



ANBI 189

Evolution of Human Disease

Lecture 17: Gun Violence



Pascal Gagneux

Winter 2021

Hunting, Deadly Weapons and Egalitarianism



Hadza, Tanzania



Jarawa, Anadaman Islands



Ache Paraguay, Namibia



Koisari, Botswana



Penan, Borneo



Pirahã, Brazil



Aka, Congo



Tsimané, Peru



Shuar, Ecuador

Hunters by definition have weapons. Modern humans developed different styles of projectile weapons to hunt a huge range of animals from a distance. Using such weapons is a learned skill, can be very effective, and is hugely satisfying for the hunter. These same weapons can also be used against fellow humans.

Egalitarian Levelling Mechanisms

- ◁ 1. Mobility and flexibility
- ◁ 2. **Access to means of coercion**
- ◁ 3. Access to food and resources
- ◁ 4. Sharing
- ◁ 5. Sanctions on the accumulation of personal possessions
- ◁ 6. The transmission of possessions between people
- ◁ 7. Leadership and decision-making



James Woodburn, *Man* 1982

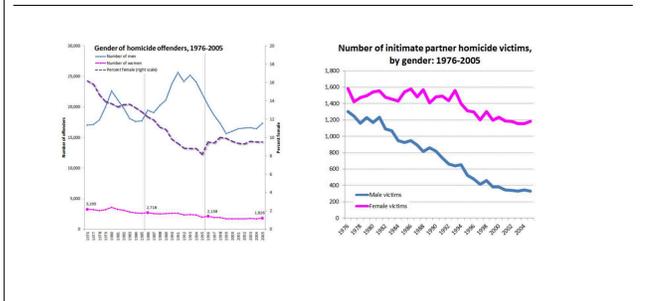
The anthropologist James Woodburn has argued that access to means of coercion might be a key mechanism for enforcing egalitarianism.

Female violent offenders? Yes, but most violence is male



Women can be violent as well, but the numbers clearly show how much more likely men are to be violent and commit all other kinds crimes.

Female violent offenders?



Trends in male and female homicides in the USA. Ten times more males are homicide offenders

Practice question: What is the approximate fraction of female homicide offenders among all homicide offenders in the US?

Around 10%.

First metal tools? Copper mace heads!



replica of copper axe found with the Tyrolean Ice man (~5 kya)



Earliest copper age artefacts from the Levant (~7 kya)

The first metal used by humans for metallurgy 7 thousand years ago was used to make mace heads....

Sad Commentary on Human Technology?



Why do we humans apply the latest technologies to killing others?
Copper mace heads, bronze swords, compound bows, steel swords and spears, cross-bows, canons and guns, nuclear devices....

Lethal Heritage?



Dani, New Guinea



Mursi, Ethiopia

Homo necans? Man the killer?

GUN VIOLENCE ARCHIVE 2020	
February 25, 2021	
Total Number of GV Deaths - "All Causes"	43,331
Homicide Murders (Intentional/ODU)	19,363
Suicides	24,108
Total Number of Injuries	39,424
Mass Shootings	611
Mass Murders	21
Number of Children (Age 0-11)	Killed: 296, Injured: 699
Number of Teens (Age 12-17)	Killed: 1,072, Injured: 3,064
Officer Involved Incident	Killed: 98, Injured: 348
Officer Killed or Injured	Killed: 1,292, Injured: 931
Defensive Use	1,450
Intentional Shooting	2,280
Murder/Suicides Incidents	570

Non-profits are tracking daily gun violence in the USA

GVA - SIX YEAR REVIEW	2014	2015	2016	2017	2018	2019
Deaths - Willful, Malicious, Accidental	12,418	13,537	15,112	15,679	14,789	15,208
Suicides by Gun	21,386	22,018	22,938	23,854	24,432	PENDING
Injuries - Willful, Malicious, Accidental	22,779	27,033	30,666	31,265	28,233	29,501
Children [age 0-11] killed or injured	603	695	671	733	670	692
Teens [aged 12-17] killed or injured	2,318	2,695	3,140	3,256	2,869	3,068
Mass Shooting	269	335	382	346	337	417
Murder-Suicides	624	530	549	608	621	614
Defensive Use [DGU]	1,531	1,393	2,001	2,107	1,888	1,547
Unintentional Shootings	1,605	1,969	2,202	2,039	1,662	1,837

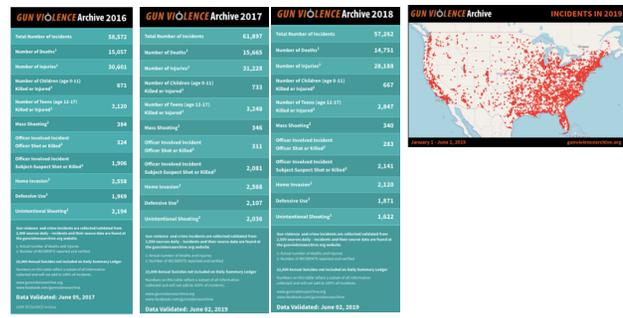
Number of Deaths, injuries, Children, Teens killed/injured [actual numbers]
 Mass Shooting, Murder-suicides, Defensive Use, Unintentional Shooting [number of incidents]
 Suicide numbers supplied by CDC End of Year Report [actual numbers]

@gundeaths
 www.gunviolencearchive.org
 www.facebook.com/gunviolencearchive

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By the numbers for years 2016-2018

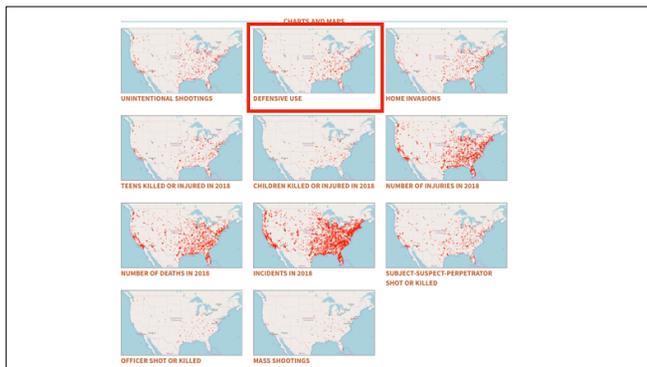


There are more unintentional shootings than defensive use shootings the last three years in a row

Practice question:

How do the numbers of self defense and accidental shooting compare in the USA?

There are slightly more accidental shooting than self-defense shootings.



Just a tiny minority of gun incidences includes defensive use?

Shop till you drop



Shop till you drop, legally or illegally



Bel-Air, Los Angeles, May 2019

Gun Shows, without background check

■ Not required
■ Required for handgun sales
■ Required for all purchases



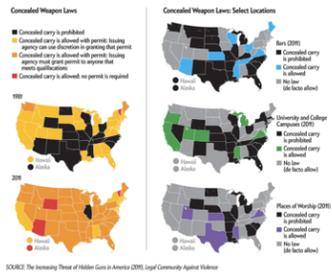
Governing, from Law Center to Prevent Gun Violence

Open Carry Laws



Wall Street Journal

Laws on concealed carrying of weapons



US History: American Revolution 1775- 1783



US History: Colonization of the West



Our nation is essentially founded on a land grab, and fire arms were key tools for the job.

US History: Individualism and distrust of government



Second Amendment

A well regulated militia being necessary to the security of a free state, the right of the people to keep and bear arms shall not be infringed.

The gun-control camp interprets the Second Amendment as specifically referring to militia—the early version of the National Guard. Even if it doesn't, they say, when the authors included they gave the OK for self-gun control.

Gun-rights supporters say all the other amendments focus on individual rights, and so does "OK" as it's sometimes called. They say the Second Amendment helps protect what's prohibited in the other one and that it's a line the government is forbidden to cross.



Erotization of Guns



Practice question:

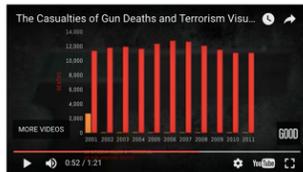
Which public depictions of human behavior are more strictly controlled in the USA, nudity or gun violence? the former.

Gun Violence vs Nudity



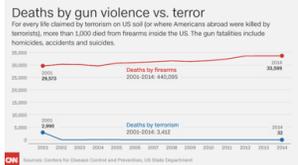
PG-13 rated movies have extremely high gun retaliated body counts, show one buttock, or teenagers frolicking naked in a grassy field and the film is R-rated.....

Constant terrorism ?



The video shows a series of alarming numbers, followed by an even more alarming statistic: In 2015, the U.S. has yet to go eight days in a row without a mass shooting. The visual, comparing gun deaths to terrorism deaths, demands not only to be seen and understood but a permanent solution.

Image sources: theguardian.com, monroenews.com



Source: Centers for Disease Control and Prevention, US State Department

Drugs go North, firearms go South?



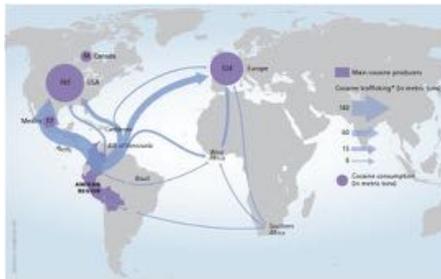
Drugs and firearms go in all directions!

Opium and its derivative Heroin



: UNODC World Drug Report 2010

Cocaine



Illegal firearms movement



New York Times, based on data of the Bureau of Alcohol, Tobacco, Firearms and Explosives

Arms/Ammo import export



<http://armsglobe.chromeexperiments.com/>

SIGG bottles?



SIG Sauer

Swiss weapons manufacturer diversify into beverage containers...

Arrival of firearms (and christianity) in Japan in 16th C



First Westerners in Japan, by Hokusai, 1817. Caption: "On August 25, 1543, these foreigners were cast upon the island of Tanegashima, Okuma Province",



First Westerners in Japan, by Hokusai, 1817. Caption: "On August 25, 1543, these foreigners were cast upon the island of Tanegashima, Okuma Province", followed by the two names Murashukusha (unknown) and Kirishitamōta (i.e. António da Mota, also known as Cristóvão, the Portuguese equivalent to Christopher).

Too much medical scrutiny?

1081 THE NEW ENGLAND JOURNAL OF MEDICINE Oct. 7, 1993

SPECIAL ARTICLE

GUN OWNERSHIP AS A RISK FACTOR FOR HOMICIDE IN THE HOME

ARTHUR L. KILLERBURN, M.D., M.P.H., FREDERICK P. ROYAK, M.D., M.P.H., NORMAN B. RENSHFORTH, Ph.D., JAMES G. BANTON, M.S., DONALD T. REAY, M.D., JERRY T. FRANCISCO, M.D., ANA B. LOOKE, Ph.D., JANINE PRUDENZIUS, B.A., BILLY B. HASKIN, M.D., AND GRANT TONER, Ph.D.

Abstract Background It is unknown whether keeping a firearm in the home confers protection against crime or, instead, increases the risk of violent crime in the home. To study risk factors for homicides in the home, we identified homicides occurring in the homes of victims in three metropolitan counties.

Methods After each homicide, we obtained data from the police or medical examiner and interviewed a proxy for the victim. The proxy answers were compared with those of control subjects who were matched to the victims according to neighborhood, sex, race, and age range. Odds and adjusted odds ratios were calculated with matched-pairs methods.

Results During the study period, 1800 homicides occurred in the three counties; 444 of them (25.0 percent) in the home of the victim. After excluding 24 cases for various reasons, we interviewed proxy respondents for 93 percent of the victims. Controls were identified for 99

percent of these, yielding 388 matched pairs. As compared with the controls, the victims more often lived alone or rented their residence. Also, case households more commonly contained an ill-drug user, a person with prior arrests, or someone who had been hit or hurt in a fight in the home. After controlling for these characteristics, we found that keeping a gun in the home was strongly and independently associated with an increased risk of homicide (adjusted odds ratio, 2.7; 95 percent confidence interval, 1.9 to 4.1). Virtually all of the risk involved homicide by a family member or intimate acquaintance.

Conclusions The use of illicit drugs and a history of physical fights in the home are important risk factors for homicide in the home. Rather than confer protection, guns kept in the home are associated with an increase in the risk of homicide by a family member or intimate acquaintance. (N Engl J Med 1993;329:1084-91.)

Practice question:

Why is it extremely difficult for the CDC to study the epidemics of gun violence? because of the Dickey amendment to a 1997 bill.

The NRA



220 million \$ income in 2011
seen as one of the top three lobbying groups in DC

The NRA



Mr. LaPierre, who earns more than \$1.4 million a year, billed [\\$267,000 in personal expenses](#), including flights and limousine service for trips to the Bahamas, Florida, Nevada, Budapest and an Italian lake resort, the leaked documents show. He even arranged for Ackerman to pay an intern's rent.

Arming our kids



NRA lobbying against gun violence research

The 1993 NEJM article received considerable media attention, and the National Rifle Association (NRA) responded by campaigning for the elimination of the center that had funded the study, the CDC's National Center for Injury Prevention.

The center itself survived, but Congress included language in the 1996 Omnibus Consolidated Appropriations Bill (PDF, 2.4MB) for Fiscal Year 1997 that "none of the funds made available for injury prevention and control at the Centers for Disease Control and Prevention may be used to advocate or promote gun control."

Referred to as the Dickey amendment after its author, former U.S. House Representative Jay Dickey (R-AR), this language did not explicitly ban research on gun violence. However, Congress also took \$2.6 million from the CDC's budget — the amount the CDC had invested in firearm injury research the previous year — and earmarked the funds for prevention of traumatic brain injury.

Dr. Kellerman stated in a December 2012 article in the Journal of the American Medical Association, "Precisely what was or was not permitted under the clause was unclear.

But no federal employee was willing to risk his or her career or the agency's funding to find out. Extramural support for firearm injury prevention research quickly dried up."

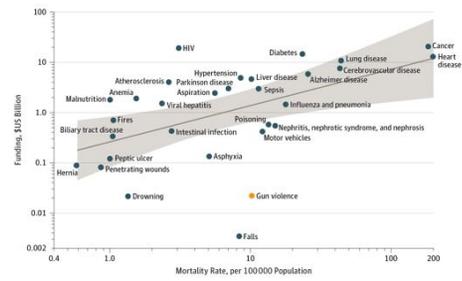
A report released in January 2013 by the group Mayors Against Illegal Guns (PDF, 2MB), founded by New York City Mayor Michael Bloomberg, found that since 1996 the CDC's funding for firearm injury prevention has fallen 96 percent and is now just \$100,000 of the agency's \$5.6 billion budget.

The CDC's online guide for grants funded by the agency's Injury Control Research Centers currently includes a section titled Prohibition of Use of CDC Funds for Certain Gun Control Activities, which states that "In addition to the restrictions in the Anti-Lobbying Act, CDC interprets the language in the CDC's Appropriations Act to mean that CDC's funds may not be spent on political action or other activities designed to affect the passage of specific Federal, State, or local legislation intended to restrict or control the purchase or use of firearms."

If research on cancer were stopped for a single day, there would be a huge protest. But this research has been stopped for 20 years.

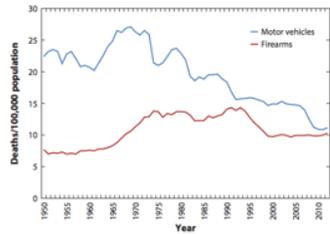
— Mark Rosenberg, former head of CDC injury prevention program

Lack of funding for research on gun related mortality



Stark and Shah, *JAMA*, 2017

Mortality rates for firearm violence and motor vehicle traffic events, 1950–2012



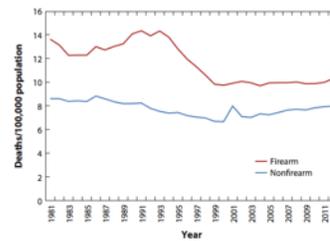
The Epidemiology of Firearm Violence in the Twenty-First Century United States *Wintemute, Annu. Rev. Public Health 2015, 36:5–19*

Mortality rates for firearm violence and motor vehicle traffic events, 1950–2012. Originally published in adapted, updated, and reprinted with permission. Data for 1950–1980 are available at the VitalStatistics of the United States website, <http://www.cdc.gov/nchs/products/vsus.htm>. Data for 1981–2012 are available at the CDC WISQARS website (Web-Based Injury Statistics Query and Reporting System), <http://www.cdc.gov/injury/wisqars/index.html>.

Practice question:

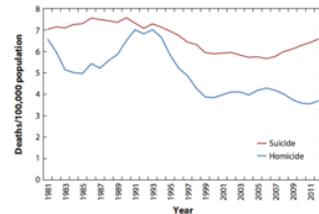
How do the trends for motor vehicle deaths and gun violence death contrast? reduction for motor vehicle, no reduction for gun violence.

Mortality rates for firearm and nonfirearm violence, 1981–2012.



The Epidemiology of Firearm Violence in the Twenty-First Century United States *Wintemute, Annu. Rev. Public Health 2015, 36:5–19*

Mortality rates for firearm homicide and suicide, 1981–2012.



The Epidemiology of Firearm Violence in the Twenty-First Century United States *Wintemute, Annu. Rev. Public Health 2015, 36:5–19*

Cost of fire arms violence to society

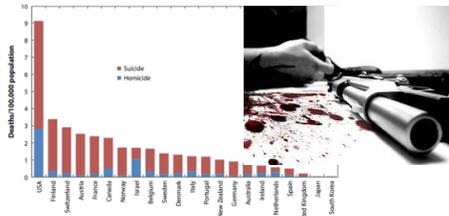
The societal costs of firearm suicides and homicides occurring in 2010, estimated at \$164.6 billion, approximated 1.1% of the US gross domestic product that year.



The overall rate of fatal firearm violence has remained essentially unchanged in the United States for more than a decade.

(<http://data.worldbank.org/indicator/NY.GDP.MKTP.CD>).

Access to guns = access to easy suicide



Mortality rates for firearm suicide and homicide for selected members of the Organization for Economic Co-operation and Development.

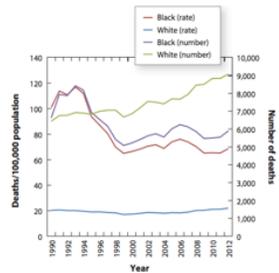
Data available at the GunPolicy.org website, <http://www.gunpolicy.org> (accessed August 28, 2014).

Practice question:

What type of incidents account for most gun deaths in the developed world?

Suicides!

Mortality rates and number of deaths from firearm violence for White males ages 35–64 and Black males ages 15–44, 1990–2012.

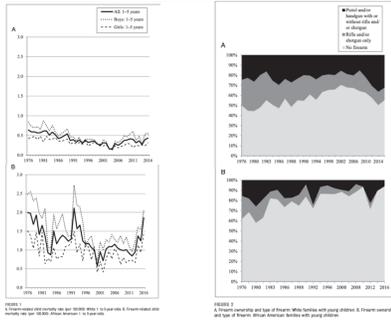


Children and Guns, a very dangerous combination

Family Firearm Ownership and Firearm-Related Mortality Among Young Children: 1976-2016

doi:10.1093/ped/kpw049

American Academy of Pediatrics
DEDICATED TO THE HEALTH OF ALL CHILDREN



The recent increase in ownership of handguns in white US families seems to have led to a clear uptick in the death of young children.

A public Health Approach to reducing gun violence

Established Public Health Success	Application to Gun Violence Reduction
Tobacco Taxation	Taxation of guns and ammunition to better represent societal costs and provide funding for gun safety and violence reduction programs
Change social and cultural norms, with particular focus on protecting youth	Change depictions of gun violence in advertising, television, movies, video games, and other media; broad media and spokesperson campaigns on the consequences of gun violence
Media and educational campaigns	Sustained, multicomponent media and educational campaigns to reduce gun violence, gun suicides, and unintentional fatalities, including how to recognize at-risk persons
Patient education and counseling	Routine primary care education and counseling to increase gun safety and prevent gun violence

Mozzafarian et al. *JAMA*. February 13, 2013—Vol 309, No. 6

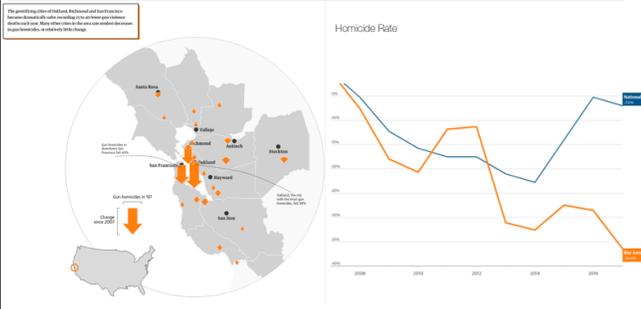
A public Health Approach to reducing gun violence

Established Public Health Success	Application to Gun Violence Reduction
Unintentional poisoning Childproof safety packaging	Key or security code locking devices on guns
Toxicity reduction (eg, reducing the numbers of pills per bottle, or the concentrations of poison)	Reduced magazine clip size; restrictions on rapid-fire assault rifles
Routine pediatrician counseling on safe storage and use	Routine primary care education and counseling on safe and secure storage and use of guns/ammunition and on recognizing at-risk behaviors
National Poison Control Center Network	National and community-based prevention programs, including well-publicized hotlines for discussing potential at-risk family members or friends
Motor vehicle safety Crash safety standards	Reduced magazine clip size; restrictions on rapid-fire assault rifles
Automobile safety	Periodic safety inspections of firearms

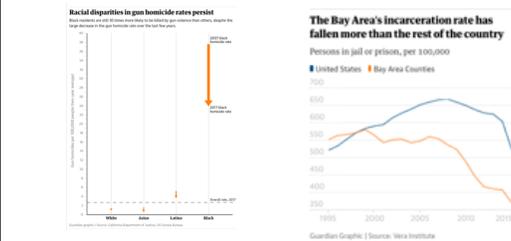
A public Health Approach to reducing gun violence

Established Public Health Success	Application to Gun Violence Reduction
Passive protection (padded interiors, collapsible steering columns, air bags)	Smart guns with automatic security or locking devices
Active protection (seat belts, child seats, motorcycle helmets)	Regulations for safe storage of guns and ammunition
Driver education	Mandatory gun safety classes
Licensing	Licensing with periodic renewal, including safety test and background check
Speed limits	Reduced magazine clip size; restrictions on rapid-fire assault rifles
Drunk-driving legislation	Stricter legislation and penalties for violators of gun safety and gun violence laws
Age requirements	Minimum age requirements for use of certain guns and ammunition
Governmental and private advocacy (eg. Mothers Against Drunk Driving)	Strong, active nonprofit advocacy focused on reducing gun violence

Successful Social interventions?



Successful Social interventions?



Social interventions at community levels can be successful.

Arming the poorest



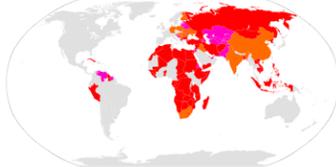
Soviet automatic weapons for the (poor world)



Avtomat Kalashnikova model 1947 (AK-47)



Viktor Bout



Soviet automatic weapons for Africa



SUMMARY



The overall fatality rate from firearm violence has not changed in more than a decade.

Suicide is the most common form of fatal firearm violence (55.5% of deaths in 2020) and is increasing. Homicide is decreasing.

Homicide risk is concentrated to a remarkable degree among "Black" males through much of the life span. Mortality rates from firearm violence are very high and unchanged in this group.

Suicide risk is highest among "White" males beginning in adolescence. They also account for most fatalities from firearm violence and have increasing mortality rates.

As compared with other industrialized nations, the United States has low rates of assaultive violence but uniquely high mortality rates from firearm homicide and suicide.
