



Children's experiences of care on walking and cycling journeys between home and school in Healthy New Towns: Reframing active school travel

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ARTICLE INFO

Keywords:

School journey
Children
Active travel
Participant photography
Go-along interviews
Urban care

ABSTRACT

The Healthy New Town programme in England set out to 'put health into place' by supporting the design and construction of healthy places to live, including by creating safe environments for active travel. To explore the impact of this approach, this study examined how children and their families experienced school journeys in two contrasting Healthy New Towns in England, one an affluent new town in the early stages of construction and the other more economically deprived and established. We undertook photo-elicitation and go-along interviews with 24 children aged 7-12 years and semi-structured interviews with 17 caregivers. We found that experiences of care were important for children's school travel. In the 'deprived' town, opportunities for children to care and to be cared for were enjoyed, facilitated by routes with limited traffic, pockets of 'nature', and possibilities to encounter meaningful others. For families living in a town under construction, the need to negotiate unfinished travel infrastructure, and a sense of being 'in limbo', was experienced as an absence of care by planners and developers. Interventions to promote children's active travel should consider the role of care-full planning in facilitating walking and cycling journeys.

1. Introduction

1.1. Introduction

This paper explores how children and their families experienced their school journeys in two contrasting 'Healthy New Towns', where ongoing policies and interventions seek to encourage active travel. Travel to and from school on foot or by bicycle is seen as an opportunity to improve children's physical and mental health, by increasing overall levels of physical activity (Cooper et al., 2006; Roth et al., 2012), and by helping to reduce emissions from vehicles (McConnell et al., 2010). The Healthy New Town programme aims to promote active school travel primarily by providing environments conducive to safe walking and

cycling between home and school both in new towns and in retrofits of existing towns. This is the first study of the experiences of those living, or attending schools, in Healthy New Towns.

We follow Yates-Doerr (2020), who argued that "it is necessary to attend to ideas as they are put into practice, following how they actually unfold in people's lives" (p392), and to do so using a relational approach that considers the extent to which the health and wellbeing of individuals is tied up with their relations with others. Thus, we aimed to investigate how children (aged 7-12) and their families experienced and negotiated environments on their journeys to and from school. We recruited families in an affluent new town in the early stages of construction and in an established and more economically deprived town that was also part of the Healthy New Town programme. We explored

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how their school journey experiences were shaped by the built environments in each location, and, in the first case, by early occupation of a gradually developing new town, as well as by the lived histories of residents. In our study, travel to school is understood not just as a means of getting from home to school (and mode of travel is not just a means of affecting children's health and levels of air pollution) but as affording a space in which children and families live and are sociable, and themselves contribute to the atmosphere of the street (Hall 2012). We contribute to a body of work on an ethics of care in relation to cities and urban infrastructure, showing how such an approach improves understandings of children's and their families' experiences of school travel, and has tangible applications for those working in public health and active school travel policy and practice.

1.2. Background

The Healthy New Town programme in England set out to 'put health into place' by supporting the design and construction of healthy places to live, incorporating upgrading or regeneration in more established areas (NHS England 2018). At the heart of the programme was a concern to improve health and promote 'healthy behaviours', building on evidence of links between the built environment and health outcomes (Sallis et al., 2012).

A contrasting approach suggests that urban planning should pursue an alternative goal, to create cities that facilitate caring practices, variously termed cities of care (Power and Williams, 2020), care-full cities (Williams 2020), or caring cities (Davis 2022). This approach is grounded in a feminist ethics of care, which emphasises our interdependence and collective responsibility for ourselves and for others. Care is considered as a practice that recognises and responds to this interdependence through attentiveness, empathy, competence and receptiveness (Tronto 1993). Experiencing care might lead to improved wellbeing more narrowly defined, but also involves experiences of attachment, trust and confidence (Davis 2022). While early geographical work building on these ideas focused on care in specific spaces such as at a drop-in centre (e.g. Conradson 2003), it expanded to include social spaces where caring occurs in less formal ways, and to pay increasing attention to the materialities of spaces (Bowlby 2012, Milligan and Wiles, 2010, p740). Thus recent research explores care in spaces through the materialities of care, examining how material conditions or environments facilitate caring relations, including how objects, buildings and terrains "shape the nature and possibility of care" (Imrie and Kullman, 2017; Power and Williams, 2020:3). In this context, care is conceptualised as a sociomaterial practice that takes place in conjunction with elements of the built environment (Power and Williams, 2020). Power and Mee (2020) have developed the notion of 'infrastructures of care' to encompass the ways in which materialities, markets and governance pattern the organisation of care, as they show in relation to housing. Infrastructures of care should enable people to meet their needs, develop their capabilities and flourish, and facilitate care and bonds between people and between people and places (Davis 2022).

Previous research on school travel and children's mobilities more generally has shown that journeys can be arenas of care (Ergler et al., 2022; Kullman 2014). A recent meta-ethnography of qualitative and ethnographic studies focusing on 5–13-year-old children's experiences of school travel found that children can have enjoyable embodied, exploratory and social experiences of their school journeys, particularly when walking or cycling (Morris et al., 2022). Kullman (2014) uses the notion of child-pavement entanglements to show how part of this experience is children's attunement with one another and their surroundings, and their sense of becoming part of collectives of urban care, negotiating risk, and maintaining attachments to those with whom they travel and to other humans and nonhumans (such as dogs) encountered along the way. This nascent body of work shows how school travel is a relational and collective experience, within which children have

opportunities to develop shared agency partly through attunement to, and care for, other beings. In the course of data collection and early analysis we turned to this approach because of its power to help us conceptualise our emerging findings.

In relation to school travel, an approach focused on care suggests that we need to consider how the built environment might facilitate socio-material practices of care on school journeys, that is, how built travel infrastructure is part of an 'infrastructure of care'. It also helps us consider the impact of the contrasting temporalities of children and planners; we show that for children growing up in a Healthy New Town everyday care is important in the short-term, while planners are focused on healthier futures. Furthermore, we aim to understand how the histories (or lack thereof) of place affect children's experiences of built environment interventions.

2. Methodology

2.1. Methodological approach

We chose to use child-centred methods that could allow us to fulfil children's rights to meaningful participation and to see children as knowledgeable experts on their own experiences with unique contributions to make (Beazley et al., 2009; James and James, 2004; Upchurch, 2008). We also follow other researchers who have sought to better understand transport practices by thinking of individuals as members of larger sociomaterial assemblages and networks, which include household members, relatives, and friends, as well as nonhuman agents (Schwanen, 2008).

Participant photography was used to produce information on mundane everyday experiences that other methods cannot capture (Bourke, 2017; Darbyshire et al., 2005; Pyyry, 2015). Go-along interviews were used to access experience in real time, and as a way of reducing power imbalances as the researcher and child experience rhythms together and children can act as a 'tour guides' (Carpiano, 2009; Kusenbach, 2003). Semi-structured interviews with parents provided further understandings of household contexts and school travel practices. Participant observation around schools contextualised children's experiences and provided thick description of the local area.

2.2. The Healthy New Towns

Our first site was a growing new build development on a rural former airfield in an affluent area in eastern England (Northstowe), built in response to a lack of local housing supply, especially for commuters to nearby urban centres. Our second site was an established community in an urban area of Darlington in north-east England. According to the Index of Multiple Deprivation (Department for Communities and Local Government, 2019), Northstowe is amongst the 10% least deprived neighbourhoods in England, whereas the Darlington site is amongst the 10% most deprived neighbourhoods in England. There was a primary school within the Darlington site, and in Northstowe at the time of the study there was one new primary and one new secondary school, and an Area Special School catering for 3-19 year-olds with complex and significant learning needs.

Both sites were part of the Healthy New Town scheme, a collaboration between NHS England, Public Health England and other private, and voluntary, community and social enterprise (VCSE) sector organisations. In new build sites the Healthy New Town programme aimed to embed active travel into the earliest stages of planning, for example, as in Northstowe, by including cycle lanes and limiting private parking for cars. In Northstowe at the time of our fieldwork approximately 1000 homes were occupied while construction continued to complete plans for 10,000 homes over the next 25 years. In Darlington the Healthy New Town scheme included plans to develop 3600 homes on three sites, with green infrastructure. Our study area was an existing estate which received some improvements to existing housing, and work designed to

improve the safety and attractiveness of paths. Prior to the Healthy New Town scheme, Darlington had been part of the Cycling Demonstration Towns scheme (2005–2011), under which 22 km of cycling routes were created and had also been part of the Sustainable Travel Town scheme (2004–2009) under which behavioural interventions and campaigns were delivered, which continued into the Healthy New Town years.

2.3. Recruitment

We recruited families through the three primary and secondary schools and at two community centres across the two locations (following discussions, the Area Special School opted out of the study). Parents received and were talked through a study information sheet and provided written informed consent. Children were given a ‘project pack’, including a camera, highlighter/pencil, pen, notebook, and child friendly information sheets. The project was explained to each child and children provided verbal consent to participate. Ethical approval was gained from Durham University’s Department of Anthropology Ethics Committee (ANTH-2021-08-25T14).

2.4. Data collection

Data collection was conducted by experienced researchers (ET and SM in Darlington and EL in Northstowe) between October 2021 and January 2022. Testing for Covid was widespread, self-isolation was required on testing positive, and masks were required in schools for some of this time, but otherwise schools continued normally. To avoid risk of transmitting infection researchers did not, as originally planned, travel with children by car or bus and the data analysed here refer only to journeys or parts of journeys that were undertaken on foot or by bike.

We conducted a participant photography activity with 24 children from 17 families. First, we distributed digital cameras and briefed the children to take 10–15 photographs of what they liked, disliked or was important to them on their journey to or from school (with the restriction that they should not take pictures of identifiable other people). For 17 children photo-elicitation interviews, in which children were asked about their photos, were conducted in-person either in their school or home using printed photographs (14 children) or viewing images on a laptop screen (3 children). For 7 children, photo-elicitation interviews were conducted remotely using video conferencing software. These methods were used according to scheduling challenges or family preferences. Interviews were often in the presence of siblings and/or parents due to children’s preferences or family activities.

We conducted go-along interviews in-person with 19 children who walked or cycled at least a part of the way to school. In Darlington go-along interviews with 8 children (lasting approximately 15 min) were conducted on the journey home from school, as preferred by the families. In Northstowe go-alongs with 11 children were conducted (lasting 10 to 30 min, due to some longer travel distances), 8 of which were conducted on journeys to school. Children showed us their school journeys and we used a topic guide that was responsive to the child and environment. Go-alongs were audio recorded and fieldnotes were written up afterwards.

We conducted 17 semi-structured in-person, telephone or online interviews with parents. Interviews lasted 15 to 60 min and were guided by an interview schedule focusing on decision-making about school travel and experiences of journeys.

All interviews were audio recorded, transcribed verbatim, and anonymised, and pseudonyms are used in this manuscript. Interviews were supplemented by six observations outside the school gates on pick-up and drop-off times, written up as thick descriptions of the scene, including pavements, cars, social actors and sounds (Spradley, 1980).

2.5. Data analysis

We used a social constructionist approach to thematic analysis

(Boyatzis, 1998). First, SM, ET and EL each independently coded the transcripts of one family and discussed any differences in approaches before inductively and iteratively developing a descriptive coding framework. ET and SM annotated and coded all remaining transcripts using Nvivo 12, and met with EL and TP to discuss. Codes were organised into sub-themes and themes and summaries of each theme were produced by ET. Case summaries of each family unit were also produced which enabled further data reduction as well as within and across case constant comparison and analysis (Ayres et al., 2003). ET wrote memos and the joint first authors and senior author met regularly to discuss emerging themes. Through these processes the team developed the final analysis iteratively, moving from descriptive codes to analytical themes that paid attention to differences and similarities across individual families and the two study sites. At this stage of interpretation, care emerged inductively as an overarching theme.

3. Findings

This section of the paper first describes the participants in the study and the research sites before presenting our three analytical themes which highlight the importance for children of care on school journeys.

3.1. The people and the environments

More girls than boys participated in both locations and participating children were younger in Darlington than in Northstowe (Table 1). In Darlington, household compositions and employment status were more varied than in Northstowe, where nearly all households consisted of two working parents and two children. In Northstowe all families owned at least one car, but fewer families in Darlington owned cars.

Most of the children recruited in Darlington lived within the estate and walked to the primary school, like the majority of children attending the school, while two children travelled from the estate to local secondary schools. In Northstowe, while some children who participated in the study lived in the new town, many came from further afield to attend the newly constructed primary and secondary schools (which had large

Table 1
Sociodemographic characteristics of study participants.

Characteristics		Northstowe (N = 13)	Darlington (N = 11)	Total
Distance to school	Under 1 mile	6	9	15
	Over 1 mile	7	2	9
Gender of child	Female	9	10	19
	Male	4	1	5
Ethnicity of family	White British	9	7	17
	Mixed	1	0	1
Age of children	7-8	2	5	7
	9-10	3	4	7
	11-12	8	2	10
No. of adults in household	1	1	2	3
	2	9	3	12
	3 or more	0	2	2
Employment status	One parent in paid work	1	2	3
	Two parents in paid work	9	1	10
	No parents in paid work ^a	0	4	4
Family car ownership	Yes	10	4	14
	No	0	3	3
Usual mode of travel to school	Walking	2	7	9
	Cycling	7	0	7
	Bus	1	1	2
	Car	3	3	6

^a Includes one parent who was in education. Those not in paid work were in receipt of Universal Credit (the UKs primary social security benefit) or other social security, which included assistance needed for child or adult disabilities and long-term health conditions.

catchments because the town was still growing).

In Northstowe, the new and sizeable houses had front gardens and small driveways (designed to accommodate one car only to help limit car use). Off road paths had been built to both schools along a greenway and passing a lake. Northstowe was often described by study participants as a “building site” with many pavements and roads incomplete and surfaces often uneven and/or soiled with mud and materials from construction work (Fig. 1). The presence of construction machinery, vehicles, and workers also created noise and disruption. The primary school was near the established housing, while the secondary school was some distance away, reached through the part of the site that was under development. Children at Northstowe referred to having participated in ‘Bikeability’ cycle training.

The Darlington estate is located towards the edge of the town, with Healthy New Town new builds on one side and a busy dual carriageway on another. The houses were smaller than in Northstowe, and some were in disrepair. There were grassy areas and trees within the residential area, overlooked by houses. In contrast to Northstowe there was a strong sense of community and history in the estate and three mothers who participated in the study had themselves grown up there.

Neither site experienced through traffic at the time of the study; all schools within the sites were situated at the end of cul-de-sacs and in the case of the secondary at Northstowe, the road beyond had not yet been constructed. However, in Northstowe, there were many cars around the primary school at the beginning and end of the school day, with some families travelling by car from the nearby village. There were often challenging encounters between cars, cyclists and pedestrians at this school:

[8.24am] Two cars then drive into the car park, round the corner quite fast. One of these cars goes into the staff car park. At this point, two children wearing helmets (10ish years old) who are cycling on bikes on the footpath down the side of school towards this staff car park entrance have to stop abruptly for the car – although they are quite far away from me, I think I can hear a slight ‘woah’ and brakes squeaking. (Fieldnotes)

“There’s usually about six or seven cars parked on the roundabout, then people are trying to drive round the roundabout, but they can’t, because people have parked their cars in areas where you shouldn’t park a car, and then they’ve got to try and get round them. Then you’ve got people that park outside the school gate and then they’ve got to try, they’ve got to try and get round there, because they



Fig. 1. Construction photographed by Ellie
 “They have to show where the cars need to go and where the cyclists need to go because that bit you can see at the back is all like construction and so there’s only one road sort of useable there” (Ellie, age 12, Northstowe).

usually park two cars behind each other when it’s a rainy day, you’ve just got to see a rainy day ... and you’ll see it’s chaos. I sit there and laugh, I think it’s so stupid.” (Mandy, Amy and Gabriella’s mother, Northstowe)

Children also explained that cars were often parked on cycle paths near the schools in Northstowe, making it difficult to cycle, and on the cycle path passing by the secondary school cones and rope were set out in an effort to stop parking.

In contrast, in Darlington there were fewer cars around the school and few problems caused by cars:

By 3.05pm all spaces in the small car park area are full, but there is no congestion ... More parents begin arriving on foot and they often walk from across the greenspace on a paved path, across the road and down to the school After school has ended [3.20pm], I notice 3 girls who look about Year 5/6 chatting as they walk in the road. There are no moving cars around. (Fieldnotes, 20.10.21)

In what follows we consider key themes exploring how these different Healthy New Town contexts shaped children’s experiences of the school journey, exploring first how the continuing development of Northstowe caused frustration for those travelling to school, before exploring opportunities for care-full social connections and engagements with ‘nature’ on the school journey.

3.2. Experiencing environments as care-less: “They haven’t bothered to like smoothen it out, finish it off” (Bella, age 12, Northstowe)

For families living and travelling in Northstowe, disruption caused by the daily activities of constructors was a concern in relation to school travel, and the built environment was experienced as “unfinished”, with pavements and cycle tracks incomplete and sometimes disrupted by obstacles (Fig. 2). Children and caregivers often referred to the existing development as a “building site” and disliked what they regarded as “messy” or unclean environments, sometimes referring to litter, but also to uneven pavements, cycle lanes and roads or patchy grass verges (Fig. 3). Children expressed a desire for more order and neatness. They described having to negotiate and change their school routes due to construction work and temporarily closed paths, and those who cycled often expressed a dislike for bumpy and uneven surfaces. Children were concerned about potential dangers and hazards associated with these



Fig. 2. Debris on the bike path

“There is so much like this with the signs that have been blown over by the wind, or people have broken or just dumped them as you can see—that’s almost on the road. If that was to go on the road it would be very dangerous and it could easily be chucked on the road by the person who doesn’t care, and it just, that’s the cycle path thing again, and bikes will have to swerve around that.” (Bella, aged 12, Northstowe).



Fig. 3. “Untidy” terrains photographed by William
“It looks really untidy with the spray paint all over the paths which have just been left there by the builders” (William, age 12, Northstowe).

unfinished terrains, recalling near misses with cars and lorries and showing us places where they or friends had fallen over, or almost fallen over (Fig. 4).

The presence of construction influenced parental attitudes to allowing children to travel independently (and thus actively):

“I think the plan is that when she [daughter, Alice, age 11] gets old enough and more confident and when there’s less builders, she’ll be able to do it on her own. At the moment, it’s the traffic around there and the builders that kind of make us a bit more wary.” (Carol, mother, Northstowe)

Some families expressed anger and frustration about these ongoing works, and some said they felt as if the people who currently lived in Northstowe were being overlooked whilst builders were “thumping up houses” (Mark, father in Northstowe) for those who had not arrived yet. Families expressed annoyance at how amenities, public spaces, active travel routes and roads were not yet built. This perceived lack of care for the present environment was reflected in the voices of children as well as parents (Fig. 5). Others were cautiously optimistic about future changes to the landscape. Parents also voiced concern about the increasing



Fig. 4. Unfinished terrains, photographed by Tom
“There’s a lot of holes there as well on the path which is quite irritating because like it’s gravelly. One of my friends fell here actually like because of a stone, like the tyre slipped.” (Tom, age 12, Northstowe).



Fig. 5. Hazards and frustration, photographed by William
“It’s really easy to slip on your bikes when you’re going down there ... [but] I like the way that the grass is green and not left as just mud and they’ve actually spent time to plant grass there Overall I think it’s quite annoying ... annoyed that they just don’t really take the time to build paths, all they’re doing is rushing to build houses” (William, age 12, Northstowe).

population in Northstowe, and what that might mean in terms of traffic and safety as the situation around the primary school was already described as “the Wild West” and “bedlam”.

In both sites, children disliked litter and vandalism and saw it as evidence of carelessness, for example expressing concerns about how it might impact animals and their habitats. There was a sense that the generally unfinished and ‘messy’ paths, pavements and fenced off areas in Northstowe encouraged littering because of the uncared for feeling of these areas.

Litter in Darlington also upset children, but here Erin’s mother spoke of a community response:

“We get quite a lot of fly tips so we do litter picks through the community centre. So all the kids come out and basically litter pick this strip and across the estate.” (Lisa, Erin’s mother, Darlington)

Thus, in both sites a sense of care-lessness was experienced on occasion, but was pervasive in Northstowe, where the community felt that they were essentially in limbo waiting for their environment to be finished. While children and caregivers did cycle and walk and actively negotiated hazards, they did not feel fully supported in these modes of travel by those developing the town. In both sites children and others were part of an active response to rectify this care-lessness (see section 3.3), but greater agency was expressed in Darlington than in Northstowe.

3.3. Producing care-full environments through human connection

The school journey was an important everyday event which allowed social relationships to develop over time, shaped by physical and wider social environments. Children and parents described the school journey as an important time in which to “catch up” with one another. When asked if there was anything she liked about walking home with her family, Maya, age 9, from Darlington said she liked that they could “talk about all our days”. Siblings also played together as they travelled, and Erin used features of an area of woodland on her family’s journey as a means of expressing care for her younger sister:

On the journey back from school the girls were running or almost bouncing through woods, jumping on rocks, picking up leaves, berries and other things. I see they are engaging with the woodlands in a close way and Erin was teaching her younger sister about

dangers and helping her identify objects (Fieldnotes, go-along interview, Erin, aged 8, Darlington).

Similarly, parents recognised the school journey as an opportunity to spend uninterrupted time with their children. Carol, a mum from Northstowe, travels with her daughter Alice by bike back from the secondary school. Carol said “*we generally go with her – it’s quite nice to just chat with her on the way as well.*” These findings echo those of Middleton (2011) about the importance of walking to work as a space for intimate family time.

Some also enjoyed the opportunity to travel with people outside their immediate family on the way to school. For instance, Jasmine talked about how her family always met another family on the way to school. When asked what she liked about this she said simply that “*it wasn’t only with our family. It was with other people and families*”. The school journey was therefore, for some, a chance to break out of the family bubble, and build and maintain social connections with other members of the community, as also observed by Hall (2012), who identified how people became familiar and intimate with one another in their interactions on a city high street.

As children got older, they were sometimes keen to distance themselves from immediate family on the journey to school, preferring to either be alone or spend time with friends. The school journey enabled them to practice independence and personal preferences over their journey:

“... when she [Beth, age 9] moved to the primary school here, she asked me if she could walk home on her own. And obviously with it only being around the corner and Beth is quite mature for her age, I was like right, we’ll see how it goes ... I think she just likes that bit of independence of walking to school on her own kind of thing. And then seeing all her friends and stuff.” (Louise, Beth’s mother, Darlington)

The well-established community in Darlington and proximity to school played an important role in how these gradual moves to independence were negotiated and experienced. Parents in Darlington described it as a safe place, informing their decisions around how children travelled to and from school. This sense of safety was partly attributed to physical aspects of the environment, such as quiet roads, open spaces, and easy walking routes, but also to having a close-knit community. Parents said it was common for friends and family to share responsibilities for accompanying children on the school journey, which was part of a wider context of communal care (for example, parents checked on each other’s children when they were playing in the park). Children regularly took photographs of and/or talked about their families’ and friends’ houses on their routes to school (Fig. 6). The



Fig. 6. Close family networks on the estate photographed by Zoe “*Shadows, and it’s near where my uncle lives.*” (Zoe, age 11, Darlington).

mothers in Darlington who had grown up on the estate had fond memories of the freedom they enjoyed in travelling around and playing there. These family histories and networks play a part in the present day, informing how children move around, relate to the estate and their experiences of environments on the school journey.

In Northstowe, perhaps unsurprisingly given that housing was very new, there was little evidence of this community-level care. Children’s independent travel tended to be supported in more formalised ways, such as parents signing a contract that their child would wear a helmet and have bike lights if they cycled at the secondary school. This was also linked partly to the longer distances and use of bicycles. Parents described practising cycle routes with children, taking specific routes that were considered by parents to be safer. Children were also proactive in arranging to travel together as a way of feeling safer, as well as being sociable, and in using technology to facilitate safer travel:

What we do is we have a group I set up that has my mum, my dad, [friend’s name]’s, [friend’s name] her dad and [another friend’s name] and her mum, and I share the live location of where we are so it sends it where all of us are in the village so they can track where we are cycling ... I thought this group was a good idea because instead of just mum being able to see where I am, all the other parents can see where their children are as well. (Gabriella, aged 12, Northstowe)

Some aspects of spontaneous informal care were also present in Northstowe however. For example, children spoke of appreciating construction workers stopping traffic for them in an informal act of care to help them negotiate traffic and the challenging material environment (Fig. 7).

3.4. Caring engagements with natural forms and rhythms

Children enjoyed visual and tactile engagement with natural forms (plants, trees, flowers) and vistas (green spaces, skies, sunrises). Some children in Northstowe appreciated the manicured environments surrounding the show homes (Fig. 8), whereas others expressed a desire for more “environmental areas” (Gabriella, aged 12, Northstowe). In Darlington, children were often observed touching and playing with natural forms such as leaves, pine cones and berries:

Zak is kicking the crunchy fallen leaves as he walks along, part running, walking not in a totally linear fashion. He and his friend are interacting and suddenly, he is shouting ‘*canon ball*’ and rolling in



Fig. 7. Informal acts of care in the landscape of construction, photographed by Tom “*Yeah, this was where normally I stop and then I get on the like actual road to the school ... the helpful thing that I like is there’s builders there that tells the cars to stop so that’s good.*” (Tom, aged 12, Northstowe)



Fig. 8. Show homes photographed by Evie
 “Just because they have a nice plant and they have the bench and it’s a bit like a maze, it’s just really nice to look at.” (Evie, age 10, Northstowe)

the leaves. It’s loud with shouting and jumping, and all happening fast. Zak is now also rolling in the leaves. (Fieldnotes from go-along interview, Zak, age 10, Darlington)

Children were attuned to seasonal changes, enjoyed watching and experiencing the autumnal change of colours on the trees, and experiencing changes in weather and daylight. For example, in Darlington, Zak took multiple photos of the same cherry tree and said, “*there is something weird about it – sometimes it changes with no trace. One day its spring and its yellow and another day its spring and its orange!*” (Zak, aged 10, Darlington). Zak’s sister, Jasmine, explained that her family picked cherries from these trees in the summer.

The possibility of seeing and interacting with animals, whether pets (cats and dogs) or wildlife (e.g. birds, squirrels and insects) was compelling for children. Interactions were often explicitly caring, such as stopping to stroke or feed animals. William and his friends in Northstowe even adapted their route so that they could visit swans in the lake, where they fed them sandwiches and talked to them;

“Hello swan. [Sound of bird squawking] What’s making that noise? I thought it was a bird ... Look how big those ripples are. Eat your food. They like it. I think they like it even more. Oh look, is that the moody one?” (Go-along interview: William, age 12, Northstowe)

Sometimes a familiarity with the environments and animals meant children created relationships with specific animals – like William’s swan – but also other elements of the natural landscape. In Darlington, Erin and her sister named a tree they often played on the “V tree” because of its shape (Fig. 9).

Children included elements of natural environments in imaginative play. Skye for example, named trees after her sister Jasmine:

“That one [points ahead] that big tree there, it’s called chatty Jasmine box, that one’s called moody Jasmine and that one’s called sassy Jasmine. All of them have Jasmine’s name in, particularly that one there. That one there is called windy bottom Jasmine.” (Go-along interview, Skye, age 7, Darlington)

Skye’s anthropomorphising of the trees shows how children animate environments through their interactions and movements through them, and how they become part of their social engagements with friends or family members.

Relational engagements with natural forms and rhythms also created opportunities for children to develop means of caring for themselves. Children felt that non-human elements, spaces and mobilities could be therapeutic, for example trees, particular routes, and spaces to be alone.



Fig. 9. ‘V’ tree photographed by Erin and her sister
 “The girls are shouting ‘V tree’ and running off the path towards two trees that are shaped like Vs. ‘This is my V tree’ shouts Erin. (Mobile interview field notes, Erin, aged 8, Darlington)

In Darlington, trees or parks could help children deal with feeling “upset” or “angry”, creating a sense of “calm” or happiness (See Fig. 10), and in Northstowe, nice views across fields in warm weather were “relaxing” for some. Thus meaningful and reciprocal relationships with ‘nature’ were understood by children as care-full, echoing the importance of green places in the visions of pre-schoolers in New Zealand for care-full urban environments (Ergler et al., 2022).

4. Discussion

This paper presents an analysis of children’s visual and mobile narratives of their school journeys, contextualised with their parents’ experiences and our own observations. Like us, others have reported that children use the school journey as a relaxed time for conversation or for fun with siblings and friends (Mikkelsen and Christensen 2009; Ross 2007) and have observed the creative ways in which children engage with pets, wildlife, plants and other aspects of the non-human material environment as they move between home and school (Fusco et al., 2012; Kullman 2014). We show that these interactions provide opportunities

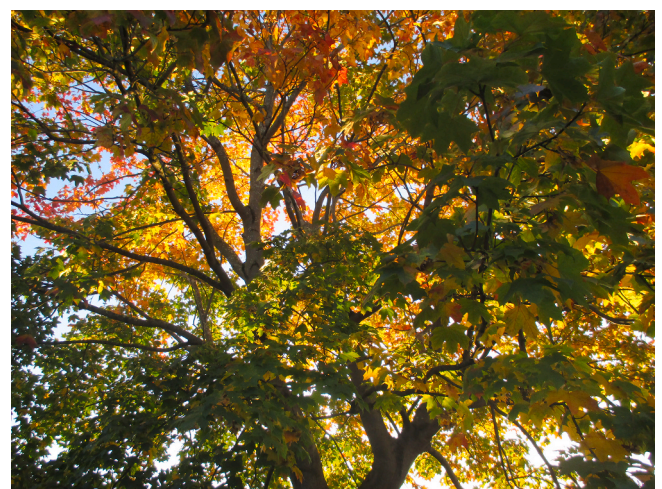


Fig. 10. Therapeutic role of trees, photography by Zak
 “There’s a tree I love so much that I saw. I call it the blossom tree, because every single time you mess up, every single time you are angry, you can go there and it will blossom” (Zak, Aged 11, Darlington).

for children to care, and to be cared for, in line with Kullman's argument that the school journey affords children the opportunity to learn care, as a practice and ethical disposition, through "affect attunement", as caring skills and sensibilities are fine-tuned in response to changing environments and moving companions (Kullman 2014:2867). Moving together between school and home thus provides an important opportunity for children to attend to more than human worlds and to engage in practices of care.

The practice and experience of care on the school journey was shaped by the two different contexts for school journeys, including the built infrastructure. In the 'deprived' context of a Darlington estate, children and their families enjoyed care-full experiences of walking between home and school, facilitated partly by the long history of their housing estate and the affordances of its physical environment, which acted as an effective infrastructure of care, offering routes with limited traffic and possibilities to encounter and attend to meaningful others, including aspects of 'nature', cultivating positive attachment to place and inter-generational care. In a new build Healthy New Town, where active travel infrastructure had been constructed but not yet finished, many children and families also travelled actively to school, but caregivers and children were concerned about safety and frustrated by the sense of living in limbo. While other studies have identified uneven pavements, holes and parked cars as impediments to walking and cycling (eg. Pooley et al., 2013, p156), using methods that directly access the experiences of children and the theoretical lens of care we gain a deeper understanding of the affective impact of such encounters as signs of a lack of care. Nevertheless, children also carved out enjoyable caring experiences in this environment, particularly in pockets of nature (some provided by design, while larger areas were available to children but due to be developed), and also experienced informal, and more formal, care. However, we note that overall the more 'deprived' town appeared to afford richer experiences of care and community to children and their families on the journey to school.

Built environmental interventions to promote active travel, and parallel initiatives to build 'Sustainable Communities' (Horton et al., 2015), can be seen as acts of care in that they are designed to promote better health for people and the wider environment (Mol 2008, p80). However, they need also to pay attention to how built environments are experienced by residents, how they are 'lived with' (Horton et al., 2015), so that interventions facilitate the creation of the caring practices that are both necessary for human life and help generate enjoyable experiences of walking, cycling, scootering etc. Davis (2022) describes an unusual approach to street redesign in Vienna that appeared to do just this. Here, street planners spent time understanding how a street was used before redesigning it. As a consequence, they aimed to facilitate the way in which the street acted as a resource and focus for caring activities, for example using trees, awnings, seating and lighting to subtly differentiate spaces in the street to allow heterogeneous users to "find a place in the street for themselves, to meet their everyday needs and cultivate their care relations" (p123), including aiming to clarify interfaces between cycling and pedestrian routes that limited children's mobility. Such an approach could usefully be considered more widely by those seeking to design or redesign environments for active travel. Healthy New Town planners set out to consult with and include residents in decision-making, but need to consider further how this can be more effectively achieved. Ethnographic work to evaluate the 'Big Local' initiative, which aimed to support residents in actively making their area a better place to live, concluded that such initiatives can effectively support community members to gain greater access to governance spaces (Powell et al., 2021).

In the case of large-scale developments such as Northstowe special concerns arise and we suggest that the temporalities of healthy urban planning are in tension with the more immediate concerns of residents, especially children. The needs of residents for enjoyable, care-full active travel while longer-term plans were implemented required further attention. Residents there will experience years of construction, working

towards an end-goal which will see active travel infrastructure connecting homes with a variety of new services such as schools and shops. As Koster (2020) notes, while planners work towards clearly defined end goals, residents affected by urban planning often experience long periods of waiting and uncertainty. Krafl et al. (2013) also highlight the attention needed to those living in new build sites and the ways in which building sites are significant as "important, often-overlooked times and places where meaning-making and everyday routes are fostered and normalised in new communities". In our study, residents felt a lack of care, that their needs were untended, and experienced construction as a disruptive and prolonged process. We show how such a context demanded daily and challenging negotiation by active travellers. Intensive qualitative methods, through foregrounding the voices and experiences of children and their families, can draw attention to such experiences, and show how they contrast with the perspectives of planners and construction companies, and could be used to directly inform the work of developers, and, potentially, the governance of developers.

We note age differences across the sites as a limitation; although we worked with a narrow age range of children, more children in Darlington attended primary school and more in Northstowe attended secondary school. Data collection was conducted in late autumn and winter only. Time limitations meant that we could not travel with children on multiple occasions over several months as others have done (Kullman, 2010, 2014).

5. Conclusions

Caring experiences on the school journey were very important to children and their families, a finding that highlights the importance of considering walking and cycling as social practices rather than thinking about them as individually-located behaviours. Specifically, we suggest that interventions to promote active school travel should consider how they can facilitate and improve walking and cycling journeys by enhancing opportunities for care. In terms of the built environment, our findings suggest that effective infrastructures of care might include low traffic routes, green spaces or pockets of nature on routes, and *well designed and executed* paths but we also emphasise that the journeys we explored were complex sociomaterial assemblages that are unlikely to be replicated simply elsewhere. Further, it is necessary both to explore further what creates conditions for enjoyable, care-full active school travel in different contexts, and to respond when interventions produce unanticipated effects. More specifically, our findings highlight that experiences of active travel in large-scale developments designed ultimately to facilitate walking and cycling may be adversely affected in the period of construction. Stakeholders should consider and strive to mitigate any detrimental impacts (e.g., disruption caused by building) on current residents. Involving residents in planning processes could support this work. Finally, this study adds to compelling evidence that children's voices are important in such processes.

Funding

This study is funded by the National Institute for Health Research (NIHR) School for Public Health Research (Grant Reference Number SPHR-PROG-PCBT-CS2). The NIHR School for Public Health Research is a partnership between the Universities of Sheffield; Bristol; Cambridge; Imperial; University College London; The London School for Hygiene and Tropical Medicine (LSHTM); LiLaC—a collaboration between the Universities of Liverpool and Lancaster; and Fuse - The Centre for Translational Research in Public Health a collaboration between Newcastle, Durham, Northumbria, Sunderland and Teesside Universities. The funders had no role in study design, data analysis and interpretation, or preparation of the manuscript. The views expressed are those of the author(s) and not necessarily those of the NIHR or the Department of Health and Social Care. JP is supported by the Medical Research Council

(Unit Programme number MC_UU_12015/7).

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CRediT authorship contribution statement

Emily Tupper: Data curation, Formal analysis, Investigation, Writing – original draft, Writing – review & editing. **Stephanie Morris:** Data curation, Formal analysis, Investigation, Project administration, Writing – original draft, Writing – review & editing. **Emma R. Lawlor:** Data curation, Formal analysis, Investigation, Writing – original draft, Writing – review & editing. **Carolyn Summerbell:** Funding acquisition, Writing – review & editing. **Jenna Panter:** Conceptualization, Funding acquisition, Methodology, Supervision, Writing – review & editing. **Russell Jago:** Funding acquisition, Writing – review & editing. **Tessa Pollard:** Conceptualization, Formal analysis, Funding acquisition, Methodology, Supervision, Writing – original draft, Writing – review & editing.

Declaration of competing interest

None of the authors have any conflicts of interest to declare.

Data availability

The data that has been used is confidential.

Acknowledgements

We are very grateful to the children and parents who participated in this study, and to staff at the schools and local community centres who facilitated recruitment. Thanks also to Jean Adams for her support during the early stages of the study.

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