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Mobilità e trasporti

un nuovo presente per una ripresa sostenibile

The 2020 pandemic and the computer-mediated communication shaping the new mobility

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The 2020 pandemic and the computer-mediated communication shaping the new mobility



SUMMARY

- ✓ *Introduction*
- ✓ *Mobility reduction*
- ✓ *The research question*
- ✓ *Forced domesticity*
- ✓ *Back to the new normal*
- ✓ *Directions to manage computer-mediated communication within prospective transport policies*
- ✓ *Concluding remarks*

INTRODUCTION

This situation is not unprecedented.....

pandemics are a constant throughout the history of mankind, with traces of their passing in many cultures and built environments



and in past times communities adapted to that....

«**il lazzaretto**», a remote but necessary facility, enforced by the Republic of Venice in every port under its authority to protect trade

INTRODUCTION

The difference, today..... *instantly global:*

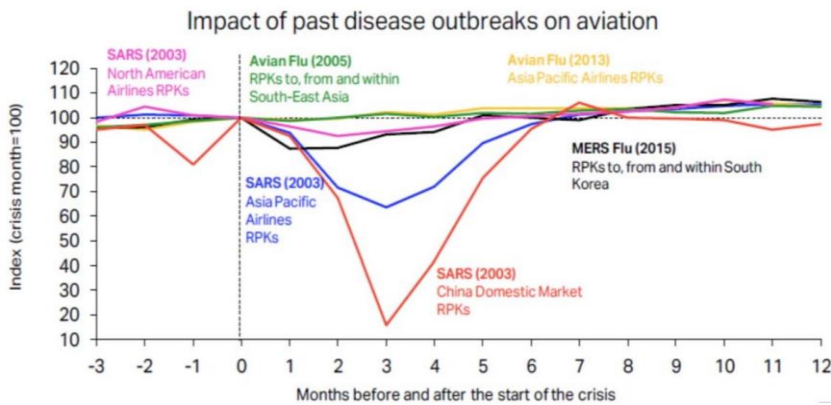
Hypermobility and speed!

- SARS, 2003
- H1N1, 2009
- MERS and Ebola, 2014
- Virus Chikungunya and Zika, 2016



*Red flag in the
supranational spread:
Air transport.....*

Musselwhite et al. 2020



INTRODUCTION

Hypermobility and speed!

*Red flag in the local spread:
Air + Surface transport.....*

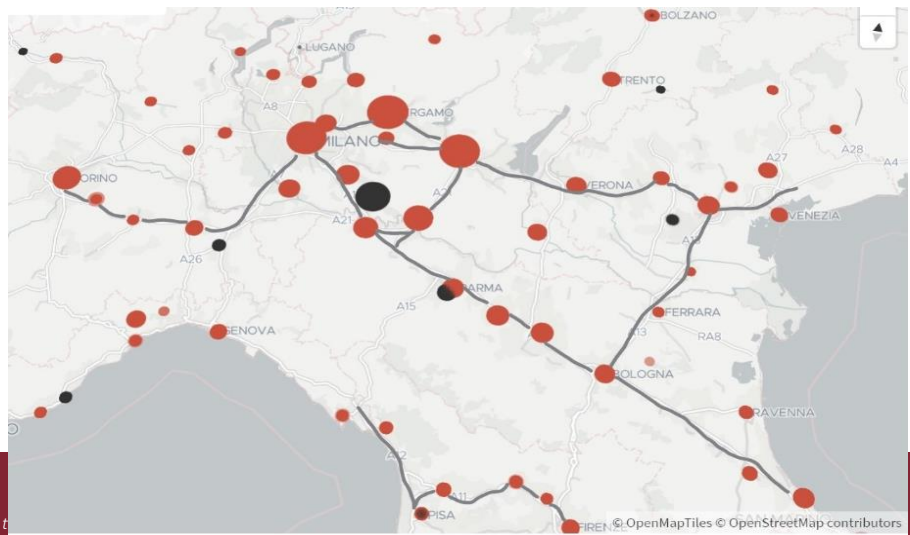
Wuhan: excellent accessibility by train and abundance of flights associated with the Chinese New Year festivities

Du et al. 2020, Zhao et al. 2020a; Zhao et al. 2020

Italy: «the virus traveled on highways»

Sebastiani 2020

....and in cities?



Caballini - Corazza The 2020 pandemic and t

MOBILITY REDUCTION

This was unprecedented.....

A dramatic drop in travel demand occurred during the pandemic first wave



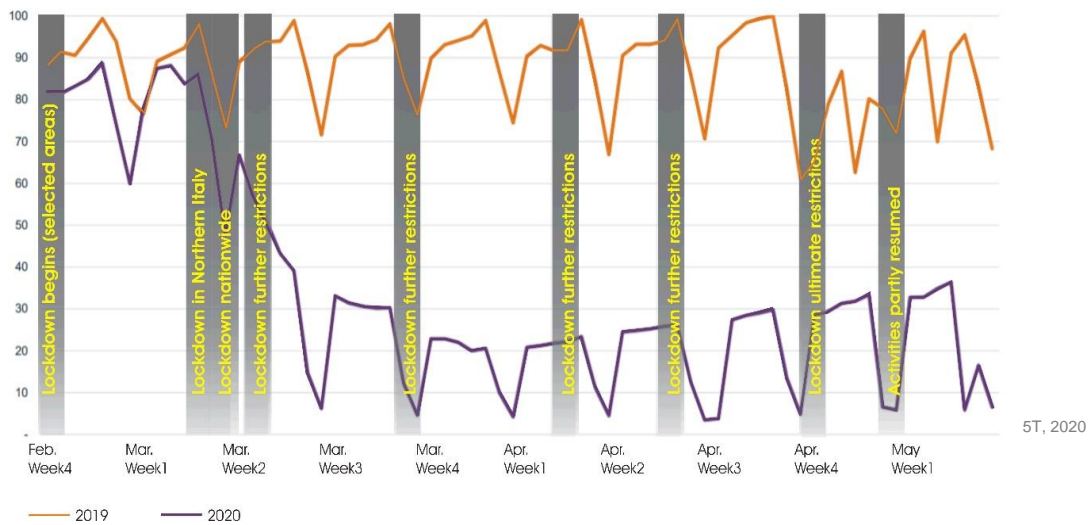
....and a massive use of video conferencing, teleworking, remote training...
.....all never experienced before.

Reduced mobility was counterbalanced by increased computer-based communication needs.

MOBILITY REDUCTION IN TURIN

One example for all.....

Traffic flows in Turin:
comparison between 2019 and 2020



Parking occupancy was no exception, in the 34 public facilities:
- 42% compared to 2019

COMPUTER-MEDIATED COMMUNICATION IN TURIN

One more example from Turin and Piedmont...

Since the Coronavirus emergency, among the citizens :

- **use of the Internet + 20%** compared to the same period in 2019 and **+ 50% compared to January 2020**

(Top-IX Consortium, 2020)

- the most common web search engine: + 45%
- the most famous social media: + 42%

RESEARCH QUESTION

*By analysing the impact of web-based communication during the COVID-19 pandemic on the demand for physical mobility, what will be the **role of computer-mediated communication** once the health emergency is over?*



Contrasting behaviors.....

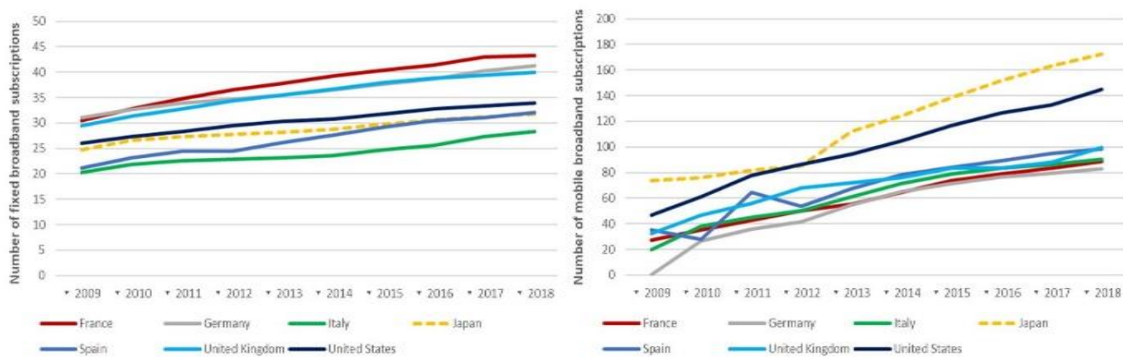
D Domesticity
Domesticità

+

U Unsharing
Separazione

COMPUTER-MEDIATED COMMUNICATION

Until 2020, the development of broadband subscriptions in some OECD member states per 100 inhabitants was constant



OECD 2020

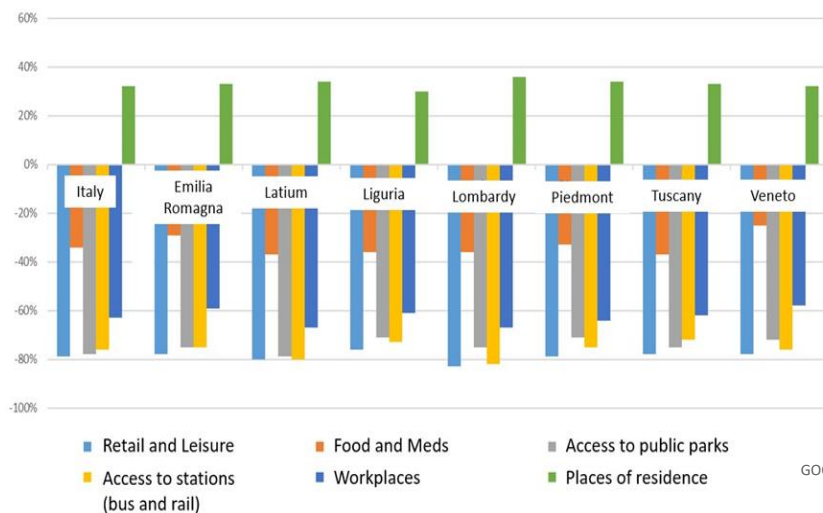
In Italy, from 2009 to 2018 the number of fixed and wireless broadband subscriptions increased by 38,4% and 360%, respectively, and.....

FORCED DOMESTICITY



In Italy, forced domesticity during the first and second waves generated:

a) a steady decrease in everyday systematic and non-systematic trips (whatever purpose)



Trip variation, compared to the reference value (Jan. 31-Apr.30, 2020).

GOOGLE 2020

COMPUTER-MEDIATED COMMUNICATION

In Italy, forced domesticity during the first and second waves generated:

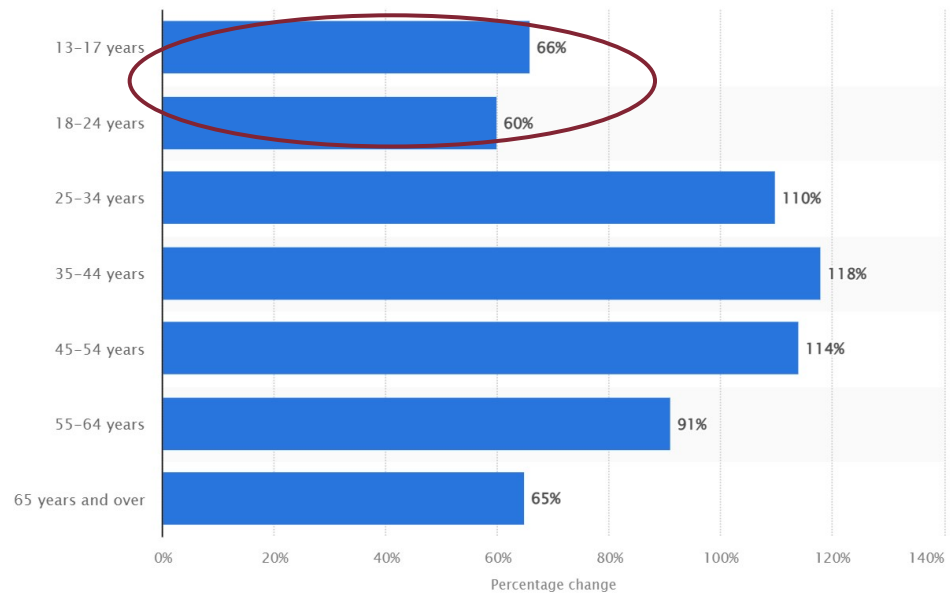
- b) a prompt rise in the demand for home and mobile connections, with the two major telecommunication providers recording increased traffic volumes up to 90% (domestic) and 35% (mobile) between March and June 2020

..... *PUBLIC LIFE @HOME*

- b) more time spent online by Italians aged between 35 and 54, which increased more than 110% than before (Johnson, 2021); not all this time was due to systematic activities.... For example, the *Houseparty* app (a group video social network) accounted 243 daily active users on android devices in February 2020, which became 32,688, one month later!!! (Ceci, 2021)

COMPUTER-MEDIATED COMMUNICATION

Online audience during the coronavirus outbreak in Italy in 2020, by user age (comparison with 2019)



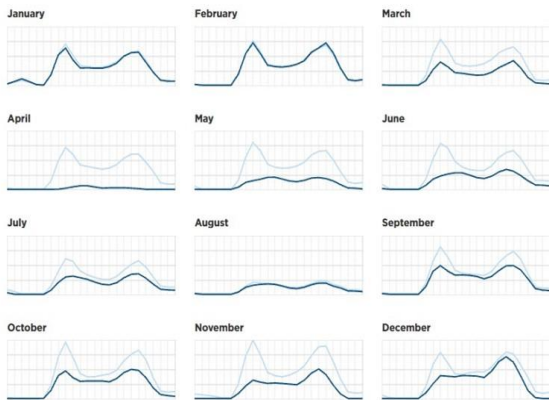
Statista 2021

Percentage change

BACK TO THE NEW NORMAL

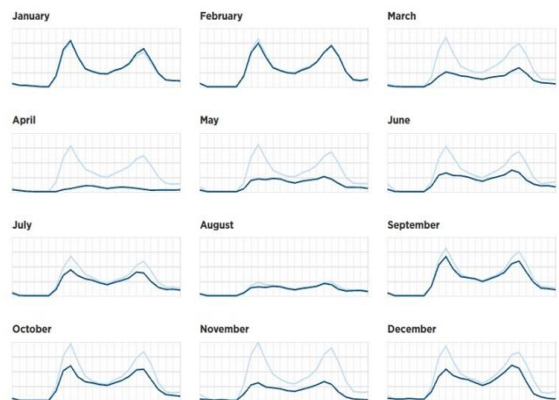
However, when the lockdown was lift...

Rome



Average congestion level
— 2019
— 2020

Milan



TomTom2021

...passenger car traffic flows resumed as before.....

BACK TO THE NEW NORMAL

In Rome....

- first day of re-opening in May 2020: + 230.000 passenger cars (De Cicco 2020, RomaMobilità 2020).
- begin/end of August 2020: +12% if compared to August 2019 (Romamobilità 2020)
- However, Internet is still a competitor in the everyday activity management: *during the 2020 Black Friday week:*
 - *24% if compared to 2019, but the event was largely anticipated on the web by many weeks* (Google 2020)
- 4 citizens out of 5 state their unwillingness to use transit in a near future (Arzilli 2020)

BACK TO THE NEW NORMAL



Transit low ridership is doomed to last (Chandra 2020)
Paratransit is not as brilliant as expected.....

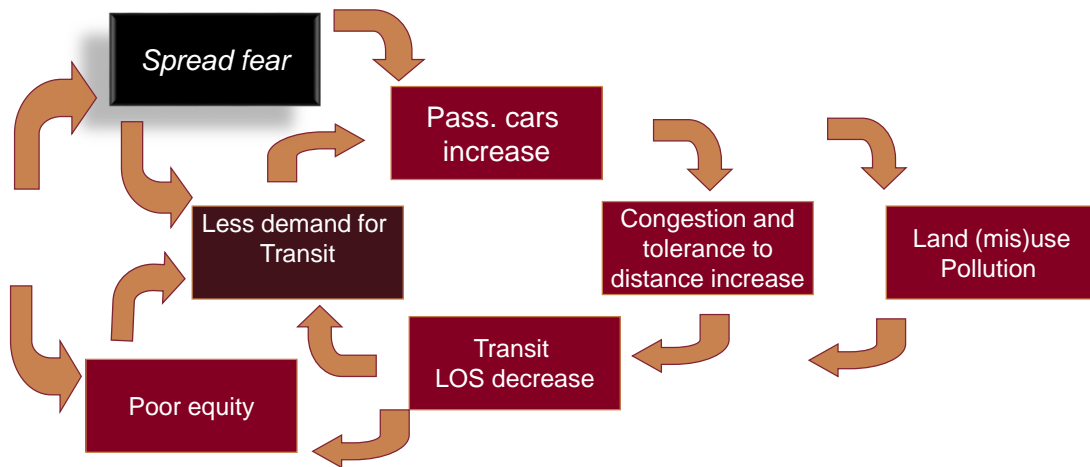
- fear to travel with/among strangers
- "solo" dimension fostered by forced domesticity
- Teleworking as a new option...
- micromobility booming, again «solo» modes (PTW, kickscooters, etc.)
- **unregulated travel options are being generated on the Net**

all of the above weaken the «sharing» culture

BACK TO THE NEW NORMAL

Behaviors

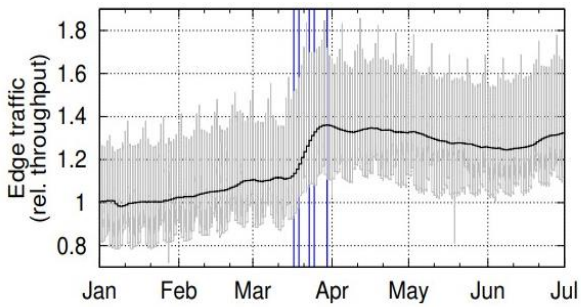
unsustainable urban mobility vicious circle is repeated and fostered.....



BACK TO THE NEW NORMAL

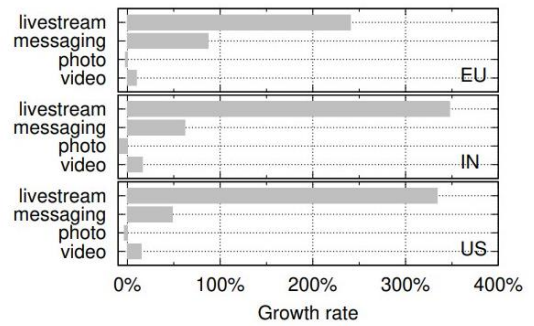
Behaviors

The Net role is not negligible anymore!.....



Relative change of global edge traffic, worldwide

Böttger, Ibrahim and Vallis, 2020

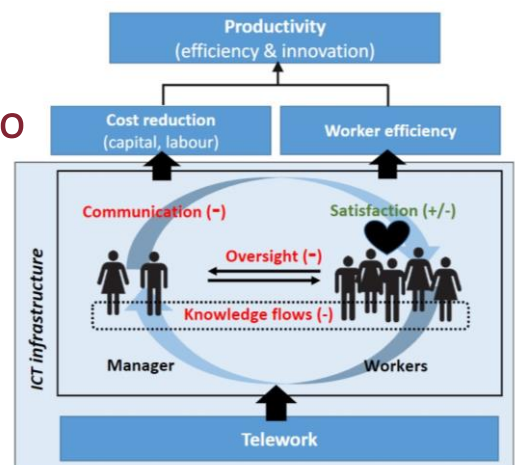


Growth rates of main products in top EU countries (Italy, France, Spain, UK, Switzerland and Belgium), India and the US

DIRECTIONS TO MANAGE COMPUTER-MEDIATED COMMUNICATION WITHIN PROSPECTIVE TRANSPORT POLICIES

To conclude, some possible answers to the research question about the role of computer-mediated communication once the current emergency will be over, can be drawn, as follows:

- computer-mediated communication proved to be an effective resource to manage everyday work tasks during the pandemic
- therefore, it will certainly be more and more included in the business and corporate culture to reduce travel costs, since telework performance proved to be equal or even superior (OECD 2021)



OECD 2021

DIRECTIONS TO MANAGE COMPUTER-MEDIATED COMMUNICATION WITHIN PROSPECTIVE TRANSPORT POLICIES

- The fear of spread is pushing again people towards the massive use of personal cars.
- **Computer-mediated communication** can help reverse this trend by turning **teleworking** into a regular option and contributing to **reduce commuting**, with clear environmental benefits.
- The current experience will pave the way for further exploitations of computer-mediated communication in other everyday activities: goods distribution, education, leisure.....

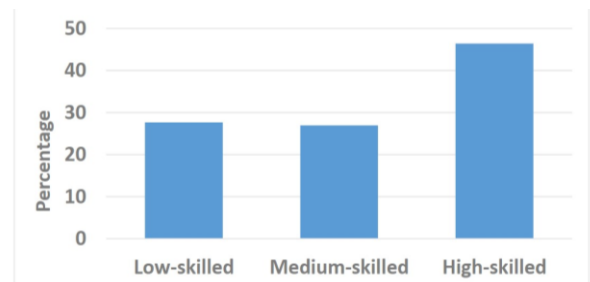
However, their extent and affordability without becoming detrimental to social life are still unclear.

DIRECTIONS TO MANAGE COMPUTER-MEDIATED COMMUNICATION WITHIN PROSPECTIVE TRANSPORT POLICIES

CAVEATS

- Computer-mediated communication did affect thus far the most affluent strata of the society, or at least those most familiar with the web literacy.
- To increase inclusiveness, computer-mediated communication should also include **access to education, health care and other welfare services** to those who have poor travel options and are still **computer-illiterate**.

Cross-country (Europe) average of percentage of people using telework in 2015 by occupational skill group



OECD 2021

DIRECTIONS TO MANAGE COMPUTER-MEDIATED COMMUNICATION WITHIN PROSPECTIVE TRANSPORT POLICIES

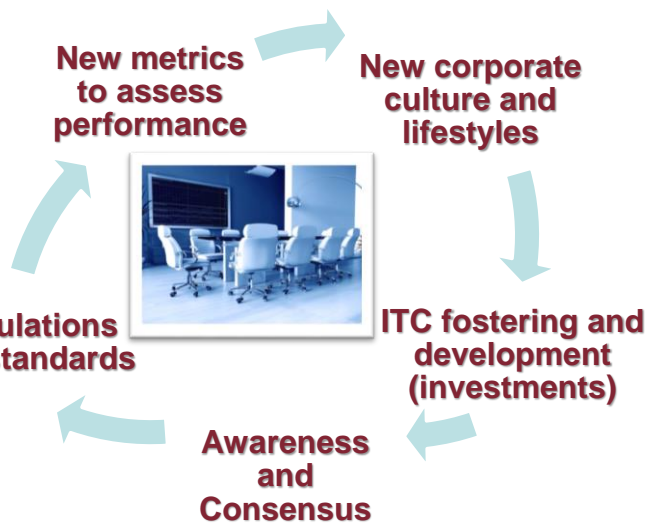
CAVEATS

- Transit is probably the worst-affected local travel option by this pandemic. One more reason was certainly its **unpreparedness** in managing the emergency.
- Thus far, R&D has been mainly focused on improving fleets management and control, within well-known fields as predictive maintenance, energy management, etc. But the lesson learnt will probably pave the way for different innovations dictated by anti-spread measures: touchless options, more flexible on-board layouts, etc.
- The challenge for transit innovations is to keep the pace with current developments in all areas of computer-mediated communication, to convey the idea that transit is safe (in the near future) and for all (in the near and far future) .

CONCLUDING REMARKS

Teleworking and other web-based activities will likely generate further reduction in physical mobility, in turn generating a greater demand for communication. Whether this newly-induced demand will be met with or without physical mobility is still to be evaluated.

An example: business trips, if systematically replaced by web meetings, could significantly affect the demand for air and rail traffic, but at the same time increase the demand for connectivity.



CONCLUDING REMARKS

The key learning is that, **for the very first time, current sustainable transport policies are dictated by exogenous policy-making affecting** private and public modes of **transport:** **public health** policies during the emergency, **labour market and management** ones, along with those associated with the **ITC development** in the new normal.....



*.....WHERE DO WE MOVE
FROM HERE???*

THANK YOU!

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