
Can social marketing make 20mph the new norm?

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Abstract

This paper explores the findings of a research study carried out to investigate the effectiveness of social marketing for 20mph signs-only speed limits. The study, completed in July 2012, involved a review of literature, detailed case studies of existing and planned 20mph signs-only schemes in Graz (Austria), Portsmouth, Oxford, Warrington, Lancashire and Bristol and qualitative research through focus groups and in-depth interviews with 51 people in Bristol.

One of the main findings from the research and case studies is that there is a mismatch between people's stated support for 20mph limits and their actual driving behaviour. The qualitative research therefore focused on investigating this gap. A range of groups or segments of Bristol drivers and residents were recruited for the research to provide insights into why some people do not feel willing or able to comply with 20 mph limits where they are in place.

This paper proposes, based on the findings of the qualitative research, that there are three main driver types in relation to 20mph areas: champions, pragmatists and opponents. It is contended that these may be encountered across a typical normal distribution curve. We found qualitative evidence that drivers may map onto Moore's "crossing the chasm" variant of Rogers' well known diffusion of innovation model. The 'chasm' represents the difficulty in encouraging pragmatists to cross from their current speed habits to the new 20mph habit of driving. Based on this, it is suggested that social marketing techniques can provide a 'bridge' over this 'chasm' by positioning 20mph limits as the *new norm* for urban areas. Social pressure would build, eventually generating a tipping point in which pragmatists would move en-masse, quickly shifting from driving at 30mph in urban areas to 20mph - 'because everyone else does'.

The rise of the 20 mph limit

Before 1991, the Road Traffic Regulation Act 1984 did not permit local authorities to set speed limits below 30 mph. Although legislation was amended in January 1991 specific consent from the Secretary of State was needed to implement a 20mph limit and it could only be introduced as part of a physically calmed "zone" or on short sections of road with a proven accident record.

Since then, there has been a slow but growing recognition of the role that 20mph can play in reducing road danger and improving quality of life for residents and the Department for Transport (DfT) has continued to revise and update its guidance.

New guidance was issued in 2006 with the DfT Circular "Setting local speed limits" (DfT, 2006) and since then two further amendments have been issued (DfT, 2009a and 2011) with the key points of interest in the current guidance being that the DfT:

- Want to encourage highway authorities, over time, to introduce 20 mph zones or limits into streets which are primarily residential in nature; and into town or city streets where pedestrian and cyclist movements are high, such as around schools, shops, markets, playgrounds and other areas; where these are not part of any major through route.
- Permit councils to use signs painted on roads as an alternative to expensive upright signs, cutting street clutter and costs;
- Believe that if average speeds are already around 24 mph on a road, introducing a 20 mph speed limit through signing alone is likely to lead to general compliance with the new speed limit. It has also been noted that early research from the area-wide 20 mph limit in Portsmouth suggests that greater reductions can be achieved through signed only limits where previous average speeds were significantly above 20 mph; and
- Suggest that to achieve compliance there should be no expectation on the police to provide additional enforcement beyond their routine activity, unless this has been explicitly agreed.

In short, the DfT have recognised the growing popularity of 20 mph and have continued to make it easier for local authorities to introduce 20mph limits without any physical calming but do not want to call for police enforcement of the lower limit.

Thus, a large number of 20 mph signs-only schemes have been introduced across the country, including Bristol, Liverpool, Oxford, Portsmouth and York, without any means of compelling drivers to comply with the lower limit.

Theoretical benefits of 20mph limits

In a recent British Social Attitudes Survey for the Department for Transport, 71% of the population were found to support 20mph limits with signage only, with only 15% against it; this has remained consistent for around 10 years (DfT, 2010). In research employing deliberative focus groups with the public, support for 20mph limits increased through focussed discussion on the topic (Musselwhite et al, 2010). Although initially there was some concern the limit was too low with negative impacts on pollution and difficulty of driving at that speed the overwhelming benefit on road user safety was discussed and increased acceptability of the concept. Hence, the 'headline' benefit – that which is most easily absorbed by a lay audience – is reduced road traffic collisions. The evidence for these reductions in signs-only schemes is mixed, possibly because the evidence for speed reductions as a result of these schemes is itself rather modest.

The experience of towns and cities that have introduced 20mph (signs-only) limits is one of modest encouragement that a small reduction in average speed can be achieved. The average speed reduction being achieved by such schemes is approximately 1 mph. In Portsmouth the pre and 18 month post-implementation speed surveys at 223 monitored sites indicated a reduction in the average speed from 19.8 mph to 18.5 mph after implementation of the scheme; a reduction of 1.3 mph (Atkins, 2010). It also led to a 22% reduction in casualties in the 18 months post-implementation compared to a national reduction of 14% in comparable areas.

Early data from the Bristol 20mph signs-only pilots shows that there was a reduction in average daytime speeds in both pilot areas; a 1.4mph reduction in inner south and 0.9mph reduction in inner south with 65% of roads seeing a reduction in mean speeds (Bristol City Council 2011). It is too early to draw conclusions on casualty reductions as the time period is short and the numbers are not statistically significant but overall casualties for the first 12 months of operation reduced by 5 in the Inner East Area and increased by 8 in the Inner South area (Bristol City Council 2012). In Oxford the one-year post-implementation speed surveys at 130 sites showed that there was a 0.9mph reduction in average speed from 22.0mph to 21.1mph (personal communication). There has been no reporting on casualty data. The five Lancashire 20mph pilot schemes implemented in 2011 found average speeds increasing by 0.2 mph at one location, staying the same at another and reducing by an average of 0.9mph at the other three sites (personal communication). To date there has been no reporting on casualty data.

Outside of the UK, Graz in Austria introduced a city-wide 30kph trial limit between 1992 and 1994. The speed measurements for pre-implementation and one year post implementation detected relatively small reductions in average speed (figure not stated in report). However, there was a strong measured reduction in high speeds; the proportion of those travelling at more than 50kph in the 30kph limits fell from 7% to 3%. (Wernsperger and Sammer, 1995). The two year trial achieved a 12% reduction in collisions with slight injury and a 24% reduction in serious injury collisions. The reductions were most significant at junctions and crossings. The study observed road user behaviour using video cameras at three junctions and concluded that drivers and pedestrians were more considerate to each other.

The overall picture from these case studies suggests that the scope for improved performance through the use of socially based behaviour change measures is considerable.

It is known that reduced number of road traffic collisions as an indicator of improved safety on a road is only one indicator of success and that other measures are needed to build up an overall impression of safety on a stretch of street. Collisions are a relatively rare event and do not necessarily reflect the safety of a street. Mean average or 85th percentile changes in the speeds of vehicle do not directly translate into changes in individual perception of safety on the street. A small decrease in average speed could, for example, trigger a step-change in whether someone walks or cycles. In Bristol walking and cycling increased by 12% in the pilot areas (Bristol 2012). Alternatively, changes in the average speed without reducing the fastest vehicles could result in no change in walking or cycling behaviour at all. There is a significant evidence gap around causal effect as levels of walking and cycling have not been monitored in most 20mph signs-only schemes.

As speeds on a street reduce, people may be using the road more as a pedestrian or a cyclist, affecting the number of collisions, but these effects may be difficult to capture. It is therefore important to build up a picture of people's perceptions about 20mph and any claimed behaviour changes: this will be useful data to consider alongside the collision and speed data.

...But low compliance in UK struggles to realise benefits

Without systematic data it is hard to draw firm conclusions but it seems clear that (lack of) compliance is a key issue in 20 mph signs-only schemes in UK towns and cities. As discussed above, the evidence from Portsmouth (Atkins 2010) and Bristol (Bristol City Council 2011 and 2012) suggests that signs only 20 limits will reduce speeds by approximately 1mph from previous averages. There is also evidence from Portsmouth that the reduction is higher on roads with a higher pre-intervention average speed limit. However, the DfT does not currently actively encourage the introduction of 20mph limits on roads with an average of more than 24 mph (Department for Transport, 2006).

It may therefore be prudent to conclude that the evidence, such as it is, from these UK towns and cities is that signs-only limits have significant limitations in changing driving behaviour. Put another way, it is possible that many or even the majority of drivers are largely ignoring the new limits. Hence the interest in the potential application of socially derived behaviour change techniques (so called 'soft measures'), including social marketing, to encourage drivers to comply with the lower limits and thus capture the anticipated benefits of slower vehicle speeds. This interest led to Bristol City Council commissioning the work discussed here.

The present study - context

Bristol City Council introduced two 20mph signs-only pilot areas in inner South Bristol and inner East Bristol in May and October 2010 respectively. The two areas covered approximately 500 roads and 30,000 households. The pilots included a comprehensive programme of pre and post-implementation monitoring which provide a wealth of data on the initiative (Bristol City Council 2011 and 2012).

The council had subsequently taken the decision to embark on the design and implementation of a city-wide signs-only 20 mph limit. A phased roll-out of the new lower limit will take place across the city between 2013 and 2015. The majority of the city's existing 30mph roads will be included unless there is a strong case for exclusion.

Study methodology

The first author undertook an action-research project, commencing in July 2011, to examine the effectiveness of social marketing techniques in supporting signs-only 20 mph limits. The study involved mixed methods including a literature review, in-depth analysis of case studies from a number of towns and cities including Bristol, in-depth interviews with stakeholders including council officers and members, police, bus operators and community representatives and qualitative research with 51 Bristol residents and drivers. The primary research question for the literature review was:

“What evidence is there to demonstrate the effectiveness of social marketing approaches in influencing drivers’ choice of speed in urban areas?”

A total of 118 academic publications were reviewed as well as extensive unpublished grey literature on driver attitudes and behaviour towards speed and best practice in influencing driving behaviour and speed choice. In addition, six case studies were selected for in-depth analysis to learn from their experiences of designing, piloting and implementing 20mph signs-only interventions. The case studies locations, namely Graz (Austria), Oxford, Portsmouth, Bristol, Lancashire and Warrington, were selected to provide a broad cross-section of experience relating to 20mph. The city of Graz was chosen because it introduced a city-wide signs only 30kph limit alongside an intensive programme of publicity and enforcement between September 1992 and August 1994 (Wernsperger and Sammer, 1995).

In England, Portsmouth City Council was the first local authority to introduce, between 2006 and 2008, a city-wide, signs-only residential limit of 20mph. Oxford followed close behind, with Oxfordshire County Council introducing a city-wide signs only 20mph limit in 2009. Bristol City Council, which part funded this study, introduced two large scale pilots in 2010 and conducted a detailed programme of monitoring. Lancashire was selected because it was the first county to announce in 2011 the intention to introduce a county-wide 20mph limit. Warrington Borough Council, at the time of the study, was still weighing up the benefits of 20mph and developing their approach to implementation.

Each case study was conducted through a review of available literature and web-based information including media, a series of meetings and in-depth interviews with delivery agents (except in Graz) and site visits to carry out direct observations (Oxford and Bristol).

The qualitative research aimed to gather data in order to assess the acceptability or otherwise of 20mph in Bristol city and to gain insights and clues into why residents say they like 20mph but don’t necessarily respect it when driving. It was also used to test reactions to a range of soft interventions including car stickers, pledging, community speed watch and neighbourhood or “DIY” street redesign that might help to shift attitudes and behaviour.

A mixture of focus groups and in-depth interviews was used so that specific issues such as opposition to 20mph could be probed in more depth. Participants were recruited through community groups, council contacts, professional and personal contacts and word of mouth. Each participant was offered a £20 cash incentive to take part in the study and most people gave from 1.5 to 2 hours of their time. Interviews and focus groups were held either in people’s houses or in local community spaces at times to suit – mostly in the evenings.

A series of topic guides and tools including use of images were developed for the research and these were adapted and adjusted as the research revealed new insights. A total of nine focus groups including a total of 43 participants (21 male and 22 female) were held with different groups as shown in Table 1. Eight in-depth interviews were conducted to explore specific positions as shown in Table 2.

All interviews and focus groups were recorded and subsequently transcribed in full. Analysis was then performed by annotating each transcript and identifying categories to group data

according to strong or recurrent themes. These themes were then tabulated and quotes attributed from each focus group and interview. This enabled the researcher to map ideas and interpret meaning across the range of data.

Table 1: Focus group participants

Group type	Nr in group	Gender	Pilot area resident?
Cyclists and sustainability champions	7	Mixed	Some
Professional drivers (city centre van & lorry deliveries)	7	Male	None
Retired residents in Easton pilot area	5	Mixed	All
High mileage commuters into/out of central Bristol	3	Male	Some
Young drivers living in Lawrence Weston	3	Male	None
Middle age residents in Mangotsfield	6	Female	None
Young parents resident in Knowle	6	Mixed	None
Residents in Southville (Playing Out group)	2	Female	All
Residents in Southville (non-Playing Out Group)	4	Mixed	All

Table 2: In-depth interview participants

Person type	Gender	Pilot area resident?
Regular driver opposed to 20mph	Male	Yes
Regular driver supportive of 20mph	Male	Yes
Community representative	Male	Yes
Parent of toddler	Female	Yes
Parent of school-age child	Female	No
IAM driving instructor	Male	No
Young driver and motorcyclist	Male	No
Community youth worker	Male	No

Extracts from the qualitative data analysis are offered below to support the idea presented in this paper that there are three main driver types in relation to 20mph limits, distributed across a typical normal distribution curve but separated by a 'chasm' which prevents the mainstream majority from adapting their driving behaviour in response to 20mph limits. These data can help to inform the design of a social marketing campaign.

Results and Discussion

Social marketing has a variety of theoretical start points to inform possible intervention designs. It is theoretically rooted in a number of constructs. One of these is the idea of commercial style economic exchanges that, in the case of commercial marketing, are offered to customers; within the social marketing context the exchange involves rewarding people in return for a change in behaviour. Exchanges can be positive or negative, that is, they can be rewards for compliance or penalties for non-compliance. Hence, 'black box' driven rewards

could be created for good driving practice and similarly penalties could be created for non-compliance with speed limits.

Another theoretical 'start point' of social marketing is persuasion. Social marketing communications can be used to persuade people of the need for behaviour changes. These communications could rest on many platforms. They may be values and beliefs based: "20mph is the platform for healthy urban living"; for example one focus group participant talked about starting to observe the 20mph limit because she could imagine how it benefitted local residents:

"...at first it was a bit irksome – you know, I'm used to hurtling along here – what's going on - and then sort of consciously started thinking actually people live here and there's a reason for this and really trying quite hard to abide by the limit day and night."

Focus group, middle aged female participant

The use of fear appeals has been used extensively in road safety marketing: 'by reducing speed we could avoid hitting a child who runs out' (avoiding the social stigma and personal consequences of causing an accident). Such tactics are well understood and accepted by most people and generated - at least in the polite company of an in-depth interview with a researcher - the kind of cognitive understanding that excessive speed is not socially acceptable. For example one participant observed:

"I think generally 20 miles an hour, it doesn't make that much difference on journey times and it makes a massive difference in terms of people surviving accidents."

In-depth interview with middle-aged father

Fear appeals are potentially legitimate tactics for consideration as soft measures. However, they have a number of limitations (Hastings et al 2004), not least the need to generate ever more powerful imagery in order to continue to create the same effects over time. Fylan et al (2006) reviewed road safety campaigns and suggested that campaigns that try to induce fear have little effect on driver attitudes and behaviour partly because drivers, particularly the most risky road users, are able to distance themselves from the message through believing the campaign is targeted for those with less road-user skill than themselves. O'Connell (2002) suggested that incurable optimism (where most drivers believe they are better than average) leads people to believe the message is not for them. Coupled with feelings of illusion of control, where drivers feel very much in control of their vehicle and their own safety, and the false consensus effect (the view that everyone shares similar attitudes, values and behaviours), messages tend to be ignored by most drivers (O'Connell, 2002). As Silcock et al. (1999) concluded, some campaigns can give drivers (who do not identify with the target group) an excuse for aberrant driving behaviour by reinforcing the belief that such behaviour lies with a limited group of "other" drivers, not themselves. For these reasons, while recognising their continuing use of practice, in this study we were particularly concerned to explore alternatives to fear appeals.

One very fruitful area that we wished to understand in more detail was so called *cognitive by-passes*. Both behavioural economics cues and social norms campaigns are examples of tactics that seek to by-pass cognitive processes in order to create automatic behaviour changes. Professional interest in these techniques stems from their relative ease of application and, not least, from their potential cost-effectiveness. For instance, once a 'critical mass' of people regards something as 'normal' the cost of conversion of new entrants into the behaviour is likely to drop dramatically. We will briefly consider behavioural economic devices before spending rather more time on the central focus of this paper, social norms.

Behavioural economic cues

Behavioural economic 'nudge' devices are designed to change behaviour in-situ. Evidence suggests behavioural economic interventions can create positive behaviour change, though these are generally short term. Vehicle Activated Signs (VAS) were recognised as early as 1973 as being effective in influencing driver behaviour (Lee et al, 1973). A more recent intervention, consisting of a speed displaying device or VAS mounted next to the road and visible to both motorists and the public, tested driver reaction to a display of the real-time speeds of cars. A self-report questionnaire of 300 motorists found that the majority of

motorists believed these devices influenced their own compliance with the speed limit (Kalla et al 2010). They also reported that their reaction was not influenced by whether they were driving in a community where they had friends or in a community where nobody knew them. The results were consistent across gender, age, levels of education and professions.

Bristol drivers commented that they are influenced by new VAS with one participant saying:

"I think a flashing sign is really effective. When it flashes, I'm like – ooh, they've seen me."

Focus group participant, female parent, inner city location.

One study found that, in the right location, VAS can achieve up to 88% improvement in compliance with speed limits (Kathmann, 2000). However, the signs were found to be most successful during their early life; as drivers become used to the signs their effectiveness reduces. A Study for Transport for London (Walter and Knowles, 2008) found that the 'novelty' effect wore off after about three weeks. Bristol Council attempted to minimise this problem in their pilot 20mph areas by continually rotating a number of signs between different fixed locations across the city (Bristol City Council, 2011).

Fleiter et al (2009) researched social influences on speeding from a qualitative perspective and identified two types of influential others on drivers: people known to the driver (such as passengers and parents) and unknown other drivers. Passengers were generally found to have a slowing influence on drivers, with key themes being responsibility for the safety of people in the car and consideration for passenger comfort. One young driver explained this effect very clearly:

"Obviously if you had your mum or sisters in the car or whatever, you'd just drive to the speed limits because you're not really proving anything because they'll think you're an idiot...I would be careful because you've obviously got to think about the people that if you were going fast, you would be putting other people's lives at risk."

Focus group participant, teenage driver, non-pilot deprived area

In relation to other drivers, key themes included speeding to keep up with traffic flow and perceived pressure to drive faster. Fleiter et al's research concluded that these driver responses to others provide scope to use social sanctions for speeding and social praise for speed limit compliance to enhance speed management strategies.

However external sanctions and rewards, whilst apparently effective over a short time-frame, have significant limitations over a longer period of time, with little evidence that they are effective after the novelty of the intervention ceases.

This short-termism is a limitation of many approaches to behaviour change. More widely, social marketing programmes that rely purely on reward based exchanges can be expensive and struggle for long lasting effect after the campaign's end. For instance evidence for the sustained effects of financial incentives to achieve healthy behaviours is weak (Marteau et al 2009). Similarly, the idea of environmental determinism - that a change in the physical environment will automatically lead to a long-term change in behaviour – is flawed in that people habituate or fall back to their original habit, if the new behaviour is not 'locked-in' (e.g. Avineri and Goodwin, 2010). Even changes in regulations are not always fool proof, as the lack of success of smoking restrictions in Italy have shown (Gallus et al 2006).

Interventions based on social norms

There is little doubt that social norms are important influences on driver behaviour. Findings from the qualitative research reinforced work from others that social norms can influence choice of speed and that drivers set their speed to match the perceived speed of others (Arthur 2011, Fleiter 2010, Aberg 1996). The belief that 'most other drivers are speeding' influences an individual's own choice of speeding behaviour; the more likely drivers are to perceive that other drivers speed, the more likely they are to speed themselves (Fuller et al., 2008). A quote from one of our focus group participants highlights this effect:

"...I used to [drive at 20] and then I just noticed that no-one else does, so I started going a little bit faster "

Focus group participant, female parent, resident in non-pilot area.

These normative social influences can be induced by providing drivers with information to shift their perceptions about the speed and behaviour of *other* drivers. A study from Iceland (Ragnarsson and Björgvinsson, 1991) found that when drivers entering a residential area were shown a posted feedback sign communicating a hypothetical daily percentage of drivers not speeding, they significantly reduced their speed. The average reduction was from 69.0 km/hr (42.9 mph) during baseline to 63.4 km/hr (39.4 mph) over a consecutive 20 day period. Even more impressively, in a classic study using posted feedback to drivers (Maroney and Dewar, 1987), a traffic sign was used to inform drivers of the percentage of drivers who were not speeding on the previous day. Data were gathered on approximately 690,000 vehicles during 3.5 months experiment and the researchers found that excessive speeding could be reduced by 40 per cent. However this impressive change in behaviour was subject to decay, albeit the speed reduction was maintained for a number of weeks after the sign was removed.

Our study sought to research ways to build on the potential power of social norms. A variety of attitudes which emerged from the study are explored next.

Mapping attitudes to 20mph limits

The research with residents covered a variety of audience types and found a range of levels of knowledge, understanding and liking for the idea of 20 mph limits. Although the recruitment strategy of the groups was deliberately designed to elicit a range of opinions, it was interesting to be able to identify an attitudinal dimension very early on within each discussion.

An early adopter or champion of 20mph described in detail how he responds to tailgaters when he is sticking to the 20mph limit:

"I'll be coming home down Whitehall Road, there is nobody in front of me because everybody bugged off doing 30 miles an hour so I'm there doing 20 thinking I'm now the poster boy for the 20 mile an hour...so people are forced to drive at 20 behind me and they flash their lights or they'll make some hurry up noise by blowing their horn and on occasion what I've done is I've slowed down opposite the speed limit and I've pointed at the speed limit sign..."

In-depth interview, middle aged father, resident in pilot area.

Another early adopter explained how he likes to stick to the speed limit to make driving simpler:

"I like rules, so if it tells me to drive at 20, I will do 20. If it tells me to drive 30, I will do 30. I usually stick on the limit."

Focus group participant, male resident in non-pilot area

In contrast, 'pragmatists' explained that 20mph didn't feel normal, that they felt the pressure to speed up:

"I drive carefully and sensibly, I don't overtake cars, so I'm going the same speed as the general traffic, but I don't look at my speedometer."

Focus group participant, parents with young children, resident in non-pilot inner city area

"The trouble is, even if it's 30mph, people tend to go over 30, don't they? If it was 20 they'd probably go over 20."

Focus group participant, female parent, resident in non-pilot area

"I don't think the speed limit change alone would make me change... on a clear straight road with nothing around...I just think 20 feels really slow."

In-depth interview, mother of schoolchild, resident in non-pilot area

Others described feeling uncomfortable with the idea of displaying a (campaigning group) '20s Plenty' sticker in their car window:

"I don't think I would, but I'd feel a bit embarrassed about saying that"

"I'm not sure that I would."
"...it's a bit evangelical."

Focus group participants, parents with young children, resident in non-pilot inner city area
More extreme views also emerged. Some respondents exhibited distinct libertarian views with respect to speeding. For some, this reflected a belief in drivers setting their own limits according to conditions:

"I don't drive at a certain speed because the speed limit is set as it is...I strongly believe that you should drive at a speed that is appropriate to the conditions."

Young driver, motorcyclist and Advanced Driver, in-depth interview, non-pilot deprived area
This particular respondent was typical of someone who would be at best a late adopter or, more likely, an opponent of the limit.

In summary, participants could be tentatively attributed to one of three 'driver types': champions, pragmatists and opponents. These were found across the different focus group and interviewees as shown in Table 3.

Table 3: Putative 'segment' descriptors

Type of participant	Descriptor	Attitude to 20mph
Non-car owners, utility cyclists, sustainable transport professionals,	Early adopters	Champions
Parents of young children, middle aged drivers, retired drivers	Mainstream middle	Pragmatists
High mileage commuters, young drivers	Late adopters	Opponents

Discussion: Diffusion of Innovations and 'crossing the chasm'

Having identified a dimension of predisposition to 20 mph limits, the next logical step was to propose that the population may be patterned within a normal distribution curve as shown in Figure 1. This 'diffusion of innovations' curve was first proposed by Rogers (1962) and is an effect extensively found in the social and business world.

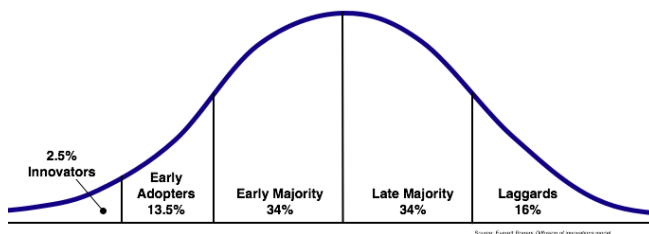


Figure 1: Rogers diffusion of innovation model
(permission required before publication)

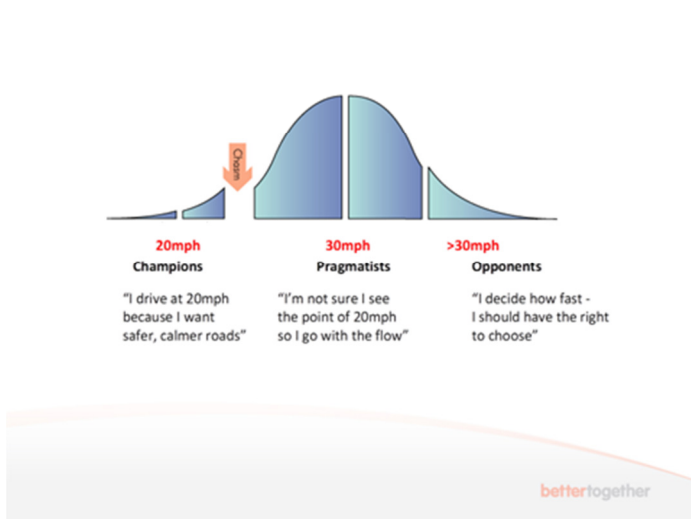


Figure 2: Using Moore's 'chasm' to distribute driver types for 20mph

As described above, our primary research identified differences between the attitudes of early adopters and those of the 'mainstream middle' or pragmatists. Early adopters were typically very knowledgeable, not just about the existence of 20 mph limits but about their benefits and about the transport policies underpinning them. In contrast 'mainstreamers', while potentially compliant with a new speed limit, had little or no interest in lower speed limits, with their main concern often being to 'fit in' with what

they saw as the societal norm. These observations therefore suggest that a variant to Rogers' model, first proposed by Geoffrey Moore in 1991 (see Moore 2002 for an updated

version), may be more applicable. Moore's variant was coined by his book 'Crossing the Chasm'.

Moore's explanation for the reason for the large gap between early adopters and the early majority lies within the nature of the latter group. Moore's work with the buyers of innovative IT products identified that 'early majority' buyers tended to be very conservative in nature, looking to each other for social cues on purchasing patterns. Crucially, they did not tend to have much contact with early adopters, creating a communications gap, and they also had clear attitudinal differences with early adopters with respect to risk. Early adopters were much more likely to take risks, to try something new, but this was anathema to the early majority.

Moore's solution to the chasm problem was that firms that recognise that early adopters of a new technical product are different to early majority buyers. Marketers that had a different strategy for selling to early majority tended to be more successful. A recent example, Apple's iPod, was the subject of a highly focused, intensive marketing campaign that had enormous resources deployed in a very short timescale. This campaign was designed to generate a 'viral effect' among the (pragmatic and conservative) early majority such that the concerns of these pragmatists would be assuaged and they would therefore in turn act as social agents who would kick-start the copycat effect amongst other early-majority buyers. Moore's insight was to recognise that pragmatists were resistant to the ideas of early adopters. Rather, they were extremely conformist - tending to 'copy' each other. Hence, in order to engender change within this sector, at least some pragmatists will have to be won over. The best way to achieve this, Moore found, was the use of intensive 'hot-house' marketing. Hence, with the iPod example, the 'offer' was made so compelling that the pragmatists being targeted could see no downside, and their risk-averse nature would not be a barrier.

It is proposed here that this 'Crossing the Chasm' model is appropriate for large scale 'step-jumps' in behaviour, of the type required for mainstream sectors to complete a successful transition from 30 to 20mph driving. This model highlights the importance of understanding that enthusiasts and proponents of 20mph will not act as role models or influencers to the early majority or pragmatists. Similar changes were observed in deliberative focus groups with the public where people's opinion shifted in favour of 20mph through discussion amongst themselves (Musselwhite et al., 2010). The model shows how such changes might be achieved with a larger population with links between attitudes and behaviour rather than on a localised and short-term context as in the focus groups.

Implications and conclusions: crossing the 20 mph chasm

These findings suggest that there is little hope for isolated and unsustained interventions. Even if 'nudge' techniques are successful in changing individuals' behaviour in situ, over time they are probably of little or no value. Two factors are proposed to explain this. First, as discussed earlier, because effects on that individual are temporary. Secondly, these initiatives are of insufficient scale to generate a copycat, or viral effect. These shortcomings mean that a critical mass and tipping point effect is never reached and so the point at which a form of self-perpetuating copycatting of a new behaviour becomes normal is never reached. A few individuals may be encouraged to briefly change but the normative pressures are too great and their own automatic driving habits are too embedded and so, to use a metaphor, like gravity pulling back a rocket that never quite reaches 'escape velocity', they subside back to previous behaviours.

Hence, a specific strategy is needed to 'cross the 20mph chasm'. There may be a variety of ways in which the 'chasm' can be crossed. One way could be to target groups that are naturally predisposed to 'bridging the gap' between early adopters and the early majority. This research suggests that campaigning organisations may not be appropriate: evangelical campaigners may be off-putting for risk averse mainstream audiences for whom the 20 mph limits are a long way from being an everyday concern.

One option is that social marketers of 20mph could look to what Malcolm Gladwell (2000) called 'connectors' or 'salesmen' – people who have the rhetorical flourish to persuade the mainstream to change. However such characteristics may be difficult to target. Specific

groups may be easier to identify and to work with and may include new parents, cyclists, learner drivers, professional drivers for companies with a strong company anti-speeding policy, drivers who have experienced a “near miss” and so on. These groups may be targeted with well-crafted social norms campaigns that emphasise the new speed limit as ‘normal’ and a good idea from a safety point of view. This could play on the conservative, law abiding nature of the pragmatic majority and appeal to them on the grounds that 20mph is the new legal maximum and everyone should obey the law.

Another approach could be to deploy the hot-house promotion that sprung from Moore’s work. The findings suggest that an intensive combination of ‘soft measures’, of which PR, social marketing and behavioural economics would all form important parts, placed alongside timed and co-ordinated police support, could combine to create a critical mass and tipping point effect that would ‘cross the chasm’. Once a tipping point is reached, road users will comply with a new speed limit simply through a copycatting effect by driving at the speed that ‘everyone else drives’.

Conclusions

20mph limits are an important step forward for a civilised society. They create the conditions for urban living that prevent damaging effects of car dominance and dependency. Survey results suggest that in the UK there is widespread latent support for the idea of 20mph limits. However trials have suggested that there is a distinct gap between these attitudes and actual personal driving behaviour. The lack of easy adjustment to the new limit has made it difficult for a ‘new social norm’ to take effect.

It is likely therefore that intensive and sustained behaviour change measures are required; it is worth noting that the DfT’s national “Clunk click every trip” campaign ran for 11 years prior to the introduction of front seat belt legislation in order to achieve a step change in behaviour (DfT, 2009b). Given the propensity of many people to ‘drive like other people drive’, for example to drive at the average speed of what they observe around them, social norms could be used to the advantage of such measures – provided a ‘tipping point’ is reached in which enough people drive at the new limit.

This research has identified the signs of three clear segments of society – early adopters, a ‘mainstream majority’, and ‘laggards’. One might hope that early adopters would serve as the spearhead with which to influence the mainstream majority. However the concern, originally modelled by Moore and pointed to in this study, is that an influence ‘chasm’ might prevent the osmosis of behaviour from early adopters to the early majority. The authors call for more research to substantiate this model and, if found, call for more work to identify appropriate strategies to help people ‘cross the chasm’ to fulfil the silent majority’s aspiration for slower speeds on their local streets.

References

- Aberg L, Larsen L, Glad A and Beilinson L (1997) Observed Vehicle Speed and Drivers’ Perceived Speed of Others, *Applied Psychology: An International Review*, 46 (3). 287-302
- Arthur R M (2011) Examining Traffic Flow and Speed Data: Determining Imitative Behavior, *Traffic Injury Prevention*, Volume 12, Issue 3, 2011
- Atkins (2010) Interim evaluation of the implementation of 20mph speed limits in Portsmouth. Atkins Global, London. Atkins Transport Planning and Management
- Bristol City Council (2011) 20mph speed limit pilot areas. Monitoring Report. December 2011
- Bristol City Council (2012). 20mph speed limit pilot areas. Monitoring Report. March 2012.
- Department for Transport (1999) 20 mph speed limits and zones Traffic Advisory Leaflet 9/99
- Department for Transport (2006) Setting local speed limits DfT Circular 01/2006
- Department for Transport (2009a) Call for comments on revision of DfT’s speed limit circular
- Department for Transport (2009b) THINK! Road Safety Campaign Evaluation Post Stage: ‘Live With It’ speed campaign and Motorcycle campaign, BMRB Social Research, April 2009
- Department for Transport (2010) British Social Attitudes survey: attitudes to transport, Department for Transport, London, UK.

Department for Transport (2011) Ministers cut traffic signs red tape for local councils DfT press release

Department for Transport Dr Fiona Fylan et al Effective interventions for speeding motorists

Department for Transport (2011) Strategic framework for road safety

Fleiter J L, Lennon A and Watson B (2010) How do other people influence your driving speed? Exploring the 'who' and the 'how' of social influences on speeding from a qualitative perspective, Transportation Research Part F 13 (2010) 49–62

Fylan, F., Hempel, S., Grunfeld, B. Conner, M. and Lawton, R. (2006) Effective Interventions for Speeding Motorists. Road Safety Research Report No. 66. London: Department for Transport.

Fuller, R., Bates, H., Gormley, M. and Hannigan, B. (2008) *The Conditions for Inappropriate Speed: A review of the literature 1995–2006*. Department for Transport

Gallus, S., Zuccaro, P., Colombo, P., Apolone, G., Pacifici, R., Garattini, S. and La Vecchia, C. (2006). Effects of new smoking restrictions in Italy. *Annals of Oncology* 17, 346-347; New York State Department of Health (2004). First Annual Independent Evaluation of New York's Tobacco Control Program. New York State Department of Health.

Gladwell, M (2000) *The Tipping Point: How Little Things Can Make a Big Difference*. Little Brown 2000

Hastings, G (2007) *Social Marketing: Why should the devil get all the best tunes?* First edition Elsevier 2007

Kalla R (2010) Motivating drivers to slow down: Evaluation of a community-based intervention to enhance road safety, *Journal Of Prevention & Intervention In The Community*, Oct 38 (4), 306-15 2010

Kathmann T (2000) The use of active speed warning signs, *Proceedings of the Institution of Civil Engineers, Transportation*, 141, May 2000 67-77

Lee C, Lee S, Choi B, and Oh Y (1973) Effectiveness of Speed-Monitoring Displays in Speed Reduction in School Zones, *Transportation Research Record: Journal of the Transportation Research Board*, No. 1973, Transportation Research Board of the National Academies, Washington D.C., 2006, pp. 27–35."

Maroney, S and Dewar, R (1987) Alternatives to enforcement in modifying the speeding behavior of drivers, *Transportation Research Record* No. 1111, *Traffic Accident Analysis, Visibility Factors, and Motorist Information Needs*. pp.121-126

Marteau, T.M., Ashcroft, R.E. and Oliver, A. (2009). Using financial incentives to achieve healthy behaviour. *British Medical Journal* 338 (April), 1415.

Moore, G. 2002 *Crossing the Chasm: Marketing and Selling High-Tech Products to Mainstream Customers*; Harper Collins

Musselwhite, C., Avineri, E., Susilo, Y., Fulcher, E., Bhattachary, D. and Hunter, A. (2010) [Understanding public attitudes to road user safety: final report. Road safety research report no. 111.](#) Project Report. Department for Transport.

O'Connell, M. (2002) Social psychological principles: 'The group inside the person'. In Fuller, R. and Santos, J. A. (eds) (2002) *Human Factors for Highway Engineers*. Amsterdam: Pergamon. pp. 201–215

Ragnarsson R S and Bjorgvinsson T (1991) Effects of public posting on driving speed in Icelandic traffic, *Journal of Applied Behavior Analysis* 1991, 23, 54-58

Rogers, E., 1962, *Diffusion of Innovations*, NY: Free press of Glencoe

Silcock, D., Smith, K., Knox, D. and Beuret, K. (1999) *What Limits Speed? Factors that Affect how Fast We Drive*. Basingstoke: AA Foundation for Road Research

Walter L K and Knowles J (2008) Effectiveness of Speed Indicator Devices on reducing vehicle speeds in London, *Transport Research Laboratory PPR* 314

Wernsperger F and Sammer G (1995) Results of the scientific investigation accompanying the pilot trial of 30kph limit in side streets and 50kph limit in priority streets. 23rd European Transport Forum, PTRC, 1995, *Proceedings Seminar G, Traffic Management and Road Safety*