

# Driver Behavior While Following Cars, Trucks, and Buses

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## 1 ISSUES

1. What is the mean and standard deviation of the following distance as a function of lead vehicle type and lead vehicle speed variability?
2. Do drivers of all ages follow vehicles in the same manner?
3. Do the experimental data agree with the literature?
4. What are important considerations in following studies in simulators?

## 2 METHOD (simulator)

"Follow the vehicles as you normally would in real driving and read all signs."



Winding road driven at 45 mi/hr

### Subjects

	Young	Old
Women	4	4
Men	4	4

### Test conditions

Vehicles	Lead vehicle speed variance	
	low	high
Car	✓	✓
Pickup truck	✓	✓
School bus	✓	
Tractor trailer	✓	



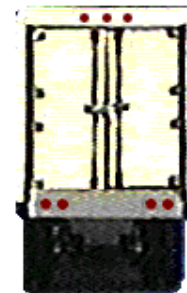
Car



Pickup truck



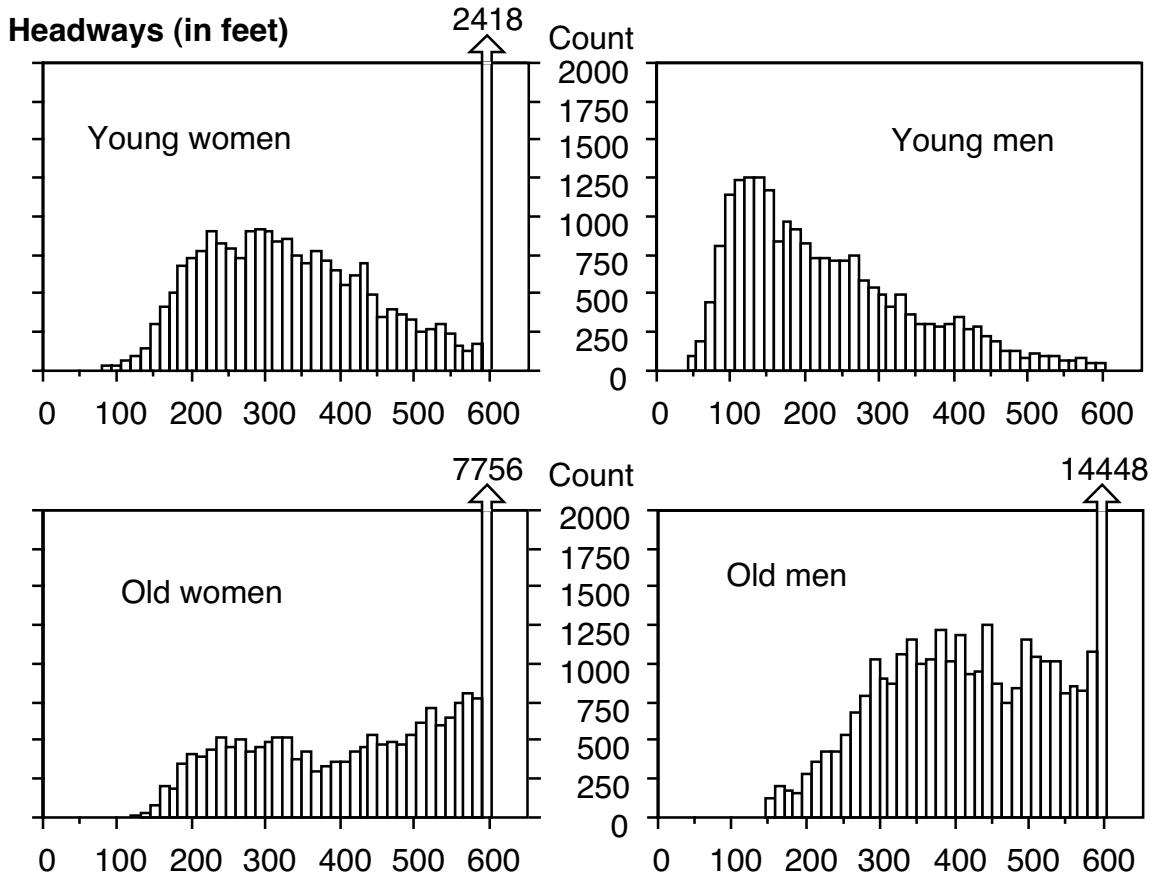
Bus



Tractor trailer

## 3 RESULTS

Maximum sight distance was 600 ft. If the headway > 600 ft, 600 ft was assumed. Data analyzed were means for each subject, block, run combination using ANOVA.



	Age	Sex	Age*Sex	Subject	Vehicle
Mean headway	* young = 286 old = 473	*	*	* range: 134 - 490	* car=359, pickup =392 bus = 385, trailer = 392
Std. dev of headway	* young = 71 old = 61	*	*	* range: 18 - 93	* - significant effect Values of selected effects are shown in units of feet
Lateral position	* young = 5.9 old = 6.2		*	* range: 5.2-6.9	
Std. dev of lateral position		*	*	* range: 0.4-12.0	

## 4 CONCLUSIONS

1. Small effect of vehicle type (following distance for cars was 10% less).
2. Speed variance had no effect on following distance.
3. Headway distances for old drivers were double young drivers. Age interacted with sex.
4. Headways measured were much larger than those in the literature.
5. Simulator limitations (no vehicle following subject, 600 ft max sight distance, image jitter when following closely) may have inflated sight distances.