

Automated vehicles and active travel: a qualitative Dutch-Australian comparison

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INTRO

Our transportation systems are on the cusp of one of the biggest disruptions in history, with new technologies enabling three key transitions to occur simultaneously:

1. Introduction of Automated Vehicles.
2. Replacement of fossil-fuel-powered vehicles with electric vehicles.
3. Increased sharing of vehicles enabled by smartphone apps.

The implications of this disruption are being studied from a number of viewpoints, however, little work has been done to understand the implications for walking and cycling.

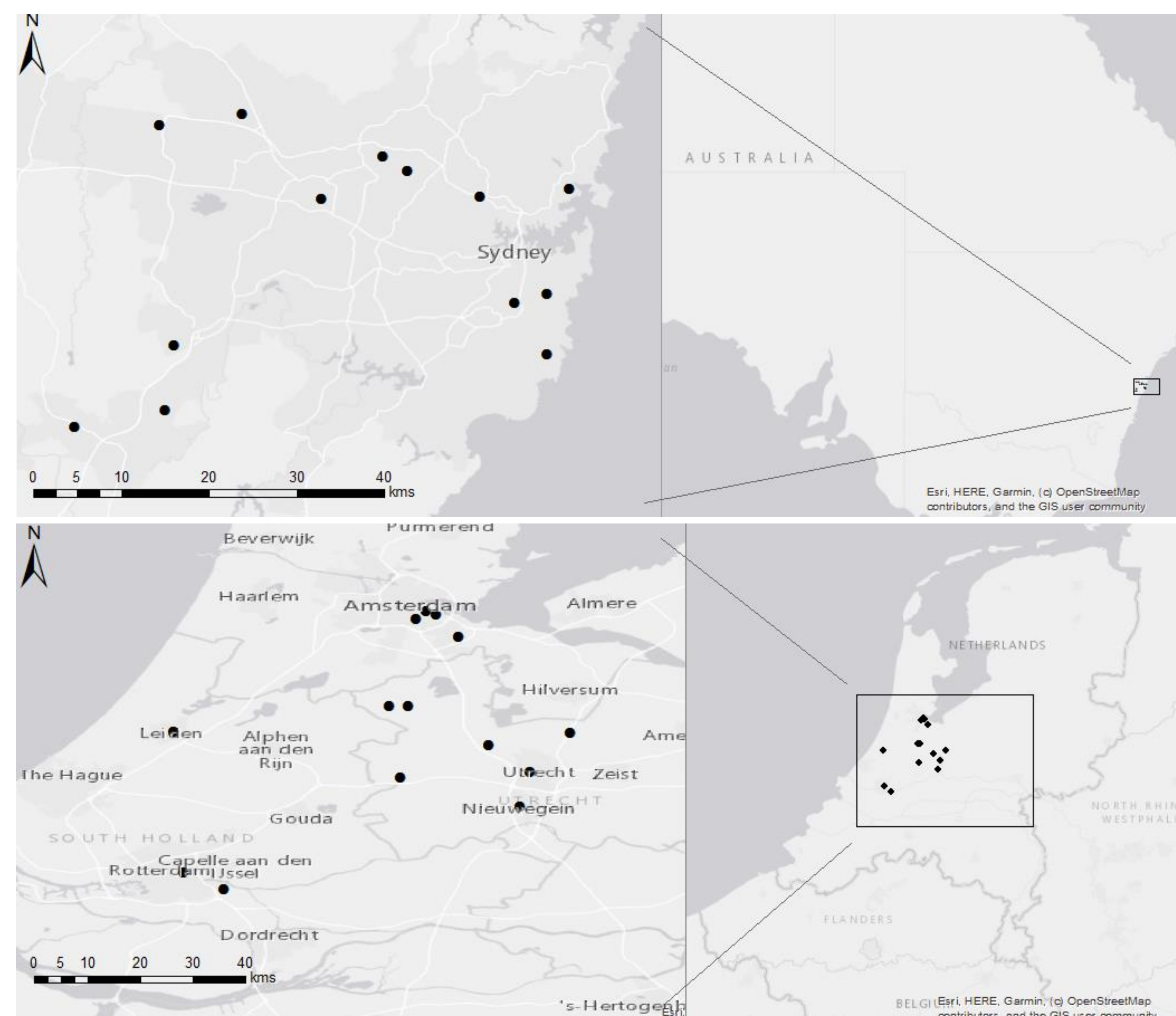
METHODS

The research used semi-structured interviews to explore attitudes towards automated vehicles, and how they might affect walking and cycling trips. As it is expected that these attitudes will vary across cultural and environmental contexts, the interviews were conducted in two contrasting environments:

1. A car-centric transport environment (Sydney, Australia).
2. A bicycle-centric transport environment (The Randstad, Netherlands).

Interviewees were sourced by a professional recruitment company and represented a diversity of locational and other demographic properties.

Fig: Location of participants in Australia (top) and the Netherlands (bottom)



Zohar Lazar

Findings Consistent across Locales

- Participants expect that AVs will be tightly-regulated.
- Participants were concerned about a loss of their humanity.
- The usefulness of AVs was widely-acknowledged.

Key Australian Findings

- Normative beliefs did not support the “right to walk” on streets with AVs.
- Given the shortage of separated bicycle paths in Australia, AVs would still present a concern to cyclists. However, the reduction in road rage and distraction were seen as benefits.
- Deskilling of the population caused by AVs was a key concern.
- The environmental advantages of AVs were seen with scepticism.

Key Dutch Findings

- Normative beliefs supported the “right to walk” on streets with AVs.
- Separated bicycle paths were a key reason that people perceived the advent of AVs to be irrelevant to bicycle use.
- The environmental advantages of AVs were keenly anticipated.



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RESULTS AND CONCLUSIONS

- Participants felt that the testing and regulation required of the AV industry would be significant, and likely to ensure the safety of vehicles.
- Loss of humanity was a key concern, with loss of control, loss of skills, social isolation and loss of driving enjoyment all featuring in responses.
- The usefulness of AVs was a key benefit, with participants perceiving them to be easy to use, allowing passengers to multitask, providing relief from parking hassles, improving traffic and improving convenience.
- Safety was also noted by many as an advantage, but often conditionally on the basis that “if what you say is true, then (AVs would be safer)”.
- Environmental attitudes were opposing in the two locales, with Dutch participants seeing AVs as offering environmental benefits, but Australian participants concerned about the effectiveness of electric vehicles.
- Views differed regarding the entitlement of various modes of transport to use roads, with Dutch participants willing to assert their “right to walk”.
- Views differed regarding cycling with AVs, with Dutch participants unperturbed by AVs, citing the protection offered by bicycle paths.

LESSONS TO BE APPLIED IN A FUTURE STATED PREFERENCE SURVEY

The results will be used to improve the design of a discrete choice experiment to be performed in 2020. Key lessons are:

- The operations of bus-style AVs will need to be clarified and perhaps split into 2 categories to ensure that fears about circuitous routes are addressed.
- The specification of costs will need to be clear to ensure that existing arrangements for employer-funded travel are considered.
- Weather, time of day and trip purpose will need to be incorporated.
- Travel time reliability will need to be included as an attribute.
- Shopping trips must be specified as “weekly/large” or “daily/small”.
- Social trips will need to identify those involving alcohol.
- Who you are travelling with is an important factor in mode choice.

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NEXT STEPS

- Submission of paper on *AVs and Active Travel* to the World Symposium of Transport and Land Use Planning conference in Portland 2020.
- Submission of paper on *attitudes towards AVs* to second conference.
- Formulation, piloting and execution of a discrete choice experiment in 2020