university of groningen

Mobility and Economic Geography

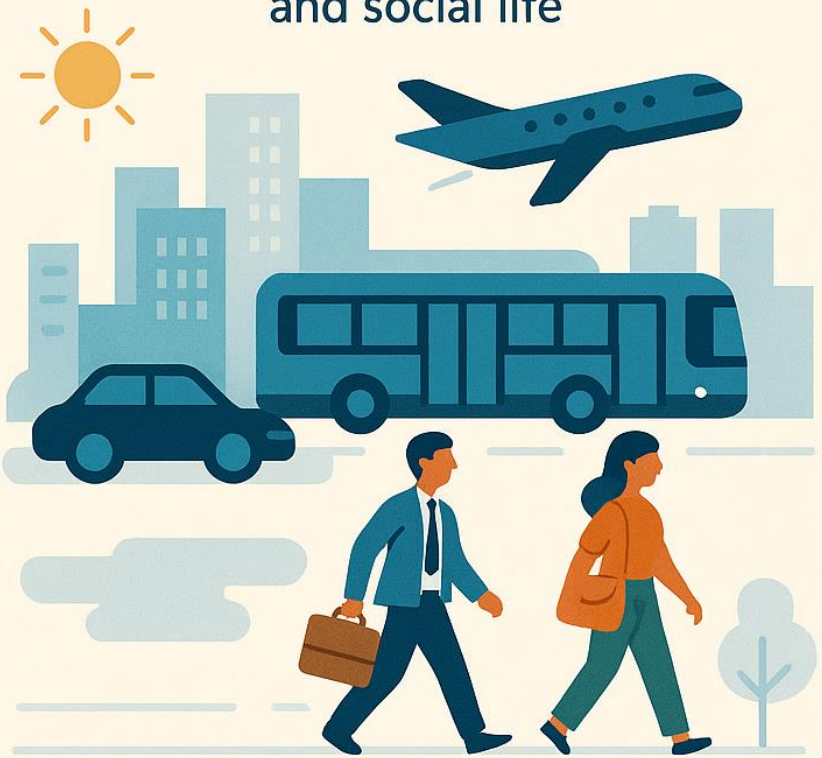
Conor O'Driscoll

Mobility and Economic Geography

Two Different Flavours of Mobility

TRAVEL MOBILITY

How people move through space to reach work, school, services, and social life



LOCATIONAL MOBILITY

The ability to act on locational preferences in response to needs, opportunities, or constraints

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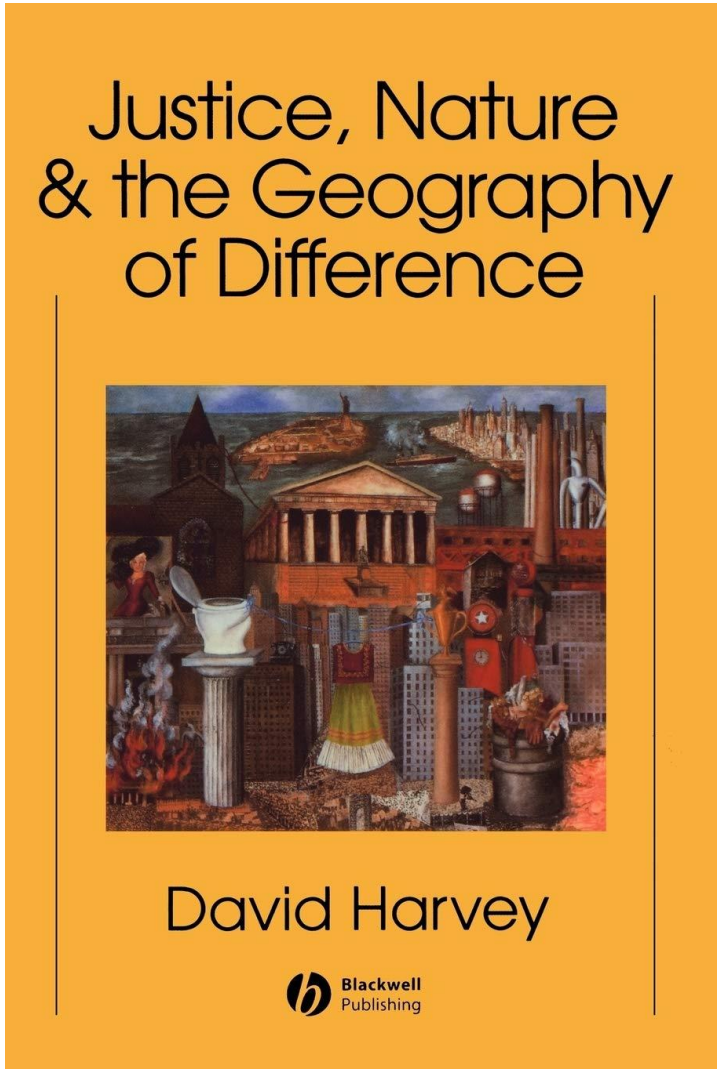

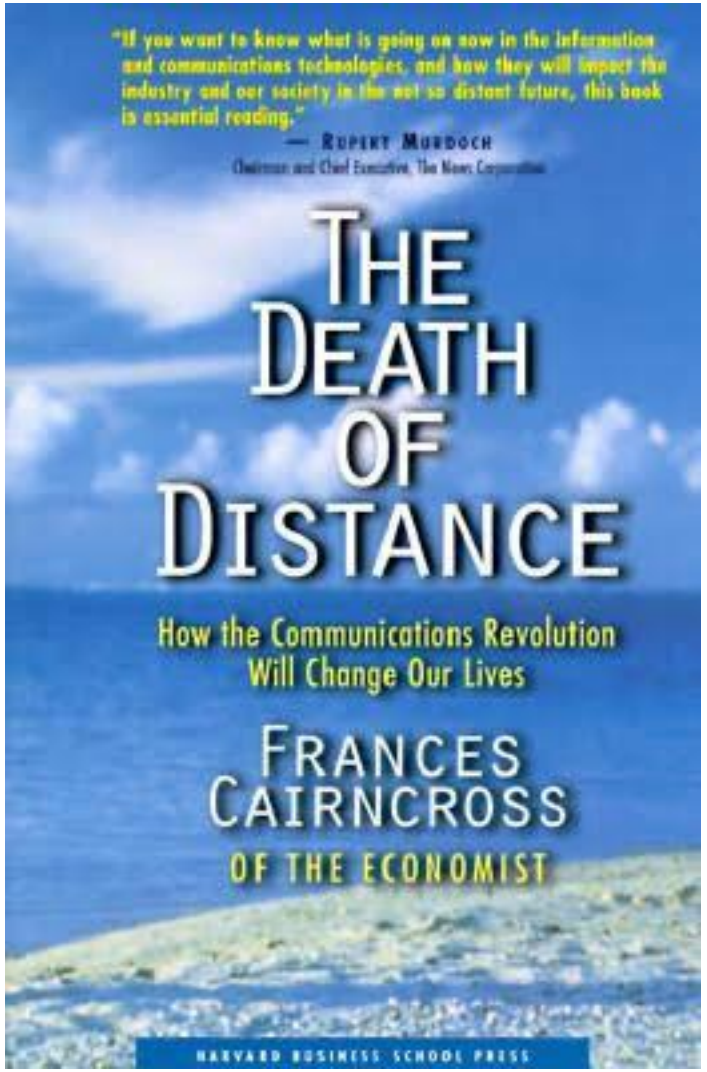

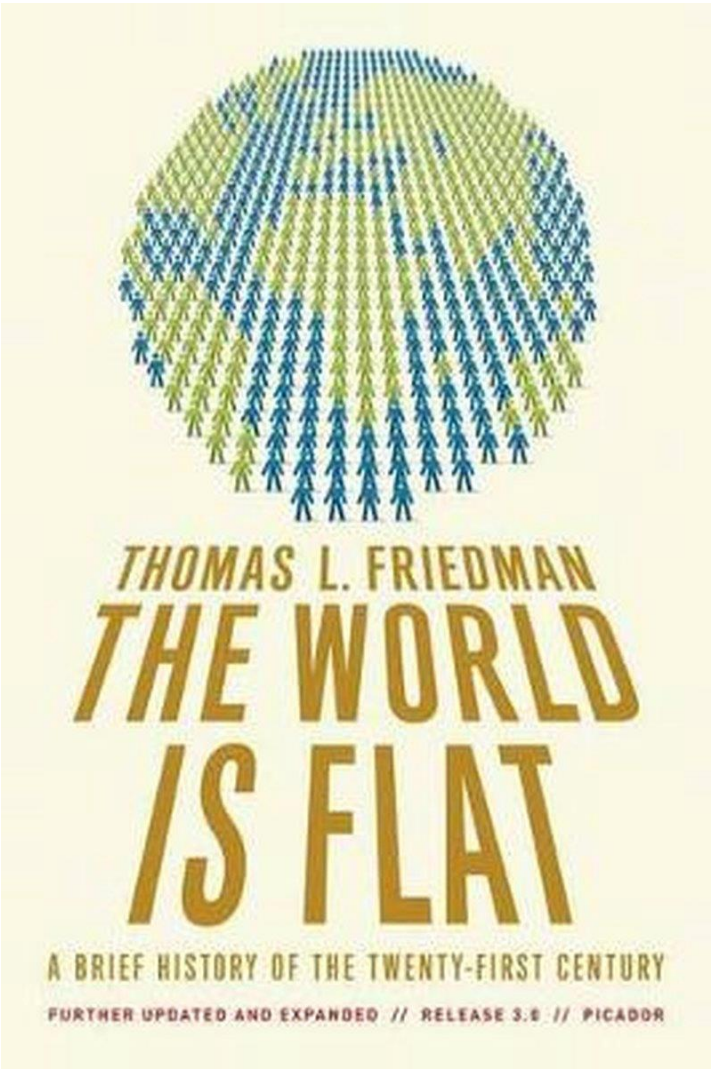

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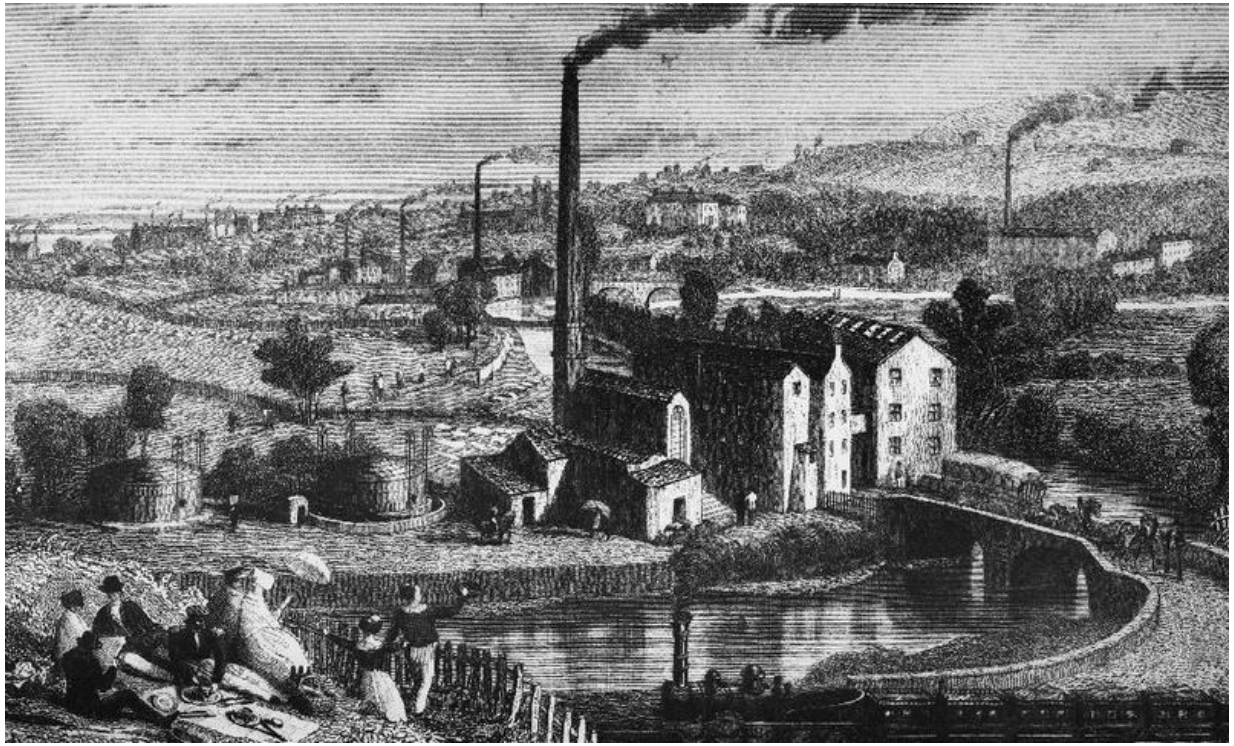
Location and Mobility: A Bird’s Eye View



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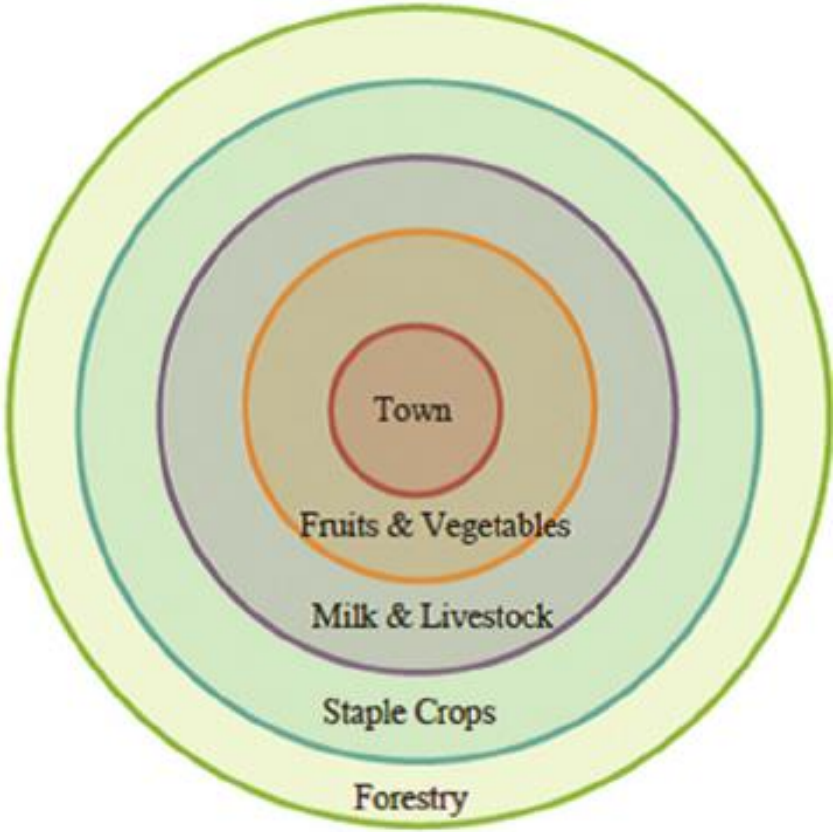

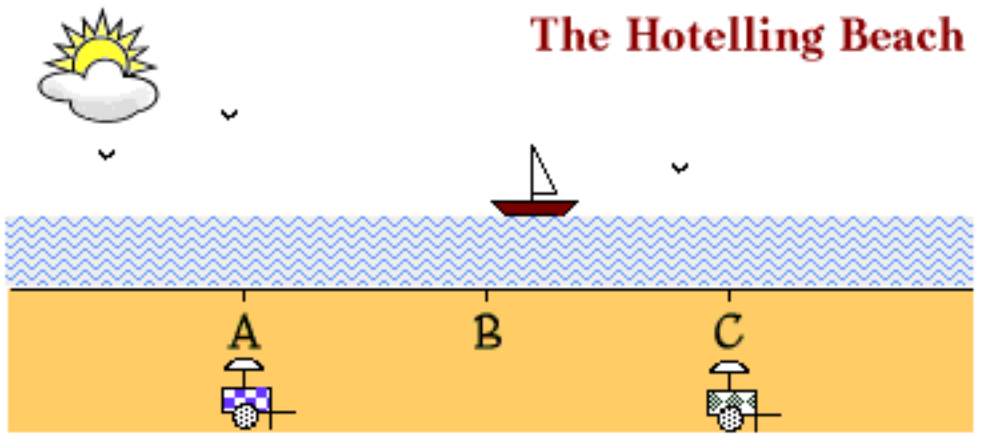

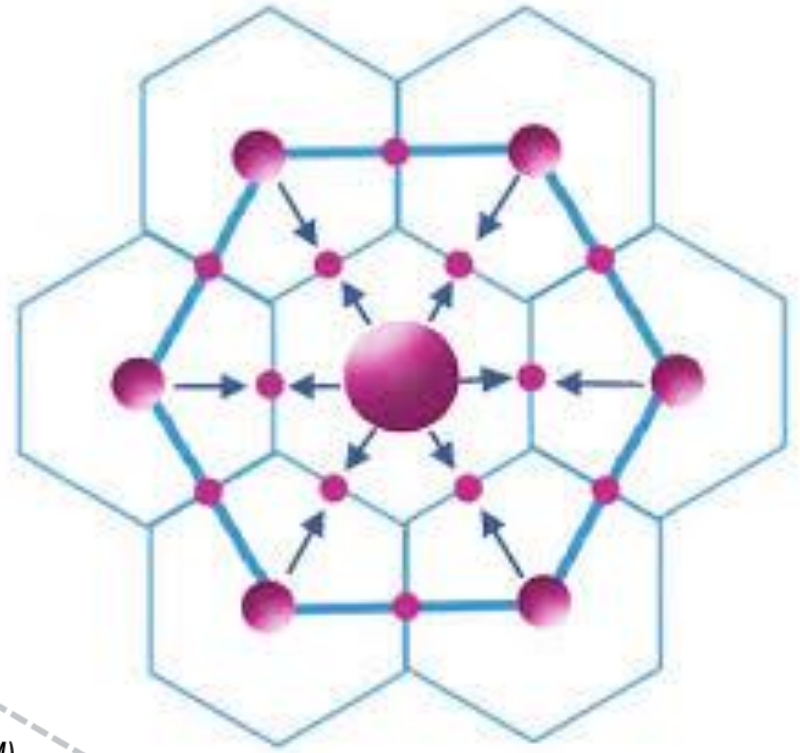

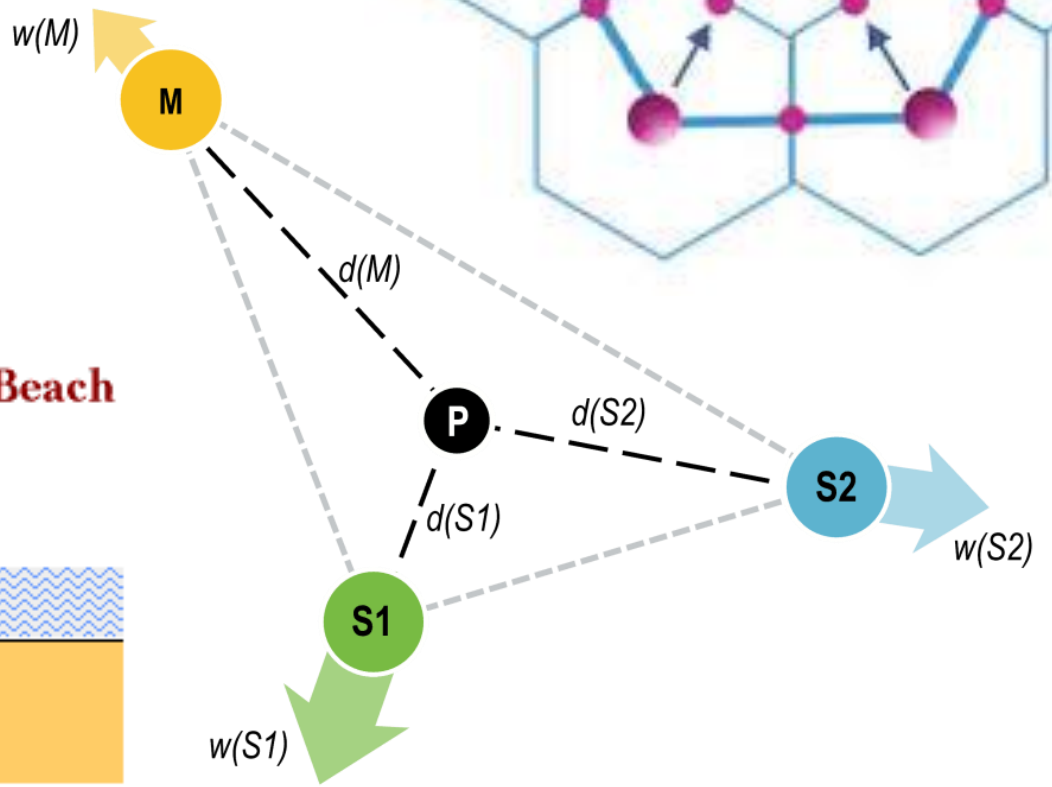

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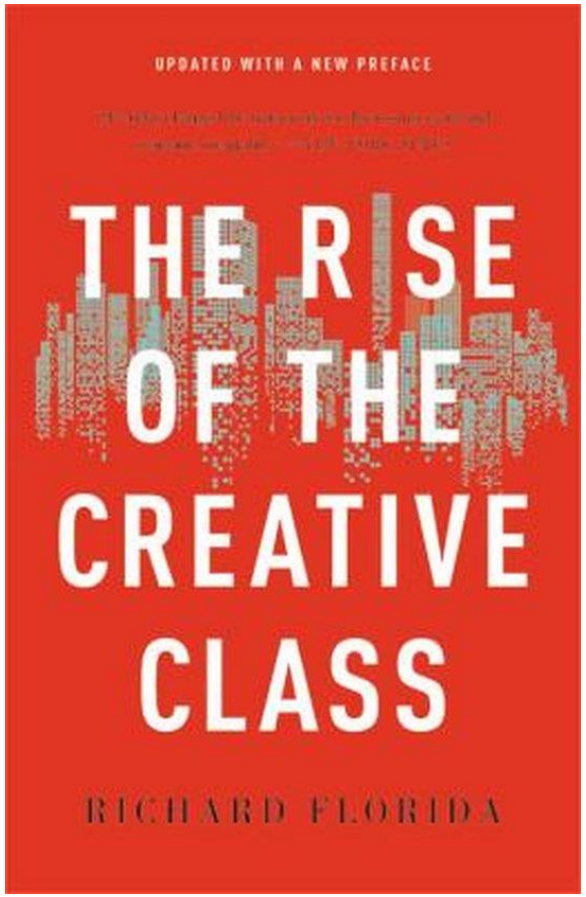

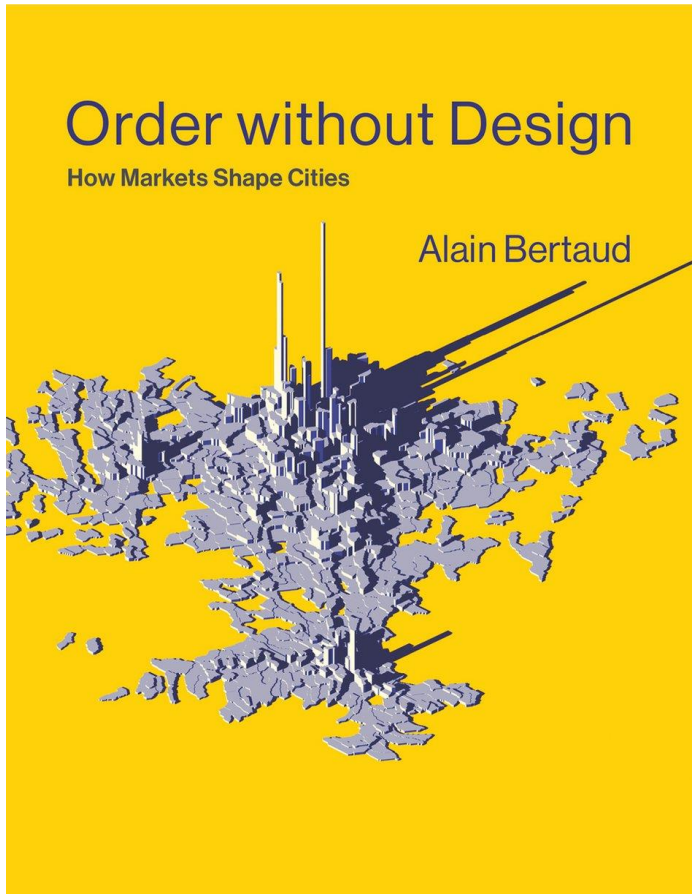

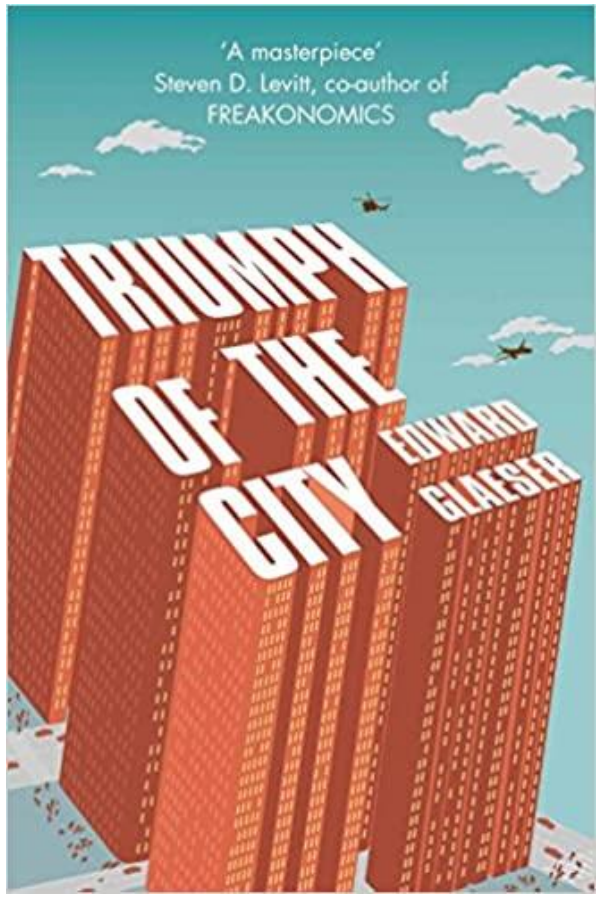

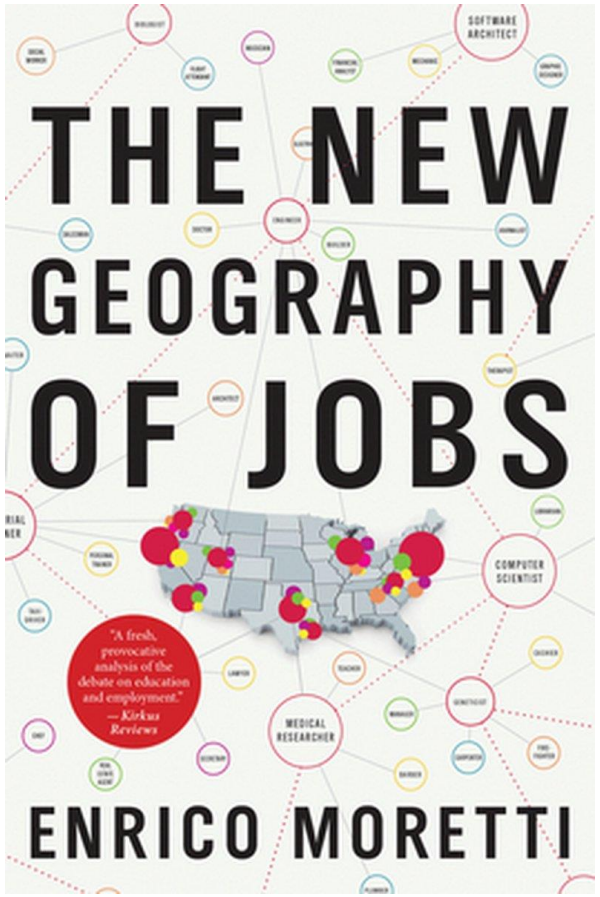

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Residential Mobility and Work-From-Home

O'Driscoll, Conor[a]; Rossi, Federica[b]

[a] Department of Economic Geography, Faculty of Spatial Sciences, University of Groningen, Groningen, The Netherlands.

[b]Dipartimento di Architettura e Studi Urbani/Department of Architecture and Urban Studies (DAStU), Politecnico di Milano, Milan, Italy.

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Email address: c.odriscoll@rug.nl (Conor O'Driscoll). Declarations of interests: None.

AI and The Spatial Configuration of Labour Markets

- What are the implications of AI adoption for the spatial configuration of labour markets, such as job sorting, search and matching?

- How does AI adoption reshape the role of location in the organisation of work?
  - Do these mechanisms interact with widespread WFH practices?

- What are the productivity gains of AI adoption for workers and firms, and do these vary across space?

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Land Use Patterns and Regional Policy

Journal of Economic Perspectives—Volume 18, Number 4—Fall 2004—Pages 177–200

THE DEATH AND LIFE OF GREAT AMERICAN CITIES

JANE JACOBS

"Perhaps the most influential single work in the history of town planning . . . a work of literature."
—*The New York Times Book Review*

Rethinking Urban Sprawl

MOVING TOWARDS SUSTAINABLE CITIES

OECD

Urban Sprawl

Thomas J. Nechyba and Randall P. Walsh

Are Compact Cities a Desirable Planning Goal?

Peter Gordon & Harry W. Richardson

To cite this article: Peter Gordon & Harry W. Richardson (1997) Are Compact Cities a Desirable Planning Goal?, Journal of the American Planning Association, 63:1, 95-106, DOI: 10.1080/01944369708975727

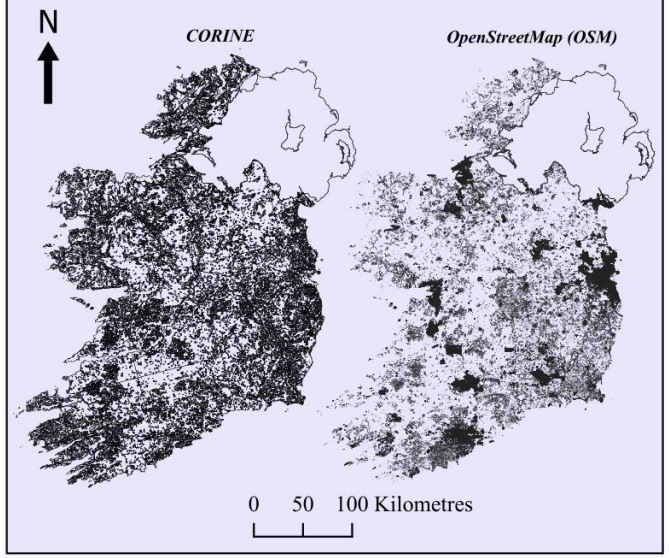
To link to this article: https://doi.org/10.1080/01944369708975727

Journal of Economic Literature
Vol. XXXVI (September 1998), pp. 1426–1464

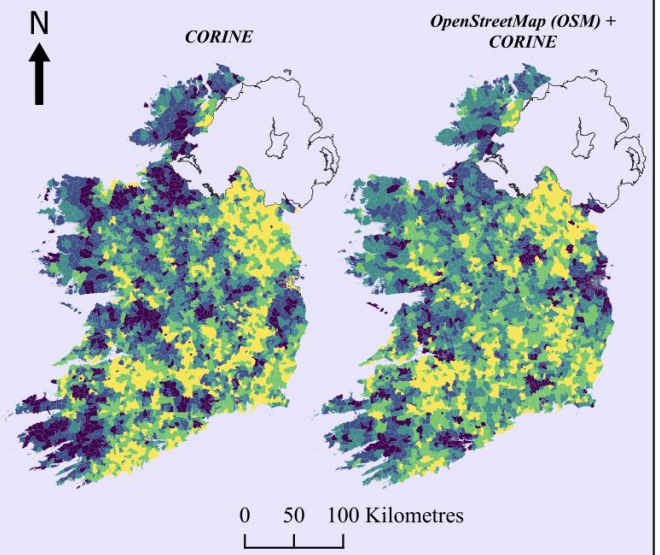
Urban Spatial Structure

ALEX ANAS
RICHARD ARNOTT
and
KENNETH A. SMALL[1]

CORINE and OpenStreetMap (OSM) land-use polygons in the Republic of Ireland.

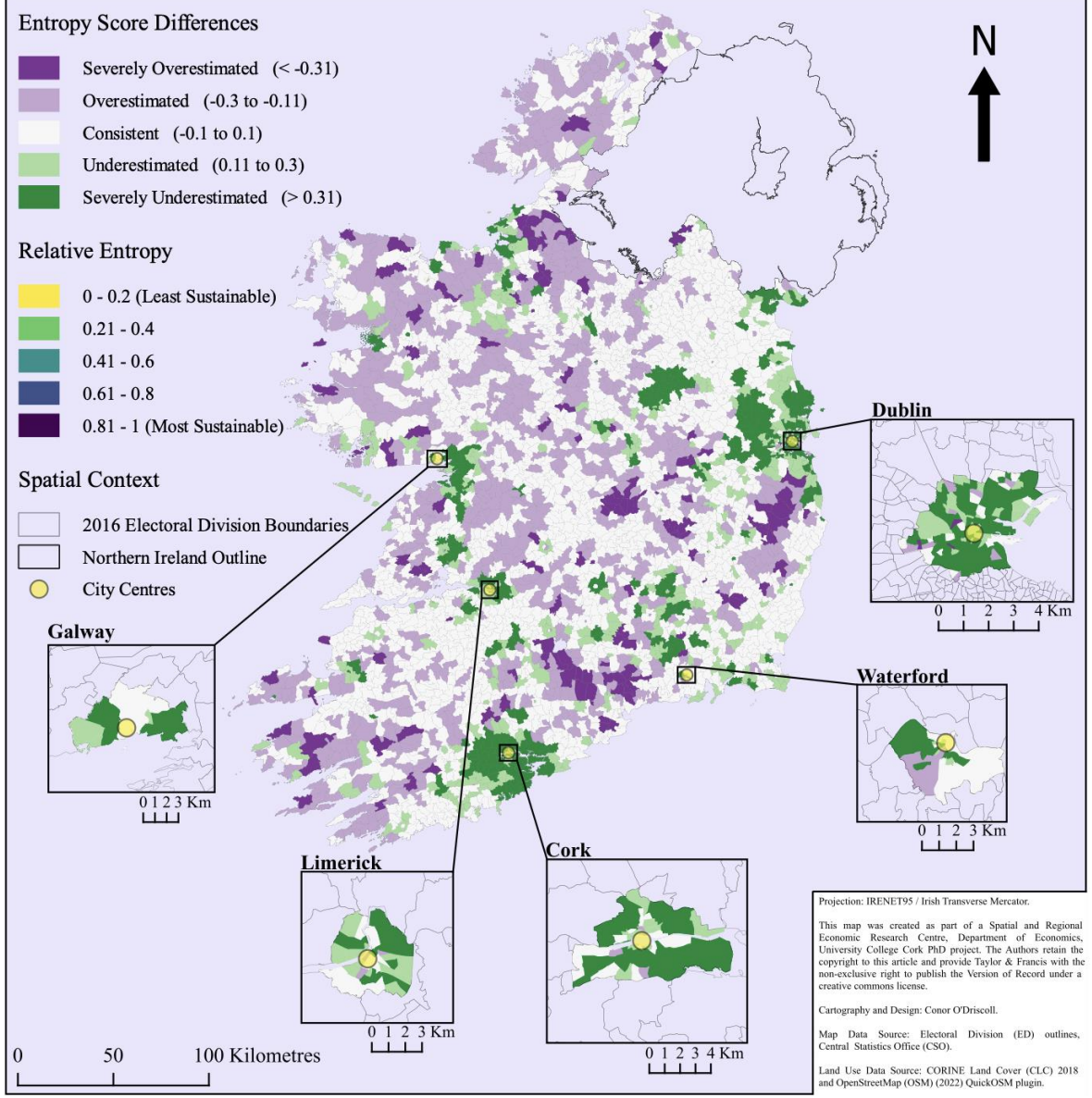


Relative entropy (land-use mixing) according to CORINE and CORINE + OpenStreetMap (OSM).



Measuring Land-Use Mixing Across The Republic of Ireland: Source Data Comparisons.

O'Driscoll, Conor* (117337281@umail.ucc.ie); Crowley, Frank*; Doran, Justin*; McCarthy, Nóirín*
*Spatial and Regional Economic Research Centre, Department of Economics, University College Cork.



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The Bottom Line

- Land-use patterns, coupled with “curious” planning regulations, are worsening the environmental degradation attributable to regional development in Ireland, while also placing a drag on local and regional economies and housing markets.

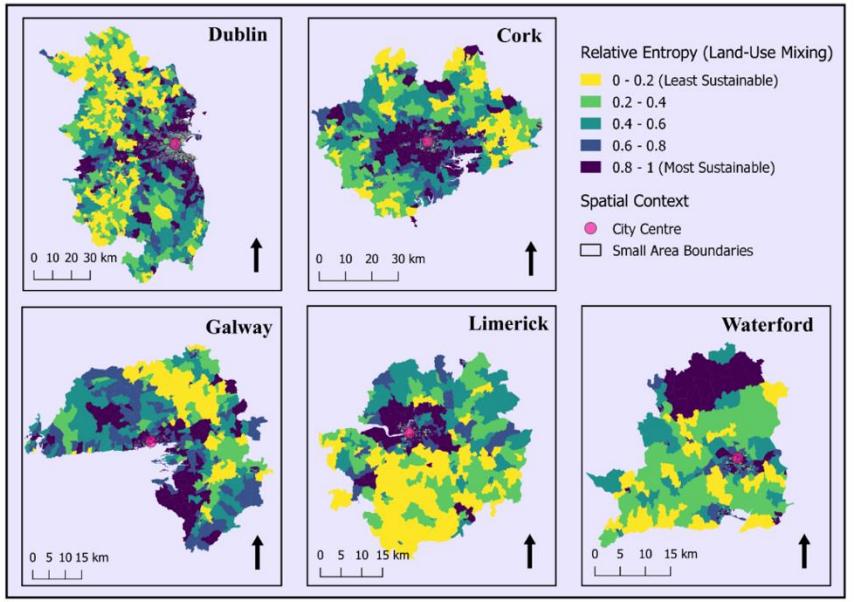

Fig. 1. The Relative Entropy of Small Areas within Irish Metropolitan Areas.

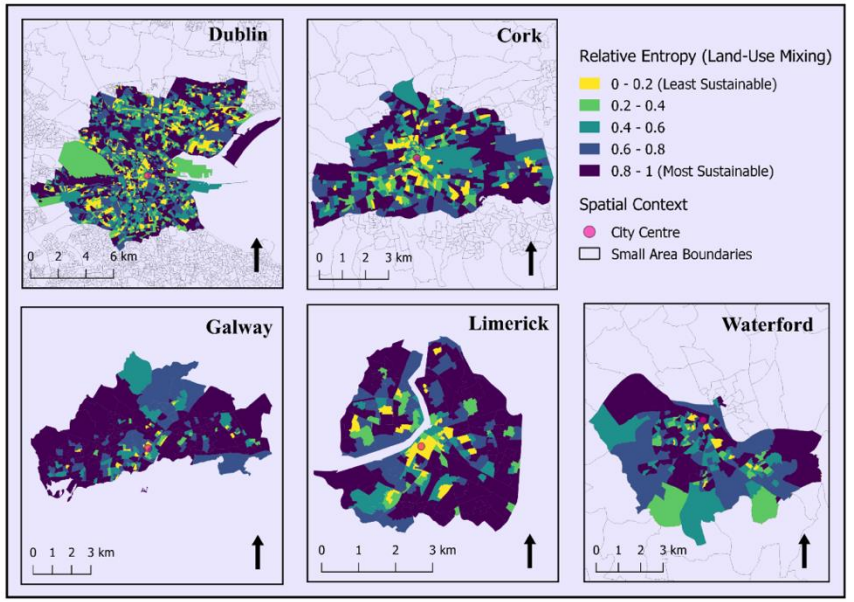

Fig. 2. The Relative Entropy of Small Areas within Irish City Cores.

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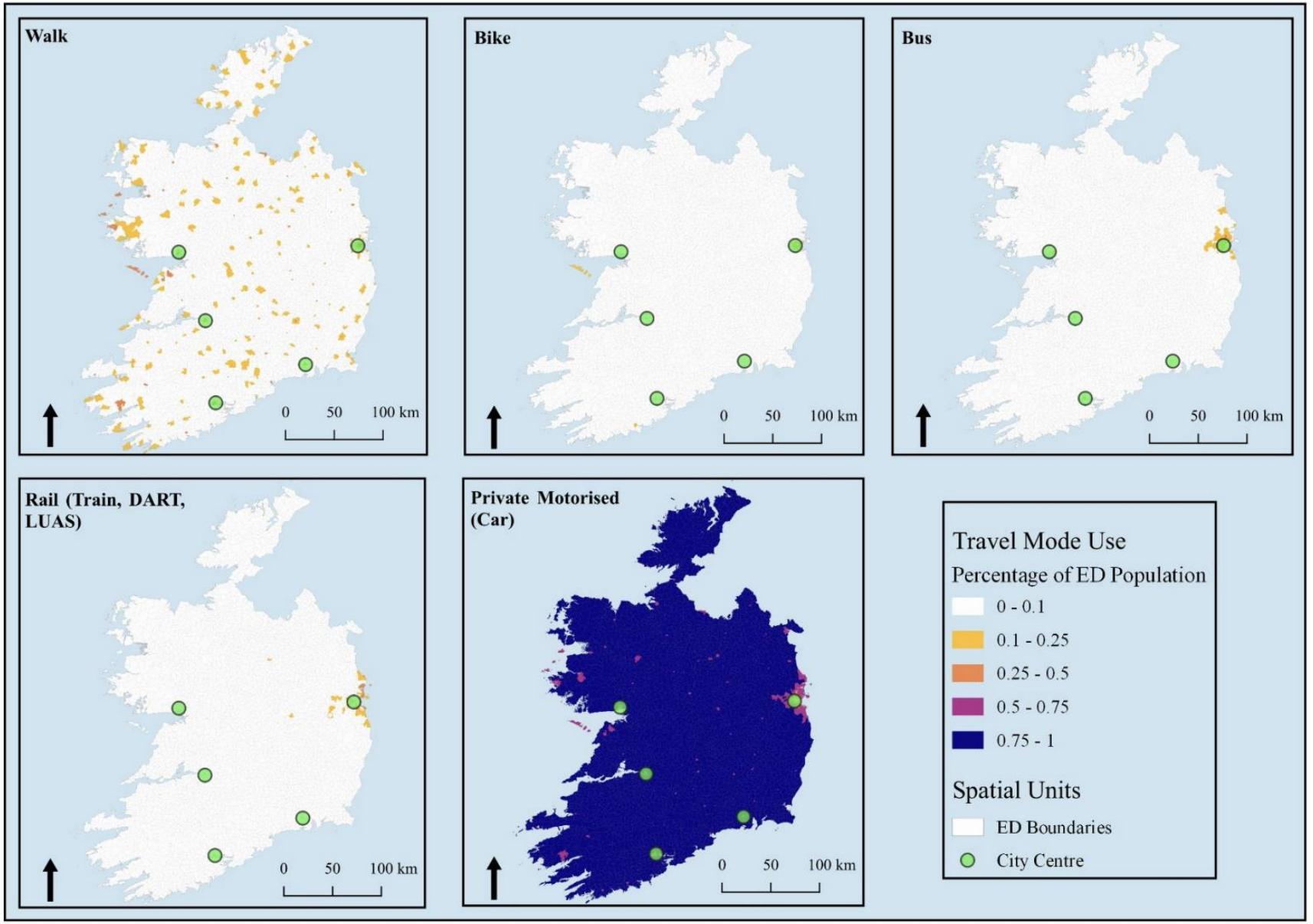
Travel Behaviours and Regional Policy



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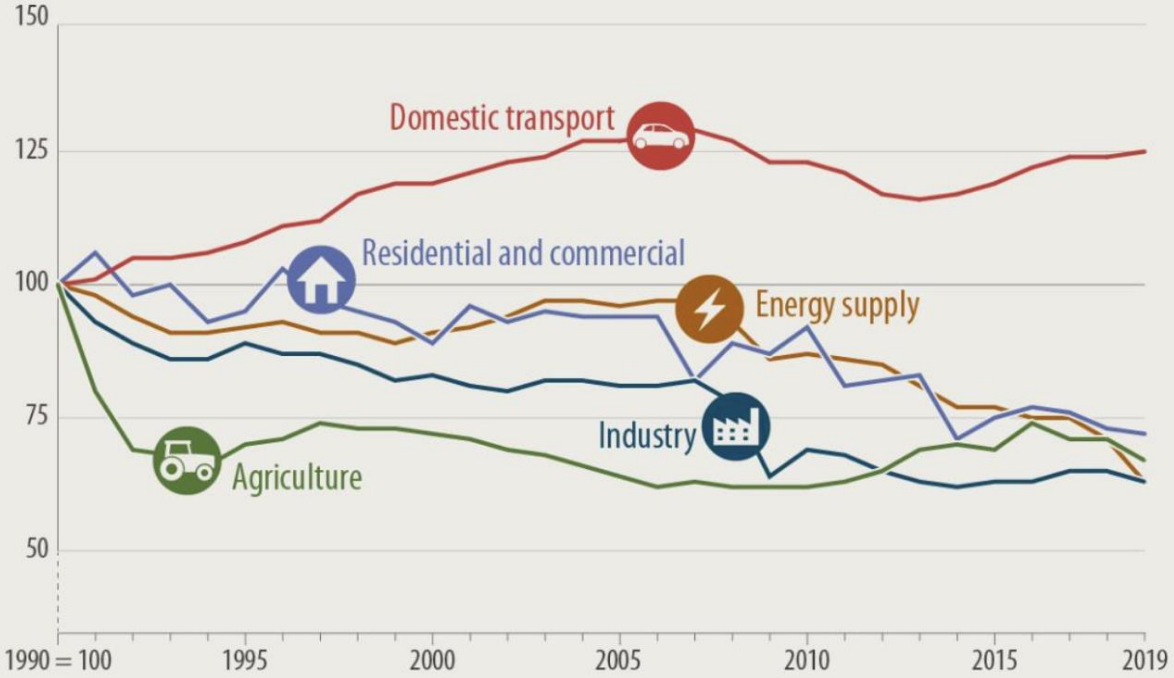
EMISSIONS IN THE EU*

Change in emission levels by sector since 1990 (in CO2 equivalent)

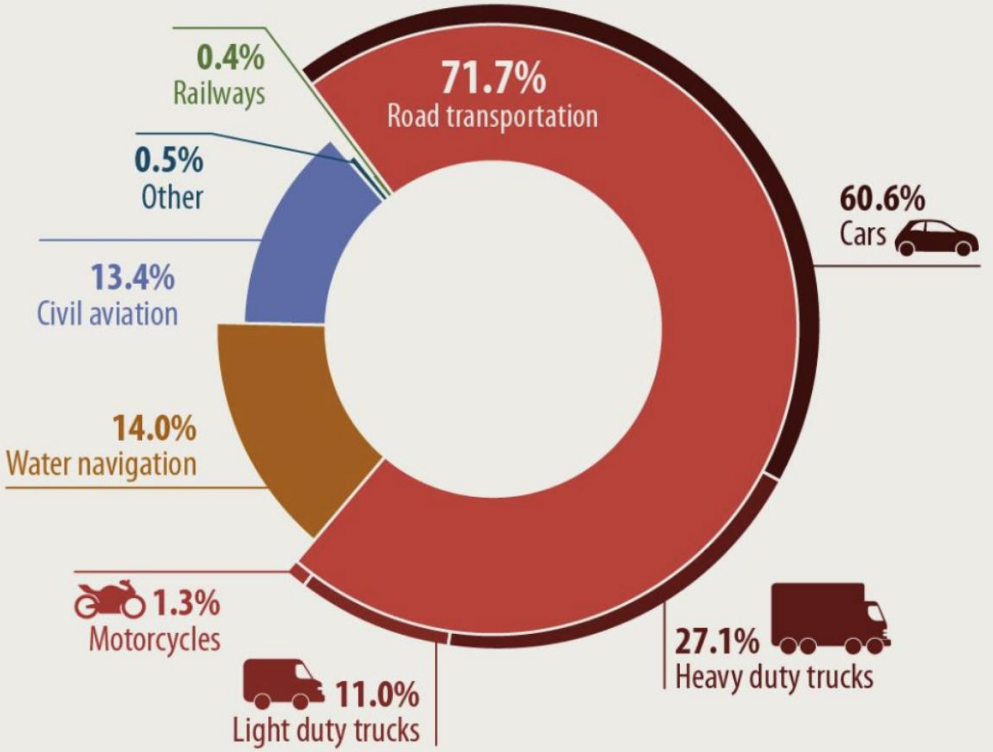


* Data excluding the United Kingdom

Source: European Environment Agency (2022)

TRANSPORT EMISSIONS IN THE EU

Greenhouse gas emissions breakdown by transport mode (2019)



Source: European Environment Agency (2022)

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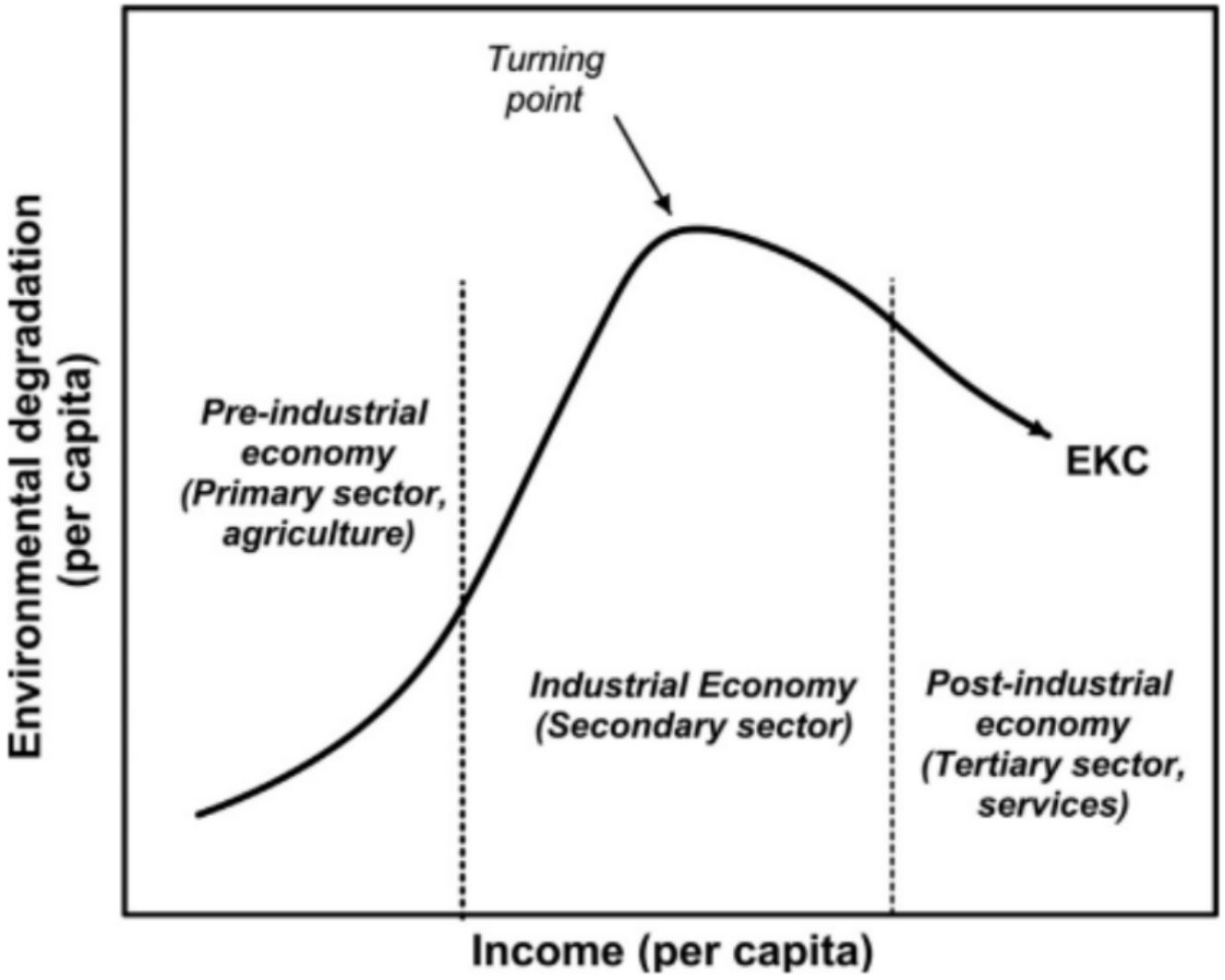

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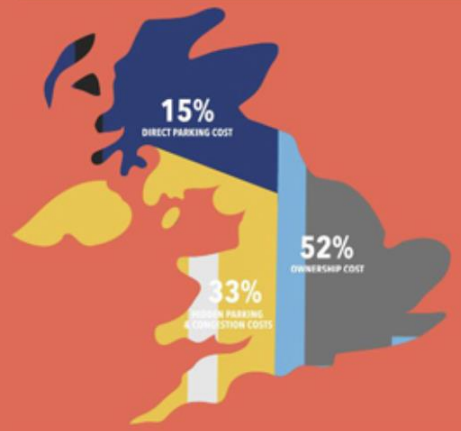
THE COST OF DRIVING IN THE **UK**

BRITISH DRIVERS SPENT

£5,795 IN 2017 [1]

ON DRIVING-RELATED COSTS

INRIX Cost of Driving Study calculated vehicle ownership costs for 30 major cities in the U.K., U.S., and Germany. Leveraging INRIX global data, the study found that traffic and parking-related costs made up nearly half of the total cost of car ownership in the U.K.



THE HIDDEN COSTS OF DRIVING

The hidden, indirect costs of driving – like sitting in congestion and searching for parking – represented about a third of the total cost of vehicle ownership in the U.K.

£941 IN 2017

HIDDEN PARKING COSTS

£983 IN 2017

HIDDEN TRAFFIC COSTS

LONDON DRIVERS SPEND THE MOST

AT **£9,430** IN 2017

ON DRIVING-RELATED COSTS

PARKING ACCOUNTED FOR

41% OF THE TOTAL COST OF DRIVING

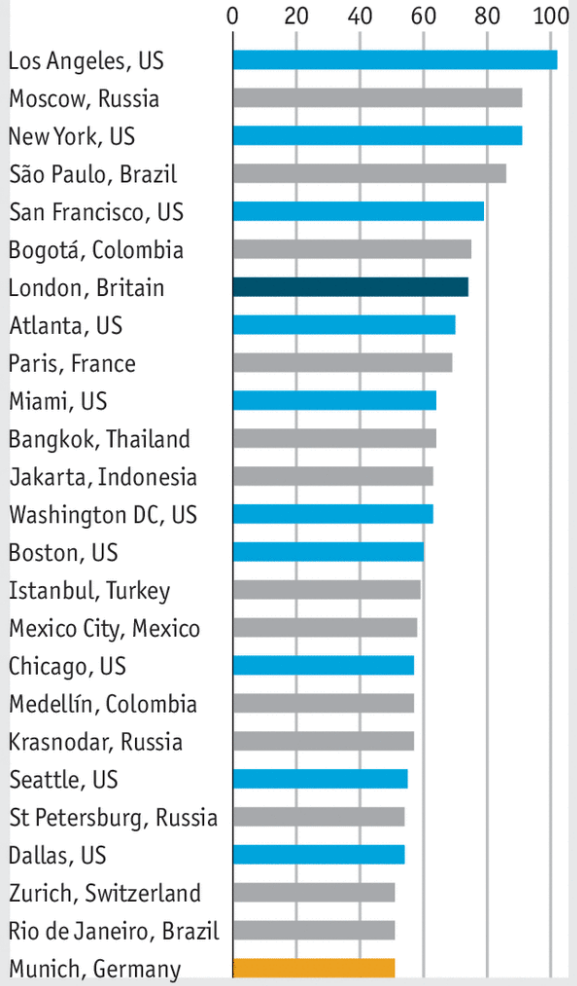
FOR LONDONERS IN 2017

Lost hours and lost money

Congestion in cities, 2017

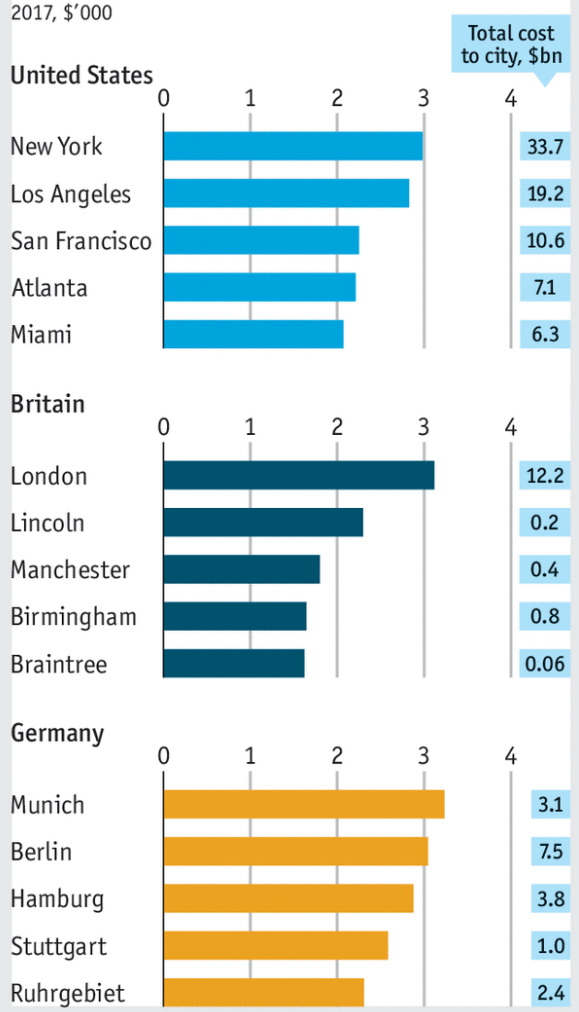
Drivers' time spent in peak traffic congestion

Hours



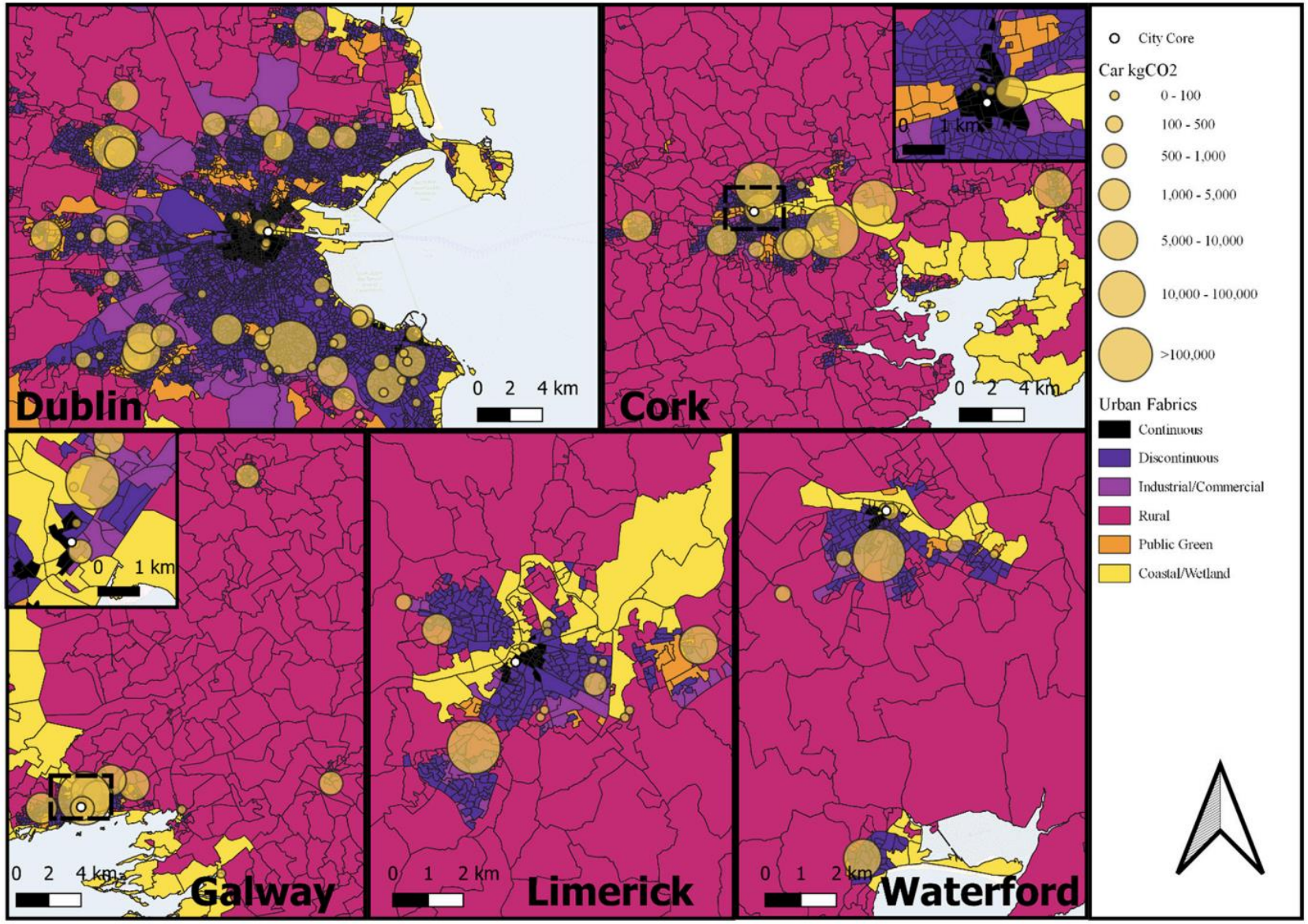
Average cost of congestion per driver, top five

2017, $'000



Source: INRIX Research

Economist.com



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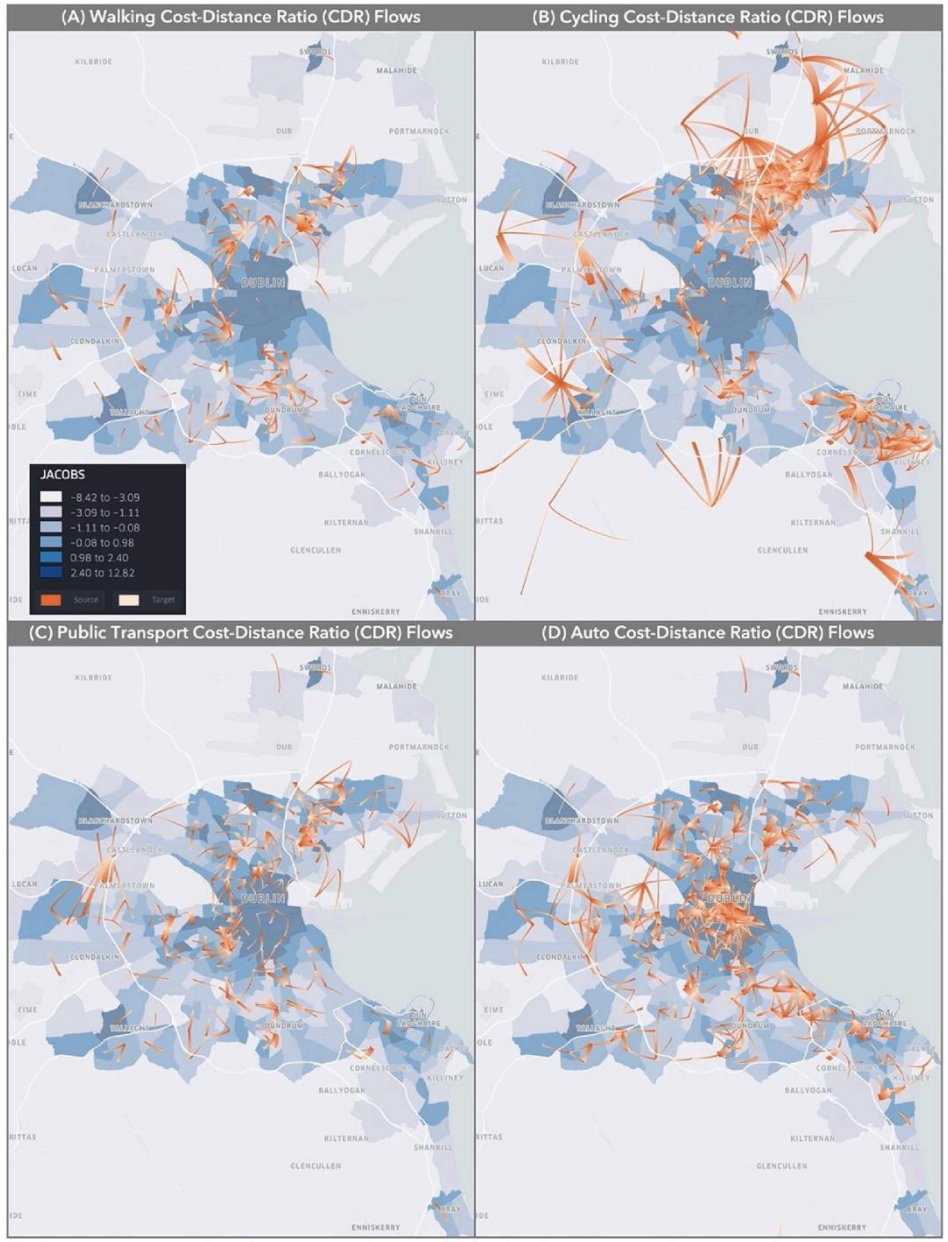

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Fig. 5. (A)-(D). Maps showing largest cost-distance ratios by origin-destination flow for the (A) walking, (B) cycling, (C) public transport, and (D) auto modes. Line width is scaled by cost-distance value and overlaid on values of the aggregate Built Environment Index (BEI) by Electoral Division (ED).

But There Is Still Lots To Unpack

- More ‘walkable’ built environments increase the efficiency of active transport modes; however, we also find that these environments are negatively related to cost efficiency for public transport, likely due to congestion effects for buses.

Table 5
Hypothesised and observed general directions of relationship between covariates and cost-distance ratios from random forest model accumulated local effects (ALE) plots, ordered by average importance across all models. Failed hypotheses marked in red; partially-failed hypotheses marked in pink.

	Hypothesised | Observed General Direction of Relationship			
Variable	*Walking*	*Cycling*	*Transit*	*Auto*
POPDENZ_j	- | -	- | -	- | +	+ | +
N_WALKZ | N_BIKEZ | N_TRANZ | N_AUTOZ	+ | +	+ | +	+ | +	+ | +
Per_0_carZ_i	- | -	- | -	- | +	+ | +
BUILDENZ_j	- | -	- | -	- | -	+ | ∩
TRNSD_j	- | ∪	- | -	- | +	+ | +
POPDENZ_i	- | -	- | -	- | +	+ | +
INTDENZ_j	- | ∪	- | -	- | -	+ | ∩
TRNSD_i	- | ∪	- | -	- | +	+ | +
Per_BroadbZ_i	+ | +	+ | +	+ | -	- | ∪
BUILDENZ_i	- | -	- | -	- | +	+ | +
LUZ_j	- | -	- | ∪	- | -	+ | -
INTDENZ_i	- | -	- | -	- | -	+ | ∩
LUZ_i	- | -	- | ∪	- | -	+ | -

+ = positive (more costly), − = negative (less costly), ∪ = U-shaped, ∩ = inverted U-shaped.

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Mobility and Economic Geography

Interesting Challenges For The Future (To Me, At Least)

Untangling Who We Are and Where We Live When Studying How We Travel

Commuting in Flux: The Roles of Place and Personal Circumstance In Shaping Behavioural Plasticity

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Email address: c.odriscoll@rug.nl (Conor O'Driscoll).

Navigating Change: Residential Relocation, Commuting Behaviours, and Built Environments

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* Corresponding author:

Email address: c.odriscoll@rug.nl (Conor O'Driscoll). Declarations of interests: None

How Mobile Are We, Really?

- (Geographic) mobility is a core assumption throughout Economic Geography theory:
  - Von Thünen, Crystaller, Alonso-Muth-Mill, Tiebout, Krugman etc…
  - But also in applications like job-search models in Labour Economics.

- But despite regular observations in empirical work, our theoretical understanding of those who are *immobile* remains incomplete.
  - What does it mean to be “stuck in place”?
  - What are the economic and social implications of being immobile?

Inter-Regional Mobility and Intra-Regional Mobility

R^3: Roots, Routes, and Relatedness

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[a] Department of Economic Geography, Faculty of Spatial Sciences, University of Groningen, Groningen, The Netherlands.

[*] Corresponding author:

Email address: c.odriscoll@rug.nl (Conor O'Driscoll). Declarations of interests: None.

Thank you!