Research Notes
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The Countryside Agency

# How people interact on off-road routes

## Summary

This research was carried out to inform the Countryside Agency's Greenways programme. It also has relevance for other routes where space is shared by a range of non-motorised users, whether for recreation or transport.

Using an innovative data collection methodology, involving video recording, this new research has contradicted earlier anecdotal evidence: it finds conflict is very infrequent, is generally slight and is mainly concerned with intrusion. Conflict, where it occurs, can be caused by people (such as the behaviour of others) or the environment (such as inadequate maintenance of the route). In the main, route users accommodate others by changing their speed and pattern of travel: cyclists slow down, while walkers move in more of a straight line and speed up.

The research found that, when people gather together to talk about conflict, they talk it up and their recollection of how many others they met while on the route escalates. Their perceptions of conflict were much higher than that actually experienced. This may account for the difference between previous accounts and the new findings.

**The findings are significant as they shed light on the difference between real and perceived conflict - involving people on foot, bike or horse - both in terms of accidents and verbal disagreements.**

## Main findings

### Research brief and methodology

The methodology developed by the researchers, and the findings, are relevant to those planning and managing shared routes.

In 1999 the Countryside Agency (then the Countryside Commission) appointed the University of Surrey to investigate the behaviour of different users on shared-use routes, concentrating in particular on the levels of conflict encountered and the factors that lead to or avoid conflict. The research considered the extent to which people's perceptions of conflict acted as a barrier to using shared-use routes. [The word 'conflict' is emotive and was not used in the field research – see page 2.]

Three data collection methodologies were used: video recording of actual user interactions on five routes; questionnaire surveys of the users (one immediately after the interaction and one later, at home); and focus group interviews to explore the issues raised by the behaviour and questionnaire responses. Additional focus group interviews were held with people who had chosen not to use shared-use routes.

## Conflict

Conflict has not been well defined in previous research. This research was designed to improve our understanding of conflict between users, especially to understand the difference and impact of 'actual' and 'perceived' conflict. The research revealed four dimensions that apply to shared-use routes:

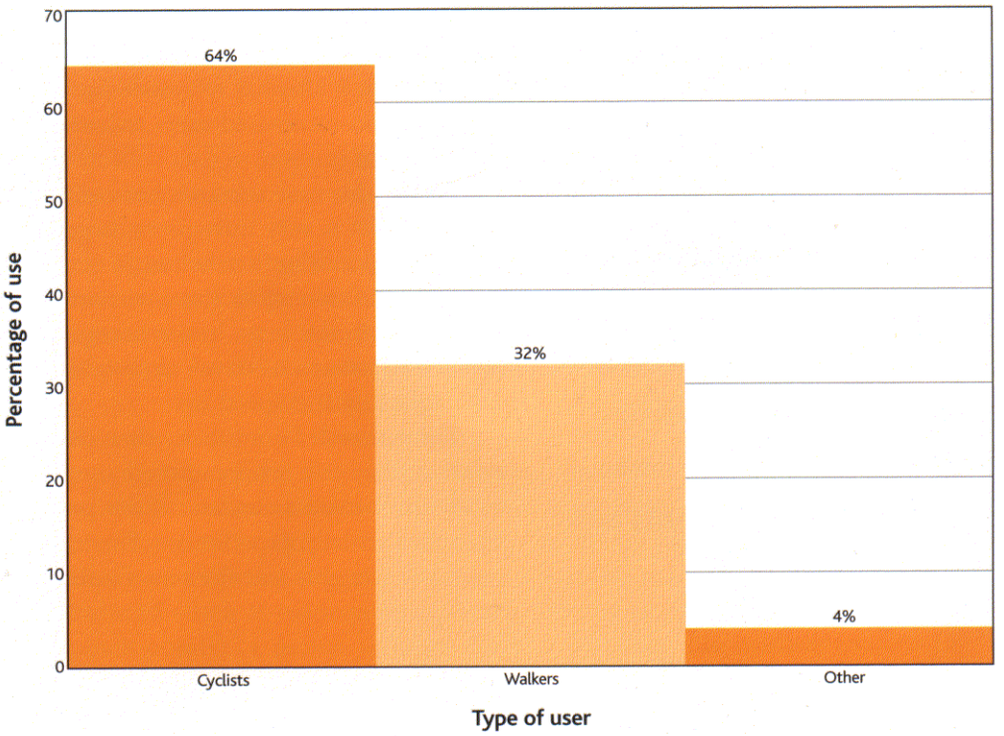
- *hostility* insulting, provocation, violence, fighting;
- *intrusiveness* crowding, delay, gesturing, speeding;
- *competition* disagreement, collision, argument, lack of consideration;
- *disagreeableness* anger, animosity, inconsistency, encounter.

The word 'conflict' was not used at all during the study because of its complexity and because it is an emotive word. The label 'interaction' was used and a scale developed to analyse its incidence.

## Usage of the routes

The routes surveyed were selected on the basis of reportedly high levels of usage, a mix of users and path types and a widespread geographical distribution.

**Figure 1:** Usage levels on survey paths

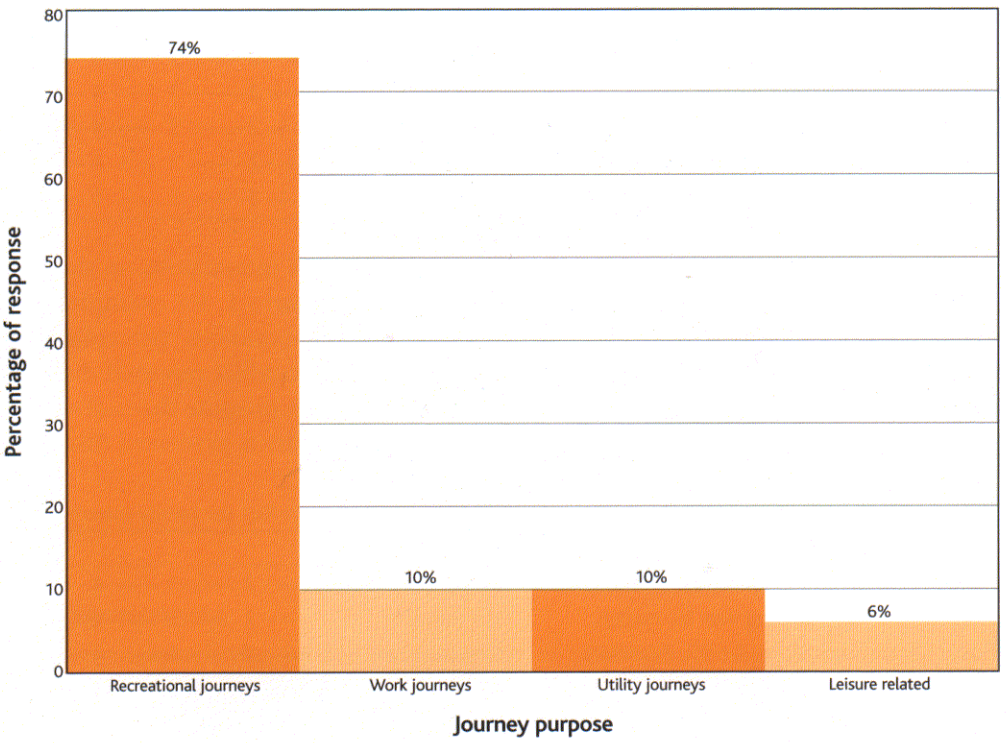



Routes are multi-functional (see Fig 2). The overwhelming reason for choosing the routes was that they were considered to be pleasant, traffic-free environments close to home. Respondents also reported that the routes were most important to them for pleasure reasons and that they valued seeing others on the routes enjoying themselves.

## The behaviour of those using the routes

When on their own, cyclists travelled at an average speed of approximately 14km per hour and walkers at approximately 4km per hour. Neither cyclists nor walkers, when alone, travelled in a straight line. Cyclists moved along the route in an elongated s-shaped pattern, slowly moving one way and then correcting themselves by moving the other way. In contrast, walkers (with or without dogs) adopted a more complex and erratic pattern, with frequent left-right corrections. In neither case was there any consistency in positioning, such as keeping to the left. This made it difficult for users to anticipate where they might encounter another route user and on which side they should seek to pass them.

**Figure 2:** Reported journey purpose over all five sites.




When encountering others, cyclists tended to slow down while walkers speeded up.

On the routes studied, (chosen for their relatively high level of usage based on recorded flow data) meeting others was a comparatively rare event, compared to the total time an individual user spent on the route. For example, a walker encountered another walker approximately once every 6.5 minutes and a cyclist every 7 minutes.

Cyclists tended to slow to the same speed regardless of what type of user they encountered. When encountering others, cyclists tended to spend more time on the left of the route, or in the centre, than they did when alone. Walkers were equally likely to keep to their left or their right. In addition to their speeds becoming more alike, the paths chosen by cyclists and walkers also converged, with walkers becoming noticeably less erratic. This 'straightening' was likely to account for walkers moving more quickly along the route.

## Differences between actual and perceived encounters

Two weeks after the event, respondents remembered twice as many encounters with others as those they identified at the time. This implied that passing other users was a more memorable event than travelling alone, with people reporting more interactions than actually occurred. This is consistent with other work on event memory and provides an insight into why the perceptions of conflicts may be greater than the actual experience of them.

## The experience of actual and perceived conflict

Most people's experience of meeting others on the routes was peaceful, unintrusive, co-operative and agreeable.

No respondents reported hostility and few reported intrusion, competition or disagreeableness (see Figure 3). Where conflict did register with users, it was associated with intrusion, caused by the unpredictable movement of other users, journey purpose, speed and inadequacies in the signing and maintenance of routes.

**Path width and speed of travel were significant determinants in people's judgement of conflict.**

**Figure 3:** Perceived conflict reported on-site

| Non Conflict | | Conflict (↓ = point of mean on scale) |
|---|---|---|
| Peaceful | 1 ↓ 2 — 3 — 4 — 5 | Hostile (mean = 1.36, SD = 0.68) |
| Un-intrusive | 1 — ↓ 2 — 3 — 4 — 5 | Intrusive (mean = 1.78. SD = 1.16) |
| Co-operative | 1 — ↓ 2 — 3 — 4 — 5 | Competitive (mean = 1.72, SD = 1.04) |
| Agreeable | 1 ↓ 2 — 3 — 4 — 5 | Disagreeable (mean = 1.51, SD = 1.01) |
| **Conflict - Low** | 1 ↓ 2 — 3 — 4 — 5 | **Conflict - High** (mean = 1.57,SD=0.75) |

Three scenarios of interactions on shared-use routes were presented to respondents. Scenario 1, for example, described cyclists passing a family who were walking. Respondents' perceptions of conflict in these imagined scenarios was greater than conflict reported during actual use of the routes (see Figure 4). When asked to imagine themselves as horse riders or joggers in other scenarios, respondents perceived that the levels of conflict were higher again.

**Figure 4:** Perceived conflict for family member in Scenario 1

| Non Conflict | | Conflict (↓ = point of mean on scale) |
|---|---|---|
| Peaceful | 1 — 2 ↓ 3 — 4 — 5 | Hostile (mean = 2.67, SD = 1.03) |
| Un-intrusive | 1 — 2 ↓ 3 — 4 — 5 | Intrusive (mean = 2.61, SD = 1.01) |
| Co-operative | 1 — 2 ↓ 3 — 4 — 5 | Competitive (mean = 2.34, SD = 1.03) |
| Agreeable | 1 — 2 ↓ 3 — 4 — 5 | Disagreeable (mean = 2.67, SD = 1.19) |
| **Conflict - Low** | 1 — 2 ↓ 3 — 4 — 5 | **Conflict - High** (mean = 2.61,SD=1.05) |

Considerate behaviour was seen as the most important factor in reducing conflict.

As perceived conflict increased, controlling factors such as path width became more important in making the experience peaceful, unintrusive, co-operative and agreeable. In actual situations, the behaviour of others, the type of people on the route and the environmental influences were less important to perceived conflict than when people thought about the routes in an abstract situation. However, while conflict was not a serious problem for most people most of the time on most routes, there were particular situations in which perceived and actual conflict was most likely to occur. More investigation is required to determine the precise nature of these situations. However, evidence suggests that these situations may be environmentally induced (such as inadequate surfacing, signing or lighting, blind corners or pinch points) or person induced (such as particular dispositions towards the fear of accidents or crime).

## The consequences of conflict

Among both users and non-users, the principal consequence of perceived conflict - particularly intrusiveness and hostility - was anxiety and fear about personal safety. This feeling was intensified by a number of factors, including crowding, cyclists travelling at speed, meeting groups (especially young people) and encountering poor environmental conditions that reduced sight lines and visibility. In the extreme, these perceptions can lead to people avoiding shared-use routes.

## Conclusions

Through this research, the University of Surrey has developed a new methodology for studying the use of all types of route. Its application has called into question the findings of much previous work, in demonstrating that people's recall of events can differ significantly from what actually occurred. Coincidentally, it has also shown that many existing estimates of route usage are inaccurate. Although requiring further development, the methodology has the potential to provide accurate, cost-effective evidence for both policy formulation and operational management.

**This and other Research Notes can also be viewed on our website: www.countryside.gov.uk**
**The full report from which these notes are drawn can be viewed on: www.greenways.gov.uk**

## Further reading

Department of Transport and Welsh Office (1986), *Shared-use by cyclists and pedestrians*, Local Transport Note 2/86. London: HMSO.

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