

Re:cycling silos – how could/ should the future of cycling intersect with the quadricyle?

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CSRG
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Centre for Transport & Society

Presentation structure

1. Mobility markets, qualities and equivalenc

2. The evolving quadricyle

3. Discussion

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1. Mobility markets, qualities and equivalence

Mobility markets, travel choice, and qualification

- Market: "…a collective device for the evaluation of goods" (Callon & Muniesa 2005:1245).
- Quality: 'a distinctive attribute or characteristic possessed by a person or thing'
- All products and services have qualities – not natural or inevitable but 'chosen' and manipulated to maximise the utility / attractiveness of the product/ service for a particular task / buyer in a market
- (Mobility) service users attempt to align what they are trying to achieve (doing the shopping, tight scheduling, maximising time with their children, going rock climbing, relaxing…) with specific modal qualities (speed, flexibility, load carrying, cost, activity level etc.) that enable them to achieve their goal
- Aligning qualities: when deciding how to move around, users therefore engage in a process of calculation/ qualculation where they judge the suitability of a mode to achieve a given goal in relation to socially normalised standards of journey qualities
- In the case of mobility, the qualities considered important, and the qualculative frame is overwhelmingly shaped by entanglements with everyday lives; and experience of other modes (notably the car as benchmark).

Qualities of mobility

1. Cargo practices – grocery shopping, DIY
2. Caring – activities and social engagements for children
3. Social relationships – maintaining connections with family and friends
4. Leisure practices – sports and entertainment
5. Commuting

Practices were less car dependent if close to home; on a fixed schedule; participants could ride a bike; no children; no 'stuff'.

Practices that require distance, flexibility, caring, cargo much harder to shift away from cars.

(Van Eenoo & Bousaauw 2023: 1-10)

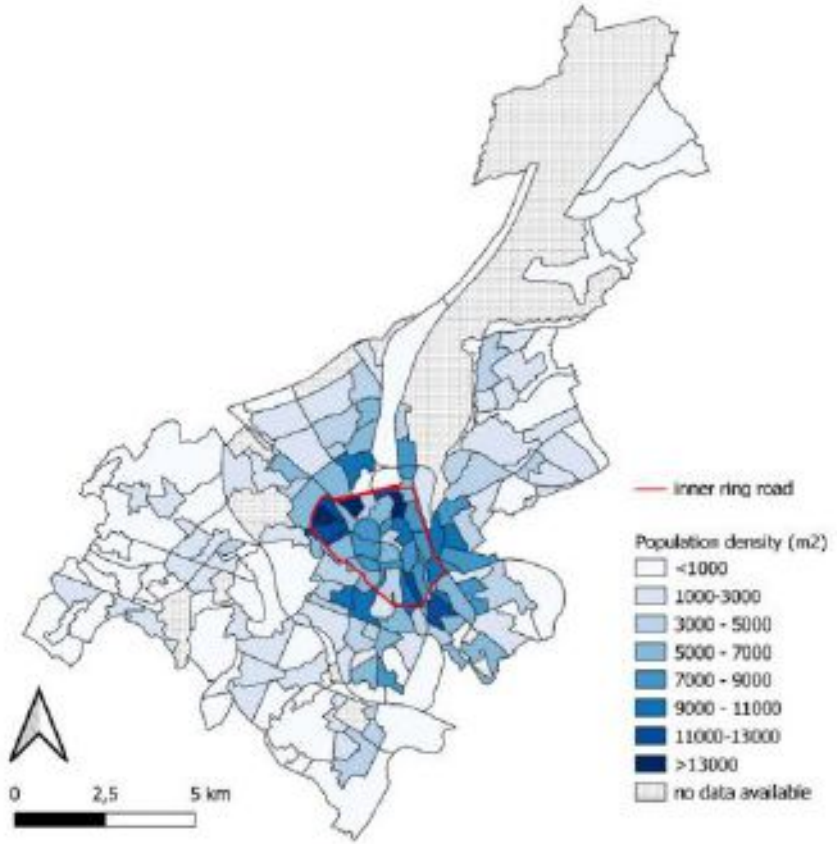

Fig. 2. Population density (level statistical ward) for Ghent.

Table 1
Modal split main transport mode for residents of Ghent, in 2012 and 2021 (City of Ghent, 2022).

	2012	2021
Car as a driver	47.8%	33.1%
Car as a passenger	6.4%	6.9%
Bicycle	21.7%	33.6%
Walking	13.8%	14.5%
Tram/bus	5.5%	6.2%
Train	3.6%	4.4%

Qualities of mobility

Care: the ability to care for family and self

Comfort: ability to travel according to normative standards of comfort and effort

Convenience: abillity to flexibly schedule multiple trips

Carrying: ability to move passengers and things

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Car as benchmark of scheduling, flexibility, comfort and carrying







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Equivalence of qualities across modes

Quality/ Mode	Car	Quadricycle	Bus	Cargo bike	E-bike	Bike
Transporting others	++	+	+	+	-	-
Feeling safe	++	+	+	-	-	-
Comfort, warmth and shelter	++	++	/	-	-	-
Carrying equipment	++	+	/	+	-	-
Minimal exertion	++	++	+	+	+	-
Travelling quickly between multiple destinations	++	++	-	+	+	-
ICT integration/ communication	++	+	++	-	-	-
Socially normalised	++	-	++	+/-	+	+/-

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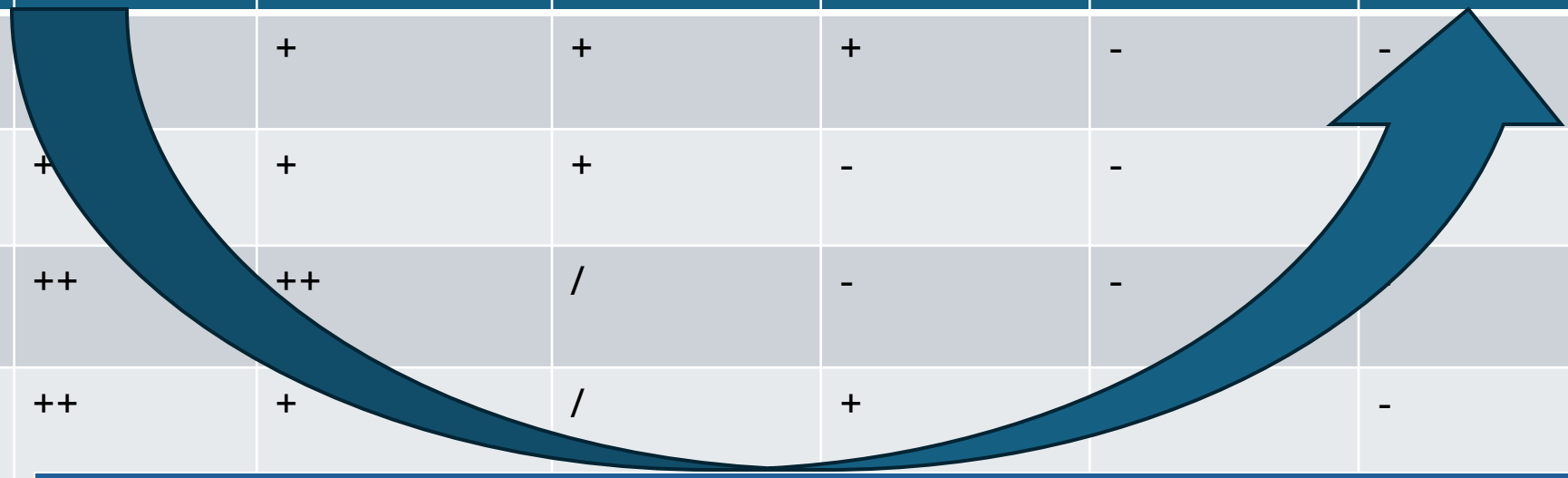

Unlikely to succeed – qualities too far from current benchmarks

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Carrying equipment	++	+	/	+	-	-
Minimal exertion					+	-
Travelling quickly between multiple destinations	++	++	-	+	+	-
ICT integration/ communication	++	+	++	-	-	-
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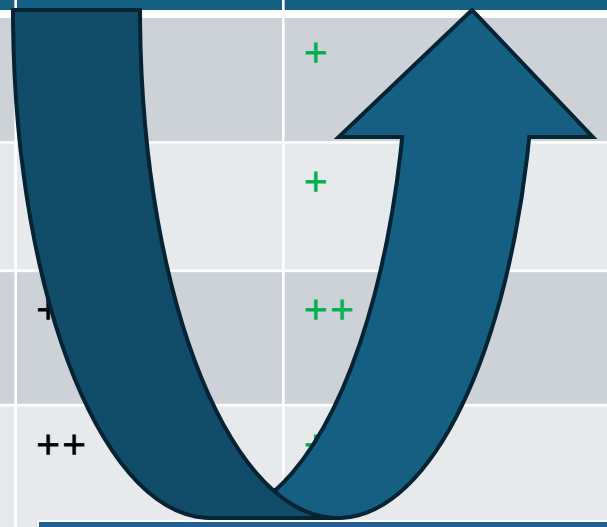

Qualities closer to current benchmarks

2. The evolving quadricycle

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What is a quadricycle?

L6 – Light quadricycle 	L6e-A: Light on-road quad	• 4 wheels • Mass running order up to 425kg • Max engine capacity 50cc (Positive Ignition) or 500cc (Compression Ignition) • Maximum power 4kW • Max speed 28mph
	L6e-BP / L6e-BU: Light quadri-mobile for passenger transport / Light quadri-mobile for	• 4 wheels, max 2 seats, enclosed passenger compartment • Mass running order up to 425kg • Max engine capacity 50cc (Positive Ignition) or 500cc (Compression Ignition) • Maximum power 6kW

L7 – Heavy quadricycle 	L7e-A: Heavy on-road quad	• 4 wheels • **L7e-A1**: Max 2 straddle seats & handlebar steer • **L7e-A2**: Max 2 non-straddle seats • Maximum power 15kW • Mass (in running order) up to 450kg
	L7e-C: Heavy quadri-mobile	• 4 wheels • Enclosed passenger compartment • **L7e-CP (passenger):** Max 4 non-straddle seats, mass in running order up to 450kg • **L7e-CU (utility)**: Max 2 non-straddle seats plus load area, mass in running order up to 600kg • Maximum power 15kW • Maximum design speed 56mph

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Source: https://assets.publishing.service.gov.uk/media/62ed0f0e8fa8f5033275fcde/annex-b-l-category-vehicle-classification.pdf

Safety of quadricycles relative to cars

Source: https://www.euroncap.com/en/car-safety/safety-campaigns/2016-quadricycles-tests/



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Quadricycle evolution….







Source: https://www.trendhunter.com/trends/pedalassist-electric-quadricycles; https://www.press.renault.co.uk/releases/3195#images

The evolution of quadricycles

Duo (€9k) is a two-seater vehicle and can be driven with or without a licence, depending on the version and local regulations. Bento (€10k) is a micro van requiring a driving licence. Instead of a passenger seat, it has a 649-litre cargo box for carrying small items of equipment and other goods.

Duo and Bento are compact (2.43 and 2.54 metres long respectively) and easy to manoeuvre in city traffic. Their small footprint makes them easy to park.

Designed for the city, Duo embraces urban codes and sidesteps the constraints. A vehicle 2.43 metres long and 1.30 metres wide, its footprint is half that of a conventional city car, so it takes up less space in the cities and is also easier to park, saving users precious time.

Duo has made comfort a priority. The main starting point for this is onboard climate comfort, with a heated driver's seat and windscreen in winter, and manual air conditioning to cool the cabin in the summer.

Duo and Bento ship as standard with a driver airbag and comfort features such as keyless entry, a phone holder, a USB-C connector and a heated windscreen. Each model in the range is sure to find its target audience.



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Source: https://www.press.renault.co.uk/releases/3195

3. Discussion

- What do different societal groups stand to gain and lose from more widespread use ofquadricycles?
- What are the implications of quadricycle development being dominated by car designers and engineers?
- Why is cycling advocacy and design largely ignoring quadricycle development, and what can be done about it?
- How as cycling advocates do we approach quadricyles to shape principles (eg human locomotion; safety standards; infrastructure) and bring about a more structured and socially useful conversation on quadricycles?

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Thanks for listening

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