

Roadworkers' Safety Research - Phase Two

A Report to the Highways Agency by MVA

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Summary

Introduction and Methodology

- The Highways Agency is interested in knowing why drivers speed at roadworks and what initiatives could be put in place to improve safety at roadworks.
- MVA therefore conducted an attitudinal survey with higher risk drivers (those who have attended a driver improvement or speed awareness course in order to avoid penalty points on their licence) and those whose work is to bring about that improvement (“improvement professionals”).
- This quantitative research was informed by qualitative telephone interviews with higher risk drivers and improvement professionals and desk research.

Attitudes towards roadworkers

- The majority (87%) of higher risk drivers agreed that roadworkers play a valuable role
- Younger drivers were less likely to feel that the roadworkers’ role is very valuable compared to those aged 35 and over (37% of those aged 16-24, 51% of those aged 35-59 and 63% of those aged 60+).
- Only a small percentage of drivers reported feeling stressed, angry or annoyed when they see roadworks on major roads. The majority stated that they feel accepting (56%) or indifferent (20%), demonstrating their recognition that they are necessary. However 16% did report feeling frustrated, which could lead to dangerous driving behaviour. In addition, younger drivers were more likely to state that they would feel angry or annoyed, although the percentage is still small (7%).

Attitudes towards roadworkers’ safety

- The majority of higher risk drivers were worried about roadworkers’ safety, always (37%) or sometimes (48%).
- Younger drivers were less likely to be always concerned (26%) about roadworkers’ safety and more likely to say that they are rarely concerned (23%).
- Over three quarters of higher risk drivers (76%) had not read a copy of the Highways Agency’s Driving Safely at Roadworks Guidelines. Our qualitative research indicates that this is likely to be because they are unaware of its existence.
- The majority of higher risk drivers reported always driving more carefully when they see roadworks (81%); however fewer did so when seeing signs for roadworks (61%).
- Younger drivers and high frequency drivers (those who use motorways or trunk roads more than once a week) were more likely to say that they

only sometimes drive more carefully when they see roadworks. Similarly, younger and high frequency drivers were more likely to say that they only sometimes drive more carefully when they see signs for roadworks.

- Higher risk drivers told us that when they see roadworks they slow down (72%), take extra care (71%), are more vigilant (61%) and keep to the speed limit (52%).
- Female drivers were more likely to say that they take extra care when they see roadworks (77%) compared to male drivers (67%).
- Slightly fewer higher risk drivers said that when they see signs for roadworks (rather than actually seeing the works) they slow down (52%), take extra care (66%), and are more vigilant (62%).
- Older drivers (60+) were more likely to say that they slow down (53%), drive steadily (60%), ensure they stick to the speed limit (56%), and pay greater attention (66%) than other drivers.
- These results show that although the majority of higher risk drivers report driving more carefully when they see signs for roadworks, the impact of actually seeing the works is greater.

Opinions about initiatives to improve safety at roadworks

- Higher risk drivers were shown a variety of initiatives aimed at improving road safety and asked which they believed were more likely to be successful.
- The majority of higher risk drivers thought that Information initiatives would improve safety at roadworks; for example, variable message signs (VMS) (92%); variable speed limits (88%) and displaying the speed of vehicles entering roadworks (87%).
- However, younger drivers were less likely to be supportive of any of the Information initiatives.
- Higher risk drivers preferred factual and “to the point” messages to emotive messages. In particular, older drivers (60+) were more likely to strongly agree that messages should be factual.
- Two education initiatives were also very popular with higher risk drivers: ensuring that all new drivers take a motorway driving test (90%) and educating about the importance of driving safely at roadworks (83%).
- Enforcement initiatives were generally expected to be less successful than information or education initiatives. However, measuring average driving speed (66%) and police at relevant points on the road (63%) were expected to be more successful than other enforcement initiatives (Traffic Officers at relevant points on the road 57% and speed cameras (41%).
- In general, higher risk drivers did **not** expect a publicity campaign to be successful (40% agreed) in improving roadworkers’ safety.

- When asked about all the initiatives, higher risk drivers were more likely to state that education initiatives would be the most successful (41%), followed by enforcement (28%), provision of information (25%) and publicity (6%).

Driver behaviours

- The desk research identified four different behaviours shown by higher risk drivers: thrill seeking; aggressive driving; low monitoring of hazards; and hesitant driving. Not all higher risk drivers will show all of the behaviours but some will show more than one at different times. We developed and tested a set of questions aimed at identifying each of the driving behaviours. Then we conducted a separate analysis for drivers scoring high on the behaviour scales, in order to identify whether different interventions are likely to be successful for different types of driving behaviour.

Thrill seekers

Compared to the overall sample:

- On seeing roadworks thrill seeking drivers are **less** likely to:
 - slow down; and
 - be more vigilant.
- On seeing signs for roadworks thrill seeking drivers are **less** likely to
 - slow down;
 - move into a lane further from roadworks;
 - take extra care;
 - ensure they stick to the speed limit; and
 - be more vigilant.
- Drivers showing thrill seeking behaviour appear to be less likely to adapt their behaviour to suit the roadworks environment.
- In terms of initiatives to improve roadworkers' safety, thrill seeking drivers favoured VMS, displaying the speed of vehicles when entering roadworks and variable speed limits.

Aggressive drivers

Compared to the overall sample:

- On seeing roadworks aggressive drivers are **less** likely to:
 - take extra care;

- drive steadily; and
- ensure they stick to the speed limit.
- On seeing signs for roadworks aggressive drivers are **more** likely to
 - slow down;
 - move into a lane further from roadworkers; and
 - be more vigilant.
- These behaviours are consistent with the aggressive driving style which involves being vigilant for gaps and lane switching to try to achieve quick journey time.
- Although they may slow down, as they are less likely to adhere to the speed limit they may still be travelling too fast.
- In terms of initiatives to improve roadworkers' safety, the aggressive drivers favoured VMS, displaying the speed of vehicles when entering roadworks and a compulsory motorway driving test for all new drivers.

Low monitoring of hazards

Compared to the overall sample:

- On seeing roadworks those showing low monitoring of hazards are **less** likely to:
 - take extra care;
 - drive steadily;
 - ensure they stick to the speed limit; and
 - pay greater attention.
- On seeing signs for roadworks those showing low monitoring of hazards are **less** likely to
 - take extra care;
 - drive steadily;
 - ensure they stick to the speed limit; and
 - pay greater attention.
- They are more likely to carry on regardless.
- These behaviours are consistent with low hazard monitoring behaviour, as drivers are less aware of the roadworks or the hazard that they represent and therefore are less likely to change their behaviour.

- In terms of initiatives to improve roadworkers' safety, those showing low monitoring of hazards were most in favour of displaying the speed of vehicles at roadworks and VMS. However, although these initiatives may be successful for other driver behaviours it could be argued that they may be less successful for low hazard monitors. VMS and education initiatives may be more successful.

Hesitant drivers

Compared to the overall sample:

- On seeing roadworks and signs for roadworks hesitant drivers are **more** likely to undertake all of the safe driving behaviours.
- This suggests safe behaviour, but knowing their more nervous disposition these responses indicate overly cautious driving (e.g. early lane switching), which may cause accidents.
- Regarding the initiatives to improve roadworkers' safety, hesitant drivers were supportive of a compulsory motorway driving test for all new drivers and VMS. This indicates their hesitation when driving on motorways.

Improvement Professionals

- Improvement professionals thought that combinations of enforcement and education measures were most likely to be effective ways of improving roadworkers' safety.
- The two initiatives they thought were most likely to be effective were; motorway driving tests for new drivers and requiring all drivers to re-sit a test every five years.

Regarding the different driving behaviours, improvement professionals thought that the most effective measures were:

- Thrill seeking drivers
 - measuring average speed;
 - a police presence; and
 - having to re-sit a test every five years.
- Aggressive drivers
 - measuring average speed;
 - a police presence;
 - having to re-sit a test every five years; and
 - a motorway driving test for all new drivers.

Those showing low monitoring of hazards

- education about the importance of safe driving,
 - having to re-sit a test every five years; and
 - a motorway driving test for all new drivers.
- Hesitant drivers
 - measuring average speed;
 - a police presence;
 - having to re-sit a test every five years; and
 - a motorway driving test for all new drivers.

Conclusions/Recommendations

- Younger people are less likely to be concerned about the safety of roadworkers or adapt their behaviour at roadworks.
- Drivers scoring high on the thrill seeking and low monitoring of hazards behaviour scales are also less likely to change their behaviour when approaching roadworks. Aggressive drivers, although stating that they would slow down when they see signs for roadworks, and thus are adapting their behaviour, are still likely to be travelling faster than the speed limit. Hesitant drivers are the most likely to adapt their behaviour to account for roadworks; however this may in itself constitute dangerous driving behaviour.
- It is clear from the research that different initiatives to improve safety at roadworks will meet with differing success, particularly depending on driver behaviour and age.
- In general, a combination of education, information and enforcement initiatives would appear to be likely to have the most effect.
- The use of VMS (factual and to the point), variable speed limits, and displaying the speed of vehicles when entering roadworks, are expected to be successful for most driving behaviours.
- Motorway driving tests and educating drivers about the importance of driving safely at roadworks are also expected to be successful for most driving behaviours and particularly for hesitant drivers.
- Although higher risk drivers did not think that enforcement initiatives would be very successful, this could be due to the fact that they would not want them introduced rather than their expected lack of success. In addition, Improvement professionals thought that enforcement initiatives would be successful, particularly for drivers displaying thrill seeking, aggressive or hesitant behaviour. The enforcement initiatives expected

to be the most successful are: measuring average speed through roadworks and a police presence. Higher risk drivers do not appear to believe that Highways Agency Traffic Officers can replace police officers at present. This may be due to the fact that they are aware of the differing powers of arrest.

1 Introduction

1.1 Background

- 1.1.1 The Highways Agency issued a news release in August 2005 urging drivers to take care to protect roadworkers. The release stated “so far this year, four workers have died and five have been seriously injured in incidents on Highways Agency routes in England. This compares to one death and 17 serious injuries in 2004 and two deaths and 10 serious injuries in 2003.”
- 1.1.2 In a survey of roadworkers, conducted in 2004, of the 400 workers who responded:
- almost 20% said they had suffered injury caused by passing vehicles in the course of their careers while working on the road network;
 - 3% had sustained major injuries;
 - 13% had sustained slight injuries;
 - 77% said they had suffered verbal abuse from drivers;
 - 40% reported having objects thrown at them by motorists; and
 - 54% had experienced a near miss with a vehicle.
- 1.1.3 Roadworkers thought that driving too fast was one of the most common causes of accidents in roadworks areas (89%), followed by lack of concentration (76%) and drivers not observing road signs (73%).
- 1.1.4 These results reinforced concerns about the safety of roadworkers. The Highways Agency organised a Breakfast Meeting at the Tower of London on 20th October 2005 to discuss improving roadworkers’ safety with representatives from contractors.

1.2 Aims of the research

- 1.2.1 The aim of this research is to inform the overall strategy towards improving roadworkers’ safety and to identify higher risk drivers’ perceptions of roadworks and roadworkers, particularly in emergency works. The Highways Agency is interested in knowing why drivers speed at roadworks and what initiatives could be put in place to improve safety at roadworks.
- 1.2.2 Building on initial qualitative research (Roadworkers’ Safety Focus Groups April 2006) looking at attitudes of road users towards roadworkers, this research aims to investigate higher risk drivers’ perceptions of roadworks and roadworkers.
- 1.2.3 Two broad groups of individuals have been identified for inclusion in this research:
- higher risk drivers (individuals who are more likely to drive dangerously or ignore safety regulations on the roads. They include individuals who have been banned from driving or taken a driver improvement or speed awareness course in order to avoid a ban);

- improvement professionals (those involved in the training/rehabilitation of higher risk drivers to ensure safer driving. They include individuals who train higher risk drivers on driver improvement or speed awareness courses).

1.3 Structure of the report

1.3.1 The remainder of the report is organised as follows:

- section two: the methodology;
- section three: the qualitative interviews undertaken with higher risk drivers;
- section four: the qualitative interviews undertaken with improvement professionals;
- section five: findings from the higher risk drivers' survey; and
- section six: reports findings from the improvement professionals' survey.

2 Methodology

2.1 Quantitative surveys

- 2.1.1 The main part of this research study consisted of two quantitative surveys, one with higher risk drivers and one with improvement professionals.
- 2.1.2 A postal questionnaire survey was undertaken amongst Lancashire higher risk drivers. These were defined as individuals who have taken a driver improvement or speed awareness course in order to avoid points on their driving license. Lancaster County Council's Road Safety Team sent out a questionnaire on behalf of the Highways Agency and MVA to 2000 higher risk drivers from their database. Analysis was undertaken on the 617 responses received.
- 2.1.3 A second questionnaire survey was undertaken amongst improvement professionals in the Lancaster area. Lancaster County Council's Road Safety Team sent out a questionnaire on behalf of the Highways Agency and MVA to 100 improvement professionals involved in provision of training on driver improvement or speed awareness course. We received and analysed 31 responses.

2.2 Questionnaire design

- 2.2.1 We designed the two questionnaires in consultation with the Highways Agency and with input from Lancashire County Council, taking account of the aims of the survey.
- 2.2.2 The drivers' questionnaire included:
- a driver-behaviour scale;
 - questions which sought to gain an insight to attitudes to roadworks and roadworkers; and
 - questions about opinions on the most effective initiatives to improve driving standards.
- 2.2.3 The improvement professionals' questionnaire sought to gain respondents' opinions of the effectiveness of various interventions.
- 2.2.4 Copies of the questionnaires are at Appendix A.

2.3 Research to inform driver behaviour scale and questionnaire design

- 2.3.1 A three-stage approach was undertaken to inform questionnaire design, and in particular the driver behaviour scale used in the main questionnaire. First, some in-depth qualitative interviews were undertaken. Ten higher risk drivers and five improvement professionals were interviewed to investigate why they feel higher risk drivers drive as they do. The interviews also sought to identify high risk drivers' attitudes to roadworks and roadworkers, their behaviour and what the most appropriate initiatives would be for them.

2.3.2 The second stage comprised desk research into different driver behaviours and identified five higher risk driver behaviours: aggressive driving; hesitant driving; thrill seeking; low monitoring of hazards and fatigue-prone drivers.

2.3.3 The third stage comprised research to verify these five driver behaviours and hence the development of a driving behaviour scale. Twenty-two questions were designed to measure each of the five driver behaviours, and the questions were piloted with 128 drivers of different ages and from different geographic areas. Through a process of adding in and excluding various questionnaire items, a four factor solution was identified (data was reduced using a statistical technique called principle components analysis). The four higher risk driver behaviours identified were:

Aggressive driving: drivers showing this tend to think negatively towards other drivers and can behave in an intimidating way, for example driving close to the car in front. They feel a competitive urge to have a more “efficient” journey than other road users.

Hesitant driving: drivers showing this tend not to like driving on motorways or major roads. They may feel nervous or hesitant when doing so, which can result in high risk driving behaviours.

Thrill seekers: drivers showing this like the thrill of driving in a ‘risky manner’ and they enjoy driving fast. For them, enjoyment of the journey is likely to be as important as the reason for travelling.

Low monitoring of hazards: drivers showing this tend not to monitor where hazards are or to alter their behaviour once they become aware of them. This can mean that they remain unaware of roadworks and do not take appropriate care.

2.3.4 Although questions related to fatigue proneness were asked, they were not consistently associated with any of the factors, and so fatigue prone behaviour questions have been excluded from the driver behaviour scale.

2.3.5 The driver behaviour scales were checked for reliability; the method is described in Appendix B and the tables in Appendix B show the analysis outcomes for the above procedures.

3 Qualitative interview findings – higher risk drivers

3.1 Introduction

- 3.1.1 This chapter presents the findings from ten qualitative telephone interviews with drivers who had been on either a driver improvement or a speed awareness training course in order to avoid being given penalty points on their driving license.

3.2 Driver attitudes

- 3.2.1 Respondents were asked how they feel when they drive on major roads. Most respondents reported feeling relaxed, comfortable or confident for the most part, although they reported that there were times that they felt worried or annoyed, which could lead to dangerous driving. This was when speed cameras may be present or in heavy traffic.

“I wouldn’t say I really feel anything, not stressed anyway, just have to go on them [roads] to get to my destination.”

“Feel fine, comfortable.”

“Confident really, sometimes worry that there may be speed cameras. I like the independence.”

“Confident, I try to avoid heavy traffic times because then it’s a bit frustrating.”

“Fine and confident unless there’s lots of traffic and big queues.”

“I feel quite relaxed. I get a bit frustrated if I need to get somewhere quickly and there’s a queue.”

“Reasonably safe. Sometimes [the] behaviour of other drivers [annoys the respondent].”

- 3.2.2 Three respondents reported feelings that could result in dangerous driving at some point on their journey. They mentioned enjoying the thrill, enjoying driving fast or feeling bored.

“I like it, you just zone out and drive but it feels good to go fast which is what gets you into trouble.”

“I love it, it’s a bit of a thrill thing; I know that sounds pathetic.”

“Bored generally because I do it a lot.”

- 3.2.3 We asked respondents about their attitudes to other drivers. The majority were accepting of other drivers on the whole, but mentioned becoming annoyed when other drivers hold them up or drive badly.

“Don’t mind but I like it when it’s just clear and I can drive fast, well not any more.”

“I don’t mind really, my mind’s not really on them but they can slow you up.”

“Accepting unless I’m in a rush, then I get angry.”

“In the majority of cases not a problem at all but it only takes one idiot to cause an accident.”

“If they can drive alright, ok. If they don’t I can have a few choice words.”

“I get quite annoyed if someone drives badly; I may shout rude words.”

“I get annoyed when other drivers jump queues.”

“I suppose I only notice other drivers if they do something wrong and then [the respondent feels] irritated.”

- 3.2.4 One driver’s comments suggested that they were less accepting than the others, reporting that other drivers get in their way.

“They get in my way. I wish I had a clearer run sometimes. Not angry, annoyed I suppose.”

- 3.2.5 One respondent was concerned about older motorists who they felt were not competent drivers and pointed out that driving too slow can be as dangerous as driving too fast.

“A big worry is the old drivers who don’t know what they’re doing because going too slow is as dangerous as going too fast.”

- 3.2.6 Only one driver seemed to be accepting of other drivers at all times and said he concentrated on his own driving.

“I’d say fairly calm, fairly relaxed. I don’t feel too much about other drivers; just concentrate on what I’m doing.”

3.3 Attitudes to roadworkers

- 3.3.1 We asked respondents whether they thought that roadworkers play an important role. All respondents appreciated the importance of the role that roadworkers’ play.

“Yes they keep the roads in good nick.”

“Keep the maintenance of the roads and improving the facilities.”

“High importance.”

“Yes, if the roads weren’t sorted out they’d fall apart. In the States, for example the roads are hideously maintained.”

- 3.3.2 We then asked how they feel when they see roadworkers on motorways or trunk roads. Four respondents reported that they felt accepting when they saw

roadworkers although two noted that they can slow drivers down, one because the speed limit through roadworks is too low.

“Just accept the fact they’re there doing a job and it needs to be done.”

“They can get in the way and really slow you down but I appreciate what they’re doing.”

“It’s a way of life, I’ve always seen roadworks; it’s just something that happens. Accepting...I do feel the speed limit is too low in some places”

3.3.3 Another respondent also felt that the speed limits are too low through roadworks and reported being frustrated by this.

“I feel frustrated because I feel they drop the speed limit to 40 or so which is too low.”

3.3.4 Other respondents reported being respectful or cautious when they see roadworkers doing their job but reported negative feelings when they see roadworks without any workers.

“I respect what they’re doing; they’re right to be there...only on the occasions where nothing much is happening [does the respondent feel negatively].”

“When I see people working I feel cautious, if no one’s there I feel a bit puzzled, I feel a little like why are they there.”

3.3.5 Another respondent reported frustration more often than others, although they stated that ‘rationally’ they understand that the job needs to be done.

“I know rationally that they need to fix the roads and resurface and all that but I do think oh not a-bloody-gain.”

3.3.6 The final respondent was unsure how he felt since he had not seen many roadworkers.

“I haven’t actually seen that many. I’m not sure.”

3.4 Roadworkers’ safety

3.4.1 We asked if respondents feel concerned about roadworkers’ safety. Half of them said that it was not something they had really thought about.

“To be honest I don’t really think about it.”

“I know this sounds selfish but my head’s more on my journey than their safety but I suppose it can be dangerous for them.”

“Not sure, haven’t really thought about it.”

“I’ve never really thought about it. I presume they’re taught not to wander into the middle of the road.”

- 3.4.2 Three respondents said that they do not worry about roadworkers' safety. Reasons given for this low concern included assuming safety precautions are taken, that workers are careful, that works are signed and that workers have high visibility clothing.

"I presume they're safely looked after."

"They always seem to be fairly careful so I don't worry unduly."

"No really it's well signposted, you're informed in plenty of time and they have all the florescent clothing so they're visible."

- 3.4.3 Only two respondents reported concern. One was concerned about the risk of unsafe drivers and the other was concerned because he had heard of the risks from his father who used to be a roadworker.

"You fear for their lives really [because] people drive recklessly."

"I do, my dad used to work on the motorway you see."

3.5 Driver safety

- 3.5.1 We asked respondents if they knew how they should drive to ensure safety at roadworks. All respondents felt they knew how to drive to ensure safety. All mentioned controlling speed, either by sticking to the speed limits or choosing to slow down. Individual respondents also mentioned keeping a safe distance from obstructions, keeping aware and driving consistently.

"I do know, how to drive safely in general after the course and it's the same principle for roadworks. I did anyway but I like going fast so I ignored it before."

"Keep to the speed limit basically."

"Only aware of speed zones – not driving too fast and keeping your distance."

"Yeah, just stick to the speed limit and don't act crazy or erratic."

"Just go slow and be careful but I don't usually unless everyone else is slowed down and then you have no choice."

"Stick to the speed limit that's set even if you think it's a clear road and just keep your eye out. Just keep watching and being aware."

- 3.5.2 Respondents were asked if they monitor where hazards such as roadworks are. Half of the respondents said that they read signs which tell them of hazards.

"As best I can from the signs."

"I suppose so just by looking at the signs and seeing where they are."

“Yes I do; I usually listen on the car radio and you just look out for it I guess.”

- 3.5.3 Three respondents stated that they do not generally monitor where hazards are.

“Not particularly if they’re there then they’re there, you take it as it comes.”

“I tend to go from A to B; I don’t listen to the radio.”

- 3.5.4 Only two reported seeking out more information by employing road sweeping, a technique they had learned on their speeding course or by anticipating problems.

“This is something I picked up on the course, sweeping the roads rather than just looking 200 yards ahead.”

“I describe myself as a defensive driver and try to anticipate problems.”

- 3.5.5 We asked respondents if they thought that motorists drive safely at roadworks. Some felt all or the majority of drivers do.

“You kind of have to slow down because everyone else does.”

“The majority but you always get some idiots driving fast.”

“The majority probably but I’m sometimes amazed at the speed people drive. They’re in too much of a hurry; too many business men on the roads.”

- 3.5.6 Others felt that motorists do not drive safely at roadworks. Reasons given included feeling that roadworks were obstructing them, being in a hurry, not seeing the need and worryingly, because they treat the roadworks like a challenge.

“Not really because it just gets in your way.”

“Some do, others don’t if they’re in a hurry.”

“I suppose not, you just feel you’re on an assault course in and out of all the cones.”

- 3.5.7 Two mentioned that speed cameras are making a difference to safe driving at roadworks although one thought it was having more of an effect than the other.

“No I think most people don’t follow the speed limit unless there are cameras.”

“Yes recently I think they do now. I have seen a change in the last few months because there’s so many cameras now.”

- 3.5.8 We asked respondents what initiatives would be most effective in making them drive safely at roadworks. The majority mentioned having their driving monitored, and for most this was by cameras. One qualified this by saying he would like to be sure that the cameras were there to ensure safety rather than to raise money. Another respondent said that he would need clear warnings about speed cameras, and another added that he would like to think that he would drive safely regardless.

“If someone’s watching and I know I’ll get my licence taken away or a big fine.”

“Cameras make you slow up.”

“Probably cameras but as long as they’re not just there to take my money and you need to know why they’re there.”

“It would be a clear warning that there are roadworks and speed cameras.”

“I’d like to feel that if they’re working there I’d drive safely if speed cameras were there or not.”

- 3.5.9 Two respondents felt that the courses that they had been on had been successful in ensuring that they drive safely in general.

“I think the course is good but the temptation is still there.”

“I’m a convert to this speeding thing but the speed awareness course is good I think.”

- 3.5.10 For one person there were no obvious initiatives that would be effective at making him drive safely at roadworks. He felt that being banned would work but noted that he had been banned before and was facing the penalty again.

“Well I think I’m just about to be banned so that would work but I’ve been banned before and I admit I still don’t stick to the rules.”

- 3.5.11 We asked respondents if they thought that being given more information whilst driving would help to ensure safety at roadworks. Four respondents felt that more information would not make a difference.

“Probably not because I just want to go fast if I can; I’m a bit of a speed demon.”

“Not for me really. I sometimes wonder what’s going on but that’s not why I speed.”

“I don’t think so because it’s not changing the fact I have to get somewhere.”

“I can’t see that working.”

- 3.5.12 The remaining six felt that being informed of the reasons for roadworks, justifying their existence, would make a difference.

“More obvious signs for the speed limits and a reason would be good to qualify.”

“Definitely, it’s frustrating when you’re driving past roadworks so information about whose working or what’s going on.”

“If people knew what was going on then people might take care.”

“More justification of why it’s slowed down, a bit more information.”

“A reason would help.”

- 3.5.13 Those who were in favour of more information were asked what kind of information would be the most effective. Two respondents felt that factual messages, that were “to the point”, would be most appropriate. The others saw the value of facts in addition to emotive messaging; they thought that different approaches would work for different types of road users. One noted that drivers would not be able to deal with having too much to read.

“I think a mixture of both [factual and emotive messaging] because they would work for different people. Hits home in different ways for different people.”

“I think it would depend on the target audience. For females emotive messaging would work and for males a more practical message. Actually it’s probably not about male/female more about practical mindedness.”

“I think the thing that’ll get people is anything that involves kids but it can come across as twee and it’s easy to shut out. Maybe just something saying men working, be vigilant.”

“Both really but you don’t want too much to read.”

- 3.5.14 All respondents felt that signs such as variable message signs would be the most appropriate way of delivering the information to drivers.

“That would be ideal.” [Variable message signs]

“I suppose the signs that say if you’re tired don’t drive.”

“If you want to get the message across it would have to be the signs on the road.”

- 3.5.15 We asked respondents if they thought that greater enforcement of safe driving would be a good idea. All respondents felt that whether they liked it or not, enforcement of safe driving is effective.

“You just have to make it so people can’t, stop them legally...it means that people have to or pay.”

“Knowing there is a speed camera and it is going to work disciplines the mind.”

“I think it might make people more reluctant to speed and think twice about what they’re doing.”

“That’s probably the only thing you can do although I suppose it hasn’t worked on me.”

- 3.5.16 Three respondents thought that a combination of both the police and speed cameras was necessary for enforcement; two people thought the police alone would be sufficient and two thought speed (or average speed) cameras would be sufficient on their own. One person noted that enforcement would need to be coupled with adequate penalties and one stated that these types of measures can cause drivers to brake suddenly, which is dangerous.

“People take notice of the police because they are authority figures.”

“I’d say the police and speed camera.”

“I think they should have a police presence at roadworks with cameras and arrest or at least stop people on the spot.”

“Cameras are good but you can see police and you stop although that is dangerous. You would need warning they’re there.”

“The average speed cameras, they’re a good one.”

- 3.5.17 Two respondents felt that Highways Agency traffic officers would be the best method of enforcement.

“I’d say that if there’s the manpower then Highways Agency men [Traffic Officers] would be good. With a camera they’re not always switched on.”

“I think the Highways Agency one [Traffic Officers] are best placed and an on the spot fine rather than just points.”

- 3.5.18 Half of the respondents were not in favour of educational initiatives for drivers. They felt that they would not be as effective as other measures.

“To be honest I don’t; not for the die hard speed freaks.”

“I do know what I’m supposed to do I just like driving fast.”

“I don’t think so. I’ve just been on a speed workshop and I think it doesn’t affect your habits.”

- 3.5.19 The other half were more supportive of educational measures. For some this was as a result of the training courses they had been on. One felt that motorway driving lessons would be a good idea.

“This course really made me think...The training course is good but you can’t put everyone on that.”

“I think motorway driving lessons would be good because it is scary. It’s all about practice and doing.”

“The course has really altered my attitude and I’m a real convert.”

3.5.20 We asked respondents if they thought that publicity would be effective, and if so what type of publicity would be effective. Some respondents were not supportive of publicity or did not feel it would be as effective as other initiatives.

“No, I just don’t know how much people listen.”

“It raises awareness but it doesn’t stop you like a fine would.”

3.5.21 Other respondents were more supportive. They felt that publicity would be a good way to get the message across.

“I suppose so just in the sense you see roadworks and don’t think anyone is working there so some sort of awareness might make a difference.”

“It couldn’t hurt, then people would know why there is a crack down on it and feel that cameras and the like would be justified.”

“The motorbike ones at the moment are quite scary, I don’t know if they’re working but they raise awareness.”

3.5.22 These respondents suggested a variety of ways of publicising the issues. Television advertising was the most popular suggestion.

“It’s hard to get the message across because leaflets and things people just throw it away...TV adverts”

“The adverts like the speed ones were very effective in my mind.”

3.5.23 One respondent suggested pamphlets but another respondent felt that they were too easy to throw away.

“Most drivers will receive road tax so perhaps a pamphlet with statistics, for the reasonable drivers.”

3.5.24 Another respondent argued that all methods of publicity available should be used to get the message across.

“Everything available radio, television, feature articles and so on.”

3.5.25 In terms of content and audience, one respondent felt that emotive publicity would be effective and another suggested that campaigns be tailored to those who are currently learning to drive.

“I suppose the stuff that makes you think and take notice like the my daddy thing.”

“Focus on the people who are learning to drive.”

4 Qualitative interview findings – Improvement Professionals

4.1 Introduction

- 4.1.1 This chapter presents the findings of the five qualitative telephone interviews undertaken with driving improvement professionals.

4.2 Driver attitudes

- 4.2.1 We asked why those sent on driver improvement or speed awareness courses drive as they do. Most considered that the reasons varied with different people. Reasons given included a lack of concentration, lack of understanding regarding the risks, lack of consideration for others, being in a rush, being nervous drivers or the fact that they like to speed.

“I believe we’ve all got the skills to drive safely but attitudes get in the way. It’s the way we choose to use those skills. We get a whole cross section. People do drive aggressively. I think it comes down to a lack of consideration for other road users and a lack of appreciation of their own vulnerability and the vulnerability of others.”

“It depends on the person, some of them have just got the taking risk nature, others don’t pay attention and some are just in a rush.”

“It’s one of these is it the person or is it the situation questions? Some people will drive dangerously some of the time because they need to get somewhere at a specified time so that’s the situation argument and others will drive that way all the time because that’s what they’re like. They always leave late or they’re just the ‘speedy’ type of person. That’s the person argument.”

“Different reasons for different people. Some are these speed demon types; others make mistakes because they are nervous and others are just not aware of the risks and don’t see the things around them that could cause an accident.”

“I don’t think you can say they drive badly. It’s a lack of concentration and that’s what resulted in an accident.”

- 4.2.2 We asked if respondents thought that drivers sent on training courses tend to like driving on major roads. They felt that people differed in this regard and that some were nervous while others were not.

“You get some that aren’t very experienced and will get very nervous about it and other people, it’s not a problem.”

“I know we do have some people that don’t [like driving on major roads], I do think they’re a small number.”

“You get some that get nervous about it.”

“It depends on the person but there are those who do worry about it.”

- 4.2.3 We asked what trainees' attitudes are to other drivers. Two respondents suggested that, in theory at least, trainees had some consideration but that this would not stop them getting annoyed or driving aggressively.

"On the whole they would all like to think they have consideration but I think it's not thinking about other people when driving. The main motivator [determining how someone will drive] is 'when I get to the end of my journey what I need to do'."

"I think they know everyone has the same right to be on the road and accept that but some can get annoyed when other drivers get in their way."

- 4.2.4 Respondents also thought that trainees stereotype other drivers; may blame them for their own accidents and get annoyed when they are held up by other drivers.

"They always tend to blame the other person until later on in the course."

*"Certain types of driver tend to get stereotyped attitudes towards them."
[Other drivers]*

"They can get annoyed about slower drivers because they tend to think they are good drivers even if they are fast or lack care."

4.3 Attitudes to roadworkers

- 4.3.1 All thought that higher risk drivers' attitudes to roadworkers would be anger or annoyance, although one stated that trainees would understand the importance of the roadworkers' role, at least in theory.

"I think people get frustrated by the number of roadworks."

"The only time a driver gives any great thought is when they [roadworks / roadworkers] give them difficulty, then I could see them being frustrated unless they can see lots of work. Anything that delays them getting to the end of the journey would be frustrating."

"I'd say annoyed that they are being held up."

"I think they would accept that they are doing a job that is essential but this wouldn't stop them getting annoyed at being held up on their journey."

4.4 Roadworkers' safety

- 4.4.1 Most respondents felt that trainees would be concerned about the safety of roadworkers in theory, but that this may not translate to safe driving behaviour.

“I think they would like to think they have a care [about Roadworker safety] but I think it’s not concern for roadworkers, it’s for the purpose of the journey [that determines driver behaviour].”

“I think if you ask them they would say yes but that wouldn’t necessarily translate into driving safely.”

“Probably, except when roadworks hold them up.”

- 4.4.2 The improvement professionals felt that trainees’ poor attitude towards safety at roadworks is because their focus is on getting to their destination. Some felt that trainees would see anything that slows them down as an obstacle, while the others felt trainees minds would not be on roadworkers’ safety.

“I think when they’re driving they want to get to their destination and anything that gets in the way is just an obstacle.”

“Very few people wouldn’t say they were concerned if asked straight out and if they think about it but when they’re trying to get somewhere and they’re being held up I don’t think that would register.”

“I think as I’ve said before the mind is on getting to the destination in time.”

4.5 Driving safely at roadworks

- 4.5.1 The improvement professionals felt that higher risk drivers would be aware of how to drive safely at roadworks.

“I think people are becoming more aware.”

“I think they’ll assume that sticking to the reduced speed will constitute safe driving.”

“I would think they know to take extra care but I couldn’t vouch that they would before coming on the course.”

- 4.5.2 They thought that although higher risk drivers knew how to drive safely at roadworks, most would not. Most felt that this is because they focus on their journey or getting to their destination quickly rather than roadworkers.

“If they don’t it’s because they are focusing on their journey outcome not the roadworkers.”

“It’s not in their train of concentration, the journey is a means to an end and it is getting to the end that they focus on.”

“They want to get to their destination quickly.”

- 4.5.3 Other reasons given included that there are often no roadworkers at roadworks, and lack of awareness about the dangers that their driving can cause.

“Quite often they have roadworks and no one working there so when they get to sites where people are working they just drive as they normally would.”

“I think it’s just characteristic of their driving in general. They are not aware or don’t think about dangers until they come on the course and we teach them how to scan the roads and pick up on all the information available so they can amend their driving style appropriately.”

4.6 Initiatives

- 4.6.1 Improvement professionals were asked to identify possible initiatives that could encourage higher risk drivers to drive more safely at roadworks.

More information

- 4.6.2 The improvement professionals felt that having the right amount, and the right type (easy to understand and remember) of information is important. However they said that too much information on the road may not have a positive effect as it may distract drivers and cause them to take their eyes off the road for too long.

“You could say yes but I think there is more roadside information and I don’t know if it is working because people get a lot of information while they’re driving and it’s distracting them.”

“I think that’s a very good starting point. Obviously you’ve got to make the information consumable. If there is too much people won’t be able to read it and it can be distracting. It won’t work for everyone.”

“They need to know what’s going on so they understand the danger or the delay but you can’t read reams while you’re driving.”

- 4.6.3 There was a difference of opinion with regard to the kind of information that should be presented. Three improvement professionals pointed out that both emotive and factual messages would be desirable as different people will respond to each.

“We’re going more for the latter [emotive messaging], trying to make it real for people. I think that’s worth trying out but you need the facts to go with it because some people will respond to one and some to the other.”

“It’ll depend on the person. Although it’s not always this way round, men will respond to facts and women are more likely to be swayed by emotion.”

“I think a bit of both so you capture everyone but not so much that it distracts people from driving.”

- 4.6.4 The other two felt that, at the roadside, factual messages would be more effective as drivers would be able to absorb the information more quickly and not be distracted.

“Short to the point facts so people aren’t distracted.”

“I’d be more in favour of short to the point facts but more emotive techniques on publicity when you have more time to absorb the message.”

- 4.6.5 Professionals suggested a number of ways of delivering the information. This included overhead gantries, roadside signs, the radio or wherever it would be noticeable. One respondent pointed out that not all drivers listen to the radio.

“Overhead gantries, signs, radio.”

“Road side signs, radio is good but not everyone listens to the radio.”

“Utilise all on road signage systems.”

Enforcement

- 4.6.6 All the improvement professionals thought that enforcement of safe driving at roadworks would be an effective initiative, particularly for those who do not respond to training or publicity. However they considered enforcement should be in addition to other interventional measures including publicity and information.

“There are always going to be people who ignore signs and are not affected by publicity. Enforcement is needed to stop them driving dangerously.”

“If it is enforced and drivers know that then even the die hard speeders are more likely to slow down and if they don’t, they will once they get a whopping fine.”

“As long as there is enough publicity so people know what they are doing is wrong and then if they get fined or penalised they have only themselves to blame.”

“Yes, it clearly would work for a certain group of drivers but I think the danger with any enforcement is that it can breed resentment if you do it in isolation.”

- 4.6.7 Improvement professionals felt that police officers and speed cameras, accompanied by signs indicating their presence, would be the best way of enforcing safe driving at roadworks.

“Speed cameras, they take your average speed over a length to achieve an ongoing speed reduction because they encourage you to maintain an average speed.”

“Average speed cameras are the best because they allow monitoring across a longer stretch.”

“The police because they are recognisable and their presence is enough to slow people down.”

“The police or, if that’s not possible, then cameras.”

Education and publicity

- 4.6.8 The improvement professionals were also supportive of education and publicity measures to inform drivers about the risks involved with unsafe driving at roadworks.

“There needs to be some information exchange at some point.”

“Of course, education should always be the first aim and enforcement the second.”

“The difficulty is that you can’t reach everyone with education, not in a training course setting anyway. For most people it will have to be through publicity.”

- 4.6.9 They noted that behaviour change involves changing or reinforcing values and changing belief systems, philosophy and habits.

“You need to challenge their current belief system and show them why what they are doing is wrong.”

“It’s about changing habits. Show them why they need to change their driving habits.”

“I’ve done it for 35 years and I still don’t know. It’s finding out what their values are and in some way addressing their values. Challenging values or reminding people of their values, which leads to a change in philosophy, which leads to a change in behaviour. Most people value their health or health of people close to them.”

- 4.6.10 One professional suggested that having a high profile case regarding roadworker safety in the public domain would be effective.

“Having high profile cases tend to work because people aren’t aware...put it out in the public domain that people are working and getting hurt.”

- 4.6.11 Improvement professionals suggested a variety of media for publicising the issue of roadworker safety. These included television, radio, roadside posters, printed media, cinema and feature articles. They did acknowledge that television and cinema could be very expensive.

“Radio, TV, billboards, printed media are the obvious. TV advertising is very strong. Cinema advertising because it’s a good environment to message people. You’ve got people’s attention but it’s a small audience at a time. TV adverts are a definite. Radio news stations don’t advertise and others [radio stations] have an audience but it’s a good back up. So I’d go for all these but it’s very expensive.”

“Anywhere you can: TV, radio, pamphlets, feature articles and so on.”

“Television reaches the widest audience but it’s expensive.”

- 4.6.12 Professionals were less supportive of advertising the cause through Top Gear as they felt the program does not set the right tone and would only be seen by a certain audience.

“That’s got a particular following of people; it may not be inclusive.” [Top Gear]

“Top Gear isn’t the appropriate place, it’s about getting the most out of your engine and they speed.”

“Jeremy Clarkson isn’t the right teacher.”

5 Survey findings – Higher risk drivers

5.1 Introduction

5.1.1 This chapter presents the findings from the survey of higher risk drivers. Of the 2000 questionnaires sent out, 617 people responded (31% response rate). A profile of the higher risk drivers who responded is presented in Table 5.1. Where there are differences in gender, age or frequency of travel on motorways/trunk roads this has been reported. In all the tables, when percentages do not add to 100% this is either because of rounding or because respondents could give more than one answer.

Table 5.1 Profile of respondents

Characteristic	%
Ethnicity	
(White) British	92
(White) Irish	1
(Asian or Asian British)	3
(Asian or Asian British) Bangladeshi	1
(Asian or Asian British) Indian	2
(Mixed) White and Black Caribbean	less than 1
(Mixed) White and Black African	less than 1
(Mixed) White and Asian	less than 1
(Black or Black British) Caribbean	less than 1
(Black or Black British) African	less than 1
Chinese	less than 1
Other	1
Gender	
Male	66
Female	34
Age	
16-24	6
25-34	14
35-44	25
45-54	25
55-59	13
60-64	6
65+	11
Working status	
Employed full time (30 hours or more)	60
Employed part time (less than 30 hours)	9
Self-employed (full or part time)	12
Unemployed	1
Retired	15
Other	3
Frequency of travel on motorways	
5 or more days a week	33
2-4 days a week	30
Once a week	18
Less than once/week, more than once/month	9
Once a month	5

Characteristic	%
Less than once a month	5
Never	1
Frequency of travel on trunk roads	
5 or more days a week	61
2-4 days a week	24
Once a week	8
Less than once/week, more than once/month	3
Once a month	2
Less than once a month	2
Never	1
Sample size	617 higher risk drivers

5.2 Attitudes to roadworkers

5.2.1 Eighty-seven percent of higher risk drivers thought that roadworkers play a very (50%) or quite (37%) valuable role. Ten percent thought the role they play to be neither valuable nor not valuable, only 2% considered it was not very valuable and less than 1% thought that the role they play is not at all valuable.

Table 5.2 Roadworkers' role

Value of roadworkers' role	%
Very valuable	50
Quite valuable	37
Neither valuable or not valuable	10
Not very valuable	2
Not at all valuable	0.3
Sample size	528

5.2.2 This was similar across gender and frequency of travel on motorways/trunk roads, however younger people (16-34) were less likely to state that the roadworkers' role was very valuable, more likely to say that it was quite valuable and slightly more likely to say that the role was not very valuable. This is shown in table 5.3.

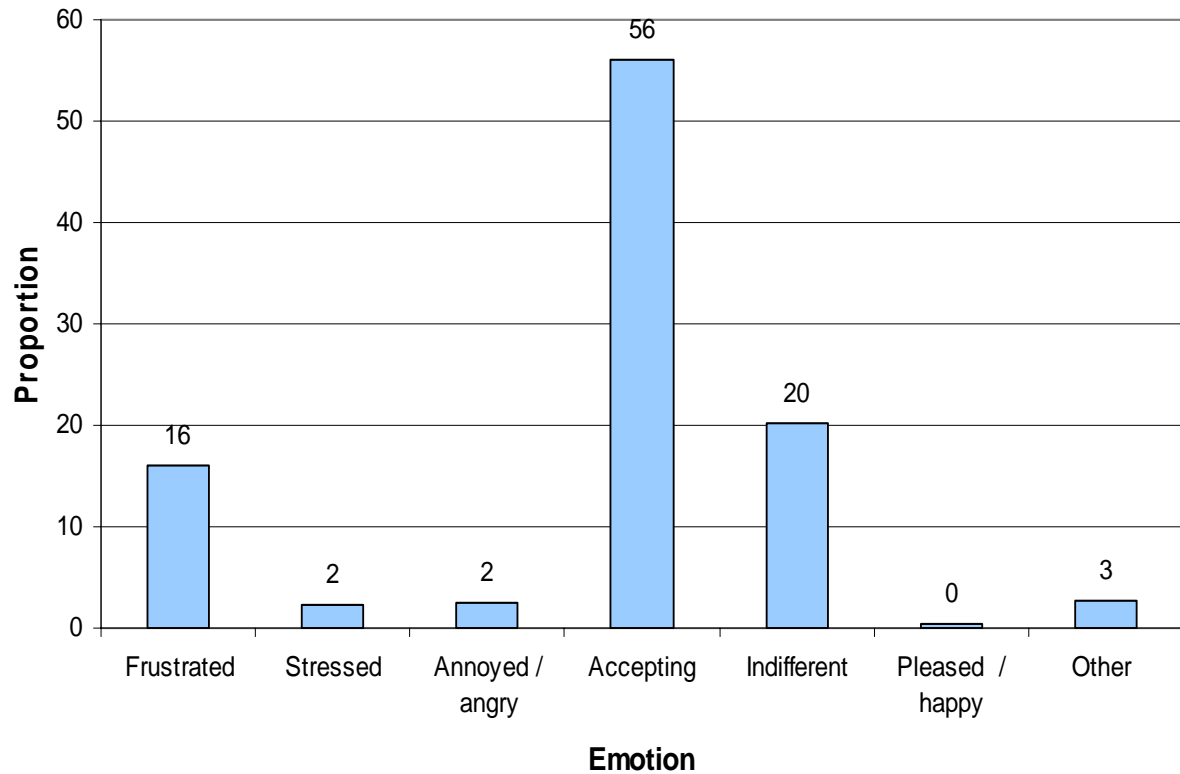
Table 5.3 Roadworkers' role – by age

Value of roadworkers' role	18-34	35-59	60+
Very valuable	37	51	63
Quite valuable	45	38	25
Neither valuable or not valuable	12	9	9
Not very valuable	6	1	2
Not at all valuable	0	1	1
Sample size	108	323	89

5.2.3 The majority of the higher risk drivers did not report feeling negatively when they see roadworkers on major roads. Overall, 56% reported being accepting and 20% reported feeling indifferent. However, a further 16% reported feeling frustrated, 2% annoyed or angry and 2% reported feeling stressed. Less than

1% of respondents reported feeling pleased or happy when they see roadworkers on major roads and 3% reported another response. This is shown in Figure 5.1.

Figure 5.1 Feeling when seeing roadworkers on major roads



(N = 614)

5.2.4 Other responses included:

- concern for safety of drivers and workers;
- disappointed; potential danger;
- sympathy;
- wondering if it was necessary; and
- a mixture of responses depending on circumstances. These circumstances included notice given about roadworks, whether late, time of day or day of week that roadworks are being carried out, and whether there is any roadworkers present or just an area coned off.

5.2.5 It is worth noting that, as the improvement professionals pointed out in the qualitative interviews, drivers may say that they value roadworkers, or that they do not feel negatively towards them, but this may not translate to safe driving behaviour in their presence.

5.2.6 Younger drivers (16-34) were less accepting of roadworks (36.4% compared to 59.7% aged 35-59 and 65.4% aged 60+) and more likely to say that they feel

annoyed/angry (7.4% compared to 0.8% aged 35-59, and 2.9% aged 60+) or indifferent (32.2% compared to 18.4% aged 35-59 and 12.5% aged 60+) when they see roadworkers on major roads. Respondents who drive less frequently on motorways and/or trunk roads (once a week or less) are more likely to say that they feel accepting when seeing roadworks and less likely to feel indifferent.

5.3 Roadworkers' safety

5.3.1 We asked the higher risk drivers if they are ever concerned about the safety of roadworkers. Overall 37% said that they are always concerned, 48% that they are sometimes concerned, 14% that they are rarely concerned and only 2% that they are never concerned. These results are shown in Table 5.4.

Table 5.4 Concerned about roadworker safety

Level of concern	%
Always	37
Sometimes	48
Rarely	14
Never	2
Sample size	616

5.3.2 Younger drivers (16-34) were less likely to state that they are always concerned about roadworkers' safety and more likely to state that they are rarely concerned than other drivers. These data are shown in Table 5.5.

Table 5.5 Concerned about roadworker safety – by age

Level of concern	18-34	35-59	60+
Always	26	37	37
Sometimes	48	51	47
Rarely	23	11	14
Never	3	2	2
Sample size	121	382	104

5.3.3 Although the vast majority (88%) had not read a copy of the Highways Agency's Driving Safely at Roadworks Guidelines, over three quarters (76%) stated they were aware of how to drive to ensure safety at roadworks. Of the remainder, 18% indicated that they were unsure and 6% indicated that they did not know how to drive safely at roadworks.

5.3.4 Older drivers (60+) were more likely to have read a copy of the Highways Agency Driving Safely at Roadworks Guidelines and younger drivers (16-34) were less likely to state that they were aware of how to drive safely at roadworks and more likely to be unsure.

5.3.5 When asked if they do drive more carefully if they see roadworks, most higher risk drivers (81%) reported that they always do, 19% that they sometimes do and less than 1% that they rarely or never do. Although respondents say they drive more carefully it is important to note that self-report is not always reliable. Data is shown in Table 5.6.

Table 5.6 Drive more carefully if you see roadworks

Drive more carefully	%
Always	81
Sometimes	19
Rarely	less than 1
Never	less than 1
Sample size	613

5.3.6 Younger (16-34) and High Frequency (more than once a week on motorways and trunk roads) drivers were more likely to state that they sometimes driver carefully if they see roadworks and less likely to state that they always do. This is shown in Tables 5.7 and 5.8.

Table 5.7 Drive more carefully if you see roadworks – by age

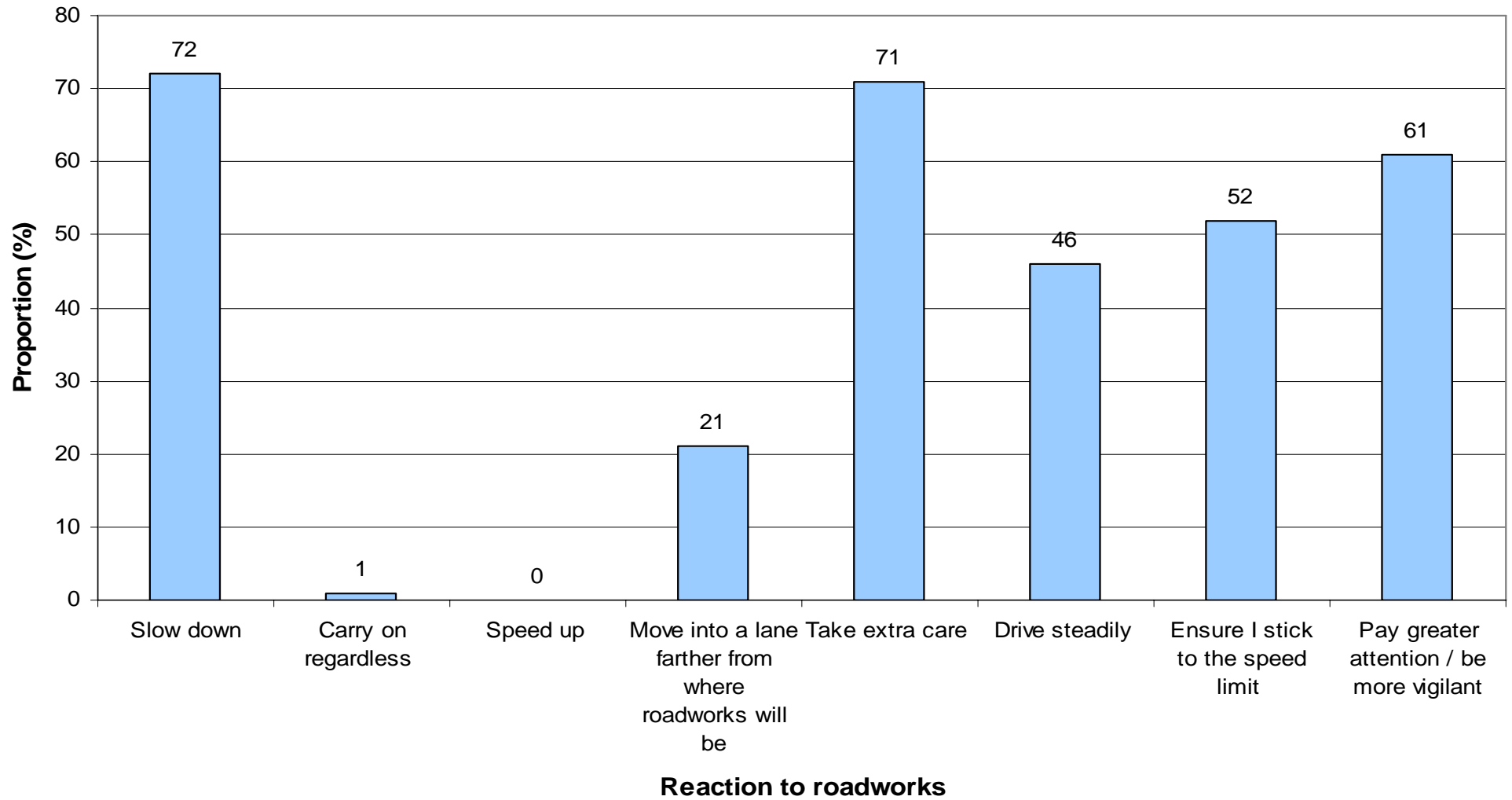
Drive more carefully	18-34	35-59	60+
Always	73	83	83
Sometimes	27	17	16
Rarely	0	1	1
Never	0	0	1
Sample size	121	380	103

Table 5.8 Drive more carefully if you see roadworks – by frequency of use (Motorways)

Drive more carefully	> once a week	Once a week or less
Always	78	86
Sometimes	22	14
Rarely	1	0
Never	0	1
Sample size	377	222

5.3.7 The most common reported response to roadworks amongst the higher risk drivers was to slow down (72%) and take extra care (71%). Respondents also reported paying greater attention/being more vigilant (61%), sticking to the speed limit (52%), driving steadily (46%), and moving into a lane further from the roadworkers (21%). Only 1% said they do not alter their driving behaviour. This is shown in Figure 5.2.

Figure 5.2 Reaction to roadworks



(N = 617)

- 5.3.8 Female drivers were more likely to say that they take extra care when they see roadworks compared to male drivers (77% and 67% respectively). Older drivers (60+) were more likely to say that they drive steadily (55% compared with 44.5%) and those that drive on trunk roads once a week or more were more likely to state that they ensure they stick to the speed limit (55% compared with 44%) and pay greater attention/be more vigilant (63% compared with 53%).
- 5.3.9 A smaller proportion of higher risk drivers said they drive more carefully when they see **signs** for roadworks, compared to seeing the actual works. Overall, as can be seen in Table 5.9, 61% reported that they always drive more carefully when they see **signs** for roadworks, 37% reported that they sometimes do. Only 2% reported that they rarely drive more carefully when they see signs, and less than 1% never do so.

Table 5.9 Drive more carefully if you see signs for roadworks

Drive more carefully	%
Always	61
Sometimes	37
Rarely	2
Never	less than 1
Sample size	603

- 5.3.10 Younger (16-34) and High Frequency (more than once a week on motorways and trunk roads) drivers were more likely to state that they sometimes driver carefully if they see signs for roadworks and less likely to state that they always do. This is shown in the tables 5.10 and 5.11.

Table 5.10 Drive more carefully if you see signs for roadworks – by age

Drive more carefully	18-34	35-59	60+
Always	41	64	71
Sometimes	58	34	25
Rarely	1	2	2
Never	0	1	2
Sample size	117	375	103

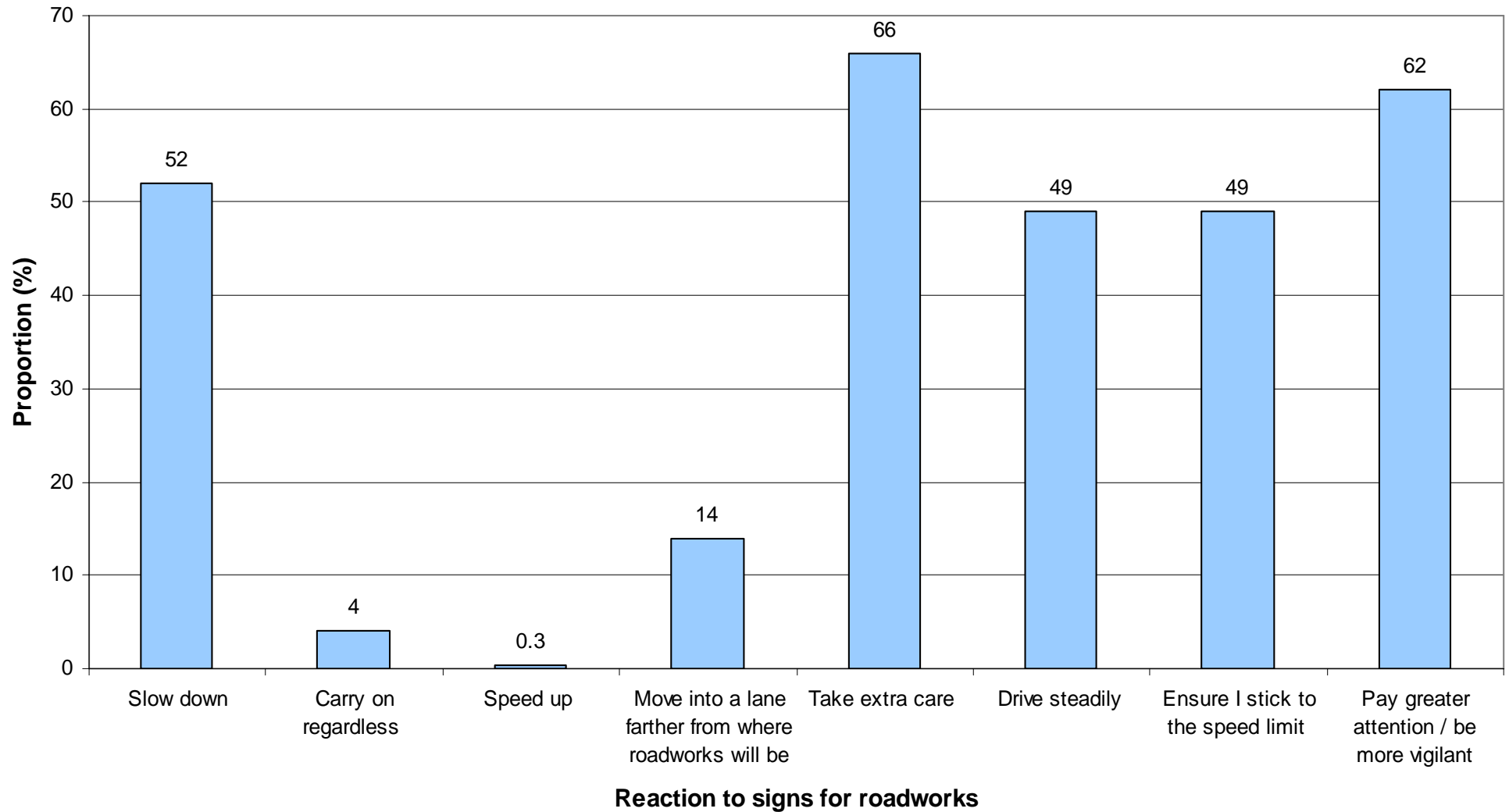
Table 5.11 Drive more carefully if you see signs for roadworks – by frequency of use (Motorways)

Drive more carefully	> once a week	Once a week or less
Always	58	67
Sometimes	36	33
Rarely	2	1
Never	1	0
Sample size	372	218

- 5.3.11 The most common responses to road **signs** were to take extra care (66%) and be more vigilant (62%). Respondents also reported slowing down (52%), sticking to the speed limit (49%), driving steadily (49%) and moving into a lane

further from the roadworkers (14%). Only 4% said they carry on regardless, and two respondents said they speed up.

Figure 5.3 Reaction to signs for roadworks



(N = 617)

5.3.12 These results show that although the majority of the higher risk drivers report driving more carefully when they see signs for roadworks, the impact of actually seeing the roadworks is greater.

5.3.13 Older drivers (60+) were more likely to say that they slow down, drive steadily, ensure they stick to the speed limit and pay greater attention than other drivers. This is shown in Table 5.12.

Table 5.12 Reaction to signs for roadworks - by age

Reaction	18-34	35-59	60+
Slow down	41	55	53
Carry on regardless	6	3	2
Speed up	1	0	0
Move into lane further away from roadworks	14	13	12
Take extra care	68	66	65
Drive steadily	47	46	60
Ensure I stick to the speed limit	42	49	56
Pay greater attention/be more vigilant	53	63	66
Sample size	121	383	104

5.3.14 When asked why they thought that they were advised to reduce their speed, most gave answers that suggest they understand the need for speed reduction. Answers included:

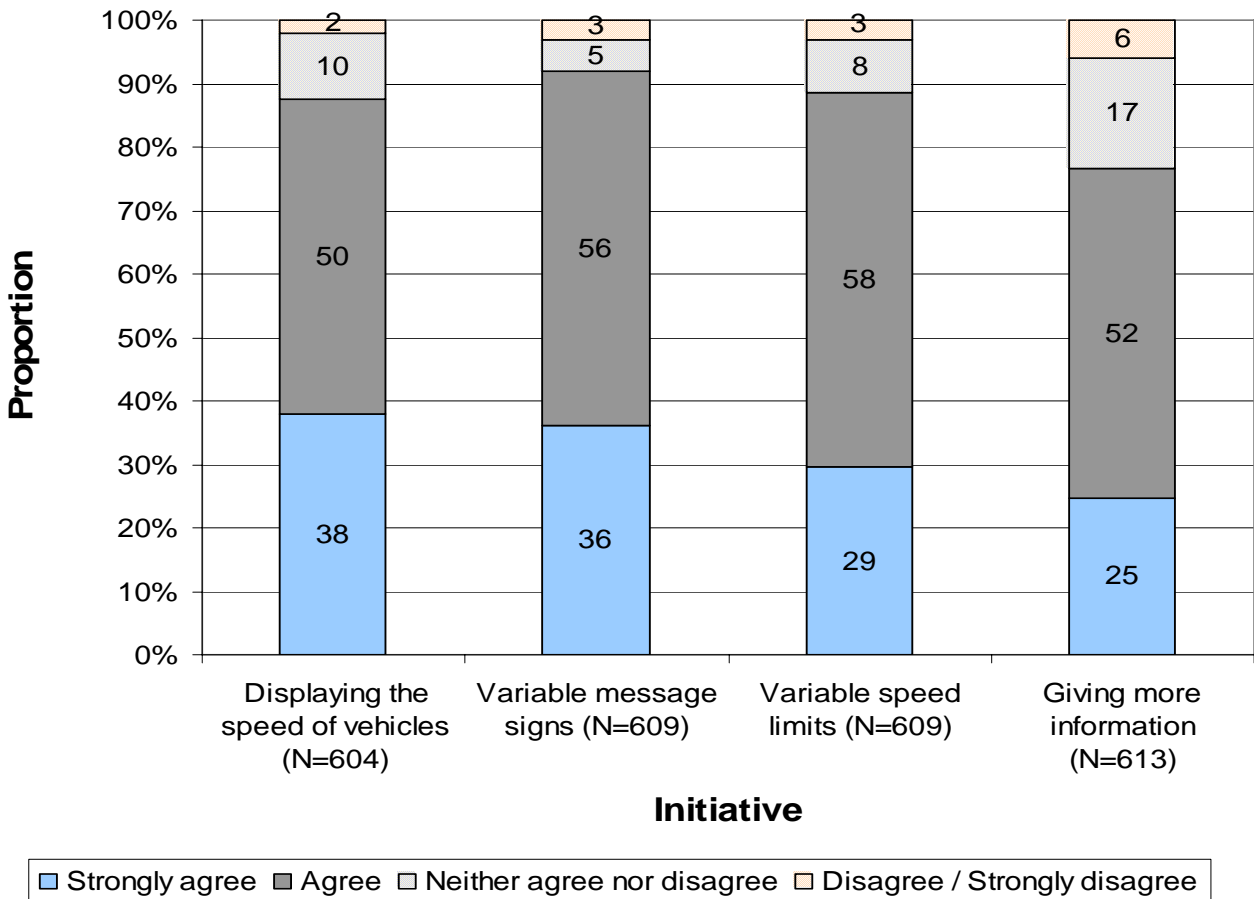
- to ensure safety of roadworkers and road users (74%);
- to ensure you are able to react adequately/to cut down on reaction times/ to be prepared for a possible emergency (7%);
- change in road layout including reduction, narrowing or merging lanes/road layout is not safe for high speed/oncoming traffic can be closer (7%);
- hazards appear when you are not expecting them (7%);
- vehicles/machines/lorries turning and being on the road (2%);
- to help/make you more aware of your surroundings/be more aware of danger/adjust to new conditions (2%);
- because of the build up of traffic and congestion (1%);
- road surface may be under repair (1%); and
- shorter stopping distance is required (1%).

5.4 Improving safety

5.4.1 Respondents were asked to indicate the extent to which they agreed with various initiatives designed to improve road safety at roadworks. Figure 5.4 shows respondents' level of agreement about initiatives which provide more information. Over three quarters of respondents strongly agree or agree with

each of these initiatives. Across the sample there is most agreement (agree or strongly agree) with variable message signs (92%) followed by displaying the speed of vehicles entering roadworks (88%), variable speed limits (87%) and finally giving drivers more information about the roadworks that they are entering (76%).

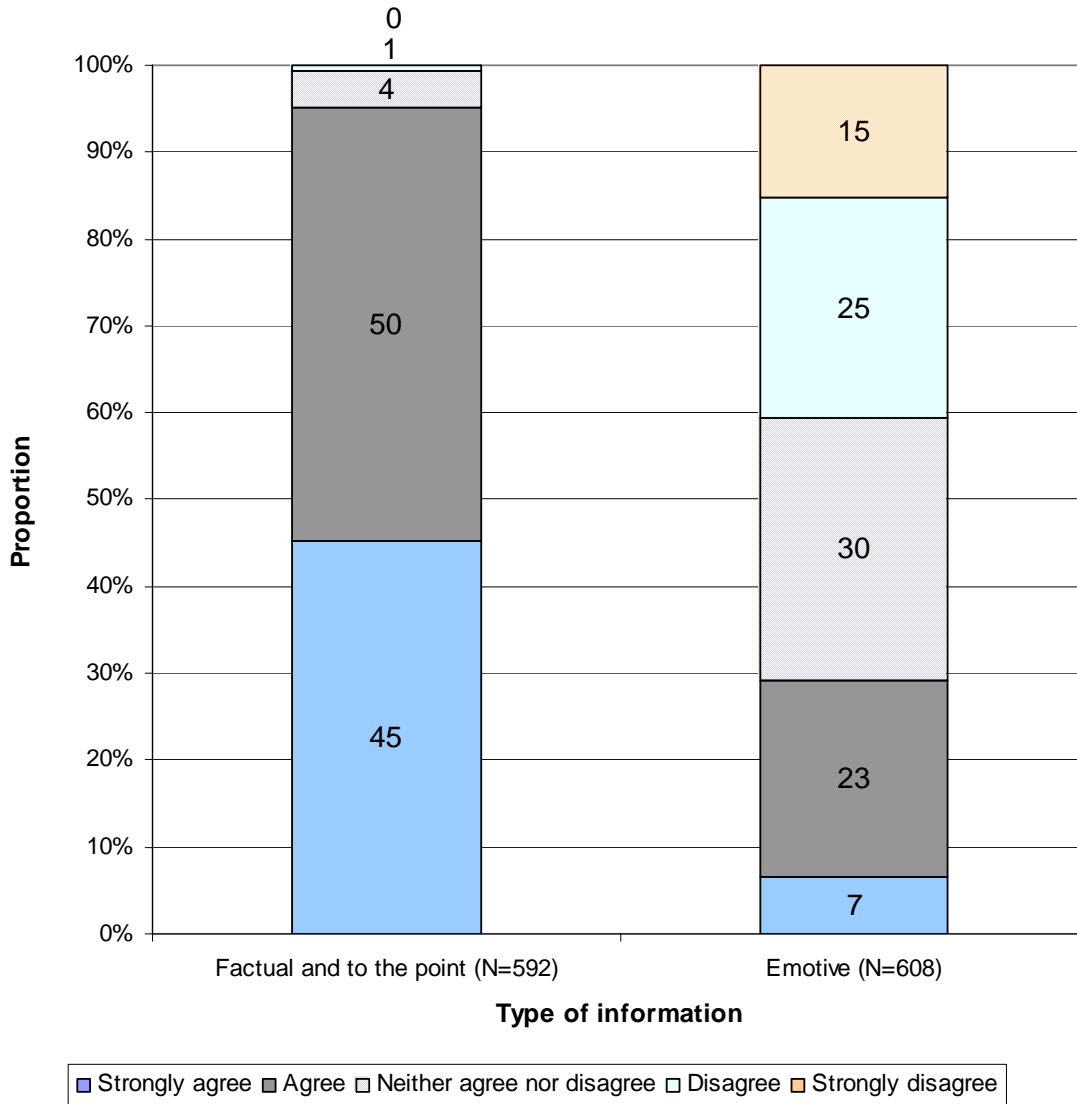
Figure 5.4 Information initiatives



5.4.2 Younger drivers were less likely to strongly agree with all of the information initiatives.

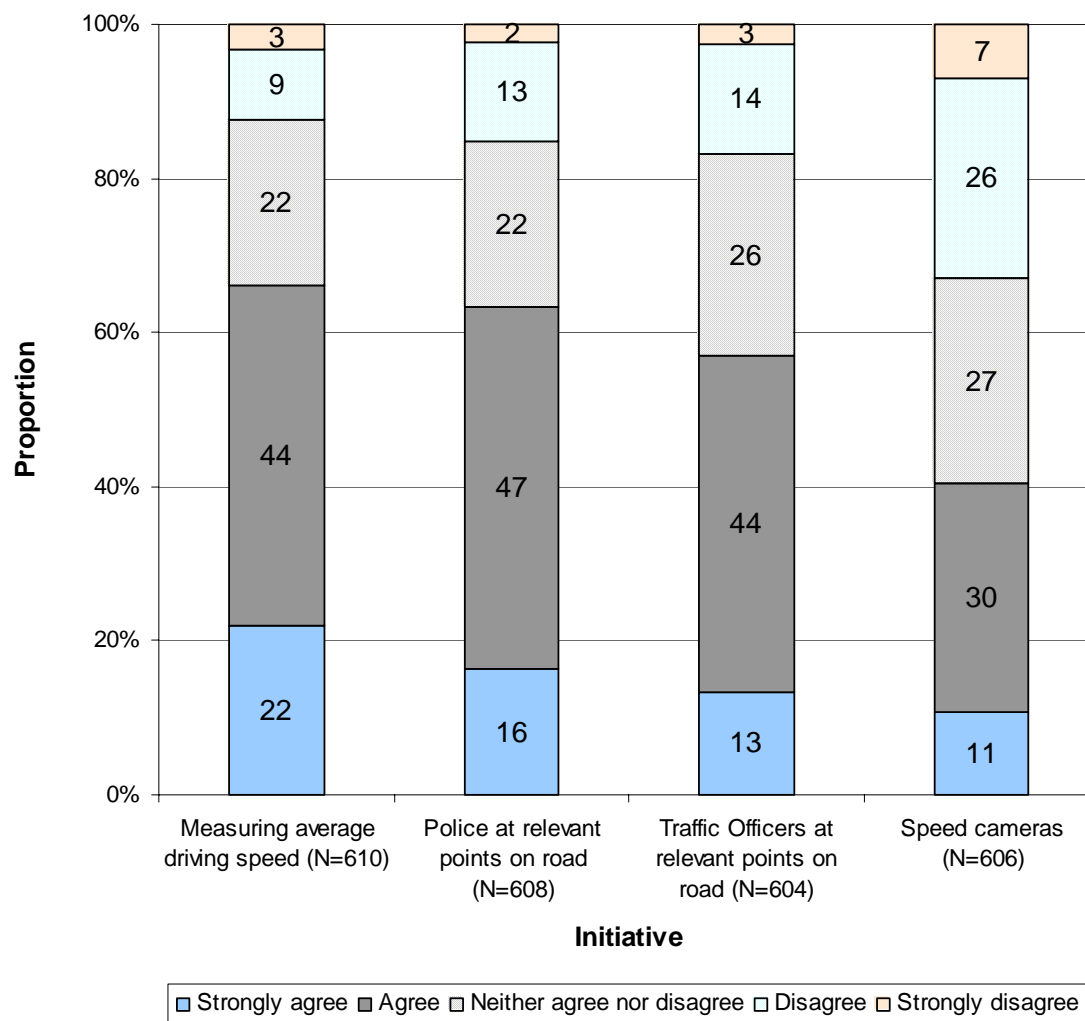
5.4.3 Respondents were generally more supportive of information that is factual and to the point rather than of information that is emotive. Whilst 95% of respondents agreed that information should be factual and to the point, only 30% agreed it should be emotive. Figure 5.5 shows the breakdown of responses.

Figure 5.5 Type of information



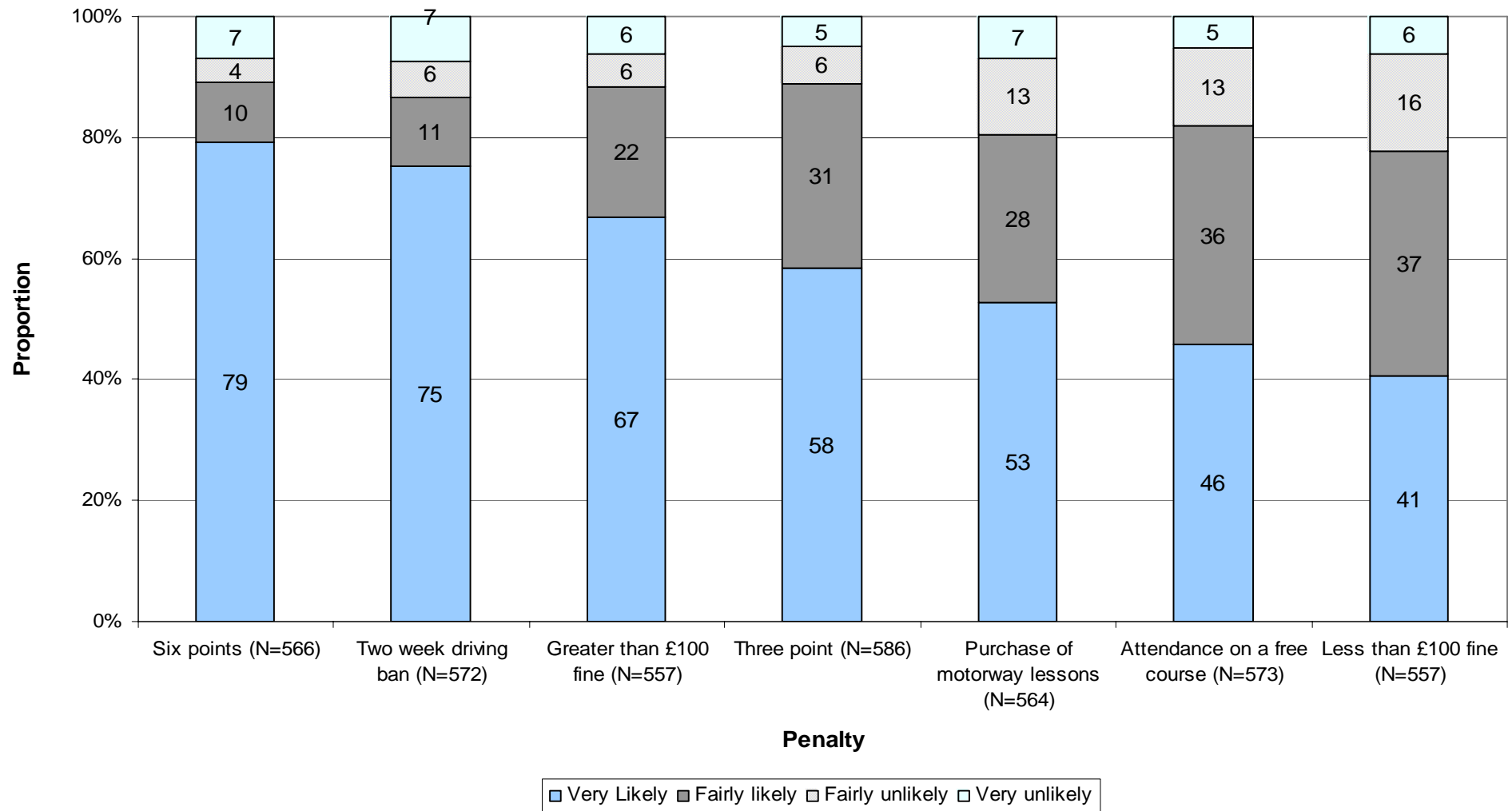
- 5.4.4 Older drivers (60+) were more likely to strongly agree that messages should be factual and to the point (60% compared to 36% of 16-34 and 44 % of 35-59 year olds).
- 5.4.5 We also asked respondents to what extent they agreed with various enforcement initiatives designed to improve road safety at roadworks. Figure 5.6 shows the breakdown of responses.
- 5.4.6 Whilst the majority of high risk drivers were supportive of most enforcement measures designed to improve road safety at roadworks, they were less likely to agree with them than with the provision of information. The majority agreed or strongly agreed with measuring average driving speed (66%), police at relevant points on the road (63%) and traffic officers at relevant points on the road (57%). However less than half felt that way about speed cameras (41%).

Figure 5.6 Enforcement initiatives



- 5.4.7 High frequency drivers were more likely to strongly agree that measuring average driving speed throughout the length of roadworks would ensure motorists drive safely (25% compared to 16%).
- 5.4.8 Male respondents were more likely to disagree that Traffic Officers positioned at relevant points on the road would be an effective way of ensuring that motorists drive safely (9% compared to 17% of females).
- 5.4.9 Younger (36% compared to 24% of 35-59 and 23% of 60+ year olds) and high frequency respondents (28% compared to 15%) were more likely to disagree that speed cameras would be an effective way of ensuring that motorists drive safely.
- 5.4.10 Figure 5.7 shows that over three quarters of higher risk drivers were very or fairly likely to think each type of penalty suggested would deter motorists from driving dangerously at roadworks. Six points, a two week ban, more than £100 fine and three points on their licence were considered the most effective deterrents.

Figure 5.7 Penalties for unsafe driving through roadworks

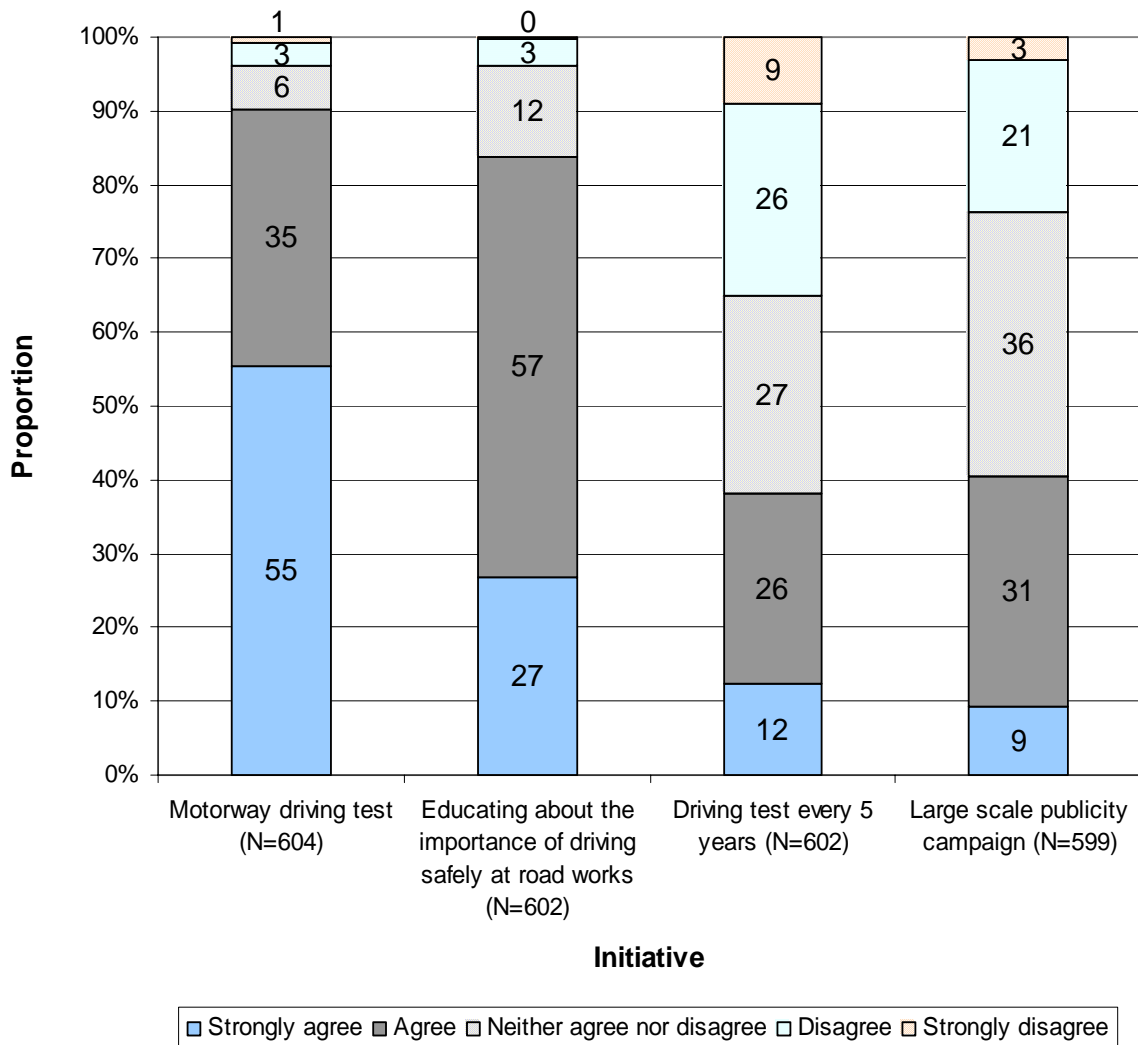


5.4.11 Younger drivers were less likely to state that three points on their licence (43%), six points on their licence (68%), compulsory attendance on a free driver improvement course (35%), and compulsory purchase of motorway driving lessons (48%) would be very likely to deter them from driving unsafely at roadworks.

5.4.12 Male drivers were less likely to state that a two week driving ban (71% compared to 84% of females) and compulsory purchase of motorway driving lessons (50% compared to 59% of females) would deter them from driving unsafely at roadworks.

5.4.13 We asked respondents how much they agreed with various education and publicity initiatives designed to improve road safety at roadworks. Figure 5.8 shows that although the majority of higher risk drivers were supportive of the motorway driving test and education about safe driving at roadworks in general (90% and 84% agreed or strongly agreed respectively) they were not so supportive of re-taking a driving test every five years or a large scale publicity campaign (38% and 40% agreed or strongly agreed respectively).

Figure 5.8 Education and publicity initiatives



- 5.4.14 Younger drivers were less likely to strongly agree that educating people about the importance of driving safely at roadworks (20%) would make them drive more safely, and that a motorway driving test should be compulsory for all new drivers before they drive on the motorway (44%).
- 5.4.15 When asked specifically about the motorway driving test, three quarters of respondents thought that it should be between 0 and 6 months later, and 60% thought that it should be assessed through a practical and a theory test. Only 37% thought it should be assessed through a practical test alone and only 3% thought it should be assessed through a theory test alone.
- 5.4.16 Female and younger drivers were more likely to state that a motorway driving test should be conducted 0 to 3 months after a person's original test. Younger drivers were more likely to believe that motorway driving should be assessed by a practical test only.
- 5.4.17 When asked specifically about a publicity campaign, the vast majority (90%) thought it should include television adverts. In addition, 51% thought it should include radio adverts, 43% thought it should include feature articles, 25% thought it should include celebrity endorsement, 20% the internet and 18% thought it should include pamphlets.
- 5.4.18 Female drivers were more likely to be supportive of a publicity campaign including celebrity endorsement than male drivers (31% and 22% respectively). Older drivers (60+) were less likely to be supportive of publicity campaigns including television adverts, radio adverts and celebrity endorsements and more likely to be supportive of it containing feature articles. Younger drivers (16-24) were more likely to be supportive of it including pamphlets and the Internet. Results by age group can be seen in Table 5.13.

Table 5.13 Interventions success in improving driver safety

Which of the following do you think a publicity campaign should include?	Age Group (% tick as many as apply)		
	16-34	35-59	60+
Television	93	92	84
Feature Articles	37	43	51
Pamphlets	25	16	14
Radio Adverts	59	52	40
Celebrity Endorsement	24	27	18
The Internet	30	19	14
Sample size	121	383	104

- 5.4.19 Looking at results for agreement with the individual initiatives, the information initiatives, introduction of a motorway driving test and education in general appear to be the most popular ways of improving safety at roadworks amongst higher risk drivers. However when asked to think about the different categories of initiative overall, more individuals would be in favour of educational initiatives (41%) compared to enforcement (28%), giving drivers more information (25%) and publicity (6%). This is shown in Table 5.14.

Table 5.14 Interventions success in improving driver safety

Interventions	%
Enforcement e.g. cameras/police/traffic officer and fine	28
Giving drivers more information whilst they are driving	25
Education e.g. a motorway driving test	41
Publicity campaigns	6
Sample size	617

5.4.20 Younger drivers were more likely to less supportive of giving drivers information and older drivers were more supportive of educating drivers. Differences by age are shown in Table 5.15.

Table 5.15 Interventions success in improving driver safety – by age

Interventions	18-34	35-59	60+
Enforcement e.g. cameras/police/traffic officer and fine	29	26	33
Giving drivers more information whilst they are driving	19	26	30
Education e.g. a motorway driving test	46	41	33
Publicity campaigns	6	7	5
Sample size	119	367	104

5.5 Other comments

5.5.1 Additional comments made by respondents regarding improving roadworkers' safety included the following:

- roadworkers would be safer working at off peak times such as night when there is less traffic. This would also be more convenient for drivers (12 respondents);
- ensure signs are up to date and clear (11 respondents);
- ensure roadworkers wear clean, safe gear including helmets (10 respondents);
- educate drivers e.g. with an awareness course (9 respondents);
- remove warning signs as soon as possible after works end (7 respondents);
- complete roadworks quicker hence safer for workers and less stressed drivers (5 respondents); and
- should give roadworkers more training/put incentives in their pay to be safe (5 respondents).

5.6 Variations in attitudes by driver behaviours

5.6.1 The questionnaire survey investigated how drivers displaying the different driver behaviours view roadworkers, their safety and the initiatives.

5.6.2 Those exhibiting each driver behaviour were identified in the sample as those who scored two standard deviations above the average on the scale.

Individuals could therefore display more than one driving behaviour at different times. For example, a higher risk driver could score significantly higher than average on both thrill seeking behaviours and low monitoring of hazards behaviours, indicating that they can behave in both ways.

Thrill seekers

- 5.6.3 Thirty-one of the higher risk drivers indicated that they display high levels of thrill seeking behaviour.
- 5.6.4 Higher risk drivers indicating that they display thrill seeking behaviour were equally likely to be male or female, tended to be 25-54 years old, to be employed full time, to travel on motorways once a week or more and on trunk roads 2-4 days a week or more.
- 5.6.5 The ‘thrill seekers’ did not differ dramatically from the overall sample regarding attitudes to roadworkers. However aspects of their reported behaviour when they see roadworks or signs for roadworks did differ:
- on seeing roadworks a smaller proportion of thrill seekers reported they would slow down (52%) and pay attention/be more vigilant (52%), compared to the sample overall (72% and 61% respectively);
 - on seeing signs for roadworks, fewer of thrill seekers reported they would slow down (45%), move into a lane further away from where the roadworks will be (7%), take extra care (58%), ensure they stick to the speed limit (42%) and pay attention/be more vigilant (52%).
- 5.6.6 The thrill seekers were more likely than the total sample to think that variable messaging signs would be the most effective way of increasing safety (100% agree or strongly agree). Like other respondents, most thrill seekers agreed or strongly agreed that information given should be factual (94%). However fewer agreed and strongly agreed that using emotive messaging would be successful (17% of thrill seekers compared to 30% of the total sample).

Aggressive drivers

- 5.6.7 Twenty-six of the higher risk drivers indicated that they display high levels of aggressive driving behaviour.
- 5.6.8 Those indicating that they display aggressive behaviour are both male and female, tend to be aged 35-59 years old, employed full time or retired, travel on motorways once a week or more and on trunk roads 2-4 days a week or more. On the whole, these drivers had more positive attitudes about roadworks compared to the overall sample, suggesting their competitiveness/aggression is focused on other drivers alone.
- 5.6.9 On seeing roadworks however, they report being less likely to take extra care (62% compared to 72% of all higher risk takers), drive steadily (35% compared to 46% of all higher risk takers) and ensure they stick to the speed limit (42% compared to 52% of all higher risk takers). However, a greater proportion report that they slow down (81% compared to 72% of all higher risk takers) -

although since they are less likely to stick to the speed limit this indicates that are still likely to be travelling too fast. A greater proportion also report moving to a lane further away from roadworkers (31% compared to 21% of all higher risk takers) and being more vigilant (69% compared to 61% of all higher risk takers). Although at first glance these look like examples of safer driving behaviour, they are consistent with the aggressive driving style which involves being vigilant for gaps in the traffic and lane switching to attempt to reduce journey time.

- 5.6.10 On seeing signs for roadworks a smaller proportion of aggressive drivers reported that they were less likely to drive steadily (39% compared to 49% of all higher risk takers) and stick to the speed limit (39% compared to 49% of all higher risk takers). Again a greater proportion reported slowing down (62% compared to 52% of all higher risk takers), moving into a further lane (23% compared to 14% of all higher risk takers) and being more vigilant (69% compared to 62% of all higher risk takers).
- 5.6.11 The aggressive drivers were more likely than the total sample to think that variable messaging signs would be the most effective way of increasing safety (100% agree or strongly agree). With regard to the type of information being displayed, all agreed or strongly agreed that information given should be factual, compared to 95% of all respondents, and a higher proportion of aggressive drivers 36% agreed or strongly agreed that using emotive messaging would be successful (compared to 30% of all respondents).
- 5.6.12 Aggressive drivers' second most popular intervention for improving safety was displaying the speed of vehicles entering roadworks (46% agreed and 46% strongly agreed). Their third most popular intervention was a compulsory motorway driving test for all new drivers before they drive on the motorways (42% agreed and 50% strongly agreed).

Low hazard monitors

- 5.6.13 Twenty-four of the higher risk drivers indicated that they display high levels of low monitoring of hazards behaviour.
- 5.6.14 Higher risk drivers indicating that they display low monitoring of hazards behaviour were more likely to be males, 35-54 years old, who are employed full-time and travel on the motorway and trunk roads 2-4 days or more a week. Those doing so were no less positive regarding their attitudes to roadworkers compared to the sample overall and in some cases were more positive.
- 5.6.15 However, they too differed in terms of their reported driving behaviour at roadworks and on seeing signs for roadworks. On seeing roadworks a smaller proportion reported that they take extra care (50%), drive steadily (38%), ensure they stick to the speed limit (33%) and pay greater attention (50%), compared to the sample overall.
- 5.6.16 On seeing signs for roadworks, a smaller proportion reported that they take extra care (49%), drive steadily (29%), ensure they stick to the speed limit (25%) and pay greater attention (50%), compared to the sample overall. In addition a greater proportion reported that they carry on regardless (13%).

- 5.6.17 The most popular intervention amongst those showing low monitoring of hazards was displaying the speed of vehicles entering roadworks (41% agree and 55% strongly agree) as a way of increasing safety. They were next most supportive of variable speed limits (50% agree and 41% strongly agree), variable message signs (46% agree and 46% strongly agree) and giving drivers more information about the works they are approaching (55% agree and 36% strongly agree).
- 5.6.18 With regard to the type of information being displayed, 96% agreed or strongly agreed that information given should be factual (41% and 55% respectively). However only 32% agreed and 16% strongly agreed that using emotive messaging would be successful.

Hesitant drivers

- 5.6.19 Twenty-one of the higher risk drivers indicated that they display high levels of hesitant driving behaviour.
- 5.6.20 Those displaying hesitant driving behaviour were more likely to be males, aged 45-59 or 65+, work full time, be self-employed or retired and travel on motorways and trunk roads 2-4 days a week or more. On the whole, hesitant drivers were positive in their attitudes to roadworkers compared to the overall sample.
- 5.6.21 With regard to their driving behaviour a greater proportion reported that they do all of the safe driving behaviours both on seeing roadworks and on seeing signs for roadworks, compared to the overall sample:
- slow down (81% on seeing works, 67% on seeing signs for roadworks);
 - move into a lane further from the workers/where the workers will be (43% on seeing works, 33% on seeing signs for roadworks);
 - take extra care (76% on seeing works, 86% on seeing signs for roadworks);
 - drive steadily (71% on seeing works, 76% on seeing signs for roadworks);
 - ensure they stick to the speed limit (67% on seeing works, 67% on seeing signs for roadworks); and
 - pay greater attention / be more vigilant (81% on seeing works, 76% on seeing signs for roadworks).
- 5.6.22 This finding would seem to suggest less danger from these drivers at roadworks. However, knowing their more nervous disposition such as feeling hesitant or nervous on major roads and not liking this type of driving, this pattern of responses may indicate overly cautious or overly hesitant driving (e.g. reducing speed too much), which can cause accidents.

- 5.6.23 The most popular intervention amongst hesitant drivers was a compulsory motorway driving test for all new drivers (15% agree and 80% strongly agree) would be the most effective way of increasing safety.
- 5.6.24 Next, they were most supportive of variable message signs (50% agree and 41% strongly agree). With regard to the type of information being displayed, all agreed or strongly agreed that information given should be factual (53% and 47% respectively). Only 16% agreed and 11% strongly agreed that using emotive messaging would be successful.

Response to interventions

- 5.6.25 Higher risk drivers displaying thrill seeking behaviour state that they are more likely to respond to variable messaging signs displaying factual information.
- 5.6.26 Similarly, drivers who indicated that they display aggressive behaviour said that they were most likely to respond to variable messaging signs displaying factual information, however over a third also thought that emotive messaging would be successful. Drivers who display aggressive behaviour also thought that displaying the speed of vehicles entering roadworks and compulsory motorway driving tests for all new drivers would also be successful interventions.
- 5.6.27 Higher risk drivers who indicated that they display low monitoring of hazards behaviour were most supportive of displaying the speed of vehicles entering roadworks. In addition, they thought that variable speed limits, variable message signs and information about works would be successful. This appears to indicate that drivers who display low monitoring of hazards behaviour need as much information as possible to ensure that they have been made aware of the risks.
- 5.6.28 Drivers who indicated that they display hesitant behaviour were most supportive of compulsory motorway driving tests, although they were also supportive of the provision of information at roadworks (i.e. variable message signs).
- 5.6.29 It is therefore clear that different interventions may be successful for drivers who indicate that they display different behaviours. Warnings when entering roadworks either through variable message signs (displaying factual information) and/or the speed of vehicles when entering roadworks appear to be the most suitable for those displaying thrill seeking, aggressive and low monitoring of hazards behaviours. However, in addition, for those indicating that they display hesitant behaviour there should be focus on training (especially on motorways).

6 Survey findings – Improvement professionals

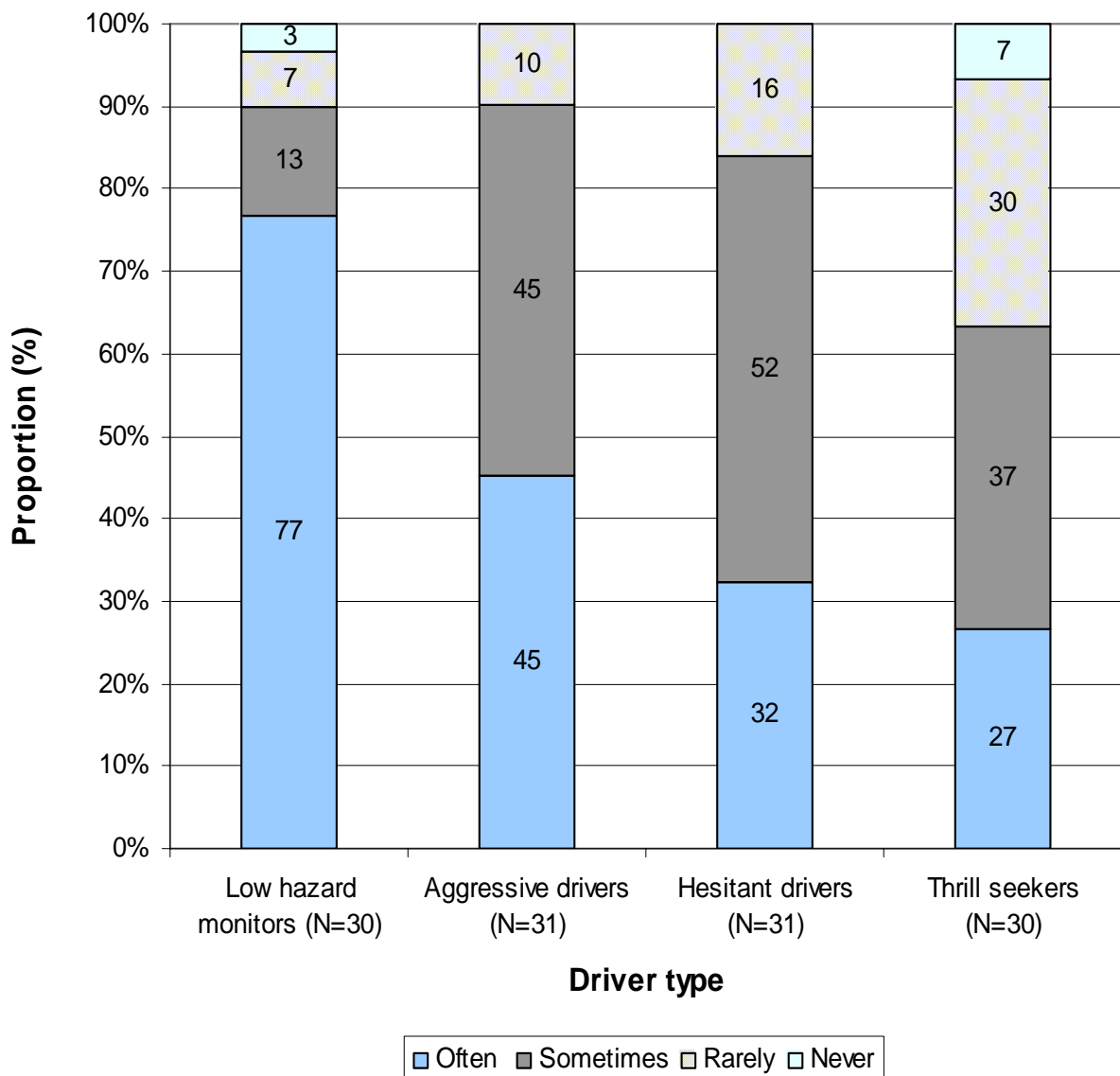
6.1 Introduction

6.1.1 This chapter presents the findings of the quantitative survey undertaken with 35 improvement professionals working on driver improvement and/or speed awareness training courses.

6.2 Drivers types

6.2.1 The improvement professionals were asked to estimate how often they come into contact with drivers displaying each of the behaviours defined in Chapter Two, on their training courses. Figure 6.1 presents their responses. This shows that the most of them often or sometimes see drivers who display each the behaviours, and that overall, they most often see low monitoring of hazards, and least often see thrill seekers. This appears to indicate that drivers, who are perceived by the improvement professionals to show low monitoring of hazards, are more likely to speed or drive dangerously; perhaps without realising that speed limits have changed.

Figure 6.1 Familiarity with driver types



6.2.2 The improvement professionals were asked if they could think of any other driver behaviours that they have come into contact with. Their responses included the following, each mentioned by one or two professionals:

- over-confident complacent drivers who see nothing wrong with breaking the rules;
- nervous;
- poorly educated;
- class 1 police drivers;
- advanced drivers;
- unskilled drivers. They have forgotten the basic driving skills they learnt when they first passed their test. They have adopted a personal style of driving unsuited to today's road conditions;
- caravaners/trailer towing drivers who lack of skills basic towing skills/knowledge specific;
- foreign drivers, both HGV and tourists, unfamiliar with signs;
- higher mileage professional and fleet drivers;
- the camera man - who slows down only for cameras;
- clueless – who has never been taught to drive on motorways and does not understand the risks;
- drivers on auto-pilot, unaware of prevailing conditions;
- The chameleon – regularly come into contact with drivers who on the initial drive can and do drive quite well but whose standard deteriorates as their concentration level fails; and
- the driver who does not see hazards.

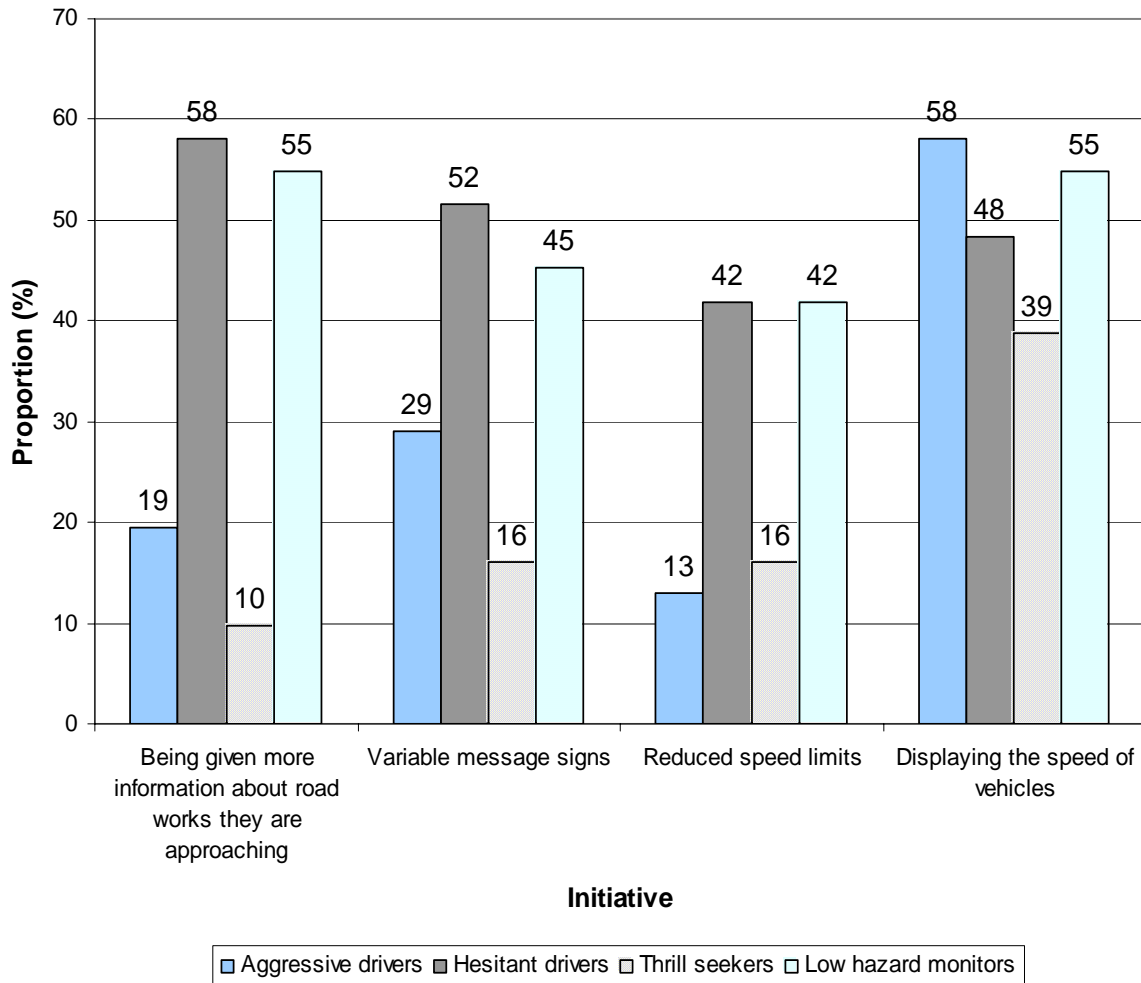
6.3 Improving safety

6.3.1 The improvement professionals were asked which type of driver behaviour type they thought would respond positively to initiatives aimed at improving road safety.

Information

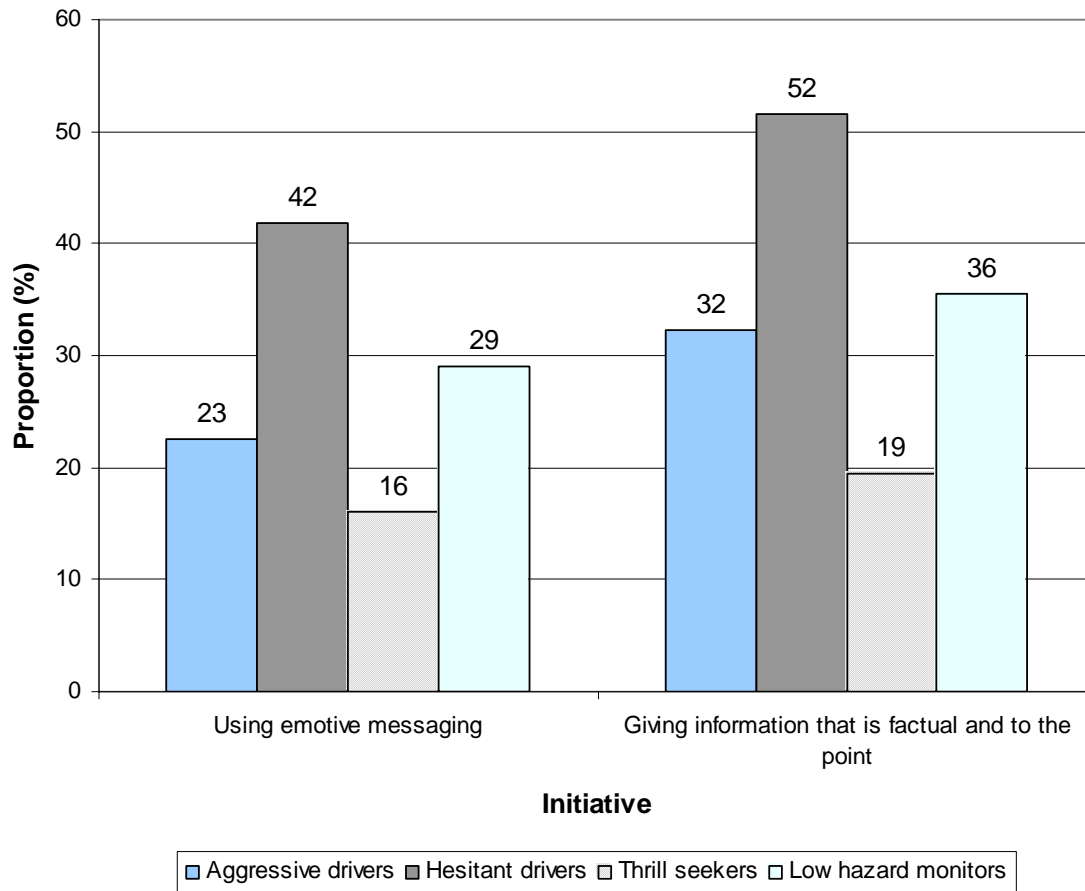
6.3.2 Figure 6.2 shows that improvement professionals consider displaying the speed of vehicles to be the most effective of the information initiatives for each of the behaviour types except hesitant drivers. For hesitant drivers, most consider the best initiative would be to give more information about the roadworks they are approaching.

Figure 6.2 Information initiatives



(N = 31)

- 6.3.3 More improvement professionals thought that aggressive drivers would respond to factual messaging rather than emotive messaging (32% for factual compared to 23% for emotive).
- 6.3.4 More improvement professionals thought that low hazard monitors would respond to factual messaging rather than emotive messaging (36% for factual compared to 29% for emotive).
- 6.3.5 More improvement professionals also thought that hesitant drivers would respond to factual messaging compared to emotive messaging (52% for factual compared to 42% for emotive).
- 6.3.6 Slightly more professionals thought that thrill seekers would respond to emotive compared to factual messaging (19% compared to 16% respectively).

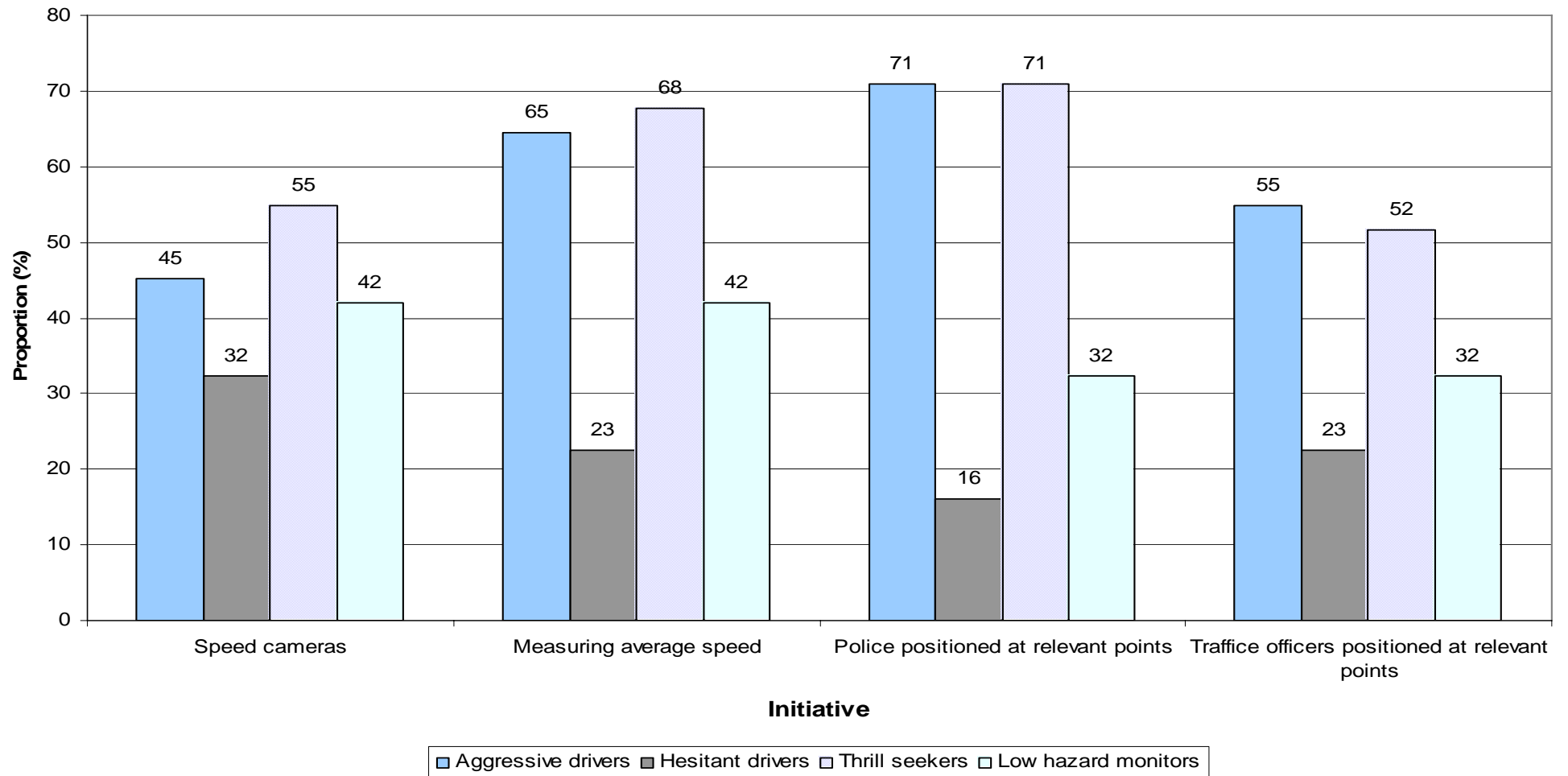
Figure 6.3 Information initiatives

(N = 31)

Enforcement

- 6.3.7 Figure 6.4 shows that of the enforcement initiatives, police positioned at relevant points and measuring average speeds were considered to be the most effective enforcement measures for aggressive drivers and thrill seekers. Speed cameras were considered to be the most effective enforcement measures for those showing low monitoring of hazards and hesitant drivers.
- 6.3.8 Overall the improvement professionals consider that aggressive drivers and thrill seeker driving would be more influenced by enforcement methods than the other driving behaviours.

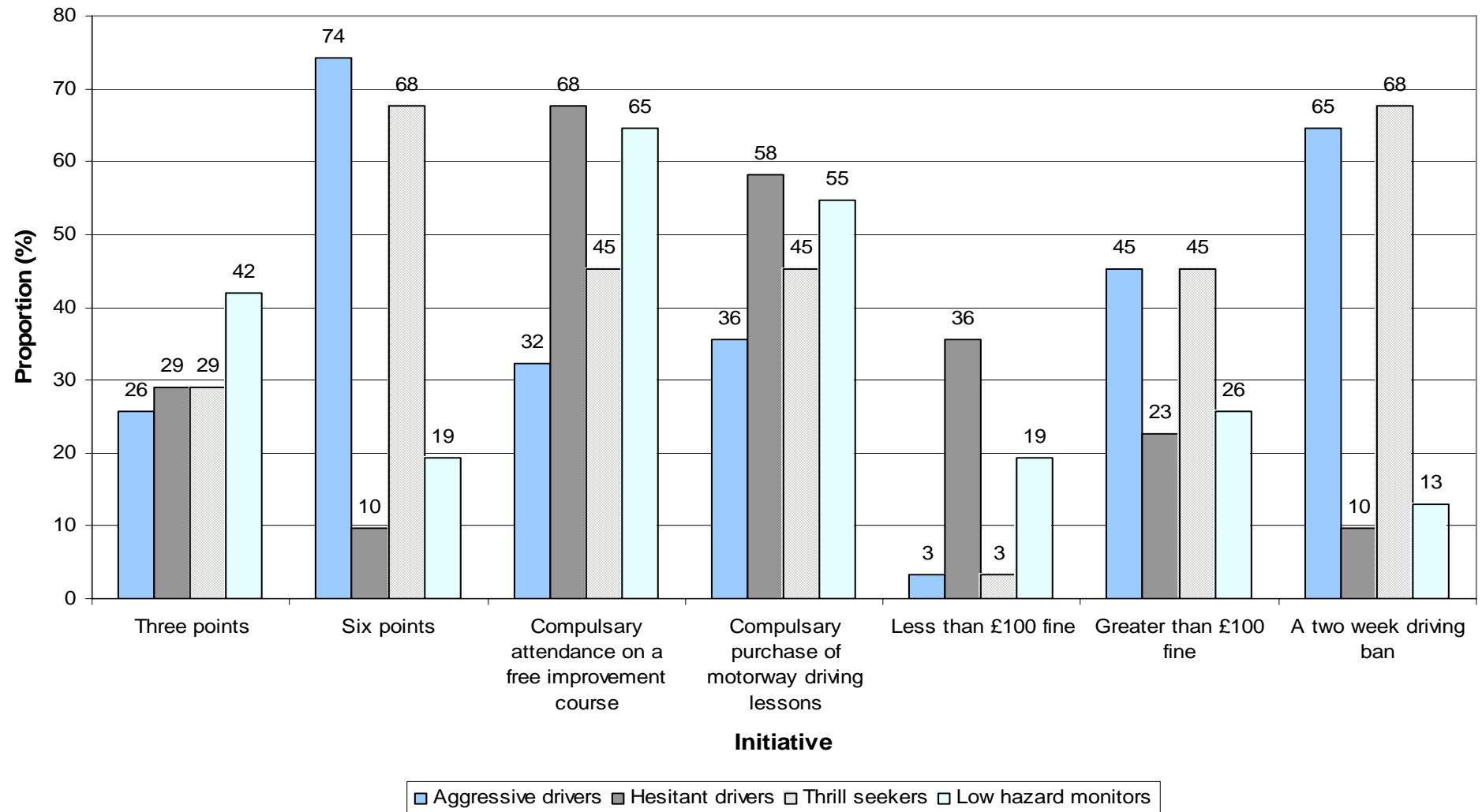
Figure 6.4 Enforcement initiatives



(N = 31)

6.3.9 Figure 6.5 presents the improvement professionals' opinions on the effectiveness of penalties. Six points or a two-week ban are generally considered most effective for aggressive drivers and thrill seekers. For hesitant drivers less than £100 fine and compulsory attendance on a free improvement course were held to be most effective, and for low hazard monitors compulsory attendance on a free improvement course alone was believed to be most effective.

Figure 6.5 Penalties



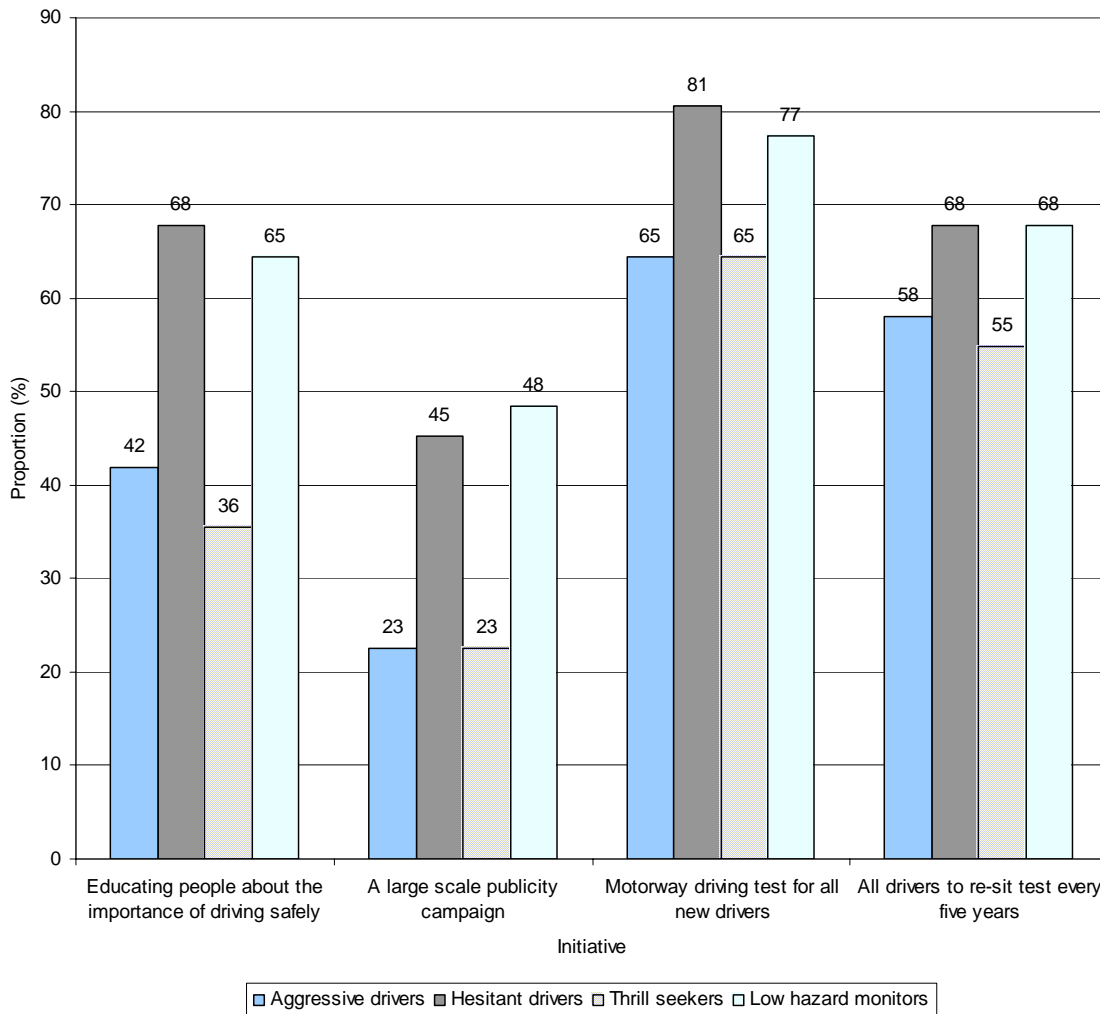
(N = 31)

Education and publicity

6.3.10 Figure 6.6 presents the improvement professionals' responses to the education and publicity initiatives. This shows that they are more supportive of these types of intervention for hesitant drivers and low hazard monitors.

6.3.11 The majority support most of the initiatives for most of the driver types, but they are most supportive of a motorway test for all new drivers.

Figure 6.6 Education and publicity initiatives



(N = 31)

6.3.12 There was some difference in opinion about when new drivers should take the motorway driving test. Overall 3% thought it should be more than six months after passing the original test, 43% thought it should be 3-6 months later, 33% thought it should be 0-3 months later and 20% thought it should be based on the instructor's discretion.

Table 6.1 Introduction of Motorway Driving Test

When to introduce motorway driving test	%
More than six months	3
3-6 months later	43
0-3 months later	33
Based on the driving instructor's discretion	20
Sample size	31

6.3.13 About two thirds of improvement professionals (63%) thought that a motorway driving test should be assessed in both a practical and theory test and the remainder (37%) thought it should be assessed in a practical test alone.

Table 6.2 Practical or theory test

Test type	%
Practical	37
Theory	0
Both	63
Sample size	31

6.3.14 Improvement professionals were also very supportive of drivers re-sitting a test every five years, for all driver types.

6.3.15 Although most respondents were less supportive of a publicity campaign for aggressive drivers and thrill seekers, they saw the benefit for hesitant drivers and those showing low monitoring of hazards. When asked about what a publicity campaign should include, 84% thought television adverts, 65% thought radio adverts, 45% thought feature articles in newspapers, 42% thought celebrity endorsement, 39% thought the Internet and 19% thought leaflets.

Table 6.3 Publicity campaign

Campaign type	%
Television adverts	84
Feature articles e.g. in newspapers	45
Leaflets	19
The Internet	39
Celebrity endorsement	42
Radio adverts	65
Other	3
Sample size	31

6.3.16 Improvement professionals were asked, overall, how they rated the effectiveness of information, enforcement, penalty, and education and publicity measures for those displaying different types of driver behaviour:

- for aggressive drivers, 50% thought education and 50% thought enforcement initiatives were most effective;

- for hesitant drivers, 89% thought education, 7% thought enforcement and 4% thought publicity campaigns were most effective;
- for thrill seekers 62% thought enforcements, 35% thought education measures, and 4% thought more information, were most effective; and
- for those showing low monitoring of hazards, 83% thought education, 8% thought more information and 8% thought enforcement measures were most effective.

6.3.17 Therefore for all driver types, except thrill seekers, education was held to be the most appropriate type of initiative.

6.3.18 This is in contrast to the interventions identified by the higher risk drivers, except for those displaying hesitant behaviour. In general, improvement professionals were of the opinion that for all driver type behaviours, with the exception of thrill seekers, education would be the most effective intervention as opposed to provision of information/enforcement identified by the higher risk drivers.

6.3.19 Regarding the provision of information, improvement professionals consider displaying the speed of vehicles to be the most effective of the information initiatives for each of the behaviour types except hesitant drivers. For hesitant drivers, most consider being given more information about the roadworks they are approaching as the best initiative.

6.3.20 Similarly to the higher risk drivers, improvement professionals thought that the provision of factual information would be more successful than emotive information.

6.3.21 We asked those improvement professionals who had noted other driver types what would be the most appropriate initiatives for those types of driver. Responses given are described below:

- Driver type: higher mileage professional and fleet drivers. Intervention: Education, further training and re-testing.
- Driver type: the camera man. He slows down only for cameras [average speed cameras. Intervention: the camera man responds only to fines (enforcement).
- Driver type: clueless. Has never been taught to drive on motorways and don't understand the risks. Intervention: education from qualified instructor before test.
- Driver type: drivers on auto-pilot, unaware of prevailing conditions. Intervention: number of convictions at the site, display of own speed.
- Driver type: the chameleon – regularly come into contact with drivers who on the initial drive can and do drive quite well. Unfortunately the standard deteriorates as their concentration level fails. Intervention: compulsory re-testing every five years.

- Driver type: the driver who does not see or perceive hazard. Intervention: every year a person's ability to hold a driving licence checked by an advanced instructor.
- Driver type: over confident, complacent drivers who see nothing wrong with breaking the rules (2). Intervention: education (2).
- Driver type: nervous. Lacking in education. Intervention: more practice and theory, designated areas of practice.
- Driver type: Class 1 police drivers. Intervention: giving more information.
- Driver type: unskilled. They have forgotten the basic driving skills they learnt when they first passed their test. They have adopted a personal style of driving unsuited to today's road conditions. Intervention: education, further training and re-testing.
- Driver type: caravaners / trailer towing – lack of skills basic towing, lack of knowledge specific. Intervention: education, further training and re-testing.

6.4 Other comments

6.4.1 Additional comments made by improvement professionals regarding improving driver safety included the following (each was made by one or two respondents):

- get matrix signs updated sooner so it doesn't say there's a problem ages after its been cleared;
- educate the roadworkers;
- reduce speed limit prior to roadworks for a greater distance i.e. from 70 mph to 60 mph for say 2 miles before 50 mph at roadworks;
- employ any strategy which minimises the hold up /slowing down effect of roadworks – long delays increase stress / aggression / speed both during and after the roadworks;
- make all drivers take a test every ten years;
- try the American method of doubling all speeding fines at roadworks;
- better 3 to 2 or 2 to 1 lane reductions leading to roadworks;
- enforce 'zip' system via camera surveillance and fixed points and fine;
- better maintenance of yellow flashing cone-top lights;
- address road pot holes and the general state of our roads; and

- what is often seen as inactivity at roadworks can lead drivers to assuming that there is nothing happening, and therefore every warning about that increased hazard is unwarranted and just meant to delay and annoy.

Appendix A

Questionnaires



Roadworker safety questionnaire

The **Highways Agency** is an Executive Agency of the Department for Transport and is responsible for operating, maintaining and improving the strategic road network in England on behalf of the Secretary of State for Transport. This research is being undertaken by MVA, an independent research company, on behalf of the Highways Agency. The questionnaire asks for your views regarding your course participants' driving on the Highways Agency roads, particularly at roadworks.

Please answer all questions as fully as you can by ticking the correct box or writing your answer in the appropriate space. Please be assured that the information and opinions that you give will be treated with the strictest of confidence. Please return the completed questionnaire in the pre-paid envelope provided by **Monday 8th May**.

If you have any comments or questions, please call Clare Millet on 0161 234 6927

Please refer to the following definitions when answering the questions:

Roadworkers: Personnel undertaking repair and maintenance on major roads (motorways & trunk roads)

Traffic Officers: Highways Agency employees who patrol from distinctive and highly visible Agency vehicles, eventually 24hrs per day 7 days a week. You will notice Traffic Officers present and assisting motorists at the following scenes: Motor vehicle accidents; Removing damaged and abandoned vehicles; Clearing debris on carriageways; Undertaking high visibility patrols; Providing mobile/temporary road closures; and Supporting police in their duties

Trunk Roads: Major roads (such as A roads) not including motorways

Safe Driving: Driving at an appropriate speed and in a safe manner e.g. wearing a seat belt, driving at an adequate stopping distance from the vehicle in front, not using a mobile phone (unless hands free) etc.

Section 1: Driver types

Through some initial research four higher risk driver types have been identified:

Aggressive drivers: This group tends to think negatively towards other drivers and can behave in an intimidating way, for example driving closely behind them. They feel a competitive urge to have a more efficient journey than other road users

Hesitant drivers: This group tends to not like driving on the motorways or major roads. They may feel nervous or hesitant when doing so which can result in high risk driving behaviours

Thrill seekers: These drivers like the thrill of driving in a 'risky manner' and they enjoy driving fast. For them, enjoyment of the journey is likely to be as important as the reason for travelling

Low hazard monitors: These drivers tend not to monitor where hazards are or to alter their behaviour once they become aware of them. They are therefore a real concern with regard to ensuring safety at roadworks

Q1 Please estimate how often you come into contact with each of these driver types on your training course (Please tick one box for each driver type)

	<i>Often</i>	<i>Sometimes</i>	<i>Rarely</i>	<i>Never</i>
Aggressive drivers.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Hesitant drivers.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Thrill seekers.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Low hazard monitors.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

Q2 Can you think of any other driver 'types' that you have come into contact with? If yes, please describe below

Section 2: Improving safety

Q3 Please indicate which, if any, of the driver types you think would respond positively (i.e. drive more safely) in response to the following 'Information' interventions? (Please tick as many driver types as apply for each intervention)

	<i>Aggressive drivers</i>	<i>Hesitant drivers</i>	<i>Thrill seekers</i>	<i>Low Hazard monitors</i>
Being given more information about the roadworks that they are approaching	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Variable message signs (computer generated messages displayed on the motorways e.g. warning of delays and fog)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Reduce speed limits at roadworks	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Display of the speed of vehicles entering roadworks	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Using emotive messaging (e.g. My daddy works here)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Giving information that is factual and to the point.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

Q4 Please indicate which, if any, of the driver types you think would respond positively (i.e. drive more safely) in response to the following 'enforcement' interventions? (Please tick as many driver types as apply for each intervention)

	<i>Aggressive drivers</i>	<i>Hesitant drivers</i>	<i>Thrill seekers</i>	<i>Low Hazard monitors</i>
Speed cameras.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Measuring average driving speed throughout the length of the roadworks.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Police positioned at relevant points on the road.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Traffic Officers positioned at relevant points on the road.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

Q5 Which of the following penalties do you think would deter the driver types from driving unsafely at road works? (Please put a tick in each driver type's box that you think would be deterred by the penalties – tick as many as apply)

	<i>Aggressive drivers</i>	<i>Hesitant drivers</i>	<i>Thrill seekers</i>	<i>Low hazard monitors</i>
Three points on their licence.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Six points on their licence.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Compulsory attendance on a free driver improvement course.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Compulsory purchase of motorway driving lessons.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Less than £100 fine.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Greater than £100 fine.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
A two week driving ban.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

Q6 Based on your knowledge of the driver types, please indicate which, if any, of the driver types you think would respond positively (i.e. drive more safely) in response to the following education / publicity interventions? (Please tick as driver types as apply for each intervention)

	<i>Aggressive drivers</i>	<i>Hesitant drivers</i>	<i>Thrill seekers</i>	<i>Low Hazard monitors</i>
Educating people about the importance of driving safely at roadworks.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
A large scale publicity campaign.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
A motorway driving test for all new drivers before they drive on the motorway.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Ensuring all drivers re-sit a driving test every five years.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

Q7 If a motorway driving test was introduced, how long after the original driving test do you think it should be? (Please tick one)

More than six months later 1 *3-6 months later* 2 *0-3 months later* 3 *Based on the driving instructor's discretion* 4

Q8 Do you think motorway driving should be assessed in a practical or a theory test? (Please tick one box)

Practical 1 *Theory*..... 2 *Both* 3

Q9 Which of the following do you think a publicity campaign should include? (Please tick all that apply)

Television adverts 1 *Leaflets*..... 3 *Celebrity endorsement*..... 5 *Other (please specify below)* 6
Feature articles e.g. in newspapers 2 *The Internet*..... 4 *Radio adverts* 6

Q10 Other, that a publicity campaign should include?

Q11 For aggressive drivers, which of the following interventions do you think would be the most successful? (Please put a tick in the box next to one intervention only)

	<i>Aggressive drivers</i>
Enforcement e.g. cameras / police / traffic officer monitoring paired with a fine.....	<input type="checkbox"/> 1
Giving drivers more information about roadworks whilst they are driving.....	<input type="checkbox"/> 2
Education e.g. through a motorway driving test.....	<input type="checkbox"/> 3
Publicity campaigns.....	<input type="checkbox"/> 4

Q12 For hesitant drivers, which of the following interventions do you think would be the most successful? (Please put a tick in the box next to one intervention only)

Hesitant drivers

- Enforcement e.g. cameras / police / traffic officer monitoring paired with a fine..... 1
- Giving drivers more information about roadworks whilst they are driving..... 2
- Education e.g. through a motorway driving test..... 3
- Publicity campaigns..... 4

Q13 For thrill seekers drivers, which of the following interventions do you think would be the most successful? (Please put a tick in the box next to one intervention only)

Thrill seekers

- Enforcement e.g. cameras / police / traffic officer monitoring paired with a fine..... 1
- Giving drivers more information about roadworks whilst they are driving..... 2
- Education e.g. through a motorway driving test..... 3
- Publicity campaigns..... 4

Q14 For Low hazard monitors, which of the following interventions do you think would be the most successful? (Please put a tick in the box next to one intervention only)

Low hazard monitors

- Enforcement e.g. cameras / police / traffic officer monitoring paired with a fine..... 1
- Giving drivers more information about roadworks whilst they are driving..... 2
- Education e.g. through a motorway driving test..... 3
- Publicity campaigns..... 4

Q15 If you identified other higher risk driver types (Q2), what interventions do you think would be the most effective for them? (Please write in)

Q16 Do you have any other comments about improving driver safety at roadworks (Please write in)

Thank you for your time



Driving Safety at Roadworks Questionnaire

The **Highways Agency** is an Executive Agency of the Department for Transport and is responsible for operating, maintaining and improving the strategic road network in England. This research is being undertaken by MVA, an independent research company, on behalf of the Highways Agency. The questionnaire asks for your views on driving on major roads (motorways and trunk roads), at road works.

Please answer all questions as fully as you can by ticking the correct box or writing your answer in the appropriate space. Please return the completed questionnaire in the pre-paid envelope provided by **Monday 8th May**. Please be assured that the information and opinions that you give will be treated with the strictest confidence. If you have any comments/questions, please call Clare Millet on 0161 234 6927

Please refer to the following definitions when answering the questions:

Road workers: Personnel undertaking repair and maintenance on major roads

Traffic Officers: Highways Agency employees who patrol from highly visible Agency vehicles. Traffic Officers are present and assist motorists at the following scenes: Motor vehicle accidents; Removing damaged and abandoned vehicles; Clearing debris on carriageways; Undertaking high visibility patrols; Providing mobile / temporary road closures; and supporting the Police

Trunk Roads: Major roads (such as A roads) not including motorways

Safe Driving: Driving at an appropriate speed and in a safe manner e.g. wearing a seat belt, driving at an adequate stopping distance from the vehicle in front, not using a mobile phone (unless hands free) etc.

Section 1: Driver attitudes

Q1 Please state the extent to which you agree or disagree with the following statements (Please tick one box in response to each statement)

	<i>Strongly agree</i>	<i>Agree</i>	<i>Neither agree nor disagree</i>	<i>Disagree</i>	<i>Strongly disagree</i>
I dislike driving on motorways and major roads	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Most people on the roads are not good drivers	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
I am not that good a driver	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
I don't like it when I'm stuck in traffic and other drivers seem to be able to avoid it	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
I would describe myself as a hesitant driver	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
It pleases me if I feel I have had a more efficient journey than another road user	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
I alter how I am driving if I see a sign for road works	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Driving gives me a pleasing rush of adrenaline	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
On the motorway, I tend to stick to the left hand or middle lane	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
I get irritated if I'm stuck in traffic and the other lane is moving faster than mine	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
I make a mental note when I see signs indicating hazards such as road works	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
I prefer it if someone else drives	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
I feel a thrill driving in a risky way	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
I feel nervous driving on motorways and major roads	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
I feel nervous driving when there are road works	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

Section 2: Attitudes to roadworkers

Q2 Do you think that roadworkers play a valuable role? (Please tick one box)

<i>Very valuable</i>	<i>Quite valuable</i>	<i>Neither valuable or not valuable</i>	<i>Not very valuable</i>	<i>Not at all valuable</i>
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

Q3 How do you feel when you see roadworkers on major roads (motorways and trunk roads). (Please tick one box)

- Frustrated..... 1 Accepting..... 4 Other (Please specify below)..... 7
 Stressed..... 2 Indifferent..... 5
 Annoyed / angry..... 3 Pleased / happy..... 6
-

Section 3: Roadworker safety

Q4 Are you ever concerned about the safety of roadworkers? (Please tick one box)

- Always Sometimes Rarely Never
 1 2 3 4

Q5 Do you drive more carefully if you see roadworks? (Please tick one box)

- Always Sometimes Rarely Never
 1 2 3 4

Q6 What exactly do you do when you see roadworks? (Please tick all that apply)

- Slow down..... 1 Take extra care..... 5
 Carry on regardless..... 2 Drive steadily..... 6
 Speed up 3 Ensure I stick to the speed limit..... 7
 Move into a lane farther from workers ... 4 Pay greater attention / be more vigilant..... 8

Q7 Do you drive more carefully if you see signs for roadworks? (Please tick one box)

- Always Sometimes Rarely Never
 1 2 3 4

Q8 What exactly do you do when you see signs for roadworks? (Please tick all that apply)

- Slow down..... 1 Take extra care 5
 Carry on regardless..... 2 Drive steadily 6
 Speed up 3 Ensure I stick to the speed limit 7
 Move into a lane farther from where roadworks will be 4 Pay greater attention / be more vigilant 8

Q9 Are you aware of how you should drive to ensure safety at roadworks (Please tick one box)

- Yes No Unsure
 1 2 3

Q10 Have you ever consulted a copy of the Highways Agency's Driving Safely at Roadworks Guidelines? (Please tick one box)

- Yes..... 1 No 2

Q11 Why do you think you are asked to reduce your speed at roadworks (Please write in)

Section 4: Improving safety

Q12 Please indicate your level of agreement with the following statements, about improving safety on major roads (motorways and trunk roads). (Please tick one box per statement)

	<i>Strongly agree</i>	<i>Agree</i>	<i>Neither agree nor disagree</i>	<i>Disagree</i>	<i>Strongly disagree</i>
Giving drivers more information about the roadworks that they are approaching would make them drive more safely.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Variable message signs (computer generated messages displayed on the motorways e.g. warning of delays and fog) would be a good way of delivering information.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Variable speed limits, which reduce speed at roadworks are a good way of improving driver safety.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Displaying the speed of vehicles at roadworks is good way of improving driver safety.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Any information given should be factual and to the point.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Using emotive messaging e.g. "My daddy works here" would help to improve safety at roadworks.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

Q13 Please indicate your level of agreement with the following statements, about improving safety on major roads (motorways and trunk roads) (Please tick one box per statement)

	<i>Strongly agree</i>	<i>Agree</i>	<i>Neither agree nor disagree</i>	<i>Disagree</i>	<i>Strongly disagree</i>
Enforcement of safe driving would be effective.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Speed cameras would ensure motorists drive safely.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Police positioned at relevant points on the road would ensure motorists drive safely.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Traffic Officers positioned at relevant points on the road would ensure motorists drive safely.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Measuring average driving speed throughout the length of the roadworks would ensure motorists drive safely.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

Q14 How likely would the following penalties be to deter you from driving unsafely at roadworks?

	<i>Very Likely</i>	<i>Fairly likely</i>	<i>Fairly unlikely</i>	<i>Very unlikely</i>
Three points on your licence.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Six points on your licence.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Compulsory attendance on a free driver improvement course..	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Compulsory purchase of motorway driving lessons.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Less than £100 fine.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Greater than £100 fine.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
A two week driving ban.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

Q15 Please indicate your level of agreement with the following statements, about improving safety on major roads (motorways and trunk roads) (Please tick one box per statement)

	<i>Strongly agree</i>	<i>Agree</i>	<i>Neither agree nor disagree</i>	<i>Disagree</i>	<i>Strongly disagree</i>
Educating people about the importance of driving safely at roadworks would make them drive more safely.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
A motorway driving test should be compulsory for all new drivers before they drive on the motorway.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Ensuring all drivers re-sit a driving test every five years would improve road safety.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
A large scale publicity campaign would ensure motorists drive safely.....	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

Q16 Which of the following do you think a publicity campaign should include?

(Please tick all that apply)

Television adverts.....	<input type="checkbox"/> 1	Pamphlets.....	<input type="checkbox"/> 3	Celebrity endorsement	<input type="checkbox"/> 5
Feature articles e.g. in newspapers..	<input type="checkbox"/> 2	Radio adverts.....	<input type="checkbox"/> 4	The Internet	<input type="checkbox"/> 6

Q17 How long after the original test do you think a motorway driving test should be?
(Please tick one box)
 0-3 months later 1 3-6 months later 2 More than 6 months later 3 Based on driving instructors discretion 4

Q18 How do you think motorway driving should be assessed? (Please tick one box)
 In a practical test 1 In a theory test 2 In both a practical and a theory test 3

Q19 Which of the following interventions do you think would be the most successful in improving driver safety? (Please tick one box)
 Enforcement e.g. cameras / police / traffic officer & fine 1 Education e.g. a motorway driving test.. 3
 Giving drivers more information whilst they are driving 2 Publicity campaigns 4

Q20 What is your gender? (Please tick one box)
 Male..... 1 Female..... 2

Q21 How would you describe your ethnic origin? (Please tick one box)
 (White) British..... 1 (Asian or Asian British) Indian 5 (Black or Black British) Caribbean..... 9
 (White) Irish..... 2 (Mixed) White and Black Caribbean 6 (Black or Black British) African..... 10
 (Asian or Asian British) 3 (Mixed) White and Black African 7 Chinese..... 11
 (Asian or Asian British) Bangladeshi..... 4 (Mixed) White and Asian 8 Other (Please specify below) 12

Q22 What is your age? (Please tick one box)
 16-24..... 1 35-44..... 3 55-59..... 5 65+..... 7
 25-34..... 2 45-54..... 4 60-64..... 6

Q23 What is your working status? (Please tick one)
 Employed full time (30 hours or more)..... 1 Self-employed (full or part time)..... 3 Retired..... 5
 Employed part time (less than 30 hours)..... 2 Unemployed..... 4 Other (Please specify)..... 6

Q24 Approximately how regularly in the last 12 months have you travelled on motorways in England? (Please tick one box)
 5 or more days a week..... 1 Once a week..... 3 Once a month.... 5 Never..... 7
 2-4 days a week..... 2 Less than once a week but more than once a month..... 4 Less than once a month..... 6

Q25 Approximately how regularly in the last 12 months have you travelled on trunk roads in England? (Please tick one box)
 5 or more days a week..... 1 Once a week..... 3 Once a month.... 5 Never..... 7
 2-4 days a week..... 2 Less than once a week but more than once a month..... 4 Less than once a month..... 6

Q26 Do you have any other comments to make about improving worker safety at roadworks? (Please write in)

Thank you for your time

Appendix B
Roadworkers safety

Scale pilot

We identified five higher risk driver behaviours: aggressive driving; hesitant driving; thrill seeking; low monitoring of hazards and fatigue-prone drivers.

We designed 22 questions to measure these driver types and piloted them with 128 drivers of a range of ages and from a range of geographic areas. The data was reduced using principal components analysis with varimax rotation, eigenvalues over 1 specified. Through a process of adding in and excluding various questionnaire items, a four factor solution was identified. The tables below show the analysis outcome.

Table 5.1 Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.456	29.704	29.704	4.456	29.704	29.704	3.713	24.756	24.756
2	2.184	14.560	44.264	2.184	14.560	44.264	2.196	14.638	39.394
3	1.998	13.321	57.584	1.998	13.321	57.584	2.168	14.451	53.845
4	1.105	7.369	64.954	1.105	7.369	64.954	1.666	11.109	64.954
5	.870	5.801	70.755						
6	.752	5.013	75.768						
7	.658	4.386	80.153						
8	.563	3.754	83.907						
9	.519	3.462	87.369						
10	.428	2.855	90.224						
11	.370	2.466	92.691						
12	.344	2.295	94.985						
13	.315	2.100	97.085						
14	.279	1.857	98.942						
15	.159	1.058	100.000						

Extraction Method: Principal Component Analysis.

Table 2: Component Matrix

	Component			
	1	2	3	4
I feel nervous driving on motorways and major roads	.905	-.027	.128	-.033
I feel nervous driving when there are road works	.873	.036	-.044	.060
I would describe myself as a hesitant driver	.824	.062	.124	-.027
I am not that good a driver	.699	-.269	.121	-.156
I dislike driving on motorways and major roads	.660	-.051	.316	.060
I prefer it if someone else drives	.508	-.022	.463	.082
I don't like it when I'm stuck in traffic and other drivers seem to be able to avoid it	.009	.780	.031	.132
It pleases me if I feel I have had a more efficient journey than another road user e.g. arriving at my destination quicker than a friend	-.106	.765	-.101	.038
I get irritated if I'm stuck in traffic and the other lane is moving faster than mine	-.176	.741	-.310	-.022
Most people on the roads are not good drivers	.137	.562	.214	-.148
Driving gives me a pleasing rush of adrenaline	-.149	.152	-.825	-.080
I feel a thrill driving in a risky way	-.077	.004	-.802	-.100
On the motorway, I tend to stick to the left hand or middle lane	.424	.151	.524	.274
I make a mental note when I see signs indicating hazards such as road works	.023	.074	.048	.885
I alter how I am driving if I see a sign for road works	-.050	-.064	.230	.843

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 5 iterations.

Therefore four factors were identified with an eigenvalue equal to or greater than one:

Factor 1: Hesitant drivers

- Item 1 I feel nervous driving on motorways and major roads
- Item 2 I feel nervous driving when there are road works
- Item 3 I would describe myself as a hesitant driver
- Item 4 I am not that good a driver
- Item 5 I dislike driving on motorways and major roads
- Item 6 I prefer it if someone else drives

Factor 2: Aggressive drivers

- Item 1 I don't like it when I'm stuck in traffic and other drivers seem to be able to avoid it
- Item 2 It pleases me if I feel I have had a more efficient journey than another road user
e.g. arriving at my destination quicker than a friend
- Item 3 I get irritated if I'm stuck in traffic and the other lane is moving faster than mine
- Item 4 Most people on the roads are not good drivers

Factor 3: Thrill seekers

- Item 1 Driving gives me a pleasing rush of adrenaline
- Item 2 I feel a thrill driving in a risky way
- Item 3 On the motorway, I tend to stick to the left hand or middle lane
(negative indicator)

Factor 4: Low hazard monitors

- Item 1 I make a mental note when I see signs indicating hazards such as road works
- Item 2 I alter how I am driving if I see a sign for road works

Although we asked questions related to fatigue proneness, they did not load consistently onto any of the factors and so we excluded them from the driver behaviour type scale.

Reliability

We used Cronbach alpha to investigate the reliability of the factors as scales to see if the items within each scale were consistent with each other/are measuring components of the same construct. A score of 1 is perfect and 0 is completely unreliable. Generally 0.6 is held to be satisfactory, 0.7 is good and 0.8 and above very good.

The table below shows that all have reasonable /good reliability meaning that inclusion in a questionnaire is possible.

Factor	Chronbach alpha
Hesitant drivers	0.85
Aggressive drivers	0.69
Thrill seekers	0.7
Low Hazard monitors	0.71

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