Transport as recreation - Road sharing in regional Victoria

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1.Introduction

This research aims to increase road user safety for bicycle riders in mountainous on-road environments. In this work we identify and implement ways of enhancing safety in this setting through an interdisciplinary study in sociology, law and design. Cycling tourism generates $130 million annually in the North East region of Australia's state of Victoria (Ride High Country, Personal Communication), a significant share of the Gross Regional Product of $592M in 2019 (DJPR 2021). Mountainous topography and natural beauty of this region are key attractions to the area. Locals and visitors seek out bicycle riding opportunities including recreational and professional training in the category of "road cycling". This is set in a context of other bicycle recreation such as off-road path riding on rail trails, mountain bike riding in forested areas, and unpaved gravel road riding. When road cycling, the rider engages with topographic and dynamic road use experiences that are almost always dependent on using paved roads. These roads are also used by motor vehicle drivers.

Mountainous topography attracts residents and visitors to the region, both of which use the road network for varying purposes. Vehicles such as logging trucks, private cars, tractors, and bicycles share the road space for a diverse array of purposes, from tourism travel, business and commerce, freight, and recreation. This diversity of purposes and vehicles, when combined with the features of mountainous roads, leads to some challenges in how the road system operates. The focus of this research is on behavioural aspects of recreational road cycling and motor vehicle users, in which we aim to determine methods of encouraging safe road sharing. The interdisciplinary research approach is framed as a combination of social, legal and design aspects, outlined below.

There are stark differences between the vehicles sharing these roads. The bicycle is a lightweight two-wheeled, single-track, human powered vehicle (Wilson and Schmidt 2020) whereas the motor vehicles on the same roads are different in nearly every regard, being heavy, four or more wheeled, multi-track and motorised. Thus, while able to reach speeds equal to those of motor vehicles on descents, ascending the same mountains may reduce a bicycle and rider to just a few kilometres per hour. Being narrower, the bicycle takes up less lane width, however the remaining space may not be sufficient for a motor vehicle to legally pass. There is a very large difference in the kinetic energy and protection provided by bicycles and motor vehicles, the former being one type of vulnerable road user. Although the concept of roads, and paved road technology pre-dates the motor vehicle (Reid 2015), the current design of roads in Australia tends to satisfy the direct needs of motor vehicles, and only

accommodates the spatial, rather than dynamic and safety needs of bicycle riders (Austroads 2016).

Put simply, a road wide enough for a motor vehicle is wide enough for a bicycle, however it is not always wide enough for these two road users travelling in the same direction to pass safely, especially considering that Victoria now has road rules that require drivers keep a minimum distance when overtaking cyclists. In the Alpine Shire, road sharing behaviour was identified as a source of tension between the safety objectives of these road user types, and education seen as a way of changing behaviour to improve safety outcomes. The Alpine Shire was awarded funding under the TAC Community Road Safety Grant Scheme to undertake the research and development of an education program to improve road safety in this situation.

2. Method

The focus of this road user education was behaviour and culture change, ruling out built infrastructure solutions. As such, the research used sociological methods to discover locally pertinent factors in relation to cyclists and drivers sharing the roads. An interdisciplinary methodology was used in the project, combining approaches from sociology, safety science, law and design (Napper, Johnson & Johnston 2021) to understand the technical, social and legal factors.

The project had three key parts. First, we used sociological methods of focus groups and qualitative surveys to generate information and then analysed these results in the interdisciplinary setting outlined above with an aim of understanding the problem from each perspective. Second, we used these findings to design and execute an educational strategy and then bring this to life in a media campaign. Third, we carried out a post-campaign survey to determine the effectiveness of the work and help to determine possible future steps. Ethics approval for low-risk human research was obtained from Monash University and RMIT ethics committees.

3. Results

3.1. Stage one - understand the problem

3.1.1 Focus group

An initial focus group with Alpine Shire stakeholders in road safety was undertaken in August 2020. The participants were recruited from key local stakeholders and in consultation with the Alpine Shire Council and included representatives of local schools, businesses, police, shire councillors, and the regional tourism authority. A semi-structured approach was followed using predetermined questions to build an understanding of the local aspects of road sharing.

Findings from the focus group highlighted elements from all aspects including social, legal and design factors. While legally a bicycle and rider are a vehicle and have the same legitimacy as other road users, this is not always recognised or accepted.

Interestingly, trip purpose was raised as a point of distinction that contributed to "legitimacy" with people driving cars having greater legitimacy than people riding bicycles. Yet trip purpose is difficult to distinguish by visual means alone. A car being driven for recreational purposes bears very little difference to one being driven for commuting. Road cycling is an activity which can be both recreational and professional and a person may ride the same bicycle in the same clothes to commute or for a recreational trip. Yet there is a tendency to identify all bicycle trips as recreational because of a cultural framing of cycling as sport

(Bruntlett and Bruntlett 2018) and this further erodes the legitimacy of bicycle riders as road users and their classification as such in Victoria's road rules. Whereas this kind of erosion based on purpose does not occur for motor vehicles in analogous situations - for example a car towing a caravan or camper trailer - which despite clear recreational purpose, maintains legitimacy as a road user as part of the tourism industry of the region.

The focus groups showed that the challenges around road sharing in the Alpine Shire were indeed a mixture of considerations in the local area, such the importance and perceived hindrance to the local economy of tourism, who is getting in the way of who, as well as how the road rules, local culture, and road design, affect behaviour. The discovery of these issues provided the basis for the qualitative survey.

3.1.2. Survey one - pre campaign

Informed by the findings of the focus groups, we developed a qualitative survey, aimed at people who live in or visit the Alpine Shire. The aim of the survey was to understand the views of different road users in different situations - for example prior knowledge indicates that nearly all adult bicycle riders drive cars. We also wished to test some perceptions of road sharing and the value of cycle tourism to the region. Incentives were offered for completed surveys (prize draw, one of three $100 gift cards).

In total, 569 completed surveys were received. Almost all respondents (98%) drove motor vehicles regularly, with 82% driving and riding frequently. Key findings from the pre-campaign survey include: 86% of respondents underestimated the value of cycle tourism to Victoria's North-East region; when driving, respondents were willing to wait 4 minutes and 6 seconds ($\bar{x}\ time$)to pass a cyclist while driving; top three reasons why some roads are more suited to driving than cycling: lack of road shoulder, narrow roads, high speeds, and; the most popular methods of communicating with other road users when driving was: wave (hand or one/two fingers)(66%) or nod (15%).

3.2. Stage two - campaign

Focus group and survey results showed that road users viewed one another as "vehicle users" of a particular type, rather than as people, revealing an opportunity for the education campaign to focus on these people, rather than their roles as drivers or cyclists. In addition, the survey confirmed the hypothesis that gesturing while using the road could be a key part of this message. We engaged DGB Media group to provide the expertise in translating this intent to forms suitable for mass-media while capturing the intent of the education campaign and factually based on the research discoveries of stage one.

We collaborated with the Amy Gillett Foundation and DGB on the creation of the media campaign, honing down to a single concept from four possible options. The concept of "Live, Drive, Ride Like a Local" was developed in this process. The centrepiece of the campaign is a short film telling the stories of locally well-known Alpine Shire residents (for example, the bank manager from Bright, a larger town in the centre of the region). The film, as per the whole campaign, emphasises two key messages: that people riding bicycles in the Alpine Shire are "normal" and consist of a strong proportion of local people; and that gesturing is an important signal to recognise use of the road between road users, to build trust and a capacity to share the roads, as well as meeting the legal obligations of road use.

The collaboration also yielded a logo, graphic design elements, photography, audio of interviews, copywritten assets and event materials which we used to create collateral such as postcards and event gantries.

The Live, Drive, Ride Like a Local campaign was launched at the 2020 Alpine Classic cycling event in Bright, debuting at two outdoor cinema events, full page newspaper advertisement, event entry gantry and postcards. The short film has a permanent home on youtube (https://www.youtube.com/watch?v=5aPflYraKtw) and is ready to be deployed to other channels, for example cinema or television advertising.

3.3. Survey two - post campaign

Following the campaign we carried out a post-survey to determine whether, and to what extent, the messages of the campaign could be recalled by the general public. We also used the opportunity to evaluate the value of emphasising local people and places in the campaign.

In total, 97 valid responses were completed, with a greater proportion of non-cycling respondents than survey one. While 97% of respondents drive regularly, only 54% of respondents both drive and ride frequently. Although the majority of respondents (70%) had seen the campaign before the survey, the video was embedded in the survey and all respondents watched it before answering campaign specific questions. The survey showed that the top two messages from the campaign video were that "people riding bikes are normal people" and "mutual respect in road sharing". These are aligned with the campaign aims and initial research findings. Other important results are described in table one, below.

Table 1: Key results from post-campaign survey

Statement	Result
Drivers and cyclists need to be educated about sharing the road for the local conditions.	92% agree
It is important to include people who live in the local area in a road safety campaign.	82% agree
It is important to include the local area in a road safety campaign.	91% agree
Behaviour change: wave to drivers	31% are more likely

4. Discussion

This project delivered a successful campaign that humanised cyclists. The evaluation reported that after watching the main video of the campaign, people had good recall of the main messages, and were more likely to exhibit behaviours which contribute to safer road sharing. In addition to these core findings, the campaign was successful in the inclusion of local people and local places to locate the campaign in place, as well as in reference to local people who are not actors.

When we consider the findings of each research stage there are three additional, unexpected discoveries from this research.

From a social perspective, we identified strong opposition by some people to non-motor vehicle use of the roads in the Alpine Shire. Responses from a small but vocal cohort included factually false but personally held understandings of what roads were built for (i.e. roads are for cars) and how road should be used according to the road rules. Follow up research in the public realm (e.g. Facebook profiles) also identified aggressive and physically violent messaging about cyclists from people who were opposed to a spectrum of social progression initiatives, not just sharing the road with road cyclists. This identifies an area for future research.

When analysing results from a legal and design perspective, we discovered that often the road design does not provide a suitable environment for sharing, in particular, speed. When we consider the speed differential of ascent when travelling up a long, mountainous road, between a cyclist (<10km/h) and a motor vehicle (60km/h), there are immediate consequences in a safe system. Survey responses included language such as "I had to overtake over double-white lines" to create a narrative in which a prohibited activity is transferred into a permitted one. This strongly relates to the social problem of how different road users construe themselves and others as having not only different amounts of legitimacy in using the road (despite being equally legitimate under the law), but also having different levels of justification to engage in breaking the road rules (despite having equivalent legal obligations).

Finally, the research also uncovered a potential infrastructure improvement that was viewed as mutually agreeable to both road cyclists and drivers. Road cycling by its very nature depends on using the road - as opposed to a shared recreational path or rail trail, which serve other purposes. Providing a smooth, swept, wide shoulder on key routes was nominated by several survey respondents as a solution which would provide road space for different road users while not undermining the appeal of the road profile for road cycling.

5. Conclusion

Through this project our research determined that humanising road users and encouraging communication through gestures would be a strong basis to an education campaign aimed at changing road user behaviours and attitudes. Based on research into the road users of the Alpine Shire, we developed a campaign and tested the results, showing that road users were more likely to perceive people riding bicycles as normal people, and to wave to each other. We also identified that further research is needed, particularly into the social issues of negative attitudes towards dislike cyclists, possible infrastructure improvements, as well as deepening the knowledge base at the intersection of safety, social issues, the law and road design.

7. Acknowledgements

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