

Further details of the sample are provided in Appendix B.

Participants were recruited through a number of differences sources which included:

- TRL's participant database[8]
- Facebook advertising
- Local community centres
- Local colleges
- Universities
- Local businesses
- Specialist recruitment agencies[9]

Leaflets and emails contained a link to a short registration survey to register an interest in the research (the registration survey is in Appendix C). The survey included demographic questions as well as items focusing on driving habit allowing

[8] This is a list of over 1,000 people in the Thames Valley area who have expressed an interest in undertaking research into transport-related research.

[9] Support was sought to recruit harder to reach groups such as low confidence drivers.

us to group road users into the homogenous groups identified above and invite them to the relevant focus group.

In total seven focus groups were conducted (including two ‘low-confidence’ groups).

A.2 Design

A.2.1 Rationale

Focus groups provide the opportunity to explore different points of view on a range of topics and to explore differences and similarities between group members’ points of view (Braun & Clarke, 2013). Focus groups are based on a small number of broad questions/themes, which are discussed by participants at their own pace. Unlike more structured qualitative methods, the conversation is guided by the participants themselves and the researcher is simply a facilitator. The role of the facilitator is to guide the discussion where appropriate, by inviting participants to elaborate on specific themes or by bringing the discussion back towards the topics of interest, ensuring that all participants can contribute to the discussion.

Focus groups have been found to be a strong investigatory tool when looking at unexplored or complex areas as participants discuss their thoughts and personal experiences on a given topic (Gibbs, 1997). They allow for a range opinions and experiences to be covered, as participants may have contrasting beliefs and are encouraged to develop their reasoning to produce elaborate accounts in order to make their position clear to the other group members, consequently allowing for a more in-depth analysis of their thoughts (Smith, 2008). Similarly, as the conversation is directed by the participants themselves and not the researcher, this ensures a more in-depth exploration of their own thoughts, as they are able to elaborate on any topic they wish to discuss and choose the direction that the discussion should take (Gibbs, 1997). In addition, people are at times unaware of their position regarding a particular phenomenon or issue until they are prompted in conversation to think about it, generally as a reaction to an opinion put forward by someone else (Smith, 2008). Similarly, during focus groups topics may be discussed that an individual would not necessarily have thought of alone in the context of an interview (Smith, 2008). This, once again, allows for a greater range of topics to be raised and a more in-depth and experience-based discussion, allowing for a richer analysis.

When determining the participants for a focus groups there are two important factors to take into consideration:

- Homogeneity or heterogeneity of the group
- Participants being acquainted or strangers

After some consideration a decision was made that in this project the focus groups would be made up of a homogenous group (same road user type) of strangers. Homogenous groups are often favoured when discussing very personal topics (Liamputtong, 2011). One of the key requirements for conducting focus groups is ensuring that participants feel at ease with the rest of the group members as this will ensure open and honest disclosure. When discussing topics that are personal and complex, such as safety, focus groups made of homogenous groups will work towards improving participant disclosure. Similarly, focus groups comprising strangers can often encourage disclosure. Research has shown that discussing topics with friends can sometimes inhibit free discussion and disclosure, while on the other hand discussing personal topics with strangers can lead to people sharing a range of different opinions and perspectives as they will probably never see the fellow participants again (Braun & Clarke, 2013; Liamputtong, 2011). This design allowed us to enable frank and open discussion on a complex topic.

A.2.2 Data analysis

Upon completion of the focus groups these were transcribed and analysed using inductive thematic analysis (TA). Thematic analysis is strong analytical tool allowing to identify, analysis and report patterns within a dataset as well as highlight how themes might differ across the different road user group. An inductive approach was chosen to ensure that the findings were based entirely within the data and generated by the respondents themselves, not driven by any previous theoretical ideas (Smith, 2008). The chosen methodology allowed us to explore and understand the intricacies of meaning within the data and achieve the aims of the research.

Initial coding was carried out by three experienced qualitative researchers. To ensure the same detail and approach was taken by all, initial coding schemes were reviewed by the technical lead. Once this had been reviewed and approved, researchers were able to continue with the analysis.

Following this a workshop[10] was conducted to identify overarching themes, patterns and differences across the different road user segments as well as solutions and actionable insight to support Highways England in implementing the findings from the research.

[10] The workshop was attended by the project's technical lead, qualitative researchers, the technical reviewer, Highways England representative and additional experts.

A.3 Procedure

After being identified through their registration survey responses, participants were sent an email inviting them to take part in a focus group. The email included the consent form and participant information sheet. Five of the focus groups were conducted at TRL's main offices in Wokingham (Berkshire) and two were conducted in central Birmingham[11]. Each lasted approximately 2 hours and were recorded for transcription. At the beginning of each focus group participants were once again presented with the information sheet and consent form and reminded of their right to withdraw. Participants were reminded of the nature of the study, its confidentiality and anonymity. At this point recording began. Two researchers were present during each focus group. One facilitated the focus group while the other took notes.

The focus groups were divided into three key sections. The first focused on exploring the emotions experienced with images of different driving environments. These images were identified based on the SRUS/High View analysis, literature reviews and interviews carried out in the earlier stages of the research.

The first activity consisted of participants working in pairs to explore the emotions that they experienced while driving in different environments. They were presented with 15 different images as well as a number of emotion cards and additional blank cards. Participants were asked to associate the photos with the emotions and encouraged to add additional emotions. Following this activity, the group went through each photo exploring the emotions chosen and the specific factors leading to these emotions.

The second section of the focus group explored the specific factors influencing road users' perceptions of safety. The third section focused on exploring the possible solutions that could address the points raised throughout the discussion, as well as the role that Highways England can play creating a safer driving environment and encouraging safer driving behaviour.

Once the focus groups were completed participants were provided with a full debrief, the opportunity to raise any further questions and the lead researchers' contact details. Participants were then thanked for their time and given a £30 incentive as compensation for their time.

[11] One of these focus groups was conducted at TRL's Birmingham offices, the other was conducted in a specific venue containing a viewing room allowing members of Highways England to observe the focus group.

Appendix B Focus group participants

Table 1: Older drivers

Gender	Age	Ethnicity	Employment	Main mode transport	Confidence
Male	61-70	White - British	Retired	Car	Very confident
Male	61-70	White - British	Employed, full time	Car	Very confident
Male	71-80	White - British	Employed, part time	Car	Quite confident
Female	71-80	White - British	Retired	Car	Quite confident
Female	71-80	White - British	Retired	Car	Very confident
Female	61-70	White - British	Employed, part time	Car	Quite confident
Male	71-80	White - British	Retired	Car	Neither confident nor unconfident
Female	61-70	White - British	Self-employed, part time	Car	Very confident

Table 2: Young female drivers

Gender	Age	Ethnicity	Employment	Main mode of transport	Confidence
Female	25-35	White - British	Not employed, looking for work	Car	Quite confident
Female	25-35	White - British	Full time mum	Car	Neither confident nor unconfident
Female	25-35	White - Any other white background	Not employed, not looking for work	Car	Quite confident
Female	17-24	White - British	Employed, full time	Car	Very confident
Female	17-24	White - British	Not employed, looking for work	Car	Very confident
Female	17-24	White - British	Employed, full time	Car	Very confident
Female	25-35	White - British	Not employed, looking for work	Car	Quite confident
Female	25-35	White - British	Full time mum	Car	Neither confident nor unconfident

Table 3: HGV drivers

Gender	Age	Ethnicity	Employment	Main mode of transport	Confidence
Male	36-40	White - British	Employed, full time	HGV (over 7.5 tonnes)	Very confident
Male	41-50	White - British	Employed, full time	HGV (over 7.5 tonnes)	Very confident
Male	36-40	White - British	Employed, part time	HGV (over 7.5 tonnes)	Very confident
Female	41-50	White - British	Self employed	HGV (over 7.5 tonnes)	Very confident

Table 4: Motorcyclists

Gender	Age	Ethnicity	Employment	Main mode transport	Confidence
Male	25-35	White - British	Employed, full time	Motorbike/Scooter	Neither confident nor unconfident
Female	51-60	White - British	Employed, part time	Motorbike/Scooter	Very confident
Male	51-60	White - British	Employed, full time	Motorbike/Scooter	Quite confident
Male	51-60	White - British	Not employed, not looking for work	Motorbike/Scooter	Very confident

Table 5: Young male drivers

Gender	Age	Ethnicity	Employment	Main mode transport	Confidence
Male	25-35	White - Any other white background	Employed, full time	Car	Very confident
Male	25-35	White - British	Employed, full time	Car	Very confident
Male	17-24	White - Any other white background	Employed, full time	Car	Very confident
Male	25-35	White - British	Employed, full time	Car	Very confident
Male	17-24	White - British	Employed, full time	Car	Very confident
Male	17-24	White - British	Employed, full time	Car	Very confident

Table 6: Low confidence drivers

Gender	Age	Ethnicity	Employment	Main mode transport	Confidence
Male	51-60	White - British	Employed, full time	Car	Not very confident
Female	51-60	White - British	Employed, part time	Car	Not confident at all
Female	51-60	Chinese or other Asian - Chinese	Retired	Car	Neither confident nor unconfident
Female	71-80	White - British	Retired	Car	Not very confident
Female	71-80	White - British	Retired	Car	Not very confident
Female	51-60	Chinese or other Asian - Chinese	Seasonal/part time work	Car	Neither confident nor unconfident
Female	41-50	Asian - Indian	Employed, full time	Car	Not very confident
Female	51-60	Black or black British - Caribbean	Employed, part time	Car	Not very confident
Male	25-35	Mixed - White and Asian	Employed, full time	Car	Not very confident
Female	17-24	Black or black British - Caribbean	Employed, part time	Car	Not confident at all
Male	25-35	Black or black British - Caribbean	Employed, part time	Car	Neither confident nor unconfident
Female	41-50	White - British	Employed, part time	Car	Not very confident
Female	25-35	White - British	Employed, full time	Car	Not confident at all
Female	25-35	White - British	Employed, full time	Car	Not very confident

Appendix C Recruitment survey

Information sheet and consent form

What is the research about?
TRL is undertaking some research exploring road users' experiences of using motorways and major A roads.

What will I be required to do?
In order to take part we would like you to answer a few questions about yourself and your availability. We will then be in touch with a date and time for you to attend if you are chosen to take part.
If you decide to help us, you will be asked to attend one of a number of focus groups that will take place either at TRL's main offices in Crowthorne (Berkshire) or in central Birmingham.

How long will it take?
This survey will take around 5 minutes to complete. If you are invited to take part in a focus group, we expect these to last up to two hours.

What do I receive for taking part?
You will not receive anything for this survey. If you are invited to take part in a focus group you will receive £30 cash payment as thanks for your participation.

Who is it for?
The research is being undertaken by the Transport Research Laboratory (TRL) on behalf of Highways England.

Will my data be kept confidential?
We will treat any information about you, obtained during the course of this research, in the strictest confidence and in line with GDPR. Hard copies of any personal identifying data will be kept in a locked file or transferred to an electronic database and then destroyed confidentially. The data will only be accessible to members of the research team who need access to it. Personal data collected during the study will be destroyed at the end of the project. When reporting the findings of the study, individuals will not be identified. Anonymous quotations collected during the research may be included.

If you have any questions please do not hesitate to contact us at contact@trl.co.uk

Please respond to the statements below to start the survey. *

	Yes	No
I understand that the information I provide in this survey will be used by TRL to decide whether to invite me to take part in a focus group	☐	☐

	Yes	No
I currently hold a full valid driving licence	☐	☐

About you

2. Are you... *

- ☐ Male
- ☐ Female
- ☐ Non-binary
- ☐ Prefer not say

3. How old are you? *

- ☐ 17-24
- ☐ 25-35
- ☐ 36-40
- ☐ 41-50
- ☐ 51-60
- ☐ 61-70
- ☐ 71-80
- ☐ 81-90
- ☐ 91+

4. Which ethnic group do you most identify with? *

- ☐ White – British
- ☐ White – Irish
- ☐ White - Any other white background

- [ ] Mixed - White and black Caribbean
- [ ] Mixed - White and Black African
- [ ] Mixed - White and Asian
- [ ] Mixed - Any other mixed background
- [ ] Asian – Indian
- [ ] Asian – Pakistani
- [ ] Asian – Bangladeshi
- [ ] Asian - Any other Asian background
- [ ] Black or black British – Caribbean
- [ ] Black or black British – African
- [ ] Black or black British - Any other black background
- [ ] Chinese or other Asian – Chinese
- [ ] Prefer not say
- [ ] Other (please specify):

5. What is your current employment status? *

- [ ] Employed, full time
- [ ] Employed, part time
- [ ] Not employed, looking for work
- [ ] Not employed, not looking for work
- [ ] Retired
- [ ] Unable to work due to your health condition

- [ ] Unable to work for some other reason
- [ ] Full time student
- [ ] Other (please specify):

6. Please indicate your TOTAL HOUSEHOLD income from all sources BEFORE tax and other deductions. Household refers to you, your partner and/or family. If you share a property with others (e.g. a house share) then do not include them in your answer. *

- [ ] Up to £9,999 per year (£199 per week)
- [ ] £10,000 to £19,999 per year (£200 - £389 per week)
- [ ] £20,000 to £29,999 per year (£390 - £579 per week)
- [ ] £30,000 to £39,999 per year (£580 - £769 per week)
- [ ] £40,000 to £49,999 per year (£770 - £969 per week)
- [ ] £50,000 to £74,999 per year (£970 - £1,449 per week)
- [ ] £75,000 to £99,999 per year (£1,450 – £1,959 per week)
- [ ] £100,000 to £149,999 per year (£1,960 - £2939 per week)
- [ ] £150,000 or more per year (£2,940 or more per week)
- [ ] Prefer not say

7. Please provide your postcode (We ask this because we need to include people from rural and urban areas). *

8. For how many years have you held your driving licence? *

- [ ] Less than a year
- [ ] 1-3 years
- [ ] 4-10 years

- [ ] 11-20 years
- [ ] 21 years or over

9. What type of vehicle do you most often drive? *

- [ ] Car
- [ ] Motorbike/Scooter
- [ ] HGV (over 7.5 tonnes)
- [ ] Bus/coach
- [ ] Van (Under 3.5 tonnes)
- [ ] LGV (Between 3.5 and 7.5 tonnes)

10. Do you drive for a living? For example, are you a coach, lorry, moped or taxi driver? *

- [ ] Yes
- [ ] No

11. Have you ever attended additional (optional) driver training courses (e.g. advanced driver training, such as that offered by the IAM RoadSmart)? Note this DOES NOT include National Driver Offender Retraining Scheme courses (e.g. speed awareness), or any courses undertaken as part of the licencing process.

- [ ] Yes
- [ ] No

12. On average, how frequently do you travel on the following road types? *

	Everyday	3-4 times a week	About once a week	About once a fortnight	About once a month	Less than once a month	Less than once a year	Never
Motorway	☐	☐	☐	☐	☐	☐	☐	☐
A road - dual carriageway	☐	☐	☐	☐	☐	☐	☐	☐

	Everyday	3-4 times a week	About once a week	About once a fortnight	About once a month	Less than once a month	Less than once a year	Never
A road - single carriageway	☐	☐	☐	☐	☐	☐	☐	☐
B road	☐	☐	☐	☐	☐	☐	☐	☐

Mileage

13. How many miles approximately have you driven on the Strategic Road Network (SRN) in the last year? The SRN in England is made up of motorways and trunk roads, the most significant 'A' roads. To see which roads are part of the SRN please click here to see a detailed map. Please think about miles driven in both a professional capacity and personal capacity. *

- ☐ <1000 miles
- ☐ 1000 - 2500 miles
- ☐ 2500 - 5000 miles
- ☐ 5000 - 7500 miles
- ☐ 7500 -10000 miles
- ☐ 10000 - 15000 miles
- ☐ 15000 - 20000 miles
- ☐ 20000 - 30000 miles
- ☐ 30000 - 40000 miles
- ☐ 40000 - 50000 miles
- ☐ >50000 miles

Driving for work

14. Which of these vehicles have you driven in a professional capacity on the SRN? *

- ☐ Car

- [ ] Van (under 3.5 tonnes)
- [ ] LGV (between 3.5 to 7.5 tonnes)
- [ ] HGV (over 7.5 tonnes)
- [ ] Motorcycle/moped
- [ ] Bus, minibus or coach

15. What size fleet does your organisation have? *

- [ ] Small (<10 vehicles)
- [ ] Medium (10-100 vehicles)
- [ ] Large (>100 vehicles)

Type of roads used

16. What types of road do you drive on most whilst working? *

- [ ] Motorways
- [ ] A roads
- [ ] B roads

Motorbike

17. What size motorbike do you ride most often?

- [ ] <50cc
- [ ] 50-125cc
- [ ] >125cc

Driving convictions

18. How many driving convictions have you had in the last 3 years?

- [ ] None
- [ ] 1

- [ ] 2
- [ ] 3
- [ ] 4
- [ ] 5+

Perception of Highways England and driving confidence

19. How confident do you feel about driving on the Strategic Road Network? If you don't drive on the SRN or only drive on it a few times a year, please think about your driving more generally. *

- [ ] Very confident
- [ ] Quite confident
- [ ] Neither confident nor unconfident
- [ ] Not very confident
- [ ] Not confident at all

20. To what extent do you agree or disagree with the following statements

	1 - Completely agree	2 - Somewhat agree	3 - Neither agree or disagree	4 - Somewhat disagree	5 - Completely disagree
I trust Highways England	☐	☐	☐	☐	☐
I admire and respect Highways England	☐	☐	☐	☐	☐
I have a good feeling about Highways England	☐	☐	☐	☐	☐
I think Highways England has an overall good reputation	☐	☐	☐	☐	☐

Contact information

So that we can contact you to invite you to a workshop if you are eligible, please provide your: *

First name:

Surname:

Email address:

Confirm email address: *

21. Which of the following locations would be most convenient for you if you were to attend a focus group? *

- [ ] Birmingham
- [ ] Crowthorne

22. In order for us to schedule these sessions at a time that is most convenient for you please could you select the dates and times that you are likely to be available to attend a focus group. Please select all that apply and CLICK NEXT PAGE TO ENSURE YOUR RESPONSES ARE RECORDED.

	9am-11am	12-2pm	3pm-5pm	6pm-8pm
Monday 25/11	☐	☐	☐	☐
Tuesday 26/11	☐	☐	☐	☐
Wednesday 27/11	☐	☐	☐	☐
Thursday 28/11	☐	☐	☐	☐
Friday 29/11	☐	☐	☐	☐
Monday 2/12	☐	☐	☐	☐

Thank you

Appendix D Topic guide

1. Key to using this guide

Text in boxes – these contain information for facilitators. This text will not be said to participants.

Text in black – guide for facilitators – things to cover/ask about.

Text in red – specific text/ wording to be said to participants.

Square brackets **[ ]** – will indicate prompts i.e. things to mention if the participants haven't already done so.

2. Introduction (10 minutes)

Materials:

- 5 copies of each of the photographs, one to be A4/A3 size minimum
- 4 sets of emotion cards, each set should contain 3 of each emotion and 10 blank cards
- Post-its and pens for participants

Layout of the room:

- A copy of each photo should be pinned up on the wall, with a sheet of flip chart under each photo to be used to note down participants' thoughts

The purpose of this topic guide is to enable participants to talk about the way they feel while driving on the strategic road network, particularly relating to what might lead to them feeling safe or unsafe. The guide includes questions (and specific wording to be used, where this is important) relating to the topics of interest. However, the facilitator's job is to 'read the room' and ultimately be guided by the experiences of participants (and the details they are willing to share), and make sure that participants are given the opportunity to clarify, elaborate and provide more detail on the things they say.

Additional probing questions to consider when required:

Clarification: "What do you mean by that…", "Can I just check I understand what you mean…"

Elaboration: "Can you say more about that…", "Can you give me some more examples…", "Why do you feel like that…"

Detail: "What was it specifically that made you feel like that…", "Can you give me more detail on that…", "How often does that happen..."

2.1 Aims

Participants to be welcomed into the session. Before starting, researchers will give a very brief introduction to remind everyone of the purpose of the day and provide some context – e.g. SRN.

In today's session, we'd like to know more about your thoughts and experiences of driving on English roads, including all types of motorways and major A-roads – which we'll refer to as the strategic road network (or SRN). We're really interested in how you ***feel*** when driving, and what affects this.

The SRN is made up of approximately 4,300 miles of motorways and major 'trunk' A-roads in England and is managed by Highways England.

Participants to be shown a map of SRN roads, to provide some understanding of the network and so they may recognise some roads they use frequently.

The map of the SRN should always be visible so that participants can refer to it.

We, TRL, are carrying out this research for Highways England and findings will help them understand more about the people who use their roads.

2.2 Information for participants

Some things to mention to participants:

- Participation is voluntary
- The discussion should last about 2 hours, but there will be breaks during the discussion
- To ensure we cover all topics, we may occasionally need to move the conversation along
- We'd like to get your thoughts, even if you do not have strong opinions. Remember, there are no right or wrong answers
- Please avoid speaking over others
- You don't have to discuss anything that makes you uncomfortable. If at any point you do feel uncomfortable, please let us know and remember that you can stop the discussion at any time
- We would like to record discussion
- The recording will be destroyed when the research has been completed and all transcripts (the text files created from the recordings) will be anonymised
- TRL is a research organisation – there is no judgement going on today, so please be honest!

2.3 Consent

Does anyone have any questions?

Note that participants will have received the consent form (and information on the purpose of the group and what will be required of them) prior to the date of the

focus group and may have already provided consent through electronic signature. The below details are provided just in case there are some people at the group who have not already done this.

If necessary:

- Researcher to hand out consent form for participant(s) to complete
- Researcher to check consent forms when they are completed/ handed in
- If 'no' to any questions, researcher to discuss any concerns/ issues
- If no resolution, allow participant(s) to leave the group
- Researcher to start the recording and announce to group.

The discussion is now being recorded.

3. Ice breaker activity (5 minutes)

Researcher to split the main group into two smaller groups of 3 or 4 people. They will be asked to think of two interesting facts about themselves.

Ask each participant to think of two interesting facts about themselves; they will then share these with the rest of their group. Encourage participant to think of anything fun and interesting for this task; it does not need to be about driving.

Participants will then report back to the rest of the group with the truths that they have learned.

4. Emotions and driving (50 minutes)

1. We are going to show you several different photos, and for each of these we would like you to think about how they make you feel.

Activity: Hand out the images and 'emotion cards' to participants – one set to be shared between two.

The first stage of the activity will be carried out in pairs.

Participants will go through each photo and have to associate the emotion cards with the photos – if they can't find a relevant emotion card, they can add new ones with the spare cards. Participants are allowed to use multiple emotions for one photo and can use the same emotion more than once.

As well as the photos there are several cards – we would like you to use these to describe how each of these photos make you feel. You also have some blank cards if you would to add extra emotions.

We would like you to go through these images in pairs.

Facilitator: Pay attention to the when the pairs have completed the pairing of images and emotion cards – once this has been completed then bring the group back together and move onto the next question.

For question 2 – you should ask the question for each of the photos. Go through the photos one at a time and make sure that each pair answers. Explore the thought process for each photo and emotion.

Second facilitator to take notes during the discussion. Write under each photo the emotions that people mention. A flip chart will be placed under each photo for these notes.

Now that you have had a chance to go through the photos we would like to explore these, and the way they make you feel as a group.

2. Why does that image make you feel that way?

Are there specific things in the image that make you feel that way?

3. Now in which of the photos would you feel safest driving? Why?
4. In which of the photos would you feel least safe driving? Why

5.Break (5 minutes)

Facilitator: During the break take the emotion cards and put them on the wall under the respective photos.

6. Perceptions of safety (20-25 minutes)

For question 5: The avoidance section will be particularly important to focus on in 'Low confidence/low SRN use' focus group

Second facilitator to take notes during the discussion. A flip chart will be placed under each photo for these notes.

5. Next, we are going to focus on safety and what might lead to you feeling safe or unsafe when driving or the SRN or has led to you avoiding certain roads or situations all together.

   Based on your own experiences and the photos that we've looked at already what might affect how safe you feel while driving? Why?

The why and the how are particularly important. Do not prompt participants in the first instance – prompts below should be supplemented with points mentioned in opening task. The prompts below may be mentioned by participants directly – in which case they do not need to be mentioned again.

How about the roads themselves? **[**Condition of the road; type of road; motorway type; infrastructure; signage; traffic conditions; traffic flow; time of day; weather**]**

How about other road users? **[**Specific things that other road users do; following too closely; using mobile phones; erratic driving; breaking the law; certain types of drivers; other people in the vehicle**]**

How about more personal things about you? **[**Purpose of travel; prior experience; experience of being in a road collision; experience of witnessing a road collisions; experience of others being in a road collisions; familiarity of the road; frequency of driving; personality traits; mental health/wellbeing; tiredness; feeling on the day; driving experience; age; difficulty of the journey**]**

How about other vehicles themselves? **[**Specific safety features; blind spots; vehicle differences**]**

Based on your own experiences, has anything led to you avoiding certain roads or situations all together? Why?

If the participants focus on what makes them feel unsafe OR negative emotions then ask question 6 below.

6. Are there any specific things that make you feel safe when using/driving on the SRN?

7.Solutions (20-25 minutes)

7. For the last part of today we would like to focus on what could be done to address all the points that have been raised today.

   Based on your experiences, and everything that we have talked about today what might make you feel safer when driving on the SRN?

   To begin with we would like you to think of three changes and write them down on the post-it notes in front of you.

   We will then come together and go through these as a group

Facilitator: Allow a few minutes for participants to write down their thoughts on post-it notes. Once participants have finished writing bring the group back together. Go round the room and ask participants to share their responses.

Who would like to share their suggestions first?

Facilitator: Write down participants suggestions on flip chart. Questions below to be asked depending on changes suggested by participants. Facilitator to refer to the notes/flipcharts used in the previous section if required. These can be used as prompts to identify possible solutions.

How about changes to the road themselves? **[**Infrastructure; signage; messaging; smart motorways; speed restrictions; road surface treatments; technology; information provision**]**

How about ways of changing your own behaviour/that of others? **[**Technology; information provision; education; training; legislation**]**

How about changes to vehicles themselves? **[**Technology requirements; maximum vehicle age permissible**]**

8. What role do you see Highways England playing in providing a safe driving environment? **[**Road maintenance, traffic flow, enforcement, roadwork design**]**

9. What role do you see Highways England playing in encouraging safe driving behaviour? **[**Legislation, communication, publicity campaigns**]**

Facilitator: go through each photograph one at a time. This should be done as a whole group exercise, make sure that you encourage everyone to participate. Second facilitator to take notes during the discussion. A flip chart will be placed under each photo for these notes.

8. Closing (3-5 minutes)

10. As one final question for today we would like you to answer in one sentence: what feeling safe mean to you? Please write your answers down on a post-it note.

Facilitator: Allow a minute for participants to write their thoughts down on a post-it note.

We'll now go around the room and if you could all read out your answers.

Each participant to read out their answer.

That is the end of the activities we had for you today. Thank you all for your time and we appreciate your honesty and engagement.

Does anyone have any final questions or points to make in the final 5 minutes?

After final wrap-up: Researcher to stop the audio recording. Participants to sign for and receive incentive. Researchers to thank them again and see participants out.

Perceptions of safety: findings from focus groups

Focus group research was undertaken to better understand how drivers and riders experience feelings of safety when using the Strategic Road Network in England. Seven focus groups were undertaken with a total of 44 people. The groups comprised male drivers under 35, female drivers under 35, HGV drivers, drivers over 60, motorcyclists, and two groups of low confidence drivers.

A key finding was that people do not tend to report ‘safety’ as something that is directly experienced; rather, people report an absence of negative experiences and feelings associated with believing oneself to be at risk.

These experiences and feelings of ‘unsafety’ appear to vary along at least three related dimensions. First, they can be more emotional or more cognitive in nature. Second, the source of risk can vary in how known or unknown it is. Third, the extent to which a risk is seen as manageable or unmanageable varies.

These dimensions provide a framework in which Highways England can understand when, where and why their customers feel unsafe when on the network. Recommendations around whether and how to reduce feelings of unsafety are given. These include using the framework to further understand the complexity of perceptions of unsafety, suggestions for road design, and a focus on targeting moments of change and unfamiliarity in the road network.

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