



Increasing Recycling Through Community Action

Summary Report of the
Surrey Scholar Research Project
to Guildford Borough Council

Dr Dennis Nigbur
Dr Evanthia Lyons
Prof David Uzzell
and Rachel Muckle

December 2005

Environmental Psychology Research Group
University of Surrey
Guildford
GU2 7XH
www.surrey.ac.uk/psychology/EPRG



Correspondence concerning this research should be addressed to:

Professor David Uzzell
Environmental Psychology Research Group
Department of Psychology
University of Surrey
Guildford
GU2 7XH
Email: d.uzzell@surrey.ac.uk
Tel: +44(0)1483 689430
www.surrey.ac.uk/psychology/EPRG

Acknowledgements

Firstly we thank Guildford Borough Council for sponsoring this research, with particular thanks to Ian Westgate for his insight, support and technical advice.

We particularly thank Tanika Kelay from University of Surrey for her valuable contribution to the production of written materials. Also thanks go to Ms Alexa-Marie Tambe and Ms Diane Wan, undergraduate students whose final year studies yielded valuable and interesting data for the project, and to the temporary research assistants who helped at various stages of data collection: Marcela Acuna-Rivera, John Barzallo, Tanya Clarke, Michael Hong, Marlene Kritz, Melissa Marselle, Danielle Rodriguez, Daniel Shepherd and Henry Wu.

Lastly and most importantly, we are grateful to all the residents of Guildford who assisted with the research process through surveys, discussion groups and by using the Kerbside Recycling Scheme.

Table of Contents

1. Introduction	4
– Background to the Research	4
– Project Aims	4
– Overview of the Research	5
2. Desktop Review	6
– What Influences Recycling	6
– Recycling as a Social Activity	7
– Pro-Environmental Behaviour and the Theory of Planned Behaviour	7
3. Preliminary Survey	9
– Method	9
– What Type of People Responded	10
– Do Personal or Social Factors Predict Recycling Behaviour?	10
– What about other areas in Guildford and other Residents?	12
4. Intervention Study	13
– Feedback Study	13
– Recycling Box Set-Out Rates and Demographic Information ..	14
– Results	15
– Effective Types of Feedback	15
– Before and After: Does Feedback have an Impact upon Attitudes to Recycling?	16
– Is Feedback Effective?	17
5. Stereotype Study	18
– People Who Recycle Are...	18
– What is the Public Image of Recyclers?	19
6. Focus Groups	21
– What do Guildford residents think?	21
– Recycling Routines and Social Influence	21
– Responses to Feedback	22
– Recycler Identities and Image of Recyclers	22
– Responsibility	23
– Improvements to the Current Scheme	23
7. Conclusions and Recommendations	25

1. INTRODUCTION

Background to the Research

An important aspect of the UK Government's response to sustainable development is the reduction of household waste, be it through reuse, recycling or reduction at source. Furthermore there is a commitment to public involvement in order to make waste reduction a part of everyday life for UK citizens. Demanding targets have been set by central government requiring all local councils to reduce household waste by 33% by 2015. Guildford Borough Council responded to this target in a number of ways, the Kerbside Collection Scheme being the most important to this research.

Project Aims

The psychological dimension of an environmentally friendly behaviour such as recycling usually means 'what are people's attitudes', yet it is known from wider research that attitudes are not always a reliable predictor of behaviour: people are happy to say that they believe it is important to act in an environmentally friendly way, but are often less happy to actually do so. There is also the assumption that if recycling is made convenient enough, then the public will simply participate. Other influences over people's recycling behaviour such as social pressures and a person's understanding of their own role are all too often disregarded. The Surrey Scholar Project reported here focused on the extent to which an individual's waste management habits are determined by neighbourhood influence and their own sense of who they are: their identity. It examined social expectations and personal understanding relating to recycling generally and Guildford Borough Council's Kerbside Collection Scheme specifically.

Overall, this research was concerned with:

1. Identifying what type of information affects public participation in Guildford Borough Council's Kerbside Collection Scheme
2. Providing locally meaningful information about the recycling habits of Guildford Borough residents
3. Generating innovative methods to increase participation in Guildford Borough Council's Kerbside Collection Scheme

In particular, the aims of the project were:

- To create guidelines of how information about waste management should be communicated to different groups of residents in Guildford.
- To evaluate 3 different schemes for increasing recycling behaviour and minimising waste.
- To identify social psychological factors which influence recycling behaviour, over and above ease of use of recycling facilities.
- To identify barriers to improving waste management behaviours.

In order to achieve these aims:

1. A Desktop Review was undertaken to identify the psychological interventions that may encourage pro-environmental behaviour and increase participation in recycling. The review was also carried out to establish the social psychological nature of individual residents' recycling behaviour within community contexts, thereby informing the design of the studies undertaken in the project.

2. A Preliminary Survey was carried out in order to provide a baseline understanding of Guildford residents' participation in the Kerbside Collection Scheme, prior to any form of intervention. Here, residents' actual recycling behaviour was compared against their self-reported behaviour. The study was also designed to establish the underlying motivations and factors that predict recycling behaviour within neighbourhood settings.
3. An Intervention Study explored which types of feedback would be most beneficial in encouraging residents to participate in the Kerbside Collection Scheme. In order to evaluate the effectiveness of the interventions, residents' actual participation was monitored over the study period. This study also entailed a follow-up survey, thus allowing a "before and after" appraisal to determine which types of feedback were more conducive in changing attitudes towards recycling.
4. The Stereotype Study aimed to establish potential barriers to recycling by exploring whether popularised perceptions of "recyclers" serve to promote or discourage participation.
5. Focus Groups were carried out in order to gauge Guildford residents' opinions in relation to the existing Kerbside Collection Scheme as well as pointers for improving the scheme.

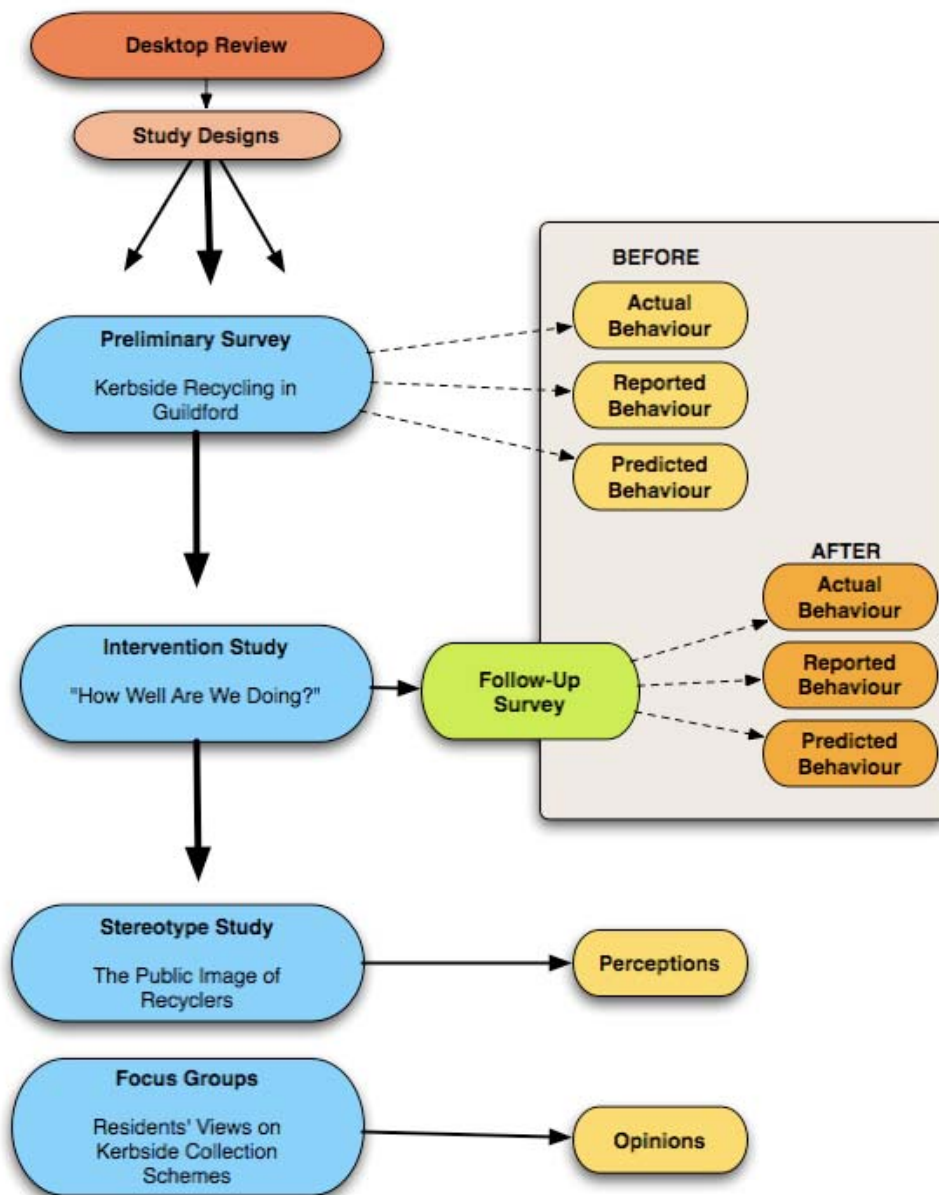


Figure 1: Overview of the Research

2. DESKTOP REVIEW

An Overview of Psychological Interventions Designed to Encourage Environmentally Friendly Behaviour

A systematic and extensive desktop review of past recycling projects and studies identified interventions that have previously been applied to increase participation. The main purpose of this review was to identify workable interventions to increase recycling participation and develop the theoretical and methodological framework used as the basis for the reported research.

What influences recycling behaviour?

Although past research has shown that people may hold positive environmental attitudes, the problem remains that positive attitudes do not necessarily mean people will engage in pro-environmental behaviour. The aim of behavioural interventions, therefore, often focuses on changing the behaviour of individuals.

The review covered the following types of intervention:

(i) **Increasing convenience:** Making recycling more convenient usually increases participation and generates a sense of responsibility. But convenient arrangements should be seen as groundwork, not as an intervention in their own right.

(ii) **Offering rewards:** Rewards can play a useful role as 'foot-in-the-door' strategies, but will not turn people into recyclers by conviction. Benefits are usually limited to the duration of the reward intervention.

(iii) **Prompting and reminding:** When residents ask for 'more information', they often mean they want clear and concise reminders of what to recycle, how and when. These help to increase participation, but should be phrased considerately, neutrally and with reference to communal benefit.

(iv) **Committing residents:** The simple act of asking residents to sign their commitment to recycling has been found to increase participation. It is a good initial strategy for areas with poor participation rates. Some monitoring should ensure that the commitment is honoured.

(v) **Setting targets:** If meaningful targets can be identified, they create a public norm for recycling. 'Street leaders' can be used to combine this social influence with instrumental reminders about recycling. Here, committed residents may agree to motivate neighbours and remind them to recycle.

(vi) **Giving feedback on participation:** feedback has consistently been found to increase participation. There is also evidence that feedback interventions can be effective in the long term. Comparative feedback may be particularly beneficial.

Previous psychological research suggests that providing services such as convenient regular kerbside collection may not necessarily be effective in the long term. Rather, they are good foot-in-the-door strategies for initiating such behaviour. Instead, commitment to recycling is better encouraged by external influences that generate a sense of personal motivation within individuals – therefore, recycling behaviour may be motivated by

external influences, such as the interventions mentioned above. The crucial issue is that providing prompts, offering rewards and setting targets are all external interventions that serve to encourage individuals to monitor their own behaviour. Essentially therefore, external influences motivate individuals to make changes in recycling behaviour over periods of time.

Recycling as a Social Activity

There is much literature documenting the psychological factors connected with recycling, such as measures of attitudes and perceived control over recycling; various types of personal and social norms; and sense of responsibility. Although such aspects of individuals may predict their propensity to recycle to some extent, it is important to note that although recycling as an activity is performed by individuals, these activities occur within a social context, in streets, neighbourhoods, towns and communities. Therefore, it is important that the role of individuals within such groups is addressed.

In simple terms, whether we *think* of ourselves as unique individuals (our personal identity) or as members of groups or communities (our collective identity) will influence what we do.

Personal or self identity refers to individuals' personal characteristics (such as their attitudes and beliefs). It is argued that people's identities are defined alongside their societal roles: individuals commit themselves to certain roles and act according to how they interpret these roles. Therefore, commitment to recycling has implications for personal identity. At the individual level, commitment to recycling would induce a greater sense of self-validation or self-esteem – such a sense of reward would encourage a recycler to gain a feeling of satisfaction from doing his or her recycling – thus encouraging further recycling behaviour.

Collective identity includes all the qualities that arise from being part of a society, culture, group, or community. When people act in accordance with collective identity, they will conform to the norms and expectations of the social group; by implication, someone who identifies strongly with a given social group will have a greater propensity to act in accordance with the norms of this group than someone who does not. For example, if a neighbourhood group, favours regular participation in kerbside recycling, residents who identify strongly with their neighbourhood will tend to participate more often than those for whom the neighbourhood is less important than personal concerns.

Although the self identity as a 'recycler' is in essence a good thing, this 'recycler identity' might sometimes have social stigma attached to it and thus act as a psychological barrier to participation in its own right. Obviously, the ways in which personal and collective identities interact are far from clear cut, yet these elements are of vital importance if we are to begin to understand the role of personal and collective attitudes to household recycling, and the impact of external social influences upon collective action and behaviour.

Pro-environmental Behaviour and the Theory of Planned Behaviour

The Theory of Planned Behaviour is a social psychological model that lends itself to the study of individual recycling within group contexts and is highly applicable in the context of pro-environmental behaviour such as recycling. Here, behaviour is a result of subjective norms, attitude towards the behaviour, perceived behavioural control and behavioural intentions (see figure 2). This theory takes steps towards understanding that an individual's behaviour is not simply a direct result of their attitudes.

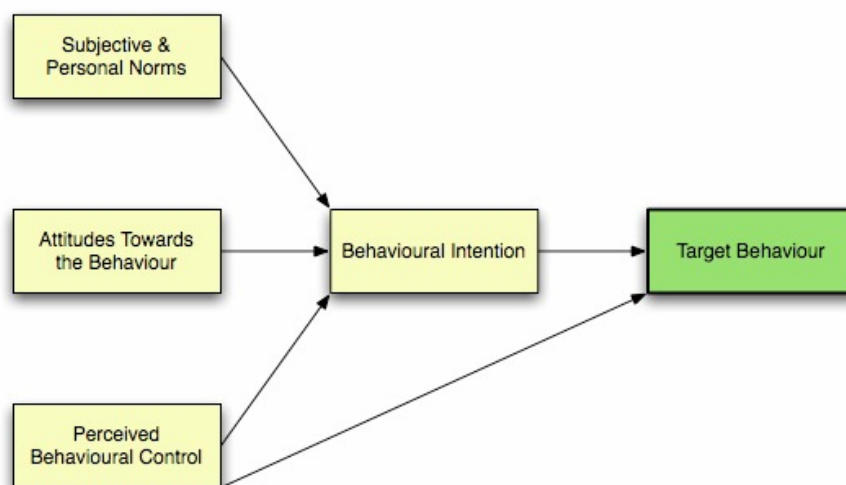


Figure 2: Theory of Planned Behaviour

Within the theory, subjective norms can be thought of as social influences and depend on factors such as friends and family exhibiting or supporting a particular behaviour. For example, if a residents' neighbours all use recycling boxes and they talk about the convenience and ease of using the kerbside recycling scheme, this would be seen by the resident as a socially acceptable type of behaviour and his/her subjective norm would be to use the scheme too. Personal norms refer to an individuals' preferences, based on their previous experiences. For example, non-recyclers may regard the use of recycling boxes as a "hassle", since it goes against their previous experiences of household waste disposal. Finally, perceived behavioural control refers to beliefs about resources, opportunities and abilities. Here, situational factors, cost and convenience will all play a part in the amount of control an individual believes they hold over a behaviour. In the case of kerbside recycling, issues such as convenience, time and frequency of collections will all combine with other situational constraints to limit the volition of following a preferred behaviour according to their attitudes.

In summary, an extensive desktop review revealed that certain interventions may be more effective in promoting long-term kerbside recycling, rather than mere incentives that encourage people to participate at a transitory level. Recycling – albeit an activity performed by individuals – occurs in a social context, which in turn influences individual behaviour. This observation is used as the starting point in order to develop new directions to promote long-term increases in kerbside recycling participation. Interventions developed in this project will focus on recycling in a community setting and consider individuals' identities relating to recycling as a social activity.

3. PRELIMINARY SURVEY

Kerbside Recycling in Guildford: Who Recycles and Why?

This preliminary study was designed to understand Guildford residents' reasons for recycling. Rather than relying solely upon people's self-reported behaviour, a manual assessment of actual recycling behaviour was carried out at the same time.

Method

Over 1800 households in the Onslow Village and Park Barn areas of Guildford (all of whom are included in GBC's Kerbside Collection Scheme) received a postal questionnaire. The questionnaire consisted of several types of statements designed to tap into whether residents participate in kerbside recycling due to personal motivations or social pressures, as suggested by the Theory of Planned Behaviour (Figure 2). Here, residents' attitudes, what they feel they should do, feelings of control, sense of responsibility and identities as recyclers explore issues related to the personal characteristics of the individual. Neighbours' attitudes, expectations and recycling behaviour, meanwhile, represent the perceived characteristics of the social context in which recycling takes place.

"What I think about recycling"	<i>To indicate residents' attitudes</i>
"What I think about myself"	<i>To indicate residents' identity</i>
"What my neighbours think"	<i>To indicate neighbours' attitudes</i>
"What my neighbours do"	<i>To indicate neighbours' recycling behaviour</i>
"What my neighbours would want me to do"	<i>To indicate neighbours' expectations</i>
"What I think I <i>should</i> do"	<i>To indicate what residents feel they should do</i>
"What I think I <i>can</i> do"	<i>To indicate residents' feelings of control</i>
"Is it <i>my</i> problem?"	<i>To indicate residents' sense of responsibility</i>
"What I do"	<i>To indicate residents' self-reported behaviour</i>
"What I am going to do"	<i>To indicate residents' intention to recycle</i>

*See full report for an example of the questionnaire.

Figure 3: Statements used in the Questionnaire

In the questionnaire, residents were asked to indicate the extent to which they agreed with a range of statements such as:

- "I don't want to let my neighbours down by not using the Green Box" (*what residents feel they should do*);
- "Recycling and waste management are not really my concern" (*residents' sense of*

- responsibility*);
- “My neighbours probably believe that Green Box recycling is the right thing to do” (*neighbours’ attitudes*);
 - “My neighbours in this street would like to see others participate in kerbside recycling” (*neighbours’ expectations*)

Actual Kerbside Recycling Behaviour During the survey period, participation in the Kerbside Collection Scheme was monitored over five collections in each sampled area. This involved members of the University of Surrey research team following the recycling team on their collection rounds, and taking a manual tally of recycling box set out rates. In this way, actual participation rates in the kerbside collection scheme were manually assessed in order to measure correspondence between people’s reported recycling behaviour and their actual behaviour.

Self-Reported Recycling Behaviour Over 28% of households returned their questionnaire. Of these, 41% households had set out their recycling box during the survey period, although 57% claimed that they were regular recyclers. Therefore, there was a discrepancy between residents’ self-reported behaviour and their actual behaviour – they claimed to be doing more than they actually did.

What Type of People Responded?

Demographic Information	% *
sex	
male	35%
female	61%
age	
under 21	1%
21-30	8%
31-40	20%
41-50	19%
51-60	19%
over 61	28%
employment	
full time	38%
part time	28%
not in employment **	33%

Of the 531 survey respondents, 326 (61%) were female and 187 (35%) were male (see Figure 3). The over-61s made up the largest age group, followed by those aged between 31 and 60. The majority (38%) of respondents were in full-time employment, with a further 23% working part-time, and 33% not in employment (this included retired residents and students).

* variations in percentages are due to missing data not provided by some respondents

** including students and retired residents

Figure 4: Description of Survey Respondents

Do Personal or Social Factors Predict Recycling Behaviour?

Analysis of the data demonstrated the complex ways in which personal and social influences interact in the prediction of recycling behaviour. Figure 5 provides as an overview of the personal and social aspects that predict whether people will participate in GBC’s Kerbside Collection Scheme.

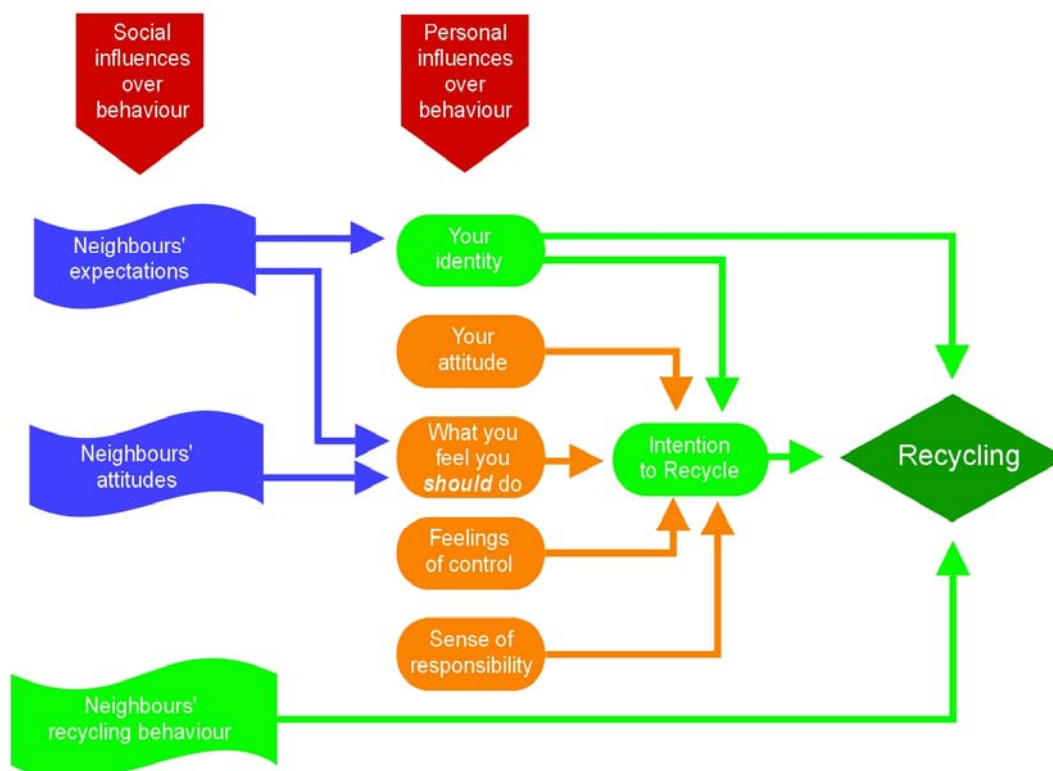


Figure 5: Factors predicting participation in Kerbside Collection Scheme

As demonstrated in Figure 5, a number of important behaviour predictors contribute to a person's recycling behaviour. Recycling was directly predicted by residents' intentions to recycle, the extent to which they felt that recycling was part of who they are - their identity, and the degree to which they observed their neighbours use the kerbside recycling facilities. Other factors had an indirect influence on recycling behaviour by affecting residents intentions: Intentions to recycle were predicted by attitudes towards recycling, the degree to which people felt they ought to recycle, the degree to which they felt they had control over recycling, and perceived responsibility for recycling. Therefore, people are most likely to recycle when:

- recycling is important to their own self-image
- they recognise recycling is their own responsibility
- they consider recycling is a good idea
- there is a feeling of control over recycling behaviour
- they feel that they *should* recycle
- there is a feeling of social pressure to recycle (e.g. from neighbours)
- neighbours visibly recycle

Perhaps the most important of these are recycling as part of one's self image and neighbours visibly recycling because these directly influence recycling behaviour: Other predictors influenced a person's intentions to recycle, which ultimately affects their behaviour.

The results demonstrate that focussing on individual attitudes alone is not enough to encourage participation in kerbside recycling; other personal and social factors are involved. The factors involved in recycling participation are not limited to personal attitudes and practical constraints. The social context in which recycling occurs and the extent to which people feel recycling to be part of their daily life are powerful predictors

with great potential for successful interventions. For instance, when their neighbours set out their recycling boxes, other residents feel encouraged to do the same. The sense that neighbours *expect* other residents to recycle encourages participation in recycling behaviour, whilst at the same time making people identify with the behaviour at a personal level (e.g. *"I am a recycler"*). These findings imply that individuals are likely to adopt recycling norms when they identify strongly with a neighbourhood group that leads by example (e.g. *"the next door neighbours have put their box out, I had better do the same"*). This is how existing social communities and relationships can be beneficial to the promotion of increased recycling participation.

What about other areas in Guildford and other Residents?

The findings described above tested the recycling intentions of a sub-sample of the Guildford population. Following these interesting results, a Borough-wide survey was conducted using the same design, in order to confirm that the factors influencing participation amongst Park Barn and Onslow Village residents were applicable across the Borough as a whole.

A postal questionnaire was mailed to a random sample of 2000 residents across Guildford: 270 residents returned questionnaires (13.5%). As previously, those who returned questionnaires claimed to be regular recyclers: no less than 67% of respondents reported recycling at every collection.

The Borough-wide survey on recycling behaviour offered resounding support for the previous questionnaire carried out amongst residents of Onslow Village and Park Barn. It is therefore safe to say that the model of intentions to recycle (see figure 5) can be translated to the behaviour of Guildford residents as a whole. Guildford residents' attitudes alone do not predict whether they engage in recycling. The most powerful predictors were related to the complex relations involved in how individuals relate to their neighbourhood groups.

These findings suggest there are a number of strategies which could be targeted towards bringing about a change in habits. For example: 1. Making people feel like recyclers; 2. creating a social atmosphere in which recycling is communally expected behaviour; 3. emphasising to residents that recycling is their concern or responsibility, can make a difference in recycling attitudes and behaviour using the relatively simple communication strategy: ***"Everyone else is recycling, how about you...?"***

4. INTERVENTION STUDY

“How Well Are We Doing?”: Different Feedback, Different Results

The results of the previous surveys identified that there is much scope for exploring interventions such as simple communication strategies. The desktop review showed that giving feedback on participation has consistently been found to increase recycling behaviour. In this case, giving feedback refers to information specific to a community's participation in the Kerbside Collection Scheme. Therefore, the aim of the next study in the Surrey Scholar Project was to explore the use of different types of feedback, especially as the desktop review suggests that such types of feedback interventions can be effective in the long term, moreover comparative feedback may be particularly beneficial.

For this study, “street neighbourhoods” in Onslow Village and Park Barn were identified. Streets of 10 or more households were considered as discrete neighbourhoods. Altogether, the sample comprised 39 street neighbourhoods. Each household in these street neighbourhoods received a feedback slip through their letterbox on recycling day (Figure 7).

Feedback Study

There were six types of feedback information (see Figure 6). In addition, a control neighbourhood received no information but was monitored in the same way. The type of feedback was randomly allocated to different street neighbourhoods.

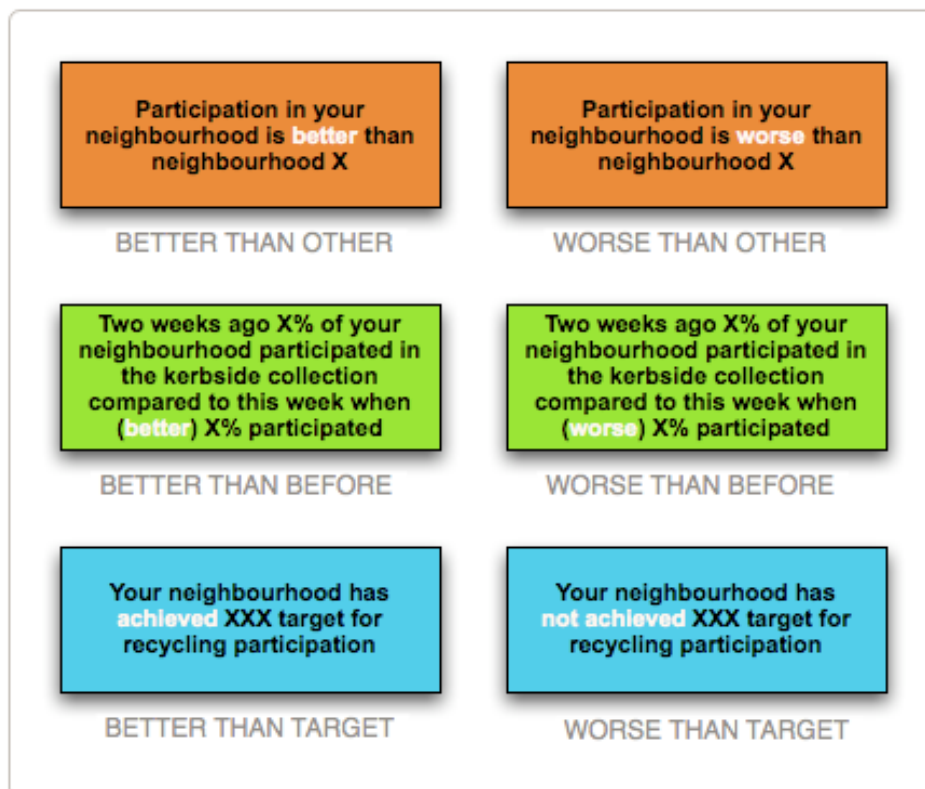


Figure 6: Six Types of Feedback

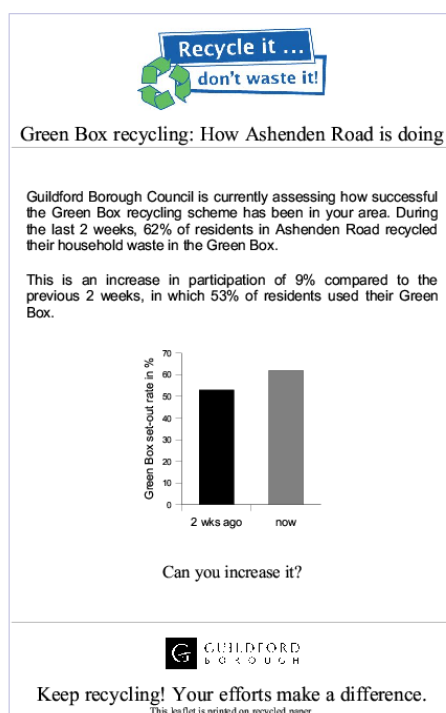


Figure 7: Example of Feedback Sheet

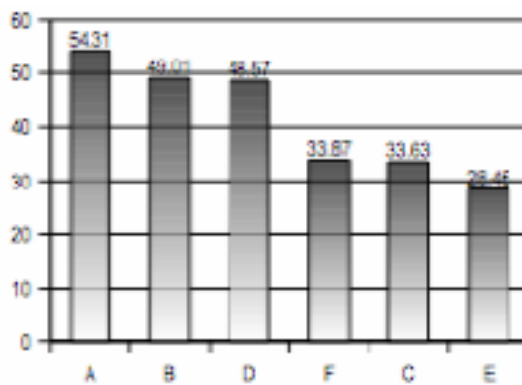
Recycling Box Set-Out Rates and Demographic Information

Participation in kerbside recycling was monitored over the 10 weeks during which households were receiving feedback information. This involved five collections in Onslow Village and Park Barn. On collection days during this period, members of the research team followed the collection vehicle by car, and a manual tally of recycling box set-out rates for each address was taken.

The social groupings of the neighbourhoods were identified using the six Acorn categories (see Figure 8).

social grade	social status	Occupation	households	%
A	“thriving” upper middle class	higher managerial, administrative or professional	692	37%
B	“expanding” middle class	intermediate managerial, administrative or professional	71	4%
C	“rising” lower middle class	supervisory or clerical, junior managerial, administrative or professional	135	7%
D	“settling” skilled working class	skilled manual workers	266	14%
E	“aspiring” working class	semi and unskilled manual workers	395	21%
F	“striving” those at lowest level of subsistence	state pensioners or widows (no other earner), casual or lowest grade workers	313	17%

Figure 8: Acorn Profiles of Participating Neighbourhoods



Set out rates were compared against the Acorn social grouping scheme (Figure 9).

The socio-demographic background of household occupation did make a difference in terms of recycling box set-out rates.

Those from higher, “thriving”, “expanding” and “settling” social backgrounds were more likely to engage in recycling than those from “striving”, “rising” and “aspiring” backgrounds.

Figure 9: Mean Set Out Rates by Social Grade

Further analysis revealed the following patterns in recycling behaviour:

Household size Larger households were associated with greater amounts of waste. However, there was little evidence to suggest that these households participated more in the Kerbside Collection Scheme. Residents from large households reported greater amounts of non-recyclable waste, as well as more frequent use of recycling banks.

Employment Those in full-time employment were less likely to participate in Kerbside Collection Scheme than those who were *not* employed (including retired residents and students). This suggests that residents with more time on their hands were more likely to recycle. Our findings also demonstrated that people who were not employed reported less waste than those in full-time or part-time employment. People who spent more time working generated more waste and used the Kerbside Collection Scheme less.

Age Older residents reported less non-recycling waste, and more frequent use of the Green Box recycling scheme.

Results

Effective Types of Feedback The results showed that feedback influenced participation to a great extent, particularly when comparisons were made between one’s own street and the street showing the highest participation rate in the area. The most substantial increase in Recycling Box set-out rates was therefore for those who received “worse than other” feedback i.e. “Participation in your neighbourhood is WORSE than neighbourhood X”. This type of feedback therefore promotes the most positive change in recycling behaviour.



To illustrate the effectiveness of the “worse than other” type of feedback, Orchard Road in Onslow Village is a useful example. Baseline levels of Recycling Box set out rates, prior to any type of intervention or feedback were 51%. Residents of Orchard Road received participation feedback that compared the participation rate in their street with that of the best performing street in the neighbourhood. The participation rose to 90% after feedback

and remained high (80%) throughout the rest of the study period, even after the feedback had been discontinued. Encouragingly, this increase added to an already high

participation rate, indicating that it is possible to raise participation even in strongly performing areas.

Non-Recyclers Feedback encouraged previous non-recyclers to participate. They responded particularly well to feedback stating that their neighbourhood had recycled more than other streets (Better than other – See figure x) or exceeded a council target (Better than target).

Social Background Different Acorn groups responded to different types of feedback. Households in higher Acorn categories responded better to feedback on the whole, since they displayed more positive change in their recycling behaviour than households in low Acorn grouping. There was also indication that, residents from higher-Acorn neighbourhoods, may be encouraged to continue recycling if they are told either that 1. they are doing better than others; or 2. that they are not doing as well as they had done before.

Before and After: Does Feedback have an Impact upon Attitudes to Recycling?

The results of the feedback study demonstrate clearly that participation in kerbside recycling can be promoted via the use of socially relevant feedback. In order to assess whether changes in behaviour were mirrored by changes in attitudes towards recycling, residents who had indicated in the first survey that they were willing to be involved in further studies were contacted again in with an identical survey, which also included questions about the feedback sheets. It was of interest to measure changes in attitudes as this influences intentions to recycle, which ultimately determines recycling behaviour.

Of the 531 respondents who had completed the first survey, 376 also returned the second – an excellent response rate of 70%. Most (83%) of those respondents who had been sent feedback remembered receiving it, and the majority (88%) of those reported that they had indeed read the feedback.

Changes in attitudes after the provision of feedback are noted below:

- (i) **No Feedback** In the **control condition**, where no feedback was given, residents' sense of responsibility for recycling was stronger at the end of the study than at the beginning. The most likely explanation for this is that the two surveys and the participation monitoring conducted by the research team had an effect on feelings of responsibility regardless of feedback. Interestingly, respondents had the impression that there was a n increase in neighbours' recycling behaviour after the survey period, even though this group had received no feedback. This may indicate that the increase in participation was visible to such an extent that other residents noticed.
- (ii) **“Worse than Other” Feedback** Residents who were told that their street was not performing quite as well as others were less likely to agree that their neighbours recycled or would expect them to recycle, but felt more individual responsibility for recycling.
- (iii) **“Better than Other’ Feedback** Amongst these residents, self-identity as a recycler, the personal norm for recycling, and responsibility all increased significantly during the course of the feedback intervention. Hearing that one's street is participating at a higher rate than others, as expected, seemed to bolster self-identification as a recycler, and additionally strengthened personal norms and responsibility.
- (iv) **“Worse than Before” Feedback** This feedback influenced residents' perceptions of how many of their neighbours actually recycled. As previously, the perceived sense of responsibility for recycling was also higher at the end of the study than at the beginning.

For “**Better than Before**”, “**Worse than Target**” and “**Better than Target**” types of feedback, residents’ sense of responsibility was the only notable change – that is, they felt more responsibility after the intervention.

Is Feedback Effective?

The aim of this feedback study was to assess the extent to which the provision of socially relevant feedback influenced recycling behaviour in residential settings. Its objective was to establish whether participation in Guildford Borough Council’s Kerbside Collection Scheme could be increased by feedback, whether different types of feedback had different consequences for participation, and whether changes in participation were accompanied by changes in attitudinal and social variables measured in the preliminary study.

The distribution of feedback information to local residents was followed by significant increases in participation with the Kerbside Collection Scheme. The results of this study have demonstrated the effectiveness of different feedback interventions in different socio-demographic groups and among people with different previous recycling habits. Thus, feedback can indeed foster significant increases in participation and certainly should be applied on a wider scale. In terms of recommendations for wider implementation, it would be productive to tailor feedback specifically to the intended audience. In our findings, whilst “worse than other” feedback had beneficial effects overall, feedback that told residents that their street had performed *better* than other streets or exceeded a fixed target rate was also effective among those who had not previously recycled. This could be a particular target audience.

5. STEREOTYPE STUDY

The Public Image of Recyclers

This study investigated residents' general impressions of recyclers. Reviews of past research suggest that the public image of recyclers may be a barrier to recycling for some sectors of the population. Previous research carried out amongst residents of Guildford has identified the following image of recyclers:

- old man in his 50's with a beard
- woman in tie-dye shirt and dungarees
- dread-locked, unwashed vegetarian hippies
- "swampy"
- Scandinavians
- outdoors types
- Ikea furniture
- Blue Peter presenters
- someone who is perfect
- someone who has time to recycle
- someone boring

(Surrey Waste Attitudes and Actions Survey, 2002)

Figure 10: Stereotypical Image of Recyclers

All of these examples locate recyclers firmly outside mainstream society, regardless of whether the stereotypes are negative (e.g. "someone boring") or positive (e.g. "someone perfect") in nature. The concern here is that if recyclers or recycling as an activity is associated with such extreme perceptions, people may be discouraged from participating in recycling schemes, purely on the basis of concerns about how others perceive them.

A questionnaire focusing on people's general impressions of recyclers and non-recyclers was sent to a random sample of 2000 Guildford Borough residents. Using a catalogue of possible characteristics, people were asked to position a 'recycler' between two extremes for ideas such as:

People who recycle are.....

- unattractive/attractive
- uncool/cool
- trendy/geeky
- normal/strange
- do-gooders/not do-gooders
- fashionable/unfashionable
- hippie types/not hippie types
- not competitive/competitive
- ambitious/not ambitious
- achievement-oriented/not achievement-oriented
- loud/quiet
- aggressive/easy-going
- submissive/dominant
- hard-working/lazy
- organised/chaotic
- economical/extravagant
- pleasant/unpleasant
- thoughtless/thoughtful
- messy/tidy

- clean/dirty
- caring/uncaring
- complacent/not complacent
- mature/immature
- reliable/unreliable
- hypocritical/not hypocritical
- likeable/not likeable
- outdoors people/not outdoors people
- people who conserve/people who consume
- people who pollute/people who don't pollute
- energy-savers/energy-wasters
- ecologically conscious consumers/not ecologically conscious consumers
- people who litter/people who don't litter
- environmentally aware/not environmentally aware
- concerned about the environment/not concerned about the environment
- conservative/progressive
- left-wing/right-wing
- ideological/pragmatic
- people who vote Green/people who don't vote Green

*see full report for additional items

Figure 11: Catalogue of Possible Recycler Characteristics

Almost 14% of the sampled residents returned this survey, most of whom claimed to be regular recyclers themselves. A secondary study carried out amongst university students focussed on young people's (aged 18-24) images of recyclers. A similar questionnaire was used, with responses from 200 students at the University of Surrey.

What is the Public Image of Recyclers?

Residents perceived recyclers and non-recyclers in different ways, demonstrating that people are aware of a specific "recycler identity".

In reporting their conceptions of an imaginary recycler, respondents generally drew similarities with themselves.

The image of a recycler is a generally likeable, energetic person; someone who has strong environmental beliefs but is also slightly idealistic. An older, female, locally employed person with a family, car and a garden; This person would be a do-gooder, left wing, green-voting, hippy type.

Guildford residents also had the impression that regular participation in kerbside recycling was associated with a certain amount of personal wealth and security, and with the availability of sufficient time to sort and recycle waste materials.



Aspects of this profile are positive and it is encouraging that most respondents consider themselves to be more similar to someone who recycles than someone who does not. This suggests that the more negative connotations are not off-putting to recycling as a behaviour. However, for younger people, there is a more negative stereotype of a recycler (unpleasant, boring) to the extent that the image may represent a barrier to recycling.

6. FOCUS GROUPS

Residents' Views on Kerbside Collection Schemes

This final study in the Surrey Scholar Project was designed to provide Guildford Borough Council with feedback about residents' opinions on the Kerbside Collection Scheme, and to give support to findings of the previous studies.

Two focus groups were convened from residents who had previously responded to questionnaires and shown an interest in contributing further to the research. One focus group included residents from Onslow Village (8 people attended) and the other residents from Park Barn (12 people attended).

What do Guildford residents think?

Our participants were very positive towards the Kerbside Collection Scheme and all regarded themselves as committed and regular recyclers. Their comments mostly supported the findings from the earlier surveys.

1. Recycling Routines and Social Influence

All participants considered themselves recyclers and almost all recycled waste using public facilities before the kerbside collection scheme started.

"I've been using these [kerbside] recycling facilities for as long as they've been going . . . before that I would take stuff up to Slyfield."

There was clear evidence that the onset of the kerbside collection scheme had resulted in a change of behaviour. Some participants had started recycling with the provision of the recycling boxes.

"I didn't recycle anything until boxes started appearing..."

Most participants had a routine followed regularly: they knew their collection day and mostly prepared boxes the night before. Habits had clearly been formed around the collection routine. Some mentioned that weekly collections were better as there was no need to remember when the recycling would be collected, but others' opinion was that weekly was too often where there were only two people in the home. Within this there was the pragmatic acceptance that the Borough Council were catering for all types of household and so a weekly collection was probably necessary for many residents in the Borough.

The focus group discussions also demonstrated the importance of social influence over recycling habits. Most participants believed that the majority of people on their streets recycled at least some of the time. There was some evidence of participants either influencing or being influenced by others, suggesting that there is a social element to recycling as a behaviour. Added to this, there was the belief that when most people within a given area behaved in what was seen as a positive way, there was an enhanced sense of community. Residents' informal references to the functioning of both injunctive and descriptive social norms (e.g. Cialdini et al., 1991) were of particular interest: people were aware of neighbours' recycling habits, referred to a sense of communal purpose

connected to participation, and mentioned some degree of social pressure to follow other residents' example with regard to recycling. The very visibility and conspicuousness of using the Kerbside Collection Scheme seems to encourage people to either continue with their participation or to begin to recycle.

“ . . . it used to be every other Wednesday . . . you just looked up the road to see if everybody else was putting their boxes out, but now it's every Wednesday so that's easier. We all know it's Tuesday.”

“ . . . there's a certain amount of pressure to make sure that you put them out as well. Because everyone else is doing it you think, well, it's even more of a good idea to do it as well.”

2. Responses to Feedback

The reaction to feedback was mixed. A small number of participants remembered receiving examples of feedback during the experimental phase. As all of the participants considered themselves as regular recyclers, most said they felt annoyance at what to them appeared to be wastefulness and useless information. They reported that the feedback sheets had no effect on their behaviour.

“My reaction was, well, so what? I mean, I put my box out most weeks . . . and the reaction was, well, what a waste of paper. We're trying to recycle and be environmentally friendly, and what do we get sent through the post, more waste paper.”

Some positive responses were made about the types of feedback where comparisons were made between different neighbourhoods. Such feedback even evoked a sense of pride in some participants if it reported a good performance of one's own neighbourhood group. In line with social identity theory (Tajfel & Turner, 1979), positive comparison outcomes were thus related to self-esteem. Again, the presence of a clear difference between the two comparison targets was considered to be crucial.

“I think if I was living in Hedgeway and some friends were living in Orchard Road I would brag about it . . . go to a dinner party or something or, meet them in the pub, 'oh we beat you.'”

3. Recycler Identities and Image of Recyclers

As noted in the questionnaire of the public image of recyclers, respondents identified with the popularised image of the typical recycler, e.g. An older, female, locally employed person with a family, car and a garden; a do-gooder, left wing, green-voting, hippy type a generally likeable, energetic person; someone who has strong environmental beliefs but is also slightly idealistic. Whilst such an image may be regarded as positive or negative, it is important to note that, for the residents themselves, such an image was regarded as positive in nature. Participants in the focus groups reported pride in considering themselves to be recyclers. Therefore, they identified strongly with the image of recycling and would be prepared to discuss it openly and encourage others. There was an assumption that others in their peer or friendship groups would automatically behave in a similar way, thus suggesting that there was a sense of communal shared identity.

“I'm very proud to say [I'm a recycler] I think.”

“Well, it's a positive thing, isn't it? Something to be proud talking about and say you do it.”

Almost all said that they would be prepared to stand up openly for their beliefs and challenge others who were seen not to recycle should the social situation be appropriate.

“I've done it [refuse to put recyclables in the general waste]. I said, oh, you don't recycle? Haven't you got a box?”

“I would ask them [neighbours] not to put it in the trash.”

4. Responsibility

There was immediate response to questions relating to responsibility that supermarkets should be taking more responsibility and make more effort to reduce packaging. Although supermarkets were consistently mentioned as centres to which participants took their recyclables, there was still a negative attitude towards them as they were perceived as being able to do substantially more to reduce waste.

“Supermarkets in my opinion. They actually educated people to over-use and use materials and foods that is over packaged probably unnecessarily.”

Interestingly, there was no mention that Guildford Borough Council, or residents themselves should be taking any more responsibility for reducing waste going to landfill. There was little evidence that residents would put less packaging prior to cost in their shopping decision making. Historical schemes were mentioned, however, as a means to encouraging people to choose glass bottles over plastic.

“Why can’t all bottles be glass and we could take them back like we used to when we were kids and get the money back on the bottle.”

Enforcing recycling through regulation or penalty systems was discussed by the groups. This was considered a direction that would have a very negative impact. The participants were all happy that they were taking responsibility for their own behaviour and that positive incentives rather than law and intervention were the best way forward. This was the case even where non-recyclers were to be encouraged, although there was some discussion that this group of people would evade the law rather than comply.

“We’d resent it [regulation] and I think it would be impossible to enforce.”

“I think it’s negative encouragement, actually not encouragement at all. It should be positive.”

“It would be more of a nanny state.”

5. Improvements to the Current Scheme

Overall, focus group members were very positive towards the kerbside collection scheme and they welcomed the Borough Council’s efforts to encourage recycling.

“I think what’s there works very well.”

“For what it is they’re doing a fine job.”

“Yes, they’re doing it very well.”

Most important was the fact that the kerbside collection scheme had made it accessible and easy for everyone to recycle. The primary message from many participants was that the scheme should be kept simple to encourage everyone to use it and continue to use it.

It was clear from discussions that even these committed participants were de-motivated when they saw their carefully sorted recyclables being poured into one lorry. There was some cynicism generated from this as to whether the items really were recycled or secretly were taken to landfill.

“Since I saw them [recycling collectors] do that with bottles [tip into the lorry] I don’t bother sorting mine out. They all just go in together. Tins and bottles they sort out, but colours of bottles all goes in together I think. So I don’t think I need to sort them, but I’m not really sure.”

"I think it would be nice to know that what we put in the bins really genuinely does get recycled somewhere rather than believing some of the rumours that it all just ends up in landfill anyway, whether you put it in the boxes or whether it goes in the regular trash."

Some practical suggestions were made by focus group participants for improvements of the Kerbside Collection Scheme.

- Participants spoke very early in the discussion about the need for plastic collections – they clearly wanted this to be added as a service and it was returned to often during discussions. This was also brought up by respondents to the surveys. As it was a service not offered, many participants did not recycle plastic but they felt that it was important that they should be able to do so.
- Re-designed collection boxes that fit more easily into people's homes would potentially encourage further participation.
- Providing a means of recycling batteries (e.g. using postage returns) would be welcomed.

7. CONCLUSIONS & RECOMMENDATIONS

A strong self-image as a recycler can encourage and sustain recycling behaviour. By making people feel they are successful at recycling (either individually or at a neighbourhood level) further participation with the Kerbside Collection Scheme would be encouraged. Most importantly, this is likely to entice non-recyclers to start using the Kerbside Collection Scheme.

We recommend that communications and information about recycling should focus on creating recycling as a part of self-identity:

- (i) It would be beneficial to adapt feedback to a very local level: where people feel that they and their neighbours are contributing to the recycling effort.
- (ii) It would be valuable to emphasise the communal nature of sustainable waste management, and to introduce some comparative element appropriate to the intended audience in future communications about recycling.
- (iii) Appealing to people's competitive spirits and making meaningful comparisons (e.g. one's own neighbourhood against a known, similar neighbourhood) is the most effective means of communication, since people will be interested in their neighbourhood's performance and pay attention to relevant feedback.

The most effective form of communicating with the public is to provide them with meaningful comparisons about recycling participation rates such as their own neighbourhood against another. Targets which may appear to be arbitrary, set by an anonymous council officer are less effective than tailoring messages to separate audiences. However, when residents can be told that they are *beating* targets, there would be improved participation, especially amongst non-recyclers. .

Social pressure to recycle and a neighbourhood expectation are potent sources of change. By making recycling an obvious and detectable behaviour (e.g. through use of the Kerbside Collection Scheme), and connecting this with a positive community quality of life, there will be long term participation. Attempts could be made to link the inclusion in the Kerbside Collection Scheme with house prices and desirable, quality neighbourhoods.

The importance of other people's observable behaviour is worthy of note. When neighbours visibly recycle and/or feedback indicates that others in one's street recycle, there is a high impact on the likelihood that *non-recyclers* will start to use the Kerbside Collection Scheme.

There may be a case to concentrate promotional campaigns and strategies on non-recyclers. Regular participation in recycling apparently becomes self-sustaining behaviour once people identify themselves as a recycler. Non-recyclers were particularly encouraged to start recycling by comparisons with other neighbourhoods and knowing that their neighbourhood was beating a target.

The recycler stereotype description suggests that there is room to reframe recycling in a variety of guises to help a wider selection of the population identify with pro-environmental behaviour. Recycling should be promoted as an inclusive behaviour; one with which all sorts of people participate.

Lack of participation in the Kerbside Collection Scheme amongst young people may be due to a number of factors such as living in multi-unit accommodation or still under the parental roof where recycling is the responsibility of another person. However, the negative response to images of recycling suggest that there is a need to investigate further young people's response to recycling, beyond the hope that recycling may become relevant to this social group once they are beyond early adulthood.

Recycling is considered an easy activity, over which residents feel they have some sense of control. This indicates that the Kerbside Collection Scheme is a successful venture and suggested improvements (e.g. plastic recovery, battery envelopes and 'pedal bin' shaped recycling boxes) would contribute still further to the overall reduction of household waste.