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Teenage trespass on the railways – a systems approach

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Rail trespass and risk-taking behaviours are particularly high among 16–25 year olds. The aim of the research described in this paper is to understand how the communication of safety information to these groups can be improved. The study involves focus groups with 117 young people and 43 interviews with stakeholders drawn from the rail industry alongside professionals involved in working with young people. Participants in the focus groups are shown a set of four safety videos which describe the dangers of trespass. The findings demonstrate a number of misconceptions about the dangers and legality of trespass among young people (e.g. lack of awareness of electrocution dangers). Material which includes emotional, ‘real-life’ information in the form of safety narratives is judged to be the most effective in communicating trespass risks. The study also underlines the importance of combining and integrating technical, educational and community-based efforts to reduce trespass.

1. Introduction

Train–pedestrian collisions that occur as a result of trespass or vandalism are one of the leading causes of train-related accidents world-wide (Lobb, 2006). Trespass and risk-taking behaviours are particularly high among 16–25 year olds (RSSB, 2013, 2014). Almost 40% of the total trespass fatalities in Great Britain involved young people aged 16–25 (RSSB, 2013). In 2013, there were 2000 reported incidents of trespass and 39 fatalities in the UK, of which 75% were due to trespassers being struck by trains (RSSB, 2013). Electrocution and risk-taking behaviours, such as train-surfing (riding on the top of a moving train with the risk of falling, electrocution from overhead power cables or colliding with bridges) and ‘playing chicken’ (racing across the tracks before an oncoming train), comprise the remaining deaths. Public trespass fatalities in the UK are disproportionately more likely to occur among the male 16–35 age group. Rail trespass involves a large number of stakeholders (e.g. Network Rail, community safety managers, schools and British Transport Police) and impacts upon the lives of train drivers and police officers, as well as the family and friends of the victims.

1.1 Previous research on rail trespass

In general, limited research has been carried out on the causes of trespass and very few studies have looked at the effectiveness of interventions targeted at reducing rail trespass and vandalism (Lobb, 2006; Silla and Luoma, 2012a, 2012b). Much of the literature discusses trespass within the larger context of railway suicide (e.g. Havârneanu *et al.*, 2015). Men are more likely to trespass as compared to women, particularly young men between the ages of 18 and 29 (Freeman *et al.*, 2013; Silla,

2012). Other work has shown that there may be a gender difference in terms of intervention success. For example, males are more likely to respond to interventions when the intervention is not perceived as a threat to their self-image (e.g. their masculinity; Harris and Napper (2005); Sherman *et al.* (2000)). Further individual differences in intervention success may also depend on other factors, such as age (Hardy, 2006; Lobb, 2006).

Two main categories of trespass exist: ‘accidental’ and ‘deliberate’ (vandalism is almost always deliberate). Accidental trespass has many causes, such as misinformation or poor attention, alcohol, drugs, peer pressure and distraction (e.g. use of mobile devices; Freeman *et al.* (2013); Silla (2012)). These can also impact deliberate trespass, which is more common. The reasons for deliberate trespass include: taking a short cut on a journey, overconfidence due to knowledge of the train timetable, and peer pressure (Lobb *et al.*, 2003; Silla and Luoma, 2009). Some reported cases of deliberate trespass can be considered to be the result of risk-taking behaviour, such as lying on the tracks (Lobb, 2006). There also appear to be misconceptions about trespass and vandalism, suggesting perpetrators often claim that the behaviour is both legal and safe (Lobb, *et al.*, 2003; Silla and Luoma, 2009).

1.2 Study aims and objectives

One of the main conclusions from previous work on trespass (e.g. Lobb, 2006; Silla and Luoma, 2012b) is that there is a need to apply a systems approach to railway trespass. According to Leveson (2011; p. 63) the systems approach emphasises: ‘that some properties of a system can only be treated adequately in their entirety, taking into account all facets relating the

social to the technical aspects. These system properties derive from the relationships between the parts of systems: how the parts interact and fit together'. Aside from young people, teenage rail trespass involves many stakeholders (e.g. parents, school teachers, youth workers, police, community safety managers and rail safety experts). Very little work has been carried out with teenagers and young adults and their attitudes towards railway dangers and trespass. Previous work has tended to discuss trespass in the context of railway suicide or failed to focus on differences that might exist within specific groups (e.g. young people). The study aimed to fill an important gap in the literature on trespass, particularly as it relates to high-risk groups, such as teenagers and young adults. The aim of the study was to find out more about the views of stakeholders, particularly with regard to how the communication of safety information to teenagers and young adults could be improved. In order to do this, the focus was on two main objectives

- (a) to probe deeper into the attitudes of teenagers and young adults with regard to trespass and how the dangers of trespass could be better communicated
- (b) to identify improved strategies for communicating the risks of trespass based on interviews with a range of stakeholders drawn from the rail industry and individuals who work with teenagers and young adults (e.g. teachers, community safety experts).

Given the limitations of space and the volume of data collected during the study, this paper is limited in the sense of providing an overview of the key findings from the study. Further information covering the findings and conclusions from the study (Kendrick and Waterson, 2015) is available on request from the corresponding author.

2. Research methods and data analysis

2.1 Focus groups

A set of 19 focus groups were conducted between June and November 2014 with young people from a variety of geographical regions within the UK (e.g. urban, suburban and rural locations) and backgrounds (e.g. secondary schools, universities, youth clubs, grammar schools and a young offenders' institute). Initial contact was made with local secondary schools in Leicestershire and Nottinghamshire, as well as with youth clubs and sport clubs. Other participants were recruited as a result of recommendations made by Network Rail community safety managers, as well as other individuals in the rail industry involved in trespass reduction (e.g. employees of the Rail Standards and Safety Board). As the study progressed the list of contacts was widened to take into account as wide a variety of geographical locations and age groups as possible. During the focus groups the authors came across a number of examples of participants who had carried out trespass in the past; however, the sample did not contain participants who might be characterised as persistent or regular trespassers on

the network. Access to such individuals is extremely difficult, particularly in terms of the low level of prosecutions each year, which makes identification of trespassers very difficult. The final sample was made up of 61 females and 56 males, ages 12–23, (average age 16.4 years). The design of the focus groups followed the guidance set out by Krueger and Casey (2014) as it relates to a 'double-layer design' for focus groups; that is, the authors aimed to compare teenagers and young adults across differing geographical regions of the UK and different age ranges and to take into account the role played by gender and family background where this was possible.

During the focus groups participants were shown four safety videos which have been produced by Network Rail in the UK as part of larger rail safety campaigns (Table 1). The videos acted as a set of 'probes' with which to stimulate discussion about trespass. Participants were encouraged to discuss what they liked and disliked about each video, followed by more general questions about their knowledge of trespass and vandalism, possible motivations for trespass and what they knew about existing safety campaigns. All of the focus groups were audio-recorded and transcribed. The resulting transcriptions were then thematically analysed (Miles and Huberman, 1994) in order to derive a set of common themes and sub-themes within the data.

2.2 Interviews

In total, 43 interviews were conducted with a variety of stakeholders drawn from two main groupings: (a) people involved in rail safety (e.g. community safety, marketing, British Transport Police, rail safety experts and rail operations personnel); and (b) individuals working with teenagers and young adults as part of their jobs (e.g. youth workers, teachers, charity and education, social work, police, youth sport and community safety officers). The interviews sought to identify effective methods and techniques for engaging with teenagers and young adults, and how to improve current methods. All of the interviews were audio-recorded and subsequently transcribed. The resulting transcriptions were then thematically analysed (Miles and Huberman, 1994) in line with the procedure used to analyse focus group data.

3. Findings

3.1 Focus groups

3.1.1 Attitudes towards the safety videos

A summary of the positive and negative comments that emerged from thematic analysis of the focus group data is shown in Table 2.

'Leighton's story' was the overall favourite safety campaign due primarily to the emotional impact, which was the most mentioned strength. Participants indicated that they would remember the information within the video because it seemed 'real'. However, 'Leighton's story' was criticised for being too long, with a reconstruction of the trespass incident

Table 1. Details of the videos shown during the focus groups

Video title	Source	Length: min, s	Overview of content
'Leighton's story'	You Tube (2016a)	5 min, 26 s	This video shows the narrator, Leighton, telling the true story of his girlfriend Sammy's death while trespassing on the railway. It features a reconstruction of their relationship and the night of the event, interspersed with footage of him speaking. The video ends with a black screen and white text, describing Sammy's death and a little more about her (her age, the fact that she was a mother).
'Track tests with Wretch 32 and George the Poet'	You Tube (2016b)	1 min, 56 s	The video provides some description of factors that might influence your ability to hear an oncoming train (for example, surrounding buildings). Two rappers attempt to correctly identify the direction from which the sounds of an approaching train are coming in a game-like scenario, and the video comes with a link to the Network Rail website where the game may be tried online by viewers.
'Track tests with Dai Greene'	You Tube (2016c)	1 min, 46 s	This video contrasts with 'Track tests with Wretch 32 and George the Poet', it focuses on the difficulty of getting across a track with any speed. The video begins with a short amount of CCTV footage of near-misses at stations. A world-champion athlete (Dai Greene) attempts to cross a track with a 'train' 300 m away. The video highlights some of the possible hazards that might make this crossing problematic (such as rain, or grease).
'Live wire – how powerful are the overhead lines on the railway?'	You Tube (2016d)	1 min, 1 s	'Live wire' presents information about the overhead power lines close to rail tracks. It has no commentary or narration, and the only sound present is the sound of electricity. The video presents an animation, using graphics to illustrate a set of facts, such as the amount of electricity in a power line and associated risks

described as 'melodramatic'. 'Track tests with Dai Greene' was the second most popular safety campaign during focus groups. Participants praised the description of the dangers of the railways and the way in which hazards were highlighted. However, the video was criticised for not having enough facts to accompany the description of hazards (e.g. voltages, the fact that the overhead wires are almost constantly switched on). The use of real-life clips (closed-circuit television (CCTV)) of people having near misses was also considered a strong point. The 'Live wire' video campaign was praised for using clear-cut, straightforward facts that were easy to understand, but overall it was not very popular.

Focus group participants suggested that the noises used within the video (i.e. the buzz of live wires) were effective in portraying the electrification of the railways; however, a voice to read the information to the viewer would be of benefit, as some participants reported being bored or not motivated to read the information. The 'Track tests' video campaign with 'Wretch 32' and 'George the Poet' was the least popular, and felt to be the least informative, sometimes labelled as 'pointless' by focus group participants. This indicates that having famous rappers who appeal to young people is not in itself enough to get the safety message across. The main criticism of the video was that it was 'unrealistic', and felt 'rushed'. Additionally, females involved in this research highlighted that the video was

particularly aimed at men, and that they would not be motivated to pay attention as a result.




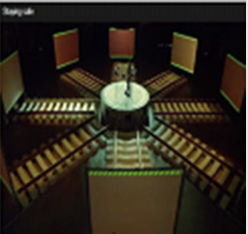
3.1.2 Awareness of the dangers of trespass

In general, the findings point to a general lack of awareness and understanding of the dangers surrounding the railways among teenagers and young adults. Particularly within the younger age group (11–15 years) participants were often unaware that trespassing is illegal, and even fewer were aware that there was an associated penalty following a trespass incident (of up to £1000). Similarly, knowledge of the dangers surrounding trains and railways was limited. A large number of participants were also unaware of the dangers of electrocution from overhead wires and the third rail that exist in some parts of the UK.

I knew it was illegal to go into people's gardens, but I didn't know that railway was private or that you couldn't go on them. (Female, urban, high school)

Although some participants reported being aware of the impact of rail trespass upon others, participants often perceived trespass as a 'victimless crime', 'similar to road crossing', supporting previous research that suggested those who trespass and vandalise are not well informed of the dangers or consequences (Silla, 2012).

Table 2. Focus groups – summary of comments on the four videos

Video (screenshot)	Rank	Positive comments	Negative comments
Leighton’s story 	First	Emotionally involving; contains information about the live rail; true story; surprised by manner of death of the trespasser	Too long; too much background story; melodramatic reconstruction contradicts serious message; confusing
Track tests (Dai Greene) 	Second	Use of CCTV clips; involvement of well-known athlete; factual; addition of hazards in stages; relatable to real life	Unrealistic needs more relatable or everyday obstacles; perception of exaggerating the problem; initial success contradicts message
Live wire 	Third	Lots of factual information; straightforward messages; contains information about the dangers of power lines	Uninteresting; lack of real-world context; too fast to process information; feels like an introduction to something else
Track tests (Wretch 32) 	Fourth	Highlights difficulty of hearing train; set-up was engaging and visually interesting.	Unrealistic; correct guesses contradict messages about dangers

3.1.3 Video content: ‘emotional impact’ and associations with family and friends

Emotional impact appears to play an important role in determining the extent to which safety messages are rated as important and successfully communicated among teenagers and young people. The use of real-life stories (such as ‘Leighton’s story’), involving the friends and families of people who have committed trespass, was seen as especially effective in getting the safety message across. Content which was seen as ‘emotional’ was also frequently viewed as a good way of presenting and prompting reflection about safety. Across the focus groups, safety campaigns with an emotional impact were the most mentioned strengths.

The talking was better [Leighton’s story] ... him telling a story. It was based on an experience ... even though you don’t know him, it was his experience and you can see the emotion in him because he lost a person. (Female, urban, youth group)

One issue mentioned by participants, was that young males may not think (or care) that rail safety is something that could affect them, and may therefore not be concerned about their own welfare. However, previous research also suggests that young males can be affected by hearing how their own behaviour could impact the lives of the people closest to them, those who they love and care about (Hoekstra and Wegman, 2011). This includes younger siblings, parents or girls in the same age group. Targeting these individuals was seen as a way to engage young males and change their behaviour. ‘Leighton’s story’ highlighted the impact of the girl’s death on her boyfriend and the impact this would have upon her daughter.

She has no mum now...The daughter’s not got a mum but she might know what’s happened when she gets older. (Male, urban, high school)

These types of comment highlight the role played by emotive information in conveying safety messages. Information in the

form of video-based material and/or personal experiences shared in a 'live' context from the victims or family members was generally seen to personalise the safety message and stories from survivors who have learnt from their mistakes, and go into schools to inform others of what could happen after one mistake.

3.1.4 Video content: realism and factual material

The use of real life and realistic situations within rail safety campaigns was seen to be most effective in engaging with teenagers.

I think it was something that could actually happen to you ... you get drawn into listening [Leighton's story]. The other one [Track tests with Wretch 32] was okay, [but] it was unrealistic. This [Leighton's story] is realistic, so I thought it was better ... it's like a true story and the other one [Track tests with Wretch 32] was, like, staged. (Female, urban, grammar school)

The use of clear facts was identified as important to young people to get the information and key messages across during safety campaigns. The use of clear-cut, straightforward facts was also understandable and appealing to young people.

I think this was the best video [Dai Greene video] out of them because you can learn the most, like how slow it can go, not even at its fastest speed it can catch you up. How many trip hazards and things like that, that can affect you. (Male, urban, high school)

I liked it ... [Track tests with Dai Greene video] ... I thought it was really good because it shows you how, like, hard it would be in reality to cross when a train's going at nearly 80 miles an hour. (Female, urban, high school)

However, using a game format to highlight the dangers of railways was seen as something that might encourage other young people to play on the rail, and might even lead them to try to recreate the game in real life.

Well it was pretty bad that he [Track tests with Dai Greene] managed to beat the train the first time... some people might think... oh yeah; I'll have a go at that! (Female, urban, university student)

3.1.5 The influence of role models, peer pressure and social media

The use of role models was suggested to be important in creating engaging safety materials for teenagers and young adults. Participants indicated that it was important to have role models they could relate to. These role models may also differ according to the age, gender, ethnicity, education, background, socio-economic status and geographical location of the target audience for the campaign. A number of the safety videos appeared to target young men, using male sports stars and male rap singers for example, whereas girls felt they wanted to see role models that they too could relate to in the safety videos.

Well Wretch 32 certainly isn't a role model for me, they need to have role models, people we can look up to, that's who they need to have on the video to get the message across, not a rapper. (Female, rural, university student)

The use of role models was also mentioned as potentially problematic. Young females for example, highlighted that it was important to have role models for females as well as males in order to appeal to male and female audiences, including successful females, and women who have, under difficult circumstances, changed their lives for the better. The influence of peer pressure was also highlighted, particularly as it is sometimes a key motivator for engaging in antisocial behaviour on and around the railway.

It's probably, at the time, they find it quite funny. And they're probably doing it 'cos other people are with them. (Female, urban, youth group)

Social media (e.g. Facebook, Twitter) were seen as having a number of advantages in terms of communicating trespass risks; however, it was also noted by a number of participants that use of social media depended on a range of factors including age, gender and background of the group being targeted. Some participants also stated that social media platforms such as Facebook fall 'in and out of fashion', and there was a danger therefore that safety information would be ignored or not seen.

3.2 Expert interviews

3.2.1 The value of 'hard-hitting' (negative) as opposed to 'positive' messages

Rail safety experts indicated a need for more hard-hitting, graphic images to be used during safety campaigns, as current material is not shocking enough to get the message across to young people. This contrasts to some extent with the findings from previous research, which suggest that the effectiveness of hard-hitting (negative) messages may depend on the gender and age characteristics of the group being targeted. One reason for a reluctance to use graphic images within safety campaigns was that the use of such material could result in negative associations with the company delivering the rail safety message.

If you can, kind of, portray danger in a... in a slightly more subtle way, and I think ... if you can get people to use their imaginations more, it's a lot more effective... (Marketing expert from the rail industry)

It is very easy to stand up in front of a group of people and say you know you could get your head knocked off or you could show them pictures. But obviously you are not allowed to do that. So you have to taper it to a level that they understand. And what I used to do is I had a couple of short films. They didn't see anything and it was all left up to their own imagination. (Technical support officer, British Transport Police)

3.2.2 Safety education – the need to start early

Interviewees discussed different tactics used to target different age groups, including cartoon images for young children and more hard-hitting content for older children. However, the age at which interviewees suggested they can most impact the behaviour of young people was primary school children, with school years 6–7 identified as the most effective time to educate.

I think certainly for year six and seven. So the last year of primary school and the first year of bigger school, upper school. So primary school in year six because although they ... although they not yet starting to go out and do anything, when they get to year six (age 10 and 11), they just starting to get their wings. Mum and Dad just starting to release the rope. (Technical support officer, British Transport Police)

When they're 14, 15 or 16 they've already made their minds up. They already know what they're going to do. University students exactly the same, 19, 20 [they are] not interested ... but young children, six, seven, you know year six, year seven – 10, 11, 12. Excellent audience and that is where I used to focus my target, my main target. (School liaison officer)

3.2.3 'Buy-in' from schools and space within the curriculum

A number of interviewees working with school-based and community education stated that the main problem of engaging with young people is accessing young people in schools, and getting time in schools to speak to children. For example, in Guildford, a live theatre company has been funded by Network Rail to liaise with schools and provide workshops involving a rail-safety-related live performance, to engage with young people and highlight the dangers of level crossings in particular. However, the main problem is trying to get time within the school day to show the live performance to the young people.

Once we're in the school it's so effective and it works really well, and we get great feedback... . But it is getting into the schools initially that is very, very difficult. They are on timetable and they have got to fit us in around all of the other things. But it is not costing the schools anything and it is really frustrating from my point of view. (Education officer, Off the Level)

One school teacher highlighted the pressure on teachers to meet all of the targets within the national curriculum resulting in insufficient time for other life skills to be taught within schools.

There's just too much pressure on teachers to meet targets – safety is not a priority. (Primary school teacher)

It was suggested that rail safety lessons could be designed into the personal, social, health and economic (PSHE) education

section within the UK national curriculum for schools. Safety information covering different areas of the country should be included, not just information regarding the immediate area surrounding a school. Gaining buy-in from schools was an issue often described as more reactive than proactive.

The only way you could get to that school was by going across a level crossing every day, and so this is where the school got in touch with us. The deputy head teacher said can you come into school and do some rail safety, because we're really concerned. (Community safety manager)

3.2.4 Integrating rail safety with other school-based activities

The benefits of combining rail safety information and teaching with other school-based activities were highlighted by a number of interviewees, with one interviewee highlighting the problems in just using PowerPoint slides to educate and inspire children about rail safety information. A more interactive and engaging method was described that involved planning a media lesson to be taken into schools; this involved the students learning about rail safety in order to develop posters and adverts aimed at people of their own age, and people within their school or college

It's all good doing an assembly now, but because a school's a moving population, that message will soon be lost. So this is where I really nailed it. They had a media arts stage, so I took my lesson plan, for them to make their own rail safety talks every year, and then use them on screens around the school. We are just trying now, to get that plan into other establishments as well, because it's something that works, and manages itself after a while of taking the classes. (Community safety manager)

Such insight shows the importance of getting young people to combine rail safety information with other activities to make it more realistic, and more interesting. Talking to young people about rail safety does not seem to be sufficient, but using rail safety as a topic for designing an advert (poster or video campaign), or combining safety with sport, appears to aid the absorption of subtle facts that might be missed within an assembly presentation at a school.

3.2.5 The role played by community safety activities

During the course of the research the authors were also made aware of the extensive range of activities that are undertaken by Network Rail route-based community safety managers; these include local events, as well as national, UK-wide partnerships.

- Life Channel. A year-long partnership with the Life Channel provided Network Rail with the opportunity to show safety films and animations on television screens in over 2000 schools and colleges across the country, as well as doctors' surgeries during school holidays. The material shown is targeted to the age profile of the viewers and any

particular issue in that area such as trespass, stone throwing or misuse of the railway.

- Football League Trust. The partnership with the Football League Trust has been created to provide diversionary sporting activities for youths in trespass and vandalism hot-spot locations at peak periods, such as school holidays. Rugby League – Tackling Track Safety: the Rugby League partnership with PDF Sports Ltd, is similar to the Football League Trust project as it promotes railway safety while also teaching children how to play rugby. It has been a great success in the London North West (LNW) route and has now been supported through the national budget, allowing the project to expand into several other routes. The plan is to continue to develop this project, creating similar activities in all routes.
- Great Britain Boxing (GB) Awards. The GB Boxing Awards partnership is a new initiative, which combines boxing and railway education. The partnership will see the creation of three new boxing clubs for youths in each route in targeted trespass and vandalism hot-spot locations.
- Junior film makers' competition. Ten schools have been invited to enter a competition to create a railway safety film. The project involves the school children learning about all elements of film making and railway safety to create a film that will inform other young people, friends and family of the dangers associated with the railway.

4. Discussion

4.1 Summary of findings

Emotional impact appears to play an important role in determining the extent to which safety messages are rated as important and successfully communicated among teenagers and young people. The use of real-life stories (such as in 'Leighton's story'), involving the friends and families of people who have committed trespass, appears to be especially effective in getting the safety message across. Safety videos that contain information about the dangers of trespass in the form of facts (e.g. electrocution voltages, train speeds) were also viewed as important. Providing a mixture of factual information and real-life narrative appears to represent the best option for content which aims to convey trespass risk. The inclusion of serious, real-life material in the form of narratives (stories), as compared to lighter, game-based and more information-rich content, is more likely to be effective in communicating safety messages (Ricketts, 2015; Ricketts *et al.*, 2010). Similar conclusions regarding the efficacy of narratives for risk communication and behaviour change have been drawn by other research outside rail transportation (e.g. Breakwell, 2014; Dahlstrom, 2014; Hinyard and Kreuter, 2007).

4.2 The need for a 'joined-up' systems approach for trespass risk communications

In line with other work, which has emphasised the need for a system-wide, 'whole systems' approach to trespass (Silla and

Luoma, 2012b), the present research has also shown the need to think in terms of combining and integrating technical, educational and community-based efforts to reduce trespass. A clear message from the interviews with experts is that it is very important that school-based rail safety education begins early on, ideally within primary schools. School children need to be provided with consistent and repeated exposure to safety messages within schools. There also needs to be more effort to integrate rail safety into the national curriculum. The findings underline the fact that, alongside the use of safety campaigns and videos, there also needs to be an equal emphasis on community outreach activities. Community safety activities play an important role in helping to educate teenagers and young adults about rail safety. Video-based campaigns are a useful medium for reaching out to a mass audience. They are also important in targeting specific groups (e.g. young/teenage men), where the content may need to be sensitive to audience characteristics (e.g. preference for harder-hitting, realistic content). The effectiveness of rail safety information and message is likely to vary a great deal according to age, gender and social background. As a result, safety messages need to be tailored to the characteristics of the audience and their background. Figure 1 summarises some of the findings and draws on other work, which has emphasised the relevance of a systems approach to risk communication for specific groups (McLaughlin and Mayhorn, 2014; Waterson and Monk, 2014).

4.3 Implications for stakeholders involved in the reduction of rail trespass

In line with the value of a balanced systems approach to the design of a risk communication strategy for reducing teenage trespass (Figure 1), the research findings underline the need to be aware of the trade-offs and compromises involved in communicating the dangers of trespass to teenagers. Investment in national safety campaigns (television films, videos) is likely to provide some benefits; however, these campaigns need to be seen in the light of wider community-based activities, which may provide as many, if not more benefits in terms of reducing the incidents of trespass. Community-based activities take up a lot of resources and are likely to reap benefits in the longer, rather than the shorter term. Despite this, the authors would argue that they are crucial to any longer-term strategy aimed at reducing trespass. Table 3 is an attempt to articulate the strengths and weaknesses of either strategy (national or community-based) in terms of a 'strengths, weaknesses, opportunities and threats' (Swot) analysis. The authors would also like to emphasise the need for both types of strategy, rather than an either/or type comparison.

5. Conclusions and future work

The subject of rail trespass is largely under-researched and there is a pressing need for more work of the kind described in this paper, particularly as it relates to individuals and groups (e.g. young men) who consistently feature in the fatality data within the UK. Most of the research so far has linked trespass

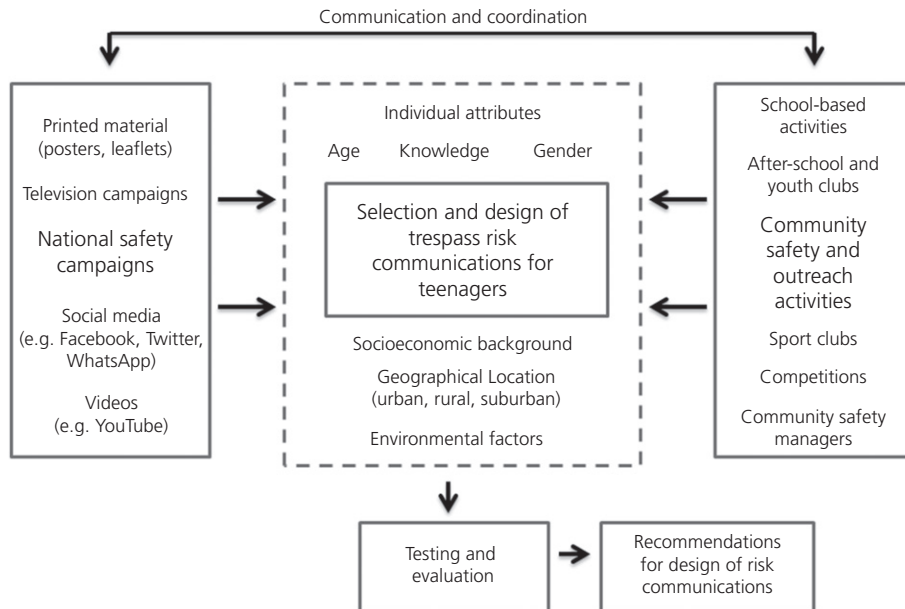


Figure 1. Teenage trespass on the railways: risk communication systems model

with suicide. The two are undoubtedly related; however, the reasons why people trespass are likely to be very different to why they commit suicide, especially for younger groups. New conceptual models and frameworks need to be developed which attempt to separate trespass and suicide, as well as examine their overlap. It also follows on from the findings that interventions aimed at reducing trespass are most likely to be effective when they adopt a ‘sociotechnical systems’ approach (Clegg, 2000; Waterson, 2015) in order to reduce the incidence of trespass. This involves considering technical (e.g. fencing,

track-side barriers), social and educational (e.g. community-based outreach activities), as well other types of intervention which focus on the key characteristics of target groups (e.g. socio-economic and educational background). The research described in this paper sheds some light on the design and content that is suitable and likely to be effective for a teenage/young adult audience. A longer-term need is to carry out systematic and longitudinal evaluations of the impact of these types of ‘sociotechnical’ intervention. Some valuable work has been conducted within the field of risk communication

Table 3. Teenage trespass on the railways: risk communication Swot analysis

	National safety campaigns	Community safety and outreach activities
Strengths	Coverage – wide and across all groups; risk communication can be effective if sensitive to variations (age, gender, geographical background) and the need to balance coverage of factual and emotional content; a variety of different campaigns are possible (television, social media, posters)	Coverage – resources may mean only limited impact (i.e. focused on only a few groups); activities can be targeted at the characteristics of specific groups (e.g. rural groups where level crossings and other dangers are present); activities can also be adapted and changed in line with feedback from participants, teachers and other groups
Weaknesses	Costs can be high (producing and filming); campaigns can fail if they are seen as frivolous or not taking the subject of trespass seriously	Lack of buy-in from current UK educational curriculum; heavily dependent on the resources available to community safety managers
Opportunities	A more coordinated and balanced approach to risk communication (campaigns plus community activities – e.g. Network Rail current campaign strategy for level crossings (Network Rail, 2016)). The use of narratives with emotional content may work well for older teenagers and young adults	Increased lobbying to get rail safety on the UK national curriculum; greater liaison with other rail safety activities, national safety campaigns and educational initiatives
Threats	Levels of funding are volatile and many other safety campaigns may need to take priority (e.g. suicide)	Resource intensive and at times stretched. Little firm evidence to suggest that community safety is effective (i.e. there is a need to improve the evidence base)

covering television campaigns and safety videos (Breakwell, 2014); however, few studies of the value of community and outreach activities have been conducted. Future studies need to examine and evaluate in more depth the question of what makes community safety successful or unsuccessful in reducing trespass.

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