EPISODE ONE
REDESIGNING CITIES with Autonomous Vehicles
Summary and Perspective by Naomi Siodmok
REDESIGNING CITIES with Autonomous Vehicles

Summary and Perspective by Naomi Siodmok

An Introduction

Hello, my name is Naomi Siodmok and I am a Master of Science in Urban Design (MSUD) student at Georgia Tech. I am currently assisting Ellen Dunham-Jones, the Director of the MSUD program in realizing a lecture, podcast, and video series called REDESIGNING CITIES: The Speedwell Foundation Talks at Georgia Tech. Below is a recap of our first event along with some reflections from myself. Give it a read and I hope you will consider the MSUD program here at Georgia Tech!

Tuesday, December 4, 2018 kicked off the REDESIGNING CITIES series with Jeff Tumlin and Harriet Tregoning at the Academy of Medicine in a format that brings together two experts to have a conversation related to one of six challenges facing cities: disruptive technologies, outdated infrastructure, social capital, money, equity, and climate change. The purpose of this series is to both inform decision-making locally in Atlanta and impact an international audience through the release of podcasts and videos based on the series. Though it was a chilly, December evening, the auditorium was comfortably full with people eager to learn about “Redesigning Cities with Autonomous Vehicles.” hear the conversation between two experts on the convergence of mobility, technology, and design.

The Presentation

The evening began with a slide presentation by Jeff Tumlin on autonomy as an element of a suite of transportation services impacting design. He noted that autonomy and ride hailing capitalize the value we place on our time, but he pointed out that at the city scale convenience and efficiency are enemies. Today, we are already experiencing a growth in vehicle miles traveled and congestion with the ride hailing economy. This will only be exacerbated with the introduction of autonomous vehicles. To elaborate, Jeff detailed how cities are currently stuck in a death spiral of congestion as roadways are expanded to ease traffic demands. Ironically, but not surprisingly, this expansion then further attracts more vehicles to the roadway creating an endless cycle of congestion known as “induced demand.”

Though to most, congestion is no laughing matter, Jeff made light when he joked that the only city that has solved its congestion problem is Detroit, but it did so by destroying its economy.

Back to business, Jeff advised governments and cities to be planning, reacting to, and anticipating the demands of autonomous vehicles. Some points that he made that caught my attention were that cities need to: more aggressively assert ownership over the public right-of-way and manage it for the public good, prioritize multi-occupancy vehicles, put active transportation first, create delightful places that encourage active mobility, incentivize low-carbon fuels, and define and establish metrics for socially equitable transportation.
The Conversation

Jeff had further opportunity to flesh out his concerns and recommendations with a discussion guided by Harriet and her public sector experience. During this conversation, Jeff mentioned a significant change in the psychology around mobility. No longer is the car an extension of personal identity. Increasingly it is a personal affront. As Jeff so wittily put it, the automobile has been replaced by the cellphone as the perceived object that brings us freedom, autonomy, social status, and sex. And currently, driving has become a barrier to utilizing our phones and therefore expressing our personal identity.

Jeff and Harriet further outlined the concerns with the potential for a dystopian future. Imagine a world like that in Wall-E where people become obese, inactive, and unhealthy once given the option of door-to-door, snack-filled mobility or a world like that envisioned in Black Mirror where people have the potential to carpool only with people of the same tribe or approval rating. Won’t private businesses chase the dollar of fear, convenience, and desire? Though presented through computer-animation or as science fiction, these lifestyles seem more and more likely as we advance somewhat blindly and ill-prepared into the world of autonomy. Fortunately, people like Jeff and Harriet are preparing for autonomy and left the audience with some advice on how to avert a dystopic future.

To ensure equity, sustainability, and efficiency, cities and their governments need to focus more on design in community plans (how to make cities delightful, prosperous, and fair) to encourage active transportation, establish clear values and metrics to organize a budget and justify the expenditure of tax dollars, and engage the community in processes that are inclusive and focus on shared goals and amenities rather than marketed desires. In preparing for autonomy, education is key and the government as well as educational institutions like Georgia Tech need to work on broadening understanding of the threats of induced demand, doubled traffic congestion from zero- and solo-passenger trips, as well as the benefits of well-designed shared mobility. Further, work needs to be done to make transit dignified again. To assist in reducing VMT, cities and associated transit authorities need to work on fostering civility and creating a comfortable environment getting to, waiting for, and riding in transit.

In Reflection

I experienced a lot of emotions during this presentation and conversation. At times I was legitimately fearful for the future, other times I was nodding in complete agreement, and then sometimes I was left wondering, waiting on an answer I did not receive.

The Fear - I am fearful that although we have great people out there like Jeff and Harriet advocating and working to prepare for autonomy, there are not enough people acting. Cities need to step up to create policies that encourage active transportation, support shared vehicles over private ownership in an autonomous world, encourage equity, and continue to create engaging urban environments.

The Agreement – As a user of the transportation system, I could not agree more with the need to change the perception and experience of public transportation. Jeff and Harriet mentioned that we cannot let public transportation die. Cities need to look to other cities that have seen growth in ridership like Seattle. Seattle has made their priority to move people over vehicles.

Lingering Questions – Jeff dropped a shocking fact in his presentation. He mentioned that 4.4 million American have jobs as drivers and that we must consider the labor implications of autonomy, throughout the remainder of the presentation neither he or Harriet further addressed the topic. I was left wondering what will happen to those 4.4 million people once the vehicle can drive itself? Also, what will happen to the small towns and the people in them that make a livelihood mainly on drivers and truck drivers stopping to eat, sleep, and refuel?
Overall, this lecture got me really thinking about the future and excited for the opportunity to graduate and apply my degree in urban design to tackle the urban challenges of the 21st century.

Want More?

In Spring 2019 we will be releasing podcasts and videos based on the series. Tune in to hear about mobility pricing as a means of addressing equity, the death of parking garages, the success of the Atlanta Beltline, and more! For more information, visit our website, here.
EPISODE ONE
REDESIGNING CITIES with Autonomous Vehicles
Overview by Ruiyan Duan
REDESIGNING CITIES with Autonomous Vehicles.

A Brief Overview

- Introduction

On December 4th, REDESIGNING CITIES: The Speedwell Foundation Talks at Georgia Tech, a lecture, podcast, and video series, has kicked off at the Academy of Medicine in Atlanta. This series is in a format that brings together two experts to have a conversation related to one of six challenges facing cities: disruptive technologies, outdated infrastructure, social capital, money, equity, and climate change.

The first episode of the series “Disruptive technologies” focuses on “Redesigning Cities with Autonomous Vehicles”, with Jeff Tumlin and Harriet Tregoning as the guest speakers.

I am Ruiyan Duan, currently a Master of Science in Urban Design student at Georgia Tech. I am glad to share with you the ideas of the 1st episode. Welcome to follow the series and know more about the program.

- Background

Autonomous vehicles (AVs) may be the most significant technology in transportation since the advent of the car 100 years ago. How will they change our cities and lives?
In the presentation, Jeff Tumlin explains autonomy as part of a suite of emerging mobility services. Autonomy gives us a lot of flexibility. It allows us to redefine the nature of mobility as simply movement and an opportunity for capturing the value of time of the people inside the vehicles. Autonomy is more about greater efficiency through accommodating sharing versus greater convenience and more congestion. No matter little scooters in the streets of Atlanta or the increase utility of ride-hailing services like Uber and Lyft all over the world, there is a decrease in the use of conventional transportation and all of these services make us rethink about the mobility in future.

nondystopia autonomy – connection, sharing and electric

- **Five points to manage the transportation system**

In cities all over the united states, public transit use is falling off dramatically. How to get with it and use autonomy and technology as the excuse to finally manage the transportation system for the public good? Jeff gives five key points in his presentation:

1. Make it shared
   
   There is a simple geometric limitation of city streets in cities where we are no longer demolishing poor neighborhoods in order to widen highways. The starting point needs to be municipalities asserting public ownership over the public right of way. And this is the real reason why autonomous vehicles will be successful.

2. Transit must lead
   
   It is important for transit agencies to take the lead on technology development for autonomous bus rapid transit and for municipalities to take the lead a dedicating right of way for the most space efficient and socially efficient modes of transportation.

3. Put active transportation first
   
   We put walking and biking and scooter and all forms of human-powered micro mobility first. Eliminating that conflict with people trying to ride a bike by using
parking-protected bikeways now and separated micro mobility lanes.

4. Incentivize low carbon
   Low carbon fuels and advantage of autonomy is that electric autonomous vehicles can refuel themselves. Gas powered ones have a really hard time with that. So this is some potentially good news with autonomy, but we have to pressure it to make it work.

5. Define + promote equity
   We need to do a much better job at defining our problems and also defining and measuring social equity. Ensuring all mobility that’s operating the public right of way takes universal payment and provides universal information and accessibility about itself. Cities need to collude with each other and public agencies have to manage mobility for the public good.

Click the link below and watch Jeff’s full presentation to see more:

(video link)

- The Conversation

Jeff and Harriet had shared their concerns, recommendations and expectations in a later conversation. They address some more points on the issue.

Like some changes the AVs might bring:

Changing the high cost of transportation - Transportation in the US is almost entirely privatized and expensive. It is the price entry to any kind of job. Transit and transportation
choices are a huge part of the equation of walkability to knowledge economy workers. Autonomous vehicles won’t have to be paid for the labor of a driver, which will make them really cheap.

**Changing the psychology of mobility** - The automobile companies used to blast us with advertisements that car is an extension of our personal identity. When the car is not privately owned and it is just a fleet service, people might be more willing to pay for transit.

**Changing the choice environment** - Autonomous vehicles provide an abundant choice environment. They can suddenly make a decision about what’s the value of his time. people seem to be making a pretty direct choice that they’d rather choose a mode where they can continue to beyond their phones and do other things.

**Changing the public health**

If we design cities that the only way you get the exercise is to take your autonomous vehicle to the gym and walk on a treadmill, we’re dooming our city to poor public health. So the invention of technology needs to be worked into the criteria which are to satisfy our basic physical, social and psychological needs.

**Changing the ways of recreation**

There’s something innate in people’s sociability. An autonomous vehicle might be so smart that we could just have people on bikes and parties and cafe tables, everything in the same right of way. They might bring us back to the scene like in the 19th century where crowds of people sort of wandering around everywhere.

Here are also some suggestions for the state government to better welcome the AV era:

**To foster trust** - The fear of future breeds mistrust and the mistrust makes people reject changes the government intends to make. Conversations about values and translate values into a strategic plan is important. The government should make performance metric and report back to the public.

**To build a culture of fast failure**

Cities are better to be fast followers rather than innovators of new technologies. The government should first define what the problem it is and be clearer about what it’s trying to achieve to avoid the possibly unintended consequences. The government should get really good at risk-taking and failure by constantly measuring and reporting back and having mechanisms to correct course.

**To operate and design streets**

Public transit has phenomenal assets and advantages in autonomy. It requires a different approach of leadership and understanding. The pedestrians and cyclists are the most privileged people. The city needs to make standard operating procedures and street design to focus on the movement of people and allow geometry of mobility.
Expanded reading

Read the articles in *Taking you out of the driver’s seat* by DAVID H. FREEDMAN in the December 14th issue of Newsweek magazine to know more. Newsweek and Georgia Tech held a joint symposium on Wednesday, Dec 12th with several of the authors. They discuss how driverless cars will change the world. Ellen Dunham-Jones, director of MSUD program in Georgia Tech, describes two hypothetical plans for a city and its transit, shared AVs and etc. She has led several urban design studios to make visions for the city of Atlanta, including identifying the best way to build a network of walkable streets and possible plans for new transportation.

One of the hypothetical plans of the 2016 MSUD works

Want More?

In Spring 2019 we will be releasing more podcasts and videos based on the series. Tune in to hear about mobility pricing as a means of addressing equity, the death of parking garages, the success of the Atlanta Beltline, and more! For more information, visit our website, here.