



Aggressive Driving: Three Studies

Aggressive Driving

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Road Rage

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Driver Aggression

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Contents:

[About the Sponsor](#)

[A Message From the Sponsor](#)

[Aggressive Driving](#)

[Introduction](#)

[Incidents of Aggressive Driving](#)

[Vehicles of Mass Destruction](#)

[Advice for Motorists](#)

[Road Rage](#)

[What is "Road Rage"?](#)

[What Causes "Road Rage"?](#)

[How to Avoid Succumbing to Road Rage](#)

[The Survey in Detail](#)

[Driver Aggression](#)

[Background](#)

[Driving and Aggressive Emotion](#)

["Cures" for Road Rage](#)

[Appendix](#)

About the AAA Foundation for Traffic Safety

The first study in this volume was sponsored by the AAA Foundation for Traffic Safety. Founded in 1947, the AAA Foundation for Traffic Safety is a not-for-profit, publicly supported charitable research and educational organization dedicated to saving lives and reducing injuries by preventing traffic crashes.

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A Message From The Sponsor

This study was commissioned after the AAA Foundation for Traffic Safety observed a growing concern with the problem of aggressive driving.

A 1995 study performed by the Road Safety Unit of the Automobile Association of Great Britain found that 90 percent of the drivers surveyed had experienced "road rage" incidents during the preceding 12 months. In this study, 60 percent of drivers admitted to losing their tempers behind the wheel during the previous year, and one percent claimed they had been physically assaulted by another motorist.

In early 1996, the AAA Potomac club commissioned a study from The Gallup Organization to investigate driver concerns. The study found that Washington area motorists felt more threatened by aggressive drivers than by drunk drivers; 40 percent of the respondents said that aggressive drivers "most endanger highway safety," while 33 percent identified drunk drivers as the primary risk.

After the AAA Potomac survey had been completed but before it was published, two aggressive drivers caused a disastrous fatal crash on the George Washington Parkway near McLean, Virginia, a tragedy that further focused public attention on the problem.

The Foundation realized that although the topic of aggressive driving seemed of great concern to motorists, there was little real knowledge of the extent of the problem or of any trends in the phenomenon. Thus the Foundation set out to determine a true picture of the extent of aggressive driving behavior. Was it

occasional or frequent? Was the trend holding steady, decreasing, or increasing? What were some of the factors at work in aggressive driving incidents?

The Foundation approached Louis Mizell, owner of a corporation that maintains databases of crime reports in Bethesda, Maryland. Mr. Mizell was commissioned to research all incidents of violence that involved traffic altercations and use of vehicles as weapons. These incidents included only the most violent confrontations -- those so extreme that they resulted in a police crime report or a published newspaper article. They undoubtedly represent a small fraction of the total number of such incidents.

The following document contains Mr. Mizell's study, along with the 1995 AA Road Safety Unit study and a subsequent paper published by the AA in November of 1996.

Aggressive Driving

A Report by Louis Mizell, Inc. for the
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Introduction

In Massachusetts, Donald Graham, a 54-year-old bookkeeper, became embroiled in a heated, ongoing traffic dispute with Michael Blodgett, 42, on February 20, 1994. After the motorists antagonized each other for several miles on the Interstate, they both pulled over to an access road and got out of their vehicles. At that point Graham retrieved a powerful crossbow from his trunk and murdered Blodgett with a razor-sharp 29-inch arrow.

In Seattle, Washington, Terrance Milton Hall, age 57, shot and killed Steven Burgess, a 21-year-old college student, because Burgess was unable to disarm the loud anti-theft alarm on his jeep. In the Virginia suburbs of Washington, D.C., in April of 1996, Narkey Keval Terry and Billy Canipe, both 26, began dueling in their cars as they drove up the George Washington Parkway. Traveling at speeds of up to 80 miles per hour, the cars crossed the median of the parkway and hit two oncoming vehicles. Only one of the four drivers involved in the crash survived; Narkey Terry was sentenced to 10 years in prison for his role in the incident.

An average of *at least* 1,500 men, women, and children are injured or killed each year in the United States as a result of "aggressive driving." A review of 10,037 incidents gathered by Mizell & Company from newspapers, police reports, and insurance reports clearly illustrates that anyone can be targeted and victimized.

The data also indicate that there is no one profile of the so-called "aggressive driver." Although the majority of the perpetrators are between the ages of 18 and 26, Mizell & Company recorded hundreds of cases in which the perpetrator was 26 to 50 years old. In 86 known cases from January of 1990 to September 1, 1996, the aggressive driver was 50 to 75 years old.

However, as might be expected, the majority of aggressive drivers are relatively young, relatively poorly educated males who have criminal records, histories of violence, and drug or alcohol problems. Many of these individuals have recently suffered an emotional or professional setback, such as losing a job or a girlfriend, going through a divorce, or having suffered an injury or an accident. It is not unusual for friends and relatives to describe these individuals as "odd," "disenfranchised," or "a loner."

But hundreds of aggressive drivers -- motorists who have snapped and committed incredible violence -- are successful men and women with no known histories of crime, violence, or alcohol and drug abuse. When the media interview the friends and neighbors of these individuals, they hear that "he is the nicest man," "a wonderful father," or "he must have been provoked."

For example, on August 3, 1995, in exclusive Potomac, Maryland, Robin Ficker, 52, a prominent lawyer and former Maryland state legislator, was driving his two sons to see his ailing father at Holy Cross Hospital. Suddenly Ficker's 1990 Jeep Cherokee bumped into a newer model Jeep in front of him. The driver, Caroline Goldman, was six months pregnant.

Goldman reported that when she approached Ficker's car he became very agitated, pointing at her and yelling. "He seemed to be out of control," she said, and reported that Ficker struck her in the face, breaking her prescription sunglasses and giving her a black eye that lasted for ten days. Ficker was convicted of battery and malicious destruction of property.

Today's aggressive could be male (as is usually the case), or female, young (usually), or old, educated or uneducated, rich or poor, white or black, Hispanic, or Asian. Aggressive drivers in recent years have been Catholic, Jewish, Muslim, Buddhist, and several other religions.

Celebrities are not immune: In California, Oscar winner Jack Nicholson believed that the driver of a Mercedes-Benz cut him off in traffic. The 57-year-old actor grabbed a golf club, stepped out of his car at a red light, and repeatedly struck the windshield and roof of the Mercedes.

Although they can be sparked by trivial events -- "He stole my parking space," "She cut me off" -- violent traffic disputes are rarely the result of a single incident but rather are in reality the cumulative result of a series of stressors in the motorist's life. The traffic incident that turns violent is often "the straw that broke the camel's back." As with most human behavior, there is a stated and unstated, a conscious and unconscious motivation for most traffic disputes.

Incidents of Aggressive Driving

Deaths and Injuries

"Aggressive driving" is defined for this study as an incident in which an angry or impatient motorist or passenger intentionally injures or kills another motorist, passenger, or pedestrian, or attempts to injure or kill another motorist, passenger, or pedestrian, in response to a traffic dispute, altercation, or grievance. It is also considered "aggressive driving" when an angry or vengeful motorist intentionally drives his or her vehicle into a building or other structure or property.

From January 1990 to September 1, 1996, a period of 6 years and 8 months, there were at least 10,037 incidents of aggressive driving in the United States that were reported to Mizell and Company, International Security.¹

At least 218 men, women, and children are known to have been murdered and 12,610 people injured as a result of these 10,037 incidents. (Aggressive driving incidents often result in more than one person being injured or killed.) The 12,610 injuries include scores of cases in which people suffered paralysis, brain damage, amputation, and other seriously disabling injuries.

The number of aggressive driving cases reported to Mizell & Company has increased every year since 1990. While some of this apparent increase may be caused by the variation in sources and increased awareness and therefore increased reporting of such incidents, such variation is almost certainly not significant. Mizell & Company consulted 30 major newspapers, reports from 16 police departments, and insurance company claim reports to construct the database for this study.

The breakdown of known incidents of aggressive driving that occurred from January 1, 1990 to September 1, 1996 is as follows:

1990	1,129
1991	1,297
1992	1,478
1993	1,555
1994	1,669
1995	1,708
1996	1,201*
TOTAL	10,037

*If the number of aggressive driving incidents for the first eight months of 1996 continues at the same rate, there will have been approximately 1,800 incidents of aggressive driving reported in the United States by the end of 1996.

Reasons Violent Traffic Disputes Occur

Motorists involved in fender-bender collisions and silly traffic disputes are increasingly being shot, stabbed, beaten, and run over for inane reasons.

A 23-year-old Indiana University student hacked a university maintenance worker with a hatchet after the two argued about the student's car being parked in a service drive. Other cases stem from equally trivial apparent causes. In one case a man was shot and killed "because he was driving too slowly." In another case a woman was shot because "the bitch hit my new Camaro." In still another case a small child was seriously wounded because her father "cut me off."

Mizell & Company analyzed the "reasons" given for violent disputes and collected the following list. Each of the reasons listed is associated with at least 25 incidents that resulted in death or injury:

"It was an argument over a parking space..."

"He cut me off"

"She wouldn't let me pass"

A driver was shot to death *"because he hit my car"*

"Nobody gives me the finger..."

A shooting occurred *"because one motorist was playing the radio too loud."*

"The bastard kept honking and honking his horn..."

"He/she was driving too slowly"

"He wouldn't turn off his high beams"

"They kept tailgating me..."

A driver was chased down and shot to death after fleeing the scene of a hit-and-run following a minor collision

A fatal crash occurred because another driver kept *"braking and accelerating, braking and speeding up."*

"She kept crossing lanes without signaling -- maybe I overreacted but it taught her a lesson."

"I never would have shot him if he hadn't rear-ended me"

"Every time the light turned green he just sat there -- I sat through three different

green lights."

A fatal dispute erupted over which car had the right of way.

A driver accused of murder said *"He couldn't care less about the rest of us -- he just kept blocking traffic."*

A driver charged with attempted murder said, *"He practically ran me off the road - what was I supposed to do?"*

And a teenager charged with murdering a passenger in another vehicle said simply, *"We was dissed."*

There are many other stated reasons for violent traffic disputes. In one case, for example, a man was attacked because he couldn't turn off the anti-theft alarm on his rented jeep.

Dozens of violent aggressive driving incidents have occurred because the occupants of one vehicle "dissed" or disrespected the occupants of a second vehicle.

The so-called "reasons" for disputes are actually triggers. In most human behavior there is a stated and unstated, or conscious and unconscious, motivation. The motivation for traffic disputes is no exception. While the event that sparks the incident may be trivial, in every case there exists some reservoir of anger, hostility, or frustration that is released by the triggering incident.

Weapons Used by Aggressive Drivers

In approximately 4,400 of the 10,037 known aggressive driving incidents, the perpetrator used a firearm, knife, club, fist, feet or other standard weapon for the attack. In approximately 2,300 cases the aggressive driver used an even more powerful weapon -- his or her own vehicle. And in approximately 1,250 cases the aggressive driver used his or her own vehicle *and* a standard weapon like a gun, knife, or club. No information was available for 1,087 of the cases reviewed.

Without question the most popular weapons used by aggressive drivers are firearms and motor vehicles. In 37 percent of the cases a firearm was used; in 35 percent the weapon was the vehicle itself.

Other weapons used by aggressive drivers have included the following, in order of their frequency:

✎ **Fists and feet:** In hundreds of cases hostile drivers have used their fists and feet to express their displeasure with other motorists.

✎ **Tire irons and jack handles** are frequently used as weapons, probably because they are readily accessible in most vehicles.

✎ **Baseball bats:** Mizell and Company recorded over 160 cases in which

baseball bats were used to settle traffic disputes. There are, of course, thousands of cases in which baseball bats have been used as weapons in other situations, such as gang fights or street

robberies.

✂ **Knives** used include bayonets, ice picks, razor blades, and swords. A knife is used criminally and violently almost every day by an angry motorist.

✂ **Hurled projectiles:** In at least 313 cases in the sample angry motorists hurled beer and liquor bottles, the most popular of hurled missiles, or rocks, coins, soda cans, and garbage. Aggressive drivers have also thrown a wide range of partially eaten foods, including burritos and hamburgers.

✂ **Other clubs:** Angry and impatient motorists have used a wide range of weapons to bludgeon one another. These "other clubs" include crowbars, lead pipes, batons, 4x4 timbers, canes (a favorite with the elderly and the disabled), tree limbs, wrenches, hatchets, and, in six cases, golf clubs.

✂ **Defensive sprays:** As more and more people are carrying defensive sprays, such as Mace and pepper spray, there are an increasing number of cases in which these items are used in traffic disputes. In most "aggressive driving" cases, however, sprays have been used to attack rather than defend.

✂ **Miscellaneous**, such as eggs and water pistols: At least five shootings occurred when mischievous teenagers pelted motorists with eggs or snowballs. A teenager in Florida was shot to death after squirting a passing car with a water pistol. In Washington state, two teenaged boys were killed by a gunman in another vehicle after they threw eggs at his vehicle.

Aggressive drivers have been very creative in their choice of weapons. For example, after an argument in a parking lot, one motorist was speared in the head and killed when a paint roller rod was thrown through his windshield.

The Role of Domestic Violence

Domestic violence plays a surprisingly large role in aggressive driving. When the flames of passion burn out, when love turns to hate, spouses and lovers are increasingly venting their rage on the highway. From January 1, 1990 to September 1, 1996, at least 322 incidents of domestic violence were played out on roads and Interstates throughout the country.

For example, in 1994 in Michigan, Jorge Chansuolme, 28, was charged with killing his estranged wife, Ruth Chansuolme, 28, and a male companion. Witnesses reported that Chansuolme rammed the companion's car after a high-speed chase. Similarly, in 1995 in Massachusetts, Anita Caraballo and her three-year-old daughter were injured when the car in which they were riding was rammed by Caraballo's former boyfriend. Caraballo's new boyfriend was driving the target vehicle.

The Role of Hate and Racism

An average of 38 violent traffic incidents each year are the result of racism and hate. These incidents are perpetrated by the full spectrum of humanity -- whites, blacks, Asians, Hispanics, and others.

However, most violent traffic incidents that are labeled "racist" actually start out as an accident or near accident, a disagreement over right of way, a dispute about a parking space, or other confrontation that is not, at first, racially related. As tempers flare, racial insults are exchanged and the "traffic dispute" suddenly becomes "racial" in nature.

True hate-related disputes are perpetrated by groups (usually) of males (usually) who are clearly bigoted and clearly looking for trouble. In addition to racial groups, these incidents are perpetrated by members of a wide range of religious organizations.

It should be noted, however, that hundreds of traffic disputes involving interracial conflict have had nothing to do with hate or racism. Like other violent traffic disputes, these incidents are simply arguments between two motorists who overreact to being cut off, being impatient with a traffic jam, or are stunned by a near-accident. Only 16 of the traffic disputes in the study were hate-based from the beginning.

Two incidents typify racially motivated disputes:

On January 17, 1996, in Taylors, South Carolina, Danny Greer, 34, a black man, was riding in a van with his wife Mechelle, who is white. They noticed that two white male motorists in a pickup truck appeared to be following them. The two white males repeatedly pulled alongside Greer's van and conspicuously stared at the couple.

When Mrs. Greer, who was driving, sped up, the pickup truck stayed with them. Mrs. Greer slowed down, hoping the men would pass, but they stayed with the van. When Mrs. Greer pulled into a parking lot, thinking the men would drive by, the truck followed and blocked their exit.

At that point Mr. Greer got out of the van and asked the men, "What's your problem?" Mrs Greer reports hearing three shots and seeing the truck pull away. Mr. Greer fell to the pavement and died.

In another racially motivated incident, in Springfield, Tennessee, two black teenagers were sentenced to life in prison for murdering a white man who had displayed a Confederate flag on his pickup truck. According to testimony, on January 14, 1995, the two black teenagers were cruising the highway when they spotted Michael Westerman, 19, and his wife Hannah, 21. Angered by the Confederate flag, the teenagers rounded up two other cars and followed Mr. Westerman and his wife. Boxing Westerman's vehicle in with one car, the youths pulled along side and shot Mr. Westerman to death. The two teenagers were

found guilty of murder, civil rights intimidation, and attempted aggravated kidnapping. Other members of the group are awaiting trial.

Motorists who Crash into Buildings and Other Property

Using their vehicles as weapons, aggressive drivers frequently vent their anger by crashing through offices, private homes, restaurants, hotels, government buildings, hospitals schools, and other properties.

During the period studied, at least 94 men and women used their vehicles as battering rams and crashed through a variety of buildings and other properties. (This number does not include the relatively new phenomenon of "crash and rob," whereby criminals crash their vehicles into stores to steal merchandise.) Some of these drivers are angry at the management that owns the building. Some are angry at someone inside the building. And some motorists, struggling with their own inner demons, are just angry at the world.

Although this problem is often ignored, it is an ever-growing and extremely dangerous aspect of aggressive driving. For example, in 1990 in California, a 22-year-old man, angry because a clerk would not sell him beer, purposely drove his car into a gas pump at a convenience store. The crash caused all eight pumps to explode, destroyed the gas station portion of the business, and caused \$500,000 in damage. In 1993 in Pennsylvania, a psychiatric patient crashed his station wagon through the gates and a chain link fence at the Three Mile Island nuclear power plant before striking a parked truck near the turbine building. In 1994 in Washington, D.C., a 23-year-old man drove a stolen car through the lobby doors of WTTG-TV in an effort to attract attention to a mysterious new AIDS drug.

Aggressive Drivers and Crowds

In at least 22 cases since 1990, aggressive drivers have intentionally plowed their vehicles into crowds of people. Motor vehicles are extremely powerful weapons; when a car or truck is aimed at a crowd of people the result could easily be dozens of dead and injured.

If a person is enraged, irrational, and impulsive enough to kill one person, he or she may also be irrational, impulsive, and crazy enough to kill many people, depending on the circumstances.

For example, in 1991 in California seven people were seriously injured in a nightclub parking lot when a 26-year-old man drove his Mercedes-Benz into a crowd. The crowd was blocking the exit to the lot and the driver grew impatient waiting for an opening.

Similarly, in 1993 in Alabama a 24-year-old truck driver aimed his tractor-trailer into a crowd of picketing steel workers and killed two men before fleeing the scene.

In 1995 in California a woman in a pickup truck plowed through a fence onto a

daycare center playground, killing an 18-month-old boy and injuring 10 other children. Witnesses reported that the truck had been "drag racing" and "doing doughnuts" in the adjacent street prior to the incident; the woman claimed that she swerved to avoid a speeding car.

Finally, in an all-too-typical incident, in 1996 in Massachusetts Anthony Brooks was charged with attempted murder and other counts after he drove his car into a crowd of New Year's celebrants, injuring 21 people. Police said that Brooks's actions were due to his impatience and anger.

Vehicles Used to Attack Police

From January 1, 1990 and August 27, 1996, the researchers recorded 221 cases in which motorists intentionally used vehicles to attack law enforcement personnel or police vehicles. These cases were reported from all 50 states.

The number of cases reported to Mizell and Company have increased every year except 1992; it is suspected that the decrease in cases during 1992 has more to do with sporadic reporting than with an actual reduction in incidents. Police officials consulted agreed with this assessment.

The breakdown is as follows:

<u>Year</u>	<u>Incidents</u>
1990	22
1991	26
1992	19
1993	34
1994	39
1995	45
1996	36*
TOTAL	221

*from January 1 to August 27, 1996

At least 48 police officers were killed or injured as a result of these incidents. Responding to vehicular attacks by aggressive drivers, police were forced to fire their weapons and wound or kill at least 38 drivers and passengers involved in the 221 reported cases. Additional drivers and passengers were injured or killed when their vehicles became involved in accidents while trying to evade police. Thirty-one of the 221 cases are known to have involved a stolen vehicle. Twenty-

nine of the cases involved drugs. Finally, nearly all of the 221 cases involved drivers or passengers who were suspected of some criminal violation. This is the type of incident most likely to involve a female perpetrator; 14 percent of the assailants were female in this category. Motorists who are stopped by the police are the most likely to become aggressive. In many cases they are under the influence of alcohol or drugs, and as noted above the police have usually stopped them because they were breaking the law or behaving suspiciously.

For example, on March 24, 1993, in North Vernon, Indiana, motorist Jonathon Warnell, 30, intentionally drove his vehicle into a police squad car and killed Patrolman Anthony Burton, 29, and Reserve Officer Lonnie Howard, 22. The officers were parked at a church watching for Mr. Warnell when the incident occurred. Warnell, who was free on bond after an armed standoff with police, was also suspected of threatening someone with a knife. A week before murdering the two police officers with his vehicle, Warnell had driven his car into a building where his estranged girlfriend worked and fired a rifle into the air.

On May 2, 1993, Cristian Omar Gomez, 22, was charged with driving while intoxicated and assault on a police officer after a stint of reckless driving early Sunday morning. Police were called to the scene by a witness who saw Gomez driving down the wrong side of the road. Officer Kathy Steigerwald spotted Gomez in a Safeway parking lot and turned on her lights and siren. Gomez rammed into her car and then fled the parking lot. His car stopped when he crossed the median and hit a tree. Surprisingly, neither Gomez nor Steigerwald was injured.

Female Perpetrators

Of the 10,037 aggressive driving incidents reviewed for this study, only 413 involved females as perpetrators. In 528 cases the sex of the perpetrator was not known. (There are a number of reasons for this. For privacy purposes some police departments and insurance companies scratch out the names before releasing a report of the incident. Also, some reports refer to the perpetrators and victims only as "Subjects." Finally, in many cases it is difficult to determine from the name whether the perpetrator is male or female.)

Like men, women who engage in aggressive driving have used firearms, knives, baseball bats, defensive sprays, and fists to settle arguments. But the weapon of choice for most women who react aggressively to traffic disputes and traffic stops is the automobile.

For example, angry that a van was blocking traffic, a female motorist in Seattle, Washington, drove her car on to a sidewalk and killed a woman who was talking with the van's driver.

Of the 413 incidents in which females were the perpetrators, women used their vehicles as the weapon in 285 cases. In 31 cases female drivers used a vehicle to attack police officers. In these cases, the police officer was usually trying to

issue a traffic citation or to arrest the female driver.

Children as Victims

The victims of irrational highway violence are frequently not the intended targets but innocent passengers and pedestrians. Children, the most innocent of bystanders, are frequently the victims of aggressive driving.

From January 1, 1990 to September 1, 1996 at least 94 children under the age of 15 were injured or killed in aggressive driving incidents. Some were wounded or killed by gunfire; others were injured or killed when aggressive drivers, frequently a relative, rammed or forced a vehicle off the road.

In 1993 in Illinois, seven-year-old Michael Montoya was shot to death while playing in his front yard. Angry that a van was blocking traffic 50 yards from Michael's house, a motorist fired at the van driver. The bullet missed the driver and hit the child.

In a case too recent to be included in this study, three-year-old Brenna Finck was critically injured on November 20, 1996, when her father engaged in a driving duel on Interstate 395 south of Washington, D.C. Robert Finck, 37, was driving toward the city with his wife Sandra and their daughter at 7 a.m. when Fred Hamilton, 20, cut him off. The incident sparked a dispute, with the two drivers racing after each other and gesturing angrily. When the two vehicles collided, Finck's Ford Explorer hit a third car and flipped over several times. Brenna, although in a safety seat, was thrown partially out of the car. Finck, his wife, and a passenger in the third car were also injured in the crash.

Vehicles of Mass Destruction

Bulldozers, Tanks, and Tractor-Trailers

It's bad enough when an aggressive driver gets behind the wheel of a car or a pickup truck. But when a "crazy" climbs aboard a bulldozer, tank, or tractor-trailer, the potential for death and destruction increases dramatically.

There exist at least 103 cases in the United States -- and hundreds more internationally -- in which a unique vehicle such as a bus, bulldozer, tractor-trailer, military tank, tow truck, or forklift was intentionally used to cause death and destruction.

In a most spectacular example, Shawn Timothy Nelson, 35, a divorced, alcoholic, drug-taking plumber, had been watching his life crumble around him. He lost his job, his girlfriend left him, he broke his neck in an accident, and he had recently been evicted from his house. So what the heck: He stole a 57-ton U.S. Military M-60 tank.

On May 17, 1995, in San Diego, Nelson entered a National Guard Armory, started up the heavily armed tank, and headed out for the highway. Barreling

through six miles of residential roads and with 20 police cruisers trailing helplessly behind, Nelson mashed 20 cars, flattened vans, knocked over telephone poles, and squashed a telephone booth and a bus bench. The power lines that were knocked down left 5,000 homes without electricity

Fortunately the tank's weapons -- a 105 mm cannon, 7.62 mm machine gun, and a 12.7 mm anti-aircraft gun -- were not loaded.

Leaving behind a trail of destroyed vehicles, spouting hydrants, sideswiped bridges, and nail-biting insurance agents, Nelson's rampage finally came to a halt when his tank became immobilized astride a concrete highway divider. At that point, four police officers leaped onto the tank, opened the hatch with bolt cutters, and shot Nelson to death.

Advice for Motorists

Motorists who might respond to provocation from an aggressive driver should think about the four realities of the threat:

¥ At *least* 1,500 men, women, and children are seriously injured or killed each year in the United States as a result of senseless traffic disputes and altercations. The incidents reported in this study are only those caught by the reporting network of Mizell & Company. Beyond question there are many more that are not reported in the media or for which the traffic altercation aspect is not mentioned.

¥ There are thousands of mentally and emotionally disturbed individuals on the highway. Charged with anger, fear, and personal frustration, and often impaired by alcohol or other drugs, motorists in all 50 states have murdered and maimed other motorists for seemingly trivial reasons. Explanations such as "He stole my parking space," "She kept honking her horn," "He wouldn't let me pass," and "She gave me the finger" abound in published reports.

¥ Without exaggeration, millions of motorists are armed with firearms, knives, clubs, and other weapons. There are more than 200 million firearms in circulation in the United States, and many motorists are carrying guns. It is also important to remember that every driver on the highway is armed with a weapon more deadly and dangerous than any firearm: a motor vehicle.

¥ Anyone can become an aggressive driver! People who have maimed and murdered motorists during traffic disputes have been old and young, males and females, rich and poor, well dressed and poorly dressed. They have been white, black, Asian, and Hispanic. Do not underestimate the potential for violence in any driver.

Motorists would be well advised to keep their cool in traffic, to be patient and courteous to other drivers, and to correct unsafe driving habits that are likely to endanger, infuriate, or antagonize other motorists. Be aware of the behaviors that have resulted in violence in the past:

¥ **Lane blocking.** Don't block the passing lane. Stay out of the far left lane and yield to the right for any vehicle that wants to overtake you. If someone demands to pass, allow them to do so.

¥ **Tailgating.** Maintain a safe distance from the vehicle in front of you. Dozens of deadly traffic altercations began when one driver tailgated another.

¥ **Signal use.** Don't switch lanes without first signaling your intention, and make sure you don't cut someone off when you move over. After you've made the maneuver, turn your signal off.

¥ **Gestures.** You are playing Russian roulette if you raise a middle finger to another driver. Obscene gestures have gotten people shot, stabbed, or beaten in every state.

¥ **Horn use.** Use your horn sparingly. If you must get someone's attention in a non-emergency situation, tap your horn lightly. Think twice before using your horn to say "hello" to a passing pedestrian; the driver in front of you may think you are honking at him. Don't blow your horn at the driver in front of you the second the light turns green. If a stressed-out motorist is on edge, the noise may set him off. Scores of shootings began with a driver honking the horn.

¥ **Failure to turn.** In most areas right-hand turns are allowed after a stop at a red light. Avoid the right-hand lane if you are not turning right.

¥ **Parking.** Do not take more than one parking space and do not park in a handicapped parking space if you are not handicapped. Don't allow your door to strike an adjacent parked vehicle. When parallel parking, do not tap the other vehicles with your own. *Look* before backing up.

¥ **Headlight use.** Keep headlights on low beam, except where unlighted conditions require the use of high beams. Dim your lights for oncoming traffic; don't retaliate to oncoming high beams with your own in order to "teach them a lesson." Don't approach a vehicle from the rear with high beams and dim your lights as soon as a passing vehicle is alongside.

¥ **Merging.** When traffic permits, move out of the right-hand acceleration lane of a freeway to allow vehicles to enter from the on-ramps.

¥ **Blocking traffic.** If you are pulling a trailer or driving a cumbersome vehicle that impedes traffic behind you, pull over when you have the opportunity so that motorists behind you can pass. Also, do not block the road while talking to a pedestrian on the sidewalk. Dozens of shooting suggest that this behavior irritates a lot of people.

¥ **Car phones.** Don't let the car phone become a distraction -- keep your eyes and attention on the road. Car phones can be great for security but bad for safety. In addition, car phone users are widely perceived as being poor drivers and as constituting a traffic hazard. The data clearly show that aggressive drivers

hate fender-benders with motorists who were talking on the telephone.

¥ **Alarms.** If you have an antitheft alarm on your vehicle, be sure you know how to turn it off. When buying an alarm, select one that turns off after a short period of time.

¥ **Displays.** Confederate flags on pickup trucks are not a good idea. Refrain from showing any type of bumper sticker or slogan that could be offensive; this might include an "IM RICH" license plate.

¥ **Eye Contact.** If a hostile motorist tries to pick a fight, do not make eye contact. This can be seen as a challenging gesture and incite the other driver to violence. Instead, get out of the way but do not acknowledge the other driver. If a motorist pursues you, do not go home. Instead, drive to a police station, convenience store, or other location where you can get help and there will be witnesses.

Reduce Your Own Stress

Traffic stress -- indeed, anger in general -- is hazardous to your health. The stress from road congestion is a major contributing factor to violent traffic disputes. Making a few simple changes in the way you approach driving can significantly reduce your stress level in the car.

¥ **Consider altering your schedule** to avoid the worst congestion. Allow plenty of time so that you do not have to speed, beat traffic lights, or roll through stop signs. Think -- is it really the end of the world if you are a bit late? Could you plan your day so you could leave a little earlier?

¥ **Improve the comfort of your vehicle.** Use your air conditioner, install a tape or CD player to enjoy uninterrupted music or books on tape, and get a pillow or seat cover to make your seat more comfortable. Listen to classical music or any music that reduces your anxiety; avoid anger-inducing talk radio, for example.

¥ While in traffic, **concentrate on being relaxed.** Don't clench your teeth. Loosen your grip on the wheel, take a deep breath, and do limited exercises and stretches for your arms and legs.

¥ **Don't drive when you are angry,** upset, or overtired.

Most importantly, understand that you can't control the traffic but you *can* control your reaction to it.

Adjust Your Attitude

Give the other driver the benefit of the doubt. Assume that other drivers' mistakes are not intentional and are not personal. Be polite and courteous, even if the other driver isn't; it's better to err on the side of caution.

Before reacting to another driver's mistake, ask yourself, "How many times have I made the same mistake?" Before initiating or responding violently to a traffic

situation, ask yourself, "Is it worth being paralyzed or killed? Is it worth the time and money for a lawsuit? Is it worth a jail sentence?" Remember, split-second impulsive actions can ruin the rest of your life.

Encased in metal armor, many motorists who are normally passive become enraged road warriors when they get behind the wheel. Don't become one of them. These individuals should be advised that (a) cars are not bulletproof; (b) another driver can follow you home; and (c) you've got to get out of the car some time.

Avoid all conflict if possible. If you are challenged, take a deep breath and get out of the way, even if you are right. You don't want to be dead right. Instead, try being more forgiving and tolerant. Recognize the absurdity of traffic disputes and focus on what is really important in life. You cannot fight every battle. Save your energy -- and your life -- for something worthwhile.

1 This number does not include cases in which people were injured or killed as a result of random snipings, so-called thrill shootings, violent carjackings, or by objects thrown from overpasses. It also does not include people injured or killed by armed robberies of motorists or other common highway crimes, and it does not include people killed or injured in "ordinary" drunk driving or hit-and-run collisions.

Road Rage

The Automobile Association Group Public Policy Road Safety Unit

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March, 1995

What is "Road Rage"?

"Road Rage" is a term that is believed to have originated in the United States. In its broadest sense it can refer to any display of aggression by a driver. However, the term is often used to refer to the more extreme acts of aggression, such as a physical assault, that occur as a direct result of a disagreement between drivers.

The response to a stressful situation may often be anger. When we are confronted by a frustrating situation we often resort to aggression. This is often no more than verbal abuse. However, there are circumstances in which we may resort to physical violence. In the late 1980s, drivers in the United States, apparently frustrated by increasing congestion, began fighting and shooting each other on a regular basis, victims of what the popular press termed "road rage." There is nothing to suggest that road rage is distinct from any other form of

anger. But for many of us driving has become one of the most frustrating activities we are regularly engaged in. In the United States, unverified figures of up to 1,200 road rage-related deaths a year have been reported. There is very little data available on the extent of the problem in the United Kingdom, although there have been increasing numbers of reports of violent disagreements between motorists over the last year.

In order to quantify the extent of the road rage problem, the Automobile Association commissioned a survey of 526 motorists. The survey, carried out in January, 1995, found that almost 90 percent of motorists have experienced "road rage" incidents during the last 12 months. Sixty percent admitted to losing their tempers behind the wheel.

Aggressive tailgating (62 percent) was the most common form of "road rage," followed by headlight flashing (59 percent), obscene gestures (48 percent), deliberately obstructing other vehicles (21 percent) and verbal abuse (16 percent). One percent of drivers claim to have been physically assaulted by other motorists.

Although 62 percent of drivers were victimized by aggressive tailgaters, only 6 percent admitted to doing it themselves. Gender differences were not as great as expected; 54 percent of women admitted to aggressive driving behavior, compared with 64 percent of men.

What Causes "Road Rage"?

In some cases it appears that incidents of road rage are caused by simple misunderstandings between drivers. A driver may make a momentary error of judgment but the perception of another is that he is driving aggressively.

It is likely that the cause of the road rage extends beyond the immediate incident. An individual may have had a bad day at work or troubles at home. Often it may be difficult to tackle the cause of the frustration. It may therefore lie dormant, indeed the driver may not even identify feelings of frustration. However, failure to indicate or a poor maneuver by another driver may be enough to trigger a release of the pent-up frustration which is directed towards the offending driver. In addition, there are a number of factors that explain why driving, in particular, should cause this frustration to manifest. Studies of animal behavior have shown how rats and various primates can respond aggressively in response to overcrowding. It is reasonable to suggest that humans respond in a comparable manner.

Human beings are territorial. As individuals we have a personal space, or territory, which evolved essentially as a defense mechanism -- anyone who invades this territory is potentially an aggressor and the time it takes the aggressor to cross this territory enables the defender to prepare to fend off or avoid the attack. This may extend no further than a matter of a few feet or less. We may be prepared to reduce the size of this territory according to the available

space (e.g. on a crowded subway train) but this can cause tension. In most cases if the territory is "invaded," if someone stands too close, our social education tends to result in defensive body language rather than physical aggression.

The car is an extension of this territory. Indeed, the territory extends for some distance beyond the vehicle, again providing room for the defender to prepare to fend off or avoid the attack. If a vehicle threatens this territory by cutting in, for example, the driver will probably carry out a defensive maneuver. This may be backed up by an attempt to re-establish territory -- in spite of the rationalizations we used to account for our behavior, flashing headlights or a blast of the horn are, perhaps, most commonly used for this purpose. However, this may not always succeed in communicating the full depth of our feelings. As it is usually difficult to talk or even shout to the offending driver, other non-verbal communication (offensive gesticulations) may be employed. Confrontations of this nature are not uncommon and are usually defused as the vehicles move away from each other.

In some circumstances, the defending driver may wish to go one step further and assert his dominance. Many drivers admit to having chased after a driver to "teach him a lesson," often pressing him by moving to within inches of his rear bumper. This is comparable to the manner in which a defending animal will chase an attacker out of its territory. However, the result of such behavior in drivers is, of course, potentially fatal.

Some of the worst cases of road rage have occurred where the opportunity for the vehicles to separate and go their own ways does not present itself. Gesticulations and aggressive maneuvers have been exchanged in a rapidly degenerating discourse. Worked up into a rage, one or both drivers have then got out of their vehicles and physically attacked their adversary and/or his vehicle.

Increasing levels of congestion on the roads have undoubtedly played a role in raising tempers among drivers and may partly explain why our survey revealed that the majority of motorists feel that the behavior of drivers has changed for the worst in recent years.

Conflicts between drivers have also arisen because of unclear road priorities -- where drivers have disagreed as to who has right of way, for example. In many cases the road priorities were determined at a time when the level of congestion and speed of traffic were considerably less than today.

Other drivers' failure to adhere to the rules of the road and ignoring signs, e.g., where lanes merge or a lane is closed and drivers merge into the open lane at the last possible opportunity, is a commonly quoted cause of irritation among drivers. Improved means of law enforcement, perhaps with the aid of roadside cameras, may reduce such transgressions.

Some psychologists have suggested that certain drivers are more susceptible to losing their tempers behind the wheel than others. The AA Foundation for Road Safety Research carried out a major study 1 designed to explore some of the lifestyle factors associated with drivers previously identified as "safe" or "unsafe" drivers. Although the AA Foundation study looked specifically at young male drivers, it should be remembered that our recent survey found few age or gender differences in the prevalence of road rage.

The AA Foundation study revealed that one of the main factors influencing driver behavior was mood. A greater number of unsafe drivers were affected by mood to a much larger extent than the safe drivers. It was suggested that this may be due to the fact that, for many of the unsafe drivers, the act of car driving is regarded as an expressive, rather than practical, activity. Being in a bad mood appears to have an adverse effect on driving behavior and this effect appears to be most pronounced among unsafe drivers.

The AA Foundation study also found that unsafe drivers were more likely to be affected by the actions of other road users. Unsafe drivers were more likely to get wound up about what they see as inappropriate or "stupid" actions of other road users. The bad moods of the driver were more likely to be exacerbated by other driver actions.

This evidence supports the view that some drivers are more likely to succumb to road rage. However, we should not conclude that this is a predisposition that cannot be altered. Drivers can adopt simple strategies that keep frustration, anger, and rage in check.

How to Avoid Succumbing to Road Rage

Be aware of the precursors. Follow our general recommendations for avoiding stress and fatigue (see below). In particular, try to disassociate yourself from problems that have no bearing on the journey.

Never assume that an apparently aggressive act was intended as such. We all make mistakes. So don't bite back. If we take an example from studies of animal behavior in the wild, the dominant animal in a group will rarely get involved in petty fights and disagreements. Although confident in his ability to defeat any opponent, there is always the risk of injury.

Finally, draw reassurance from the fact that if you feel that someone is driving like an idiot, everyone else does also.

How to Avoid Becoming a Victim

Our survey information indicates that the great majority of people (96 percent) have not found that the road rage incidents have affected their confidence to drive. However, women and motorists aged 55-64 were the groups most likely to say that the last incident had affected their confidence. It must be stressed that the chances of any driver becoming the victim of a violent road rage attack are

very small. The risks of driving alone can be exaggerated -- be sensible about your safety but don't be afraid to drive on your own. However, if you feel threatened by another motorist, the following gives advice on how to defuse the situation or protect yourself:

¥ If you're being hassled by another driver, try not to react. Avoid making eye contact, as this is often seen as confrontational. Don't be tempted to accelerate, brake, or swerve suddenly; again, this may be seen as confrontational and increases your chances of losing control of your vehicle.

¥ If a driver continues to hassle you or you think you are being followed, drive on to the nearest police station or busy place to get help.

¥ In town, lock the car doors and keep the windows and sunroof only partly open.

¥ When stopped in traffic, leave enough space to pull out from behind the car you are following.

¥ If someone tries to get into your car, attract attention by sounding your horn or a personal alarm.

¥ Do not be tempted to start a fight and do not be tempted to carry any sort of weapon. It may only provoke a potential assailant and could end up in his or her hands.

General Advice for Reducing Stress and Fatigue on the Road

Before starting a journey, make sure that you know how to get to your destination and, if possible, have an alternate route in mind or at least an atlas in the car. Think about the timing of the journey -- you wouldn't want to be traveling the M252 at 5:15 p.m. on a Friday.

Make sure your car is regularly serviced and carry out routine checks (tire pressure, oil, water, etc.) regularly. Carry spare items (bulbs, fan belt, emergency sign for the windshield, etc.). Also, make sure your windshield is clean, particularly before a long journey. Peering through a dirty windshield is a common source of stress and fatigue when driving. Also, have a window cloth, de-icer, and sunglasses accessible.

Make sure that you are comfortable before starting the journey. Adjust your seat and mirrors. You should also ensure that your seat belt and head restraint are correctly positioned, if they are adjustable.

Too often we have unreasonable expectations of journey times. Take journeys in easy stages and never remain behind the wheel of a car for more than three hours without a break. Don't try to cover more than 3003 miles a day and, on a long trip, be careful on the the second day of driving -- this is when you tend to be most vulnerable to fatigue.

When you take a break, make sure that you get out of the car and stretch your

legs. Eat a light snack but avoid heavy meals, particularly at lunchtime. Try to avoid eating in noisy, crowded places.

The likelihood of getting stressed while driving is largely dependent on your attitude of mind before you even turn the key in the ignition. Wind down before you crank up. Try to take one or two minutes to concentrate your mind on the task at hand and try to forget about other problems when driving.

Anticipate situations that are likely to wind you up and be tolerant of other road users' errors. If you find yourself in congestion, try to accept that there is probably very little that you could have done or can do to prevent the delay.

Take remedial action before stress and fatigue get the better of you. Learn to spot the warning signs and develop positive coping strategies, such as listening to the radio or a cassette (many people listen to novels or humorous tapes in jams).

Wind down the windows to increase ventilation and consciously breathe in the air slowly. Also, don't grip the steering wheel too hard as this will tense arm and neck muscles, leading to fatigue symptoms such as headaches.

If your mind is full of images of recent events or you are replaying conversations repeatedly in your mind, make a conscious effort to slow them down until they become softer and more distant.

The Survey in Detail

The AA surveyed 526 drivers to establish the extent to which British motorists had experienced and perpetrated particular types of aggression when driving.

MAIN FINDINGS

Opinion of Motorist Behavior

"Overall, how do you feel the behavior of motorists has changed in recent years?"

<u>Rating</u>	<u>All Motorists (%)</u>
Better	2
Worse	62
No real change	34
Don't know	1

The majority of motorists feel that the behavior of drivers has changed for the worse in recent years. Motorists aged between 35-54 were most likely to feel this way (73 percent), compared with those aged over 55 (62 percent) and those

aged under 35 (49 percent).

Receipt of Particular Types of Aggressive Behavior

Motorists were then asked which of a list of particular types of behavior they had experienced from other motorists in the last 12 months.

<u>Behavior</u>	<u>All Motorists (%)</u>
Aggressive tailgating (driving very close behind)	62
Had lights flashed at me when other motorist annoyed	59
Received aggressive or rude gestures	48
Been deliberately obstructed or prevented from maneuvering my vehicle	21
Received verbal abuse	16
Being physically assaulted	1
None of these	12

Almost nine in 10 (88 percent) of all respondents had experienced at least one of the types of behavior listed above in the last 12 months. Motorists aged over 55 were less likely to have done so (79 percent).

The majority of motorists had been tailgated (62 percent) and had lights flashed at them by other motorists (59 percent), and about half (48 percent) had received aggressive or rude gestures. One in five had been deliberately obstructed, and fewer had received verbal abuse (16 percent) or been physically assaulted by other motorists (one percent).

Men were more likely than women to have received aggressive or rude gestures (52 percent and 42 percent, respectively), verbal abuse (19 percent and 10 percent, respectively), and are more likely to have been deliberately obstructed (24 percent and 17 percent, respectively).

Types of Aggressive Behavior Displayed Towards Other Motorists

All respondents were then asked which types of behavior they had done to other motorists.

<u>Behavior</u>	<u>All Motorists (%)</u>
Flashed lights at them when annoyed with other motorists	45
Given aggressive or rude gestures	22
Given verbal abuse	12
Aggressive tailgating (driving up very close behind)	6
Deliberately obstructed or prevented from maneuvering my vehicle	5
Physically assaulted another motorist *	*Only one positive response
None of these	40

Sixty percent of all respondents admitted to doing one or more of the above to other motorists. It is debatable how willing people would be to admitting having done some of the more serious things described.

Men were more likely than women to have done any of the things listed (64 percent and 54 percent, respectively).

Similarly, motorists aged under 35 were most likely to admit having done any of the things listed (76 percent) than were those aged 35-54 years old (67 percent) or those aged over 55 (34 percent).

Almost half (45 percent) of all motorists claimed to have, within the last 12 months, flashed their lights at another motorists when they were annoyed with them. One in five (22 percent) have given aggressive or rude gestures, and one in 10 (12 percent) have given other motorists verbal abuse. Around one in 20 admits to having tailgated another driver (6 percent) or deliberately obstructed another car (5 percent). One respondent claimed to have physically assaulted another driver in the previous 12 months.

Types of Road on Which the Last Incident Was Experienced

All respondents who had experienced an aggressive incident were asked on what type of road the last incident occurred.

<u>Type of Road</u>	<u>All motorists (%)</u>
Main road	46
Motorway (divided highway)	26
Minor road	23
In a car park (parking lot)	4
Other	2

Almost half (46 percent) last experienced one of these incidents on a main road. About a quarter mentioned a motorway (or divided highway) (26 percent) and a similar proportion said a minor road. One in 20 (4 percent) incidents occurred in a car park (parking lot).

Men were more likely to have experienced an incident on a motorway than were women (30 percent and 18 percent, respectively). Similarly, respondents aged over 55 were more likely to mention a motorway (34 percent) than those aged 35-55 (23 percent) or those aged under 35 years old (24 percent).

Time of Day at which the Last Incident Was Experienced

All those who had been a victim of aggressive behavior were asked whether it occurred after dark or during the day.

The majority (70 percent) said the last incident occurred during the day, and 30 percent said after dark. Younger motorists, those aged under 35, were more likely to say after dark (44 percent) than were 35-54 year-old drivers (28 percent) or motorists aged over 55 (15 percent).

Extent to which Aggressive Behavior Affected Your Confidence when Driving

All respondents having experienced any road rage incident were asked whether it affected their confidence while driving.

<u>Confidence</u>	<u>All motorists (%)</u>
Much less confident	1
A little less confident	3
Confidence not affected	96

Clearly, for the great majority of people (96 percent), these incidents do not affect

their confidence when driving. However, women (8 percent) and motorists aged 55-64 (9 percent) were the groups most likely to say that the last incident had affected their confidence when driving.

As part of a survey of 500 parents who drive, a similar question (on the types of aggressive behavior shown to other motorists) was used in July of 1996, with the following results:

Aggressive tailgating	5
Flashing headlights	36
Aggressive or rude gestures	28
Verbal abuse	32
Pushed/hit another motorist	<1
Aggressive use of horn	40
None of these	27

1 "'Safe' and 'Unsafe': A comparative study of younger male drivers" by G. Rolls and R. Ingham, Department of Psychology, University of Southampton. AA Foundation for Road Safety Research, 1992

2 A major highway in London, England.

3 The AAA advises no more than 500 miles.

Driver Aggression

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November, 1996

Background

"Road rage" has caught the public eye and become embedded in the common vocabulary. It can be used to refer to a variety of behaviors, from specific incidents of roadside assault (or, indeed, murder) to any exhibition of driver aggression. People perceive that society as a whole is becoming more violent,

and our behavior behind the wheel is no exception. In January 1995, 62 percent of 526 drivers surveyed by the AA agreed that the behavior of motorists has changed for the worse in recent years¹. Home Office statistics support this perception -- between July 1995 and June 1996, violent crime rose by 10 percent.²

It remains to be seen whether the emergence of the road rage phenomenon is merely a sign of the times; if we now pull fellow drivers from their cars to attack them when once a "V" sign³ and quiet curse would have sufficed, or if it is simply the case that a violent minority now spend more of their time driving (like the rest of us) and are therefore involved more frequently (and with greater media attention) in violent acts on the road.

In 1976, Naatanen and Summala suggested that aggressive road user behavior is often the result of the driver's frustration at being unable to progress unimpeded by traffic, but they also suggest that this kind of frustration could be provoked by a similar situation involving any means of transportation:

Consider, for instance, walking in a hurry along a very long and narrow corridor without any chances to pass a large person walking very slowly in front!⁴

Our aim, then, is to determine why "pedestrian rage" does not exist; if road rage has simply provided a convenient handle on which coincidental and unrelated incidents can be hung and thereby be given more weight, or if the driving environment provides a unique situation liable to give rise to aggressive behavior.

In 1968 Parry, an early researcher in this area, raised a similar point:

...anyone who, late for an appointment, tries to walk briskly along a crowded city street, heavy with slow-moving shop-gazers, will not improve his speed of progress if he angrily pushes aside his fellow-citizens, swears at them, or threatens them with physical assault. Yet this is precisely what a number of drivers in their vehicles do when pressed for time.⁵

Our comparison of the driving and walking scenarios can be divided into two primary questions:

1. Is the driving environment more likely to give rise to aggression?
2. Is the experience of aggressive emotion more likely to be translated into violent behavior in the driving environment?

Driving and Aggressive Emotion

There are several reasons why driving might be more likely to give rise to anger and aggression than walking. Naatanen and Summala's first suggestion is that the exertion of walking might help tap any pent-up aggression, so that the act itself might help prevent the possibility of aggressive behavior. Driving, on the

other hand, may provide a greater field for stress and tension to accumulate, without providing an outlet.

Congestion is also undoubtedly an issue. Few drivers can claim to have never found themselves caught up in dense traffic which impedes their progress, whereas on most streets a pedestrian's progress is limited primarily by his or her physical capability. Drivers must also adhere to stringent limitations placed on their speed and movement, prescribed directly (by speed limits or variations in the number of lanes available) and indirectly (by congestion). This means that it is easier for the driver to ascribe his frustration at being impeded to an ambiguous source, especially if he sees no reason for the obstruction.

Driving also represents a situation in which people are forced to take a high degree of interest in the movements and behavior of strangers. Walking into another person on the street accidentally might present some risks, but the potential expense and aggravation of damaging one's car in a collision far outweighs them. This burden of responsibility to see that the mistakes of others do not result in an accident may result in a greater susceptibility to aggression.

Aggressive driving maneuvers, such as tailgating (close following), can also be seen as the result of the driving environment, and they are undoubtedly also connected with the issue of congestion. On most roads driving is a situation in which all members of the community are made relatively equal by prescribed limits in the face of individual differences in capability and status. The vast majority of cars in the United Kingdom are fully capable of exceeding 70 mph; many are capable of twice this speed. And yet all cars, regardless of their worth or engine size, are forced to adhere to the same upper limits.

The car is symbolic in many ways, regardless of its owner's perception of it; often it is the individual's second most valuable belonging; it is frequently an important part of the owner's livelihood; often his main access to freedom; and, almost invariably, a "statement of self."

Its size, shape, power, color, and value may all be used by the owner as an expression of how he sees himself and how he wants others to see him. Every time the car is used its value and meaning is to some extent controlled and obstructed by forces beyond the driver's control, and it is placed at an unknown risk by other road users. It is this "egoic" aspect of driving which is perhaps more than anything else responsible for the uniqueness of driving and its unique ability to provoke emotion. And it is not only the car itself which can prove to be an emotional Achilles' heel. As Ntnen and Summala point out, driving is a skill which allows people to imagine themselves to be uniquely able without any real indicators to detract from this view. Drivers are not ranked in terms of skill and ability; individuals either pass their driving test and are able to drive or fail and are not, and yet most people would agree that some full license holders are unfit to drive.

In addition, the accident involvement of an individual can be used as a

convenient and arbitrary indicator of how good a driver he or she is, creating an environment in which people can improve their self-esteem, seeing themselves as extraordinarily competent drivers who are thereby entitled to take more risks than others, drive more quickly, and criticize inferior road users.

In AA studies subjects have been asked about their accident experience. It is the only question which consistently provokes unprompted qualifications of the answer; respondents are not happy merely to tell us how many accidents they have been involved in. There are invariably mitigating circumstances, which demonstrate their bad luck in meeting particularly unable fellow drivers, and which waive any blame due themselves.

Driving is an emotive activity, and the car is a prized and symbolic possession which is uniquely able to provoke personal offense and territorial defense if any perceived threat occurs.

Psychological Mechanisms of Aggression and Rage

It may be useful in addressing this point to revert to wider analyses of aggression. In many animals aggression is undoubtedly a basic biological response -- an evolutionary drive which helps to ensure a species' survival. In humans, however, it is still unclear to what extent a firm biological basis for aggression can be assumed, as opposed to being a learned response developed through imitation of others and reinforced by the experience of its results. This lack of clarity is based on numerous experiments; if a certain area of the brain, the hypothalamus, is artificially stimulated in certain animals, aggressively violent behavior is normally instigated. This is not the case for humans, however, suggesting that social factors may be more influential in human aggression.

Experiments in which people are encouraged to vent aggression and then record the emotional results support the suggestion that human aggression is not simply an innate drive. If aggression were a basic biological drive like hunger, it should be cathartic, i.e., after aggressive acts have been carried out the individual's frustration and anger should be to some extent satiated. Many such experiments suggest that this is not the case.⁶ This means that by allowing ourselves to vent "pent-up" anger, by swearing or gesticulating for example, the problem will not be resolved. Venting anger may, in fact, serve only to warrant displays of aggression at a more intense level, since the desired result (satiation) has not been achieved. In short, there is strong evidence against the commonly held belief that a good way of handling anger is to "get it all out." Venting anger appears to do little or nothing to reduce feelings of aggression.

The design of the brain means that we have little or no control over when we are swept by emotion, nor over what emotion it will be, but we can have some control over how long the emotion will last.⁷ This is particularly relevant to intense emotions such as rage. There are different kinds of anger in terms of physiology as well as experience. The more primitive part of the brain, the limbic system, may be the source of the rage we feel in response to a driver who has threatened

or endangered us, but it is the "thinking" part of the brain, the neocortex, which produces more calculated anger such as revenge or outrage at unfairness or injustice.

There has been a lack of well-reasoned explanations for rage and, in the main, only the most simplistic explanations for road rage. However, in a recent publication Goleman⁸ provides perhaps one of the most succinct and accessible "scientific" explanations for rage, although not specifically road rage. Scientific evidence suggests that anger is the emotion that people are least able to control.⁹ As Goleman puts it:

...anger is the most seductive of the negative emotions; the self-righteous inner monologue that propels it along fills the mind with the most convincing arguments for venting rage. Unlike sadness, anger is energizing, even exhilarating.¹⁰

Goleman suggests that the seductive nature of anger may explain why views that it is uncontrollable (or that it should not be controlled) and that venting anger is "cathartic" are common, in spite of the fact that the research fails to support these beliefs.

Danger may be perceived in symbolic threats to self-esteem: unjust treatment, being patronized or insulted, or simply being frustrated in attempts to achieve a particular goal. These perceptions cause the limbic system to release catecholamines (organic compounds known to contribute to the functioning of the nervous system), which results in a sudden vigorous action that prepares the individual to take flight or fight depending on the situation (what Goleman refers to as the "rage rush"). This state will last for a few minutes only. Simultaneously, however the limbic system prompts arousal in the nervous system, providing a longer-lasting, more general state of readiness upon which subsequent reactions can build particularly quickly. In effect this state of arousal lowers the threshold of the point at which anger is provoked.¹¹

Theories suggest that the "higher," civilized elements of the mind become subordinate to our most primitive responses; successive anger-provoking thoughts become a trigger for surges of catecholamines, each building on the hormonal momentum of those preceding it. Before the first has subsided there is a second, closely followed by a third, and so on, such that the body is rapidly in a state of extreme arousal. Consequently, an aggressive thought that occurs later in this process is likely to result in a greater intensity of anger than one that occurs at the beginning. In Goleman's words:

Anger builds on anger; the emotional brain heats up. By then rage, unhampered by reason, easily erupts in violence. At this point people are unforgiving and beyond being reasoned with; their thoughts revolve around revenge and reprisal, oblivious to what the consequences might be ...the rawest lessons of life's brutality become guides to action.¹²

Is Driving Aggression an Index of General Aggression in Society?

Individuals vary enormously in their propensity to display aggression. The positive responses which previous expressions of aggression have elicited will lead certain people to rely on aggressive behavior as a method to achieve their own ends. Driver aggression may therefore act as an index of a society's general propensity to act aggressively. Any unusual tendency the driving experience offers of provoking aggression will make little difference to those drivers whose personal experiences have never led them to believe that aggression is a reliable short cut to achieving their aims.

Whitlock¹³ explored this aspect of the driver aggression issue by correlating the number of road deaths with the number of violent deaths (murder and suicide) in numerous countries. From this research he concluded that:

...road death and injury rates are the result, to a considerable extent, of the expression of aggressive behavior ...those societies with the greatest amount of violence and aggression in their structure will show this by externalizing some of this violence in the form of dangerous and aggressive driving...

A similar contemporary correlation for regions of the United Kingdom can be conducted. Fatal and serious road accident statistics are currently compiled by the local authority, and homicide statistics are compiled in terms of the police force, so that comparisons can only be made for those regions where these two groups correspond exactly. Using the 1994 statistics for only these areas¹⁴, however, a correlation coefficient of 0.7 is produced, suggesting a strong predictive link between road accident and homicide rates. Furthermore, a comparison of regional accident statistics and population density does not suggest that this link is mitigated by the size of each region; in other words, those areas with high homicide rates will typically also exhibit high serious and fatal road accident levels, and this link is not necessarily merely a consequence of the region's population or geographical size. Nationally, Whitlock would appear to be supported.

Driver aggression is an issue which must be addressed in far wider terms than road rage -- if the driving environment is unique in its ability to provoke negative and potentially dangerous emotion, only a proportion of this will result in violent behavior directed at the driver's immediate neighbors. There is a danger that drivers who do not effectively deal with their anger towards fellow motorists might underestimate the influence their aggression will exert on their driving. As early as 1968 supportive experimental evidence for this was provided. In an analysis of fatal accidents, Selzer, Rogers, and Kern¹⁵ found that in 20 percent of the cases they surveyed the drivers had been found to have been involved in aggressive altercations at some point in the last six hours before their death. This would equate to 724 deaths in 1995 in the United Kingdom.

If driving does increase people's propensity to display aggressive emotion and behavior, while evidently providing many drivers with a perceived means of

emotional escape, a conflict is clearly apparent and many drivers involved in road accidents may be the victim of their own or other motorists' inability to resolve aggression behind the wheel. In these terms driver aggression is a greater risk to the person experiencing the aggression than to his fellow drivers.

Environmental influences on aggression.

It is widely accepted that there are numerous environmental variables which can, under certain circumstances, either provoke aggression or increase the likelihood of its occurrence.

Noise

Research suggests that noise is an unusual environmental influence on aggression, because it influences the *intensity* of aggression which has already been provoked, rather than adding to other variables which might together culminate in aggression. To an extent this can be seen as a result of the direct effect of noise on *frustration* rather than aggression.

The probability of finding any causal link between noise and the presence or intensity of aggression appears to rely on the level of control the subject has over the noise. If the individual has no control over the volume or duration of an irritating noise, the level of aggression *provoked by something else* is likely to be raised. Such noise tends to produce stress, and makes concentration more difficult, so that any further infringements will probably be reacted against, and individuals who already find themselves in an aggression-producing situation will aggress more intensely.

The ramifications this has for the driving environment are clear: In congestion, for example, the noise of other vehicles and even car stereos may inhibit the driver's tolerance of frustration so that any aggression will be displayed at a higher and potentially more dangerous level.

Noise is perhaps, therefore, a unique predictor of and influence on aggression because of its ancillary relationship to other environmental factors.

Temperature

The incidence of violent crime is widely reported to increase during the summer months. While a causal link between hot weather and aggression is commonly supposed to exist, experimental evidence to support this view is sparse, and the interpretation and comparison of laboratory and "real world" surveys is difficult. The central problem is one of controllability; regardless of the commitment an experimental subject might have to the study, and the social restraints that may act to preclude his abandoning the project, the fact remains that if the heat the experimenter generates artificially becomes unbearable the subject can insist on its level being reduced, or can call an end to the experiment. This knowledge appears to have a profound effect on laboratory studies of heat and aggression -- most of the frustration and irritation extreme heat incurs can be seen to originate

in the extent to which this situation is beyond the individual's control.

One experiment which overcame this difficulty, however, and which can be related directly to our understanding of driver aggression, is that of Kenrick and MacFarlane¹⁶. In their experiment a car was repeatedly positioned in front of another vehicle at a set of traffic lights, and the driver would deliberately ignore the presence of a green light and remain stationary. A basic standard measure of the aggression of the driver behind was formulated, based on the time which elapsed before he or she sounded the horn, the number of times the horn was sounded, and the duration of each sounding. This measure was assumed to indicate the annoyance and aggression of the obstructed driver.

A direct, linear relationship between the outside temperature and this aggression measure emerged. Kenrick and MacFarlane had thus tested the effects of heat under experimental conditions which did not allow subjects to assume they could avoid or control the level of heat. It would appear from these results that there can be seen a direct influence of heat on driver aggression.

Overcrowding

The effects of overcrowding on aggression are difficult to calibrate or predict, primarily because, unlike noise and temperature, overcrowding is a wholly subjective environmental feature. Direct measures of population density or available space can be correlated experimentally with aggression levels, but only when the density is perceived by the subjects of the experiment to constitute overcrowding.

These findings are relevant to the driving scenario, and perhaps more specifically to traffic congestion. Very slow or stationary traffic situations present typical conditions in which driver aggression can be allowed to reach detrimental levels. The environmental influences mentioned above, heat and noise, may well exert the most influence in congestion, and a sense of overcrowding is certainly most likely to arise there.

Individual differences and the car as an annex of the home

Individual differences in our predisposition to be aggressive may be important in the driving experience in deciding the outcome of conflict. The extent to which the vehicle symbolizes real and imagined aspects of the driver's individuality has already been outlined; the car is an indication, to both the driver himself and those around him, of social standing, of wealth, of attitude, and of

personality. But when a situation of conflict arises,

individual differences may again be of singular importance.

Any form of attack is a reliable and potent stimulus for aggression, particularly when the "victim perceives the event to be wholly deliberate and indicative of malicious intent. If this is not the case, i.e., if the individual decides on balance

that the conflict arose from error and misjudgment, *as is frequently the case on the road*, the extent to which aggression is used in retaliation is probably determined to a greater extent by individual predispositions. The problem of feedback in the driving environment is again important; if it is relatively difficult to communicate to another driver that an unfortunate maneuver was the result of a mistake on your part, his decision as to whether or not your action was deliberate and personally aggressive is internally generated -- you are uniquely reliant on the margin with which he gives the benefit of the doubt, the extent to which he feels generally aggrieved, and therefore his predisposition to being aggressive."

Interpersonal Communication

Low levels of aggression while driving, such as swearing or gesticulating, will often be futile. Feedback from the party to whom the aggression is directed will be extremely limited; it will often be impossible to ascertain whether or not the grievance is acknowledged, and the aggressed-upon will be unable to communicate any apology or submission effectively. To return to our walking analogy, it is easy to express apology and goodwill when another pedestrian is accidentally bumped into on the street through verbal communication and body language. In the car, however, this is not possible. An attempt to gesticulate submission may even, in fact, be construed as a signal of offensive retaliation and provoke more violent behavior.

Secondly, as a living space that the driver personally owns, the car is subject to cultural standards of behavior that differ from those that exist in the outside world. In general it is socially acceptable for people to display aggression at a higher level within their own home than they would do in public, often even when it intrudes, by its noise for example, on others. The car presents similar levels of privacy and territorial invulnerability. To return to the analogy with walking, if the behavior of one pedestrian threatens the safe progress of another, it is immediately important that an accurate assessment is made of whether or not this obstruction is deliberate and whether retaliation is required. It is more likely that a verbal or physical display of annoyance will be noticed, and an accurate assessment is needed so that an appropriate level of aggression can be displayed.

Otherwise the aggrieved can expect to be ridiculed rather than supported.

The car, therefore, can be seen to straddle the boundary between personally owned space where, within limits, the individual's behavior is accountable only to the standards he has set himself, and the public domain, where behavior is regulated by general acceptability and explicit rules.

"Cures" for Road Rage

It is important that we challenge the thoughts that provoke anger before there is opportunity for the successive waves of anger to compound. The sooner we intervene in the "anger cycle"¹⁷ the more effective the intervention is likely to be.

The tactic is to concentrate on mitigating information that might put the provocative circumstances in a more reasonable light. However, Zillmann emphasizes the point that at already high levels of rage people are often unable to think in a rational manner and are likely to dismiss mitigating information regardless.

Drivers must also be advised to pay more attention to their own level of emotion; the evidence suggests that drivers who allow their emotions to get out of hand behind the wheel represent a greater risk to themselves than to those around them. It is especially important that drivers aren't tempted to resolve aggressive emotion with small-scale outbursts of abusive language or gesticulation; research suggests this will not improve their ability to overcome the situation and concentrate on driving, and the risk of retaliation will obviously increase. The evidence linking driver aggression and road accidents with general socially dysfunctional behavior such as violent crime, though scarce, does not support the argument that extreme driver aggression -- "road rage" -- is the result of our cultural prohibition of emotional displays.

An alternative tactic suggested by Zillmann is to find a situation where further provocation is unlikely and wait for the surge of adrenaline to dissipate, what Goleman describes as psychologically "cooling off." Distraction is a key device in achieving this. Ironically, Tice¹⁸ found that a large proportion of men cool down by going for a drive -- which cannot be recommended. Goleman suggests safer alternatives, such as going for a long walk or, more dynamically, using specific relaxation methods. The basic theory behind this is that after high levels of physiological activation during the exercise the body rapidly returns to a low level once it ceases. The important point is that any attempt to cool off has to be sufficiently distracting to interfere with the train of anger-inducing thought. Tice's research found that TV, films, and reading also aided cooling off, even though these cannot be classified as physiologically active pursuits. Goleman also highlights the need for self-awareness to ensure that we identify cynical or hostile thoughts as they arise.

We have already seen that controllability has been a significant factor in laboratory studies of the effects of noise and temperature upon aggression. Control is a crucial element in the management of stress and aggression -- frustration need not lead to aggression. It is important to have an appropriate set of responses that enable one to cope with the frustration. This may not remove the cause of the stress, but should mitigate the worst effects or prevent any escalation of the situation.

Understanding why people behave in particular ways in particular situations brings a sense of control. Simply having sufficient information about why a driver is behaving in a particular way means that one is more able to predict behavior and, if necessary, more able to take avoiding action.

The evidence of environmental variables' influence on aggression has perhaps the greatest bearing on how we advise drivers to avoid aggression and conflict

on the roads, by both supporting the logic behind advice which is already given and by supplementing our knowledge of those circumstances where aggression is most likely. Sharing the road safely and being patient in traffic remain eminently sensible pieces of advice, particularly given our understanding of how overcrowding can be seen to influence aggression. Drivers need to learn to bear in mind those environmental circumstances that appear more likely to provoke aggression, for example, excessive temperature and congestion.

Punishment

It is the AA's view that those so-called "road rage" offenses that are not adequately covered by motoring law are covered by existing criminal law. The possible offenses are listed in Appendix 2. The magistrates and law courts have, on occasion, requested that a "road rage" offender attend a course on anger management or receive psychiatric attention. However, the AA would like to see clearer guidelines for the treatment of offenders. In particular, there may be cases where a "road rage" offender can only be convicted of a non-motoring offense even though his or her aggressive behavior is clearly linked to driving and the driving environment. In such cases, the AA would support moves that enable the magistrates and courts to impose a driving disqualification.

Putting Driver Aggression in Perspective

As a phenomenon which has only comparatively recently raised public concern, and one for which statistical evidence is not routinely collected at present, the incidence of injuries and deaths attributable to driver aggression is difficult to ascertain. Attempts to estimate the potential number of road rage cases tend to be based on the extrapolation of small-scale surveys, which is a tenuous methodology given the difficulties in providing an accurate prognosis of the problem.

The high profile given to cases that result in death is, in fact, the only variable which facilitates an approximate calculation of incidence. On the assumption that six cases of death resulting from "road rage" conflicts have occurred in 1996, it can be postulated that as members of the UK population, while we typically face a 1 in 15,686 chance of being killed in a road accident, the probability of dying as a result of "road rage" is closer to one in 9.5 million.

Part of the "cure" for road rage is that the public's perspective of the problem is restored to realistic proportions. Correspondingly, those areas of road safety that have been proven to be a significant factor in a much greater percentage of road accidents, fatigue for example, should be given greater weight. Disturbingly, there are some indications that attention on driver aggression may be attracting investment and research from other, more important areas.

It is irresponsible to suggest that there are fundamental problems within our society on the data we have at present. Although the individual's perception of prevalent social problems is, in part, based on personal experience, we should

not underestimate the effects of society's mass communicators, the media. Inevitably, however, researchers, social scientists, and other opinion formers have to take a degree of responsibility; essentially, this responsibility is to act and speak only on reliable evidence.

1 "Road Rage," The Automobile Association Group Public Policy Road Safety Unit, March 1995

2 Home Office Statistical Bulletin: Government Statistical Service

3 The British equivalent of the American "finger."

4 "Road User Behavior and Traffic Accidents," R. Ntinen and H. Summala, 1976, North Holland Publishing Co.: Amsterdam

5 "Aggression on the Road," London: Parry M. H., 1968

6 Geen, Russell G., *Human Aggression*. Milton Keynes: Open University Press

7 Geen, *op cit.*

8 Goleman, D., *Emotional Intelligence*

9 Quoted as part of D. Zillmann, "Mental Control of Angry Aggression," in Wegner and Pannebaker's *Handbook of Mental Control*

10 Goleman, *op cit.*

11 Zillmann, *op cit.*

12 Goleman, *op cit.*

13 Whitlock, F.A., *Death on the Road: A Study in Social Violence*. London: Tavistock

14 Using this "identical area of responsibility" criterion resulted in the correlation of statistics for 34 regions.

15 Selzer, Rogers, and Kern, "Fatal Accidents: The Role of Psychopathology, Social Stress, and Acute Disturbance" in *The American Journal of Psychiatry*, 124, pp 1022-1036.

16 Kenrick, D.C., and MacFarlane, S.W., "Ambient Temperature and Horn Honking: A Field Study of the Heat/Aggression Relationship" in *Environment and Behaviour*, 18, 179-91, 1986

17 Geen, *op cit*

18 Tice, *op cit.*

Appendix

Driver Aggression:

Penalties IN THE UNITED KINGDOM

Road Traffic Legislation

Causing Death by Dangerous Driving: 10 years imprisonment; disqualification for 12 months and a re-test, and/or a fine. Triable only on indictment 1

Dangerous Driving: £5,000 or six months or both plus disqualification for one year and a re-test.

Careless or Inconsiderate Driving: £2,500 plus three to nine penalty points.

Causing Danger to Other Road Users: Triable summarily², £5,000 or six months or both. Triable on indictment -- seven years or a fine or both.

Offenses other than Road Traffic Offenses

Murder or Manslaughter could be charged in the appropriate circumstances; the sentence for both can be life imprisonment.

Common Assault: Six months or £5,000 or both.

Wounding with Intent: Can be life imprisonment.

Unlawful Wounding Five years and/or fine. Triable only on indictment.

Causing Injury by Furious Driving: On indictment five years and/or a fine. Otherwise six months

and/or £5,000.

Using Threatening, Abusive, or Insulting Words or Behavior, thereby causing fear or provocation, or offering violence with intent to cause a person to believe that unlawful violence will be used: Six months or £5,000 or both.

As above, but using *threatening, abusive, or insulting words or behavior and causing harassment, fear, or distress:* £1,000 -- in this element there is no actual intent of violence.

Criminal Damage: Six months and/or £5,000, unless the following elements are present, which would dictate that the cause be tried on indictment: a) Committed by a group; b) The damage is of high value; c) There is clear racial motivation.

The Highway Code

The new version of the Highway Code, published July of 1995, contains a supplement that includes the following:

Be Careful and Considerate of Other Road users

Don't drive aggressively. Try to be understanding if another driver causes a problem.

10. If someone is behaving badly on the road, don't get involved. If you feel angry, pull over and calm down.

11. If a vehicle behind you is trying to overtake but can't, take no action. Keep a steady course and stay within the speed limit. Pull over if it is safe to do so and let the vehicle pass. Never obstruct drivers who wish to overtake. Speeding up or driving unpredictably while someone is overtaking you can be very dangerous.

12. Never overtake a vehicle indicating right. Even if you believe the signal should have been canceled, don't take a risk. Wait for the signal to be canceled.

13. If a vehicle pulls out into your path at a junction, slow down and hold back to allow it to get clear. Don't overreact by driving up too close behind it.

1 An indictable offense being one dealt with in the Crown Courts by jury.

2 i.e., by magistrate

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