Information Collection Request Supporting Statement: Part B, Appendices
Factors That Influence Effectiveness of Hazard Anticipation and Attention Maintenance Training
OMB Control No. 2127-New

The screening, pre-study, and post-study questionnaires are described in Appendices 1 & 2. Additionally, two survey scales that will be administered during the post-study questionnaire are described in Appendices 3 & 4. More on the individual questions/surveys and the rationale for including them in this study is discussed below in the separate appendices.

Note that all questionnaires provided to participants will include the OMB control number and expiration date, the NHTSA form number, and a statement about the Paperwork Reduction Act (see Supporting Statement, Part A, #18).

1 Appendix 1: Screening Questionnaire (NHTSA Form 2018)

1.1 Rationale for Inclusion

The screening questionnaire is needed to limit potential sample respondents to those who are 18 or 19 years old, do not have an unrestricted or provisional/intermediate license, and who plan to obtain a license in the next 12 months. Moreover, because we are using quota sampling by sex and socioeconomic status (SES), we need information on respondents' sex and zip code of residence at age 17 (which will be used to approximate SES). Finally, because we need to schedule participants for the experiment which is being conducted in-person at the research center, we need to ask about potential participants' availability.

1.2 Questionnaire

1. What year were you born?

2. What month were you born?

3. Do you currently have a driver's license, and, if so, what type?

   □ No
   □ Yes
      □ Learner's Permit
      □ Junior Operator's License[1] or other provisional license
      □ Unrestricted License

4. Excluding your current license, did you ever hold another driver's license and, if so, what type?

   □ No
   □ Yes
      □ Learner's Permit
      □ Junior Operator's License or other provisional license

[1] This is the name for an intermediate/provisional license in Massachusetts, a potential site where the study may be conducted.

□ Unrestricted License

5. Do you plan to get your driver's license (any type) in the next 12 months?

   □ No
   □ Yes

6. In general, what days of the week would you be available to participate in an approximately 4-hour study at the research center [address TBD] during the hours of 6:00 am and 6:00 pm (*check all that apply*)?

   □ Sunday
   □ Monday
   □ Tuesday
   □ Wednesday
   □ Thursday
   □ Friday
   □ Saturday

7. What was the zip code of the place you lived when you were 17? (*If you lived in more than one place, please provide the zip code for the place you lived the longest.*)
   _____

8. What is your sex?

   □ Female
   □ Male

9. Please provide your email address: _____

10. Please provide your phone number: _____

11. Would you prefer to be contacted by phone or email?

    □ Phone
    □ E-mail

2 Appendix 2: Pre-Study and Post-Study Questionnaires

2.1 Pre-Study Questionnaire (NHTSA Form 2020)

2.1.1 Rationale for Inclusion

The information collected in the simulator sickness pre-study and post-study questionnaire is designed to determine whether the participant exhibits any signs of simulator sickness and, possibly, should be excluded from the study. The simulator sickness questionnaire has been validated in both flight[2] and driving simulators.[3] Questions (q) and (r) are also related to a decision on whether to have a participant be evaluated in the driving simulator; these two questions are administered only in the pre-study simulator sickness questionnaire.

2.1.2 Simulator Sickness (Pre-Study)

Please indicate the severity of symptoms that apply to you right now by circling the appropriate word.

Symptom 0	1	2	3
a. General discomfort	None	Slight	Moderate	Severe
b. Fatigue	None	Slight	Moderate	Severe
c. Headache	None	Slight	Moderate	Severe
d. Eyestrain	None	Slight	Moderate	Severe
e. Difficulty focusing	None	Slight	Moderate	Severe
f. Increased salivation	None	Slight	Moderate	Severe
g. Sweating	None	Slight	Moderate	Severe
h. Nausea	None	Slight	Moderate	Severe
i. Difficulty concentrating	None	Slight	Moderate	Severe
j. Fullness of head	None	Slight	Moderate	Severe
k. Blurred vision	None	Slight	Moderate	Severe
l. Dizzy (eyes open)	None	Slight	Moderate	Severe

[2] Kennedy, R.S., Lane, N. E., Berbaum, K. S., & Lilienthal, M. G. (1993). Simulator sickness questionnaire: An enhanced method for quantifying simulator sickness. *International Journal of Aviation Psychology, 3*, 203-220. https://doi.org/10.1207/s15327108ijap0303_3

[3] Stoner, H., Fisher, D., & Mollenhaurer, M. J. (2011). Simulator and scenario factors influencing simulator sickness. In D. Fisher, M. Rizzo, J. Caird, & J. Lee (Eds.), *Handbook of driving simulation for engineering, medicine, and psychology* (pp. 14-1-14-23). CRC. https://doi.org/10.1201/b10836

m. Dizzy (eyes closed)	None	Slight	Moderate	Severe
n. Vertigo*	None	Slight	Moderate	Severe
o. Stomach awareness**	None	Slight	Moderate	Severe
p. Burping	None	Slight	Moderate	Severe

* Vertigo is a loss of orientation with respect to vertical upright.
** Stomach awareness is a feeling of discomfort just short of nausea.

q. Are you in your usual state of health and fitness?	**YES**	**NO**	
r. a. Have you been ill in the past week?	**YES**	**NO**	
b. If yes, are you fully recovered?	**YES**	**NO**	**N/A**

2.2 Post-Study Questionnaire (NHTSA Form 2021)

2.2.1 Rationale for Inclusion

The information collected in the post-study questionnaire is related to demographics (Section 2.2.2) and driving experience (Section 2.2.3). The demographics section includes a version of the Family Affluence Scale,[4] modified so that participants are thinking of their living situation when they were 17. Responses on the Family Affluence Scale will be used as a supplementary measure of SES, in addition to zip code of residence at age 17. Information is also collected on post-simulator sickness scores to determine whether a participant should be advised to remain at the lab or be offered a ride home (Section 2.2.4). Finally, participants are administered two survey scales during the post-study questionnaire that will be used to categorize them as higher or lower on measures of trait sensation seeking and aggressiveness;[5] these scales are described in Appendices 3 & 4.

2.2.2 Demographics

1. What year were you born?
2. What month were you born?
3. What is your sex?

   □ Female
   □ Male
4. What is your race and/or ethnicity?

[4] Corell, M., Chen, Y., Friberg, Y. C., Petzold, M., & Lofstedt, P. (2021). Does the family affluence scale reflect actual parental earned income, level of education and occupational status? A validation study using register data in Sweden. *BMC Public Health, 21,* 1995. https://link.springer.com/article/10.1186/s12889-021-11968-2

[5] Zhang, T., Hajiseyedjavadi, F., Wang, Y., Samuel, S., Qu, X., & Fisher, D. (2018). Training interventions are only effective on careful drivers, not careless drivers. *Transportation Research Part F(58),* 693-707. https://doi.org/10.1016/j.trf.2018.07.004

<u>Select all that apply</u> and enter additional details in the spaces below.

☐ **American Indian or Alaska Native**—*Enter, for example, Navajo Nation, Blackfeet Tribe of the Blackfeet Indian Reservation of Montana, Native Village of Barrow Inupiat Traditional Government, Nome Eskimo Community, Aztec, Maya, etc.*

☐ **Asian—***Provide details below.*

☐ Chinese ☐ Asian Indian ☐ Filipino
☐ Vietnamese ☐ Korean ☐ Japanese
Enter, for example, Pakistani, Hmong, Afghan, etc.

☐ **Black or African American**—*Provide details below.*

☐ African American ☐ Jamaican ☐ Haitian
☐ Nigerian ☐ Ethiopian ☐ Somali
Enter, for example, Trinidadian and Tobagonian, Ghanaian, Congolese, etc.

☐
Hispanic or Latino—*Provide details below.*

☐ Mexican ☐ Puerto Rican ☐ Salvadoran
☐ Cuban ☐ Dominican ☐ Guatemalan
Enter, for example, Colombian, Honduran, Spaniard, etc.

☐ **Middle Eastern or North African**—*Provide details below.*

☐ Lebanese ☐ Iranian ☐ Egyptian
☐ Syrian ☐ Iraqi ☐ Israeli
Enter, for example, Colombian, Honduran, Spaniard, etc.

☐ **Native Hawaiian or Pacific Islander**—*Provide details below.*

☐ Native Hawaiian ☐ Samoan ☐ Chamorro
☐ Tongan ☐ Fijian ☐ Marshallese
Enter, for example, Chuukese, Palauan, Tahitian, etc.

☐ **White**—*Provide details below.*

☐ English ☐ German ☐ Irish
☐ Italian ☐ Polish ☐ Scottish
Enter, for example, French, Swedish, Norwegian, etc.

5. What was the zip code of the place you lived when you were 17? (*If you lived in more than one place, please provide the zip code for the place you lived the longest.*)

   _____

6. When you were 17, did your family own a car, van, or truck?

   □ No
   □ Yes, one
   □ Yes, two or more

7. When you were 17, how many computers did your family own?

   □ None
   □ One
   □ Two
   □ More than two

8. Now please think of the home in which you lived when you were 17. How many bathrooms were in this home? (*If you lived in more than one home, please think of the home in which you lived the longest*.)

   □ None
   □ One
   □ Two
   □ Three or more

9. In this home, did you have your own bedroom for yourself?

   □ No
   □ Yes

10. In this home, was there a dishwasher?

    □ No
    □ Yes

11. During the year you were 17, how many times did you travel away on vacation with your family?

    □ Not at all
    □ Once
    □ Twice
    □ More than twice

2.2.3 Driving experience

12. If you now have or have had a learner's permit, when did you first get it (*month and year*)?

    _____

13. During a typical week, about how many trips did you take each week using your learner's permit?

    _____

14. About how many miles was a typical trip you took using your learner's permit?

    _____

15. What driver training programs have you completed (*please check all that apply*)?

    □ Driver education at public school
    □ Driver education from a professional/private driving school
    □ Accident avoidance program
    □ None
    □ Other _____

2.2.4 Simulator Sickness (Post-Study)

As noted above, the simulator sickness questionnaire (below) will be administered both before and after the study.

Please indicate the severity of symptoms that apply to you right now by circling the appropriate word.

Symptom 0 1 2 3				
a. General discomfort	None	Slight	Moderate	Severe
b. Fatigue	None	Slight	Moderate	Severe
c. Headache	None	Slight	Moderate	Severe
d. Eyestrain	None	Slight	Moderate	Severe
e. Difficulty focusing	None	Slight	Moderate	Severe
f. Increased salivation	None	Slight	Moderate	Severe
g. Sweating	None	Slight	Moderate	Severe
h. Nausea	None	Slight	Moderate	Severe
i. Difficulty concentrating	None	Slight	Moderate	Severe
j. Fullness of head	None	Slight	Moderate	Severe
k. Blurred vision	None	Slight	Moderate	Severe
l. Dizzy (eyes open)	None	Slight	Moderate	Severe
m. Dizzy (eyes closed)	None	Slight	Moderate	Severe
n. Vertigo*	None	Slight	Moderate	Severe
o. Stomach awareness**	None	Slight	Moderate	Severe
p. Burping	None	Slight	Moderate	Severe

* Vertigo is a loss of orientation with respect to vertical upright.
** Stomach awareness is a feeling of discomfort just short of nausea.

3 Appendix 3: Post-Study Arnett Inventory of Sensation Seeking (AISS) Questionnaire (included in NHTSA Form 2021)

3.1 Rationale for Inclusion

The Arnett Inventory of Sensation Seeking questionnaire contains 20 items, and respondents will be asked to indicate how each item applies to them on a 4-point scale (with 1 representing ‘‘Describes me very well” to 4 representing ‘‘Does not describe me at all).[6] This questionnaire has been validated in a number of different studies.[7,8] Questions denoted with (-) are ones for which a negative response indicates higher sensation seeking. The survey scales in Appendices 3 & 4 will be used to either categorize participants into higher and lower levels on each or, if the two are highly correlated, a single dimension of combined sensation seeking/aggressiveness. A prior study found that drivers ages 18 to 24 with lower scores on these same measures of sensation seeking and aggressiveness (in addition to two other measures) were more likely to anticipate hazards and maintain attention after training than drivers in a control group, whereas drivers with higher levels of sensation seeking and aggressiveness were no more likely to anticipate hazards or maintain attention after training than drivers in a control group.[5]

3.2 Questionnaire

For each item, indicate which response best applies to you:

A) describes me very well
B) describes me somewhat
C) does not describe me very well
D) does not describe me at all

1. I can see how it would be interesting to marry someone from a foreign country.

2. When the water is very cold, I prefer not to swim even if it is a hot day. (-)

3. If I have to wait in a long line, I'm usually patient about it. (-)

4. When I listen to music, I like it to be loud.

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[6] Arnett, J. (n.d.) *Arnett Inventory Sensation Seeking (AISS)*. https://sjdm.org/dmidi/Arnett_Inventory_of_Sensation_Seeking.html

[7] Roth, M. & Herzberg, P. (2004). A validation and psychometric examination of the Arnett Inventory of Sensation Seeking (AISS) in German adolescents. *European Journal of Psychological Assessment (20)*, 205-214. https://doi.org/10.1027/1015-5759.20.3.205

[8] Arnett, J. (1994). Sensation seeking: A new conceptualization and a new scale. *Personality and Individual Differences (16)*, 289-296. https://doi.org/10.1016/0191-8869(94)90165-1

5. When taking a trip, I think it is best to make as few plans as possible and just take it as it comes.

6. I stay away from movies that are said to be frightening or highly suspenseful. (-)

7. I think it's fun and exciting to perform or speak before a group.

8. If I were to go to an amusement park, I would prefer to ride the rollercoaster or other fast rides.

9. I would like to travel to places that are strange and far away.

10. I would never like to gamble with money, even if I could afford it. (-)

11. I would have enjoyed being one of the first explorers of an unknown land.

12. I like a movie where there are a lot of explosions and car chases.

13. I don't like extremely hot and spicy foods. (-)

14. In general, I work better when I'm under pressure.

15. I often like to have the radio or TV on while I'm doing something else, such as reading or cleaning up.

16. It would be interesting to see a car accident happen.

17. I think it's best to order something familiar when eating in a restaurant. (-)

18. I like the feeling of standing next to the edge on a high place and looking down.

19. If it were possible to visit another planet or the moon for free, I would be among the first in line to sign up.

20. I can see how it must be exciting to be in a battle during a war.

Scoring: Combine responses to items, with A = 4, B = 3, C = 2, D = 1, so that higher score = higher sensation seeking. For items followed by (-), scoring should be reversed.

4 Appendix 4. Post-Study Buss Perry Aggression Questionnaire (BPAQ) (included in NHTSA Form 2021)

4.1 Rationale for Inclusion

The Buss-Perry Aggression Questionnaire is used as a measure of the aggressiveness personality trait. It consists of 29 questions and asks respondents to rate, using a 5-point scale, how each statement describes themselves.[9] The questionnaire has been validated.[10] The survey scales in Appendices 3 & 4 will be used to either categorize participants into higher and lower levels on each or, if the two are highly correlated, a single dimension of combined sensation seeking/aggressiveness. A prior study found that drivers ages 18 to 24 with lower scores on these same measures of sensation seeking and aggressiveness (in addition to two other measures) were more likely to anticipate hazards and maintain attention after training than drivers in a control group, whereas drivers with higher levels of sensation seeking and aggressiveness were no more likely to anticipate hazards or maintain attention after training than drivers in a control group.[5]

4.2 Questionnaire

Using this 5-point scale, indicate how uncharacteristic or characteristic each of the following statements is in describing you.

	Extremely Uncharacteristic	Somewhat Uncharacteristic	Neither Uncharacteristic nor Characteristic	Somewhat Characteristic	Extremely Characteristic
1. Some of my friends think I am a hothead.	○	○	○	○	○
2. If I have to resort to violence to protect my rights, I will.	○	○	○	○	○
3. When people are especially nice to me, I wonder what they want.	○	○	○	○	○
4. I tell my friends openly when I disagree with them.	○	○	○	○	○
5. I have become so mad that I have broken things.	○	○	○	○	○
6. I can’t help getting into arguments when people					

[9] Buss, A. & Perry, M. (n.d.) *Buss Perry Aggression Questionnaire (BPAQ)*. https://psychology-tools.com/test/buss-perry-aggression-questionnaire

[10] Buss, A. & Perry, M. (1992). The aggression questionnaire. *Journal of Personality and Social Psychology (63)*3, 452-459. https://doi.org/10.1037/0022-3514.63.3.452

disagree with me.	○	○	○	○	○
7. I wonder why sometimes I feel so bitter about things.	○	○	○	○	○
8. Once in a while, I can't control the urge to strike another person.	○	○	○	○	○
9. I am an even-tempered person.	○	○	○	○	○
10. I am suspicious of overly friendly strangers.	○	○	○	○	○
11. I have threatened people I know.	○	○	○	○	○
12. I flare up quickly but get over it quickly.	○	○	○	○	○
13. Given enough provocation, I may hit another person.	○	○	○	○	○
14. When people annoy me, I may tell them what I think of them.	○	○	○	○	○
15. I am sometimes eaten up with jealousy.	○	○	○	○	○
16. I can think of no good reason for ever hitting a person.	○	○	○	○	○
17. At times I feel I have gotten a raw deal out of life.	○	○	○	○	○
18. I have trouble controlling my temper.	○	○	○	○	○
19. When frustrated, I let my irritation show.	○	○	○	○	○