

Driver behavior on campus: A Robert Morris University case study¹

Jade Hart

Robert Morris University

Studies show that students are less likely to make complete stops on college campuses than non-students. Areas with fewer police or less traffic are more likely to show the “rolling stop” phenomenon. The current study focuses on two intersections at Robert Morris University. A 3-way intersection and a 4-way intersection were observed. Student, faculty, and others’ stop-sign compliance were compared. The findings indicated that students were more likely to make rolling stops or to not stop at all; and faculty members were more likely to come to complete stops. There was no significant difference in compliance when comparing the 3-way intersection with the 4-way intersection.

Introduction

People do not always come to complete stops at stop signs; unless, of course, there is a lot of traffic or pedestrians trying to cross. Some might assume that older, more mature adults adhere to traffic laws better than young adults because they have more experience. Many drivers use their cell phones while driving. This is an obvious risk everywhere. So far, seven states have banned cell phone use while driving (Governor’s Highway Safety Association, nd). Then there are passengers who can interfere with drivers’ attention. College students frequently carpool or drive places together. The passengers can distract the drivers very easily. Although traffic accidents seem rare on college campuses, it is important that students understand the driving risks and follow the laws to continue preventing accidents.

Failing to stop at a stop sign can result in a cop seeing you and you could be cited and have to pay a fine, and the more obvious, end up causing an accident. People aged 15-24 have the highest risk of death as a result of traffic accidents (Stacey, 2006). This issue is important on the Robert Morris University Campus, since most of the students are between the ages of 18 and 24. The cost of traffic accidents involving young people aged 15-20 cost an estimated \$40.8 billion, in one year (Stacey, 2006). That cost includes repairs, rehabilitation, and property damage. Young men are at a higher risk (Stacey, 2006). They crash approximately

three times more often than young women (Stacey, 2006).

Hendrick (2000) conducted a study in which he observed two intersections. He classified the stop signs as either appropriate or inappropriate. Inappropriate stop signs were those where there was low risk for being seen by the police and less traffic. In other words, the conditions facilitated drivers perceptions that the location was one that was inappropriate to make a complete stop. Appropriate stops reflected conditions that tended to support drivers perceptions that stopping was necessary.

Hendrick (2000) observed traffic about once per week for 15 minutes each session and recorded the drivers’ compliance to stop over a four month period. He made sure not to let the drivers see him to avoid affecting their behavior. He only observed on sunny days at random times of the day. Out of 93 drivers observed, 76 of them stopped at the appropriate stop sign and only 34 stopped at the inappropriate one. It is not surprising that 17 did not stop at an appropriate sign, and 59 did not stop at the inappropriate sign based on the risks of not stopping. Hendrick concluded that the more confident a driver feels about the situation, the less likely he or she is to come to a full stop. This means that they were confident about not causing an accident, or that they were taking into consideration the risk of getting caught by the police, which was relatively low.

¹ Address correspondence to: Stephen T. Paul, Ph.D., 6001 University Blvd., Moon Township, PA 15108-1189, or via email at: paul@rmu.edu.

HART

DeVeause, Kim, Peek-Asa, McArthur and Kraus (1999) studied driver compliance at the University of California Los Angeles. The focus of this study was on compliance with stop signs at pedestrian crosswalks on the campus. The UCLA campus sees approximately 50,000 students, staff and visitors each day. This is of course a much larger amount compared to the RMU Moon Township campus. There are miles of roads on UCLA's campus and much more traffic than at the Robert Morris University campus on a given day. DeVeause, et al. decided to observe compliance at three different intersections. All had crosswalks with appropriate warning signs. One site had zebra striping on the walkway, and the other two had conventional striping. DeVeause et al. took several different variables into consideration. These included vehicle type, time of day, whether the car stopped or not, how many pedestrians were in the crosswalk, and whether or not the driver let the pedestrian(s) cross.

They found that 22.8% of all vehicles came to a complete stop. Almost a quarter made a rolling stop (because there were pedestrians crossing) and 2% stopped within the crosswalk itself. More than half did not stop at all. University owned vehicles had the highest compliance rate with the stop signs. People on bicycles were most likely to go through the stop sign without slowing down. Vehicles were more likely to stop when pedestrians were present. DeVeause et al. also concluded that pedestrians wearing brighter colors were more likely to be seen by other drivers, and those drivers were more likely to stop for them to cross.

There are many intersections at RMU and pedestrians are walking everywhere on campus. Pedestrians have little protection from vehicles. Vehicles do not always stop and wait for all the pedestrian(s) to cross. This may be because students driving onto campus are in a hurry and just impatient. However, they need to remember that so are the pedestrians. Dr. Gregory Hall of Bentley College agrees that college students are often under stress based on their busy schedules. Stress can often lead to the feeling of having to rush. Students who are under stress may not take the time to fully stop at stop signs because they feel they must get right to class. Based on prior research (e.g., DeVeause, et al., 1999; Hendrick,

2000), it is predicted that faculty will comply with stop signs more frequently than students.

Method

Participants

Observations were made of 181 Robert Morris University students, faculty and staff as well as bus drivers and delivery drivers and unmarked vehicles on the Moon Township campus. Stop sign compliance was recorded for every driver that passed through the intersection during the observation sessions.

Design

Driver compliance was observed and recorded as complete stop, stop, rolling stop, or no stop. A complete stop was considered the same as law enforcement descriptions. A stop was pausing for a few seconds but not coming to a full stop (i.e., nearly a complete stop but releasing the brake just before the vehicle stopped). A rolling stop was slowing down while the car was still in clear motion the entire time. No stop meant the driver did not slow down at all through the intersection. Type of driver was recorded by looking for parking tags or vehicle information.

Procedure

Drivers were observed at two intersections on campus. One intersection was the 3-way intersection in front of Sewall Center. Campus Drive intersects an entrance to the registered free parking lot and this intersection is the most frequently used entrance to the campus. The other site was a 4-way intersection on the other side of campus. This intersection crosses the rear gate to Centerdale Road and Pennsylvania Avenue and the entrance to a general parking lot (see the campus parking map in the Appendix). Locations were observed and driver compliance was recorded two times at each site for 15 minutes each session. The recording was done discretely to avoid affecting the behaviors of the drivers.

Results

Students were least likely to make a complete stop at either intersection. At the 3-way, busier intersection, only 11% of students made a complete stop and at the 4-way intersection only 9% made a complete stop. Most students (41%) made a rolling stop at the 3-way intersection and

Driver behavior

most (41%) made no stop at the 4-way intersection. Faculty members had a much higher compliance rate. Most of the faculty members (33%) made a stop at the 3-way intersection and 60% made a complete stop at the 4-way intersection. When comparing the 3-way intersection with the 4-way intersection, there seemed to be no significant difference in stop sign compliance rates (see Table 1). Fifty percent of drivers categorized as other made a rolling stop at both locations. Unmarked vehicles had the highest percentage of no stops.

Table 1. Percentages across all conditions.

Driver	3-Way Intersection			
	Complete Stop	Stop	Rolling Stop	No Stop
Student	11%	16%	41%	32%
Faculty	27%	33%	27%	13%
Unmarked	10%	20%	30%	40%
Other	17%	33%	50%	0%

Driver	4-Way Intersection			
	Complete Stop	Stop	Rolling Stop	No Stop
Student	9%	16%	34%	41%
Faculty	60%	20%	20%	0%
Unmarked	13%	25%	25%	38%
Other	0%	0%	50%	50%

Discussion

Prior research suggested that type of driver and presence of pedestrians will affect stop sign behavior. As Hendrick (2000) found, people stopped less often at stop signs described as

inappropriate. The stop signs on campus could be categorized as such. There are no police near the stop signs observed nor are there many driving interruptions. Cars coming from other roads in the intersection are often the only cause of a driver making a complete stop. When drivers need to take turns, one will almost always have to make a complete stop. Based on this present study, faculty members are more compliant with stop signs and students are less compliant. The reasons for such may be that students are under more stress and have poor time management skills compared to faculty. If students cannot manage their time as well, they may be running late for class often and when drivers are in a hurry they are not going to make a complete stop unless they feel it is absolutely necessary.

References

- DeVeauuse, N., Kim, K., Peek-Asa, C., McArthur, D., & Kraus, J. (1999). Driver compliance with stop signs at pedestrian crosswalks on a university campus. *Journal of American College Health, 47*, 269-275.
- Governor's Highway Safety Association. State Cell Phone Laws. Retrieved March 2, 2009, from http://www.ghsa.org/html/sateinfo/laws/cellphone_laws.html
- Hedrick, H. W. (2000). Compliance with stop signs under perceived appropriateness versus inappropriateness of signs. *Human Factors and Ergonomics Society, 4*, 104-107.
- Stacey, C. (2006, October). The road to young safety. *The OECD Observer, 257*, 19-22.