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Walking school buses in the Auckland region: A longitudinal assessment

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ABSTRACT

This article examines the development of walking school buses (WSBs) in Auckland, New Zealand, drawing on five annual surveys. Longitudinal analysis reveals sustained growth in the number of routes, and in levels of participation, although activity remains concentrated in the wealthiest neighbourhoods. Parent coordinators identify four key benefits to WSBs: the sense of community, opportunity for exercise/health promotion, reduction in car use and local congestion, and reduced injury risk for child pedestrians. We contend that this form of supervised walking challenges some of the social practices associated with automobile dependence at the same time as it reinforces others.

1. Introduction

Walking school buses (WSBs) provide an opportunity for children to walk to and from school in an adult-supervised, timetabled and structured manner (Kearns and Collins, 2003; Kearns et al., 2003; Mackett et al., 2003). The potential advantages of the initiative include reduced levels of parental chauffeuring, less traffic congestion in the vicinity of primary schools at peak times and increased routine physical activity for children and parent volunteers alike. The focus of this article is on the development of WSBs in Auckland, New Zealand (population: 1.4 million) between 2002 and 2006. It draws upon surveys conducted at the end of each school year, the design and analysis of which was a collaborative project involving the authors, and the Auckland Regional Transport Authority (ARTA), the regional government body responsible for transport issues. The questions and methods informing the reports have developed alongside the WSB initiative itself, but in combination the five annual reports provide the foundation for our assessment.

In New Zealand, the WSB idea, first proposed by Engwicht (1993), was initially adopted in the South Island city of Christchurch (Kingham and Ussher, 2005). Subsequently, the initiative diffused to a number of other cities, including Auckland, the country's major metropolitan centre, where it flourished and become firmly embedded in policy. Walking is officially promoted in Auckland as "a preferred travel choice for shorter journeys" (ARTA, 2008). WSBs feature prominently in the region's travel demand management initiative, *TravelWise*, and are a relatively common strategy in the school travel plans promoted by regional government in an effort to reduce car travel to schools by 10% (Lang, 2007).

Specifically, of the primary schools in the Auckland region that currently have a school travel plan, 42% incorporate a WSB. This said, the WSB initiative was often adopted prior to the development of such plans, and many schools with WSBs (around one third of the total) have yet to implement one. As Mackett et al. (2003, p. 179) note in the English context, because WSBs can be "set up on the initiative of parents or others associated with a school", formal governmental input/direction is not necessarily required. Nevertheless, ARTA supports WSBs in Auckland through the employment of a Regional WSB Coordinator, and the provision of financial support – including start-up grants of up to $1500 per route (NZD) and (from 2004) operating grants of $200 per year, subject to timely completion of the surveys that inform this article.

Our research into Auckland WSBs is broadly longitudinal, in the sense that the approach to data collection, and the particular questions posed in surveys, varied somewhat from year-to-year – reflecting the evolving knowledge and interests of both the researchers and ARTA – but the guiding objective remained to understand changes, successes and challenges in regional adoption of the initiative. In the first 2 years of our study, data were collected by telephone interview. In 2002, we sought to contact the principals of all Auckland primary schools at which WSBs operated, and also the parent coordinator of each route (the person responsible for its day-to-day management, including the scheduling of adult volunteers). The following year we contacted parent coordinators alone. In 2004, we used a self-completion questionnaire for the first time. These were sent to the parent coordinators of all known WSBs, and response was linked to a $200 grant (an ARTA initiative, organized independent of the researchers). This approach was repeated in 2005 and 2006, with

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the questionnaire largely unchanged. Response rates over the five assessments averaged around two-thirds of all coordinators, and peaked at 79% with the most recent survey. This very high rate reflects both the monetary incentive to respond, and coordinators' existing stake in WSBs.

While the reports focussed on the Auckland context, they also have a broader significance. The WSB initiative has become increasingly widespread, especially within Australia, New Zealand the United Kingdom, and has attracted academic, media and policy interest. Moreover, the imperatives that have helped to "drive" enthusiasm for WSBs – such as preventing child pedestrian injury, enhancing physical activity, reducing car-dependence, and increasing social cohesion – appear to have become more pressing over time. By way of example, a recent column by George Monbiot, a prominent British environmentalist and social critic, reminds us that "[d]eath and injury on the roads is the world's most neglected public health issue" and that "[t]he highest death rate is among children walking on the roads." He suggests that ongoing efforts to address these issues solely through "better training for drivers and better safety for children" are unlikely to work, and are promoted in part because they "do not interfere with the commercial interests of the transport industry" (Monbiot, 2007). While WSBs do not pose a particularly direct challenge to the dominance of the automobile (Collins and Kearns, 2005), they may reduce familial car use and localized congestion around schools, and contribute to normalizing walking as a form of daily mobility for neighbourhood-level journeys.

This article provides a longitudinal overview of the WSB phenomenon, as it has unfolded in Auckland. First, we provide a summary of existing research into WSBs, and the broader literature on children's mobility of which it is part. Then, we present our analysis organized around six key themes: the growth of WSBs and the broad characteristics of their day-to-day operation; the sustainability of WSBs as volunteer-driven initiatives; the benefits of WSB activity as perceived by adult coordinators; the disciplined nature of WSB activity; the gendered nature of WSBs; and participants' observations of the urban environment.

2. Changing trends in children's mobility: the place of WSBs

Children's experiences of the journeys between home and school have changed significantly in recent decades, due in particular to increased car use (often as part of a parent's multi-purpose trip), and substantial decreases in independent walking (Pooley et al., 2005). Trends towards both chauffeuring and parental supervision of active travel have been granted momentum by long-standing, but accentuating, concerns for road safety and stranger danger, and by the increasingly complex scheduling of day-to-day life. Nevertheless, walking to school has not disappeared; indeed, Pooley et al. (2005) found that it remains the most common travel mode for pupils in Britain. Independent walking, in particular, continues to be viewed positively by many children by virtue of the opportunities it presents for socialization and independence.

An increasing dependence on the automobile for everyday journeys has led not only to a partial retreat of children from public space in many Western cities, but also to a more fundamental restructuring of children's lives (Barker, 2003). While this restructuring should not be considered entirely negative, it has come at a price. This price includes a significant risk of injury for remaining child pedestrians and cyclists, and diminished opportunities to explore urban spaces, especially independent of adult supervision. Children themselves are often aware of the ways in which their lives are constrained by fear, and many savour opportunities to explore outdoor environments when these are presented (Mitchell et al., 2007). Given the relatively short distances between home and primary school for most children in cities such as Auckland, daily travel between these two sites offers an important opportunity for routine active travel, and exploration of the local environment (Neuwelt and Kearns, 2006).

Another variable shaping school travel is urban form. McMillan (2007) found that factors like the patterning and density of streets are important influences on parents' choice of travel mode, alongside other issues such as perceived neighbourhood safety and sociodemographics. In addition, factors that have received little attention in travel choice literature, such as attitudes towards modal choice, caregiver country of birth and perceptions of vehicle speeds, were also found to be significant (McMillan, 2007). It follows from such findings that efforts to bring about major shifts in school travel behaviour will likely need to be very broad-based.

Although school travel behaviour is typically understood to be determined by parents, children can also express strong views on alternate travel modes (Barker, 2003). One Auckland survey of primary school children found walking to be the most popular travel mode, and that many pupils who were chauffeured would prefer an active form of travel (Collins and Kearns, 2001). In some contexts, such preferences may help to explain the endurance of walking for journeys between home and school.

One such environment is Fife, Scotland, where Ross (2007) found a majority of children continued to negotiate this journey independently, and on foot. Community networks of support and belonging reassured children and reduced parental safety concerns. Critically, these networks were often developed and maintained through children's independent travel in their local environment. Elsewhere, Boarnet et al. (2005) investigated the frequency of active commuting in schools in California, where infrastructure for active travel (such as pedestrian crossing improvements and bicycle paths) had recently been completed under a legislated programme. Children who travelled past the new projects on their journey to school were more likely to increase their active commuting to school compared with other neighbourhood children. Notwithstanding the diverse contexts of these studies, in sum they show that many children generally want to walk, and that social networks as well as improvements to urban form can support children's walking.

Over the last 15 years, WSBs have been adopted and adapted from the original idea by Engwicht (1993) to promote sociability, safety and health through an adult-supervised walk to and from school. Recent assessments are demonstrating that WSBs have the potential to increase trust and sense of community within schools and neighbourhoods as children walk with the parents of their peers (Johnston, 2008). Research has also examined the health benefits, as measured by total levels of physical activity, associated with children's active travel, for both trips between home and school (Boarnet et al., 2005), and neighbourhood-level journeys more generally (Mackett et al., 2005). In Auckland, it has been found that children who participate in the WSB are provided with greater opportunities to be physically active in general, and heightened encouragement to continue to participate in walking for exercise and enjoyment (Neuwelt and Kearns, 2006).

Such benefits notwithstanding, there is a clear socio-spatial pattern to uptake of the initiative and this limits the opportunity for some children and families to participate. Specifically, WSBs tend to be adopted in areas of higher socioeconomic status. At least in the Auckland case, this has been in part due to the economic and political priorities of reducing traffic congestion having precedence over the public health priorities of reducing injury to child pedestrians and promoting physical activity

(Collins and Kearns, 2005). This view suggests a broader trend: less affluent schools may face limitations in the establishment and maintenance of volunteer-driven initiatives (Kearns et al., 2003). Yet, it is in low-income neighbourhoods that the case for the WSB initiative is perhaps most pressing: rates of child pedestrian injury tend to be high, opportunities for organized recreational activity are low, and the public health impacts of a sedentary lifestyle most evident (Collins and Kearns, 2005; Johnston, 2008). An intervention that facilitates pedestrian reclamation of public space, and encourages supervised walking and routine physical activity, has much promise in such environments.

Evaluations of the significance of WSBs have also considered their durability, and sought to determine the factors that have contributed to their growth and longevity in some contexts. Kingham and Ussher (2005) surveyed schools with WSBs in Christchurch, New Zealand, and found that few routes have survived longer than one and a half years. However, in the larger urban setting of Auckland, Kearns and Collins (2006) found that routes which survived the initial period of vulnerability were highly likely to continue to operate. Longitudinal work, as presented in this paper, allows this issue to be addressed in greater detail.

Certainly the operation of WSBs has not been without difficulty: commonly-reported problems have included child safety, volunteer recruitment, and lack of council and school involvement with WSBs after initial set-up. Potential responses to such challenges include increased responsiveness to parental suggestions (Kingham and Ussher, 2005), and recognition of regular participation on the part of children and parents alike through small, but symbolically important, incentives (Kearns and Collins, 2006). The modest expenditure that such incentives require (e.g., on the part of supportive transport agencies), may pay dividends in travel demand management terms by sustaining an initiative that normalizes walking, and enables children to develop pedestrian skills and confidence (Kingham and Ussher, 2007). In addition, international evidence suggests that as rates of walking (and cycling) increase, the risk of being struck by motorists declines, likely due to increased awareness and behavioural modification on the part of drivers (Jacobsen, 2003). With these potential benefits in mind, we turn to the central focus of our paper: the five annual surveys of WSB activity in Auckland.

3. Growth and patterns of operation

Our surveys have been concerned, in part, with establishing baseline data on variables such as the number of routes in operation and the number of children participating in the initiative. Table 1 presents a picture of the ongoing growth of the WSB initiative in the Auckland region throughout the study period. Steady increases in numbers of both routes and participants speak to an enduring popularity, although they also mask a level of volatility. The category of respondent routes, for example, is made up of new routes (20% of the total at the time of the last survey), established routes responding for the first time, and previous respondents – while excluding any routes that have ceased to function. Similarly, the figure for children walking – as with any form of transport patronage – is determined by "[t]he relative size of the incomers, outgoers and loyal customers" (Goodwin, 2008, p. 29).

Table 1 also illustrates that only slightly more than half of those children registered for WSBs (and thus *eligible* to participate on days of their parents' choice), actually join the bus on an average morning. This may be explained in part by the complexity of family travel schedules, which can change from day-to-day, and by decreased enthusiasm for walking in winter months. In addition, while the number of children registered per route has tended to increase, actual participation levels remain fairly static on a per route basis. A notable drop-off in ridership occurs on days affected by rain. For example, in 2006, average ridership declined by 41.4% on a wet morning (with 25 routes ceasing to operate), and 28.7% on a wet afternoon (with 5 routes ceasing to operate).

One trend that became apparent relatively early in the analysis of WSB activities is that take-up of the initiative is not evenly distributed throughout the region; rather it is concentrated in schools whose pupils are drawn from wealthier neighbourhoods. Specifically, schools with high Ministry of Education decile-rankings are most likely to have WSBs. Decile-rankings are determined by five census-based indicators of neighbourhood socioeconomic status: families on low-incomes; parents in low-skill occupations; overcrowded households; parents with no formal qualifications; and parents who receive welfare payments. Schools are then ranked according to the proportion of pupils they draw from low socioeconomic status neighbourhoods. Decile 10 schools are the 10% of institutions that draw the *lowest* proportion of students from these communities; decile 1 schools are the 10% of institutions that have the *highest* proportion of these students. Fig. 1 illustrates that although WSBs are present at an increasing number of schools throughout Auckland between 2002 and 2006, they have always been most common at high decile schools.

Fig. 1 also reveals an enduring tendency for decile 10 schools to be the most likely to adopt the WSB initiative. Specifically, for each year in which a survey was conducted, decile 10 schools accounted for between 41% and 50% of all schools with WSBs. Expanding this analysis to include other high decile schools (i.e., deciles 8 and 9) the concentration has varied between 54% (2003) and 63% (2005). One consequence of this pattern is that respondents to the annual WSB surveys have consistently been drawn from a population that is strongly weighted towards the top of the socioeconomic spectrum. The unequal distribution of WSBs may also contribute to an existing tendency in New Zealand towards more protective parenting cultures in wealthier areas; there is evidence to suggest that children's opportunities for unaccompanied active travel vary inversely with socioeconomic status (Kypri et al., 2000; Mitchell et al., 2007; Tranter and Pawson, 2001).

Table 1
Overview of WSB activities (2002–2006).

	2002	2003	2004	2005	2006	Change 2002–2006 (%)
Total schools with at least one route	34	54	54	79	83	+144
Routes responding to survey	39	42	89	108	158	+305
Children registered (respondent routes)	575	677	1519	2019	2873	+400
Children walking (typical morning; respondent routes)	n/a[a]	n/a[a]	821	1099	1655	n/a
Adult volunteers registered (respondent routes)	317	n/a[a]	750	846	1264	+299

[a] Not asked.

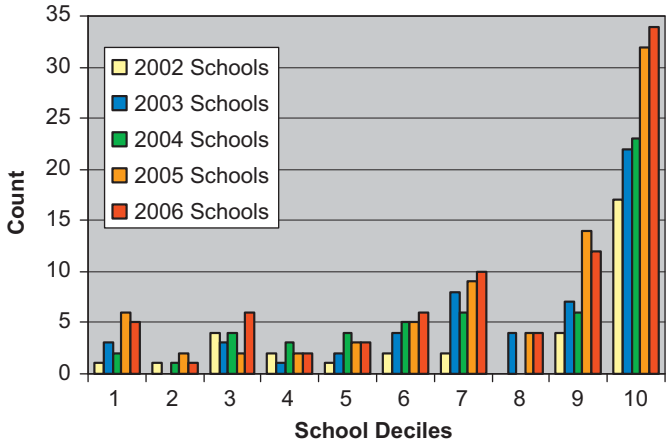

Fig. 1. All Auckland primary schools with WSBs by decile 2002–2006.

The degree to which WSBs are a feature of the urban landscape depends not only on their distribution, but also on their duration and frequency of operation. The first issue is simple to address: the average walking time of a single WSB journey was reported, in each of the last three surveys, as being 20 min. The second issue is somewhat more complex: in broad terms there is a trend towards WSBs operating for more (indeed, almost all) potential morning trips, but progressively fewer afternoon journeys. On average, 85% of routes operating in 2006 walked on any given morning, while the equivalent afternoon figure was just 53%. For the first time since this question was asked in 2004, less than half of all routes were operating for one journey "option": Friday afternoons. In comparing these operation rates with previous years, we note a continued increase in morning route activity – from 75% in 2004, to 82% in 2005 and to 85% in 2006. By contrast, afternoon activity has entered a pronounced decline: from 68% in 2004, to 63% in 2005 and to 53% in 2006. The most likely reason for the decline in afternoon route activity is lower demand, associated with the complicated timetabling brought about by participation in after-school extra-curricular activities. It is not possible to predict whether this trend will continue, or whether operation levels will stabilize.

4. Sustainability

An enduring concern of the annual research into WSBs has been to reflect on their sustainability. Specifically, we have sought to identify and measure indicators which point to their endurance and robustness (on the one hand), and persistent difficulties or declines in activity which cast doubt on their durability (on the other). This concern is motivated largely by recognition that WSBs are volunteer-driven initiatives, potentially vulnerable to declines in support after the initial enthusiasm and novelty has subsided. Moreover, even "successful" WSBs must recruit new volunteers and participants on a relatively regular basis as families leave the neighbourhood, parents adopt new schedules, and older children leave the WSB. Our research, which focuses on aggregate data, has a limited ability to quantify such "churn" (Goodwin, 2008), although some survey respondents have noted the challenges associated with volunteer and passenger turnover. It appears that the longer a routes endures, the more embedded it becomes in the routines of families and the tradition of the school community. Indeed, it is at the scale of the *school* that commitment to WSBs may be most important: while individual routes can struggle, and occasionally close, it is exceptionally rare in Auckland for a school served by one or more WSB routes to abandon the initiative altogether.

In the first annual report, we identified three indicators of WSB sustainability: longevity, growth and support. We proceeded to note that as 18 of 21 surveyed WSBs had been in operation for fewer than 12 months, there was limited opportunity to comment on longevity. However, only three routes had been known to cease operation during the year, and most others had either static or increasing numbers of child participants. Levels of parental support, as measured by factors such as a 1:1.8 ratio of registered volunteers to child walkers, were high. The following year we found increased evidence of the normalization of WSBs as both a form of mobility for children and as a form of volunteer commitment for parents. For example, at 27 of 53 surveyed schools, one or more WSB routes had been in operation for over 1 year, and a majority of routes were witnessing increased levels of child participation.

Subsequent reports found that while ridership levels continued to be strong, this was not matched by volunteer commitment. Rather, the numbers of parents volunteering to assist on one of more scheduled walks per week was static or decreasing in most cases. Over time, these trends had led to a gradual increase in the registered volunteer-to-child ratio, from 1:1.8 to 1:2.4. Respondents portrayed static or declining volunteer numbers as problematic, primarily because of the burden placed on those adults who continued to participate. While this situation is likely to have motivated some volunteers to withdraw from involvement, it does not appear to have threatened the overall expansion of WSB activity (see Table 1). With few routes experiencing significant declines in passenger numbers (and fewer still ceasing to operate), there is little reason to question the sustainability of WSBs. At many schools, they are now well-established institutions.

5. Benefits

In Auckland, walking for school journeys has been valued and promoted by government agencies for reasons relating primarily to the imperatives of reducing car use and school-gate congestion. Indeed, it was initial evidence of this effect – a finding that the first WSB in Auckland saved an average 19.5 car journeys per day (Kearns, 2001) – that prompted governmental interest. An ongoing focus on WSBs as a means for facilitating a modal shift from driving to walking has been reflected in the annual surveys, which have sought to estimate not only the number of children walking, but also the number of car journeys averted.

In 2006, respondents estimated that 63% of children participating in WSBs would otherwise have been driven. From this figure, we calculated the average number of car trips averted per route each morning (7.6) and afternoon (7.3). Multiplying each of these averages by 180, and adding the totals, suggests a total of 2667 journeys saved. However, this does not take into account the fact that many buses only operate on select mornings and afternoons. On an average morning, 85% of routes operate, and on an average afternoon, the figure is 53%. Thus, we can estimate that 153 routes operate on a typical morning, and 95 on a typical afternoon. Multiplying these numbers by 7.6 and 7.3, respectively, produces a total of 1840 journeys saved on an average day in 2006. The results of this analysis, and those for the previous 2 years, are presented in Table 2. The data point to a steady increase in journeys saved, consistent with increasing numbers of respondent routes.

The estimates of journeys saved assume, for the sake of simplicity, that if one child who would otherwise have been driven to school uses the WSB on a given morning (or afternoon),

Table 2
Estimated car journeys saved (respondent schools only) (2004–2006).

Journeys saved	2004 ($n = 104$ routes)	2005 ($n = 120$ routes)	2006 ($n = 180$ routes)
Average per route: mornings	7.6	7.2	7.6
Average per route: afternoons	6.7	6.7	7.3
Total for all routes (a.m.+p.m.)	**1046**	**1212**	**1840**

one car journey is averted. It does not take into account any "return" (school-to-home) journeys on the part of morning parent-drivers, or a number of other complicating factors regarding driving distances and directions. The same principles apply for calculating afternoon figures. Nevertheless, the increasing numbers of journeys saved, and a relatively consistent average of approximately seven car journeys saved each time a route operates, point to the utility of WSBs in reducing car use. Such benefits may continue after children leave WSBs (typically at age 9–10), as many "graduate" to independent walking, either by themselves or with friends (Neuwelt and Kearns, 2006). It appears that regular WSB participants become "accustomed" to walking for local journeys, particularly those associated with schooling.

Importantly, for those parents who organize and participate in WSBs, the initiative is not valued solely, or even primarily, for its contribution to reducing car-dependence or alleviating congestion. In each of the last 3 surveys, respondents were asked to rank the benefits of WSB activity, as they perceived it. While less car use has always featured among the top four benefits, it has never been the highest-ranked benefit. Rather, in 2004 and 2005, the *most* valued benefit was health and exercise. In 2006, the community and social benefits of WSBs were to the fore. The fourth consistently highly-ranked benefit relates to the perception that adult supervision reduces the risk of child pedestrian injury.

Alongside the ranking of benefits, respondents were also asked to comment on the positive experiences of WSB involvement. These help to provide an insider's view of a volunteer-driven initiative. First, parents coordinating WSB activities have often commented enthusiastically about the perceived health benefits of regular walking, with some reporting marked improvements in children's (and, sometimes, adults') fitness levels. Illustrative responses to questions about benefits have included:

> Creating healthy lifestyles. Enjoyment of walking. Fitness.
>
> The children let off steam walking to school (which increases their fitness) [and] they are more settled upon arrival to school.
>
> Walking revs up everyone's metabolism.

Such viewpoints echo contemporary health promotion language, which earlier research into WSBs found may be internalized by many child participants (Kearns et al., 2003). In addition, participants were cognizant of other benefits which feature prominently in official discourses around walking to school, and less car use: reduced congestion, injury prevention, and the promotion of road safety skills. Yet another important benefit in the eyes of many respondents was that of sociability, and a heightened sense of community.

While the contribution of schools to social cohesion has been remarked on elsewhere (Witten et al., 2003), the act of routinely walking to and from school offers an additional opportunity for social interaction, above and beyond that which may be found through conversations at the school-gate, or participation in school events. In general terms, walking offers chances for conversation among strangers and casual acquaintances that are often rare in a private-automobile oriented society (Bean et al., 2008). WSBs offer specific opportunities for social interaction between children of different ages, between parents who may not otherwise know each other, and between children and adults who are unrelated. Such interactions are valued, as the following responses to questions about the positive aspects of walking attest:

> Friendship building, children getting to know other adults they do not usually have contact with, children enjoying walking with friends, great way for new families to get to know families in neighbourhood.
>
> [It's] a focal point in the community [that] gives neighbours a reason to communicate.
>
> Younger children getting to know older children at school. The older children are very supportive of the younger ones on the bus-this carries on at school.

The promotion of road safety is another commonly-reported positive experience, linked to the idea that children learn valuable practical knowledge about traffic through routine, adult-supervised walking. Significantly, the perceptions of children being better equipped in terms of safety extend beyond traffic-related risk. For instance, according to one coordinator, "children are aware of safe people/houses in the community". In other words, although road safety may be prominent in parents' minds, knowledge of the community generated through routine walking under adult supervision may also yield safety benefits.

6. Discipline

References to learning rules for road safety point to the disciplined nature of participation in a walking school bus. The form of walking it offers is highly structured, in terms of timetable, route and expectations as to behaviour. While walking for transportation (as opposed to leisure) can be interpreted as counter-cultural, especially in auto-dominated environments such as Auckland, the specific form of walking required by a WSB also reinforces particular cultural notions of childhood. In particular, children are perceived as unpredictable pedestrians, poorly equipped for a world dominated by cars, and in need of constant adult surveillance and correction.

In this context, impulsive and/or playful behaviour on the part of children presents a challenge for adult volunteers. Indeed, WSB survey responses are replete with complaints about children's ill-discipline and unreliability. Typically, the behaviours complained about are relatively common to groups of primary school-aged children, and include pushing, fighting and general unruliness, as well as not being fully attentive. Responses include re-assertions of rules, the invoking of school and parental authority, and – in some cases – exclusion from the group.

The reflections of adult coordinators on the challenges of walking with groups of children also invoked particular understandings of gender. With some frequency, they indicated that misbehaviour was most often associated with boys, who lacked common sense, and pushed boundaries:

> Too many small/young boys makes it a difficult to control group.
>
> Keeping the boys walking rather than running/racing.
>
> The only negative has been a situation where we had 12 walkers, 10 of them small boys and they were a bit boisterous.

Accordingly, reported responses to behavioural challenges also had a gendered dimension:

> Talk to the boys. Reprimand them. Give them to the Principal to deal with it by informing their parents.
>
> Children have been put into two lines. A line for girls and a line for boys to prevent bad behaviour.

Across our 5 years of reports, girls are very seldom mentioned, and never in a negative context, suggesting that they are perceived as relatively quiet and compliant walkers.

Expectations of compliant walking are not limited to child "subjects", and complaints about the unreliability and unruliness of adults are also common. These often focus on failures on the part of parents to inform volunteers that their child will not be walking on a particular day (resulting in unnecessary delays and anxiety), as well as volunteers "not turning up for their rostered shift." The voluntary basis of WSB participation means this unreliability does not result in formal reprimand. A related negative experience concerns the recruitment and retention of volunteers, with a proportion of parents considerably more keen for their child to walk with the group, than they are to volunteer their own time to assist with the operation (i.e., the freeloader problem).

7. Gender

The overwhelming majority of those who *do* volunteer in WSB initiatives are mothers. Our most recent survey (the first to explicitly address gender) found that 88% of volunteers are women, and that a majority of routes (54%) have no male volunteers. In addition, 21% of routes have just one male volunteer, and no WSB has more men than women. When asked to comment on the difficulties associated with recruiting male volunteers, 75% of WSB coordinators (themselves usually mothers) noted that men's work routines precluded volunteering. Comments such as "they work!", "work commitments" and "most work full-time and are therefore unable to help" were almost ubiquitous. Only a small minority (6%) suggested that stereotypes about gender roles were independently responsible for the lack of male involvement: generally, the notion that "most males are in full-time employment whilst mums are the main caregivers" was stated as a simple fact of Auckland life.

This said, recruiting female volunteers was seldom without challenge: only 20% of respondents reported no problems in this area (7% also reported no problems in recruiting men). For 32% of respondents, difficulties in securing female volunteers was also attributed to "work", while 27% noted that the responsibilities of caring for other family members (especially younger children of pre-school age) made it difficult for many women to be involved. While child-care responsibilities were *never* mentioned as factors restricting men's participation in walking, they were considered common for women, either independently or in combination with paid work:

> [Some] mothers… work full-time; but the "at home" mums have other commitments with other kids, i.e., babies and toddlers, or older kids needing to be taken to another school.
>
> [Our] route [can't] be managed with younger siblings walking or in push-chairs [i.e., strollers]. [It] has a steep hill at the beginning. [Also,] mothers of older children are returning to work.
>
> Work commitments, pregnancy, reluctance to commit if they have small babies.

One consequence of reliance on mothers' volunteer labour is that routes are vulnerable to declines in support if and when women return to full-time work outside the home. Certainly, the data confirm that the temporal and spatial demands of work in Auckland (where long commutes, typically in sole-occupant motor vehicles, are routine) are often inconsistent with supervising children walking to and from school. As has been noted elsewhere (Beckmann, 2001; Sheller and Urry, 2000), automobility is associated with the intense scheduling of everyday life, including long working hours, and with the need to be highly flexible. For many parents, one consequence of this is unavailability for walking to and from school. Accordingly, if they want their children to be supervised on these journeys, they are reliant on the volunteer labour of other adults, or dependent on alternatives such as driving children as part of their own travel to and from work (i.e., trip-chaining).

8. Walkers' observations of the urban environment

Routine walking leads volunteers to reflect critically on the hazards pedestrians must negotiate. Such reflection is evident in a variety of comments, including those focussed on driver behaviour, the built environment and the marginal status of walking/walkers in Auckland. In combination, these comments amount to a critique of auto-dominance:

> [Our problem is] cars. We are just not getting through to parents, the council, or the police. People are not stopping.
>
> There is no pedestrian crossing. [The] road is extremely busy with a 70 km/h speed limit. We eventually got council to install an island but we have 30 kids some days and 2 adults. It is hard to get 30 kids safely onto a small traffic island.
>
> It is along a very busy main arterial route with lots of side street crossings. Despite council's assurances that a crossing aide would be installed… nothing has been done.

Traffic management issues feature prominently in accounts of negative experiences. Common concerns include "drivers accelerating too fast on to driveways," "impatient motorists when we are crossing side roads," and cars "running red lights" as well as speeding through pedestrian crossings. In addition, many coordinators have identified intersections which do not allow for safe crossing, especially by a group of children:

> One of the roads we cross is quite dangerous. It's very hard to see in both directions and cross safely particularly on the occasions when we have only one [volunteer].
>
> The pedestrian crossing is very dangerous. We have all seen cars go through red lights there. Could we get speed cameras installed to help slow traffic? The crossing is at the bottom of a hill and cars tend to pick up speed as they go down.

Such comments speak to the hazards associated with automobilization that have contributed to children's retreat from the street, and which individual pedestrians have a very limited ability to address. This said, over time WSBs – in combination with other initiatives intended to normalize active travel in Auckland – *may* promote more cautious driver behaviour, consistent with Jacobsen's (2003) findings around "safety in numbers" for pedestrians and cyclists. In addition, the organized and institutionalized nature of WSBs has already been used as leverage to achieve improvements in the local environment: councils have often been willing to undertake relatively inexpensive actions, such as cutting back overhanging vegetation, and upgrading/maintaining footpaths, in response to requests from coordinators.

9. Conclusion

In the Auckland region, routine walking to and from school is encouraged by increasing numbers of WSB routes. These are frequently portrayed as an affordable contribution to addressing urban ills ranging from traffic congestion to childhood obesity. Their ability to reduce car journeys is, perhaps inevitably, a particular focus of attention. However, recent health promotion initiatives centred on the importance of routine physical activity have helped cast a different light on the importance of attempts to re-legitimate walking, especially for neighbourhood-level journeys.

In broad terms, the act of supervised walking challenges *some* of the social practices associated with automobile dependency. For example, many survey respondents have *insisted* that children have a legitimate place on the footpaths of the city, and that they are *entitled* to walk to and from school (albeit in a regulated manner). Obstacles to the realization of this entitlement – ranging from dangerous driving, to intersections that cannot be safely navigated, to deteriorating pedestrian infrastructure – are portrayed as unacceptable. In this way coordinators' arguments contest ingrained notions that children must "give way" to cars. In some ways, then, WSBs are contributing – albeit modestly – to a social movement revaluing New Zealand cities as walkable places.

The involvement of relatively large numbers of adults in walking with groups of children also suggests a (re)emerging understanding of supervised walking as an appropriate means of *caring* for children. While, in some circumstances, car use may be a measure of parental (especially maternal) contribution to children's wellbeing (Dowling, 2000), many parents in Auckland have come to see the supervision of children's walking in a similar light. Their generally positive views of walking are underpinned by a range of perceived benefits, including health and fitness, and the sociability and sense of community that is fostered by regular conversations among relatively diverse groups of children and adults. A key challenge for future research will be to assess whether such positive assessments of walking – also perceived by children (Neuwelt and Kearns, 2006) – result in a long-term transition to independent active travel, and reduced automobile dependence, on the part of former participants.

Ultimately, however, the phenomenon of a supervised walk to and from school is not revolutionary. Many parents, including the majority of fathers, are apparently unable to volunteer to walk with children due to demands of full-time work. Typically, they are commuting at the time that children depart to school – traversing the physical separation between home and work that has been greatly expanded by the rise of the automobile. In addition, understandings of adult supervision and control, inherent in the WSB concept, are emblematic of enduring concerns about the (in)ability of children to negotiate automobile-dominated space independently.

In light of such issues, the continued promotion of WSBs in Auckland should proceed with recognition that supervised walking is neither the sole answer to children's mobility needs, nor a panacea for the ills of auto-dominated environments (Engwicht, 2003). Rather, WSBs can and perhaps should be regarded as stepping stones towards two broader developments: increased independent mobility for children for a range of neighbourhood-level journeys; and significantly reduced car use, speeds and density in suburban neighbourhoods. If these twin goals were achieved, formalized WSBs might not be needed. Moreover, for as long as supervised walking is required, it may continue to *reinforce* some of the social identities associated with automobile-dominated space (i.e., those around gender roles, and the public incompetence of children). This said, it is clear that routine walking in groups also helps to break down the social isolation often associated with automobilized family lifestyles, and alerts adult participants, in particular, to the some of the costs and dangers associated with allowing motor vehicles to dominate the public spaces of everyday life.

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