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UITP Young Transport Professionals Seminar
PwC Officers
2 Riverside Walk, Southbank

Making the Case: Mass Transit

Prof Graham Currie
Public Transport Research Group
Monash Institute of Transport Studies
Monash University



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Introduction

The End

Auto-no-(e)motion

Non-o-sharing

Why?

Transit Fusion

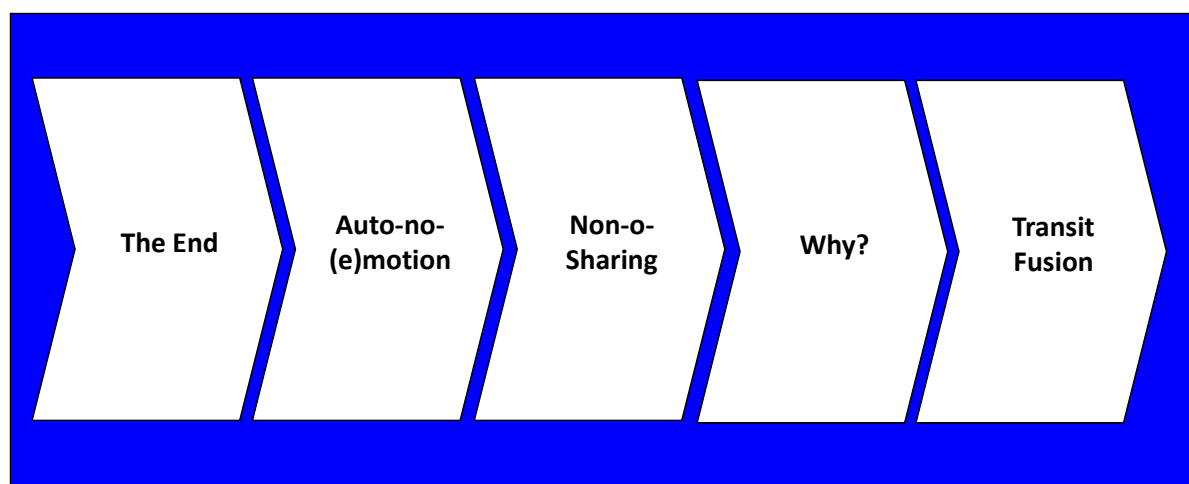


This session considers mass transit futures in a changing world

- It aims to :
 - consider how new mobility, autonomous vehicles and shared mobility is going to impact transit
 - Explore the future case for Mass Transit systems
 - Look at some new and interesting developments in the field
- It is going to debunk fallacies being promoted about new mobility and transit using:
 - New words



...and is structured as follows



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THE ATLANTIC
COULD TRANSIT START-UPS BE THE FUTURE OF TRANSPORTATION?

Start-ups like Lyft, Uber, and others have disrupted the transportation industry. They have revolutionized the way we get around, and they have made it easier for us to get where we need to go. However, they have also made it harder for public transit to compete. Public transportation is often funded by the amount of people riding it regularly, and it's harder for cities to fund a bus route if there are fewer people riding it. The problem begs the question, should cities privatize transportation? After all, the New York City subway system was built by private companies, not the government.

CATO INSTITUTE

The End of Transit and the Beginning of the New Mobility: Policy Implications of Self-Driving Cars

Featuring **Randal O'Toole**, Senior Fellow, Cato Institute; **Marc Scribner**, Research Fellow, Competitive Enterprise Institute; and **Adam Thierer**, Senior Research Fellow, Mercatus Center; moderated by **Matthew Feeney**, Policy Analyst, Cato Institute.

Experimental self-driving cars have successfully operated more than 700,000 miles on American highways. Such cars will be on the market by 2020 and will radically transform the 21st century. What should Washington policymakers know about the future of American mobility? Randal O'Toole will describe the implications of self-driving cars for urban transit and regional transportation planning. Marc Scribner will discuss the laws and regulations that should govern self-driving cars. Adam Thierer will review the privacy implications of self-driving cars. Please join us for a preview of the future of American transportation.

The End of Public Transit?
Are self-driving cars proving more efficient than government in areas like... Should some services be privatized?

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Auto-no-(e)motion

New Word Definition:

“**Auto-no(e)motion**” is the unscrupulous use of the concept of the autonomous car by technologists to assert that the driverless car will solve all the worlds mobility problems, so that we can get rid of urban public transport which is a bad and should have been got rid of anyway; good riddance!

Prof Graham Currie, 22-06-2017



Driverless Cars; the end of Transit

Driverless cars could make mass transit obsolete

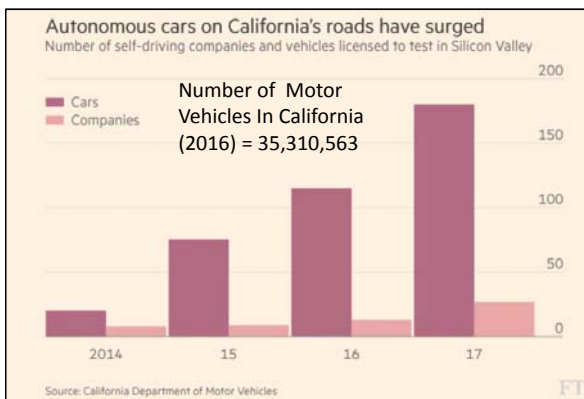
BY DAVE ROSS
OCTOBER 25, 2016 AT 9:27 AM



A group of self driving Uber vehicles position themselves to take journalists on rides during a media preview at Uber's Advanced Technologies Center in Pittsburgh. Driverless



Driverless Cars; current status



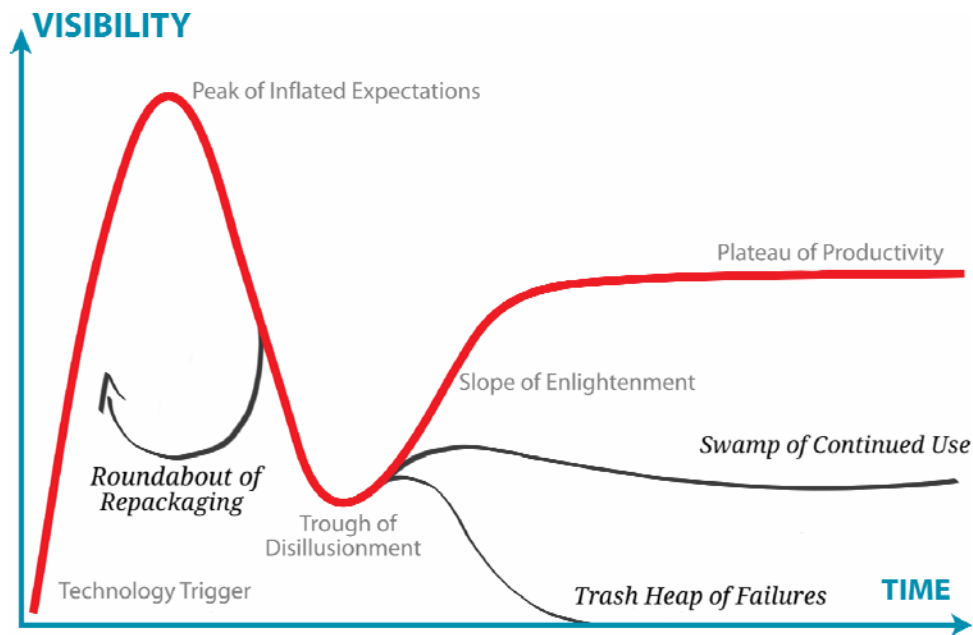
Australia's first self-driving car ready for the road this week

The World Today, By Tim Lamacraft
Updated 6 Oct 2016, 2:05am

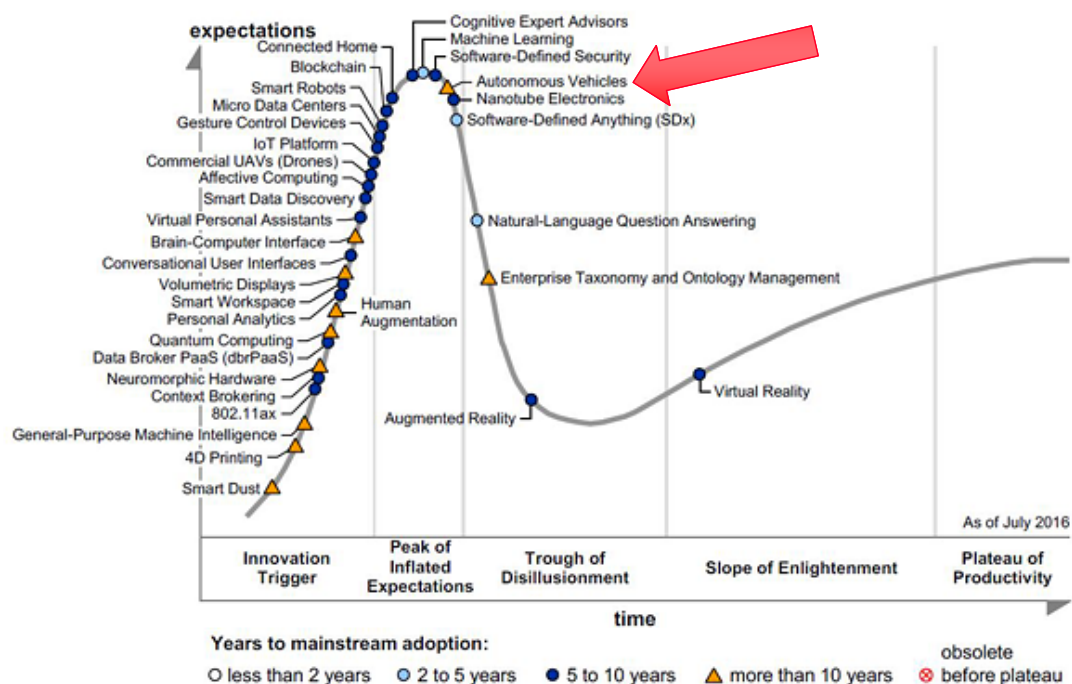


PHOTO: The car still needs someone behind the wheel, but it is designed to navigate roads with or without driver input. (ABC News, James Hancock)

The Hype Curve; technologists as experts in spin

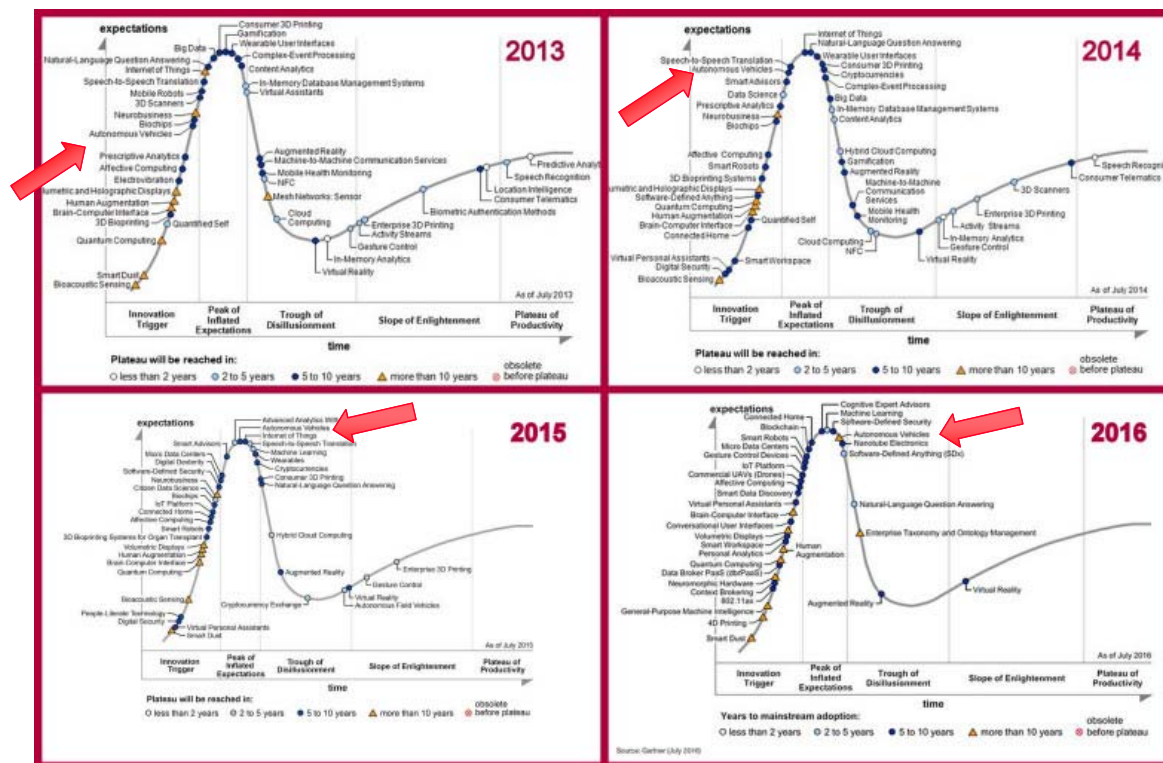


The Hype Curve; technologists as experts in spin

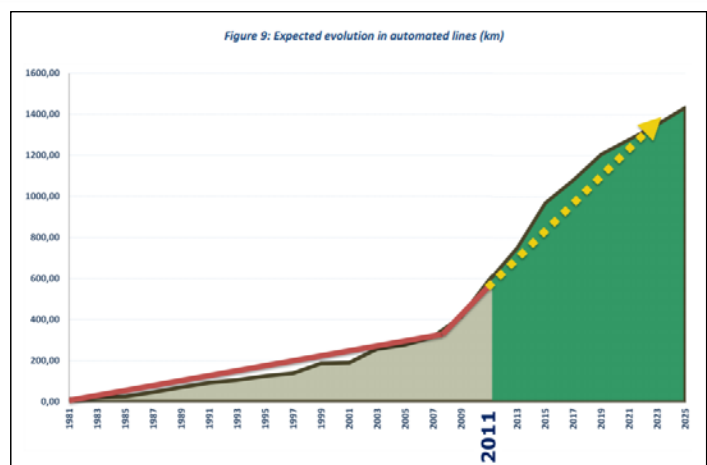


Source: Gartner (July 2016)

The Hype Curve; technologists as experts in spin



Real Driverless Vehicles; trains



Automated Trains are more efficient

Allowing for shorter journey times and more trains operating on the line at the same time.



The Jubilee Line has increased the number of trains running in peak hours by 18 per cent, allowing an additional 5,000 people an hour.

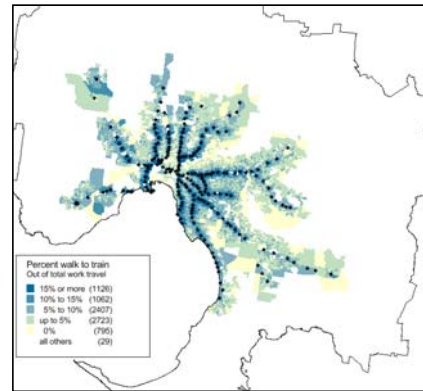


January 2012, overall capacity will increase by a third, this means the Jubilee can carry about 12,500 more passengers an hour.

Autonomous Buses – first/last mile solutions



Metro Trains Walk Market
Penetrates only 7% of
Melbourne



Source: PTRG Analysis of Census Journey to Work (2011)

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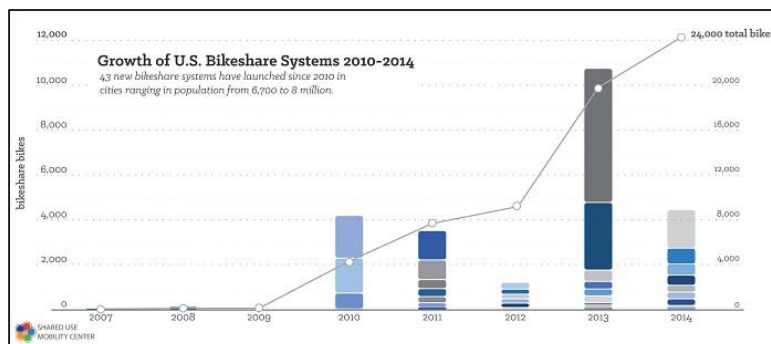
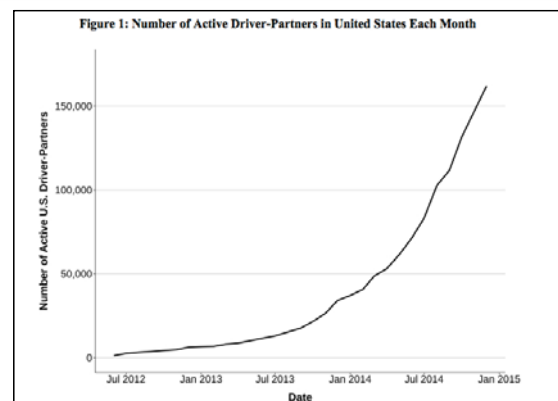
New Word Definition:

“Non-o-sharing” isn’t sharing. Its using words to make it look like it is. It is the unscrupulous use of the word “sharing” by technologists to imply that new mobility modes are good and incorrectly asserts they involve lots of sharing. This is to show they are much better than urban public transport which is not good and doesn’t involve sharing in any good sort of way and which has to be got rid of as soon as possible.

Prof Graham Currie, 22-06-2017



Shared Mobility is growing; isn't that good!



Shared Mobility is growing; but its REALLY BAD for transit ;-(

Can these companies make taking a bus cool?



SCOTT OLSON/GETTY IMAGES/FILE

Mark Fields, chief executive of Ford, spoke about the Chariot transit service — which was recently purchased by Ford — earlier this year at the North American International Auto Show in Detroit.

By [Scott Kirsner](#)

GLOBE CORRESPONDENT MARCH 03, 2017



TECH

Pop-up bus service looks to reinvent mass transit

By [Ben Johnson](#) and [Abraham Moussako](#)
July 03, 2014 | 5:00 AM

[Listen to this story](#)



An Academy Bus in New Jersey. The "pop-up" bus service Bridj is using buses like these to provide an experience the company cites as a step above general public transit. - ([Secondarywaltz/Wikimedia Commons](#))

Shared Mobility is growing; but its REALLY BAD for transit ;-(

Bloomberg Technology

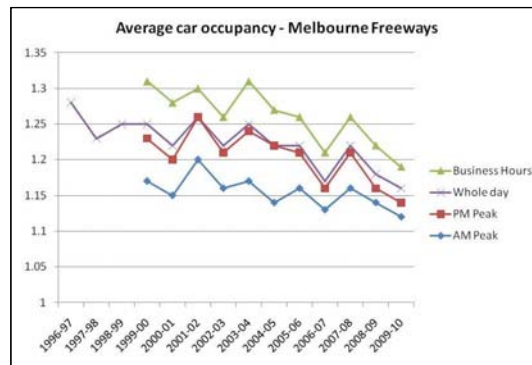
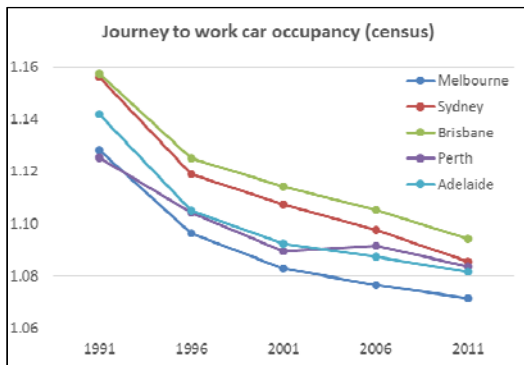
Uber and Lyft Want to Replace Public Buses

Pressed by tight budgets, some towns are cutting transit lines and subsidizing car rides.

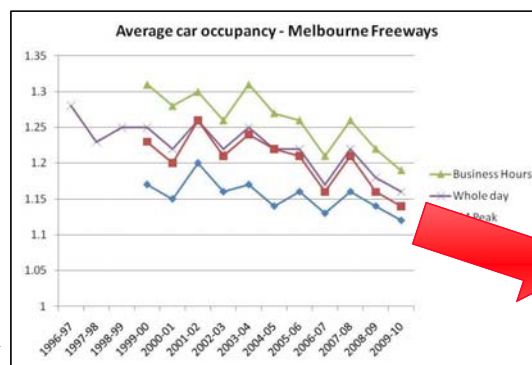
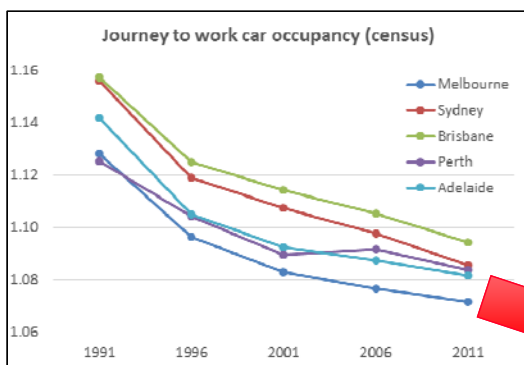
by [Joshua Brustein](#)
August 15, 2016, 9:00 PM GMT+10
Updated on August 16, 2016, 1:16 AM GMT+10

Illustration by Stephanie Davidson

Shared (car) travel is NOT growing; its been DECLINING for 30 years



With AV's we can now achieve occupancy ; BELOW 1!



Are Driverless cars the solution or another part of the problem?



When Ride Sharing Isn't

- Uber assumed to have the same occupancy as Taxi at 1.66 per vehicle (including the driver)

– Source: San Francisco County Transportation Authority (2017) 'TNC's Today'

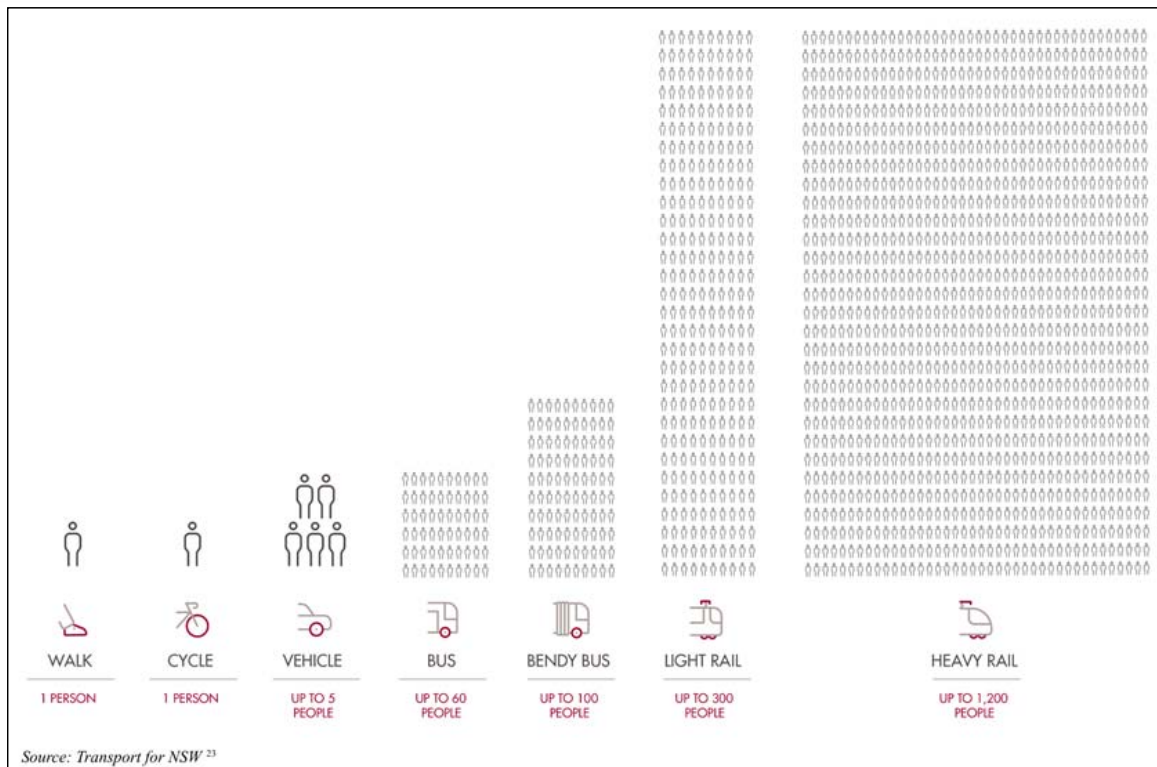
It isn't much
in the way of
sharing

- CarShare – average vehicle occupancy is 1.44 (including the driver)

– Source: Cervero, R Golub A and Nee B (2007) 'San Francisco City CarShare: Longer-Term Travel-Demand and Car Ownership Impacts' Institute of Urban and Regional Development University of California at Berkeley

Slightly better
than
Melbourne
traffic but
known to
have positive
impacts in
reducing car
ownership

Public Transport is the most efficient form of SHARED MOBILITY



Bus based demand responsive sharing has in general; always failed

Academic Results – DRT Trials:

“Most of the services that have stopped have done so because of the high costs in relation to their patronage”

Oxley(1979)

“Increased mobility is rather intangible when compared to the harsh reality of deficits on a balance sheet”

Transport Canada

(1978).

Bridj, local on-demand bus service, is shutting down



KATHERINE TAYLOR FOR THE BOSTON GLOBE/FILE

Matthew George, the 26-year-old founder and owner of Bridj, loaded a truck with packages for delivery in August 2016.

By Curt Woodward, Adam Vaccaro and Felicia Gans

GLOBE STAFF | GLOBE CORRESPONDENT APRIL 30, 2017

In practice: Shared Modes enhance transit

KEY FINDING 1

The more people use shared modes, the more likely they are to use public transit, own fewer cars, and spend less on transportation overall.

KEY FINDING 2

Shared modes complement public transit, enhancing urban mobility.

KEY FINDING 3

Shared modes will continue to grow in significance, and public entities should engage with them to ensure that benefits are widely and equitably shared.

KEY FINDING 4

The public sector and private mobility operators are eager to collaborate to improve paratransit using emerging approaches and technology.

Source: TCRP J-11/TASK 21 'SHARED MOBILITY AND THE TRANSFORMATION OF PUBLIC TRANSIT'

Figure 2: Frequent use (once or more per week) by mode—supersharers v. all respondents²

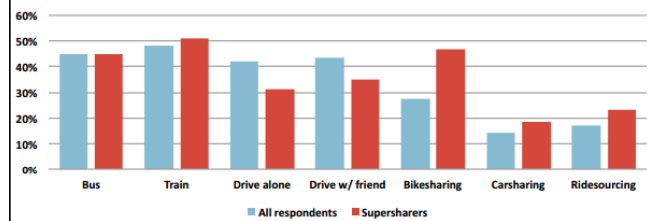
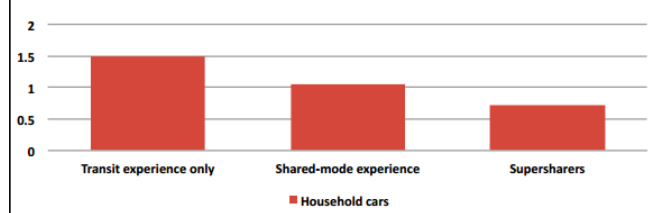
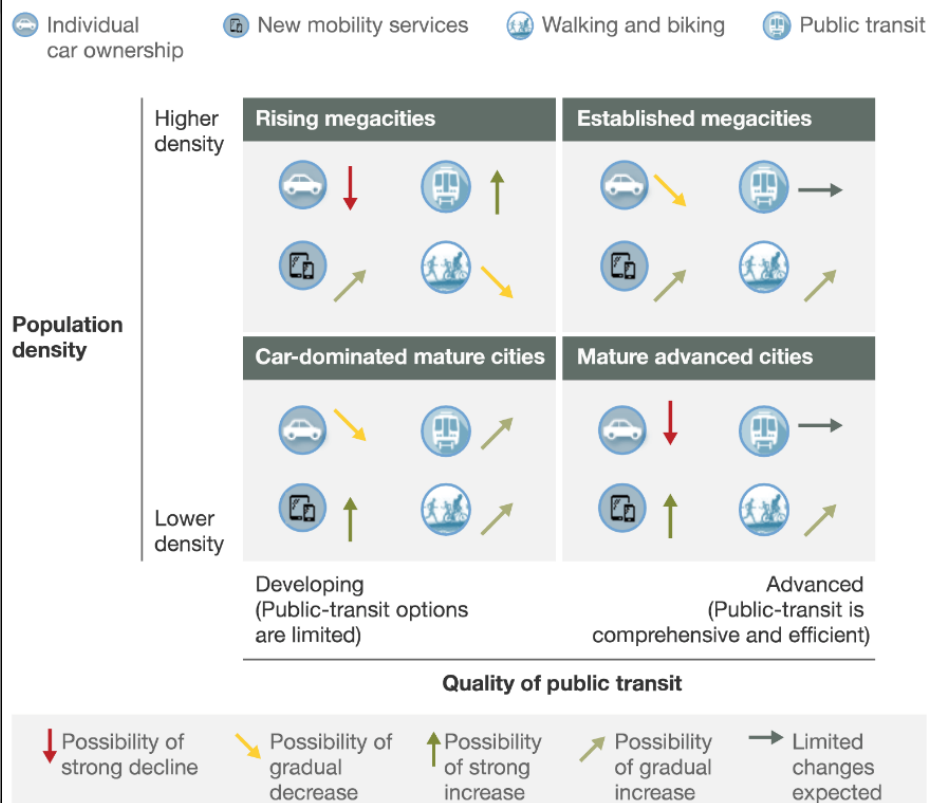


Figure 3: Household vehicle ownership, by shared-mode experience³



How mobility is likely to change, by type of city.



Source: Urban mobility at a tipping point By Shannon Bouton, Stefan M. Knupfer, Ivan Mihov, and Steven Swartz McKinsey & Co

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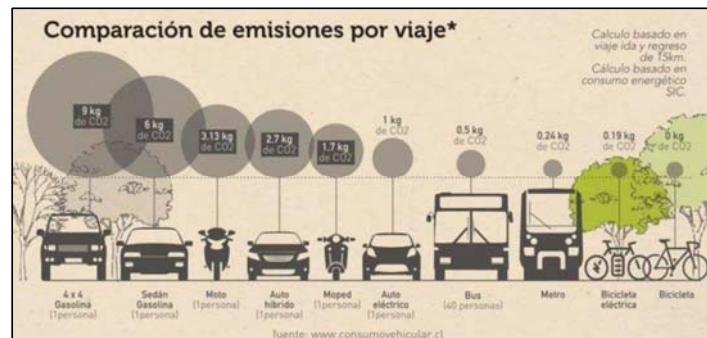
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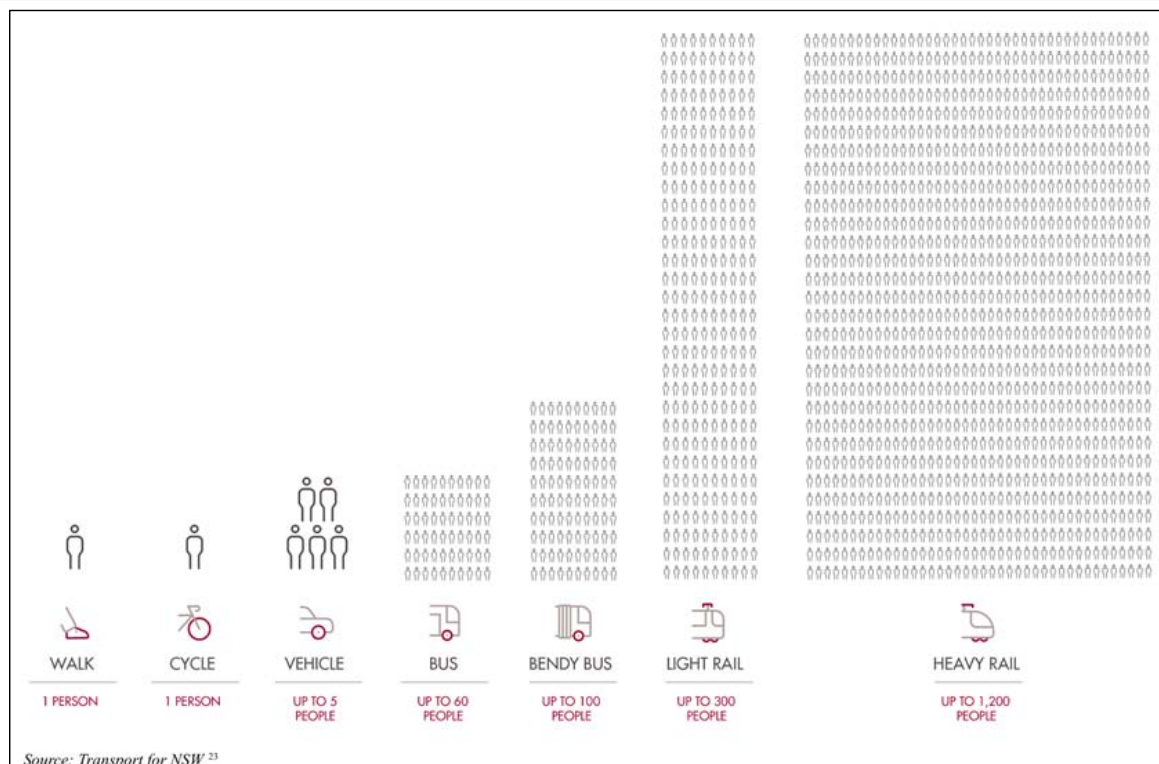
Cities; humanities future



Rail=Efficiency and Volume



Public Transport is the most efficient form of SHARED MOBILITY



The Westgate Freeway; a Giant Ugly Beast but BIG travel carrier



Melbourne Metro = 4.8 West Gate Freeways

1 Rail Tunnel



=



Note: Assumes a 2 way rail tunnel carrying 24 trains an hour at an average load of 800 = 38,400/hr and a freeway lane = 2000 vehicles an hour/Lane

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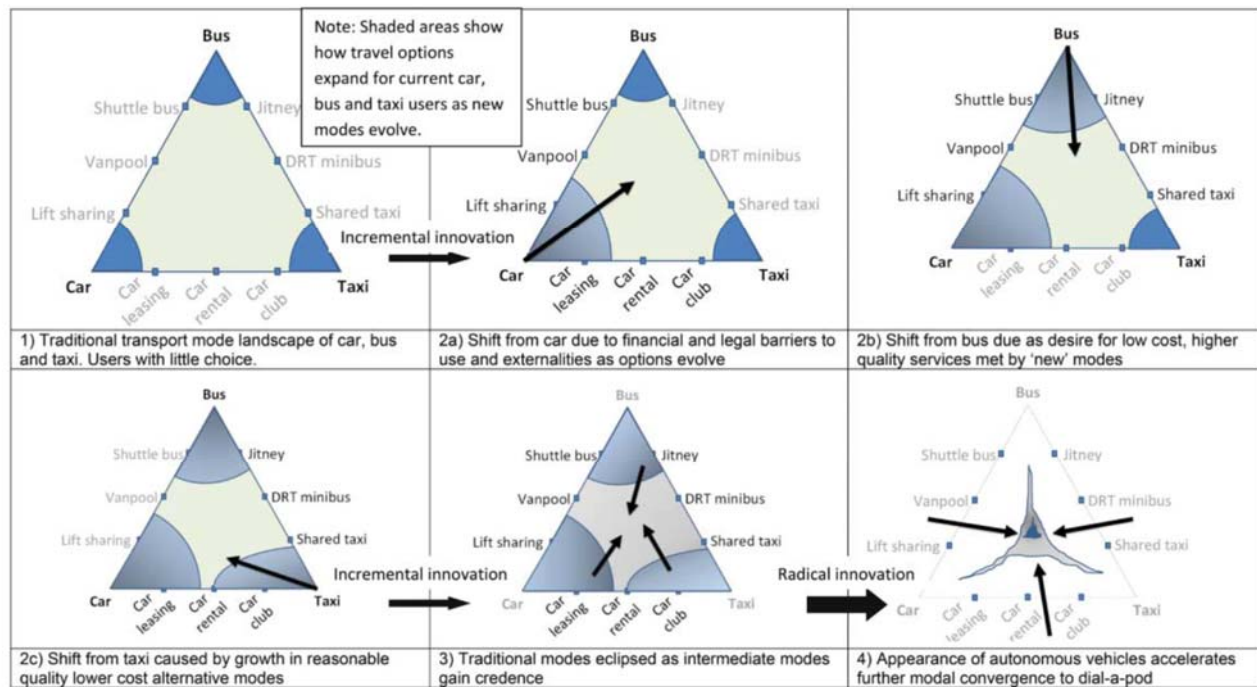


Fusion – Bringing the New into Transit

A composite image for the GoPass app. At the top, the text 'UBER+ DART' is displayed with a yellow arrow pointing right. Below this, a woman is shown holding a smartphone displaying the app. To her right, a yellow banner contains the text 'Go further. GoPass.' and 'Simplify your commute with the FREE GoPass app.' Below the banner, there are logos for GoPass, DART, and a 'let's go.' logo. At the bottom, a blurred image of a train in motion is shown.

Transit runs the Car Share Scheme

“Modal Convergence” - An old idea; is it happening now?



Source: Enoch MP (2015) How a rapid modal convergence into a universal automated taxi service could be the future for local passenger transport' Technology Analysis and Strategic Management

Bus Rapid Transit; Rubber Tired Railways; cost effective but not as good?



A New Way to Bring the Train to the City



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Paper of the Day

A Genetic Algorithm for the City Coach
Station Location and Distribution of Transit
Lines
Le Zhang, Xiaoping Qiu, *et al.*

Reader from:  Curitiba, Parana, Brazil

World Transit Research February 2017 Newsletter
Institute of Transport Studies Monash University
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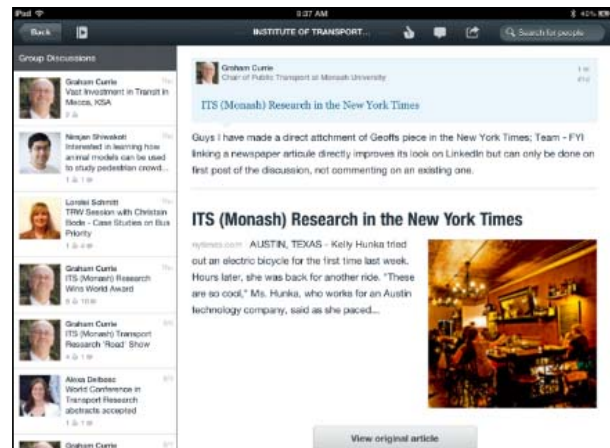
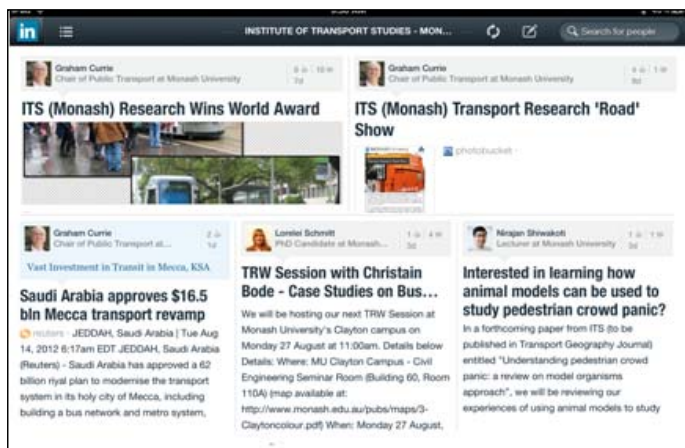
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