



Samuel I. Schwartz, P.E.

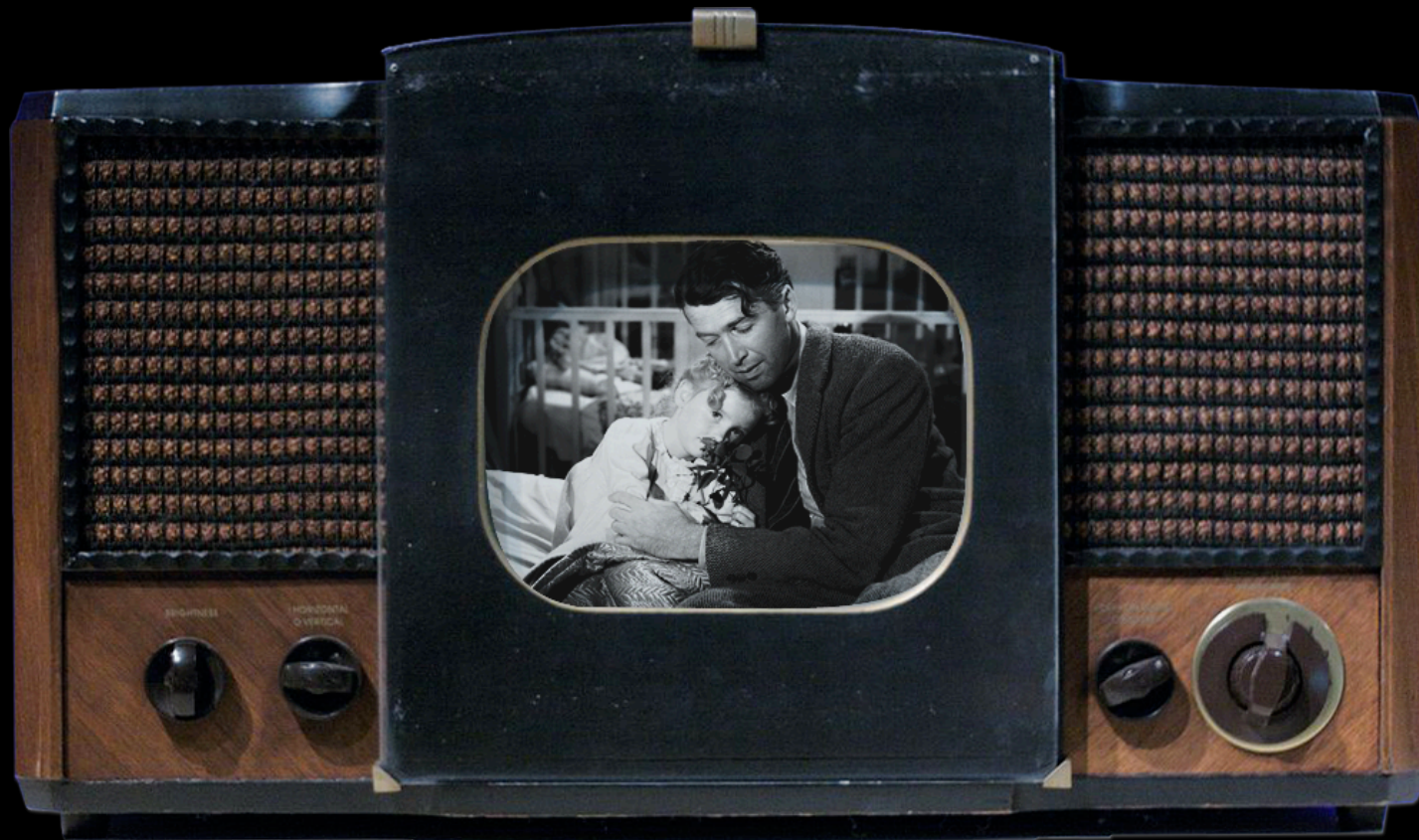
DVRPC Safety/Futures Group

June 19, 2019

Zap









1911





 **Super showdown** 
SUPER BOWL
BRONCOS, SEAHAWKS PUNCH TIX FOR NY: SPORTS

PUBLIC ENEMY #1

Man, 84, bloodied by cops — for JAYWALKING!

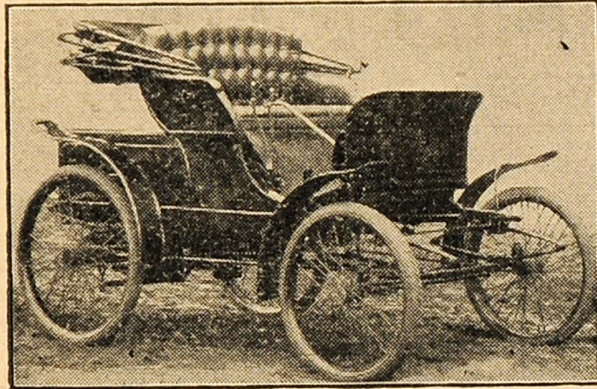
NYPD cops left 84-year-old Kang Wong a bloody mess after he physically resisted their attempts to ticket him for jaywalking on the Upper West Side, witnesses said. The blitz was sparked by the third pedestrian fatality this month around West 96th Street.

PAGES 6-7



Why did we do this?

Away with the Whip!



You can do without it now. No horse to keep, to stable, to stumble or to bolt.

Science and skill offer you the

Winton Motor Carriage

Price \$1,000. No Agents. The triumph of 19th century mechanism. Easy and safe to operate. Speed controlled by your own will. Clean, elegant and economical. Hydro-carbon system. *Send for free cata*
THE WINTON MOTOR CARRIAGE CO., Cleveland, Ohio.

“Easy”

“Safe”

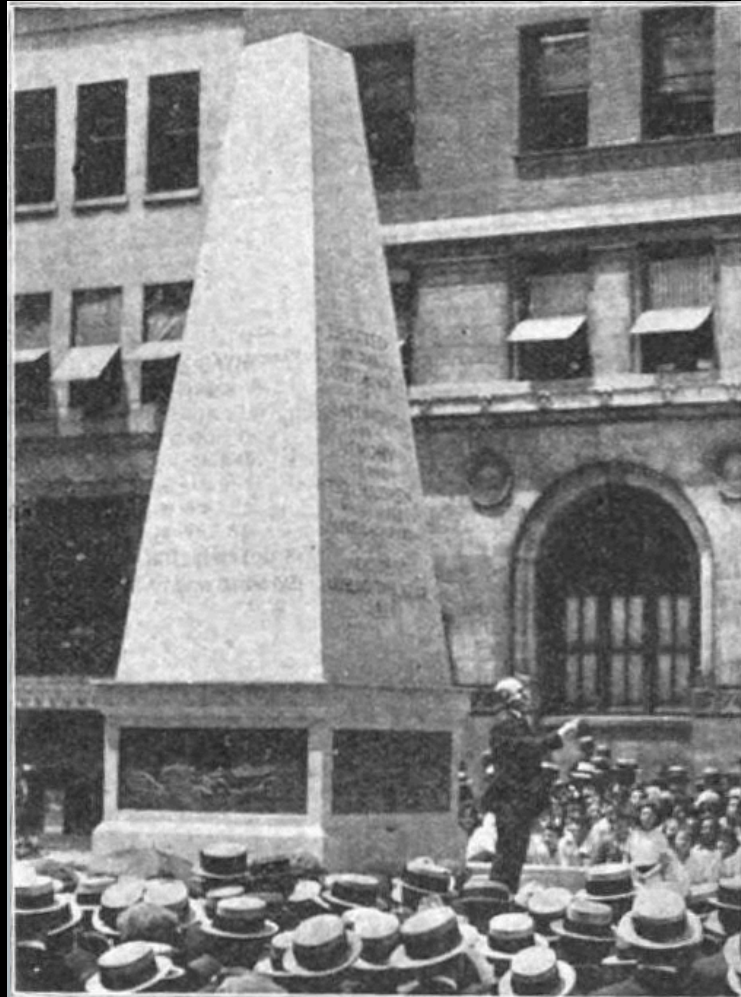
“Clean”

“Elegant”

“Economical”

“A city made for speed is made for success.” – Le Corbusier

But, there were **side effects..**



Baltimore 1922
Monument to
children killed in
street traffic.

CINCINNATI SPEED GOVERNOR WAR OF 1923

VOTE "YES"

On the Ordinance to Curb Speeding

Which Shall A Limit of 25 Miles Per Hour and
It Be--- SAFETY
— or —

No Limit and the Lurking Danger
of DEATH!

Did controlling pedestrians and
modern engineered roads
solve the problem?

No

**Today 3700 people will die worldwide
in traffic crashes**

3,700 PEOPLE DIE DAILY WORLDWIDE



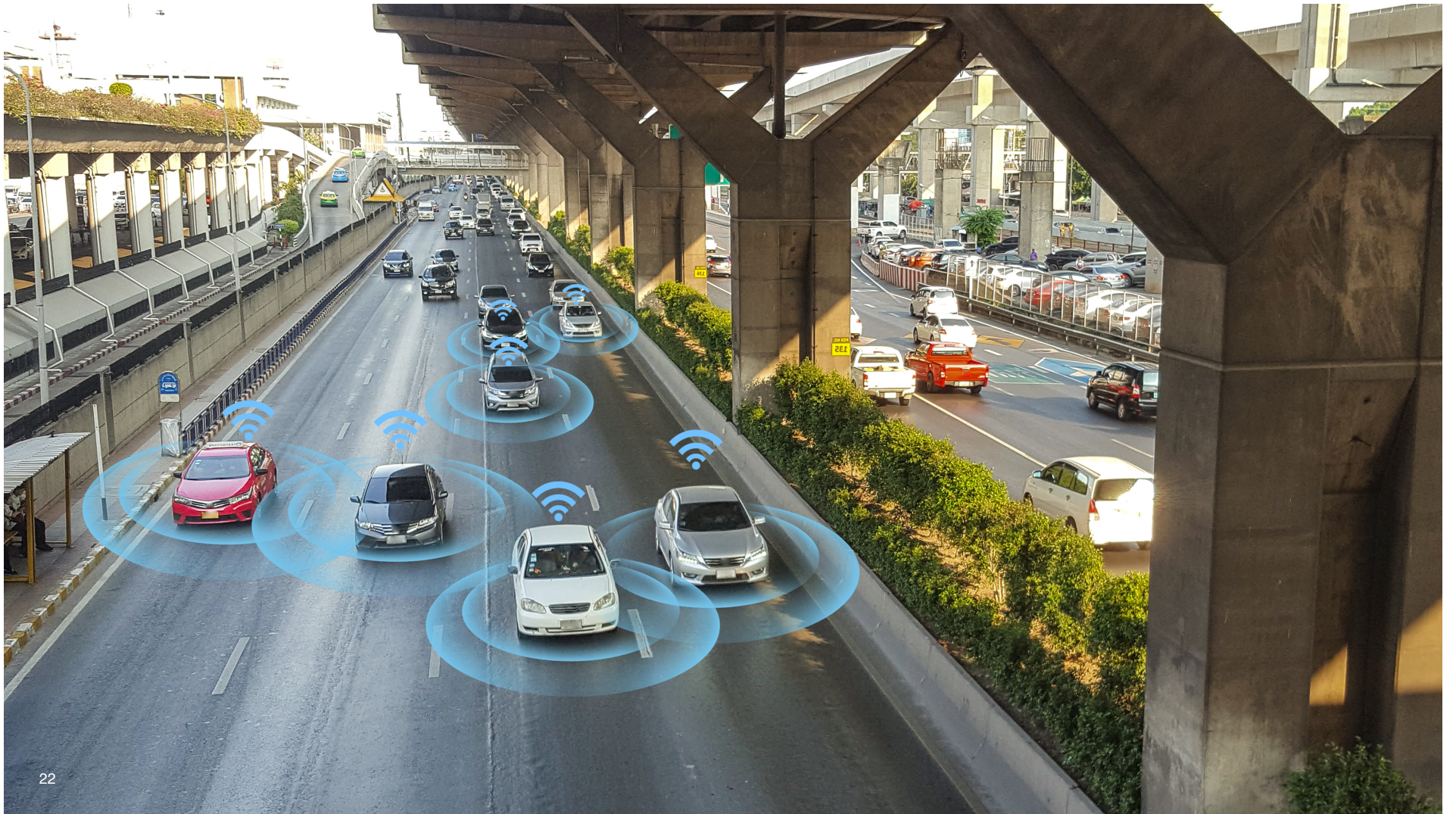
March 10, 2019

Equivalent to **24 plane crashes daily** Ethiopian Airlines **157 dead.**

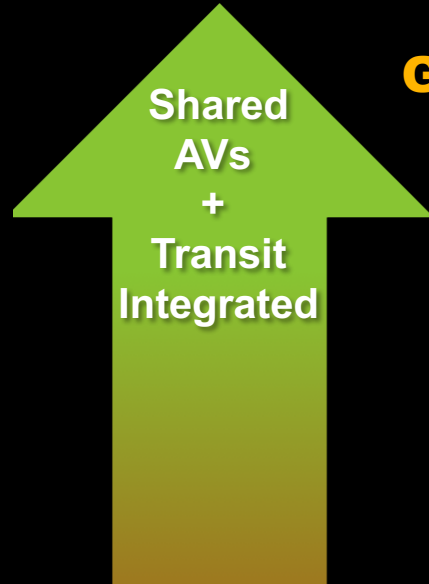
CAR SIDE EFFECTS

- 3,700 worldwide deaths daily
- 1.35 million killed annually
- 50 Million killed since 1900
- Gridlock
- Pollution
- Climate Change
- Sprawl
- Energy Dependency
- Obesity/Inactivity
- More...

**We could have done better
and must do better with
autonomous vehicles (AVs.)**



THE GOOD, THE BAD AND THE UGLY (POSSIBILITIES)



GOOD

- Congestion diminishes
- Crashes, injuries, and deaths plummet
- Disabled and low-income well-served
- Energy consumption plummets
- Less pollution
- Smaller carbon footprint
- Last mile solved
- Parking demand goes way down

THE GOOD, THE BAD AND THE UGLY (POSSIBILITIES)



Shared
AVs
vs.
Transit

BAD

- Traffic miles soar & congestion increases
 - Many jobs disappear
 - Peds, bikes squeezed out
 - Unaffordable for poor and rural dwellers
 - Reverses millennial trend eschewing driving
 - Competes with and undermines existing transit
-

UGLY

- Widespread gridlock
- Public transportation decimated
- Heart disease/stroke/diabetes skyrocket
- Everybody gets a license (even your dog)
- A new “modernist” view of cities
- Encourages sprawl

Truth vs. Hype

“We’re less than two years away from complete autonomy.”

– Elon Musk, June 2016

“We will be feature complete, full self-driving, this year...I am certain of that. That is not a question mark.”

– Elon Musk, Feb. 2019

“Level 5 will never happen globally.”

– Thomas Sedran, CEO of Volkswagen Commercial, March 2019

“Autonomy always will have some constraints.”

– John Krafcik, CEO of Waymo, Nov. 13, 2018

“We’re not even remotely close to being...truly autonomous.”

– Austin Russell, CEO Luminar, July 2018

U.S.:

Humans responsible

94% of fatalities

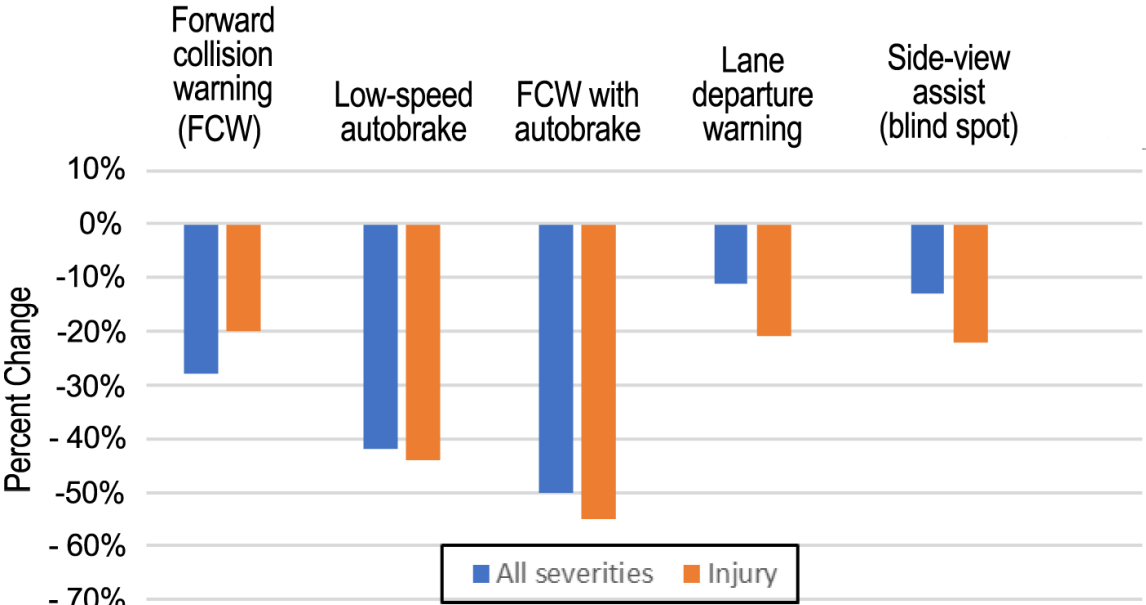
Sweden:
Humans fallible
Vision Zero

Sweden fatality rate **plummeted 62%**

U.S. rate 4 X Sweden

CARS CAN BE SAFER NOW

Summary of Technology Effects on Relevant Police-Reported Crash Types



Source: IIHS, May 2018

**40 countries agreed to
automatic emergency braking standard
as soon as 2020.**

But, not U.S. or China

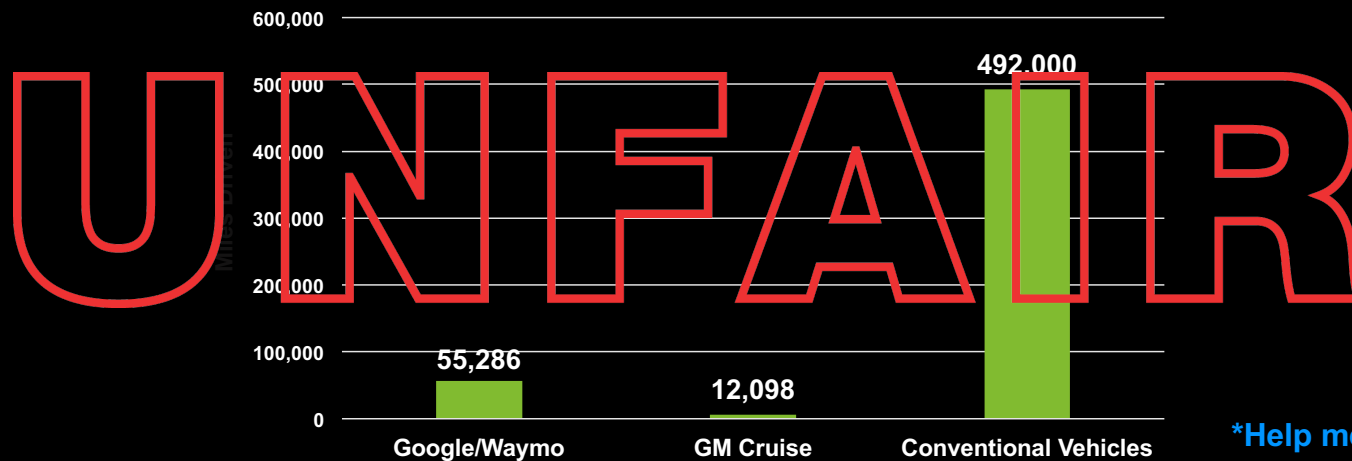
Self-driving already safer.
Not supported by data.

SELF-DRIVING CRASH HISTORY (WHAT WE KNOW*)

Fatalities: 4 Known in USA

- In 2017, there were 1.16 fatalities per 100 million miles, conventional driving
- 4 fatalities in conventional vehicles would take avg. 345 million miles driven
- Number of miles driven to date in AV mode unknown

Crash Frequencies: Self-Driving vs Conventional Vehicles
(December 2017- November 2018)



[*Help me get the data](#)

Switching passengers from
cars to AVs will save lives.

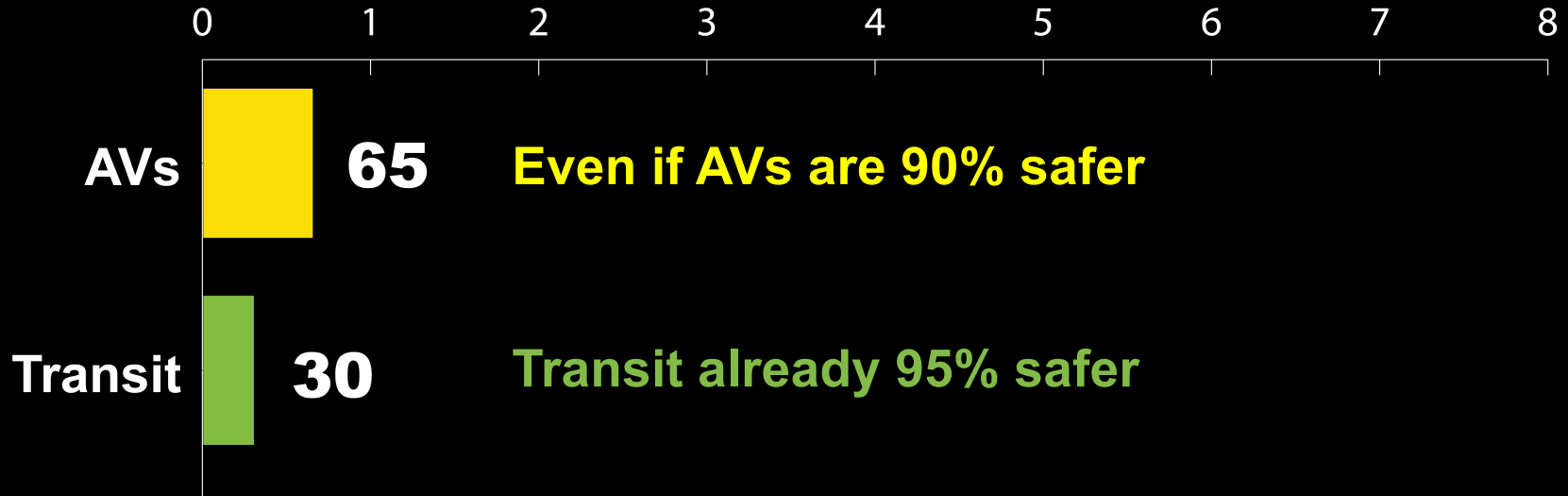
But taking them from transit
will increase fatalities.

DEATHS PER 100 BILLION PASSENGER MILES



Source: Passenger Deaths By Mode, 2000-2014, [APTA](#) (x100)

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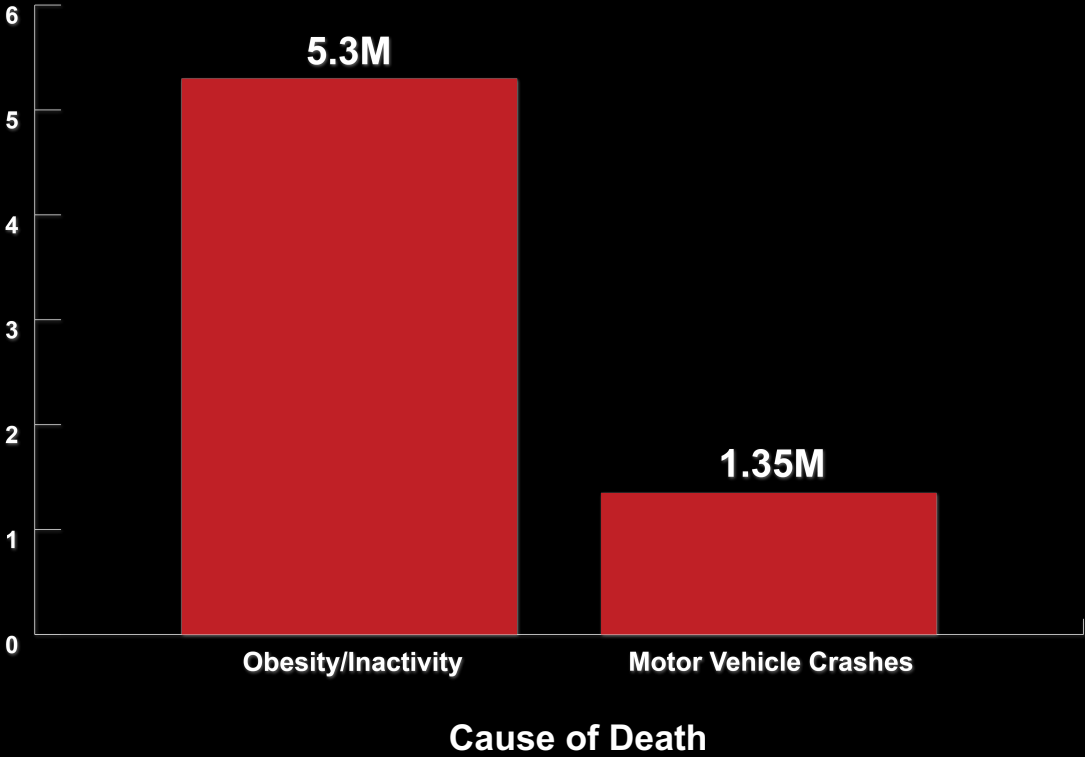
If we spend more time in cars,
we increase our mortality rate





WALL-E IS NOT FAR-FETCHED

WORLD DEATHS (INACTIVITY VS. CRASHES)

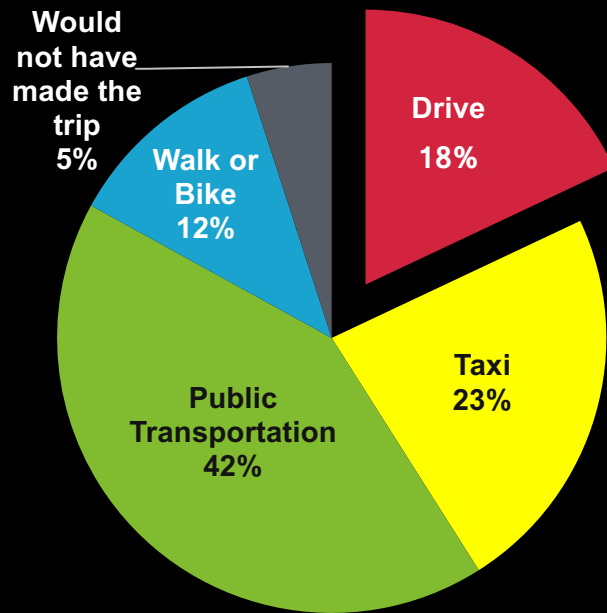


Traffic will improve.

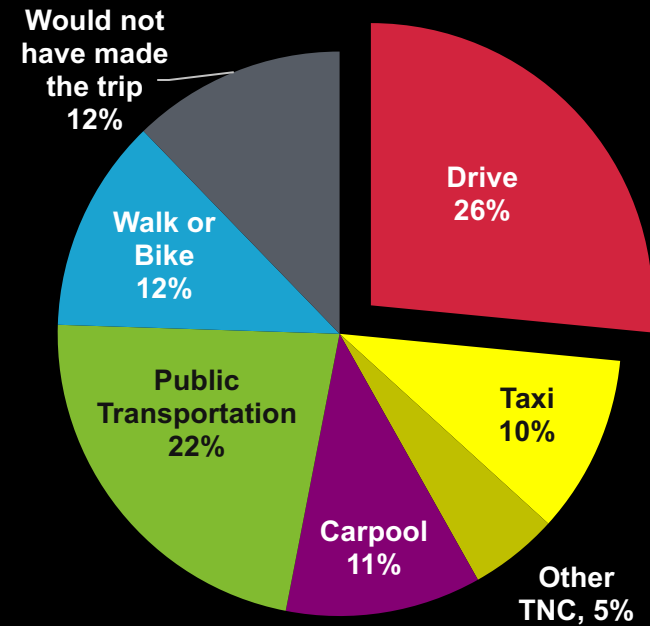
Not supported by
independent analysis.

A GLIMPSE INTO THE FUTURE: TNC MODE SHIFTS

Boston



Denver



App-based cars travel 1.58 miles for each passenger mile*

Source: The New Automobility: Lyft, Uber and the Future of American Cities by Schaller Consulting, July 2018

Source: The Adoption of Shared Mobility in California, Circella et al. 2018

Source: Impacts of Ridesourcing—Lyft and Uber, Henao 2017



Life without driverless cars

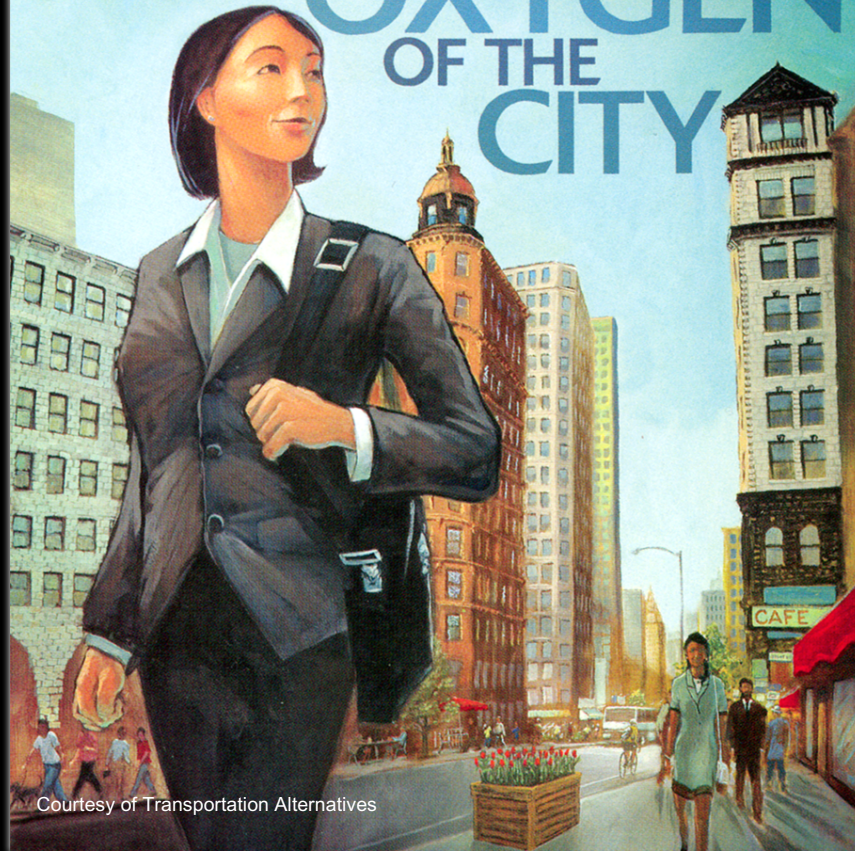


Life with driverless cars

All HAIL the revolution!

Cities and towns will thrive
Not if we repeat 20th-century
mistakes

WALKERS ARE THE OXYGEN OF THE CITY



If we don't walk we
lose the vibrancy of
cities and towns.

THE FOLLOWING PEDESTRIANS MAY NOT BE DETECTED:

- shorter than 3.2 ft. or taller than 6.5 ft.
- wearing oversized clothing
- carrying large baggage, holding an umbrella, etc.,
- bending forward or squatting
- pushing a stroller, wheelchair, or bicycle
- walking closely in groups
- wearing white and look extremely bright
- in the dark, such as at night or while in a tunnel
- whose clothing nearly the same color as surroundings
- near walls, fences, guardrails, or large objects

A visitor from 2100 warns:
Climate change devastating, cities
collapse, transport major factor.

BY 2030 WALKERS IN CITIES SLOWED AV TRAFFIC TO A CRAWL



BY 2035, PEDESTRIANS WERE FENCED IN LIKE CATTLE

DOING IT RIGHT

Government, Society, and Industry Should:

- Sell rides, not cars; integrate with transit
- Get AV \$ support for roads
- Establish AV street typology plan



Car Free



Slow Streets

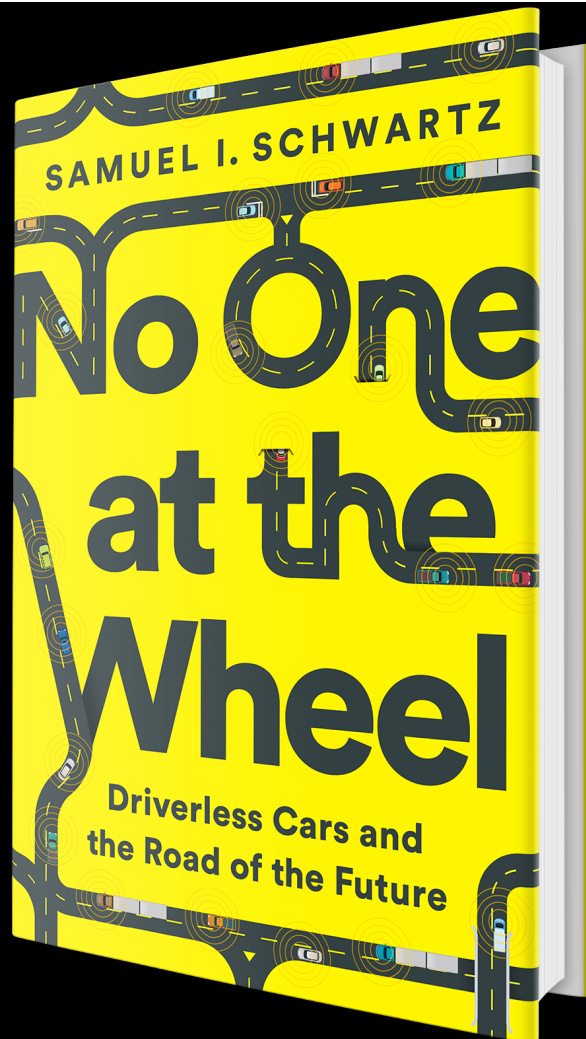


Freeway/Highway

DOING IT RIGHT (CONTINUED)

Government, Society, and Industry Should:

- Utilize pricing to maintain adequate mobility
- Maintain and support good mass transit
- Emphasize last mile
- Ensure equity for low income, disabled, and elderly
- Don't mess with bike/ped growth
- Reallocate parking for better use
- Enact legislation and enforcement policies preemptively
- Develop a counter-terrorism strategy
- Humanize street design: narrow lanes, widen sidewalks, don't add lanes

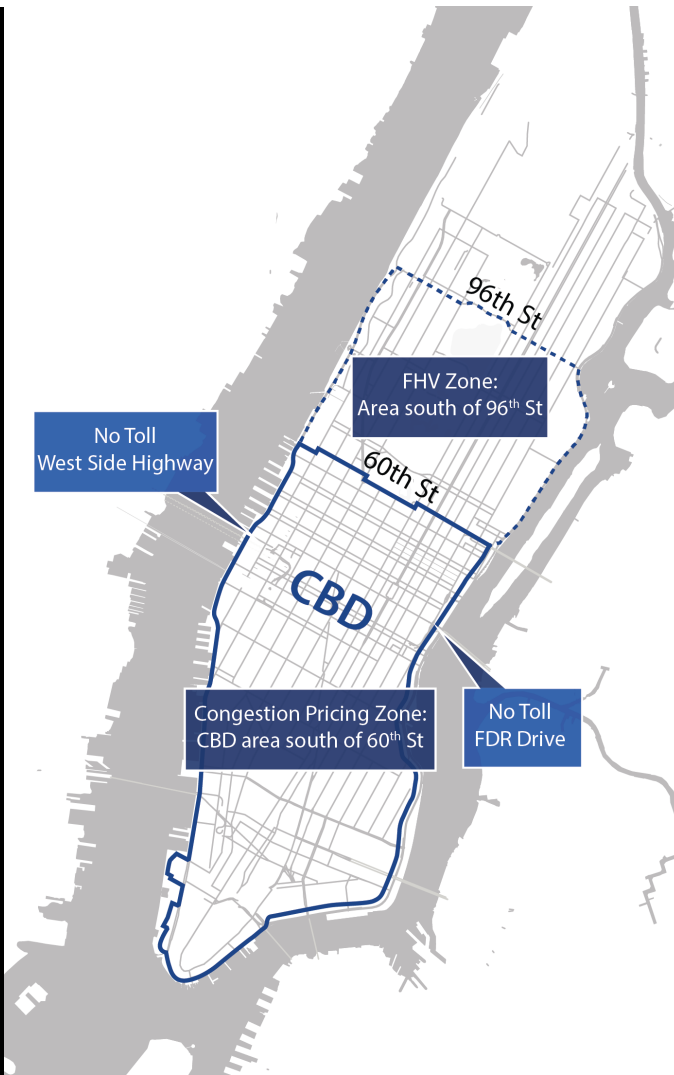


Available at Amazon, Barnes & Noble, IndieBound, Google Play, Kobo, and eBooks.

www.samschwartz.com

CONGESTION PRICING NYC





CONGESTION PRICING

- FHV charge began Feb. 2019 So. of 96th
 - ❖ \$2.75 Uber/Lyft | \$2.50 Taxi | 75¢ Shared Rides
- Traffic Mobility Act – Passed 4/1/19
 - CP all vehicles So. of 60th
 - Revenue goal = \$15B bonds
 - 80% Subways & Buses
 - 20% Railroads
- Fee??
- Traffic Mobility Board report due Nov. 2020 (after elections)
- Exemptions:
 - ❖ FDR Drive & Westside Highway thru trips
 - ❖ Vehicles transporting disabled
 - ❖ CBD residents income < \$60K
- Earliest date Jan. 2021