



Aalto University
School of Engineering



Self-driven Faustian bargain or opportunity for imagination? Envisioning framework for participatory expansion of socio-technical horizons for emerging mobility technologies

Miloš N. Mladenović

Spatial Planning and Transportation Engineering

Aalto University

We cannot disentangle questions of socio-technical transition from “engineering” (re)distribution of benefits and burdens across present and future societal groups, as well as threats of reproducing existing forms of inequality

Starting Premises

What is (emerging) technology?

Defining
technology
means
defining what
is to be a
human



Technological change creates ecological not additive change



The machines devolved us so slowly, nobody noticed.

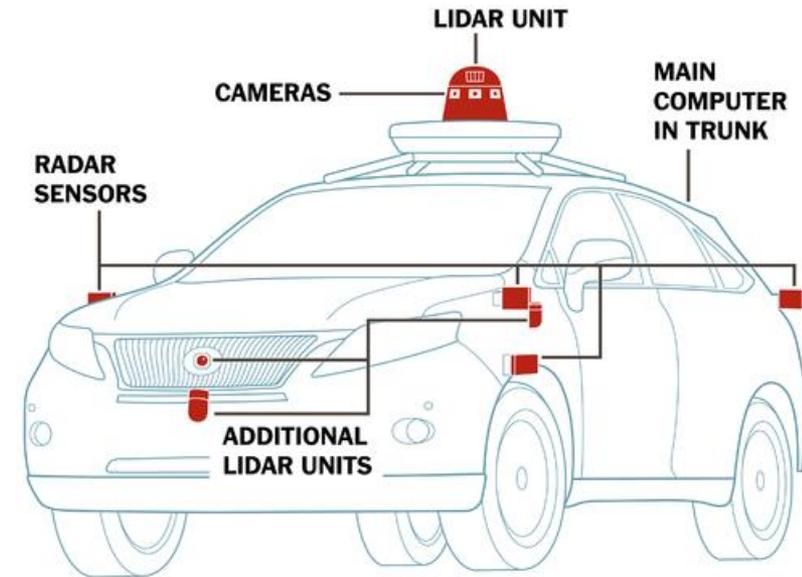
There are (someone's) Values and Visions built into technology



Self-driving Vehicles – Emerging Everyday Technology

What is a Self-Driving Vehicle (SDV)?

- Vehicle with sensing, communication, and processing technology
- “Removal” of the driving task
- Choosing speed/travel time, destination, departure time, route/activities?
- “The first large-scale deployment of robotics in a society at large in human history”



The ultimate moral question:

Should the SDV exist at all?

The future is self-driving

You can now take a self-driving bus ride at Chalmers.

The bus will go every weekday between Chalmersplatsen and Chalmers library. Travel will be free.

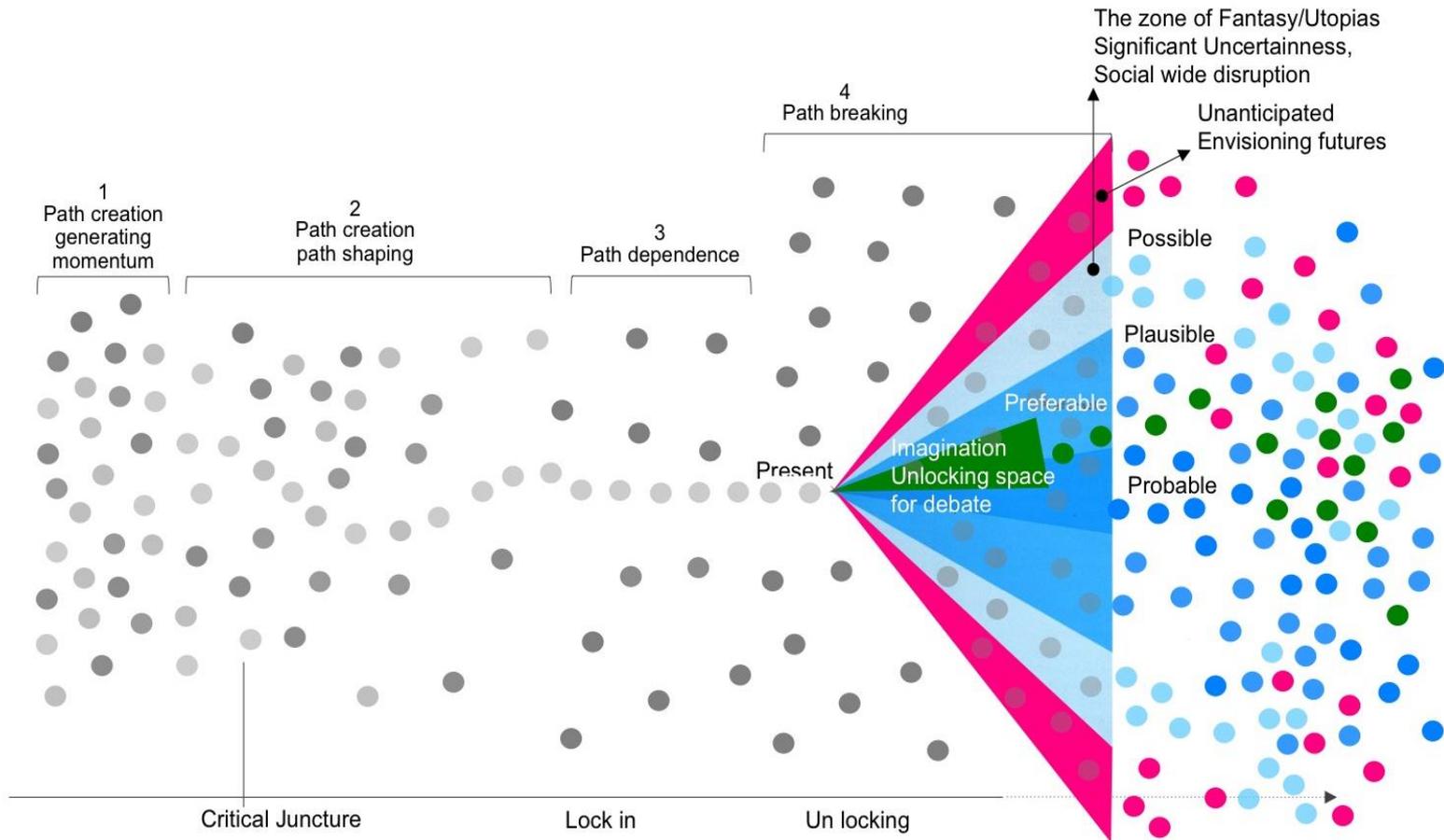
Come and try the transport of the future!

www.självkörandeGBG.nu #självkörandebuss

RISE S3 AUTONOMOUS MOBILITY DRIVE SWEDEN RISE

Gothenburg, Shuttle buses in city. The goal is to test how new, shared transport solutions can contribute to continued sustainable city development. The project is part of the government's co-operative program "The next generation's travel and transport" and is mainly financed by Vinnova through Drive Sweden. The project is led by the research institute RISE. Partners: Autonomous Mobility, Chalmers University of Technology, Chalmersfastigheter, Ericsson, Förvaltnings AB Framtiden, Göteborgs Stad Parkerings AB, Härjeda kommun, Karlstadens Utveckling AB, Rise Research Institutes of Sweden, Sunfleet, City Planning Authority and Urban

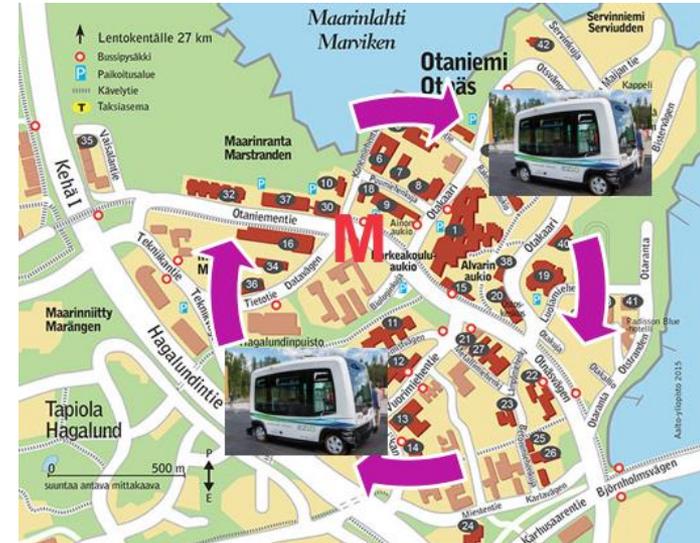
The Need for Path-Breaking Futures



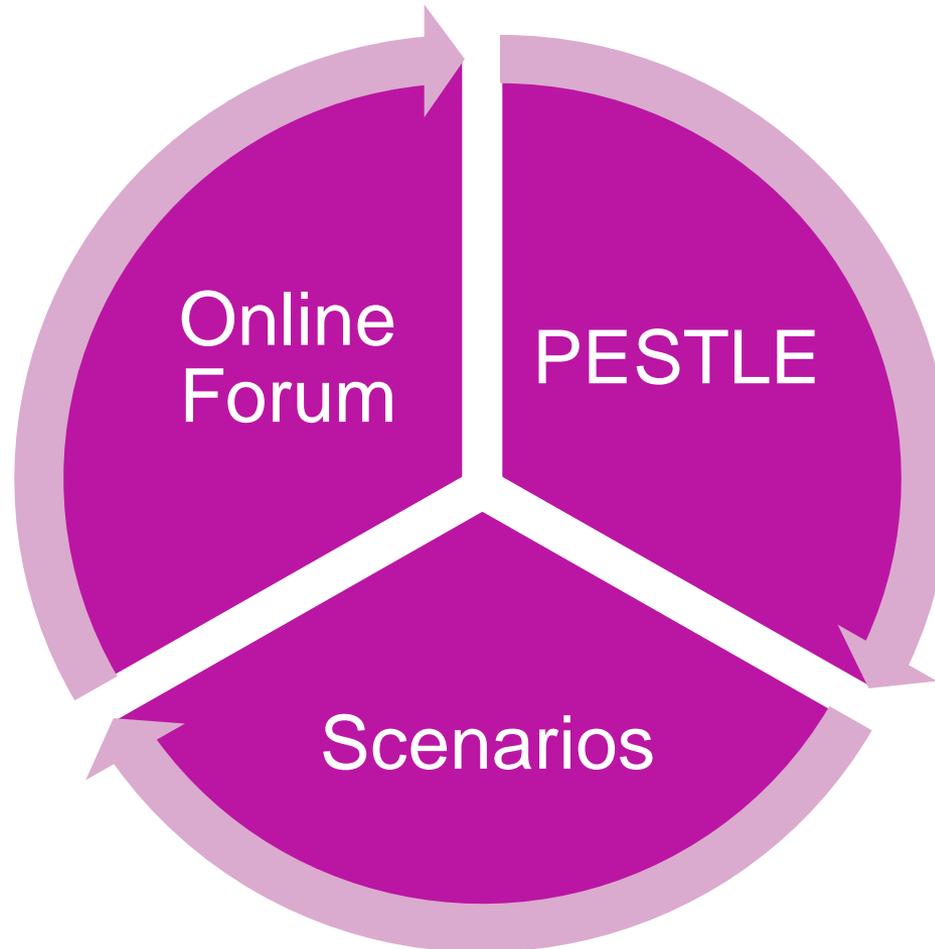
Exercise in collective imagination of mobility futures

A Vision* - Self-Driving Urban Area (SUA)

- Self-driving electric shuttles with fixed and on-demand routes
- Proximity to high capacity transport nodes
- Integrated land use, transport and energy infrastructure planning
- Emphasis on street design for walking and biking
- Restricting car access through parking management
- Public transport and pricing policy



Envisioning Framework



Some Lessons Learned

- Participants, language, piloting technicalities (usability)
- Unique assembly of Finnish values and norms
- Different everyday mobilities for different social groups
- Co-created rules, moderation, placeholder discussions, subtopics, activation techniques, experience sampling
- Space for contestation of desirable and anticipated futures
- Emergence of disagreements and points of conflicting opinion
- Enabling social learning by not immediately seeking consensus

Faustian Bargain of Institutional Void?

- Lacking the capacity to imagine breaking existing technological path dependencies
- Not explicitly avoiding potentially irreversible technological lock-ins
- Missing an opportunity for more divergent reflection on all possible, desirable technological options (e.g., vast diversity of current vehicle types)
- Difficulty in estimating the changes from emerging technology until the technology is fully formed
- Bargain under conditions of unequal bargaining power and irreducible uncertainty

Challenges for inter-organizational learning in governing (for) SDVs

Knowledge to Action

- Advocating democratization of technological development practices → cultivating moral and imagination capacity
 - Avoiding displacement of the political debate about the inevitable ethical underpinnings
 - Reflection about undesirable urban futures can help in reflection about unanticipated consequences and building consensus about desirable visions
 - Transition end date should be the outcome of the divergent and agonistic envisioning process
 - Explicating latent aesthetic/experiential principles, including considerations for shaping the city identity
-

Knowledge to Action

- Some divergence of function and, consequently, technical requirements should be expected and accepted as something to be tackled at the national or international level
 - Data governance as the new policy lever
 - Continue developing and implementing envisioning methods
 - Policy coordination and integrated planning (e.g., MALPE)
 - A range of instruments (e.g., taxation and infrastructure investments, flexible work regulation and incentives)
 - Experimentation with new institutional forms may open up the constellation of current roles and responsibilities for change agents
-

Experiment with new (inter)-organizational Roles



The screenshot shows a press release from the Los Angeles Mayor's Office. At the top left is the Los Angeles seal and the text "LOS ANGELES". Below it is a blue box with the name "Eric Garcetti" and the hashtag "#MayorOLA". The main headline in white text on a dark blue background reads "MAYOR GARCETTI ANNOUNCES APPOINTMENT OF TRANSPORTATION TECHNOLOGY STRATEGIST FELLOW". Below the headline is a navigation menu with "Mayor's Office Home", "Media" (with a dropdown arrow), and "Talk to Us" (with a dropdown arrow). To the right of the menu is the date "AUGUST 18, 2015" and a small photo of a woman. The main text of the press release states: "Mayor Eric Garcetti today announced the appointment of Ashley Z. Hand as the transportation technology strategist fellow at the Los Angeles Department of Transportation (LADOT). The fellowship is funded through a grant from the Goldhirsh Foundation."

LOS ANGELES

Eric Garcetti
#MayorOLA

MAYOR GARCETTI ANNOUNCES APPOINTMENT OF TRANSPORTATION TECHNOLOGY STRATEGIST FELLOW

Mayor's Office Home
Media ▼
Talk to Us ▼

AUGUST 18, 2015

Mayor Eric Garcetti today announced the appointment of Ashley Z. Hand as the transportation technology strategist fellow at the Los Angeles Department of Transportation (LADOT). The fellowship is funded through a grant from the Goldhirsh Foundation.

“It is a mistake to confuse progress with
a continued movement in one direction”
- Wittgenstein

Thank you!

Mladenović, M. N. (2019). **How Should We Drive Self-driving Vehicles? Anticipation and Collective Imagination in Planning Mobility Futures.** In *The Governance of Smart Transportation Systems* (pp. 103-122). Springer, Cham.