

8-31-2016

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Recommended Citation

Yin, Jennifer, "Aggression and Driving: Separating Ourselves From the Games" (2016). *Advanced Writing: Pop Culture Intersections*. Paper 15.
http://scholarcommons.scu.edu/engl_176/15

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English 106

Professor Hendricks

August 31, 2016

Aggression and Driving: Separating Ourselves From the Games

Introduction:

In 2015 on a busy street in Los Angeles, California, two cars were driving next to each other. One decided to cut in front of the other, angering the first driver, who decided not to let the second into his lane. The frustrated second driver eventually managed to get into the other lane, when both decided to get out of their vehicles. The drivers ended up getting into a fist fight in the middle of the road, and one driver was almost struck by the passing vehicles. Unfortunately, both returned to their vehicles and were not caught by the police¹. Incidents of road rage like this one have become more frequent in recent years. As a consequence of greater population in the US, there have also been more drivers on the road, contributing to the frustration that often precedes road rage.

There is no formal definition for road rage since it is a term recently produced by the media. Each media source defines it in different manners, particularly to illustrate their point about how poor driving has become widespread. However, it is commonly recognized as aggressive driving in response to another's actions while on the road. Fortunately, the California Vehicle Code has a section stating that "the suspension period... for an assault commonly known as 'road rage,' shall be six months for a first offence." In addition, it suggests that those drivers

¹ Woodyard, Chris. "Violent Road Rage Attack Caught on Tape." USA Today.

suffering from road rage complete an anger management course before returning to the road in the hopes that this will deter people from repeating their behavior².

The effects of road rage do not end when the driver's destination is reached. These consequences continue in the form of injuries, stress and other long term health issues. In addition, stress and anxiety resulting from being in a commute results in poor working habits. Stressed workers end up performing worse in the workplace than they could, reducing their efficiency and the amount of work accomplished. So, suffering from road rage impacts people not just on the road but all over the world due to the globalization of companies and the economy. In addition, the long term implications of longer dangerous commutes show that it cannot be ignored if we wish to lead long healthy lives. Since these results are often not immediate, it is difficult to see the connection and try to fix it, and as such, little has been done to actively curb road rage.

Video gaming has become very popular especially with the creation of gaming systems like smart phones, gaming consoles and computers. With new games and old franchises frequently producing new and improved games, players have ample opportunity to try many games. What is concerning is that some of these games actively encourage poor driving habits. It is also well known that the target audiences of these games are teenagers and young men. This age category is also the most likely to have collisions and traffic incidents. As driving is a small part of our incredibly complex lives and interactions, it is difficult to pinpoint exactly what causes road rage, but driving games are a possible contributor to the intensity of today's road rage. This paper will argue that driving video games are at least partially responsible for road

² 2016 California Vehicle Code Unabridged Criminal Justice Edition.

rage by influencing a player's mentality through the actions performed and learned through playing frequently.

Background:

Some driving games are more cartoon-like, like the *Mario Kart* series. *Mario Kart* is geared towards children and offers them cartoon violence. Young gamers race each other or non-playing characters (NPCs) around a course and are able to use weapons against each other in order to win the game. Hitting their opponents can disable or distract their competition and often allows them to race ahead. It is often a first exposure to violent driving games, and is considered acceptable to parents and the public. Others provide enclosed race courses for players to drive on, like *Asphalt*. *Asphalt* mimics a street race by placing gamers on a set course through a city. This style of game is geared towards older gamers, who race against other vehicles and gain points by colliding with stoplights, barricades and traffic cones through the city, with more wreckage leading to a higher score. While the primary goal is to finish first, drivers are encouraged to collide with others while driving in order to eliminate competition as well as earn points. In addition, drivers are encouraged to speed as fast as they can control their vehicle in order to finish the course. And finally, others provide traffic and violence against non playing characters, like in the *Grand Theft Auto* series. Gamers are sent on missions through the city to commit crimes for money and reputation while evading the police and rivals. Gamers are allowed to run over pedestrians and swerve through traffic in order to reach their goals. While the concepts behind each of these are different, they all encourage competition, whether against goals, friends or the game. Linked with competition is often aggression and violence. Unfortunately aggression and attention-seeking personalities are common in young adults, and is a reoccurring theme through this paper.

Interestingly, not a lot of research has been completed on the relationship between road rage and playing driving games. Driving games mimic life since they provide a lifelike course and goals, and offer the same style of actions. This is significant since the action and the consequence seem to be very easily connected as similar skills are used in both activities, such as the need to follow the road, and often times meet time limits. In addition, since there are very serious consequences, it is surprising that very little research has been completed linking video games to road rage.

As stated in *Road Rage and Aggressive Driving: Steering Clear of Highway Warfare*, a book by Leon James and Diane Nahl, part of the reason that road rage has become more widespread is that society encourages people to let aggression out. People believe bottling up anger and frustration is unhealthy and leads to future explosions of rage³. It is a commonly held belief that withholding rage causes heart disease and other stress related illnesses, while releasing the tension through shouting at another driver or using impolite gestures is cathartic. Interestingly enough, it has been shown through many unrelated research studies that this catharsis is short-lived and leads to reductions in control of aggression⁴. So, while an angry driver feels justified at screaming at another, it makes him more likely to repeat this incident, or escalate to a physical argument on the street. This contributes to a self-perpetuating cycle of road rage. As a result, there are often dangerous consequences to their actions if the other driver takes offence, or if the angry one loses control of their car.

³ James, Leon, and Diane Nahl. *Road Rage and Aggressive Driving: Steering Clear of Highway Warfare*.

⁴ Fischer, Peter, Tobias Greitemeyer, Andreas Kastenmüller, Claudia Vogrincic, and Anne Sauer. "The Effects of Risk-glorifying Media Exposure on Risk-positive Cognitions, Emotions, and Behaviors: A Meta-analytic Review."

Instead of succumbing to anger and taking it out on other drivers, an unhappy driver should rationalize that they should not take offence and let the issue go. They should be able to understand that the situation is out of their control and to be more peaceful⁵. Unfortunately, many drivers, especially those with aggressive personalities, decide not to and escalate the problem, leading to road rage. Clearly we must encourage drivers to change their mentality so that they become more tolerant and more likely to control themselves rather than release their frustration on the world. This is very important since it suggests that road rage is an acquired mentality and therefore, with hard work, can be modified. As releasing aggression rather than controlling it is a commonly accepted idea, it is also a part of our culture that needs to be adjusted.

Part of the problem with traffic is that it is out of our control. People are in a hurry to get to work on time, or return home after a long day, and they are prevented by a multitude of other cars with different driving styles. The differences in driving styles are very frustrating to drivers as they believe they would have done differently in the same situation and rage at what they believe is a poor driver. They also feel trapped and frustrated since they are no longer in control of the situation and blame it on others. The feeling of being confined to a small area and being prevented from doing what they want leads to anger⁴. This is similar to what happens on airplanes, where recently many people have ended up in fistfights over the small enclosed plane over their rights to their seats. As people in airplanes have no control over what their neighbors will do and are confined to their seats for hours, they lash out at others.

⁵"Sharing The Road." California Driver Handbook.

⁴ James, Leon, and Diane Nahl. *Road Rage and Aggressive Driving: Steering Clear of Highway Warfare*.

Video games work by encouraging the audience to be competitive. They have set goals and rewards for completing them. Some of these games encourage violent behavior, by giving points and providing blood and destruction when damage occurs. While these games tend to be geared towards older audiences and have a mature rating as a warning to parents and their younger children, often times minors will play these games, either with or without their parents' approval. As a result many of these players do not have the emotional maturity to separate themselves from the game world. They do not understand that actions have consequences, which can contribute to dangerous actions on the road. While this does not account for all the incidents of road rage, it helps explain the relationship between video games and lack of proper forethought.

Another possible reason is that these driving games teach users to perform risky maneuvers. They are rewarded for actions that an average driver would be hesitant to perform from fear of breaking the law. As clearly shown by *Grand Theft Auto* series, reckless driving and illegal behavior is perfectly acceptable. As stated in "A Longitudinal Study of Risk-glorifying Video Games and Reckless Driving," young audiences are easily influenced by the rebellion found in these games⁶. This rebellion against laws and regulations could encourage a shift in thought processes, making it more likely for people to ignore the authorities. This would mean more people speed or break the rules of the road similar to how they behaved in the video game. Since there are no repercussions to rebellion in these racing games, if emotionally immature players cannot understand the difference between life and games, they could end up replicating these actions on the road, causing danger to law-abiding citizens and themselves.

⁶ Hull, Jay G., Ana M. Draghici, and James D. Sargent. "A Longitudinal Study of Risk-glorifying Video Games and Reckless Driving." *Psychology of Popular Media Culture* 244-53.

Rebelling is also linked to attention seeking behavior. Rebelling against the authorities is common and somewhat accepted behavior for teenagers and young adults. This is in part because they are attempting to impress their peers, the other gender and other observers. While this is helpful in a video game setting, it is hazardous on the road. For example, they could run a red light while to impress their passengers or to prove their driving ability and courage to other drivers. They believe that being cautious is an indication of fear and weakness, and attempt to avoid this using any method they can. However the consequences usually include injuries and costly repairs.

Mentality:

The invincibility complex is the idea that many teenagers and young adults have, especially men. They believe that they will not be injured and therefore engage in hazardous actions. Unfortunately this belief is clearly erroneous, leading to injuries to them and to others on the road. This is prevalent and is a clear sign of inexperience, overconfidence and immaturity. Since we cannot ban them from the road, all we can do is try to teach them otherwise through campaigns and public service announcements.

As video games never truly punish a gamer for poor driving, this might also be contributing to the invincibility complex. When a gamer completes a dangerous stunt and ends up colliding or rolling off an embankment, a game will often send the player back to the checkpoint. This serves as mild punishment and only reinforces the idea that a gamer is invincible while on a virtual road. As some young drivers are still emotionally immature they might extend this to a physical road. Certainly colliding or hit-and-run collisions carry far more weight on the road.

A psychological principle similar to this is the weapons effect. As shown in the famous paper "Weapons As Aggression-Eliciting Stimuli" by Leonard Berkowitz and Anthony LePage, young men acted more aggressively towards others when shown a traditional weapon. In the laboratory setting, they were far more likely to cause harm to others when angered and in the presence of a weapon⁷. Clearly it cannot be tested for ethical and moral reasons, but many later studies have shown that it occurs.

At first glance a car does not seem like a weapon. However its thousands of pounds of metal, plastic and glass can be used to harm others and damage property. The law occasionally describes a vehicle as being a dangerous weapon in this case. For example, assault with a deadly weapon and vehicular manslaughter can apply to drivers that injure others with their cars. As every driver is in a dangerous weapon and is looking at hundreds of other deadly weapons it is possible that this can contribute to aggression towards other drivers.

If we can extend this theory to vehicles, this can explain what is happening everyday on the road. People are frustrated with others' driving styles and other factors beyond their control, and then are confronted with the fact that they are in control of and are surrounded by deadly vehicles. This causes them to lash out and results in road rage and aggression. This is compounded by people playing video games. In many driving games gamers are encouraged to collide with others and destroy their vehicle. Many people who cause harm to others because of road rage report that they felt blind fury⁶. If this is the case, and their rage was irrational, they might have automatically acted out the fantasies created by the games they play on their own

⁷ Berkowitz, Leonard, and Anthony LePage. "Weapons As Aggression-Eliciting Stimuli."

⁶ Hull, Jay G., Ana M. Draghici, and James D. Sargent. "A Longitudinal Study of Risk-glorifying Video Games and Reckless Driving."

time. This shows that video games unintentionally teach people to accept that destruction of others is acceptable and encouraged.

Clearly road rage is a mentality with contributions from our means of entertainment and societal cues. As shown by various studies, violent games of all kinds have correlations with aggression levels in young adults, especially young men. However, violent games have less of an impact on aggression than violent driving games⁸. This is interesting and contrary to popular opinion since it suggests that some games have more of an impact on mentality than others. It also poses the question as to why driving games have a greater impact. It could be that since we drive frequently and are unlikely to be fighting zombies or aliens, the scene and actions are more familiar. When confronting a crowded road filled with poor drivers the stress and frustration is similar to the adrenaline felt while playing games. As a result, the driver reacts in the same way he or she normally would have if it had been in the virtual world, leading to road rage. Otherwise both types of violent games encourage bloodshed and aggression, but only the driving games have a significant effect on aggression.

In order to help reduce road rage it is clear that more rules or regulations must be created to help out the audience. While it is not clear what the impact of driving games is on older adults, there seems to be a correlation between teenagers playing driving games and aggressive driving behavior. So, enforcing the mature rating on these games would be helpful in limiting exposure to these games. Currently, the mature rating attempts to limit users under the age of 17. However, it is clear through the number of subjects in the many studies conducted on violent

⁸ Beullens, Kathleen, Keith Roe, and Jan Van Den Bulck. "Video Games and Adolescents' Intentions to Take Risks in Traffic."

video games that younger children often play these games⁶. This could be because parents do not understand the impact the games could have on a developing mind⁹. As a result the age for mature ratings should be increased and more public service announcements sent to parents warning them of the possible dangers. In addition, while unlikely, game developers should be encouraged to create less violent games, whether driving or otherwise. It is clear that somethings must be done to help create a better road system. It is difficult to do so since aggression is a learned behavior that many people are unwilling to acknowledge. These violent games are also highly popular and creators and consumers will be unlikely to use less violent ones.

Limitations:

While this is interesting, it does not necessarily cover all reasons for connecting road rage and driving games. Considering how easily we can see connections to actual driving, it is surprising that not as much research has been done on this topic. As such, there is far more to know but not much research has been completed, and some of it is not as recent. This is unfortunate since it is clear that society has great influence on this issue. As issues in society change frequently, a clearer understanding of the correlation between driving and video games would be helpful. In addition, much of the research has been completed on subjective rather than objective data. For example, many of these are voluntary surveys done on young adults on how they feel. While this can give some idea on aggression levels, it would be far more helpful if they had compared driving records with aggression levels and video game usage since a survey

⁶ Hull, Jay G., Ana M. Draghici, and James D. Sargent. "A Longitudinal Study of Risk-glorifying Video Games and Reckless Driving."

⁹ Fischer, Peter, Jörg Kubitzki, Stephanie Guter, and Dieter Frey. "Virtual Driving and Risk Taking: Do Racing Games Increase Risk-taking Cognitions, Affect, and Behaviors?"

participant may not be the most honest. They may exaggerate or downplay aspects of their personality out of egotism or embarrassment. This would have an impact on how the results actually exist.

Finally, not all players become aggressive due to playing racing games. While it is true that some do, it would be very helpful for lawmakers and designers to understand what exactly makes some people more likely to drive poorly in response to these games. Interestingly, males are more likely to drive recklessly while females more cautiously after they witness a collision⁶. As a result, it is clear that showing short clips of dangerous driving activity to young women could help prevent road rage. Young women drive slightly more carefully after being shown clips of aggressive driving, which implies that driving game usage would not be as bad for young women as young men. In contrast young men mimic what they see and tend to lead to more aggressive behavior. More research needs to be done in order to find an effective solution for both young men and women.

Solutions:

One clear solution would be to raise the driving age and raise the age recommended to play mature rated games. Young men are typically the ones playing driving video games and are also the ones involved in collisions and other incidents on the road. As such, increasing the age limit of both will reduce their exposure to dangerous cause and therefore reduce the amount of aggression on the road. It will hopefully also allow gamers to play these games once they are fully mature and will be able to separate life from art. Unfortunately, this would be unlikely to go

⁶ Hull, Jay G., Ana M. Draghici, and James D. Sargent. "A Longitudinal Study of Risk-glorifying Video Games and Reckless Driving."

through since many young people view driving as a right rather than a privilege. As some people mature more quickly than others, it would be difficult to determine when to create this new age limit.

Other changes that need to occur are changes to the drivers' education system. The California driver's education handbook suggests to readers that they catalogue their style of driving and consciously choose to be a defensive driver instead of engaging in road rage behaviors⁴. Of course this is simple to write, but difficult for new drivers to actually put into action. In addition it is difficult to enforce, as it cannot be tested for regularly. In addition, the driver's handbook does not mention the dangers of driving games. Even if research has not yet proven that driving games cause road rage, prevention is important for protection. This could show young drivers that even seemingly unrelated parts of their lives can have great impact on them and other drivers.

Another expedient solution would be to ban driving games altogether. This would help prove causation if driving aggression rates decrease after this, since most studies can only show correlation, not causation. Unfortunately this solution will also probably not occur, since gaming companies would rightfully be outraged at the loss of revenue. In addition, many of the people would probably not be willing to give up their mentality. The short term excitement coming from being aggressive to others is addicting, so that they would enjoy their dangerous driving. Young people often have an invincibility complex, where they believe that they cannot be hurt. This is a clear example of the disconnect between the older, more experienced population and their

⁴ Ciceri, Maria Rita, and Daniele Ruscio. "Does Driving Experience in Video Games Count? Hazard Anticipation and Visual Exploration of Male Gamers as Function of Driving Experience."

children who's minds have not fully developed and are unwilling to listen. Changing these mentalities would be very difficult, since it is deeply engrained in society, and such mentalities are acceptable, even encouraged for young people to help discover themselves. Society has created its own problems which now need to be fixed immediately.

Analysis:

It is clear through the many studies conducted over the last few years that there is a connection between driving games and aggression, and between aggression and road rage. As driving is an integral part of American lifestyle, as well as leisure through video gaming, this is very important for our future wellbeing. As more people are on the roads and have a longer commute from the suburbs to the cities, there are more instances of collisions and aggression since people are more tightly packed on the road.

It is possible that some people believe that learning how to drive in a video game is similar to learning how to drive a real car due to the hand-eye coordination and the foresight required in both^{5,10}. However, it seems clear through all the sources that this is far more detrimental than they think. As there are no permanent consequences to a collision in a game, racing around corners in a game setting is far less harmful than doing the same on the road. In addition, due to the unpredictability of others' driving styles and distractions from the environment, driving is far more dangerous and contributing to road rage than video game

⁵ "Sharing The Road." California Driver Handbook.

¹⁰ Ciceri, Maria Rita, and Daniele Ruscio. "Does Driving Experience in Video Games Count? Hazard Anticipation and Visual Exploration of Male Gamers as Function of Driving Experience."

driving would show. As such, people trying to improve their skills through using games are doing far more harm to their abilities and developing techniques than those who just

While driving games attempt to mimic real life, they are far from the truth. They glorify poor driving behavior to players in order to attract and maintain their attention. In addition, they are programmed with specific styles in mind. In contrast, human decision making is complex and easily influenced by outside factors. This leads to the changes in traffic and the styles of driving of other drivers. As a result, gamers attempting to drive the same way they do in a game become hazards on the road. The aggression that improves their speed and leads to wins in a video game also lead to law breaking and injuries on the road. It is clear that road rage is popularized in a game, but is a distinct issue while on the road.

One aspect that can help predict poor driving behaviors is through their media exposure. The more young drivers are engaged with music videos featuring dangerous driving or with driving in violent video games, the more they tend to have aggressive and attention seeking personalities. Unfortunately this cannot prove causation, but it suggests that either these media sources help cause a personality shift, or that people with these personalities are attracted to media glorifying reckless driving^{11,12}. Video gaming might be more strongly linked since it requires active participation in the game, while media viewing is passive. As a result they are deliberately driving poorly and being rewarded for it in a game, instead of merely watching poor

¹¹ Beullens, Kathleen, and Jan Van Den Bulck. "Predicting Young Drivers' Car Crashes: The Role of Music Video Viewing and the Playing of Driving Games. Results from a Prospective Cohort Study. "

¹² Vingilis, Evelyn, Jane Seeley, David L. Wiesenthal, Christine M. Wickens, Peter Fischer, and Robert E. Mann. "Street Racing Video Games and Risk-taking Driving: An Internet Survey of Automobile Enthusiasts."

behavior through a screen. While this does not necessarily mean that young drivers play video games cause them to have this set of personality traits, it can be helpful for the public to recognize which drivers are most at risk, based on what they entertain themselves with. Knowing this could alert doctors, parents, or other people who have interest in the gamer's health so they can help guide and monitor their behavior. If poor driving behavior is a means of attracting attention from others, young people need to be taught to find a different, healthier way of attracting notice than on the road.

This attention seeking is far more popular than usually considered. Often times, young drivers speed excessively or perform stunts on the road, such as making "donuts" in the middle of the street, or racing against another driver on the road. If they are cautious, they can get away with it if the police are not in the area, contributing to their willingness to repeat these dangerous activities. These clearly have serious consequences. Often times, these young drivers refuse to or are unable to see the consequences until it is too late.

Conclusion:

Video gaming is an important part of society and is not likely to diminish over the coming years. Similarly, driving is a necessary part of Americans' daily lives. Linked with both is road rage, which has clear effects on our health and mental status. It also reflects on our society as a whole. As rage and aggression are taught through driving video games and modify thinking behavior, it is clear that things must change in order to produce a more orderly and calm society as well as improve the road system.

Road rage is a taught behavior and therefore can be overwritten by another safer behavior. It can be controlled with hard work and dedication. While racing games are unlikely to be banned, just acknowledging their influence might allow us to be better, safer drivers by

opening our minds and being able to make conscious decisions to be more careful while on the road. In addition, being aware of the dangers that road rage can have on us might be a good deterrent for young drivers interested in replicating their favorite games. By showing them that these behaviors are not helpful and not the intelligent, popular activity to do, this might allow them the time to assess the situation and decide against poor behavior. Hopefully with more time, research and public awareness campaigns, we can reduce the negative impact that driving games have on our world.

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