A Local Perspective on Leading Edge Transportation Planning Issues

Dr. Kevin Fang – Sonoma State University

35th Annual Planning Commissioners Conference - 1 December 2018

We are in an era of many supposed transportation revolutions…

…What might these revolution mean for local planning?

SB 743: A regulatory revolution…

- Senate Bill 743 (2013) changes how we analyze transportation impacts environmental review

- Going away is auto-convenience-focused roadway level of service (LOS)
  - Encouraged continued auto-mobility
  - Non-advantageous, if not hostile, to more sustainable alternatives

- In its place comes automobile vehicle miles traveled, where lower is better

New need for VMT mitigation

- Under an LOS-based world, transportation mitigation was relatively simple → more roads or smaller projects

- Such actions are now impacts → need new mitigation ideas

Might any of these transportation revolutions be part of possible VMT mitigation efforts?

Do transportation revolutions facilitate or hinder VMT reduction goals?

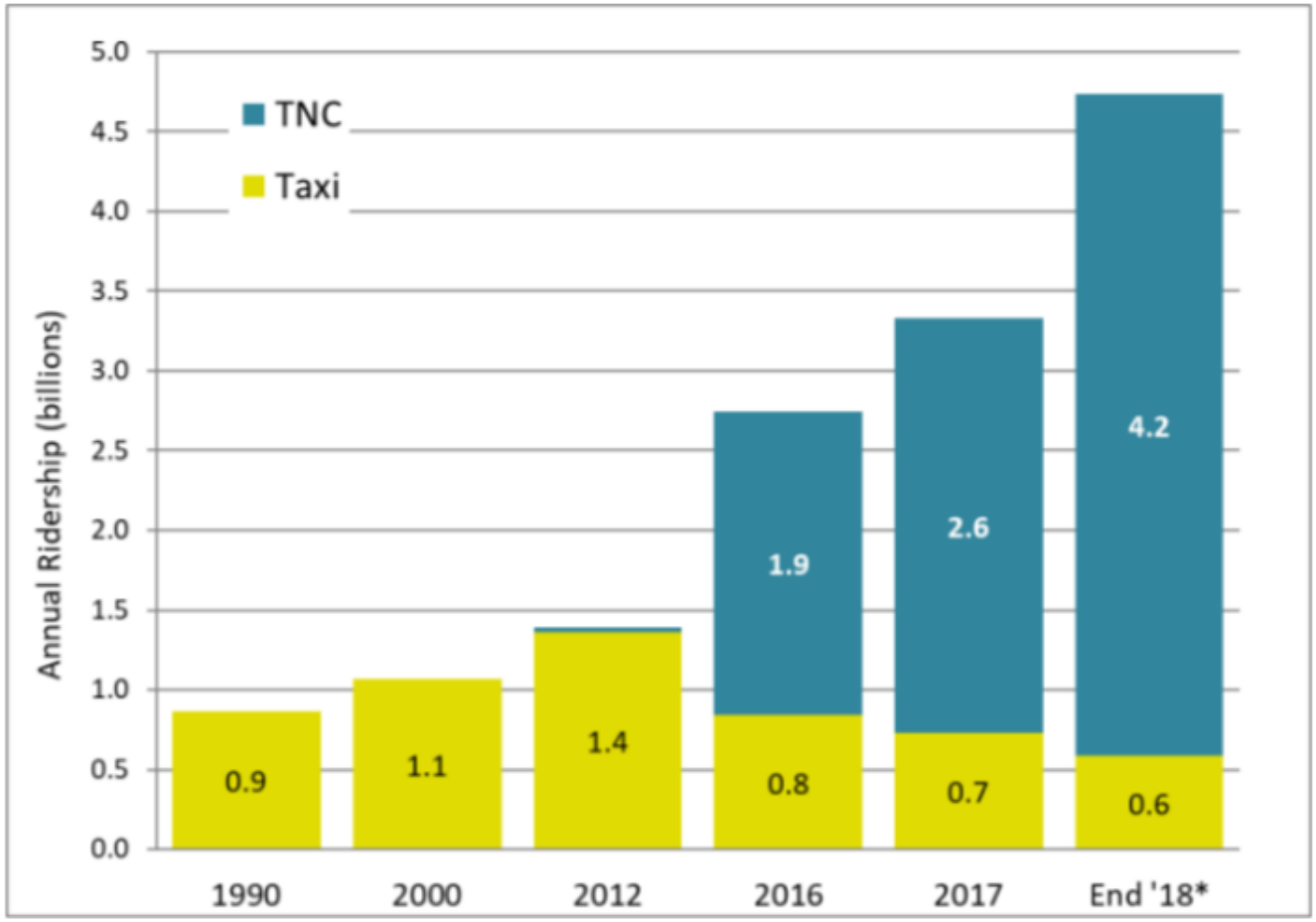
“Ride hailing”

(e.g. Uber/Lyft)

Go by many names…

- Ride hailing
- Ride sharing
  - Although the rides are usually not “shared”
- Services provided by **Transportation Network Companies** or **“TNCs”**

US Taxi and TNC ridership (1990-2017)



TNCs carrying more passengers than taxis ever did

Schaller Consulting (2018)
http://www.schallerconsult.com/rideservices/automobility.pdf

One TNC narrative…

- Ride hailing could reduce the need for private automobile ownership as users rely on TNC's instead

- Could help travelers use transit as a connection to transit stops when they are outside of convenient walking distances

Where do TNC users come from?

- "Surveys of TNC users have consistently found greater impacts on public transit than personal vehicle use"

- Only ~40% of TNC trips replace personal vehicles and taxis

"Instead of 'replacing the personal auto,' TNCs in large cities are primarily supplanting more space-efficient modes such as bus, subway, biking and walking."

Schaller Consulting (2018)
http://www.schallerconsult.com/rideservices/automobility.pdf

1,289 views | Nov 4, 2018, 03:58pm

Transportation Authority Says Uber And Lyft Make San Francisco Traffic Worse

Jean Baptiste Su Contributor ⓘ
Enterprise & Cloud
Vice-President and Principal Analyst at Atherton Research

Lyft and Uber are making traffic worse, not better, in San Francisco according to the latest report by the local transportation authority. (Photo by Justin Sullivan/Getty Images)

Contrary to the companies' claims, Lyft and Uber are making traffic worse, not better, in the City by the Bay according to a recent report released by the San Francisco County Transportation Authority (SFCTA).

"Ride-hailing is likely adding vehicle miles traveled in major cities."
Analysis of seven major US cities, Clewlow (2018)

TNCs account for 20-26% of trips in the downtown and South of Market areas, "likely exacerbating peak period congestion"
SFCTA (2017)

Gridlock

New York City Council passes first-in-the-nation cap on Uber and Lyft

A recent report ordered by New York City regulators calls for a $17.22 minimum wage for ride-hail drivers. (Lucy Nicholson/Reuters)

But, social benefits, too…

Various studies estimate between 2-22% of ride hailing trips would not have been made otherwise…

"At the moment, I am using a walking stick. In cases of reduced mobility, ride-hailing is more convenient because they come pick me up

"Before Uber, I used to go out anyway, but I had to come back home early, to avoid taking buses so late. Now, I can stay out until they close the club."

Source: Triachini (2018)

“Microtransit”

Microtransit

- TNC-esque service, with the goal of getting multiple passengers to share vans
  - Like a bus/ride hailing hybrid

- Typically, rider goes to fixed stops, but vehicle (semi) on-demand

At least four California agencies have experimented with microtransit in recent years

Poor initial returns…

Santa Clara Valley Transportation Authority

Service generated only 0.4 boardings per hour that a vehicle was in service
(VTA requires 15 to keep running bus routes)

The core ridership of the micro transit service consisted of just 20 people

AC TRANSIT FLEX

The flex rides served just three passengers per hour, less than half of the fixed route it replaced

Eno Center for Transportation (2018)
Urgo/AC Transit (2018)

Autonomous vehicles

MOTORTREND

TAPPING THE BRAKES: WHY THE AUTONOMOUS-CAR SOCIETY IS STILL DECADES AWAY

Bloomberg

Drivers Aren't Going Away Anytime Soon, Say Driverless Car Leaders

THE BALTIMORE SUN
baltimoresun.com

The driverless future is still a long way off

recode

We need to stop pretending that the autonomous car is imminent

Tap the brakes.

Drive

Australian Government: fully self-driving cars "decades away"

WSJ

BUSINESS | AUTOS & TRANSPORTATION | AUTOS INDUSTRY

Autonomous-Car Proliferation Decades Away, U.S. Regulator Says

NHTSA head Mark Rosekind says it will take 20 to 30 years to cycle out older vehicles

TTAC the truth about cars

Michigan Testing Shows Fairly Innocuous Weather Baffles Self-driving Car Systems

AUTOMATION LEVELS OF AUTONOMOUS CARS

LEVEL 0

There are no autonomous features.

LEVEL 1

These cars can handle one task at a time, like automatic braking.

LEVEL 2

These cars would have at least two automated functions.

LEVEL 3

These cars handle "dynamic driving tasks" but might still need intervention.

LEVEL 4

These cars are officially driverless in certain environments.

LEVEL 5

These cars can operate entirely on their own without any driver presence.

SOURCE: SAE International

BUSINESS INSIDER

Current market ready tech is only at Level 2

Big leaps necessary to move up remaining levels

→ Be wary about banking on outcomes

News

Semi-Autonomous Systems Slow Driver Reaction Times

By **Matt St-Pierre** - November 5, 2018 0

Like 0

Cadillac Super Cruise | Photo: Cadillac

We're a long way from full autonomy

Human skill will still be required for the considerable future

But, automation features erode human skill?

Some self-driving more dangerous than none?

space required to transport 60 people

car

bus

bicycle

(Poster in city of Muenster Planning Office, August 2001) Credit: PressOffice City of Munster, Germany

space required
to transport **60 people**

car

uber

autonomous car

Peter Calthorpe's Self-Driving Car Dissent

The founder of New Urbanism takes his autonomous vehicle skepticism, and ideas for other solutions to congestion, to the pages of the New York Times.

November 5, 2018, 10am PST | James Brasuell | @CasualBrasuell

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posteriori / Shutterstock

"Peter Calthorpe thinks Silicon Valley has it all wrong," writes John Markoff for the New York Times. "He rejects the ideas of tech industry visionaries who say personal autonomous vehicles will soon be the solution to urban problems like traffic congestion."

https://www.planetizen.com/news/2018/11/101395-peter-calthorpes-self-driving-car-dissent

“Little vehicles”

Or

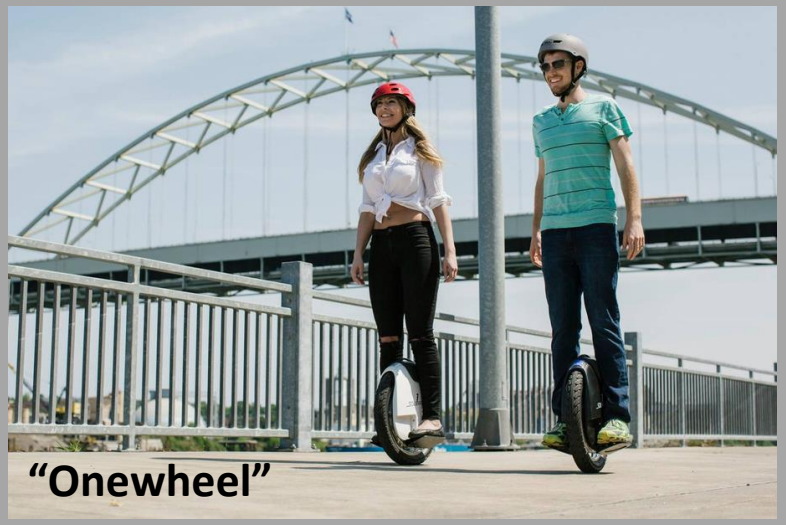
“Micromobility” devices

Personal Mobility Devices

Personal Transportation Devices


Segways


Hoverboards


“Onewheel”


“Solowheel”

Not just the domain of tech startups…
Name-brand corporations interested as well

Honda uni-Cub

Toyota i-Real

Little vehicles are (and have been) here…

The case of skateboarding for transportation…

LA Metro Transit
~30,000 trips to/from bus stops/train stations

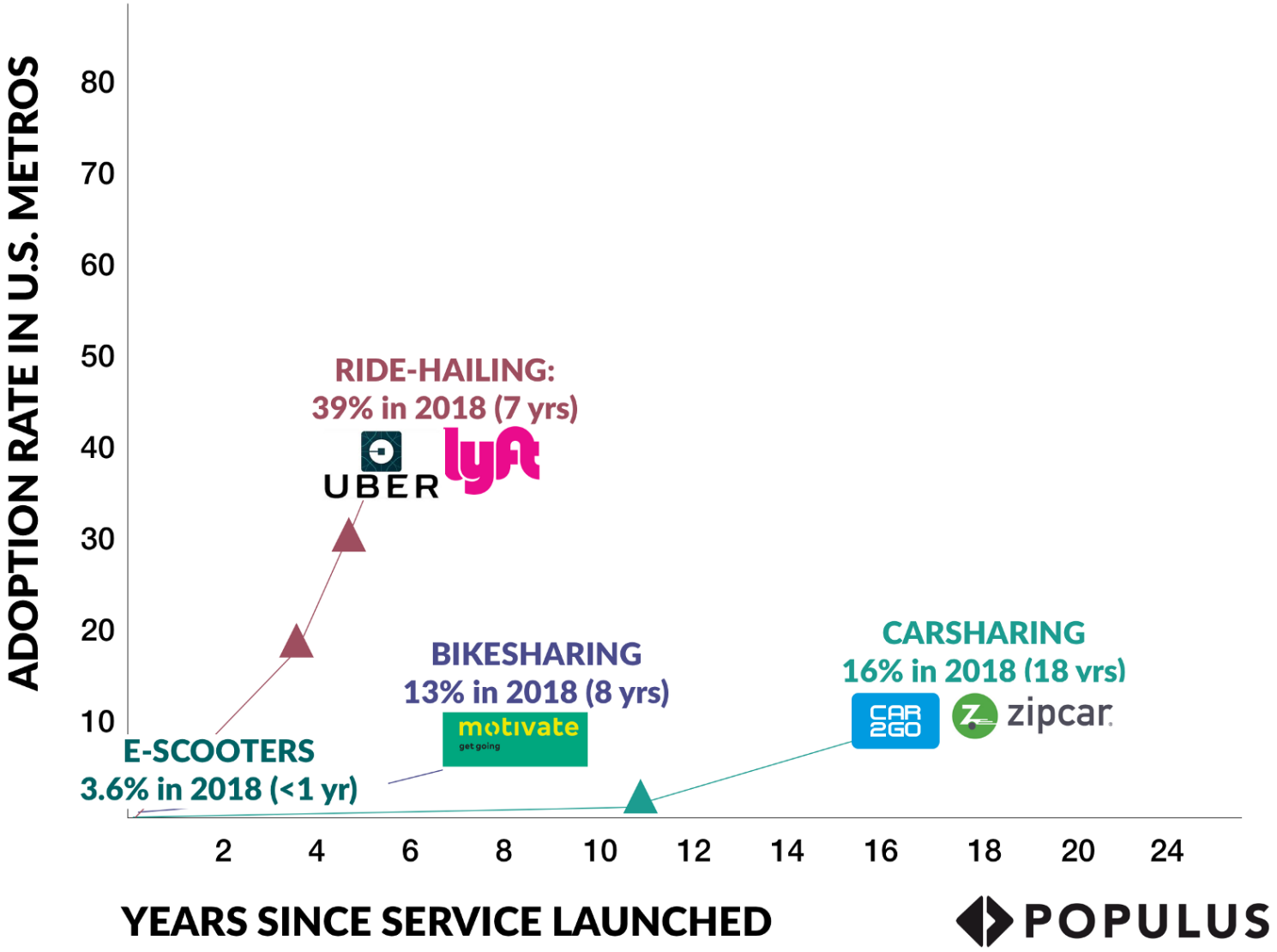
Portland, Oregon
Skateboarders observed at 79% of intersections

UC Santa Barbara
More students skateboard to school than drive cars

Skateboarders/kick scooter/roller skaters cover ~48 million miles per year statewide

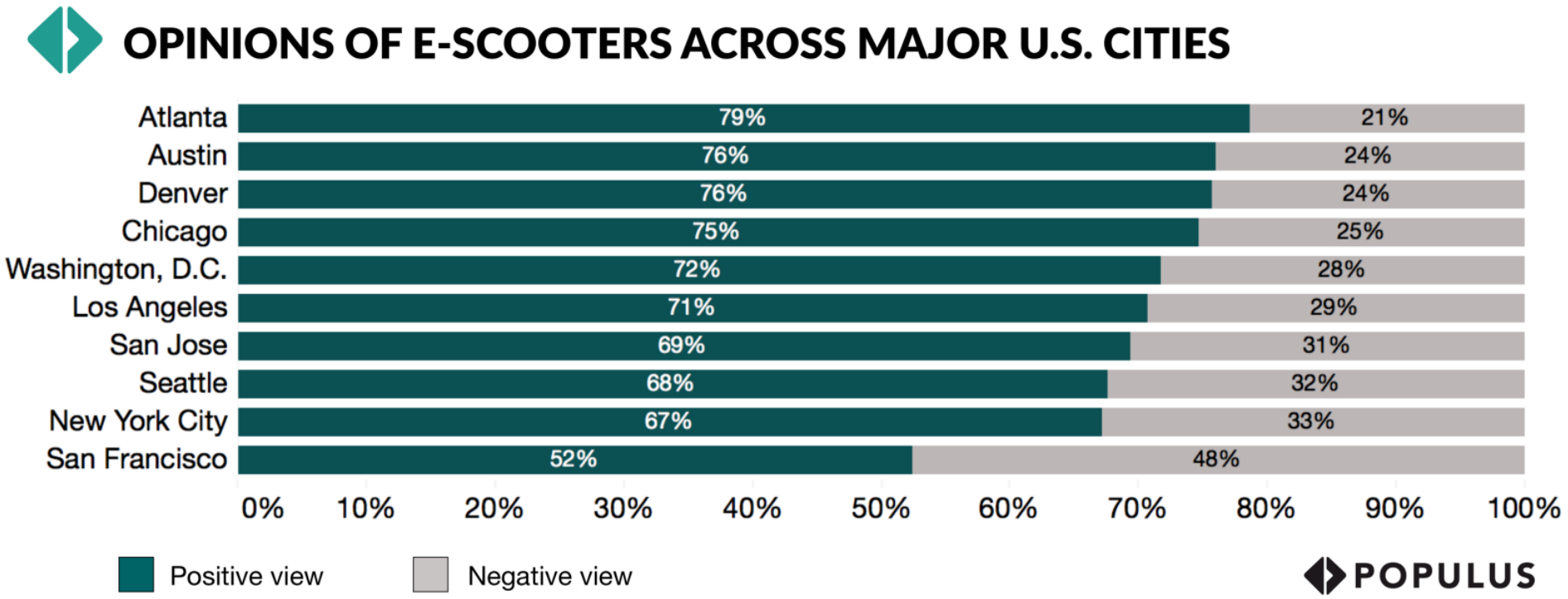

BIRD
BIRD

MOBILITY SERVICE ADOPTION IS SPREADING FASTER



Sources: Populus Groundtruth; Clewlow & Mishra, 2017; Clewlow, 2016

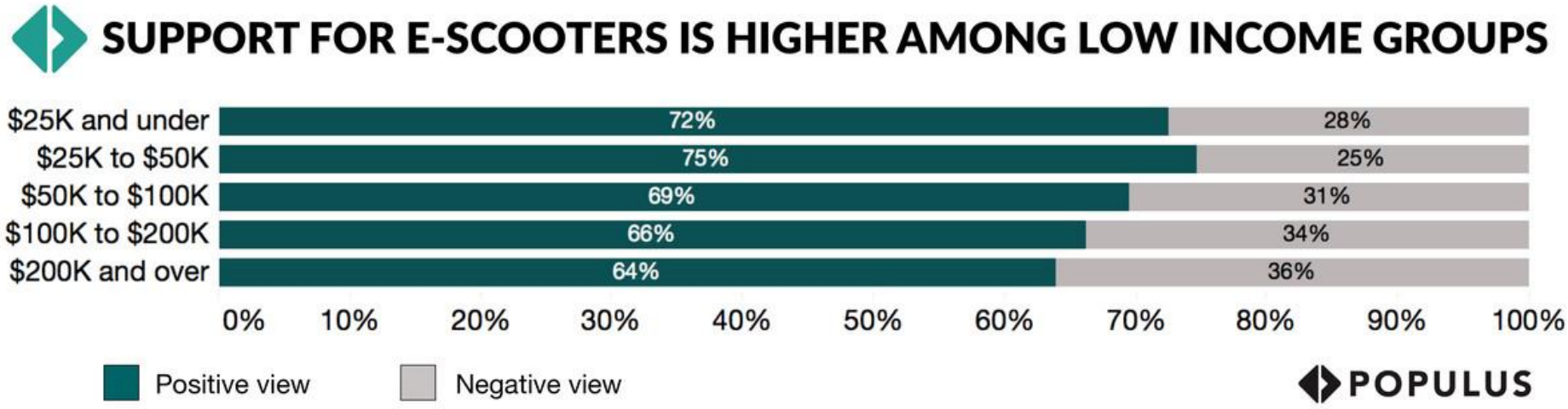
Generally well-received



Survey of 7,000 adults in 10 US cities find supermajorities have positive opinions

(SF a notable outlier, but still net positive)

Not just for “tech bros”



Generally more favorable views among lower income groups

Cities
Tech and the city

Are ride-share electric scooters the future of urban transport?

Rory Carroll *in Los Angeles*
@rorycarroll72

Wed 25 Apr 2018 06.00 BST

▲ Bird electric scooter riders in Santa Monica, California. Photograph: Dan Tuffs for the Guardian

Scooters have taken over Santa Monica, caused fury in San Francisco and are spreading to other US cities and likely Britain. Are they fun and environmentally friendly – or a dangerous nuisance?

https://www.theguardian.com/cities/2018/apr/25/electric-scooters-urban-transport-bird-santa-monica-uk

Prepare now for the tiny vehicle takeover. // Kathy Willens/AP

Why Little Vehicles Will Conquer the City

BENJAMIN SCHNEIDER JUN 21, 2018

Nearly all of them look silly, but if taken seriously, they could be a really big deal for urban transportation.

Not just big cities… Coming to suburbs, too

Culver City

Monrovia

Local News | Puget Sound | Traffic Lab

Seattle puts the brakes on shareable electric scooters — for now

Originally published April 20, 2018 at 6:00 am | *Updated April 20, 2018 at 9:52 am*

A woman rides an electric scooter Tuesday in San Francisco's Washington Square Park. San Francisco has ordered three companies that rent out the motorized scooters to stop operating until they can ensure riders are following state law and the dockless devices are not a hazard to the public. (Jeff Chiu/AP)

https://www.seattletimes.com/seattle-news/transportation/seattle-puts-the-brakes-on-shareable-electric-scooters-for-now/

THE WALL STREET JOURNAL.

WSJ reporter Jim Carlton takes a ride around San Francisco on an electric scooter. Video: Jake Nicol/The Wall Street Journal

A-HED

Adults Are Terrorizing San Francisco On Tiny Electric Scooters

In a compact city known for experimentation, popular electric-powered devices are injuring toes, starting fights, prompting debates over regulation; 'Wild West situation'

https://www.wsj.com/articles/adults-are-terrorizing-san-francisco-on-tiny-electric-scooters-1524670611

Some operational concerns…

Parked devices as clutter

Compatibility with other travelers

Where are scooters parked?
Case of San Jose (n=530)

Sidewalks	**72**
Edge of sidewalk	38
Street furniture zone	27
Other	8
Adjacent property	**23**
Mixed-use street	**5**
Street	**<1**

Fang, Agrawal, Steele, Hunter, and Hooper (2018)

Only 2% of scooters were “blocking”

- Out of 530 scooters observed, only 11 engaged in “blocking”

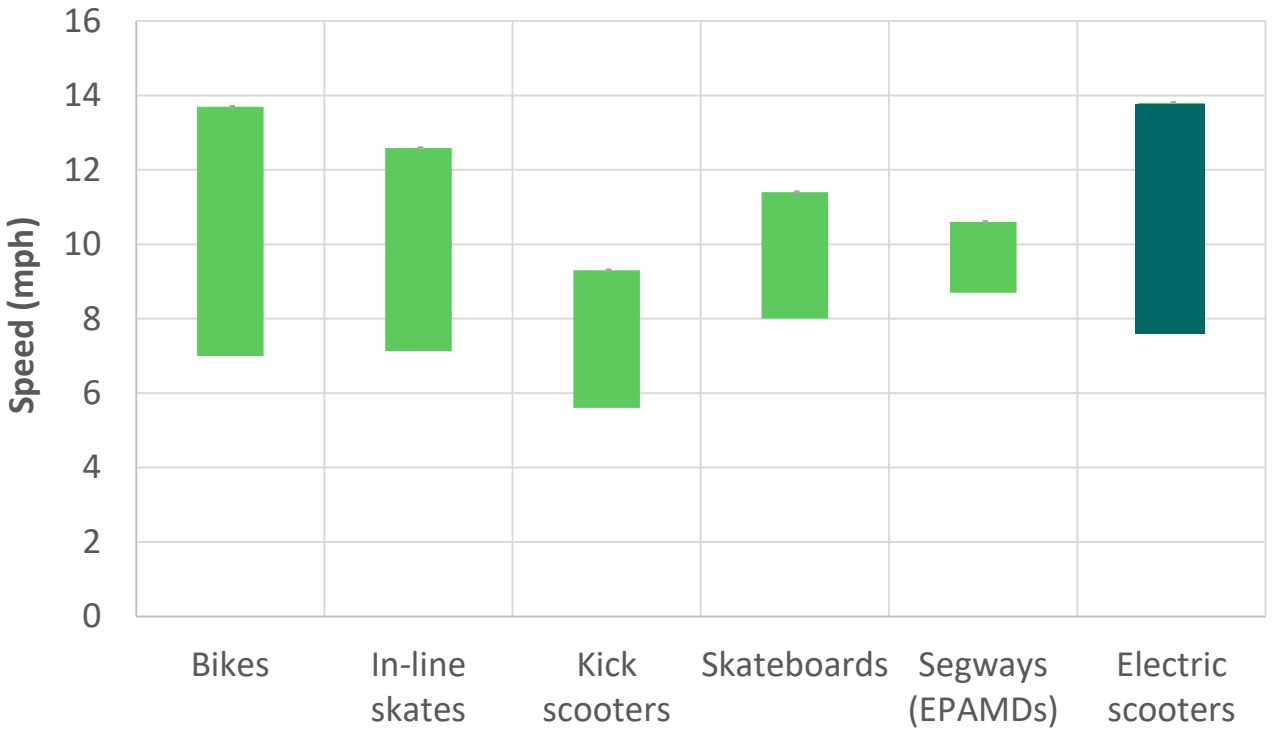
- Blocking defined as:
  - Blocking a door
  - Blocking infrastructure for the disabled
  - Blocked more than ½ the width of the sidewalk (SJ’s standard for bicycles)

Speed of devices

	15th Percentile	Median	85th Percentile
Electric scooters	**7.6**	**11.2**	**13.8**

15th-85th Percentile Speed Comparison

Source:
Pernia, Lu, and Birriel (2000)
FHWA (2004)
Fang and Handy (2017)
Arellano and Fang (2018)



Regulatory questions…

- Given their newness, regulations sparse, inconsistent when they exist

- Regulations that cities considering include prohibitions, per vehicle fees, caps on the number of devices allowed in cities

Such approaches problematic from a sustainable transportation standpoint

(Inconsistent with "complete streets" perspective of transportation, inconsistent with how cars are regulated, based on presumptions about devices that may not be true)

Thank you! Questions?

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