INTERVIEW

Vulnerable road users

Jon Sutton interviews **Ian Walker** about how psychology can assist non-car drivers

I rarely drive – I cycle to work, and walk a lot. I see a lot of psychological research around driver behaviour and safety, but have I been ignored?

Yes, I'd say so. I first started to notice this at a traffic psychology conference about eight years ago – 98 per cent of the delegates were in the next room for a session on the driver behaviour questionnaire whereas in the parallel stream on cycling issues there was just me and three Finnish people alone in a room.

This is clearly reflected in the research literature. There are key issues surrounding vulnerable road users that have no data. What are the attentional mechanisms underlying drivers hitting cyclists? What are the social mechanisms underpinning aggression towards cyclists? There's some speculation, but very little data and no real theories.

It certainly often seems that cyclists are the poor relation in terms of infrastructure.

Yes… I can't help suspecting (but again, nobody's really studied this) that one of the problems is that cyclists are neither one thing nor the other: they go faster then pedestrians, and so make pedestrians feel uncomfortable when they get close; but they go slower than cars and drivers don't like to share space with them either.

Given neither of our major road user groups wants to share space with cyclists, what to do?

Should town planners treat cyclists as fast pedestrians and accommodate them that way (e.g. put them on pavements, expect them to yield priority at every side road) or should they treat cyclists as slower vehicles and accommodate them that way (e.g. create cycle lanes at the sides of roads)? All these solutions have problems, but most critically, there's no way that one solution will fit everybody as people cycle for different reasons. Some of the work we've done at Bath lately, most notably by my PhD student Gregory Thomas, shows that some people really value fresh air and exercise such that, if they were unable to cycle, they would walk. Others are cycling for speed and, if for some reason had to change mode, would drive. Because people are doing the same behaviour with different motivations, you can't expect them all to accept the same infrastructure provision – the person who just wants exercise might tolerate stopping at every sidestreet but the person who wants to get to work quickly will not.

Maybe it's those who cycle for speed that prompt the most negative reactions from other road users… cyclists are downright hated in a lot of quarters!

A report from the Transport Research Laboratory and University of Strathclyde a few years ago led by Lynn Basford (PDF via tinyurl.com/7qk877b) suggested that there's some classic social psychology at work here – cyclists represent an outgroup such that the usual outgroup effects are seen, particularly overgeneralisation of negative behaviour and attributes – 'They all ride through red lights all the time'. It's hard to escape the conclusion that something of this sort is going on.

However, there has to be more to it than just this. For a long time I wondered if the outgroup status of cyclists was compounded by two other known social psychological factors: norms and majority vs. minority groups. Not only are cyclists an outgroup, they're also a minority outgroup. Moreover, they are engaging in an activity that is deemed slightly inappropriate in a culture that views driving as normative and desirable and, arguably, views cycling as anti-conventional and possibly even infantile.

But even adding these factors into the mix does not explain all the anger that cyclists experience. It's easy to identify other minority outgroups whose behaviour similarly challenges social norms but who do not get verbally and physically attacked like cyclists do: vegetarians, for example. So there's clearly one or more important variables that we've not identified yet. Any social psychologists looking for a challenge are very welcome to wade into this.

Does this social status have concrete effects?

Yes, the lack of understanding of the cyclist outgroup seems to produce measurable changes in other road users' behaviour. A few years ago I did a study which showed that changing the appearance of a cyclist led to notable changes in how much space drivers left when passing the bicycle. The specific changes seen make sense given the small body of research on non-cyclists' stereotypes of cyclists. The two extant studies – the Lynn Basford et al. one, and research by Birgitta Gatersleben and Hebba Haddad, in 2010 – both found that non-cyclists view bicycle helmets as an indicator of an experienced rider, and in my data we saw riskier behaviour from drivers when they passed a cyclist who was wearing a helmet, which fits the idea they saw the rider as more capable.

The positive lesson from this, I feel, is that drivers do adjust their behaviour to the perceived needs of the non-drivers they are interacting with. The problem is that they do not always understand how to read these other people and judge their needs.

And that's even worse in white van drivers, right?

Ha, perhaps! I did do an analysis on a subset of the data which showed white vans tended to be amongst the worst culprits for getting close when passing

Pedestrians

'If we think cyclists are ignored by researchers, pedestrians have it even worse. Of the little that is published on pedestrians, almost all of it can be construed as supporting the societal status quo in which pedestrians are firmly held as second-class to people in motor vehicles. Analyses tend to look at why pedestrians are so "reckless" as to "jaywalk" away from their designated crossing areas, rather than to study what I would argue are much more fundamental questions about the social, environmental and health consequences of obliging healthy and harmless walkers to yield priority to inactive and polluting drivers. Ian Roberts and Carolyn Coggan looked at this in a 1994 paper (see tinyurl.com/735bl96) – little has changed.'

cyclists. Interestingly, red vans were much better behaved. I take my hat off to the audience member who, at a public talk, put two and two together here and suggested an excellent explanation: most of the red vans were Post Office vans, and postal delivery people have often cycled as part of their work and so understand cyclists. This would totally fit the picture I'm developing here of how a key problem is the majority of road users not understanding the needs and behaviours of a minority with whom they have to share resources; as soon as you take a group of drivers who do know what it is to be in that minority, behaviour improves.

If this long chain of inferences holds together to say that cyclists' problem is that other road-users don't know what it is like to be a cyclist – and there are qualitative data to suggest it does – then perhaps we might solve many problems by increasing drivers' understanding. Compulsory cycling as part of driver training would be an ideal solution.

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What is the psychology behind most accidents involving bikes?

If you look at taxonomies of car–bicycle collisions – or, indeed, car–motorcycle collisions, which tend to be very similar – you see that the majority of collisions happen in just a few circumstances.

One of the key issues is where the rider is going straight along a main road and are hit by a driver turning right (in the UK), either into a side street or out of one. There's actually a (very) small psychological literature on this, particularly the 'looked-but-failed-to-see phenomenon', which is where the right-turning driver looks at the rider but does not consciously become aware of the hazard. Unfortunately, this literature is so small it doesn't provide very hard answers, but it's likely the problem is drivers' expectations, making it a top-down processing problem. The hypothesis is that drivers don't expect to encounter cyclists at junctions and so their visual search patterns go to the parts of the road where cars and trucks are to be found, skipping the parts of the road where cyclists (and, to an extent, motorcyclists) are found. The way to test this is incredibly simple: behavioural analysis of drivers in, say, Cambridge or York (where one would expect cyclists at each junction) and Basingstoke (where one would not). We expect to see different visual search patterns – and fewer conflicts with cyclists – where cyclists are more prevalent.

Of course, there are also relatively low-level visual processes at work in car–bicycle collisions. David Shinar in Israel has recently been doing studies to suggest that riders' smaller physical size plays a role in throwing off drivers' judgements. Most interesting of all, he found that the visibility of riders depends very heavily on the background they happen to be passing at any given moment: if you're riding in front of a white house it's far better to wear black than so-called 'high-visibility' gear. To a psychologist, it's pretty obvious that visual contrast between figure and ground, rather than the rider's clothes *per se*, is what will matter. But this seems to be a difficult message for wider audiences to swallow – they won't let go of the idea that 'high-visibility' clothing is always the best thing.

Incidentally, there are other reasons to be suspicious of high-visibility gear, not least that it transfers responsibility from the driver of the metal box that creates the danger to the victim of that danger.

So is that kind of research considered 'traffic psychology', or 'transport psychology'? What's the difference?

Traffic psychology is largely about the human factors involved in traffic 'accidents' and is in many ways applied cognitive psychology – it's all about attention, decision making, response selection, etc.

Transport psychology is about how people choose their travel modes – do they drive, cycle or take public transport – and in practice is applied social psychology, a lot like health and environmental psychology.

That must be an important link, with health psychology. Active transport is surely one of the best ways for people to get more exercise.

These days, I find myself working in transport, environmental and health psychology. What's fascinating is that the underlying issues and theories are largely the same in all these fields. Whether you're looking at why people engage in recycling, why they undertake risky health behaviours or why they drive everywhere (which is, ironically, itself a risky health behaviour) you're looking at the antecedents of a person's behaviour and how best to influence the behaviour-selection process. In practice, this largely consists of wishing there was something obviously better than the theory of planned behaviour – another practice common to all three fields.

I like your approach to research. I read in one chapter 'I once, in an exploratory study with no particular hypothesis' – I don't think we see that often enough!

I have to confess that that's often how I start studies: 'I wonder what people will do if I manipulate X...'. In the back of my mind there's often some sort of theoretical basis to this, but I'd be lying if I said every study was a direct test of a specific hypothesis derived from theory; often I find the theory afterwards for the write-up. I'm sure this is far more common than people think, but the rigid traditions of academic publishing force people to pretend that every study is a test of a theoretically derived hypothesis.

Here's hoping your approach and research becomes more and more influential – presumably bikes aren't going anywhere anytime soon? As Katie Melua sang, 'There are nine million bicycles in Beijing, That's a fact.'

You mean Melua and Batt (2005)? I question the veracity of their thesis.

More seriously, though, the bicycle cannot go anywhere and must form part of our future. At the moment there is an incredible research effort to design better cars for the future. None of these efforts address the fundamental design flaws of the car. Even if somebody came up with a car that runs off angels' sighs and never crashes, it would still encourage sprawling urban planning, bad land use (especially for parking) and would still encourage its owner to get fat and unhealthy. The population is rising; we don't have the space to accommodate more and more cars and we have some serious population health issues. More cycling solves a swathe of problems at a stroke, and all it requires is a simple machine that most people already have lying around their home somewhere.