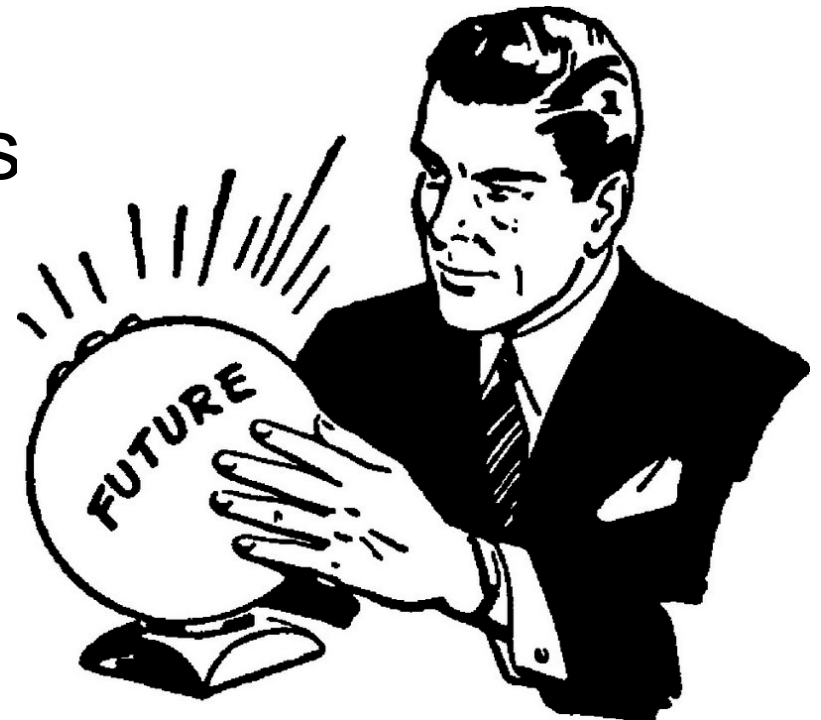# Cities / Transport
in the
Age of New Technologies

Steve Raney
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Silicon Valley

Accurate Future-cast?
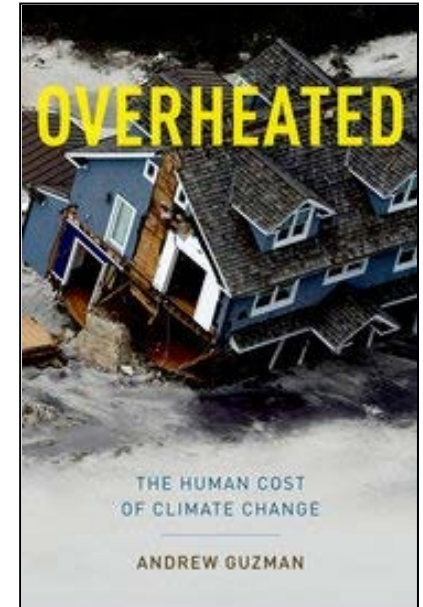
- Future-cast accountability?
- Way too many change vectors
- Forecast = fcn(methodology, background, biases, optimism, breadth)
- Dystopia v. Utopia
- Bikes, fewer cars, hubs
- Autonomous vehicles.

Techn∞ptimism vs. Climate Pessimism

Climate

OVERHEATED
THE HUMAN COST OF CLIMATE CHANGE
ANDREW GUZMAN

■ COG experts: % chance 4C?

"A 4°C future is incompatible with an organized global community, is likely to be beyond 'adaptation', is devastating to the majority of ecosystems, and has a high probability of not being stable."
– Prof. Kevin Anderson
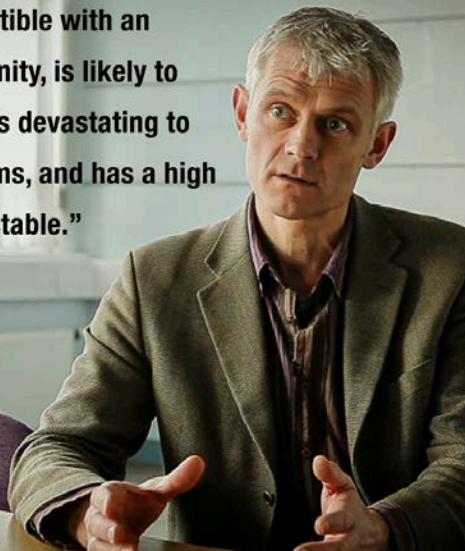
Positive Future Vision Project

- **Imagination.** Dystopian Sci-Fi
- Futuring curriculum & contests
- Digital town hall ➜ more participation
- Adopt a <u>differentiated</u> narrative
  - Make "future videos"
- Small, lean, cheap pilots ➜ scale
- Assume you will attract a billionaire
- Investor conference.

Differentiated vision: "Super Inglewood"

- "Caring, sharing, kinder, high-trust, bargain, social, healthy" neighborhoods
  - WWII mobilized homefront
  - Organized to do good deeds (low overhead)
- Embed sociologists ➜ lab to earn PhD
- Cars: 2 to 1, Millennials none
  - Awesome, subsidized mobility via GoLA app
- Neighborhood-serving tech
  - Free broadband
- Sharing economy: child care, pre-school, healthy meals delivered, telemedicine
  - IoT: kid tracking, health monitoring, etc
- Connect Academy (bilingual excellence).

Civil Disobedience vs. Surveillance?
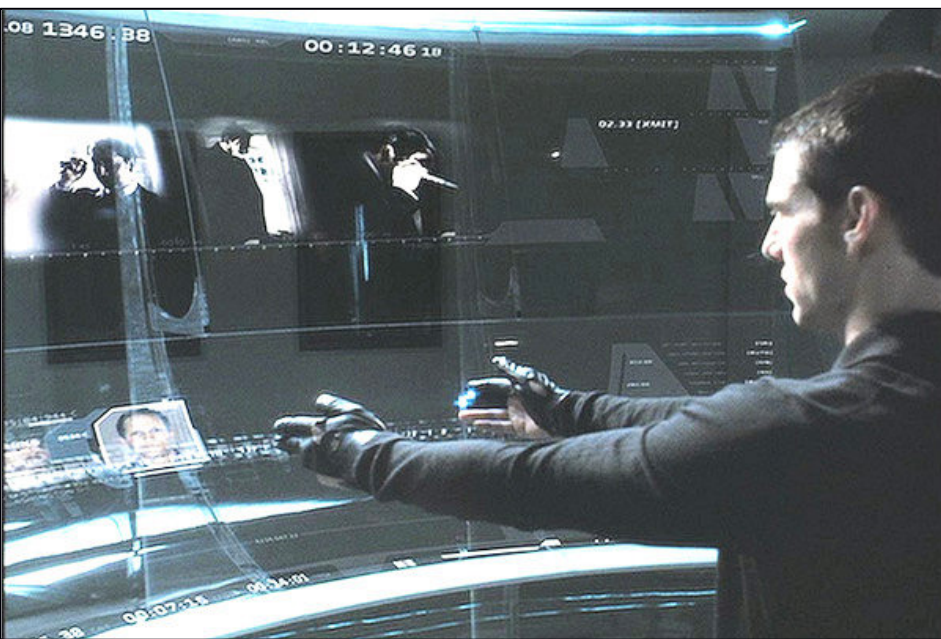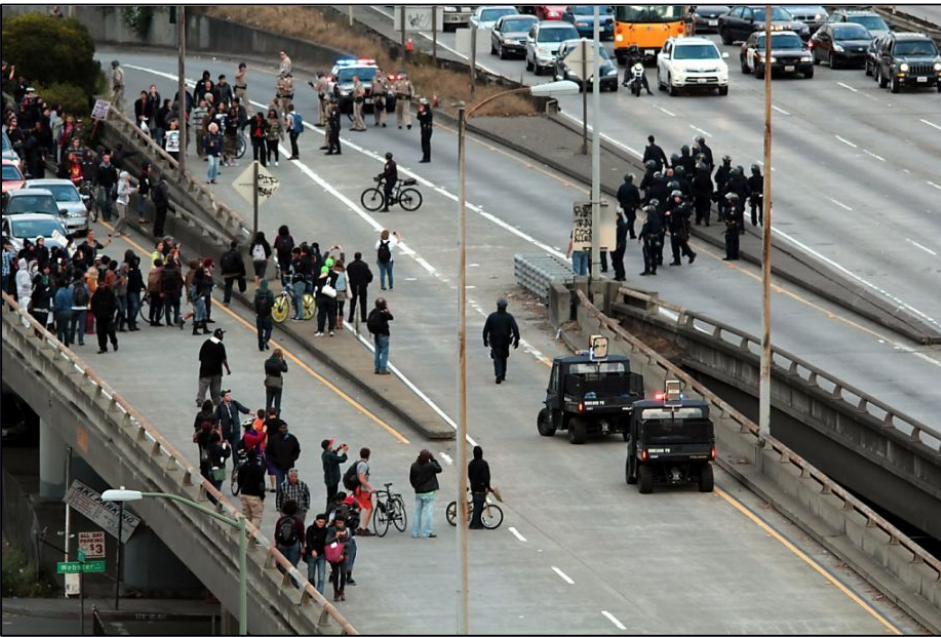
State Policy – Alt 3

US outlier. Not business as usual

Climate & congestion focus

- 20% of 1990 transport emissions by 2040
- Largest GHG reduction via EVs, but also …

-17% per capita driving/GHG

- ➔ Higher driving price

Carpool freeway lanes: HOV2 ➔ HOV4

- HOV4 = 3 general purpose lanes
  - EV SOV?

Transit & biking double

"Road capacity expansions rejected"

"SCAG RTP Policy B."

Amsterdam 30% bike commute

Cold and rainy
Don't be a wimp

Mixed Use Micro-unit Mobility Hub

Convert centers? Concentrate growth?
Convenient residential

- Unsubsidized affordable by design
- Mfg off-site. Erect in 1 week
- Low car, low driving

Multi-modal extravaganza

- Mobility hub.

300 cubic feet of storage
9 foot ceilings
150 square feet of living area
Dining table converts to bed
Sustainable hardwood floors
Kitchen counter/computer work area
Bay windows with multi-purpose bench

Developer Patrick Kennedy's model of one of the small apartment units he hopes to build in San Francisco.

Source: smartspace.net   John Blanchard / The Chronicle
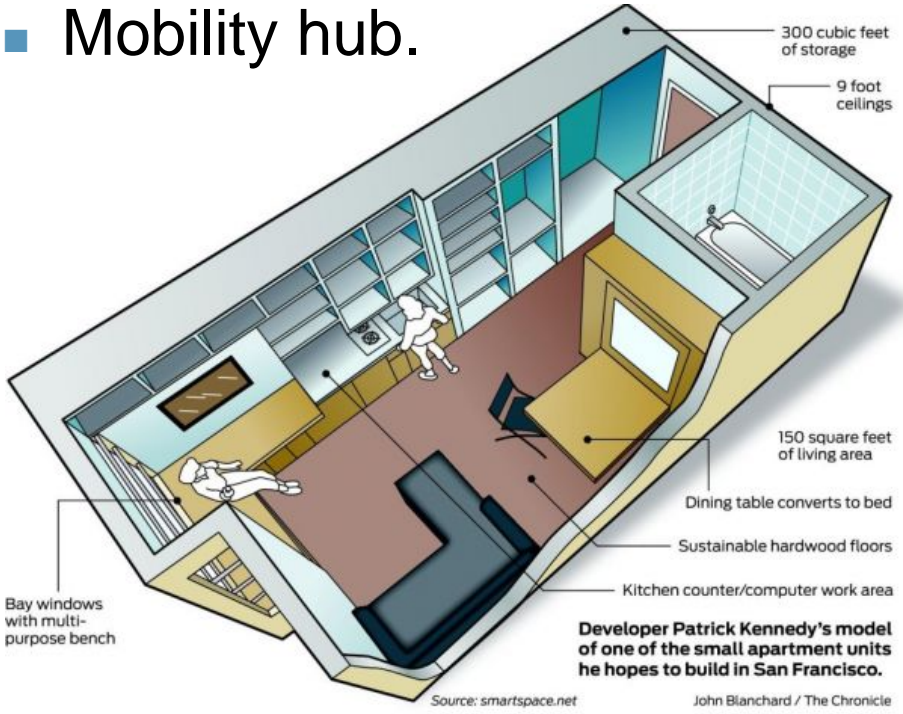
One Seamless App

Multimodal trip planning.
Customer-centered.

GoLA
Find Your Way in LA

●●●●○ AT&T LTE   12:14 PM   ✈ ✳ 45% ▮

Santa Monica
University of Southern California
🕐 Leave at 10:14AM in PST

| Sooner | Cheaper | Greener |

10:14am-10:43am (29mins)
Take Flitways
Wait 5m   21mins   3.5kg CO₂   13 calories
$25.98

10:14am-10:43am (29mins)
Catch a Taxi
Wait 5m   21mins   3.5kg CO₂   13 calories
$40.65   Find a ride

10:18am-10:52am (34mins)
Take Lyft and Expo Public transport
Wait 2m   11mins   Expo   5mins   1.9kg CO₂   29 calories
$13.16   Booking

10:20am-11:03am (43mins)
Board 1 Public transport and Zipcar
22mins   3.8kg CO₂   57 calories   10:57am
$20.00   Find a ride

10:30am-11:12am (43mins)
Take Lyft and 35/38 Public transport

carma
Get there together

Flywheel   uberPOOL   ▦ **pay**by**phone**
⬤ **Commuter Check**®

Faster-than-real-time Intelligent Agents
- Accesses calendar, e-mail, GPS & optimizes
- Google Now / Apple Siri

First/Last Mile + E-bike (8 mi)

Autonomous Vehicle Timeline

Year	Milestone
2017	Pay per mile auto insurance: -8% driving
2020	Free workplace parking ENDS
2020	Read-a-magazine freeway robocar
2023	5% freeway robocar penetration
2023	3 robotaxi systems (Uber w/ robot)
2028	Significant positive robotaxi/van impact
2028	30% freeway robocar ➔ platooning

95% of trips, 5% invoke 5-second rule

Induced demand (Air Resources Board)

- "Driving easier ⇒ live further away" - Toyota
- "Steal transit riders" - Sven Beiker, Stanford
- Reduced peak hour pain
- Poor suffer

2028: platooning (network effect).

Robotic Surface Street Driving

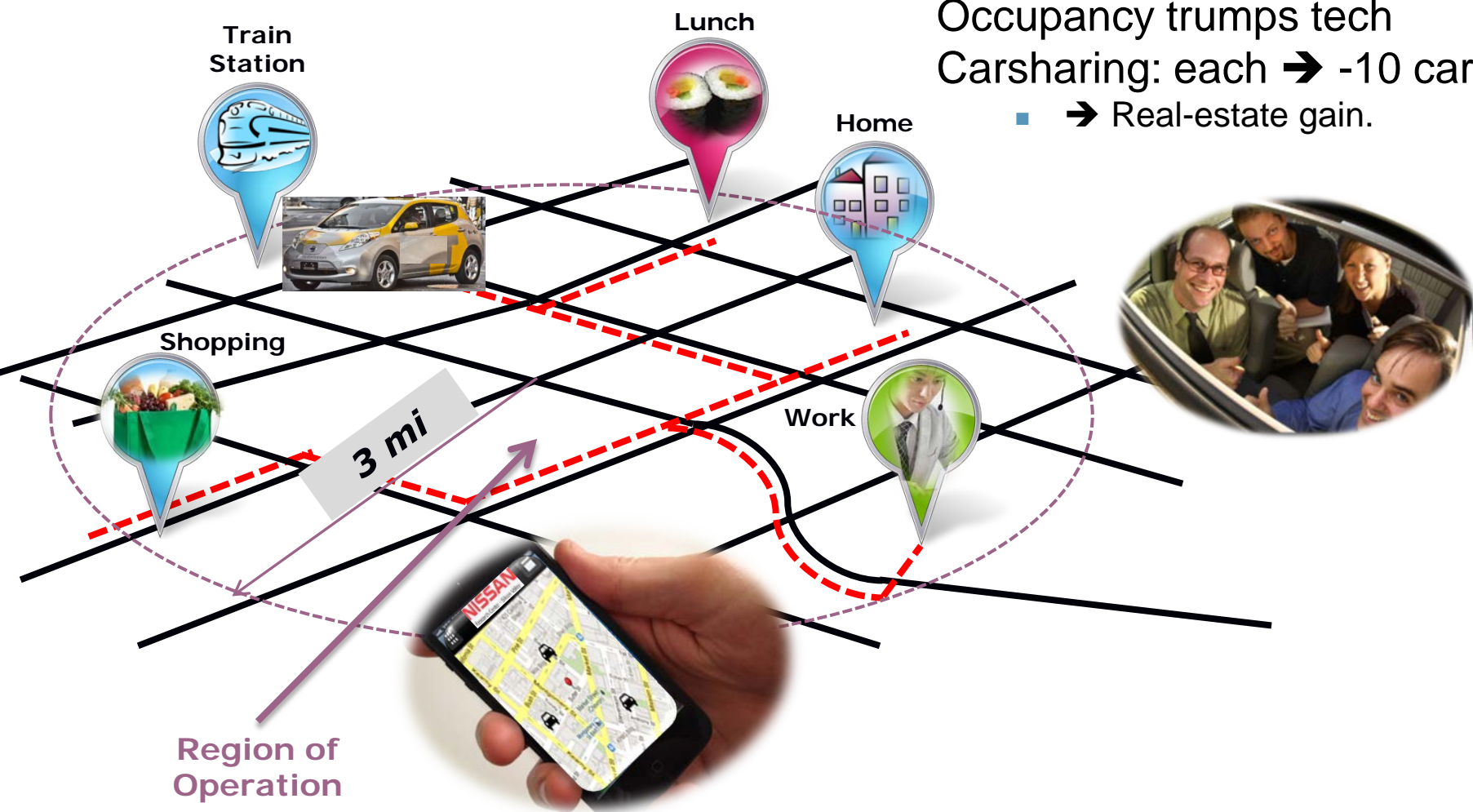# Robotaxi – Last Mile starting 2023

Empty vehicle movements
Private auto @ $0.55/mi
- Subsidy for low income?

Occupancy trumps tech
Carsharing: each ➔ -10 cars
- ➔ Real-estate gain.

Train Station

Lunch

Home

Shopping

3 mi

Work

Region of Operation

RoboVan starting 2023

Private sector ⇒ public bus transit

- $0.25 per passenger mile vs. $1 for public transit bus
- 4X the frequency
- HOT4 BRT arterials

Helsinki Kutsuplus demand-responsive minibus

- Part of car-free Helsinki effort

Robotic, containerized Amazon Fresh Express.

THANK YOU.

- Dystopia v. Utopia
  - ➔ Imagine Super Inglewood
- Bikes, hubs, GoLA, fewer cars
- Freeway robo-jam, robo taxi/van.