



Do you think that your local area is a good place for young people to grow up? The effects of traffic and car parking on young people's views

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Abstract

The damaging effects on well-being of the increasing number of motor vehicles on the roads, accidents and emissions aside, are often overlooked. Among 11–16 year olds in Wales, those who reported living with busy traffic and car parking were found to be less likely to have positive perceptions of the safety, friendliness, appearance, play facilities and helpfulness of the people in their local area. This was independent of the effect of socio-economic circumstance. Results are discussed in terms of the potential negative effect on sense of community identity, health and well-being, and the need for good environmental design and development of more pedestrian-friendly living areas.

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Introduction

Recent decades have seen a rapid rise in the number and length of motor vehicle journeys and a corresponding decline in the number of journeys by rail, bus and bicycle (McCarthy, 1999). While the threat to life from road traffic accidents and the risks to respiratory health from vehicle air pollution are widely recognised, the damaging effects on well-being of the increasing number of motor vehicles on the roads, accidents and emissions aside, is often overlooked. Research in this area is limited, but has found a negative effect of traffic speed and volume on social interaction and perceived friendliness of the street environment (Appelyard and Lintell, 1972; Appelyard, 1981)—where traffic was light, the number of social interactions was far higher and residents perceived the street environment as more friendly and close. Hine (1996) found that the presence of heavy traffic volumes led to heightened anxiety about

crossing the road and a greater perceived need for the accompaniment of children. Streets with low traffic speeds and volumes have been found to have more indicators of a better quality of life—more street activity, more signs of street care (e.g., flower boxes) and more open windows (British Medical Association, 1997). Where traffic levels have been reduced through traffic calming and pedestrian-orientated measures, research has found a significant increase in general informal social activities and in children's play (Pharoah and Russell, 1989).

The study of young people as a specific group within this socio-geographical context has been missing from the literature (Matthews and Limb, 1999). Specifically, there has been little consideration of their existence in what Matthews and Limb refer to as the 'fourth environment: those places beyond the home, school and playground' (p. 65). In this fourth environment, the outdoors, young people are seen as increasingly vulnerable to a range of dangers: road traffic accidents, pollution, abduction, molestation or intimidation, the latter, often from other young people (Matthews and Limb, 1999).

The fear of road traffic accidents is very real and present one. Britain still has one of the worst child

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pedestrian casualty rates in Europe with more than 140 children killed each year in road accidents (Pilkington, 2000). Although there has been a huge decrease over the last three decades in the number of child road fatalities, few people would regard the roads as safer now than three decades ago. Research suggests that the decrease may be due to the fact that increasingly fewer children and young people frequent public highways than ever before (Hillman et al., 1991; DiGuiseppi et al., 1997; Dixey, 1998), and that there are greater restrictions placed on their independent travel than ever before (Hillman et al., 1991; Hillman, 1993, 1999, 2000). It appears, therefore, that the visible, official problem of road deaths among children and young people is contributing to an invisible, unofficial problem of increased fear and worry, journeys foregone, restricted independent mobility, and reduced social and play activities outside of the home, school and playground (Davis, 1993; Dixey, 1998).

A downward spiral of fear can be created in response to road safety fears in which reductions in play, cycling and walking activities among children and young people can diminish the general social activity levels of an area—lack of people about and contact between neighbouring families—which can heighten fears of ‘stranger-danger’. This, in turn, can increase the perceived need, on the part of parents and young people themselves, for an increased number of escorted journeys, which, in turn, further contributes to the traffic and car parking volumes, and further erodes feelings of safety and sociability within an area. In reality, children and young people are 100 times more likely to be killed as road users than by strangers (Sustrans, 2001). In addition, there is a conflict between Health Promotion messages to be active and take daily exercise, and the reality of daily living where fear of traffic restricts play activities (Davis and Jones, 1996). For example, from focus group research, Davis and Jones (1996) found that among 132 9–14 year olds from inner-city Birmingham, almost 90% of the owned a bicycle, and generally wished to be able to use it, but its use was restricted by their own and their parent’s fear of traffic danger.

This paper uses the data from a large cross-sectional survey of young people in Wales to examine whether there is a relationship between the level of traffic and car parking in the local area and perceptions of safety and sociability of that area. Given the absence of research in this area, this research was primarily exploratory. The local area was defined as “the area surrounding the home, such as the streets or estate where one lives, or the surrounding village or countryside”. As a confounding effect of socio-economic circumstance on relationships between traffic and local area perceptions was anticipated, socio-economic circumstance was measured and included in the analysis—low socio-economic residential

areas generally have a higher population density, more run-down houses, are nearer to busy roads, and have less room for off-road parking than their higher socio-economic counterparts. The affects of age and sex were also examined.

The concept of local area perceptions used here is one of four components of social capital that has been defined and developed by the Health Behaviour in School-aged Children (HBSC) cross-national survey project, as part of a larger agenda to define and measure social capital as it applies to young people (HBSC Research Protocol for the 2001–2 Survey). The notion of social capital is an expansive one that includes concepts such as sociability, social networks, trust, reciprocity, and community and civic engagement. According to Morrow (1999), the extent to which people are embedded within their family relationships, social networks, and communities and have a sense of belonging and civic identity constitutes their social capital. This stock of social capital is thought to impact on health and well-being, perhaps in the same way as economic capital. The items designed to measure social capital among young people comprised both new and existing HBSC items, and were subject to extensive piloting in Spring 2000 (HBSC Research Protocol for the 2001–2 Survey). The data presented here were collected as part of this process.

Methods

Survey

The data used here are drawn from the Welsh Youth Health Survey 2000 (WYHS, 2000). This survey forms part of the HBSC study which currently has representation from 29 countries across Europe and North America and is run in collaboration with the World Health Organisation. The study is both a research and international monitoring study of health and health behaviours in school-aged children and assesses health related behaviours such as smoking, alcohol and drug consumption, diet and physical activity; general perceptions of personal health and well-being; perceptions of family relations and support; perceptions of peer relations and support; and perceptions of the school environment. The HBSC survey instrument is an international standard questionnaire used by all participating countries.

Sample and procedures

A two-stage stratified random cluster sampling procedure was used to recruit respondents. In the first stage a stratified random sample of 80 schools was selected, by Health Authority, from the total population

of 249 schools. In the second stage, schools were asked to select approximately one non-streamed, mixed ability class from each of years 7 (aged 11–12), year 8 (aged 12–13), year 9 (aged 13–14), year 10 (aged 14–15) and year 11 (aged 15–16). All respondents completed the same anonymous, self-completion questionnaire in school between February and March 2000. The questionnaire was administered by a trained survey administrator, took between 45 min and 1 h to complete, and was administered to all sampled pupils attending school on the day of the survey.

Measures

Local area perceptions

Eight items were added to the WYHS 2000 questionnaire, as part of the piloting process. These measured perceptions of local area safety, appearance, and helpfulness and friendliness of local people; the availability of places to go in the local area; and overall view of the local area. The items were as follows.

- Generally speaking, I feel safe in my local area (All of the time; Most of the time; Sometimes; Hardly ever; Never),
- It is safe to walk alone in my local area after dark (Strongly agree; Agree; Neither agree nor disagree; Disagree; Strongly disagree),
- It is safe for younger children to play outside during the day (As above),
- There is a lot of litter on the streets and footpaths (As above),
- There are good parks, playgrounds and play spaces in this area (As above),
- People say 'hello' and often stop to talk to each other on the street (As above),
- I could ask for help or a favour from neighbours (As above),
- Do you think that your local area is a good place for young people to grow up? (Yes, it's really good; Yes, it's good; It's not so good; No, it's not good at all).

Traffic and parking

Two items assessing frequency of busy traffic and car parking were also added to the WYHS 2000. The former had been used in the 1998 Scottish HBSC survey.

- The road outside or nearest my home is busy with traffic (All of the time; Most of the time; Some of the time; Hardly ever).
- The road outside or nearest my home is full of parked cars (As above).

Socio-economic circumstance

The Family Affluence Scale (FAS; Currie et al., 1997) was used as the measure of socio-economic circum-

stances in preference to the standard parental-occupation based indicator. Past HBSC surveys have consistently found that up to 20% of responses to questions concerning parents' occupations could not be coded to give parental occupational categories, because young people gave incomplete job descriptions, did not know their parents' occupations or did not answer the question. In addition, categorisation of the non-working group has been particularly difficult. As a result, three indicators of consumption/deprivation were developed for use in 1997/8 HBSC study, based on the work of (Townsend, 1987; HBSC Research Protocols for the 1997–8 Survey and 2001–2 Survey; Currie, 2000; Mullan and Currie, 2000). A composite score is calculated by collapsing scores from the items into a four-point ordinal scale, in which level 4 indicates more material wealth than level 1. The items are as follows.

- Does your family have a car or a van? (No; Yes, one; Yes two or more),
- Do you have your own bedroom for yourself? (Yes; No),
- During the past year how many times did you travel away on holiday (vacation) with your family? (Not at all; Once; Twice; More than Twice).

Research by Currie et al. (1997), using telephone ownership instead of holidays, concluded that the items comprising the FAS measure have the advantage over the traditional parental occupation-based measure of socio-economic status of requiring no intermediate coding and of being able to classify almost all young people. Currie (2000) and Mullan and Currie (2000) also show support for the FAS as an alternative to the parental-occupation based indicator.

Analysis

Ordinal logistic regression analysis was used to estimate the associations between the predictor variables traffic, car parking, age, sex and FAS score, and the eight outcome variables representing perceptions of the local area, using STATA software (Release 6, 1999). Odds ratios were adjusted for the design effect of clustering within schools using the 'svyolog' procedure. Year group (years 7–11) was used as a proxy for age. The alpha level was set at 0.05. As the outcome variables were ordinal in nature, the assumption of proportional odds was tested—that is, that the strength of association between each level of each predictor and each outcome variable is proportionally equal (see Ananth and Kleinbaum, 1997; Bender and Grouven, 1998). As the predictor variables were also ordinal in nature, the presumption of linearity for each with regard to each outcome variable was also tested in order to allow them to be modelled as linear, or continuous variables,

thereby simplifying the interpretation and presentation of the results.

The significance of the contribution of socio-economic circumstance, and, therefore, its potential confounding effect on the predictor–outcome associations, was assessed by comparing two nested models, one with and the other without FAS score, for each of the outcome variables, using the ‘svytest’ procedure.

Results

Complete data, with no missing values, were obtained from 5194 pupils from 50 schools (50.7% male; 49.3% female; 19.7% year 7; 19.3% year 8; 21.7% year 9; 19.8% year 10; 19.4% year 11). Table 1 lists the percentage ratings of local area perceptions by frequency of road nearest home being busy with traffic and full of parked cars. A table of the percentage ratings of these by age, sex and FAS score variables (Table 3) is included in Appendix A.

Tests of the proportional odds assumption failed to support it, possibly due to the large sample size (see Bender and Grouven, 1998). However, deviation of separate binary logistic models from their proportional odds counterparts was found to be small and not to alter the interpretation of the results. Tests of the presumption of linearity of the ordinal predictor variables revealed only four instances, across all categories within the eight outcome variables, where a single ordinal category of a predictor variable accounted for a significant amount of variance over and above that which could be accounted for by a linear representation of the data. Thus, the ordinal data were considered to approximate sufficiently a linear representation for the purposes of these analyses. As a result, the relationship between each level of each predictor and each outcome variable was assumed to be consistent and linear.

Table 2 presents the adjusted odds ratios for all eight outcome variables, and as a result of the support for presumptions of linearity and proportional odds, a single reference point could be used for each of the predictor and outcome variables. In some items, the small percentage of respondents in the extreme negative response categories necessitated their being collapsed from five to four response categories.

Sex and age

Results show that males and the younger age groups were more likely than females to indicate that their local area was a good place in which to grow up (1.20; 1.26), a safe place to walk alone after dark (1.80; 1.80), a safe place for younger children to play outside during the day

(1.48; 1.07), a place with good parks, playgrounds and play spaces (1.26; 1.11), and a place that had a lot of litter on the streets and footpaths (1.15; 1.03). Males also felt safer, generally, in their local area all of the time (1.88), but were less likely than females to indicate that people say ‘hello’ and stop to talk to each other on the street (0.84), or that they could ask for help or a favour from neighbours (0.88). The younger age groups were more likely to see their local area as a place where they could ask for help or a favour from neighbours (1.08).

Traffic

Those who reported that the road outside or nearest their home was busy with traffic all of the time were less likely to view their local area as a good place in which to grow up (0.81), as a safe place in which to walk alone after dark (0.80), as a place in which people say ‘hello’ and stop to talk to each other on the street (0.86), as a safe place for children to play outside (0.71), as a place with good parks, playgrounds and play spaces (0.91), or as a place where they could ask for help or a favour from neighbours (0.84). They were less likely to feel safe, generally (0.78), and more likely to view the area as having a lot of litter on the streets and footpaths (1.28).

Car parking

Similarly, those who reported that the road outside or nearest their home was full of parked cars all of the time were less likely to consider that the local area was a good place in which to grow up (0.81), as a safe place in which to walk alone after dark (0.79), as a safe place for children to play outside (0.87), as a place with good parks, playgrounds and play spaces (0.92), or as a place where they could ask for help or a favour from neighbours (0.93). They were also less likely to feel safe, generally (0.75), and more likely to view the area as having a lot of litter on the streets and footpaths (1.46).

Socio-economic circumstance

Those with the lowest FAS score were less likely to view their local area as a good place in which to grow up (0.86), as a place in which they felt safe, generally (0.89), as a safe place in which to walk alone after dark (0.90), as a safe place for children to play outside (0.92), as a place with good parks, playgrounds and play spaces (0.86), or as a place where they could ask for help or a favour from neighbours (0.88), and marginally, though significantly, less likely to view their local area as a place in which people say ‘hello’ and stop to talk to each other on the street (0.96). They were more likely to view the

Table 1
Percentage ratings of local area perceptions by frequency of road nearest home being busy with traffic and full of parked cars

	Busy with traffic				Full of parked cars			
	All the time %	Most times %	Some-times %	Hardly ever %	All the time %	Most times %	Some-times %	Hardly ever %
<i>Good place to grow up</i>								
Really good	9.8	16.8	27.7	45.7	11.6	17.1	31.0	40.3
Good	11.4	21.9	28.8	38.0	12.4	24.5	32.1	31.0
Not so good	15.3	24.2	31.7	28.8	19.8	26.6	27.0	26.6
Not at all	24.6	22.4	23.2	29.7	27.9	24.9	23.5	23.7
<i>Safe to walk alone after dark</i>								
Strongly agree	10.1	15.1	27.5	47.2	13.6	17.3	27.2	41.9
Agree	10.3	20.7	30.6	38.5	12.1	23.4	31.1	33.3
Neither	12.3	23.5	28.0	36.2	15.5	25.2	30.0	29.3
Disagree ^a	22.8	22.6	26.1	28.5	23.4	25.5	28.4	22.6
<i>People say hello and stop to talk</i>								
Strongly agree	12.4	19.5	27.7	40.4	16.4	21.8	28.8	33.1
Agree	13.1	21.7	28.8	36.4	15.5	24.1	30.3	30.1
Neither	13.6	23.1	28.7	34.6	13.9	25.9	30.7	29.5
Disagree ^a	23.6	21.4	27.3	27.8	22.1	23.7	27.3	26.9
<i>Safe for young children to play</i>								
Strongly agree	9.3	15.8	28.3	46.5	13.3	19.9	29.6	37.1
Agree	11.9	22.1	29.6	36.4	14.9	24.7	30.8	29.6
Neither	18.1	26.5	28.5	26.9	17.7	25.0	30.4	26.9
Disagree ^a	29.8	25.2	23.3	21.7	26.2	28.3	24.1	21.4
<i>Litter on streets and footpaths</i>								
Strongly agree	22.6	24.8	23.6	29.0	27.7	29.0	23.8	19.6
Agree	16.4	23.6	29.6	30.4	17.9	28.0	29.7	24.4
Neither	8.9	21.5	32.9	36.6	12.4	22.1	34.1	31.5
Disagree ^a	9.6	16.8	27.5	46.1	9.5	17.7	30.6	42.2
<i>Good parks and play areas</i>								
Strongly agree	13.2	17.5	27.6	41.7	14.7	22.7	29.8	32.8
Agree	12.3	21.9	27.9	37.9	13.4	23.5	31.3	31.8
Neither	11.3	22.5	30.0	36.2	13.3	23.0	30.5	33.2
Disagree ^a	16.7	22.1	28.6	32.5	20.3	24.6	27.9	27.1
<i>Could ask for help from neighbours</i>								
Strongly agree	12.5	18.2	27.2	42.1	15.3	21.5	29.8	33.4
Agree	12.8	22.8	29.3	35.0	15.0	24.8	30.2	30.0
Neither	14.2	23.9	31.0	30.9	15.9	26.4	30.2	27.5
Disagree ^a	23.9	22.3	24.6	29.1	24.2	24.1	26.4	25.3
<i>Feel safe generally</i>								
All of time	10.7	16.9	28.1	44.3	13.2	18.4	28.7	39.7
Most of time	12.8	23.2	29.8	34.2	13.8	26.7	31.3	28.2
Sometimes ^b	28.3	25.7	26.9	19.1	28.3	25.7	26.9	19.1

^aIncludes 'disagree' and 'strongly disagree'.

^bIncludes 'hardly ever' and 'never'.

area as having a lot of litter on the streets and footpaths (1.14).

Results showed that FAS score was significantly associated with each outcome variable. However, as

the adjusted odds ratios for all eight outcome variables (and the related 95% CI) showed little or no change when FAS was removed from each model (see Table 2), it is clear that the relationship between traffic, car

Table 2

Odds ratios (95% CI) for local area perceptions by age, sex, road nearest home being busy with traffic and road nearest home being full of parked cars

	Better place to grow up		More strongly agree safe to walk alone after dark ^a		More strongly agree people say hello and stop to talk ^a		More strongly agree safe for young children to play ^a	
	Odds ratio (95%CI)		Odds ratio (95%CI)		Odds ratio (95%CI)		Odds ratio (95%CI)	
	Without FAS	With FAS	Without FAS	With FAS	Without FAS	With FAS	Without FAS	With FAS
Males	1.21 (1.07–1.35)	1.20 (1.07–1.35)	1.80 (1.60–2.02)	1.80 (1.60–2.02)	0.84 (0.75–0.94)	0.84 (0.75–0.94)	1.49 (1.35–1.63)	1.48 (1.34–1.63)
Younger age group	1.26 (1.20–1.32)	1.26 (1.20–1.32)	0.85 (0.81–0.88)	0.85 (0.81–0.88)	1.031* (0.98 to1,08)	1.03* (0.98–1.08)	1.07 (1.03–1.12)	1.07 (1.03–1.12)
Busy Traffic	0.81 (0.76–0.85)	0.81 (0.76–0.85)	0.80 (0.76–0.84)	0.80 (0.76–0.84)	0.86 (0.81–0.92)	0.86 (0.81–0.92)	0.71 (0.66–0.76)	0.71 (0.66–0.76)
Full of Parked Cars	0.79 (0.74–0.85)	0.81 (0.76–1.15)	0.79 (0.75–0.84)	0.79 (0.75–0.84)	0.90* (0.92–0.99)	0.96* (0.91–1.02)	0.87 (0.82–0.92)	0.87 (0.83–0.92)
FAS	—	0.86 (0.81–0.91)	—	0.90 (0.86–1.05)	—	0.96 (0.92–0.99)	—	0.92 (0.88–0.96)
	More strongly agree litter on streets and footpaths ^a		More strongly agree good parks and play areas ^a		More strongly agree could ask for help or favour ^a		More strongly agree feel safe all the time ^b	
	Odds ratio (95%CI)		Odds ratio (95%CI)		Odds ratio (95%CI)		Odds ratio (95%CI)	
	Without FAS	With FAS	Without FAS	With FAS	Without FAS	With FAS	Without FAS	With FAS
Males	1.15 (1.04–1.26)	1.15 (1.04–1.26)	1.26 (1.25–1.41)	1.26 (1.25–1.41)	0.88 (0.78–0.98)	0.88 (0.78–0.98)	1.88 (1.69–2.09)	1.88 (1.69–2.09)
Younger age group	1.03 (1.00–1.07)	1.03 (1.00–1.07)	1.11 (1.06–1.15)	1.11 (1.06–1.15)	1.08 (0.96–0.88)	1.08 (0.96–0.88)	1.02* (0.97–1.06)	1.01* (0.97–1.06)
Busy Traffic	1.28 (1.22–1.34)	1.28 (1.22–1.34)	0.91 (0.87–0.96)	0.91 (0.87–0.96)	0.84 (0.80–0.89)	0.84 (0.80–0.89)	0.78 (0.74–0.83)	0.78 (0.74–0.83)
Full of Parked Cars	1.47 (1.37–1.60)	1.46 (1.35–1.57)	0.90 (0.84–0.97)	0.92 (0.86–0.98)	0.92 (0.86–0.98)	0.93 (0.87–0.99)	0.74 (0.70–0.80)	0.75 (0.70–0.80)
FAS	—	1.14 (0.85–0.96)	—	0.86 (0.81–0.91)	—	0.88 (0.84–0.93)	—	0.89 (0.84–0.95)

* = $P > 0.05$.^a 'Disagree' and 'strongly disagree' combined.^b 'Hardly ever' and 'never' combined.

parking and of each of the outcome variables was independent of the possible confounding effect of socio-economic circumstance.

Discussion

The purpose of this research was to examine the relationship between busy traffic and car parking in the area around where one lives and perceptions of the safety and sociability of that area among young people in Wales. Results show that those reporting more traffic and/or car parking on their local streets were less likely to view their local area as a good place in which to grow up; as a safe place generally, a safe place to walk alone in after dark, or a safe place for children to play in outside; as a place where they could ask for help or a favour from neighbours, or where people say 'hello' and stop to talk to each other on the street; and as a place with good parks, playgrounds and play spaces. In addition, those reporting more traffic and/or car parking were more likely to describe the area as having a lot of litter on the streets and footpaths. These results could not be accounted for by the effect of socio-economic circumstance. It is important to note, however, that the data being cross-sectional, the results do not infer causality. In addition, the survey did not include questions on respondents' domiciliary area—rural, urban, or sub-urban—therefore it was not possible to determine the affect of this on their local area perceptions.

The results indicate that young people growing up in less traffic and car filled areas 'see' or experience a somewhat nicer, more pleasant, more supportive and more likeable local environment than those who live with more traffic and cars. These results have implications for young people's mental well-being, and potentially, for the well-being of a local area. They also suggests that attention to the design of living environments has much to contribute towards promoting health and well-being among young people. These issues are discussed in turn

Community identity, health and well-being

Since the influential work of McKeown (1976) there has been an acceptance of the integral relationship between people's health and their environment. Recent in-depth qualitative exploration of young people's views of their neighbourhoods by Morrow (2000) concluded that perceptions of the local area are likely to have an important effect on sense of community identity and, ultimately, on personal well-being. It may be that negative perceptions of the safety, amenities and friendliness of residents in a

local area can compromise community identity by engendering feelings of alienation from that area, and diminishing respect for the property, amenities and residents of that area.

A context of low social resources, lack of respect for the area in which one lives, and a sense of not belonging to a community can generate feelings of exclusion from society. The resultant psycho-social stress may have negative long-term health implications for the individual (Greenwood et al., 1996) and for the overall health of the local area, with regard to perceived levels of crime and anti-social behaviour (Campbell et al., 1999). To this end, Hillman (1993) posits that the psycho-social stress associated with traffic-induced decreases in independence and increases in restrictions may be associated with some of the anti-social behaviour observed among young people on our streets today.

Those from traffic and car filled areas may also be in danger of what Davis and Jones (1997) have called traffic-induced social exclusion. This describes the situation wherein young people are increasingly spending greater amounts of time indoors because of their's and their parents fears of 'stranger-danger' and road traffic accidents, and it has potentially damaging consequences for their physical and social health and quality of life.

Environmental design

The motor vehicle has come to dominate the streetscape in most urban and rural areas of Wales despite their being built, for the most part, before the explosion in the ownership and use of the motor vehicle. However, the land-use planning system continues to enable developments that encourage car use, are inimical to access on foot or bicycle, and lead to the social dispersal and disintegration of living and working communities (Environment, Transport and Regional Affairs, 2001). The blanket application of standard engineering formulae in residential areas, which are based around convenient access by the largest possible vehicles that are likely to use the road, has led to the development of wide roads, fast traffic and danger to vulnerable road users. Such designs leave little room for environmental features, resulting in a bleak unattractive environment, and ultimately, they discourage walking and cycling and make efficient bus access very difficult.

Ideally, cars in our living areas should operate under the same 'social rules' as traffic in campsites: cars are allowed in the space around and in between tents, but this space is predominantly for children to occupy and for general pedestrian activity. This requires car drivers to modify their behaviour accordingly and they naturally accede to the use of this space for pedestrian and

Table 3

	Sex %		Age %			FAS %	
	Male	Female	Yr 7	Yr 9	Yr 11	FAS 1	FAS 4
<i>Good place to grow up</i>							
Really good	19.9	15.5	27.1	16.7	10.9	13.5	21.4
Good	44.8	44.1	47.8	45.7	41.9	39.8	47.5
Not so good	20.9	26.7	16.2	25.1	27.9	28.4	19.6
Not at all	14.2	13.7	9.0	12.6	19.3	18.3	11.4
<i>Safe to walk alone after dark</i>							
Strongly agree	16.4	7.2	8.4	12.0	13.9	10.9	14.1
Agree	38.2	32.8	31.7	34.6	41.0	32.4	38.4
Neither	24.7	31.3	30.2	29.3	25	24.4	27.9
Disagree ^a	20.7	28.6	29.7	24.0	20.1	24.0	19.6
<i>People say hello and stop to talk</i>							
Strongly agree	26.1	27.5	27.3	25.5	25.9	24.7	27.1
Agree	47.8	51.1	51.0	51.2	49.3	49.1	49.5
Neither	16.3	13.7	13.9	14.3	16.5	15.7	15.4
Disagree ^a	9.7	7.7	7.8	8.9	8.3	10.6	8.0
<i>Safe for young children to play</i>							
Strongly agree	33.4	23.3	32.6	29.5	22.2	24.3	31.1
Agree	44.9	48.7	44.2	45.3	52.5	45.8	46.4
Neither	13.0	17.8	14.6	15.7	16.0	16.7	14.6
Disagree ^a	8.7	10.3	8.5	9.6	9.3	13.2	7.9
<i>Litter on streets and footpaths</i>							
Strongly agree	21.0	17.9	21.1	18.2	18.4	23.7	16.5
Agree	27.8	28.7	26.1	30.6	28.9	31.0	25.3
Neither	19.7	20.5	19.6	20.3	21.9	18.3	21.3
Disagree ^a	31.4	32.9	33.2	30.9	30.9	27.0	36.9
<i>Good parks and play areas</i>							
Strongly agree	20.4	14.9	21.8	21.1	12.5	16.5	20.3
Agree	31.2	31.4	32.2	29.2	33.7	25.3	35.0
Neither	14.2	15.0	14.4	14.2	15.7	12.6	14.8
Disagree ^a	34.2	38.7	31.6	35.5	38.1	45.6	29.9
<i>Could ask for help from neighbours</i>							
Strongly agree	34.0	27.4	39.6	36.8	7.7	30.6	41.2
Agree	44.3	41.3	41.7	40.3	8.4	44.7	40.7
Neither	12.2	12.7	10.9	14.4	10.1	13.3	10.9
Disagree ^a	9.5	8.6	7.7	8.4	9.1	11.4	7.2
<i>Feel safe generally</i>							
All of time	42.0	45.3	40.7	43.4	15.9	30.4	38.2
Most of time	26.2	54.1	32.2	51.6	16.3	46.1	50.4
Sometimes ^b	34.1	49.6	32.7	52.5	14.8	23.5	11.4
<i>Busy with traffic</i>							
All the time	12.9	14.8	12.1	13.3	13.6	16.1	13.0
Most times	20.4	22.6	18.7	21.4	22.4	23.4	19.3
Sometimes	28.3	28.6	27.5	29.6	30.2	28.7	28.7
Hardly ever	38.3	34.0	41.7	35.7	33.8	31.9	40.5

Table 3 (continued)

	Sex %		Age %			FAS %	
	Male	Female	Yr 7	Yr 9	Yr 11	FAS 1	FAS 4
<i>Full of parked cars</i>							
All the time	16.5	15.7	11.3	17.0	20.3	19.5	14.7
Most times	23.3	24.2	22.0	24.1	26.4	28.8	18.6
Sometimes	30.0	29.0	31.0	29.6	26.9	29.5	28.5
Hardly ever	30.2	31.1	35.7	29.3	26.4	22.3	38.2

Note: FAS = Family Affluence Scale.

^a Includes 'disagree' and 'strongly disagree'.

^b Includes 'hardly ever' and 'never'.

general play activities (Home Zone News 1, 2000). Indeed, this depiction encapsulates the notion of the 'Home Zone'. The UK government's white paper on transport (DETR, 1998) recognised the importance of Home Zones, following which a number of pilot schemes were established and evaluation is on-going. A recent act of parliament gave Home Zones legal recognition and Local Authorities in England and Wales now have the power to designate them in their areas.

While UK government policy is increasingly supportive of the development of more pedestrian-friendly living areas (DETR, 1998), and some county councils have embraced the concept of shared space within their design standards, a culture change among highway engineers, planners and housing developers is required to make this a reality (Home Zone News 2, 2001). Such culture changes tend to require a multi-pronged approach of joined up planning, greater use of health impact assessment tools at the planning stage, enforcement of national policy at the local level, financial penalties for infringement, and, perhaps most importantly, better education of engineers, planners and developers with regard to the psycho-social implications of their work. It also requires greater integration of the public health (health promotion), transport, urban planning and social inclusion agendas, the basis of which is laid down in prominent UK public policy documents of recent years (Our Healthier Nation, 1998; Better Health Better Wales, 1998; UK strategy for Sustainable development, 1999).

In conclusion, the current dominance of the motor vehicle on residential roads has greatly reduced the attractiveness of, and quality of, life in both urban and rural communities for young people in Wales today. Young people are generally afforded no voice in the decisions that are made about the design of their local environments, yet must be most vulnerable to the traffic-induced fears, real and perceived, generated by the poor environmental design of their 'fourth environment', the outdoors. Ultimately, young people's needs in the local environment and the negative health impact of non-pedestrian-friendly designs should be considered

when developing future public health, transport and planning policies.

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Appendix A

Percentage ratings of local area perceptions and perceived frequency of road nearest home being busy with traffic and full of parked cars, by age, sex and FAS score are shown in Table 3.

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