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Front Cover Image reproduced with kind permission of Andrew Aitchison:  
"Electric buses operated by Ashden Award winner, Nottingham City  
Council in the UK, 2017".

## EDITORIAL

We apologise for the late arrival of this issue. Excuses are rarely interesting for anyone other than the person making the excuse but we have been very busy dealing with securing funds for the continuation of the journal. At the end 2016 we ran out of funds but are delighted to announce that the Helen and William Mazer Foundation in the USA has agreed to fund us for one more year and we are delighted with and very grateful for that support. We are also very grateful to "Transportation Choices for Sustainable Communities Research and Policy Institute (TCSC)" in California for facilitating the Mazer grant and supporting us in the negotiations with that Foundation.

We recommend that our readers follow the work of TCSC which very closely matches the aims and objectives of the journal:

<http://transportchoice.org/>

The UK in May 2017 is in a state of great turmoil. The referendum decision last year to leave the European Union (so-called Brexit) has caused great confusion and alarm in the sustainable transport world. We rely on the European Union for its tenacity in setting demanding air quality and carbon reduction standards and taking member states to court for non-compliance with air quality thresholds. Brexit leaves us outside of that regulatory framework and recent events in the courts of the UK show that the UK government is content with breaches of air quality standards and has very little to offer by way of active intervention to improve air quality. This is alarming to say the least when the majority of air pollution is traffic-sourced and c50, 000 UK citizens die every year as

a result of poor air quality. 9,000 from this total are Londoners. Brexit makes us far less protected than we would be as an EU member state.

The air quality problem in 41 European countries is very serious indeed, currently responsible for 466,000 deaths pa as a result of PM 2.5 pollution and 71,000 deaths as a result of NOx pollution (EEA, 2016). Dealing with this problem requires a high level co-ordinated democratic response to deliver real public health gains and in countries like the UK the evidence is that national governments are more likely to worry about economic growth, inward investments and GDP than they are about a few tens of thousands of dead citizens. Sustainable transport delivers fundamental air quality improvements and we still have a long way to go before we have the kind of situation we find in Freiburg im Breisgau in southern Germany with 28% of all trips every day by bicycle and about 25% by car.

The lack of a serious, sustained programme of sustainable transport interventions kills citizens in the more traditional manner, sometimes referred to as "road pizza" in New York (i.e. being squashed by a vehicle weighing 1 tonne). Luckily the World Health Organisation is "on the case" At the time of writing we are in the United Nations/World Health Organisation global road safety week (8-14 May 2017):

<http://www.who.int/roadsafety/week/2017/en/>

The emphasis of this week is on reducing speed:



**SPEED**  
is at the core of the  
road traffic injury  
problem.

# MANAGING SPEED



includes measures that bring drivers to a safe speed, avoiding injuries and deaths. It also reduces air and noise pollution and saves fuel.

The subject of speed limits and more specifically the urgent need for a total, blanket, UK-wide legally binding 20mph/30kph speed limit on every residential road has been the subject of several editorials in this journal in recent years and it remains a remarkable confirmation of the UK's lack of an ethical stance on road safety and lack of a strong public health impetus that we still do not have this general 20mph speed limit. The linkages between speed limits that make it very difficult, if not impossible, for cars to kill pedestrians and cyclists and the need to massively increase rates of walking and cycling are very much ignored in the UK. Real progress with sustainable transport demands that we adopt the system-wide, total default limit of 20mph/30kph on every residential street. We need it now.

The bad news is that there are still areas like Shropshire (main town is Shrewsbury) where the local authority refuses to follow best practice on 20mph and is content with a higher probability of death for children and older people than we can achieve. This is unethical. Sadly this is also the view of the Police and Crime Commissioner for West Mercia. The diagram below shows that we can have a situation where 9 out of 10 people hit by a vehicle will survive but key decision makers in Shropshire are content with the much worse 5 out of 10 and 1 out of 10 survival rates

In this issue of WTPP we have a range of highly original contributions all of which shed new light on core issues in sustainable transport: Steve Ward on "Residential through traffic: quantitative evidence

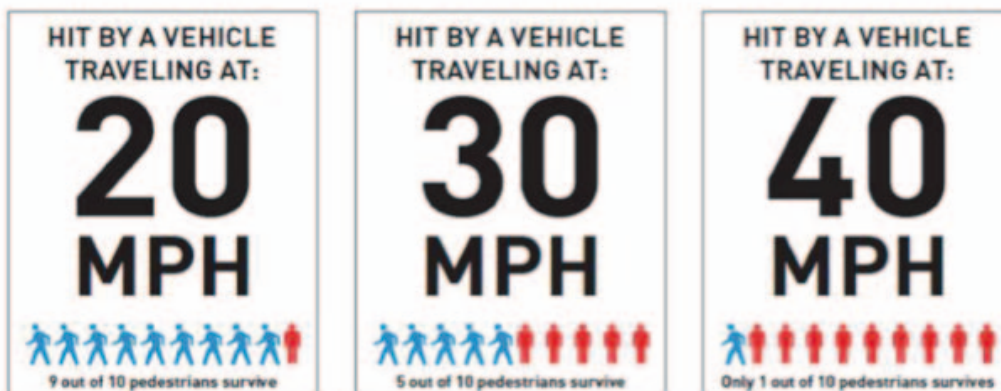


Image: Seattle Department of Transportation

The good news is that in England and Wales many local authorities responsible for road safety have introduced these wide-area 20mph speed limits and 15 million people now live with this high level of attention to ethics and public health.

from participant observation", Cameron Gordon on "Carbarism: civilising the automobile", Hartmut Topp on "Promenadenring in Leipzig - the Great Vision" and a report on the sustainable transport and clean air awards organised by the Ashden Trust in London.

Finally a request for help. The journal is now in its 23rd year of publication. Its original source of finance is no longer available and we have benefitted hugely from a 3 year financial lifeline from the Helen and William Mazer Foundation. This 3 year period will end in early 2018. At the moment and in spite of efforts to arrange alternative finance it very much looks like volume 23 will be the last volume of WTPP.

If you have any ideas at all about sources of finance for the continuation of this journal please contact the editor.

John Whitelegg  
Editor

**Reference:**

EEA (2016) Air Quality in Europe, EEA Report No 28/2016

<https://www.eea.europa.eu/publications/air-quality-in-europe-2016>

**Residential through traffic: quantitative evidence from participant observation**

*Steve Ward*

**Abstract:**

Concerns about the effects of traffic levels on the life of neighbourhoods are very common. This paper uses participant observation to show how one community was able to organise and administer traffic surveys to obtain quantitative evidence of their impact, discussing the advantages and limitations of this "do-it-yourself" approach. The role of through traffic and in particular its presence in residential one-way streets merits further research.

**Keywords:** traffic management, traffic surveys, environmental quality, car use, participant observation

**Promenadenring in Leipzig - the Great Vision**

*Hartmut Topp*

**Abstract:**

How can car-oriented cities be repaired to cities for people? One example is Leipzig with its Promenadenring, which represents a landscape park and a ring road around the city centre with a historical and cultural meaning going far beyond Leipzig. The road with up to 50.000 vehicles per day is a barrier between the city centre and the adjacent quarters. How can the conflict between landscape, city development and traffic be scaled down - through a reduced ring road with less traffic? Yes, that works; if the planning philosophy "demand follows supply" would be applied; that means to define for the special location a compatible supply of road infrastructure, to evaluate its impacts on traffic, and to compare them with the urban and scenic advantages. The 250 years old "Great Vision Promenadenring" gives orientation for its continuation: "Five Steps forward" are suggested which lead to a new edition of the Great Vision.

**Key Words:** traffic planning, city centre, landscape park, ring road, repairing car-oriented cities, planning philosophy "demand follows supply", cities for people

**Carbarism: Civilising the Automobile**

*Dr. Cameron Gordon*

**Abstract:**

Instead of a debate about whether the automobile is good or bad, this article will argue that it is more useful to carefully consider how the automobile should live in its natural environment in a way that is compatible with human development. We should, I will argue, now develop a framework to civilize the automobile. Civilization is probably harder to define in a positive sense than in a negative one; i.e. what goes against civilization is generally easier to agree upon that what advances it. Thus, I offer the concept of 'carbarism'. This is not meant to be a blanket epithet but a rubric for identifying social and economic applications of the automobile that could be said to be 'barbaric' in the sense of degrading human civilization, and hence to be avoided.

Technology is never neutral with respect to society. Its contribution to civilization can just as easily be negative as positive. Any technology should to be introduced into the wild (so to speak) in a way that ensures that civilization is advanced along with technical progress. The automobile thus far has been simultaneously social advancer and destroyer but it is not too late to begin to civilize the automobile. Some of this involves undoing, slowly, design and institutional mistakes of the past. Some of this involves progressing technological advancement of automobility in a way different from that of the past. But whatever moves may be made the advance of civilization in a broad sense and the avoidance of barbaric uses of the car (carbarism) should be kept front and centre.

**Keywords:** Automobility, automobiles, barbarism, carbarism, cars, car culture, civilization, humanism, planning, policy, technology



## **Residential through traffic: quantitative evidence from participant observation**

Steve Ward

### **Aims and Background**

This study uses participant observation to examine a community-designed approach to quantifying the nature of through traffic in a neighbourhood within the city of Bristol, UK.

Following a brief overview of the socio-political environment, this paper first seeks to understand the symbolism of through traffic for place-based communities, and how in a specific context a need arose to substantiate and quantify its assumed effects. Thirdly, some of the advantages and limitations of the DIY cordon survey method are discussed in assessing the impact on the suburban neighbourhood. In this context, potential solutions to through traffic through the use of "filter points" are discussed.

In 2016 a group of residents of the neighbourhood formed a campaign in response to perceived "rat running" on a specific street in north Bristol, i.e. traffic taking shortcuts through the residential area instead of using a longer route on main roads:

*As Dongola Road is used as a "rat-run" there are many instances of vehicles meeting partway down the road and unable to pass due to its narrowness and a shortage of available passing spaces (SAFER Roads, 2016a).*

Initially the group advocated this street be converted to one-way traffic in order to avoid these "face-off" confrontations; however following publicity through local newsletters, the campaign soon attracted interest from residents in neighbouring streets. It became clear to the group that a simple solution focused on one street would not be sufficient:

*The Bishopston and Ashley Down Traffic Campaign has developed out of the original Dongola Road "One-Way" campaign to put pressure on Bristol City Council (BCC) to conduct a survey*

*and residents' consultation to address traffic issues in the matrix of roads between encompassed by the junctions of Ashley Down and Gloucester Road (SAFER Roads, 2016b).*

### **The community perspectives**

#### *Socio-political context*

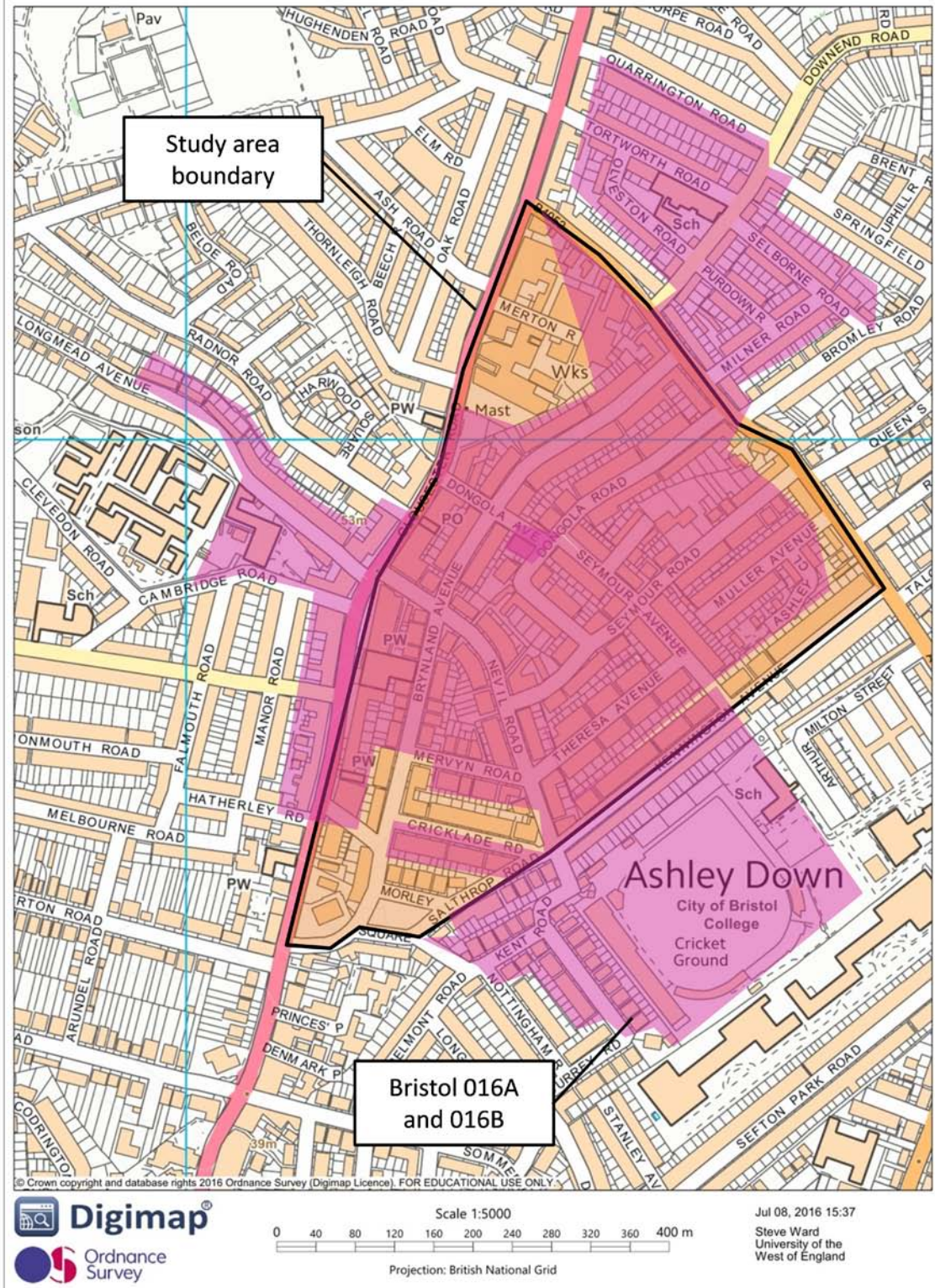
This study focuses on a small neighbourhood of streets within the suburb of Bishopston, an area in the city of Bristol in the South-west of England. Bristol's population is approaching 450,000 residents with a relatively prosperous economy including in advanced and low carbon technologies, aerospace, creative and media and higher education (Invest Bristol and Bath, 2016). The study location within Bristol is shown in Figure 2 (starred). This is also shown in more detail with the boundary of the area of interest shown in black and an area corresponding to two relevant sets of data from the 2011 census is shown shaded (Figure 1).

The study area is within the local government ward of Bishopston, a suburb of 12,431 people in north Bristol. The area is above the UK and Bristol means for proportions of working age people, educational and health indicators, car availability and household size (ONS, 2011); large mean household size is thought to be due to a large student population.

The two shaded areas in Figure 1 correspond to Lower Super Output Areas from the national census and offer a reasonable fit with the study area. In the 2011 census there were 1,183 households and 1,462 vehicles in this area, a ratio of 1.24 vehicles per household (Bristol mean=1.04; England mean=1.16). Population density was comparable with inner London suburbs (106 persons/ha<sup>2</sup>; Bristol=39.1; England=4.1).

Politically, the area elected local representatives from the Labour and Green parties in 2016. The area can be said to have an active community, with a large number of community groups and activities. Various issues have energised community engagement, such as local advocacy groups against supermarket expansion and other forms of perceived over-development.

## Bishopston study area



**Figure 1:** Study area and ONS census areas © Ordnance Survey

Nearby Gloucester Road is well known for its concentration of independent shops (Independent, 2004).

Bristol has historically leaned towards centre-left politics, with the Labour party's post-war majority in local politics punctuated by occasional successes for smaller

parties such as the centrist Liberal Democrats and more recently the Green Party, plus the election of an independent, progressive and liberal mayor in 2011.

Beyond party politics, there has been considerable discussion regarding the functions and fitness of the city's transport



systems (Bristol Post, 2016 a; Key, 2015). This is in the context of long-standing debates regarding the perceived lack of ability to move goods and people quickly and effectively (Bristol Post, 2015a), and whilst debates between the “rights” of the motorist versus the need for a liveable environment are hardly unusual, some of the policy responses have been more innovative in a UK context; for example, the former Mayor’s initiatives to “Make Sundays Special” by “freeing city centre streets of traffic once a month, allowing people to enjoy street markets, entertainment, games and sporting activities and attracting many more visitors” (Bristol City Council, 2012). Such instruments are well established in other European cities (Ville de Bordeaux, 2016; Stadt Hannover, 2016), however recent interventions such as residents parking schemes, reduced urban speed limits and pro-cycling policies can be seen as partial successes only. The “shocks” experienced following introduction of such policies within a short timeframe, in comparison with the years spent gradually constructing a progressive consensus on transport policies in other European cities, may have contributed to

the independent Mayor’s failure to secure a second term in the 2016 election.

Parking issues have been a theme of many of these campaigns, and there is some evidence that parking issues have been exacerbated by the introduction of Residents’ Parking Zones, restricting parking in neighbouring areas (Bristol Post, 2016 b). In an economy sustained by rising house prices, the affect heuristic of the buyer may be the bellwether judgement on the desirability of high levels of traffic, a perspective supported by the observed effect on property values following its removal (Ossokina & Verweij, 2015).

*Issues underpinning the advocacy group*  
 Rat-running, vehicle speeds and volumes and narrowness or otherwise unsuitability of roads for general traffic were all identified by the group as issues requiring action. Whilst several studies relating to through traffic have focused on the economic and quality of life metrics of city centres (Fisch, 1975; Blunt, 2004), there is little in the academic literature pertaining to its effects on suburban residential areas. A policy differential frequently exists between



**Figure 2:** Location of study area in Bristol

local and regional government priorities in balancing quality of life with mobility (De Borger & Proost, 2013) but such conflicts may be less important for city centres, assuming that their residents have not opted for the quiet life. Therefore, it seems important to consider these negative effects on communities which are more strongly grounded in place.

A variety of factors could be encouraging "rat runs", from the ubiquity of Sat-nav systems encouraging drivers to take shortcuts (De Baets, et al., 2014) to increasing congestion levels on neighbouring arterial routes and junctions. Significant housing "intensification" has occurred within and adjacent to the study area and Melia (2016, p. 107) has argued that while urban intensification is linked to reduced propensity to drive, it can also result in increased traffic density due to there being a higher density of car owners in an area. The group's original suggestion of converting streets in the area to one-way traffic was related to the experiences and frustrations, anecdotal or vicarious, of "face-offs" – where vehicles meet each other on a road which is narrow (or narrowed due to parked cars). There was some debate within the group about the merits of this, however, raising fears that this would encourage greater traffic speeds and volumes. While Riggs and Gilderbloom (2015) found evidence of increased traffic flow following conversion to two-way, several other ancillary benefits were noted, although this was for wide boulevards. Meng and Thu (2004) also noted improved traffic flow for one-way streets, but hypothesised that effects on pedestrians wishing to cross the road would be negative. Wazana et al (2000) found a statistically significant higher child injury rates on one-way compared with two-way streets.

The group also expressed interest in physical measures that could restrict the movement of through vehicular traffic, i.e. filtered permeability. Filtered permeability (Melia, 2012) can be considered a progressive development of Buchanan's concept of traffic cells (or sometimes, "environmental cells"); which have been accused of "breaking the city into cells...surrounded by central 'arteries' like islands in an fragment urban sea...residents' direct

contract and involvement with one another, which in the past came about through movements on foot, will be severely disturbed" (Holzapfel, 2015, p. 54). In contrast, filtered permeability seeks to filter out through traffic using calming measures or closing roads to motorised traffic, together with securing a fine grain walking and cycling network. However, neither approach seeks explicitly to remove car access for non-through traffic, which as we shall see is likely to constitute the majority of vehicle movements in residential areas.

#### *Ownership of spaces and places*

Filtered permeability can define the boundaries of traffic cells, thus creating attractive walk and cycle friendly enclaves; however motorised mobility modes can be displaced, or even concentrated, elsewhere, resulting in "non-places" which are "surrendered to solitary individuality, to the fleeting, the temporary and ephemeral". With increasing mobility, non-places gradually supplant places and so residences are diminished by those in transit; travellers become drivers and passengers; and crossroads become interchanges (Augé, 1995). In non-places, the chances of place-based social interaction is diminished. Elaborating further on the concept, Freudendal Pedersen (2009) employ's Shane's (2005) description of armatures and enclaves as spaces devoted to flows and their centring devices respectively, to describe a tendency for individuals to live increasingly in enclaves, whereby the car then acts as "an enclave in the middle of armatures...a cocoon using non-spaces. It is in these cocoons that social interaction takes place". Freedom to create one's own social spaces within the cocoon risks "a contradictory relationship with community". However, in responding to this threat, the non-mobile community, created in "anthropological place" (Augé, 1995) "has a number of different options in which the emergence of a strong 'we' can be created... if one, in addition, has a common project, a goal for the future which is dependent on the other group members' effort to succeed, it helps tremendously. And if one furthermore can plead a common enemy... then everything is laid out for a strong and solidarity we-feeling" (Freudendal-Pedersen, 2009, p. 85).

Thus the place-based community may seek to portray those who engage in anti-social driving behaviour as outsiders; for a community whose identity is linked to a particular place, the 'out group' must physically belong outside the area:

*"Of course, we all do it [rat-running], I know I do when I'm driving around Bristol, that's not the point. But the problems come when people are driving through and they don't belong to the area, they don't feel invested in it" (SAFER Roads, 2016c).*

*In Bristol, with its strong undercurrent of independent thinking, "imposed" solutions such as residents parking schemes are met with scepticism if not hostility, although positive views may emerge once they are in place (Bristol Post, 2014; 2015b).*

### **Why participant observation?**

The origin of this study came about through contact between the author and the SAFER Roads campaign. The advocacy group had sought out individuals with knowledge of traffic issues and how to quantify them within the local community. For this group, the co-design of survey methods was an attempt to obtain objective, quantifiable evidence to submit to local authority officers. This developed into the concept of a "study within a study", looking not only at the outcomes of the quantitative methods but how the community helped design these processes.

Therefore from the very start, the author was engaged in the dual role of participant and observer, "reacting to and interacting with others in the events and situations that unfold" (Dewalt & Dewalt, 2002, p. 17). This involves neither pure observation (objective gaze) nor pure participation ("going native") but a necessary blend of both.

Whilst use of participant-observation in the field of transport and mobility is not unknown (Rogalsky, 2010) these generally involve the informants being the subject, rather than co-creators, of the methods yielding quantitative data. For the purposes of this study the survey can be seen as insights into how a community advocacy

group shapes itself around the task of obtaining such data and employing it effectively.

### **The "DIY" survey method and its challenges**

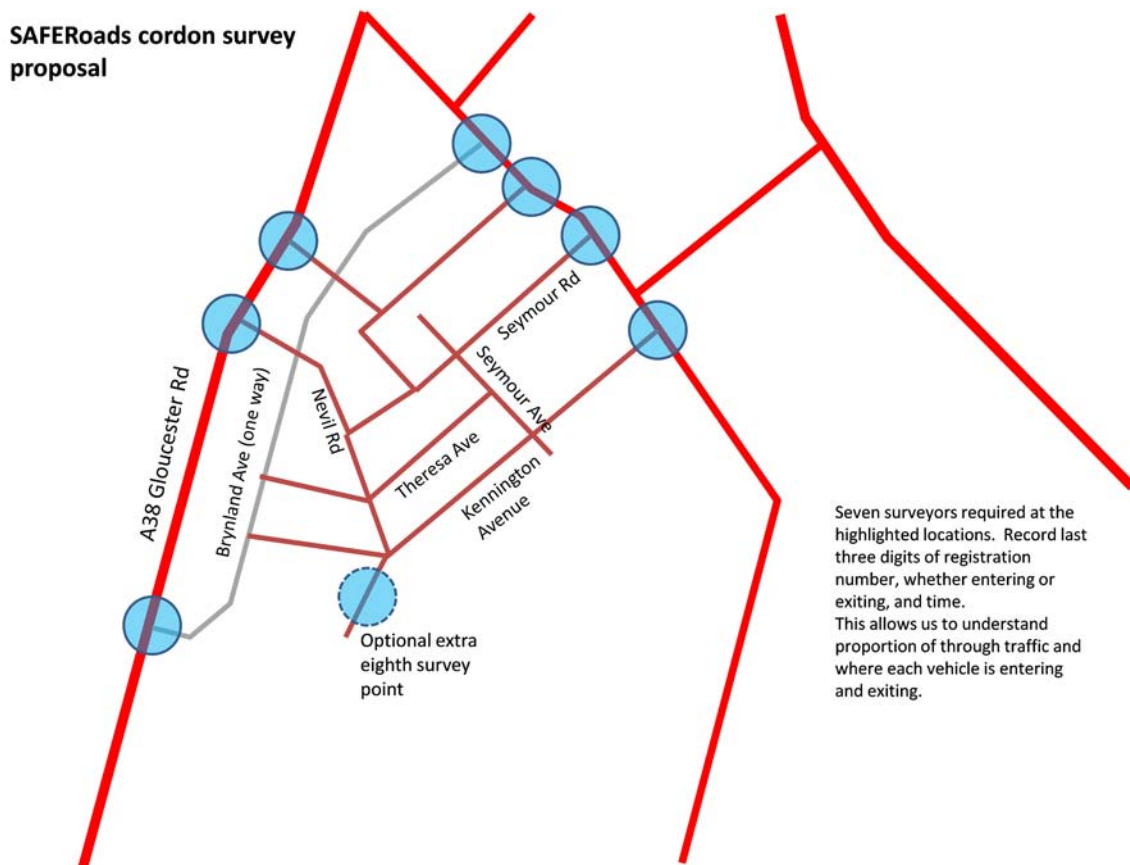
One of the key issues facing the group was: how can a group of willing volunteers build evidence on the effects of through traffic with no budget and limited expertise? With contribution from the author, the group decided to design a programme of data collection from cordon surveys. The former are often designed to provide origin-destination pairs (through selective roadside interviews) or make use of Automatic Number plate Recognition (ANPR) cameras at fixed points to determine vehicle flows.

While cordon counts are useful in obtaining objective evidence, residents' concerns on issues such as vehicle speeds and "through traffic" in urban areas are more likely to be accurately gauged through face-to-face surveys (Hine, 1996).

Without the resources to employ expensive survey methods, the group engaged its informal membership through Facebook to survey vehicle movements at all nine key junctions forming the boundary of the study area during the summer of 2016 (2016b, Figure 3). Surveyors were to record all vehicles entering and exiting the area for a one hour period, which were a mixture of morning peak (8-9am), evening peak (5-6pm) and weekends (12-1pm Saturdays). This was done by recording the three alphabetical characters on car registrations (which are generally sufficient to uniquely identify a vehicle in the UK); whether the movement was an entry (N) or exit (X) from the area; and the time of day. Thus vehicles travelling through the area without stopping could be identified by an entry followed an exit at a different location within a short period.

Despite the surveyors' enthusiasm for the task these individuals were unpaid and untrained, and consequently the survey process became a learning exercise for the group. Initial surveys were invalidated due to individuals not turning up or in one case attending to a minor road traffic ac-





**Figure 3:** Study area and cordon survey locations

cident during the survey period. Surveyors sometimes were unable to record all movements when vehicle flows were heavy. Partial losses of data through events like these were deemed to have invalidated the survey at the time of their occurrence, at least for the purposes of determining proportions of through traffic.

Learning from this, the group developed a more disciplined approach through comprehensive guidance and checklists to ensure the surveys were completed successfully. One or more “floaters” were considered necessary to act as coordinators on the day and to ensure that all survey points were covered (including in the event of any participants not turning up). Learning as a result of such issues is evident in a sample of the email communications shared by the group in Appendix 1.

Analysis of the data by the author also enabled calculation of mean vehicle speeds across the area. Whilst it was assumed that these times were accurate across different cordon points thanks to the requirement that surveyors “synchronise watches” we can expect that the time for vehicles to

travel through the area is accurate only to the minute. Nonetheless it was hoped that for a large sample size, valid statistical tests could be performed to calculate mean speeds for each O-D pair surveyed.

### Survey results – through traffic

Despite the initial difficulties, over 4½ hours of valid survey data were obtained, consisting of simultaneous entry/exit data recording at all nine survey locations. On several occasions one or more locations were unable to record and this imperfect data was removed for the duration of the interruption from all other survey points. In total, 4,147 vehicle movements were recorded. Analysis of the data indicated that 783 vehicles (19%) were “through traffic”, defined as those entering and exiting the area within four minutes during the survey period.

#### Vehicle speeds

As previously discussed, a significant limitation of the method when applied to calculating speeds of through traffic is that entry and exit times were recorded in discrete one minute intervals, ie accurate to



half a minute. Hence assuming all surveyors followed the instruction to synchronise watches (to Internet time), up to 59 seconds error could be added or subtracted to the time taken for a given vehicle to travel the link. At the extremes, for the shortest link within the survey area (138m) a vehicle travelling at a nominal speed of 2ms<sup>-1</sup> taking 69 seconds could theoretically be recorded as taking 9.5s or 128.5s. The generalised formula describing the minimum and maximum speed V calculated by two surveyors located distance D apart over time T is:

$$V_{min} = \frac{D}{T} + 59; V_{max} = \frac{D}{T} - 59$$

This limitation in recording accurate times could of course be overcome through use of automated recording methods, and whilst resource limitations meant these were not readily available to this study, one possibility for future "do-it-yourself" surveys could be to use video recording at each cordon location.

Actual survey data across all survey days is plotted in Figure 4, indicating calculated mean speeds. A number of linear relationships are shown, corresponding to the discrete one minute recording intervals,

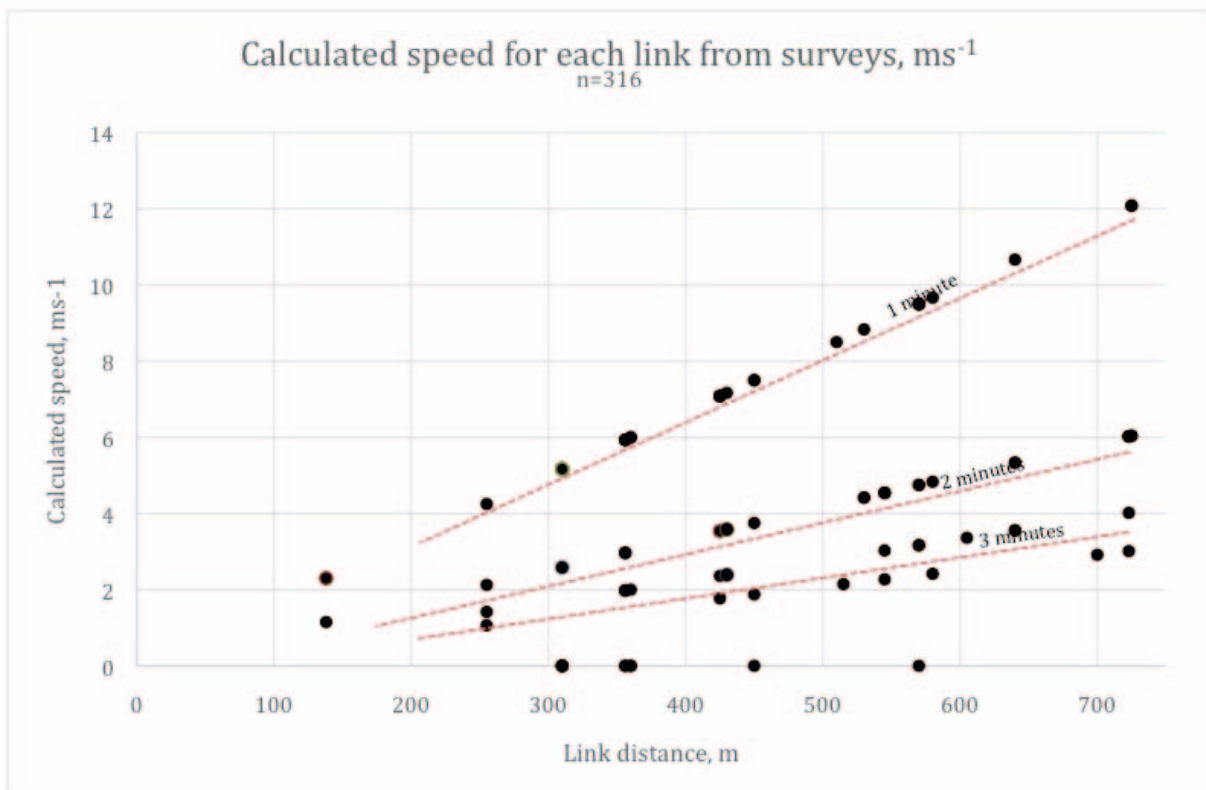
clearly highlighting the errors inherent in this method.

The mean speed calculated across the area is  $4.59 \pm 0.31 \text{ ms}^{-1}$  ( $s=2.77, \alpha=0.05$ ).

It is noteworthy that the most heavily trafficked link in the area is also the only one-way street, where a priori we would expect the lack of oncoming traffic for individual vehicles could result in more consistent and possibly higher vehicle speeds. Due to the limitations of the data, no differences could be demonstrated for vehicle speeds on one-way versus two-way streets in this study.

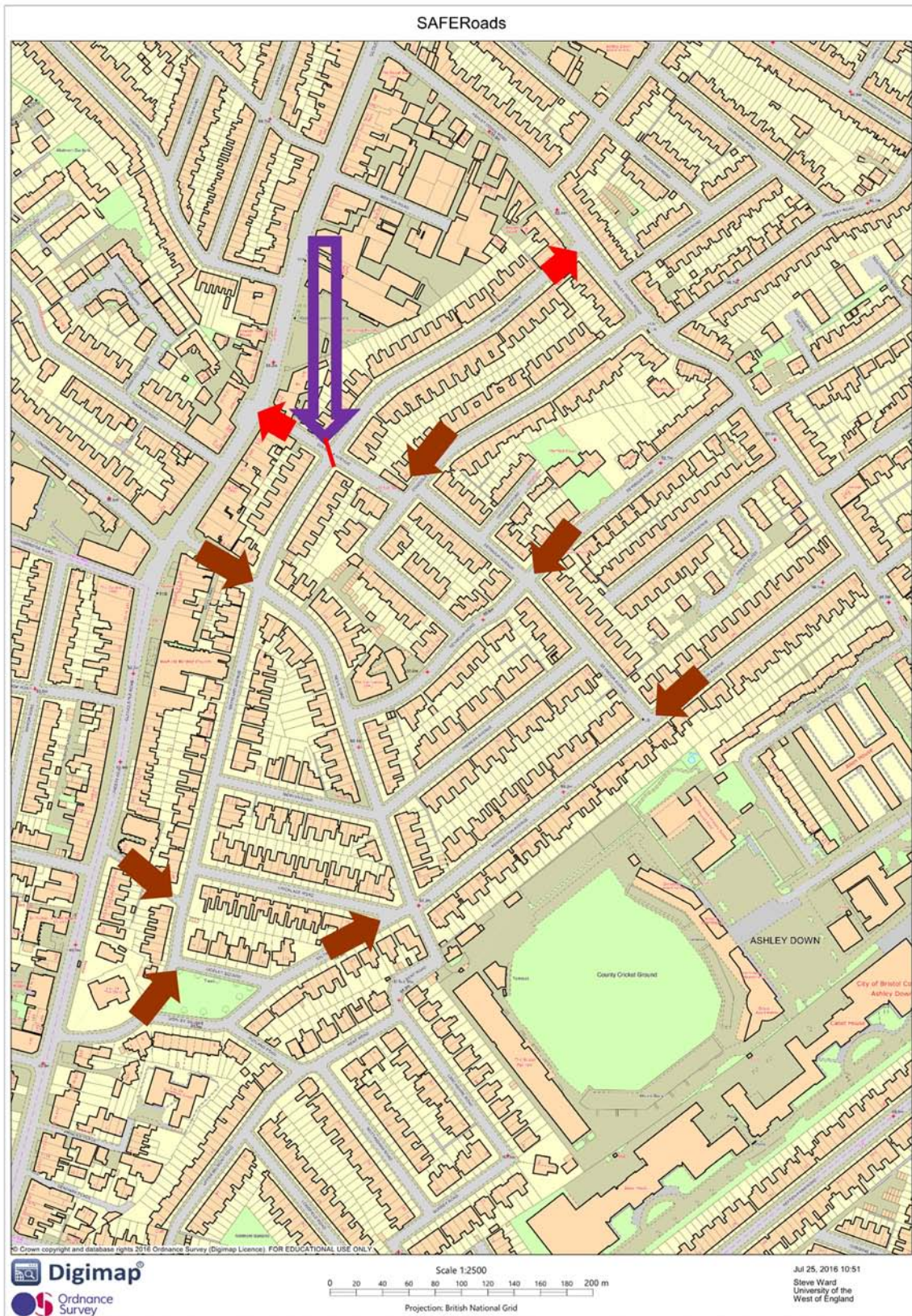
*Community response to empirical results*  
Following the analysis of the survey data, the advocacy group met to discuss how it could use the data to achieve its objectives. 19% of vehicles observed in the surveys were using the area as a "rat run" and so the group was keen to look at management proposals that could reduce this traffic.

At the time of writing, one option being considered is to introduce a series of 'filter points' close to the survey locations shown in Figure 3 that would restrict movement



**Figure 4:** Calculated link speeds and linear relationships with discrete recorded time intervals





**Figure 5:** proposed filter points (arrow direction indicates mandatory direction of vehicles)

to one-way at those points (Figure 5). As an alternative to introducing one-way systems these filter points act to reduce the ability of traffic to 'cut across' the area between the major roads to the north-east and the west since vehicles are inhibited from entering from one major road and

exiting to the other. The small red line cutting across a crossroads (highlighted by a larger arrow) prevents straight-on movements at this junction, which is on the link which experienced the highest proportion of through traffic flows (32 vehs/hr). An example of a similar arrangement on a





**Figure 6:** filtering of vehicular traffic to prevent straight-on traffic movements, Sheffield.  
© Google Maps

residential street in Sheffield, UK is shown in Figure 6. Whilst this scheme restricts the number of exit points from the area to just two, analysis survey data indicates that these exit points would experience a reduction in hourly am peak flows due to the restrictions on through traffic. This does not take into account any potential demand-suppression effects on trips originating from within the area resulting from the filter restrictions.

Assuming the group does agree on a solution, many questions remain unanswered about how any neighbourhood-wide treatment could be afforded. At an informal meeting of the group in July 2016 a representative from the local "neighbourhood partnership" which includes a remit to decide priorities on local traffic issues, highlighted the local authority's proposal for dealing with similar issues of rat-running and face-offs on a street just outside the SAFERoads study area. The local authority's two alternative proposals were to introduce signage and markings encouraging cautious driving, or to convert the street to one-way. Costs to the local authority are understood to be approximately £5,000 to design the proposals and £20-30,000 to implement. Where public funds are limited, the costs of such top-down approaches contrast sharply with SAFERoads DIY methods, from survey through solution design to possible implementation.

## Discussion

The planning and execution of area-wide qualitative traffic surveys are challenging activities for local residents to undertake, but if managed successfully can provide motivation and overcome financial and bureaucratic obstacles often present when residents interact with traffic authorities. Whilst momentum has been building for some time for early citizen participation and engagement in sustainable transport planning, citizen engagement on the most local issues rarely reaches the top rungs of Arnstein's "ladder" of participation (Lindennau & Böhler-Baedeker, 2014).

The cordon surveys undertaken by the citizen advocacy group in this study can be seen as successful in quantifying levels of through traffic. Lessons were learned that could prove helpful to other citizen groups in determining vehicle speeds through an area, which this study failed to quantify.

Participation in the survey process can be seen as a form of empowerment for the citizen group and to that extent may have motivated and encouraged further engagement. These shared experiences could also contribute to the socially constructed 'we' feeling of belonging to a place-based community, with survey participants standing at the area boundary symbolically acting as a human equivalent of gateway treatments.

The participant-observer approach enabled the co-design of these new approach-

es to survey methods, whilst allowing close observation of the group's approaches to design, execution and interpretation of the surveys in contributing to the citizen group's aims.

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## Appendix 1 – briefing correspondence and guidance for cordon surveys

From: xxxxxxxxx<sup>1</sup>  
Sent: 07 July 2016 10:38  
To: Sue; Richard; Steve Ward; jon; Tony; Steve; richard; Jodie; Jo; Mick; Jo  
Subject: CORDON SURVEY SCHEDULE Thurs pm  
Attachments: Cordon Survey Brief Jun-Jul.pdf

Hi all,

As there seemed to have been some miscommunication yesterday, so just in case, I'm re-sending this.

Please email or text me to confirm you're OK for this afternoon

Just a few pointers:

- text Steve in the 15m prior to start
  - leave your phone on (and answer it)... inform Steve of any problems
  - monitor until 4 MINUTES PAST the end time (this will trap cars 'in the system')
  - record any 'face-offs' between oncoming vehicles (I just bracket the reg nos and annotate with "FO")
  - do 5 bar gates of cyclists (and note any on the pavement)
  - drop sheets off at xxxxxxx: Mick B will be inputting data
- Further help always welcome, especially

<sup>1</sup> Personal details redacted

for the busy Nevil Rd, Kennington and Dongola Av junctions (Nos 1/2/3)

I've allocated Jo to No9 so Steve Ward can act as liaison and float to fill any gaps.

THURSDAY 7/7: 1730-1834

- 1 Tony C
- 2 Sue P
- 3 Jon R
- 4 Richard S
- 5 Neil W
- 6 Richard O
- 7 Steve S
- 8 Jo H
- 9 Jo S

So, let's hope for dry weather :-)

Neil

## CORDON SURVEY BRIEFING Surveys June/July 2016

What is the purpose of the survey?  
Steve Ward (UWE Traffic Researcher) suggested that we do a cordon survey as this helps measure traffic flowing into and through the area. This is the sort of hard data that BCC are asking for (if we do it will force the issue rather than waiting for BCC to get funding).

How does it work?

Data collectors (that's you) are stationed at main junction into the area (see 1-8 on map below). Over an agreed hour they note:

- The last 3 digits/letter of any vehicle's registration number (if a foreign reg all of it)
- Whether the vehicle was travelling INTO or OUT OFF the area
- The time of the observation
- DON'T record motorbikes, bicycles or the now ubiquitous scooters

The results are then handed in and centrally collated to identify traffic flows.

Are we monitoring speed?

No, but if anyone is clearly going well over c25mph put an \* (asterisk) by it on the sheet.



Where do you position yourself?

I will let you know your designated location prior to the day (if this isn't convenient let me know)

Once there, locate yourself anywhere that is SAFE but with a clear view of incoming and outgoing traffic. This needn't be at the actual road junction as long as there are no side roads between you and the main road.

How do you record the information?

Steve has provided a form for us to use (see attached: I will have them on the day).

As an alternative, if you have a mobile phone which records the date/time of photos, you could use this and then transfer the data onto the sheet later: this may be useful if there's a build up of traffic and you can't easily keep up.... BUT BEWARE that some drivers may see this as an aggressive act, so be discrete.

What happens if there is too much traffic for you to keep up?

You may be by yourself or might have another person with you. If there are two of you you may find it useful for one of you to "spot" and the other to "record". Alternatively you may wish to have one person monitoring incoming and the other outgoing traffic.

Either way, DON'T PANIC... make full records if you can but if it's not possible, then just note the number of vehicles entering/leaving and the time (past surveys suggest c60/70 per hour).

Otherwise, as noted above, using a phone to photograph vehicles may help.

What happens if a driver asks you what you're doing?

Simply explain what we're doing and that the data will only be used for this survey.

- If they ask you to remove their registration number DO SO (but still record the vehicle).
- Clearly, we want to avoid any trouble, so if anyone becomes abusive or aggressive then apologise, walk away

and call me.

What happens if it's bad weather?

If it's too bad at the start of the session, we'll cancel and try to re-schedule. If the weather turns bad during the survey we'll have to abandon it... BUT, please don't do so without calling me.

... and don't forget to dress for a British summer (with waterproofs just in case)

ANY OTHER QUESTION... EMAIL OR CALL ME ON THE DAY

On the day there will be a named co-ordinator

If you have any questions, need sheets etc, please contact them

Allow enough time for you to get to your position before the start of the survey

Send a SMS/call the co-ordinator 15m prior to the start to confirm you will be participating

After the survey drop your sheets in to the co-ordinator

CHECKLIST

Things on and for the day:

- Recording sheets: print off attached or collect from me
- Pens or pencils
- Clipboard (a sheet of hardboard/ply/stiff card plus a bulldog clip will do)
- Watch/phone with correct time (we must all start and finish "on the dot")
- Mobile phone to liaise (keep it on)
- Suitable clothing: assume the worst!
- Refreshments (in case you get peckish)
- Folding seat or stool (an hour standing around is quite tiring)

RECORDING SHEET

Date: Time: Location:

CODES:

eNtering: use N or eXiting use X

Time (hhmm)

Reg (last 3 digits)

Time	Reg.	N/X
e.g. 0835	WRD	X

50 rows per sheet

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## Promenadenring in Leipzig - the Great Vision<sup>1</sup>

Hartmut Topp

What is the essence of a livable city? First of all, its people and a human scale - as Jan Gehl (2010) taught and showed us in his projects worldwide. Additionally, and what people enjoy, are frequented public spaces, green parks and water in the city. All these amenities are threatened by too much car traffic and by one-sided car-oriented traffic planning approaches. That happened in many cities and raises the question how car-oriented cities could be repaired and humanized again as cities for people.

One example is Leipzig with its Promenadenring, which represents two elements important for the whole city: (1) an urban landscape park around the city centre (Figure 01) and (2) a highly traffic loaded ring road (Figure 02) with up to eight car lanes plus four tram tracks; a third aspect are significant buildings along the ring: from Neues Rathaus over Thomas Church, Höfe am Brühl, Main Railway Station, Opera House, New Augusteum, Gewandhaus to the City-Tower (Dietrich, 2015).

The origin of the almost 250 years old Promenadenring goes back - like in other cities as well - to the demolishing of the fortifications; the Great Vision in those



**Figure 1:** City centre with Promenadenring as landscape park (City of Leipzig)

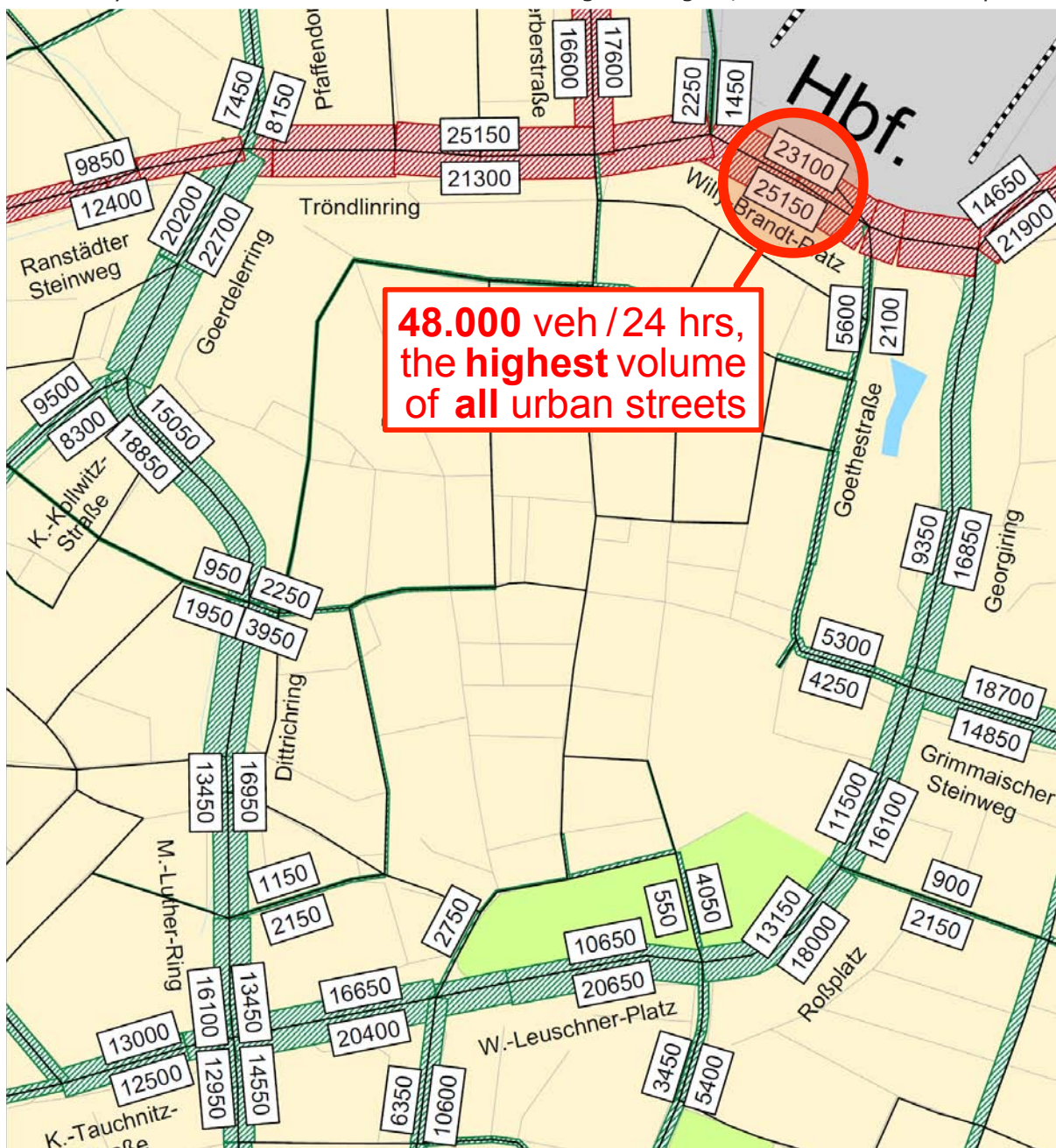
1 - after my talk at the International Summer School Sustainable Mobility - Made in Leipzig in August 2016. Thanks to Torben Heinemann for his support.



days was to create a wide green promenade around the whole city, which survived until today as the oldest communal landscape park of Germany. Later and up to 1943 a basically two-lane ring road existed with roundabouts on both sides of the Main Railway Station and a tram line around the city centre. The - for an inner city - totally overdrawn transport function (Figures 02 and 06 left) was added only in the 1960ies using the war destructions. The dimension of the street was understood as a representative urban trade mark of the already in the 1920ies - and in the 1960ies again - discussed "Ring-City" (Reuther, 2000). A witness of the car-oriented city was until 2004 a mon-

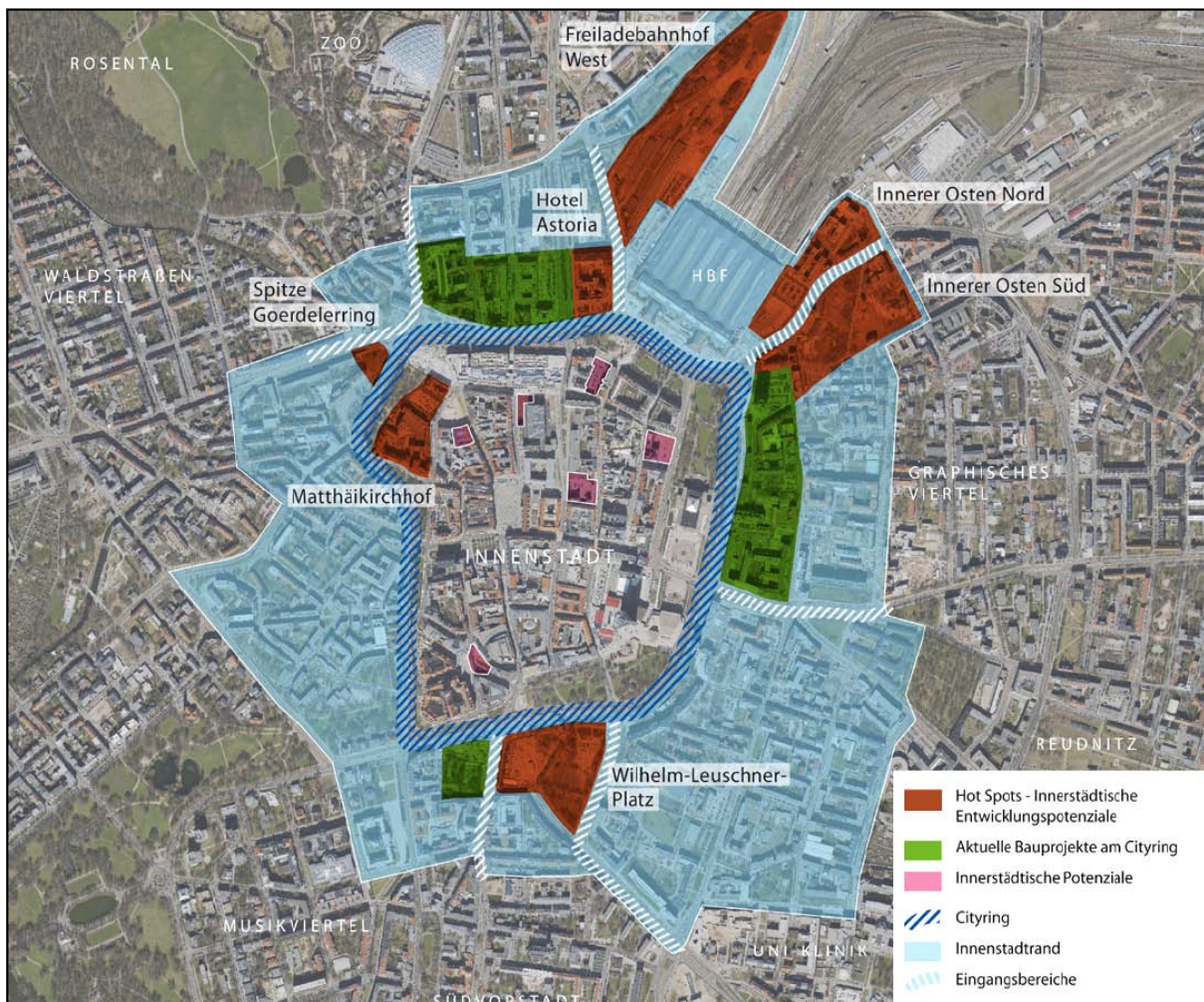
pedestrian bridge at the north-west corner, where the ring road still has eight carlanes (Figure 06 left) and an almost 60 m long pedestrian crossing.

The city centre of Leipzig is - for instance compared with Frankfurt (ca 160 ha) or Nuremberg (ca 150 ha) - small with only about 60 ha within the Promenadenring with extensions of 800 to 900 m and short walking distances; the perimeter of the ring road is 3.6 km. That again and again generates considerations to extend the city centre across the ring road as it was conceived already with the Ring-City. "Jumping over the ring" will soon be on the agenda again, since now - after passed



**Figure 2:** Traffic volumes (veh per day) on the city Ring Road (City of Leipzig)





**Figure 3:** "Jump over the City-Ring", workshop of koopstadt 2014 in Leipzig

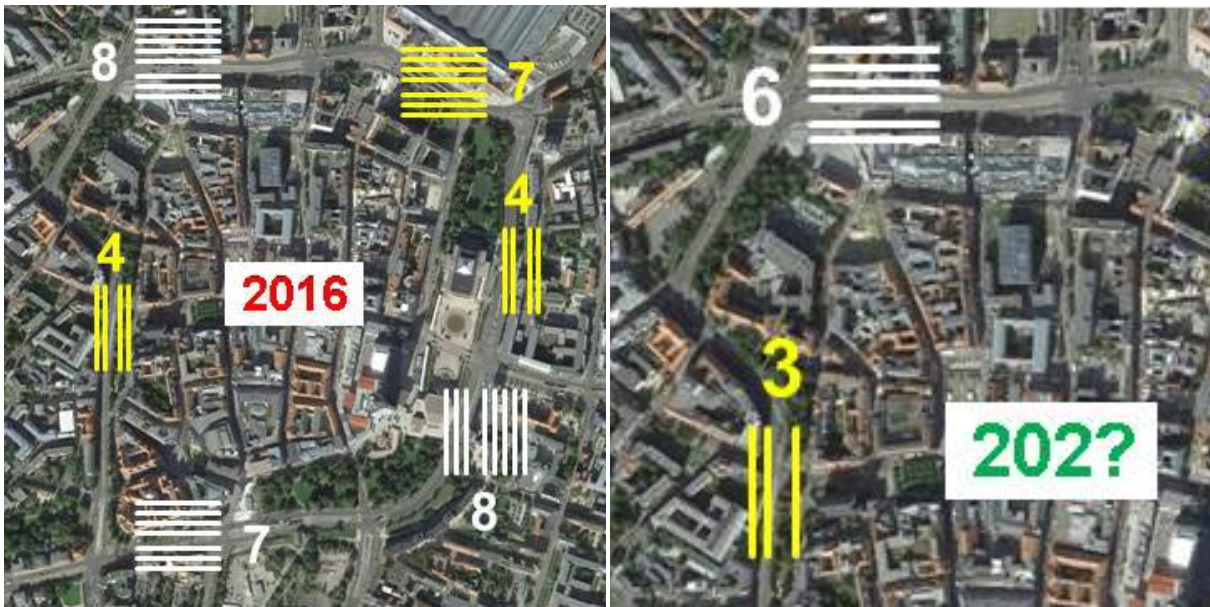
population losses - the city is growing fast (City of Leipzig, 2016). The jump (Figure 03), safe and comfortable crossings for pedestrians and cyclists and the Ring as an attractive address were the topics of a workshop (koopstadt, 2014). However, between the city centre and the adjacent quarters lies the car-oriented ring road as a strong psy- chological and physical barrier. In front of the main railway station the City-Ring car-ries almost 50,000 vehicles per day (Figure 02); that is the highest traffic volume of all urban streets within Leipzig resulting in a pedestrian crossing of almost 60 m length.

The Promenadenring has a historical, cul- tural, scenic, urban, architectural and final- ly also political meaning going far beyond Leipzig. Here, in autumn 1989 the Monday Demonstrations took place which finally led to the collapse of the East German re- gime. These meanings on very different levels and the identification value for the city, the Great Vision, are standing in contrast to the car-oriented city ring road with

its - for an inner city - exorbitantly high traffic volumes forming a barrier between the city centre and the adjacent quarters. Can the City solve this conflict (Figure 04) through a reduced ring road with less traf- fic?

The previously asked question can be an- swered in two different ways: (1) The city ring road has "an important distributor function, which necessitates the perpetu- ation of the arterial street character particularly because these traffic flows seem hardly to be shifted or rather reduced" (Gerlach, 2013), or (2) because of the meaning of the Promenadenring, the traf- fic function of the ring road has to stand back against urban shape and landscape. The two answers represent contrarian planning philosophies (Figure 05) of which in case of the Promenadenring and its un- doubted greatness the philosophy "de- mand follows supply" obviously has to get priority. That means to de- fine for the special location of landscape and city a rea- sonable and compatible sup- ply of road in-





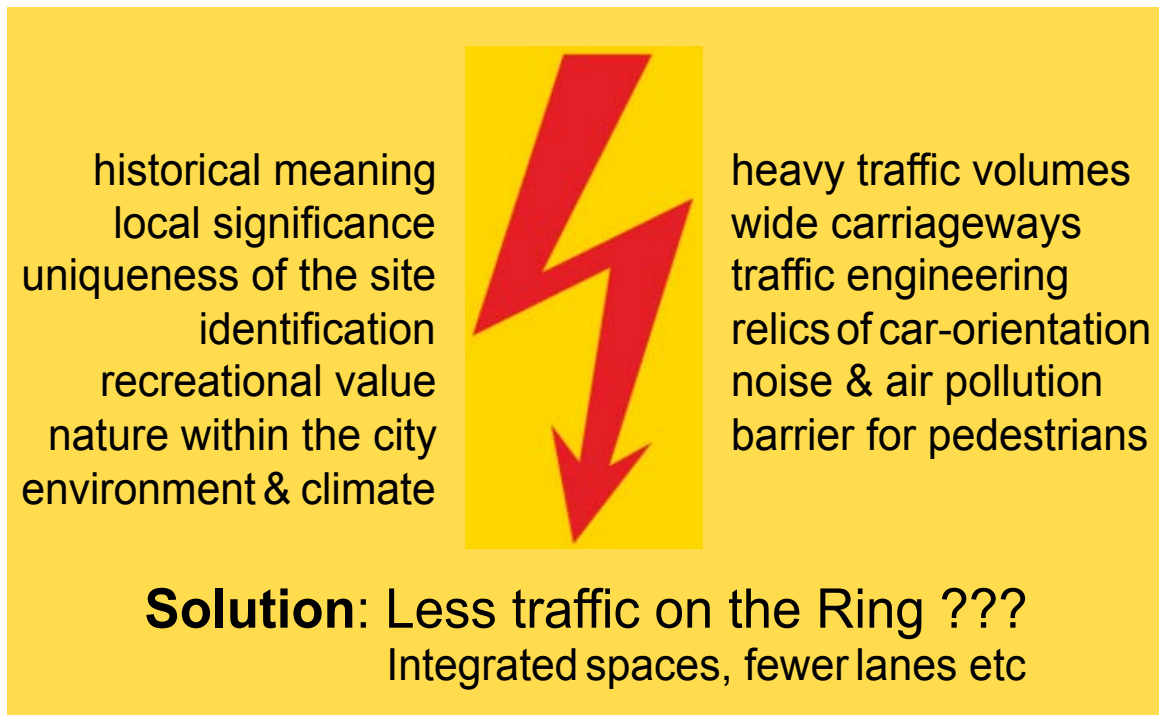
**Figure 4:** Conflict between the Great Vision and parts of reality (own schema)

infrastructure, to determine and evaluate its impacts on traffic and to compare them with the urban and scenic advantages on side. That is, so to say, the re-versal of the traditional approach of traffic planning to determine demand and to adjust the infrastructure accordingly.

In case of the Promenadenring „demand follows supply“ means to define a city compatible width of the carriageway of the ring road by the number of car-lanes (Figure 06 right) and then to check how

the traffic expected in the time horizon of 2025 to 2030 reacts. The moderate reduction of the number of car-lanes shown in figure 06 is one possible approach.

Where does the traffic remain, when the capacity of a street will be reduced? To cover this question we have experience and many answers: an old example is the Zeil, an important street in Frankfurt, with originally 35,000 vehicles per day; after its change to a pedestrian street contrarily to dramatic forecasts not even half of the



**Figure 5:** Two contrarian philosophies of traffic planning (own schema)





**Figure 6:** Number of car-lanes on the city ring road today & tomorrow (plus tram) - .....white: at junctions, yellow: out of junctions (own schema)

traffic was found on adjacent streets, as for instance on the Bleichstraße. This also else-where observed phenomenon is recognized by the transportation profession as "Zeil-Bleichstraßen-Effect". Parts of the car traffic shift to different modes, spread

out spaciouly within the road network or choose different destinations or different times of the day (Figure 07).

In case of Leipzig's city ring road, there is the S-Bahn (metropolitan train) with its

**What transport planners usually do:**

- they count traffic & predict future demand
- they adjust the infrastructure accordantly
- That means: **Supply follows demand**

**What in special situations\* is needed:**

- special values restrict the infrastructure
- what happens with traffic & accessibility?
- That means: **Demand follows supply**

\* like Promenadenring

**Figure 7:** Where does the traffic remain, when the capacity of a street is reduced? (own schema)

## Where does the traffic remain? when the capacity of a street is reduced

- stays on the reduced street
- uses adjacent streets
- spreads out spaciouly
- switches to public transport
- shifts to walking and biking
- changes to different times
- chooses different destinations
- does not move at all

**Figure 8:** City Ring Road and Tangenten-Viereck - tangent square (City of Leipzig)

new stations Markt and Leuschnerplatz as an attractive alternative for traffic to the city centre and the Tangenten-Viereck (tangent square - Figure 08) for traffic driving past the city centre.

In the fast growing city of Leipzig it is reasonable to argue that a bigger population generates more traffic. However, that does not necessarily mean more car traffic, especially not in the inner city. The City is aiming to reduce the share of the car on total traffic in favour of the mobility association of public transport, biking and walking. That happens already since 2003 with then 44 percent share of the car up to 2015 with 39.7 percent (City of Leipzig, 2016). The target of the City for environmental quality in 2025 is a ratio of 30 to 70 between car traffic and the mobility as-

sociation (City of Leipzig, 2015). According to experience it can be assumed that the modal shift from the car towards the mobility association is higher in the inner city than in the periphery. Concluded that means: Leipzig is growing, but car traffic is not growing and in the inner city the planning philosophy of "demand follows supply" (Figure 05) is to be applied.

The 250 years old „Great Vision Promenadenring“ gives orientation for its continuation: „Five Steps forward“ (Figure 09) are suggested, which have to be concretized and deepened to finally lead to a new edition of the Great Vision.

- Step 1: **Transport study** to check the effects of a reduced Ring Road and 30 kph within the Tangenten-Viereck
- Step 2: **Evaluation** of new chances for the Promenadenring & the whole center
- Step 3: Political **debate** and **participation** of citizens
- Step 4: Open space, transport and town planning **contest of ideas**
- Step 5: **202?** : Opening the **reduced Ring Road** & enhanced Promenadenring

**Figure 9:** Five steps forward with Leipzig's Promenadenring (own schema)

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## **Carbarism: Civilising the Automobile**

*Dr. Cameron Gordon*

### **1. Introduction**

The transport world often can seem to be split into two camps: pro-automobile (while often anti-transit) and anti-automobile (and pro-transit). One can hear statements like this from Brian Ladd, in his 2008 book "Autophobia":

"The automobile, our great vehicle of progress, demands its tribute, whether the hapless cats and deer on the road, the houses and neighborhoods swept away for new roads, or the shattered rural idylls." (Ladd, 2008, p. 14)

On the other hand the well-known transit critic, Randal O'Toole of the libertarian Cato Institute in the US makes claims like this one favouring road investments (and thus by definition auto modes – though this does include buses):

"Instead of subsidizing streetcars, cities should concentrate on basic—and modern—services such as fixing streets, coordinating traffic signals, and improving roadway safety." (O'Toole, 2012, p. 1)

The problem with such a technological focus – for or against – is that while it is true that a technology is not 'neutral' in a social sense (since its particularities will always have unpredicted and unintended consequences) any technology, once the genie is out of the bottle, can never be willfully eliminated, even with the best of intentions. The automobile in its various forms has had far-ranging impacts, some of which have been quite destructive. But at the same time, the automobile is not going to be un-invented, any more than the computer, nuclear fission or genetic engineering are going to be un-invented.

Instead of a debate about whether the automobile is good or bad, this article will argue that it is more useful to carefully consider how the automobile should live in the human environment in way that is compatible with human development. Granted, it would have been nice had the social impacts of the automobile had been

considered before it was widely introduced into society in such an uncontrolled way. But now that it is here and our modern world is built around it we should go beyond current incremental schemes to limit car use in particular locales.

We should, I will argue, now develop a framework to civilize the automobile. Civilization is probably harder to define in a positive sense than in a negative one; i.e. what goes against civilization is generally easier to agree upon that what advances it. Thus, I offer the concept of 'carbarism'. This is not meant to be a blanket epithet but a rubric for identifying social and economic applications of the automobile that could be said to be 'barbaric' (a word which literally means "Absence of culture and civilization" (Oxford Dictionary, 2017)) and hence to be avoided.

The automobile thus far has been both a social advancer and destroyer but it is not too late to begin to civilize it. Some of this involves undoing, slowly, design and institutional mistakes of the past. Some of this involves progressing technological advancement of automobility in a way different from that of the past. Whatever moves may be made – and a few ideas will be offered below – the advance of civilization in a broad sense and the avoidance of barbaric uses of the car (carbarism) should be kept front and centre. This will be the framework developed in the following pages.

### **2. The grand illusion of 'progress'**

In 1942, RKO studios released a film directed by Orson Welles, titled "The Magnificent Ambersons". Based on the novel of the same name by Booth Tarkington, this was Welles' second movie after his 1940 film "Citizen Kane", also released by RKO. The film, like the novel, is paean to the passing of an age of prosperous town culture and social fabric in late 19th century America, driven by a relentless economic and technological modernization process. The film's protagonist George Amberson Minafer (played by Tim Holt), is the petulant and immature heir to the Amberson family fortune. In a crucial scene, George disparagingly characterizes the automobile as "useless" and "a nuisance," while sitting

at the dinner table with family friend and automobile inventor and entrepreneur Eugene Morgan (played by Joseph Cotten). Morgan gives the following speech about automobiles, delivering it in a wistful and contemplative manner:

"I'm not sure George is wrong about automobiles. With all their speed forward, they may be a step backward in civilization. It may be that they won't add to the beauty of the world or the life of men's souls. I'm not sure. But automobiles have come. And almost all outward things are going to be different because of what they bring. They're going to alter war and they're going to alter peace. And I think men's minds are going to be changed in subtle ways because of automobiles. And it may be that George is right. It may be that in ten or twenty years from now, if we can see the inward change in men by that time, I shouldn't be able to defend the gasoline engine but would have to agree with George: that automobiles had no business to be invented."

Welles, the film's director, was an idealist who pursued the theme of a lost and better past in many of his films. This particular speech is an example of such idealism, but in a very thoughtful form. That there is no stopping technology and its economic and technical prowess is recognized. But at what human cost? Welles much later said this about the film overall: "You see, the basic intention was to portray a golden world—almost one of memory—and then show what it turns into. Having set up this dream town of the 'good old days,' the whole point was to show the automobile wrecking it—not only the family but the town." (Welles and Bogdanovich, 1992, p. 114)

In a technophilic age such as Welles lived in during the first half of the twentieth century, technologists – those people who believe unreservedly in the power and ultimate positivity of technical advance -- saw innovation and invention as a basically unqualified social good. Technologists are still with us, of course. It is just the inventions that have changed. The automobile was the great advance then, just as digital inventions are today's panacea.

Car technologism was certainly rampant in the first half of the 1900s. Modernist architects and planners rushed to promote cities built around the motorized vehicle. Le Corbusier and Frank Lloyd Wright both designed cities (on paper mostly) where the car was the central facet, where free-ways moved people quickly into and out of tall structures, distant from each other, and also far from centres of employment and services (which were very vaguely referred to, if at all). This idealized location patterning thus required the fast, personalized travel that only an automobile could deliver (Fishman 1982). This unqualified devotion to car travel may seem odd today but was seen by most people at the time as an unqualified positive march towards societal and economic betterment. The car was the wave of the future and whatever casualties that might occur would by definition be well worth it.

Technologists require technocrats to make their visions real. The most famous – indeed notorious – technocrat to translate these visionary plans into projects on the ground on a large scale was Robert Moses, the 'master builder' of New York City, who pushed many road and other civic projects through existing neighborhoods and ecosystems and, for better or worse, transformed the city's infrastructure, much of which remains in place today in the form Moses laid down. Moses' handiwork has since been seen to be a mixed blessing, combining genuine civic improvement with destruction of the urban, social and environment fabric in many locales. If he had been able to build all he wanted to there would have been additional expressways that would have divided midtown Manhattan in two and gone straight through Washington Square Park in Greenwich Village. As it was New York City went from a dense, transit-dependent conurbation to a city surrounded by and shot through with motorways and easy access to the suburbs over the course of several decades (Caro 1974).

Moses became a villain to many urbanists and indeed his Greenwich Village designs inspired Jane Jacobs to write her famous "The Death and Life of Great American Cities" (1961) which promoted everything Moses hated – walkable spaces,

density, intimate urban scale, and local streets rather than roads. Jacobs' book articulated the world-view of a well-connected (and Manhattan-based) opposition that finally proved powerful enough to stop his plans and force him from power. But in the 1920s and 30s when Moses began his road building in earnest he was hailed as an urban progressive, and indeed was aligned with progressive politics in New York (Caro 1974). Cars and roads and all the other systems they required were a means towards liberating people from cramped and dirty urban squalor. The post-World War 2 prosperity enhanced the momentum both in the US and around the world as suburban car-led growth promised every nuclear family a house, a yard and day in the country, all travelled to by auto.

Orson Welles' views on the car, which turned out to be ahead of the times, was a minority view during this period. Indeed *The Magnificent Ambersons* was badly cut by RKO to soften the grim ending Welles had directed showing a broken car-based dystopia, while replacing it with a typical Hollywood happy ending. The studio also removed most of the film's other dystopic references of the car gone wild, though the cautionary speech quoted above remains in the final cut (Welles and Bogdanovich, 1992).

This celebration of automobility was part of the western notion of 'Progress' where technical progress and social progress were conflated into one. More civilized societies produce more powerful technologies which, in turn, creates more civilizing of society – so the logic goes. This view probably reached its height in the late 19th century, especially in Victorian England, where it was thought that it was only a matter of time before the remaining secrets of the universe would be cracked and where the rapid pace of industrialization would soon bring unending peace and prosperity (Meek 2011).

The mechanized horrors of the First World War profoundly shook this Progress ideology. Indeed "The Great War" seemed to be proof that humanity was fundamentally irrational and that technology could as easily serve to regress society than to progress it. Concurrent developments in

mathematics and the sciences, especially the Theory of Relativity, put paid to long held notions of Newtonian fixities in time and space and the linear worldview that went with it. Newtonian mechanics and Cartesian logic seemed to validate the idea of constant moving ahead and its collapse removed the fixed points of the compass by which 'ahead' could be distinguished from 'behind' (Kline 1980).

Still given all the technical progress that was about, the idea that technology would solve all ills was hard to give up. Americans in particular were not much affected by the postwar ennui, especially by being spared the very worst of the Great War's destruction (though sensitive Americans, some of whom had served in the War, were disillusioned, forming the 'lost generation' that went into self-imposed exile in Paris, including literary luminaries such as Ernest Hemingway and F. Scott Fitzgerald). It is perhaps no accident that America would become the global centre for automobile production, design and marketing for many decades.

Certainly there was no turning back of the technological wheel. With respect to the combustion engine more and more of society organized itself around it and did so with abandon, especially the US with its wide open spaces and the great manufacturing process innovator, Henry Ford who, while he did not invent the car, did make its mass production possible (Flink 1988). A great uncontrolled social experiment based on the automobile had begun.

### **3. Some proposed positive principles of civilization**

The general focus of most studies of technological change focus on the process of invention, adoption and diffusion. One seeks to understand how innovation comes about, what causes one innovation to be taken up as opposed to another, and then how the successful adoptions become widespread (diffused) to ultimately be displaced by new innovations that begin the whole cycle anew (see Rogers 1962 for the definitive and original statement of this model).



There is also whole sociological literature on the societal dimensions of technology (Ellul 1964; Hughes 1987; Segal 1994; Pinch and Bijker 1984). The automobile has been the focus of a great deal of specific attention, for obvious reasons. Two very influential books by J.J. Flink (though not sociological) created and disseminated, in their titles, terms that have become figures of popular speech: "The Car Culture" (1975) and "The Automobile Age" (1998). Even more magisterial is Wolfgang Sachs' *For Love of the Automobile* which closely studies the development and dissemination of the auto in Germany. Sachs finds the car quickly became a powerful social symbol that put mechanism over corporeality (i.e. the motor over the horse) and individual carriage over common carriage (i.e. the car as individual travel mode on demand over the schedules and crowded carriages of the train). The car quickly became much more than a means of travel and morphed into a lifestyle and a sign of prestige that became not only highly desirable but a compelling necessity for many. Indeed, most automobile marketing today rests on these cultural assumptions.

Building on these inquiries, it would be useful to have a systematic benchmark against which to assess the wider social effects of the automobile. I therefore propose the ancient idea of civilization as a framework. This concept does have its limits, as will be considered later. But it provides, I believe, a useful construct to help determine whether development around the car "add to the beauty of the world or the life of men's souls".

There are three basic historical reference ideas that will help flesh out this concept which I will term as: (1) Classicism; (2) Humanism; (3) Acculturation. These are highly simplified and far from comprehensive but offer a core outline of what civilization means (to westerners) in a basic sense.

Classicism refers to the idealized standards of ancient Greek and Roman culture in their respective hey-days. From the Greeks came: systematic philosophy, inquiry and open-minded empiricism; the concept of citizenship and the system of democracy (primarily from the Athenians,

the most 'classical' of the Greeks); an artistic aesthetic, influenced by the development of higher math, that emphasized proportionality, harmony, and unity, especially in the human form; and an architecture that was meant to put the human being and human society at the centre of public space. The Romans built on this foundation with a further refinement and delineation of aesthetics, a more elaborated formal conception of citizenship, a highly codified rule of law, and physical engineering prowess (Greenhalgh 1990; Winterer 2004).

Of course the actual Greek and Roman societies of their times practiced human slavery, patriarchy (very extreme in Rome), brutal warfare (again, taken to a new level by the Roman Empire), elitism and varying degrees of social, political and economic corruption. The Greeks provided the seed of western rationalism which would cause some serious philosophical and social problems later on in western cultural and psychological development that persist to this day. But in some ways this is beside the point, for Classicism is an ideal to aspire to, grounded in elements of human practice that indeed do offer a lot of merit and appeal (Swain, 1996). We abstract from real historical experience to arrive at principles which are meant to improve the individual and the collective in which he or she lives. Classicism remains an influential aspirational model.

Humanism is a movement that started in Renaissance Europe. It is epitomized by the great Dutch Catholic scholar, Desiderius Erasmus, who lived and worked during the late 15th and early 16th centuries. Erasmus provided his own translation of the Bible, one he thought clearer and superior to the Latin translation in wide use at the time, and an accomplishment that he was criticized for by the Catholic establishment of the time which did not approve of the idea of lay access to the scriptures. Like other earlier humanists (e.g. Petrarch) Erasmus harkened back to ancient Greek and Roman sources, and put the human being in the centre of society, seeing humanity as fundamentally good. Of course Erasmus and others were Christian in their beliefs and hewed to the idea that God was creator of all. But

the humanists called for the full flowering and celebration of humanity, especially through education and art, emphasizing the human as being made in the image of God. This focus would later be detached from its Christian and religious moorings and a fully secular equivalent would be elaborated in the 20th century. But the idea that society should be built around the human being, rather than some other entity, whether it be God or the State, remains a basic ideal of Western (small 'l') liberalism (Nauert 2012).

Finally, in 1939 German sociologist Norbert Elias wrote a seminal book called 'The Civilizing Process'. Elias's notion of civilization was much more sociological and psychological and hence I have referred to it as Acculturation. Elias defined a term, 'habitus', which was meant to capture the 'second nature' that human beings internalize from their immersion in and interaction with the creation of social norms. Studying royal court etiquette guides from early modern Europe, Elias found that standards in conduct showed a definite refinement trend. Indeed, the ways that nobles were allowed to act at court in the 1500s, for example, would not be acceptable in 'polite' adult society today, or even amongst impolite children. Elias referred to this process as 'civilizing' not as a normative endorsement or even as evidence of any innate 'progress' such as contained in crude Darwinism prevalent during the time he wrote the book. Rather he used it because the people involved in the societies he studied themselves used this term. Whether this was for good or for ill was not entirely clear, but western European societies do exhibit, according to Elias, socialization that channels behavior and mores into more and more rarefied planes. And it does this in a way very organic to human sociality.

Taken together, the first three conceptions provide a foundation for what the intellectual and emotional basis of a positive conception of civilization in a Western context and the third denotes a process by which such a civilization grows and propagates, an analogy, perhaps, to technical innovation and diffusion models.

We might summarize three major principles of civilization drawn from each of these notional pillars which could be deemed to be subjectively attractive (though of course also highly contestable):

- Classical balance, proportion and unity (aesthetic development)
- Humanist placement of the human being at the center of society (social cohesion and relationship to the individual)
- Elias' focus on organic process and refinement (organic growth)

One may argue with both the content and the breadth of this list but at least these are basic principles against which the impact of a technology may be measured.

#### **4. Technology and its discontents**

At this point, however, rather than get into the thicket of more elaborated positive conceptions of civilization (and whether civilizing is actually good or bad), let's stick with things that clearly go against civilization.

Barbarism is the obvious antithesis to civilization. The ancient Greeks used to imitate the language of outsiders (i.e. non-Greeks) to their peninsula as nonsense noise, imitating it as 'bar bar bar...'. The ancient Greek word "bárbaros," meant "babbling". Interestingly other Indo-European languages have cognates, e.g the Sanskrit "barbara," which means "stammering." This is the origin of the term which in its original context simply means outsider. Since the Greeks considered themselves the pinnacle of human civilization, non-Greeks were by definition uncivilized (Pruitt 2016).

Of course this is a chauvinistic term in the context of Greek history. The more modern meaning of the term puts forward a distinction civilized behavior and conduct and barbaric (uncivilized) behavior conduct. Advancement of technical and economic structure is not necessarily civilized. Indeed the 18th and early 19th century doctrine of Romanticism found much barbarism in Europe of the time and much humanity (and hence civilization in the deepest sense) in many 'primitive' cultures that Europeans referred to as 'savage' (Hulme 1924).

The historian Thomas Hobsbawm provides an interesting operational definition of his own which is a useful amplification: "I understand 'barbarism' to mean two things. First, the disruption and breakdown of the systems of rules and moral behaviour by which all societies regulate the relations among their members and, to a lesser extent, between their members and those of other societies. Second, I mean, more specifically, the reversal of what we may call the project of the eighteenth-century Enlightenment, namely the establishment of a universal system of such rules and standards of moral behaviour, embodied in the institutions of states dedicated to the rational progress of humanity: to Life, Liberty and the Pursuit of Happiness, to Equality, Liberty and Fraternity or whatever." (Hobsbawm 1994)

Dictionary definitions are also useful here: "Civilization - an advanced stage or system of social development"; "Technology - the application of scientific knowledge for practical purposes, esp. in industry" (Oxford Dictionary 2017).

Even at this basic semantic level, technology obviously does not guarantee social development or advancement. Technical change can potentially feed barbarism, in the senses above, as it can civilized behavior.

To put this a bit differently, technical progress is relatively easy to understand and one technical advance does tend to lead to others. Technology, properly applied, leads to efficiencies in important practical matters such as production, and thus also generally leads to economic improvement (though this is much less guaranteed because of the complexity of cause and effect there; economists would say it is a necessary but not sufficient condition for economic development).

But there is no necessary relationship at all between the advancement of technology and human social development. An analogy can be made with the introduction of foreign plants and animals to an ecosystem. Such introductions have generally wreaked havoc in the ecosystems they were supposed to benefit. Similarly if new technology is introduced and allowed to

'run wild' the impacts may be very negative and unbalancing. Instead of such wholesale introduction, the wiser course is to first 'civilize' the untamed technology, i.e. make it fit for and consistent with human society and its development, and then introduce and develop it in a civilized manner.

In fact, we rarely do this with any technology because of the enduring prevalence of technologism, which can be seen to be an unfettered faith in pure invention. Technology and invention are not problems per se. A faith in it as Golden Calf is what causes mistakes and unintended consequences on a grand scale.

## 5. Defining 'barbarism'

Technologism has led to uninformed and careless introduction of the car into the wider world. Society should have 'civilized' the automobile from the outset, but did not. This may well be the human way, its 'hubris', following the Greek idea. Nonetheless, we can change course now. Even at this late stage society still can respond to and manage and potentially integrate automobiles in such a way that it works towards our 'better natures'.

What would such a society look like? In this paper I will not focus on this more difficult problem of a positive conception of proper social integration of the auto. This is not because such a conception is not important or needed. There are various examples of places held up as examples of how to do the car 'better' than it is done most other places. But as a look at these examples shows, the accommodations differ widely. Freiburg in Germany is one city that is showcased as an exemplar of pedestrian-focused development. Stockholm, Sweden is offered as an excellent solution for city logistics. Bogota, Colombia's capital, is a leader in the use of Bus Rapid Transit (BRT) as replacement for more roads (Goldman and Gorham 2006). And there are many more examples which range from quite modest incremental policies all the way to elimination of automobiles from at least city centres entirely.

However, it is, I maintain, often easier to agree upon the evils of a particular thing



than it is to come to consensus on its alternative. I thus refer to 'Carbarism,' which I define as the uncivilized use and social application of the automobile. Of course, as with the term barbarism, we may refer to 'carbarians' (those who implicitly or explicitly practice or advocate for carbarism) and 'carbarian' as an adjective applied to policy, design etc.

What does Carbarism look like? At a minimum we can speak of unrefined use of the automobile and/or use and design that degrades human culture and society. As a start, the three broad criteria developed in the last section – aesthetic development, social cohesion and relationship to the individual and organic growth – can provide a foundation.

#### *Aesthetic development*

One clear outgrowth of the untrammelled introduction of the automobile into the world has been automobile dependency, which can be defined as "high levels of per capita automobile travel, automobile oriented land use patterns, and reduced transport alternatives" (Litman 1995). As we have seen, modernists of the first half of the 20th century actively supported the creation of such dependency, predicting it to be a liberating force for humanity.

Cause and effect here is not entirely straightforward since economic and industrial forces probably had as much or more to do with the widespread adoption of car-oriented land use than visions propagated by boosters, knowing or otherwise. What is clear is that car-dependency has led to an almost anti-aesthetic of imbalance, disproportion and fragmentation. The quintessential car aesthetic as far as human settlement is concerned is sprawl. Dense sprawl is less car-dependent than non-dense sprawl but either way the outcome is something far from the Greek, Roman or Renaissance ideals of urban, town and country form. Sprawl is not a well-defined term but its origin in the automobile is obvious (Bhatta et. Al. 2010).

Sprawl has its defenders, at least from an economic perspective. Joel Garreau (1992) for example invented the concept of 'Edge City' to describe relatively dense and productive agglomerations that were,

in his view, a new urban form. Some of these agglomerations (e.g. Century City in greater Los Angeles) were even somewhat livable.

But overall sprawl is seen as a necessary evil at best, and an ecologically and socially unsustainable paradigm at worst. Many governments are now trying to take steps to at least provide some amelioration of sprawl to bring it down to human scale, e.g. walkable spaces and public art. Density of population, residences and employment in sprawl areas is now getting high enough that some former sprawl is becoming urban in nature, often encouraged by policy initiatives such as new transit service and multipurpose development (e.g. mid-city Los Angeles and Tysons Corner, Virginia) (Cannavò 2007; Garreau 1992). Still, relatively few people choose sprawl for its own sake, instead accepting it out of habituation or for the amenities it might offer such as cheaper housing or more land.

The vast engineering works needed to support automobility on a mass scale is also often ugly by any terms, not least Classical ones. Of course this is not always the case for particular facilities. For example, there are many celebrated bridges that were built for automobiles and which are indeed works of art not unworthy of the Greeks and Romans (e.g. the Sydney Harbour Bridge or the Verrazano Narrows Bridge in New York City). But roads overall are typically considered to be an aesthetic and physical blight, at least in the light of decades of accumulated experience. (Modernists like Le Corbusier loved freeways and on paper they do have a certain panache in terms of sleek lines on a plan). There have been attempts to 'humanize' roadways, such as adding sound barriers to insulate surrounding neighborhoods and the incorporation of public art into dead spaces such as underpasses (Burns 2013).

But these are incremental gilding of a quite unattractive lily. The car needs a great deal of land and a great deal of public and private works to park it, move it around, and fix and maintain it, and little of this is aesthetically balanced, proportional or providing a sense of harmonic unity. Using

the metrics of Classical sensibility, all this is mostly abominable, or 'carbaric' to use my term. As discussed above, there are examples of particular facilities that are attractive and some 'ugly' things may be 'beautiful' under a differing design standard (e.g. modernism). But most western aesthetics evoke, in their own way, the legacy of Greece and Rome, so even then dissonance is the basic tone of the automobile system.

#### *Social cohesion and relationship to the individual*

Following this thread some more, our modern transportation systems have put the car, not the human being, in the center. This is clear in both big and small ways. For example, footpaths (sidewalks) are often not provided at all along roadways and even on many urban streets there may be alternating paths, forcing pedestrians to cross streets for the sake of greater automobile, pedestrian mobility sacrificed for the car. Even where a footpath is continuous, pedestrians are often forced to the opposite side to cross a street, especially to accommodate major vehicular turning lanes at intersections. Even large dense cities like Madrid often design their pedestrian walkways in this manner.

Timing of traffic light cycles are often notoriously favorable to the automobile (Noland 1996; Chen et al 2014). Even in urban cores, pedestrians have to scurry across crosswalks in times far shorter than those provided for cars. The addition of visible crossing time countdown clocks to signals, while useful from a practical perspective, often highlight the disparity where the supposedly faster motorized vehicle is given far more time than the slower moving human being on foot, with the timers pronouncing this disparity clearly and loudly (and obviously unintentionally from the designer's point of view). Indeed, oftentimes allotted pedestrian crossing times cannot be reasonably met by anyone with any sort of impairment from age or disability.

Highway traffic engineering manuals have been relatively slow to incorporate and recognize pedestrians at all in their criteria. In the US, for example (admittedly a worst case), the Highway Capacity Man-

ual, the standard guide for road builders, emerged out of very practical need to unify and codify national road management standards as the automobile rose to dominance during the first half of the 20th century (Roess and Prassas 2014). Related standards for bicycles and pedestrians are now included and are slowly being elaborated over time. But these are still more of an add-on than a central focus and road standards remain car-first, then everything else if possible (Dowling et. al. 2016). There is a long way to go in the civil engineering profession, the core discipline of the automobile nexus, in providing the human being the center of design and building of road projects. Other supporting disciplines, such as economics, are not necessarily much better.

Of course the problem is not confined to the infrastructure sphere. Private housing and commercial complexes often lack any separate paths for pedestrians. Even when they are included, fences impeding passage to walkers to favour automobiles are often present in the interest of property security (Schilling and Linton 2005). Zoning and land use regulations generally require the addition of parking spaces for certain amount of floor-area-ratios (FAR) (Ferguson 2004). In the public sphere, parks are fenced off for large portions, funneling cyclists and walkers into main entrances along with vehicular traffic, even when the pedestrian may prefer many more convenient but closed off options. Golden Gate Park in the relatively progressive US city of San Francisco does this, to name but one example. Informal passages are often beaten through where possible but are obviously far from ideal. There are some legitimate reasons for decisions like this, especially in terms of public safety. But why default to prioritizing entry and exit for the car?

All this societal carrying of the car comes at a considerable financial burden, taking resources that could to be devoted other more 'civilizing' purposes. Some of these costs, already mentioned above, include infrastructure building, development and maintenance; costs of dealing with externalities such as air pollution; costs of accidents and deaths on the road; and funding of policing, courts, insurance and other ad-

ministrative apparatus to deal specifically consequences wrought by the automobile. Any travel mode will incur systemic costs but the car seems to be particularly expensive, with off-street parking in the US alone estimated to require \$US127 billion to \$US374 billion in subsidy in 2002 (Whitelegg 2015).

### *Organic growth*

Finally there is what the car does to the process of human and social growth. The Magnificent Ambersons quote earlier is focused particularly on the way that the car has thrown off human trajectories and put them on a mechanical schedule.

Thinkers in the early 20th century actually celebrated this. The Futurist movement in Italy celebrated machine speed. Marinetti, its chief poet, intoned: "a roaring motorcar, which runs like a machine-gun, is more beautiful than the winged Victory of Samothrace" (Marinetti 1909). The juxtaposition of a Classical myth with a modern invention is instructive for all disciplines of that time – art, science, philosophy, literature – were rejecting or transcending the aesthetics of Classicism, seeing them as a restriction against the freedom offered by new technologies.

This particular chalice ended up being somewhat poisoned as it turned out. Marinetti's reference to a 'machine-gun' is interesting. The automobile mechanized warfare and made it more deadly. This was even true during the First World War, an epoch which, as noted earlier, led to soul-searching by some and, paradoxically, a greater abandon to technologism by others. The Ford Model T, the first mass-produced car, was widely used by Allied forces by the end of the war (Flink 1988). Of course the Second World War would bring mechanized warfare to a new and horrifying extreme (obviously going beyond automobile based modes of delivery, if we can use that term). This would be a very literal example of 'carbarism'.

Elias himself studied the way in which automobiles and the systems they relied on upended organic human growth and self-regulation. His earlier studies showed how social forces, i.e. the links between individuals and across human beings col-

lectively, internalized and changed standards of behavior. He observed how the car was at least partially de-humanizing this process. Elias refers to this as a 'decivilizing' process through 'technization'. Which is not to say that is not a necessary adjustment in part. Human beings in cars are moving at far faster speeds and with the potential for much more deadly force than if they were on foot or horse or even bicycle. Mechanical aids of all sorts, from traffic lights, to signage, to automatic barriers, are needed to minimize casualties and properly manage system traffic flow and people need to adjust accordingly (Elias 1995). But the cost is a sort of inner alienation from both oneself, one's mode of movement, and potentially from the human embodied and intuitive pathways of human society. Clearly the message is that people must adapt to the car, not the other way around.

On its own terms, these measures have been effective in reducing rates of accidents and fatalities, though the tolls are still quite high and accepted apparently unquestioningly. In 2013, the World Health Organization (WHO) estimated that there were 1.25 million traffic fatalities worldwide. Perhaps we are numb to this carnage or at least justify it on the basis of a necessary evil of progress. Interestingly, though, the human social dimension persists. Elias found that traffic fatality rates vary widely across countries and cannot be accounted for solely by technological or policy differences. Culture still matters, apparently (Elias 1995; Dant and Martin 2001).

One last dimension will be mentioned which indicates that car-centered society is hostile to the human form, namely its public and individual health impacts (independent of road safety tolls). This has two dimensions: the direct morbidity and mortality effects of auto-dependence which stems from reduced physical activity as car travel replaces 'active' modes such as walking and cycling; and the broader indirect health effects driven by development patterns of sprawl that auto-dependence encourages. The overall evidence is quite clear that obesity, and all its associated disease outcomes, is highly associated with both dimensions (Frumkin 2002;



Frank et. al. 2004). Looking at additional health impacts of the car such as pollution, I have referred to the potential of the car 'making war on the human body' (Gordon 2012). Physically the car is, in certain ways, killing us.

## 6. Human-centred automobility

What is the alternative to carbarism? I do not write in condemnation of motorized transport for it is not necessarily innately good or bad. To say otherwise is to engage in ideology and ideology itself is opposed to civilization. In any case, it is too late for such a blanket judgement anyway. The car is here to stay until the next innovation displaces it (at which point hopefully we will not make the same mistakes). We must humanize and civilize the system of automobility as much as possible, i.e. put humans back at the center of the system, and make them served by automobiles appropriately, rather than continue down the track that we have now: automobiles at the center, humans servants to their supposed vehicles. (We carry the vehicles rather than the other way around). There are some marginal trends towards this in the post-Modernist era where the excesses of untrammelled automobility have been recognized, some of which have been discussed. But even these measures, useful as they are, still put humans at the margins. Transportation professionals, for example, are well aware of, and study, the human (ghost?) in the machine they are responsible for studying and shaping and guiding. But the way this body of research is referred to -- 'human factors' -- indicates that human elements are just 'factors' in the larger system rather than the be-all and end-all (Salvendy 2012).

In this article I have argued that 'uncivilized behavior' or 'carbarism' is a good negative frame for assessing future social development of the automobile. I have also laid out a practical rubric for considering and designing truly socially advancing applications of car technology. It is important to define what human-centred automobility actually looks like to be able to actually civilize the car. Some attempts to do so may actually make things worse, at least in the short run. For example banning automobiles outright is a good

thing in some contexts. In other contexts it may make things worse by degrading human-centred transport even further, at least in the short term.

The Modernists in this sense may have been on to something and we would do well to revisit their ideas with the benefit of the very mixed experience that followed them. Is it possible, for example, to use the automobile, perhaps through new modes of car-sharing and other capacity efficiencies, to get more density where we want it (e.g. in areas of employment) and less where we want that (e.g. in some residential settings or in 'greenbelts' and the like)? This is not a new idea. The so-called Garden City movement of the early 20th century aimed for something like this (Fishman 1982). It could be useful to return to some of these concepts but within the frame of pro- and anti-civilizing applications of car technology.

Even if we decide to aim for a car-free utopia someday, there is the significant issue of making sure we do not cause harm during the transition. Many people rely on car travel to get to work and amenity and it will take a generation or more to 'undo' all of that. Quite a few of those car users are socially and economically disadvantaged, being forced into their autos because the only residential options they have is to live far from work and transit (Gordon and Peters 2011; Gordon 2015). Here again a 'carbaric' frame may suggest that making their trips easier, while making some other trips elsewhere in the system harder (e.g. privileged travelers who have access to transit but choose not to use it). Of course this need not be a 'forever' policy and can be changed with circumstances.

We could also apply this frame to new developments in technology such as driverless vehicles and vehicle-sharing. Right now these technologies are proceeding mostly along mechanical and technical lines. The human dimensions, especially cultural and social, are largely afterthoughts. Of course there is no 'central planner' that can do anything about this, and probably there shouldn't be one. But a common frame of at least baseline assessment could do a lot to avoid some of the problems encountered after untrammelled

introduction of the auto itself. 'Smarter' vehicles and systems should not be assumed to be less 'carbaric' just because the word 'smart' is in their title.

Obviously there is much further development of the carbarism concept that is needed and much to test. I offer the notion of carbarism as only a beginning. A broader and deeper framework is needed and it should not necessarily be limited to the western patrimony, recognizing all the good aspects that it nonetheless retains. The 'desirable' values around which we should coalesce is a topic requiring much debate and there may never be a complete consensus on it.

An advance systematic discussion of and planning for a systemic phenomenon is nonetheless highly recommended. Much good work is out there to draw upon (I have only referred to a tiny fraction of it in this article). And not all will agree about either problems or solutions. But perhaps we can agree in general that stopping carbaric behavior is a good thing. Instead of being reflexively anti-automobile, yearning for some pure and impossible antediluvian state right now, it might be more systematic, and more effective to seek to distinguish carbaric practices from non-carbaric ones and adjust our planning and practice in response. There certainly is no time like the present to do it.

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## The 2017 Ashden Awards

Over the next twenty years, transportation is expected to be the major driving force behind a growing global demand for energy. It's a sector that is currently responsible for one quarter of energy-related greenhouse gas emissions worldwide, with its emissions increasing at a faster rate than any other sector. Road transport is also a major contributor to local air pollution.

Organisations on this year's 2017 Ashden Awards shortlist are working hard to keep travel as low carbon as possible and their solutions include innovative vehicle technologies and improvements to public transport infrastructure.

Generally, the electric vehicle market is booming and India is no exception. Ampere Vehicles is making electric bikes and scooters affordable for rural consumers as well as manufacturing electric scooters for people who are disabled and waste collection vehicles used in villages (Figure 1). To date the company has sold more than 14,000 long-life battery vehicles, helping to tackle air pollution and make a real dent in climate change emissions.

According to the World Health Organisation, air pollution is growing worse in urban areas across much of the planet, hitting the poorest city dwellers hardest and contributing to a wide range of potentially life-shortening health problems, from heart disease to severe asthma.



**Figure 1:** One of Ampere Vehicle's electric waste management trucks  
Credit: Paul Starkey/Ashden





**Figure 2:** One of the one many volunteers assisting the Hangzhou Bicycle Service to maintain the cleanliness of the bicycles and stands, and assist users when required. Credit: Paul Starkey/Ashden

Last year China suffered its worst air pollution ever with more than 70 cities reaching dangerous levels. The city of Hangzhou in the northwest Zhejiang province is taking

affirmative action to protect the health of its citizens by encouraging them to use its public bicycle service (Figure 2). Since the Hangzhou Bicycle Service started up



in May 2008, thousands of bicycles have been rented for free more than 700 million times thanks to an innovative financial model.

Funded by the government, the project makes a profit - by selling the advertising rights on over 3000 bicycle sites and renting out the service kiosks - which is then used to cover staff salaries and maintain the service. The concept of public bicycles

in deprived areas in order to improve peoples' mobility, health and wellbeing (Figure 3), as well as to increase access to workplaces, education and training. The scheme was also designed to bring about behaviour change by encouraging people to travel by bicycle rather than private car, thereby reducing congestion - and pollution - on roads. BBB has linked up with over 50 community groups including homeless and mental health charities, and



**Figure 3:** Birmingham City Council has provided more than 4000 free bikes and cycle training to residents living in deprived areas in order to improve peoples' mobility, health and wellbeing.

Credit: Big Birmingham Bikes

has since spread to 30 other provinces in China and some 175 cities nationwide. The Guardian reported recently that in the UK, the government's own statistics show 38 out of 43 UK "air quality zones" breach legal limits for air pollution. Recognition of the scale of this crisis has been slow but a group of cross-party MPs named it a "public health emergency" in April last year. Some local authorities are tackling the issue head on by adopting sustainable travel initiatives with gusto.

Birmingham City Council for example, through Big Birmingham Bikes (BBB), has provided more than four thousand free bikes and cycle training to residents living

GPS tracking is used to monitor the effectiveness of the scheme and provide data to guide planning and policy to support cycling.

To tackle traffic congestion and associated air pollution, Nottingham City Council has introduced a Workplace Parking Levy (WPL) which places a modest charge on employers providing 11 or more parking places, and invests the revenue back into sustainable transport measures such as electric buses, cycling, trams and a public transport smartcard.

It's the first local authority in the UK to implement such a scheme, which is in-



**Figure 4:** Nottingham currently operates the largest fleet of electric buses in Europe. Credit: Nottingham City Council

creasingly being recognised as an innovative solution, especially in the difficult financial environment that public sector organisations operate in. The WPL is already encouraging more sustainable travel behaviour across the city and reducing the number of car journeys, as commuters switch to the efficient public transport that is being paid for by the levy.

Find out more about the finalists in the [2017 Ashden Awards](#) which reward pioneering sustainable energy enterprises and programmes globally. This year's winners will be announced at the annual Awards Ceremony in London on 15 June 2017.

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## Book Review

### **New Mobility. Beyond the car era**

*Arie Bleijenberg*

<https://eburon.nl/en/product/new-mobility/>

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Published 2017 at 20 Euros

This is a splendid book designed, printed and published to a very high standard. It adds a great deal of academic and scientific credibility to the now widely accepted view that we have come to the end of one paradigm characterised by more new roads, more car parks, more vehicles and a touching belief that congestion can be solved by building new roads. The book is very well suited indeed to form the basis of a training course and awareness raising experience for all politicians at all levels in all countries. We can do things in a different way, we do need a new paradigm with lots more walking, cycling and public transport and we can design cities and regions to maximise accessibility and harvest economic and social gains from that maximisation rather than throw them away with new motorways, bypasses and suburbanisation.

In all this Bleijenberg is adding his distinctive voice and high quality photos, diagrams and illustrations to the growing list of new paradigm sustainable transport academics and practitioners. These include Phil Goodwin on peak car, Jeff Kenworthy in many issues of the journal "World Transport Policy and Practice" and John Whitelegg's new book "Mobility".

It is such a splendid book that I feel uneasy about voicing some criticisms but it is the job of a reviewer to do this if they appear relevant to the development of the subject matter in coming years.

Arie is quite simply wrong to downgrade the role of public transport in his wider vision of a new transport paradigm. He

does this in several ways in several different places e.g.

"Better public transport contributes relatively little to the major carbon emission cuts we need to achieve" (page 29)

"It is only clean vehicle technology that has made any real contribution to reducing CO2 emissions from the European car fleet" (page 48)

"Subsidising public transport and electric vehicles is an expensive and relatively ineffective means of reducing carbon emissions" (page 62)

"One of the lessons from environmental policy on road transport that it is more acceptable to make cars cleaner than to get people to make different mobility choices" (page 71)

These are rather strange and peculiar statements. We know from a great deal of empirical work in cities around the world that we can achieve very low carbon futures if we have very high quality walk, cycle and public transport facilities. We know that carbon reduction is far more likely with an integrated range of synergistic spatial, behavioural and fiscal changes over and above any technology (Whitelegg et al, 2010). We know that large numbers of car users will switch to walk, cycle and public transport when density, accessibility, quality of public transport and safety are really improved. We know that quality of life in places like Delft, Lund in Sweden and Freiburg in southern Germany goes up dramatically when a large number of trips are accomplished by non-car modes and we know that clean cars, electric cars and efficient cars still kill people, deter walking and cycling and create very unpleasant congested conditions and obesogenic environments.

I live a car-free life style and it is great in terms of my mobility and its very low carbon result, but I need better public transport and I am worried about material appearing in print that suggests in some way that public transport is "yesterday's news". It is not. The future for communities, social life, mobility for the growing



numbers of older people who can't drive, access to beautiful rural areas and tourist destinations currently trashed by tens of thousands of cars, attractive towns and so much more depends on the best possible outcomes for well-funded public transport and world best, totally safe walk and cycling conditions.

I still like the book.

John Whitelegg  
Editor  
World Transport Policy and Practice

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