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Hoody, goody or buddy? How travel mode affects social perceptions in urban neighbourhoods

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Abstract

Cars dominate most urban environments whereas walking and cycling are declining. The negative effects of increased car use on air quality and road safety are well documented. This paper examines whether travel mode use may also affects communities by influencing social perceptions. We hypothesise that car use is negatively related to perceptions. Social psychological research has shown that people may make more negative judgements of others when limited information is available because they err at the side of caution (there may be a threat) or because their judgements are affected by negative stereotypes. Once negative perceptions have been formed people may want to further distance themselves from these others. Car users are typically more distant from their social environment than cyclist or pedestrians. Three studies were conducted. A survey study ($n = 644$) among two neighbouring communities demonstrated that neighbourhood perceptions of a low SES area are indeed negatively related to increased car use and positively to increased walking. Two experimental studies ($N = 245$ and $N = 91$) demonstrated that explicit (but not implicit) attitudes towards a group of young people in an ambiguous situation are more negative when these young people are viewed from the perspective of a car user in particular in relation to a pedestrian perspective. These findings have major implications for the future wellbeing of communities where social perceptions and community cohesion may be eroded due to increased car use.

Introduction

In most modern societies car use is increasing whereas walking and cycling through neighbourhoods is steadily declining. In the UK, for instance, the number of trips made on foot declined by 24% between 1995/97 and 2008 (Department for Transport, 2010). Similarly in Canada, 68% of people aged 18 and over travelled everywhere by car in 1992 and this had increased to 74% in 2005. In the same period the proportion of people who made at least one trip by bicycle or on foot declined from 25% to 19% (General Social Survey, 2010). There is plenty of literature on the negative effects these changes have on issues such as air pollution, road safety and obesity. This paper examines whether wellbeing in communities may also be negatively affected by these changes because mode use affects social perceptions and can therefore erode community cohesion and wellbeing. Consider for instance the following scenario:

‘An urban road passes alongside a park. Three youths are in the park. Someone drives past in a car and sees ‘a few lads who are up to no good’. A passenger on a bus that stops at the local stop notices them and wonders: ‘What are they up to?’ Someone cycling through the park hears them making fun of each other and a person walking past recognises their neighbour’s son and says: ‘Hi’.’

People may be more likely to form negative perceptions (e.g., Hoodies, who are up to no good) of a social situation when they drive past at speed then when they witness this situation from slower and less enclosed modes of transport such as a bicycle and in particular walking. This is because people who walk through their neighbourhoods are exposed to more individuating and detailed information of that situation than people who drive. With limited information judgements may be more cautious (there may be a threat) or they may be affected by negative stereotypes. Once negative perceptions are formed people may further

distance themselves from potentially threatening or unpleasant places by travelling through such places in the comfort and safety of their car.

Making social judgements with limited information

The tendency and ability to make quick social judgements has an important function.

Wojciszke (2005) notes that one of the most basic judgements people need to make when confronted with others is whether those others can be trusted or are likely to pose a threat.

Distinguishing between potentially beneficial and harmful social stimuli is a very basic function of social cognition (Wojciszke, 2005). When entering a new neighbourhood or encountering new people we need to know whether we can approach other people without coming to harm or whether it is better to avoid contact and leave (O'Brien & Wilson 2011).

The importance of being able to make rapid judgement of social threat for survival needs is supported by evidence from a range of psychological subdisciplines including cognitive, psychophysiological, neuropsychological, and neuroimaging (Green & Phillips, 2004).

When making social judgements in unfamiliar situations where information is limited, people may be cautious and avoid social interaction. Wojciszke (2005) notes that there is significant evidence which shows that negative information, outcomes or events tend to have a greater impact on people than positive information (Wojciszke, 2005). When people are asked to make a social judgement in an ambiguous social situation negative information and indications that suggest some form of threat may be more prominent. When someone cannot clearly make out what people are saying or doing they may be more likely to come to negative conclusions about these people than when they can hear and see clearly. In the scenario described above, therefore, the perceptions of the car user, in particular compared to the pedestrian, are more likely to be distorted by a negativity bias because their speed and

relative enclosure means they are exposed to less detailed information about the social scenario, despite the fact that the car user is likely to be safer than a pedestrian if there was a real threat.

Another way in which social perceptions may be biased is related to (sometimes unconsciously activated) stereotypes. There is plenty of evidence that people are able to make accurate social judgements on the basis of very little information (e.g., Patterson, 2009). For instance, only very brief exposure to facial expressions or body postures can result into accurate perceptions of trustworthiness (Willis Palermo and Burke, 2011; Todorov, Pakrashi, & Oosterhof, 2009). But we also know that judgements can be distorted by (inaccurate) stereotypes (e.g. Crawford, Jussim, Madon, Cain, & Stevens, 2011). When making social judgements people tend to rely on specific information as well as stereotypes (Crawford et al., 2011). Stereotypes are particularly influential when individuating information is not available or accessible.

Stereotypes are beliefs about the attributes of groups and their individual members (Ashmore & Del Boca, 1981). They can be activated unconsciously when people are exposed to features that are typical of a group (e.g., skin colour, gender features; Bargh, 1996, 1997). And this can influence affective reactions, behaviours and attitudes. For instance, very brief exposure (315 ms) to photographs of Black faces has been shown to activate negative affect among White participants (Fazio, Jackson, Dunton, & Williams, 1995). And subliminal exposure to photographs of Black faces has been shown to lead non-African Americans to behave aggressively toward a White individual (Bargh, Chen, & Burrows, 1996; Chen & Bargh, 1997). Moreover, people primed with the 'elderly person' stereotype have been shown to walk more slowly when leaving an experiment (Bargh, 1996).

The influence of stereotypes becomes more prominent when less detailed information is available or when judging ambiguous situations or behaviours (Bodenhausen & Wyer, 1985; Sagar and Shofield, 1980). When more detailed information is available or accessible stereotypes are less likely to have a strong effect on social perceptions. For instance, Kunda (2002) found stereotype activation after 15 s exposure to a video of an interview with a black person but not after 12 minutes of exposure. It is likely, therefore, that social perceptions of people who see an ambiguous social situation only very briefly (for instance from a fast driving car), are more likely to be affected by (unconsciously or consciously) activated stereotypes which may result into more negative implicit (unconscious) and explicit (conscious) attitudes if such negative stereotypes exist.

The effect of stereotypes on social perceptions will only exist if such stereotypes are present. Exposure to the mass media can promote negative stereotypes. For instance, Dixon (2008) showed that people who had more exposure to network news hold stronger negative stereotypes of African Americans. There are many stereotypes that may affect social perceptions in urban neighbourhoods such as those related to ethnicity or socio-economic status (SES). In this research we are particularly interested in the views of low SES areas and of young people. Young people are often seen in urban neighbourhoods 'hanging out'. However, whereas research on perceptions of minority ethnic groups is relatively common, research on perceptions of young people is rare. This is despite the fact that there is evidence that in the UK nearly half of media stories about young people are negative and people believe that such media exposure confirms their everyday experiences (Bawdon, 2009). A strong existing negative stereotype of young people in the UK (and elsewhere such as the US) is the 'Hoody' – referring to a young person wearing a sweatshirt with a hood, who is generally up to no good. In some areas young people who wear hooded sweatshirts have been

actively banned from shops. In ambiguous unclear situations such negative stereotypes may well affect social perceptions.

Taken together, this literature clearly suggest that people may form more negative or less positive judgements about others in an urban environments when they have less detailed information about those others. Car users, who drive through urban environments at speed in an enclosed space may therefore form less positive or more negative perceptions of that environment than cyclists and pedestrians. Moreover, once a negative perception is formed people may try to avoid further contact with potentially threatening people and places and this may serve to further disconnect them from their social environment and confirm their views. We already know that people tend to walk more in their neighbourhood if they trust many people (Cleland, Timperio and Crawford, 2008). And social interaction in neighbourhoods is significantly lower in streets with high volumes of motorised traffic (Appleyard, 1969; Hart, 2008). Walkable neighbourhoods can help tackle depression symptoms of elderly men not only because of increased physical exercise, but also because those walkable environments bring people outside and therefore promote social interactions (Berke, Gottlieb, Moudon & Larson, 2007). There is plenty of evidence in social psychological research that exposure to others can lead to more positive social responses and reduce threat perceptions (Allport, 1954; Bornstein, 1989; Claypool, Hugenberg, Housley, & Mackie, 2007; Harrison, 1977; Kunst-Wilson & Zajonc, 1980; Zajonc, Wolosin, Wolosin, & Sherman, 1968) and therefore promote social interactions and wellbeing in communities.

The relationship between mode use and social perceptions and wellbeing in communities may therefore play itself out in different ways. Not only may mode use affect social perceptions due to differences in exposure, as discussed above, once people have developed negative perceptions of an area they may well avoid further contact with this environment by driving

through it instead of walking. This then is likely to only reinforce negative views due to a lack of exposure and contact. This may be particularly important in understanding people's views of their neighbourhoods in which they do not live but through which they will need to travel regularly – for instance to get to schools or shops. People are less likely to have views of these areas which are based on personal experience (as they do not live there) and are therefore more likely to have to rely on existing knowledge (such as stereotypes) and secondary information.

This paper presents three studies. A survey study in two neighbouring communities in a city in the North of England explored whether perceptions of people's own and their proximal neighbourhoods, and the people in these neighbourhoods, are related to their travel through these neighbourhoods by these different modes. An on-line experiment (Study 2) examined whether attitudes towards a group of young people in an ambiguous situation and unfamiliar urban environment are affected by mode use. Study 3 examined the effect of mode use on both explicit (conscious) and implicit (unconscious) attitudes thereby examining the potential role of unconsciously activated stereotypes.

Study 1

The first study examined the link between social contact and transport and perceptions of the social quality of a neighbourhood. The study explored whether there is a positive link between neighbourhood perceptions (in terms of safety, friendliness, upkeep, etc) on the one hand and reported contact and travel on the other. It was examined whether more positive views could be found among those drive less and those who walk and cycle more through two neighbourhoods and those who report more social contact while travelling through the area. We were particularly interested in exploring people's views of the areas in which they

do not live themselves and which are quite different from the area in which they do live. For the study, were therefore selected two areas along one road with very different levels of socio-economic status (SES). We hypothesised that increased reported social contact and walking (and perhaps cycling) and reduced driving would be associated with more positive perceptions of people's own and their neighbouring communities. We also expected that these relationships would be particularly strong when studying the views on a low SES area by those living in a high SES area. This was because negative views of the low SES area are more likely to exist and travel through the low SES area was likely to be more frequent for all participants as it was located close to the city centre.

Area of Study

Two areas along one road in a city in the North of England were selected for the recruitment of participants. Area 1, near the city centre, has relatively low socio-economic status and is culturally mixed. Area 2 is located towards the outskirts of the city near a national park, is relatively affluent and residents are predominantly white middle class. The index of Multiple Deprivation (an index used to identify deprived communities, combining a number of indicators such as relative income, health, education, crime, housing conditions and living environment) in 2007 was 36.8 and 8.0 for the two areas respectively (Communities and Neighbourhoods, in Ballas, 2010). Moreover, 4.4% of the population in Area 1 claimed Job Seekers Allowance in 2007, compared to only 0.9% in Area 2 (Neighbourhood Statistics, in Ballas, 2010).

Participants

A total of 644 participants took part in the study: 209 from the low SES area and 398 from the high SES area. Participants had lived for an average of 20 years in their neighbourhood.

The sample consisted largely of White participants (86%), with very few participants belonging to the other racial and ethnic groups. This fairly accurately reflects the population in Area 2, but it less accurately reflects Area 1, which had a large Asian population (25.62%) and Black population (7.26%; 2001 census from CASWEB, in Ballas, 2010). There were slightly more female (62%) than male participants (36%). The average age of participants was 56 years, with the youngest participant aged 18 years and the oldest aged 93 years. Twelve percent of participants ($N = 77$) had a disability which affected their activities. The majority of participants were employed (28% full-time, 16% part-time) or retired (33%).

Materials

The questionnaire comprised an A5 booklet of 15 pages, with questions relating to experiences of the two areas. For each area, participants were asked to assess the area and how they use it by responding to questions on neighbourhood perceptions, travel behaviours and community engagement. Other questions were asked of the participants relating specifically to their own area of residence, but these are not discussed in this paper.

Measures

Neighbourhood perceptions were measured with 14 items (see Gatersleben, Clark, Reeve & Uzzell, 2007). Respondents were asked to indicate to what extent they agreed with statements such as 'People look after their property in this area', 'People in this area are well-educated', 'This is a safe area', 'I like the people in this area' (1 = totally disagree, 5 = totally agree). One scale was created on the basis of these items representing the overall perceptions of neighbourhood 1 ($\alpha = .91$, $M = 3.02$, $SD = .65$) and of neighbourhood 2 ($\alpha = .87$, $M = 3.86$, $SD = .47$). Perception of neighbourhood did not differ significantly by age or gender and so measures are collapsed across these factors in the analyses below.

To measure social contact respondents were asked to indicate to what extent they agreed with 8 statements (1 = totally disagree, 5 = totally agree) such as 'When I travel through the area on map 1 I greet many people', '... I am usually in my own thoughts', '... I often smile at people', '...I talk to many people'. Social contact was slightly higher in area 2 ($M = 3.71$, $SD = .52$, $\alpha = .81$) than in area 1 ($M = 3.28$, $SD = .55$, $\alpha = .76$). Moreover, in area 2 older people reported more social contact in their neighbourhood ($r = .25$, $p < .001$).

Travel mode use was measured by asking respondents to indicate on a 11-point scale how often they travelled through their own area as well as through the other area on foot, in a car, on the bus and on a bike (never (0), once a month or less (1), twice a month (2), 3-4 times a month (3) 3 - 4 times a week (5), 11 – 12 times a week (9), more than 12 times a week (10)).

Procedure

Questionnaires were distributed by hand to randomly selected homes in the two selected areas. One person per household was asked to complete the questionnaire and post it back to a freepost address. Around 4,000 questionnaires were distributed. Householders were asked to nominate an adult over the age of 18 who would be the first to celebrate their birthday in that year. This was done to try to randomise the selection of participants from each household. Participants were offered the opportunity to enter a competition to win one of four £50 vouchers for a well-known UK supermarket. Participants were provided with information about the study and its purposes, instructions on how to complete the survey, and assured of their anonymity.

Findings

A repeated measures ANOVA with one within subject factor (neighbourhood perception of own and other area) and one between subject factor (area of residency) was conducted to examine whether ratings of the two areas differed and whether these ratings varied between those who did and did not live in the areas. Overall people rated their own area more positively than the other area ($t = 15.41, p < .001$) and the high SES area was rated more positively than the low SES area by participants in both areas ($F = 428.55 (1,445), p < .001$). A significant interaction effect ($F = 215.67 (1,445), p < .001$; see Figure 1) demonstrated that those who lived in the low SES area did not think very differently about their own and the other area whereas those who lived in the high SES were significantly more positive about their own area than the other area. As expected, the most negative perceptions were thus found for the low SES area among those who did not live in this area.

- Figure 1 here -

Regression analyses were conducted for each area separately to examine whether contact and mode use affected people's perceptions of the neighbourhoods. A dummy variable was included in the analyses to examine whether this varied between those who did or did not live in the area.

A total of 32% of the variance in perceptions of area 1 (low SES) could be explained ($R = .58, \text{adj } R^2 = .32 (F(11,432) = 19.72, p < .001)$). Overall, level of engagement with the area was positively related to perceptions ($\beta = .35, p < .001$) and this did not vary between those who did or did not live in the area. The amount of travelling by any mode did not affect perceptions. However, a significant interaction effect suggested that for residents of the high

SES area amount of walking in the low SES area was positively related to perceptions of that area ($\beta = .15$, $p = .008$) and amount of driving was negatively related ($\beta = -.18$, $p = .048$).

- Table 1 here -

For Area 2 (high SES), results were much weaker: only 19% of variance in perceptions was explained ($R = .45$, $\text{adj } R^2 = .19$, $F(11,486) = 11.48$, $p < .001$). Engagement was positively related to perceptions but this was not significant ($\beta = .24$, $p = .10$) and this was independent of where one lived. Interestingly the level of driving was also positively related to perceptions ($\beta = .30$, $p = .025$) independent of where one lived. No other variables were related to perception of Area 2.

Study 1 demonstrated that a link between mode use and neighbourhood perceptions.

Perceptions of a low SES among those who do not live in this area are less positive when they drive more through that area and more positive when they walk more through the area.

Perceptions of area 2 (high SES) were positively related to car use through this area. This may be because this area was on route to a national park, a place which people with positive perceptions may choose to visit more often and mostly by car. Travel through area 1 was likely to be less voluntary as it was the main route to the city centre and the place of work, education, shopping and commuting for many people in area 2. Although Study 1 revealed a link between travel and perceptions it did not examine whether mode use affects social perceptions or whether those who have more negative perceptions try to avoid contact. Study 2 aimed to test the scenario described in the introduction in order to provide a more detailed insight into the nature of a possible relationship between mode use and social perceptions.

Study 2

Study 2 examined social perceptions of an ambiguous (potentially threatening) social situation from the perspective of different mode users. The majority of research on the effect of information exposure on social judgements tends to be conducted in controlled laboratory experiments and often only with visual stimuli. In everyday life, people tend to be exposed to a range of factors which affect exposure. In relation to mode use, for instance, walkers can have a clear unobstructed view of their immediate environment and will be exposed to visual as well as auditory stimuli, whereas car users will only have brief visual exposure. There is some evidence to suggest that exposure to audio-visual presentation of a social situation results in more accurate judgements than a visual presentation only (Patterson and Stockbridge 1998; Smith, Archer & Costanzo, 1991). We therefore hypothesised that people who see a group of young people play fighting in a park only very briefly and from an enclosed space (a car) will have less positive attitudes towards these young people and report feeling more threatened than people who are exposed to the young people for a longer period of time and who are able to hear their voices (pedestrian). Perceptions of those who travel fast but not in an enclosed space (cyclists) and those who travel slowly but are in an enclosed space (bus passenger) will fall in between these two.

Methodology

Participants

A total of 245 people completed an online survey. Just over half of the sample (51%), were women and 46% were men (the remainder withheld this information). The mean age of the sample was 56 years (ranging from 18 to 93), and the majority (93%) were white.

Approximately 70% of the participants reported being in employment, and around 16% reported being in education at the time of the study. A total of 30% of the respondents said they had regular contact with young people (through work or personal life)

Design

Four short video clips were developed for the study. Each video showed a journey along the same stretch of road. This was the same road that connected the two neighbourhoods examined in Study 1. Three young professional actors enacted a socially ambiguous scene: two teenage boys were play-fighting over an A4 sheet of paper near a bench, on which a teenage girl sat sending text messages on her mobile phone. The four videos were each taken from the viewpoint of someone using a different method of transport: walking, cycling, sitting on a bus or sitting in a car (see Figure 2). As social judgements may be affected not only by the young people themselves but also by environmental cues (Caster 2010, Wittenbrink Judd & Park, 2001) a relatively neutral environment was shown in terms of status and upkeep.

The method of transport was recognisable by some indicating feature, such as handlebars for the cycling video but also by virtue of the speed of travel. The videos were all taken of the same situation on the same day, but varied in travel speed, distance to the young people (with walking closest and driving furthest), travel speed, enclosure (through a window from bus and car). The length of the videos differed as each video covered the same distance (walking 18 seconds, cycling 14 seconds, bus 32 seconds (12 seconds standing still at bus stop), driving 13 seconds). The videos were made by a professional film company and the young people were professional actors.

The number of people viewing each video was roughly even, with approximately 60 participants for each (31% walk, 24% bicycle, 25% bus, 21% car).

- Figure 2 here -

Procedure

Data was collected via an on-line questionnaire. Potential respondents were recruited via a contact list provided by a research consultancy (who managed the research). A link was posted on the consultancy's website and distributed via their contact list (including colleagues, clients, friends and family). Respondents could access the link to the questionnaire at any time and from any place using a personal computer. Upon entering the questionnaire they were given a brief introduction informing them that this study was part of a project which examined people's perceptions of neighbourhoods and what people see when they travel through a neighbourhood with different modes of transport. They were told they would see a short film (15-30 seconds) of a journey through an urban environment and to imagine they themselves were making this particular journey. They were then randomly presented with one of the four videos. Immediately after seeing the video they were asked to write down any thoughts and feelings they may have had if they had actually made the journey (these answers are not reported here). They were then asked to indicate on Likert-type scales how they would have felt and what they thought about the young people. A five item check followed in which respondents were asked questions about clarity of the view and sound. Finally respondents were asked a range of questions about their own mode use and some demographic questions.

Measures

Anticipated feelings. Respondents were asked to indicate on a 7-point scale how they would feel if they had actually been making the journey they saw. Factor analyses (PCA) were conducted to explore whether any dimensions should be distinguished in these judgements. The initial analyses revealed 4 factors explaining 68% of the variance. However, a Scree plot revealed that the first two factors explained most of the variance. In a rotated factor solution (Oblimin) extracting two factors factor 1 explained 40% of the variance in the responses and factor 2 explained 20% of the variance. Factor 1 captured the extent to which respondents felt worried as opposed to safe and calm. Items with factor loadings of .60 or higher were intimidated, stressed, relaxed (reversed), threatened, safe (reversed), scared, anxious, calm (reversed) and worried. The second factor captured the extent to which respondents felt annoyed as opposed to amused. Items with loadings of .60 or more were amused (reversed), annoyed, happy (reversed) and irritated. New variables were created by calculating the mean score of all variables with a factor loading of .60 or higher on the respective factors. On average respondents indicated they did not feel worried ($M = 2.07$ $SD = .77$, $\alpha = .90$) or annoyed ($M = 2.71$, $SD = .82$, $\alpha = .74$).

To measure *social perceptions* respondents were asked to indicate what they thought of the young people. Questions related to intentions (e.g. up to no good, intimidating), personal factors (e.g. kind, intelligent, funny, considerate) as well as how they looked (e.g., well-dressed, scruffy). An initial factor analysis (PCA) extracted 4 factors explaining 65% of the variance, but a Scree plot showed that the first two factors explained most of the variance: 31% and 28% respectively. Two new variables were created by calculating the mean score of all items with factor loadings of .60. The first variable captured the extent to which respondent had a negative view of the young people and included the items: up to no good, intimidating, unpleasant, scruffy, threatening, poor and irritating ($\alpha = .80$, $M = 2.18$, $SD = .65$). The second variable captures the extent to which respondents had a positive view of the

young people and included the items kind, funny, intelligent, well-educated, and considerate ($\alpha = .86$, $M = 2.24$, $SD = .81$).

Mode use was measured by asking respondents to indicate how often they used each of the four travel modes (1 = never, 7 = always) for five destinations (e.g, work, shopping, education). They were also asked how much they liked using each of the four modes of transport (1 = not at all, 7 = very much so). Usual travel mode use and the extent to which respondents liked using different modes did not vary between conditions and were not related to anticipated feelings or attitudes.

There were no significant differences in the evaluations of the youths between men and women, those with different employment statuses, and between those who did or did not have regular contact with young people. Surprisingly age was negatively to related anticipated feelings suggesting that younger people felt more threatened ($r = -.17$, $p = .01$), annoyed ($r = -.17$, $p = .009$) and that younger people had stronger negative attitudes towards the young people ($r = -.30$, $p < .001$) and weaker positive attitudes ($r = .14$, $p = .036$). Average age did not differ between the four scenarios so we did not control for it in further analyses.

Perceived clarity of view was measured to check the manipulation. Respondents were asked to indicate on a 5-point scale whether they felt they were going fast, felt distant from the scene, whether they had a clear view of the scene, clear sound and a clear image. As expected these items varied between conditions (see Table 2). In particular respondents who saw the scene from a car felt that they were going significantly faster ($F(3,237) = 34.39$, $p < .001$), felt less close ($F(3,237)=9.76$, $p < .001$), and had a less clear view ($F(3,237) = 48.11$, $p < .001$) than alternative modes, and in particular in relation to pedestrians. Sound ($F(3,232) = 14.13$, $p < .001$) and image ($F(3,237) = 10.71$, $p < .001$) were also clearer for pedestrians.

- Table 2 here -

Results

Anticipated feelings. Analyses of variance showed that the extent to which participants felt threatened and irritated by the youths varied significantly across the four videos ((Threatened: $F(3,231) = 4.08$, $p = .008$; Annoyed: $F(3,231) = 8.48$, $p < .001$). Table 3 shows that participants felt most threatened and annoyed by the young people when they viewed the scene from a car, and least when they were walking.

- Table 3 here -

Social perceptions. As expected, significant differences were found between the four conditions in the negative ($F(3,229) = 6.13$, $p < .001$) and positive ($F(3,229) = 6.65$, $p < .001$) views of the young people. Table 4 shows that those who walked had the most positive view of the young people, followed by those who took the bus, those who cycled and those who took the car. Similarly, car users had the most negative views of the young people, and those who walked, cycled and took the bus had lower levels of negativity, with pedestrians having the lowest.

- Table 4 here -

Study 2 showed that anticipated feelings and explicit attitudes towards a group of young people in an ambiguous social situation varied depending on the travel mode from which the respondents witnessed the situation. It suggested that, when asked, respondents try to make sense of a social situation and if insufficient information is available these judgements appear to be more negative. The study could not show whether these negative perceptions were a function of automatically activated negative stereotypes or whether a more conscious process

may underlie these judgements. Moreover, we cannot draw conclusions on the specific role of vision and sound on perceptions as these were not studied separately. Pedestrians would have been the only ones who may have picked up some of what the young people were saying. A final study was conducted to examine whether the findings could be replicated among a different sample. In addition the study examined both explicit and implicit (unconscious) attitudes and explored the role of sound.

Study 3

Two of the four videos from Study 2 were used, showing the pedestrian and the driver's view. Videos were shown with and without sound. It was expected that those who saw the car video would have more negative explicit attitudes towards the young people than those who saw the pedestrian video, thereby replicating findings from Study 2. In addition we expected that (unconscious) implicit attitudes may be more negative among car users as very brief exposure to limited information may activate unconscious negative stereotypes. Pedestrians, however, are exposure to more detailed information which will dissipate the effect of these stereotypes. We further explored whether perceptions were more positive among those who saw the videos with sound then among those who saw the videos without sound as sound is an important source of information. Only on the pedestrian video with sound could the voices of the young people be heard (although the viewer could not make out what they said). Finally a question was added to examine the extent to which respondents indicated they would approach or avoid the young people. This question aimed to tap into the concept of personal threat more specifically. It was expected that those who saw the video from a car user perspective would be less inclined to approach the young people because they had developed a more negative perception of them.

Participants

A total of 91 students participated. Potential respondents were recruited via an on-line recruitment system at the university and via posters advertising the study displayed throughout the university. All faculties were presented in the sample. The average age of the respondents was 22 (ranging from 18 to 53). Almost 80% were White or White British and 77% were women.

Design

Two short videos from Study 2 were used in the study: the pedestrian video and the car user video. Each video was shown either with or without sound. The number of people in each condition was roughly even: 22 people saw the pedestrian video with sound or the car video without sound and 23 people saw the pedestrian video without sound or the car video with sound.

Procedure

Data was collected over a period of 4 weeks in December 2011 and January 2012.

Participants were offered £5 (approximately €6 or \$7.70) for participating in a series of three contiguous studies, of which this was the second. The first study was on perceptions of colour in gardens. The three studies were introduced as research on people and their environments. Upon entering the laboratory, respondents were seated at a computer, given brief instructions and then left alone for the duration of the study. Participants were told they would see a very brief video after which they would be asked a few questions about what they had seen. After seeing the video respondents were asked to complete a lexical decision task which was followed by the same questionnaire as used in Study 2.

Measures

Implicit attitudes. The Lexical Decision Task was programmed in the software package PEBL (Mueller, 2009). Respondents were asked to identify words and non-words. The stimulus appeared in the centre of a black screen and respondents pressed specific marked keys on a keyboard for words and non-words. The stimuli were presented in random order. Before the actual task they were given a short practice trial. For the main study respondents were presented with 20 non-words and 20 words of which 10 were target words. The ten target words were: threat, scruffy, poor, irritating, intimidate, annoyed, mischievous, worried, bad, and nuisance. The target and neutral words were carefully balanced in terms of word length and frequency in the English language. Non-words were matched in length to real words. Error rates and response times were recorded for non-words (Nr correct $M = 17.7$, $SD = 2.26$; Response time $M = 1644$ ms, $SD = 796$), neutral words (Nr correct $M = 9.43$, $SD = .83$; response time $M = 1107$ ms, $SD = 400$) and target words (Nr correct $M = 9.67$, $SD = .72$; Response time $M = 1124$ ms, $SD = 559$). Three very high response times were deleted and these responses were omitted from the analyses, resulting in an average response time of 1040 ms. The average number of correct responses was very high 74% got all 10 correct and a further 23% got 9 correct, only 4 people gave fewer correct responses. This variable was therefore dichotomised into: 10 correct or fewer than 10 correct.

Anticipated feelings. As in Study 2 respondents were asked to indicate on a 7-point scale how they would feel if they had actually been making the journey they had seen. Factor analyses initially unveiled three factors explaining 69% of the variance, but the third factor only included one item (intrigued). A two factor solution uncovered a slightly different solution as was found in Study 2. Rather than distinguishing between threat and annoyance the two factors distinguished between negative (intimidated, stressed, annoyed, threatened, scared,

anxious, worried and irritated) and positive feelings (amused, relaxed, safe, happy, and calm). Two reliable scales could be computed on the basis of these findings: negative feelings ($\alpha = .94$, $M = 3.02$, $SD = 1.44$) and positive feelings ($\alpha = .87$, $M = 2.90$, $SD = 1.34$).

Explicit attitudes were measured with the same items as in Study 2. An initial exploratory factor analysis revealed 4 factors explaining 70% of the variance. A two factor solution explained 53% of the variance and revealed the same solution as in Study 2. Consistent with Study 2, two variables were created on the basis of the two factor solution representing the extent to which respondents had a negative view of the young people ($\alpha = .85$, $M = 3.83$, $SD = 1.23$) and the extent to which they had a positive view ($\alpha = .84$, $M = 2.41$, $SD = .88$).

Approach-avoidance. respondents were asked to indicate how likely it would be that they would stop to talk to the young people shown in the video (1 = very unlikely, 5 = very likely; $M = 2.18$, $SD = 1.16$).

Feelings and perceptions were not related to gender or study subject. Age was significantly related showing that, as in Study 2, younger people were less likely to hold positive views of the young people than older respondents ($r = -.21$, $p = .046$).

Manipulation checks. As in Study 2 respondents were asked to indicate (on 5-point scales) how clear the images and sounds of the videos were. Analyses of variance were conducted to check whether this varied between conditions. Respondents who saw the scene from the perspective of a car user felt that they were going faster ($M = 4.71$, $SD = 1.06$) than those who saw the video from a pedestrian perspective ($M = 3.12$, $SD = 1.42$, $t = 37.87$, $p < .001$). They also indicated they felt less close than pedestrians ($M = 3.76$, $SD = 1.24$ vs $M = 4.58$, $SD = 1.14$; $t = 9.66$, $p = .003$) and pedestrians indicated they had a clearer view of what was going on ($M = 4.60$, $SD = 1.43$ vs $M = 3.46$, $SD = 1.42$; $t = 13.32$, $p < .001$). No significant

differences were found in the rating of clarity of the image on the computer. As expected sound was perceived clearer when people were given sound ($M = 4.57$, $SD = 1.61$) than when they were not ($M = 3.70$, $SD = 1.14$; $t = 8.67$, $p = .004$). The difference was strongest for pedestrians (no sound: $M = 3.67$, $SD = .91$, sound $M = 5.14$, $SD = 1.42$).

Findings

Implicit attitudes. To examine stereotype activation a multivariate analyses of variance was conducted with one within subject factor (response time for neutral words and response time for target words) and two between subject factors (mode and sound). No significant effects were found suggesting that response time did not differ between mode use conditions ($F(1,83) = 1.05$, $p = .39$) and sound conditions ($F(1,83) = 1.59$, $p = .21$). Because the variable measuring number of correctly identified target words was dichotomised a χ^2 test was performed to examine differences between mode use and sound conditions. Again no significant effects were found ($\chi^2 = 2.86$, $p = .09$ for both tests).

Feelings. A two by two multivariate analysis of variance was conducted to examine whether anticipated positive and negative feelings differed between conditions (view and sound). No significant effects were found for mode condition (Willks Lambda = .01; $F(2,83) = .45$, $p = .63$) or sound condition (Willks Lambda = .01; $F(2,83) = .59$, $p = .55$).

Explicit attitudes. A similar analysis was conducted to examine whether positive and negative social perceptions varied depending on mode and sound. A significant multivariate main effect was found for travel mode (Willk's lambda = .89; $F(2,83) = 5.29$, $p = .007$). As expected respondents who saw the video from a pedestrian perspective had significantly more positive attitudes towards the young people ($M = 2.60$, $SD = .90$) than respondents who saw the video from a car user's perspective ($M = 2.22$, $SD = .80$; $t = 4.85$, $p = .004$). Similarly,

respondents who saw the video from a car user's perspective expressed significantly stronger negative attitudes towards the young people ($M = 4.22$, $SD = 1.14$) than respondents who saw the scene from a pedestrian perspective ($M = 3.47$, $SD = 1.22$; $t = 8.87$, $p = .004$). A significant multivariate effect was not found for sound (willk's $\lambda = .94$; $F(2,83) = 2.59$, $p = .091$). Only the univariate effect for positive views was significant ($F(1,84) = 3.60$, $p = .026$). Respondents who saw the videos without sound had less positive views of the young people ($M = 2.21$, $SD = .80$) than respondents who saw the videos with sound ($M = 2.61$, $SD = .91$). The interaction effect did not reach significance.

Approach-avoidance. The extent to which respondents said they would be likely to stop and talk to the young people did not depend on mode use or sound. However, regression analyses showed that respondents were significant more likely to talk to the young people when they less negative views ($\beta = -.34$, $p = .002$; $R = .43$, $\text{adj}R^2 = .17$, $F(2,85) = 9.79$, $p < .001$). The effect for positive views was not significant ($\beta = .19$, $p = .08$)

Discussion

Most of us walk and drive through urban neighbourhoods on a daily basis. And there is plenty of research that examines how this behaviour affects our communities by studying safety, physical health and exercise and the quality of the air we breathe. This paper aimed to demonstrate that the quality of life in our communities can also be affected by travel behaviour by affecting our perceptions of the social environment. Study 1 showed that perceptions of the social quality of a relatively poor neighbouring community were positively related to the amount of walking through that community and negatively to the amount of driving through that community (by people who do not live there). Studies 2 and 3 showed that mode use may directly affect social perceptions. Respondents who saw a group of young people in an ambiguous situation from the perspective of a car user were more likely to experience negative emotions and hold negative attitudes towards the young people than respondents who saw the scene from the perspective of a pedestrian. Study 3 confirmed these findings but did not find that implicit or unconscious attitudes towards the young people were affected by mode use. This would suggest that the negative views are more likely to be a function of consciously formed views rather than unconsciously activated negative stereotypes. In line with Wojciszke (2005) car users, in particular compared to pedestrians appear to form more negative perceptions because their limited exposure to information about what is going on in the scenario may make them err at the side of caution and perceive more threat, despite the fact that the car user is likely to be safer than a pedestrian if there was a real threat. Study 3 also found that the extent to which respondents formed negative perceptions of the young people was related to their intention to approach these young people, although it did not show that people in the car condition were less likely to approach

the young people. Perhaps because practical constraints will affect whether a car user can approach the young people or not.

A surprising finding was the weak effect for sound in Study 3. Although it was difficult to make out what the young people were saying, the tone of voice of the young people that could only be clearly heard in the pedestrian video suggested that there was unlikely to be a specific threat and that the young people were simply 'mucking about'. This would suggest then that the visual information – the behaviour of the young people – was a more significant source of information to form social judgements upon, than the auditory information.

We did not find evidence of automatic stereotype activation. There may be several reasons for this. Firstly, of course, that such automatic activation simply did not take place.

Respondents were asked to form judgements of the young people and may have only done so because they were asked to do so. And their interpretation of the situation was affected by one of the most important dimensions of social cognition: threat (Wojciszke, 2005). It is also possible that among the sample in this study a strong stereotype of the young people simply did not exist. Most research on stereotype activation focuses on very clear groups with very distinct features (e.g., gender, ethnicity). The young people in this study did not represent a clear social group for which a stereotype exists. Therefore a clear cognitive schema may not have been present in the respondents' minds. Instead the judgements that they were asked to make were more a rational and conscious judgement of the situation. In order to draw reliable conclusions on this it would be useful to repeat the study and verify the findings. We found very small error rates in the lexical decision task and therefore relatively little variability, although we did find that response times to non-words were longer than neutral and target words. In this study we only used one block of trials other studies have either used more

words or more blocks and it is therefore worth repeating this work (e.g., Mc Connell, Rydell, Strain and Mackie, 2008). Moreover, it may well be worth repeating the study with clearer stereotypical groups – such as a group of young black people.

The studies do clearly demonstrate that mode use affects social perceptions in communities. These findings can have far reaching implications as this can affect community relations. Study 1, suggests that this may particularly affect communities which are already struggling with social issues (areas with low socio-economic status (SES)). People who do not live in such communities or are new in the area are more likely to develop negative views of the people in such communities when they drive, which can only serve to further disconnect the outsiders or newcomers from these areas. On a different level it may also be worth examining the effect of mode use on social perceptions among specific groups. For instance, police patrols are increasingly undertaken in cars. If police judgements about young people's intentions and behaviours are affected by their mode use this can have major implications of relationships between the police and local youths.

An unexpected finding was reported in Studies 2 and 3 where older respondents appeared to have more positive attitudes towards the young people than young people. This is somewhat surprising as it is often suggested that older people feel more threatened than younger people by 'loitering youths'. However, no respondents in our samples could be labelled as elderly. Younger people may well have had the more negative views because they could imagine themselves more easily as being part of the scenario and therefore be under threat.

In Studies 2 and 3 respondents had no choice over the mode they used, they were randomly assigned to a condition. In real life, people choose their travel mode. They choose their route and they can choose the direction in which they are looking. In studies 2 and 3 participants

did not have this control. Waggoner, Smith and Collins (2009) showed that active exposure may lead to very different social perceptions than passive exposure. A field study examining different mode user's perceptions of a similar scenario in the field may be useful to examine the strength of the findings in these studies in the field.

People are motivated to make accurate social judgements. Given resources and opportunity they will make judgements as accurate as possible and be less guided by potentially irrelevant contextual and social cues. With limited information, however, people may well err at the side of caution and be more likely to decide that unfamiliar people in an ambiguous situation form a threat. This paper demonstrated that these processes are important to study in relation to travel by different modes in urban neighbourhoods.

This work is important in a world where car use is rapidly increasing and where increasing worry is expressed over disengagement in local communities and loneliness. The way in which we travel through our environment affects how we perceive that environment, which in turn influences how we interact with that (physical and social) environment. This can have a major impact on the quality of life in communities where social interactions and perceptions may be eroded due to increased car use.

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Figure 1. Neighbourhood perceptions of a low and a high SES area by residents of each area.

Bus view

Car view

Pedestrian view

Figure 2. Views of young people from a bus, a car and a pedestrian perspective.

Table 1. Regression analysis explaining neighbourhood perceptions of the low SES area from engagement and travel.

	B	Std. Error	Beta	t	<i>p</i>
(Constant)	1.73	.62		2.78	.006
LIVE (1 = high SES area)	.07	.37	.05	.19	.850
Engagement	.43	.08	.35	5.32	.000
Engagement X area	-.13	.11	-.30	-1.15	.251
Walking	-.01	.01	-.05	-.57	.566
Driving	.02	.01	.08	1.55	.121
Bus use	-.01	.02	-.03	-.42	.678
Cycling	.02	.02	.07	1.47	.142
Walking x area	.08	.03	.15	2.68	.008
Driving x area	-.04	.02	-.18	-1.98	.048
Bus use x area	-.02	.02	-.05	-.76	.449
Cycling x area	.02	.04	.02	.53	.595

Table 2. Clarity of view and sound reported by respondents in the four different conditions.

	Walk	Bike	Bus	Car
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Going fast	3.24 (.99)	4.02(1.06)	2.94 (1.11)	4.78(1.06)
Distance from scene	4.51(1.11)	3.65(1.22)	3.58(1.28)	3.56(1.28)
Clear view	4.96(1.44)	2.86(1.33)	4.00(1.52)	2.24(1.10)
Clear sound	5.74(1.57)	4.04(1.80)	5.00(1.58)	4.10(1.93)
Clear image	6.15(1.10)	5.02(1.41)	5.61(1.20)	5.00(1.70)

Table 3. Anticipated feelings when making a video journey on foot, a bike, by bus or in a car.

	Walk	Bike	Bus	Car
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Threatened	1.94 (.73)	2.05 (.68)	1.96 (.77)	2.39 (.84)
Annoyed	2.43 (.72)	2.70 (.68)	2.89 (.97)	3.13 (.72)

Table 4. Attitudes towards young people in an ambiguous social situation seen from the perspective of a walker, cyclist, bus user or car passenger.

	Walk	Bike	Bus	Car
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Negative	2.07 (.70)	2.17 (.82)	2.15 (.67)	2.64 (.85)
Positive	2.43 (.69)	2.06 (.62)	2.17 (.56)	1.93 (.61)