**Table S2. Influence of the transition between primary and secondary school on travel behaviours**

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| **Lead author (year)** | **Effects on travel behaviours** | **Other important results** |
| Bonham (2012a, 2012b) | Many participants described that attending secondary school precipitated giving up cycling. | In childhood, cycling was a skill acquired/attempted by all respondents between the ages of 5 and 12. It was described both as a way to get around, acquire freedom and independence, and maintain social relationships. Cycling in childhood was described as part of everyday life, a form of entertainment and a travel mode to school, friends' houses and errands. Cycling as a teen was viewed as “uncool” and “childish” by some participants. Time pressure related to homework and involvement in other activities, the need to carry books/equipment and longer distance to school also contributed to giving up cycling. Travel by car or public transit was viewed as a way to facilitate relationships in adolescence. Immigrating to Australia or relocating from a rural to an urban area was associated with greater concerns about traffic, which deterred cycling. |
| Cardon (2012) | The proportion of children who cycled to school increased from 69% to 83% across the school transition (*p*<0.001). The average duration of cycling to/from school increased from 9.24 ± 0.70 to 11.56 ± 0.63 min/day (*p*<0.001). | Children who cycled at a particular time point were much more likely to cycle later on (OR=2.69 to 7.61; *p*<0.01). Gender, SES, baseline BMI, and the presence of siblings were not associated with the likelihood of cycling or cycling duration. |
| Cooper (2012) | Primary school: 77.0% walk; 19.1% car; 3.2% cycling; 0.7% bus. Secondary school: 60.7% walk; 17.2% car; 3.5% cycling; 18.6% bus. Transition was associated with a decrease in walking and increase in bus riding (*p*<0.001).\* | Children who walked to school were significantly more active than those who were driven both before and after the transition (+9.7 and +18.0 min/day of MVPA; *p*<0.001). Longitudinally, a shift from walking to motorized modes was associated with a significant decline in accelerometer-measured MVPA (-9.1 min/day; *p*=0.008). 73.1% of children lived within 1 km of their primary school and this proportion decreased to 16.2% in secondary school (*p*<0.001).\* |
| D’Haese (2015) | Mean time spent engaging in AT to/from school increased from 10.21 ± 12.14 to 15.87 ± 16.75 min/day in girls and 12.99 ± 14.66 to 18.43 ± 18.13 in boys (both *p*<0.05). Changes in walking and cycling for transport during leisure time were not significant, except for a decline in walking in boys (from 9.11 ± 12.58 to 5.93 ± 10.21 min/day). | In boys, an increase in perceived neighbourhood aesthetics was associated with an increase in AT to/from school. Among girls, increased parental perception of the availability of walking/cycling infrastructure was related to more cycling for transport during leisure time (*p*<0.05). In boys, a decrease in perceived safety from crime and in parent-perceived availability of walking/cycling infrastructure was related to more cycling for transport during leisure time. |
| De Meester (2014) | Average child-reported AT time increased from 11.35 ± 13.35 to 17.23 ± 17.83 min/day across the transition (*p*<0.001). | Extracurricular PA promotion was not associated with AT to/from school. Total reported PA (*p*<0.01) and extracurricular PA (*p*<0.001) declined across the transition, whereas accelerometry-measured MVPA increased (*p*<0.05). Among children who did not meet the PA guideline in primary school, total PA showed a larger decrease when school support for AT decreased from primary to secondary school. Conversely, among children who met the PA guideline in primary school, there was a smaller decrease in total PA when school support for AT decreased across the transition. |
| Jones (2013) | Almost all Boomers (born between 1945-1955) walked unaccompanied throughout primary school. Most Echoes (born between 1975-1985) finished primary school either walking (mostly with a parent) or being chauffeured by a parent. In both cohorts, few participants cycled to primary school. After the transition, Boomers used walking, cycling or bus in fairly equal proportions. Some Boomers also started to cycle to other places. Most Echoes used the bus or were driven by parents. Thus, in both cohorts, use of motorized travel modes increased after the transition. | Independent mobility (e.g., children’s freedom to move around in public space without adult supervision) differed between generations: Boomers had more spatial freedom for cycling and were less likely to be accompanied by their parents for school travel than Echoes. |
| Larouche (2013) | The prevalence of AT to/from school declined from 57% to 46% across the transition (*p*=0.049). Among active travelers, the weekly AT distance increased from 6.9 ± 4.5 to 11.1 ± 10.9 km/week with a moderate effect size (Cohen *d*=0.52), but this difference was not statistically significant, likely due to the small number of active travelers at both time points (n=11). | Daily step counts declined from 16578 ± 3758 to 14071 ± 3680 (*p*<0.001). Average distance between home and school increased from 2.6 ± 2.7 to 3.9 ± 3.4 km. The positive association between AT and PA was only significant at follow-up. |
| Marks et al. (2015) | Mean number of school trips by bicycle/scooter per week declined from 1.2 ± 2.5 to 0.5 ± 1.6 (*p*<0.05). This decline was significantly larger in participants whose school location changed during the transition, especially among girls. There was no change in the weekly frequency of walking to/from school (from 2.9 ± 3.8 to 3.0 ± 3.8). | Objectively measured MVPA (−4 mins/day) and light-intensity PA (−23 mins/day) levels at lunch and recess declined across the transition (all *p*<0.05), but there were no changes in the proportion of children meeting PA and screen time guidelines. MVPA and light-intensity PA did not differ between children who changed school location across the transition and those who did not. However, changing school location was associated with an increase in screen time, especially among girls. |
| Remmers et al. (2020) | Multilevel models indicated that, after the transition, children spent 6.34 (95% CI = 5.27, 7.42) more min/day in light-intensity PA during AT before school and 0.43 (95% CI = -0.72, -0.14) fewer min/day of light-intensity PA during motorized travel. During the after-school period, they accumulated fewer min/day of light-intensity PA during motorized travel (-1.65; 95% CI = -2.93, -0.38). On weekends, they accumulated fewer min/day of light-intensity PA during AT (-15.88; 95% CI = -25.21, -6.54). In all models, changes in MVPA during active and motorized travel were not significant. | Multilevel models indicated that total MVPA declined significantly on weekend days (from 55.1 to 34.3 min/day) and weekdays (from 43.9 to 34.0 min/day) and similar declines were observed for light-intensity PA. Declines in light-intensity PA and MVPA were particularly important in the after-school period. Light-intensity PA declined during school hours, especially when participants were on school grounds. However, light-intensity PA and MVPA increased during school hours when participants were in other locations than home, school, and sport grounds. |
| Underwood (2014) | About 90% of participants reported cycling for recreation and/or transportation in primary school. This proportion was just over 60% in junior high school and just over 40% in high school. | The number of participants who reported liking cycling decreased from 28 in elementary to 21 in high school. Most mentions of cycling as "exciting and fun", "cool", or as a way to gain freedom and independence were made in relation to elementary school years. Much more participants described cycling as "uncool", "nerdy", "dorky", "geeky", "weird", "lame", "unfashionable", "untrendy", and "for losers" in relation to junior high and high school years. Most of the latter attributes were mentioned by women. Increasingly negative attitudes towards cycling were associated with the onset of driving (as driver or passenger), which was seen as “cooler” by many participants. Increasing distance, busy schedules, hills, poor weather, rural roads, and traffic were also mentioned as reasons for abandoning cycling. |
| Vanwolleghem (2016) | The proportion of participants who reported that they usually engaged in AT to school was stable (65.2% in primary and 65.5% in secondary school) whereas the proportion of participants reporting AT to other destinations at least once in the previous week declined from 93.9 to 70.0% (*p*<0.0001).\* | For each km increase in distance, children were 19% less likely to have switched to AT and 13% less likely to have maintained AT compared to participants who switched or maintained motorized travel. Greater parent-perceived neighbourhood safety at baseline was associated with higher odds of maintaining AT to other destinations at follow-up (OR=2.78) vs. switching to or maintaining motorized travel. All *p*<0.05. |

**Note**: Both Bonham (2012) publications used the same dataset, so they were counted as a single study. AT: active transportation; MVPA: moderate- to vigorous-intensity physical activity; PA: physical activity. \* We obtained the *p*-value using a chi-square test for differences in proportions (<https://www.medcalc.org/calc/comparison_of_proportions.php>).

**Table S3. Influence of the beginning of postsecondary education on travel behaviours**

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| **Lead author (year)** | **Effects on travel behaviours** | **Other important results** |
| Deforche (2015) | There was a significant decrease in time spent engaging in AT (boys: from 337 to 224 min/wk; girls: 287 to 212 min/wk) and in time spent in motorized transport (boys: from 21.2 to 17.4 min/day; girls: from 25.7 to 19.9 min/day) (both *p*<0.005). | Changes in AT and motorized transport were not associated with changes in BMI. BMI and weight increased significantly in both genders, with larger increases in boys (+4.2 kg and +1.5 kg/m2 vs. + 1.9 kg and +0.6 kg/m2). Waist circumference increased significantly only in boys (+1.8 cm). Sport participation, food consumption, TV/DVD watching and video games declined while internet use and studying increased (all *p*<0.05). Alcohol consumption increased, especially in boys. |
| De Paepe (2018) | 49.5% of participants cycled to secondary school and 26.0% used bus or tram. Post-secondary, 61.5% of students in Ghent dorms cycled followed by walking at 24.5%. Students commuting to Ghent mainly used train (53.8%) followed by bus/tram (22.5%). In secondary school, 55.0% reported grocery shopping as car passenger and 22.0% by bicycle. Post-secondary, 46.6% of students in Ghent dorms walked for grocery shopping followed by cycling at 45.0%. Students commuting to Ghent mainly used car as passenger (42.0%) followed by bicycle (24.5%). In secondary school, 47.0% reported “fun shopping” as car passenger followed by bus/tram at 20.0%. Post-secondary, 47.7% of students in Ghent dorms walked for “fun shopping” followed by cycling at 27.8%. Students commuting to Ghent mainly used car as passenger (34.0%) followed by bicycle (29.2%). | In secondary school, pro-car attitude was associated with higher odds of driving to school and “fun shopping” and perception that cars are cheap were associated with higher odds of driving to school. Perception of car as safe was associated with higher odds of driving for groceries. Having a driver's license or a car were associated with higher odds of driving to university or for shopping. Living in an urban area and pro-AT attitude were associated with lower odds of driving to university. In university, higher distance was associated with higher odds of driving for shopping. Perception that cars are comfortable was associated with higher odds of driving for grocery. Pro-car attitude was associated with higher odds of “fun shopping” by car and pro-AT attitude was associated with lower odds. |
| Jones (2013) | In high school, most Echoes (born between 1975-1985) used the bus or were driven by parents. Echo males who went to university reported different combinations of travel modes, including driving. Most Echo females went to university without a car and mostly walked for transportation. The effect of starting university on Boomers’ travel behaviour appears to be highly variable (p. 146-148). | Most Boomer males (born between 1945-1955) who attended university delayed car ownership until entering the labour market. Boomer females delayed acquisition of a driver's license and car ownership until their third decade of life. Many Echoes, especially men already owned a vehicle when starting university. |
| Parra-Saldías (2019) | The prevalence of AT decreased significantly for the trip to school/university (from 39.8% to 34.0% in males and from 32.9% to 18.5% in females) and the trip back home (from 44.1% to 33.7% in males and from 38.6 to 17.6% in females). For the trip to school/university, there were significant declines in car travel and increases in use of public buses and train/metro for males and females. For the trip back home, the prevalence of train/metro increased in males and females, and the prevalence of public bus and car increased only in females (all *p*<0.05). | In both high school and university, greater distance was associated with much higher odds of motorized travel (all OR>5 and *p*<0.001). Participants had been attending university for up to 5 years, but authors reported that length of university studies was not associated with usual travel mode. |
| Rau (2016) | After starting college, 36% of participants reported an increase in cycling whereas 19% reported a decrease; 71% reported an increase in walking whereas 9% reported a decrease; 69% reported an increase in PT use whereas 13% reported a decrease; 14% reported an increase in driving whereas 23% reported a decrease; 13% reported an increase in travel as car passenger whereas 48% reported a decrease. Only descriptive statistics were reported. | N/A |
| Scheiner (2013b) | Commencement of apprenticeship or university was associated with no changes in frequency of trips by car, PT, walking and cycling (all *p*≥0.38). | Many baseline variables (e.g., gender, number of children in the household, living in a couple, education and employment status, type of urbanization, etc.) were associated with subsequent trip rates suggesting that mode use may change in the absence of any major life events, due to changes that were already planned and high levels of freedom of choice. |
| Sharmeen (2013) | Starting university was associated with increased time allocated to subsistence activities (defined as work and study) and travel time related to these activities (*p*<0.10). It had no effect on time allocated to maintenance (e.g., groceries, errands, etc.) and leisure (e.g., shopping, dining, social activities) activities and travel time associated with these activities (*p*>0.10). | N/A |
| Van Dyck (2015) | Time spent engaging in AT decreased from 303.7 ± 199.0 to 215.6 ± 129.7 min/week (*p*<0.001). | A decrease in modeling (β=0.12, 95 % CI=0.01, 0.25) and in time-related barriers (β=0.16, 95 % CI=0.04, 0.28) was associated with a decrease in AT. These effects were not moderated by residency (i.e., living at home vs. in university residence). Residency, change in social support from family, self-efficacy, and other perceived benefits of, and barriers to, PA were not significantly related to changes in AT. Time spent engaging in leisure-time sports decreased from 185.7 ± 217.7 to 111.0 ± 154.8 min/week (*p*<0.001). |

Note: AT: active transportation; MVPA: moderate- to vigorous-intensity physical activity; PA: physical activity. \* We obtained the p-value using a chi-square test for differences in proportions (https://www.medcalc.org/calc/comparison\_of\_proportions.php).

**Table S4. Influence of entry into the labour market on travel behaviours**

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| **Lead author (year)** | **Effects on travel behaviours** | **Other important results** |
| Bopp (2019) | Before graduation, participants spent an average of 273 ± 203 min/wk in AT. After entering the labour market, the authors classified participants as low-AT (n=152) who reported 25 ± 42 min/wk and high-AT (n=52) who reported 325 ± 193 min/wk. Based on the reported means and standard deviations, there was an overall decrease in AT across the transition at *p*<0.001.† | Compared to the low-AT group, participants in the high-AT group reported significantly more AT and vigorous PA in college and more MVPA and shorter distance to work post-graduation. Participants in the high-AT group had greater moderate (*t*=4.31, *p*<0.001) and vigorous PA (t=3.05, *p*=0.01), and less sedentary time at work (*t*=2.02, *p*=0.04) relative to the low-AT group |
| Busch-Geertsema (2017) | Before the transition, 7.2% traveled by car, 53.6% by PT, 28.5% by cycling, 10.6% by walking. After the transition, 19.5% traveled by car, 46.3% by PT, 26.8% by cycling, 7.2% by walking. The increase in driving was statistically significant (*p*<0.0001) while other changes were not.\* 37% of participants who transitioned from post-secondary studies to working life reported a change in travel mode vs. 16% of those who remained students. | Mode change was associated with theory of planned behaviour constructs (attitudes, subjective norm and perceived behavioural control), work requirements (flexibility, dress code), opportunities (changed car availability, parking availability and connection to PT) and increasing distance. Mode change was inversely associated with habits. Participants who relocated during the 1-year follow up were more likely to report changing mode (56% vs. 31%), but no information was provided about travel mode before and after relocation. |
| Jones (2013) | All Boomer men (born between 1945-1955) who entered the labour market at the age of 15 or 16 years were car owners and commuters by 21. This was often preceded by using a motorcycle. Most Boomer women who entered the labour market at the same age used PT. In high school, most Echoes (born between 1975-1985) used the bus or were driven by parents. Most Echo women who entered the labour market between 16 and 18 began to drive to work and other places. Echo men used a broader range of travel modes including driving, walking and cycling. | In the Echo cohort, most participants who graduated university found jobs close to city centers and this was less common in those without university education. |
| Mbabazi (2016) | Regardless of cohort (e.g., participants who turned 17 in the 1970s, 1980s or 1990s) and current travel mode, PT was the most common mode when entering the labour market. Qualitative data indicated a shift from AT to car use and PT with this transition as many participants perceived the distance as too long for AT. Combining data from Tables 5.2 to 5.5, we note that, among participants who received higher education, the mode share of AT declined from 41.4% to 28.0% while PT increased from 50.0% to 52.4% and car increased from 8.6 to 19.5%. | The “awkward” configuration of the transit system was expressed as a reason for switching to car travel, with some participants describing transit as too slow or impractical for their commute. The main enabler of car use was increased financial resources or access to a company car. Availability of a direct transit route was the main enabler for PT use, whereas short distance enabled AT. |
| Oakil (2016) | Starting full-time work was not associated with shifts from cycling to another travel mode of from another travel mode to cycling (all *p*>0.05). | Changes in employment were associated with a higher likelihood of shifting to/from cycling (*p*<0.05). Increased travel time was associated with shifts away from cycling, whereas decreased travel time was associated with shifts to cycling (both *p*<0.01). Shifting from full-time to part-time work was associated with reduced odds of shifting from cycling to another mode (*p*<0.05). Increasing vehicle availability was associated with reduced likelihood of shifting to cycling (*p*<0.05). |
| Rau (2016) | After starting their first job, 13% of participants reported an increase in cycling whereas 36% reported a decrease, 18% reported an increase in walking whereas 44% reported a decrease, 36% reported an increase in PT use whereas 39% reported a decrease, 54% reported an increase in driving whereas 13% reported a decrease, 15% reported an increase in travel as car passenger whereas 33% reported a decrease. Only descriptive statistics were reported. | N/A |
| Scheiner (2013b) | Changes in daily trip rates associated with entry in the labour market were as follows: car as driver: +0.17 trips/day (+0.24 in men; +0.12 in women); car as passenger: -0.04 (-0.02 in men; -0.06 in women); PT: +0.01 (-0.10 in men and +0.10 in women); walking: -0.14 (-0.10 in men and -0.16 in women); cycling: -0.02 (-0.10 in men and +0.04 in women). In multivariate analyses, entry in the labour market was associated with a 29% increase in car trips as driver (*p*<0.001), but it had no significant effect on car trips as passenger and walking, cycling, and PT trips. | Many baseline variables (e.g., gender, number of children in the household, living in a couple, education and employment status, type of urbanization, etc.) were associated with subsequent trip rates suggesting that mode use may change in the absence of any major life events, due to changes that were already planned and high levels of freedom of choice. |
| Scheiner (2014a) | Changes in daily trip rates associated with childbirth were as follows: car as driver: +0.20 trips/day (+0.27 in men; +0.14 in women); car as passenger: -0.03 (+0.01 in men; -0.06 in women); transit: +0.01 (-0.07 in men and +0.08 in women); walking: -0.12 (-0.08 in men and -0.15 in women); cycling: -0.02 (-0.10 in men and -+0.04 in women). In multivariate analyses, entry in the labour market was associated with a 25% increase in car trips as driver in men and a 26% increase in women (both *p*<.05), but it had no significant effect on the frequency of walking and transit trips. | Descriptive statistics indicated gender differences in PT and bicycle use: men tended to decrease their cycling and PT use after entering the labour market whereas women used PT more. These differences did not remain significant in multivariate analyses. |
| Scheiner (2014b) | Changes in entropy: +0.04 (-0.03 in men and +0.10 in women); changes in trips per tour, i.e., trip complexity: +0.15 (+0.39 for men and -0.02 for women). Entry into the labour market is associated with a 7% increase in entropy and a 39% increase in trips per tour (both *p*<0.05). These changes were moderated by gender (both *p*<0.05); results show increased entropy for women more than for men whereas tour complexity increased more for men than women. | Among individuals employed part-time at baseline, there was a significant increase in entropy (*p*<0.001) and a decrease in trips/tour (*p*=0.001). There was a decrease in entropy among unemployed individuals at baseline (*p*<0.001). Leaving the labour market without retiring was associated with reduced entropy, but only for women (*p*=0.002), suggesting that men who leaved the labour market replaced work with other out-of-home activities. Increased car use was associated with increased entropy and reduced trip complexity. |
| Scheiner (2016) | The sample was split in two halves for analyses. Entry into the labour market was associated with reduced multimodality as evidenced by significant reductions in the number of travel modes used and mode entropy, and increases in Herfindahl-Hirschman Index and in the share of trips made using one’s primary travel mode in at least one of the split-half samples (all *p*<0.005). | Multimodality increased with children moving out of the household, leaving the labour market, improvement in PT, and reduced parking space availability. Multimodality decreased with increased car access (suggesting that car use became predominant) whereas improvement in PT was associated with increased multimodality (all *p*<0.05). |

Note: AT: active transportation; MVPA: moderate- to vigorous-intensity physical activity; PA: physical activity. † We obtained the p-value based on a t-test for independent means (<https://www.medcalc.org/calc/comparison_of_means.php>)

**Table S5.** **Influence of marriage on travel behaviours**

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| **Lead author (year)** | **Effects on travel behaviours** | **Other important results** |
| Döring (2019) | Marriage had no independent effect on commute mode and it was excluded from the multivariable model predicting participants’ commute mode. | In the year of marriage, the probability of increasing car availability was 9.1% for women and 11.6% for men, whereas the probability of reduced car availability was less than 1% for both. Gender was associated with car availability at baseline and increased car availability (both higher in men), which was in turn associated with driving at baseline and switching to driving. Positive attitude towards driving was associated with both driving at baseline and switching to driving. Longer distance at baseline and increases in distance were associated with higher odds of driving. Participants who used a given commute mode were most likely to keep using the same mode the following year, underscoring the importance of habits (all *p*<0.05). |
| Prillwitz (2007) | The authors state "family events like marriage or the birth of a first child do not play a significant role" in relation to commute distance (p. 68) | Relocating from a core urban area to a non-core area, relocating to a single-family house, increased income, changes in employment status and vehicle ownership, and use of public transport for commuting were associated with increased commute distance. Greater commute distance at baseline and easy access to public transit at follow-up were associated with decreased commute distance (all *p*<0.05). |

**Table S6.** **Influence of parenthood on travel behaviours**

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| **Lead author (year)** | **Effects on travel behaviours** | **Other important results** |
| Bonham (2012a, 2012b) | Childbirth was described by many participants as a key moment when they stopped cycling or cycled less. Those who continued to cycle reported that their partners took on more chauffeuring responsibilities. Some women who had tried cycling when their children were young gave up due to safety concerns, the need to organize equipment, and/or juggling work and domestic labour. Younger women generally did not cycle for children's or household-related journeys. Mothers said that they struggled to ride with children due to motorists’ behaviours and because their bike was not equipped to carry children and additional equipment. | When children got older and were able to bike, some mothers and grandmothers started cycling again. Mothers also believed in the importance of teaching their child how to ride and follow the rules of the road. Women came back to cycling though a combination of circumstances during their 20s (for social relations) and their late 30s (for health and fitness reasons). Most women knew someone who cycled (partner, family member, colleague or acquaintance). |
| Clark (2014) | 5.81% of participants who had a child reported switching to non-car commute vs. 5.37% of those who did not. 7.35% of participants who had a child reported switching to car commute vs. 6.08% of those who did not. These differences are not significant (both *p*>0.20).\* | In multivariate models, childbirth was not associated with increased household car ownership during the follow-up period (OR=1.16; *p*>0.05). However, new parents were more likely to report a decrease in household car ownership during the follow-up period (which by design, would be limited to the child's first year of life; mothers may still have been on maternity leave at the time of follow-up) (OR=1.53; *p*<0.05) |
| Clark (2016) | 9.2% of individuals who had a child shifted from car to non-car travel; 20.5% shifted from non-car travel to car travel; 26.3% shifted from active to non-active mode; 3.2% shifted from a non-active to an active mode. In multivariate models, odds of reporting changes in travel behaviours did not differ between participants who had a child and those who did not (all *p*>0.50). | Relocations that involved an increase in population density and reduced travel time to the nearest employment centre by public transport and walking increased the likelihood of switching to non-car commuting. Starting AT was more likely with a move to mixed land use areas. Relocations were most likely to result in mode shifts when they were associated with a change in commute distance (especially with an increase in distance). Willingness to act to protect the environment preceded shifts toward non-car and AT. (all *p*<0.05). |
| de Haas (2018) | Based on latent transition analysis, participants were classified into 6 clusters: "strict car", “car and bike", "bike", "car and walk", "low mobility", and "public transport". After the birth of a child, all other classes showed an increasing probability of becoming a member of the "strict car user", but the difference was only significant (*p*<0.05) for participants in the “low mobility” cluster at baseline. Members of the “strict car user”, “car and bike”, and “bike” clusters were significantly more likely to switch to the "car and walk" class. Members of the "car and bike" class were significantly less likely to switch to the “bike” class. | In general, members of the strict car use cluster were the least likely to report changes in travel behaviour over time. Many other correlates of changes in class membership are reported in Appendix A (p. 149-150). |
| Döring (2019) | Childbirth had no effect on car availability and commute mode in the following year and it was excluded during the model development process. The authors suggest that there may be a time lag between childbirth and effects on car availability and commute mode. | Gender was associated with car availability at baseline and increased car availability (both higher in men), which were in turn associated with driving at baseline and switching to driving. Positive attitude toward cars was associated with both driving at baseline and switching to driving. Longer distance at baseline and increases in distance were associated with higher odds of driving (all *p*<0.05). Participants who used a given commute mode were most likely to keep using the same mode the following year, underscoring the importance of habits. |
| Fatmi (2016) | 11.04% of participants reported birth of a child. This was associated with neither mode loyalty (e.g., keeping the same travel mode) nor changes in travel mode. | Presence of children in the household was associated with higher loyalty to car travel and higher odds of shifting from transit to car travel (both *p*<0.05). Many other correlates of mode loyalty and changes in travel mode are reported in Table 3 (p. 42-43). |
| Gao (2019) | Childbirth was associated with a 1.54 min/day increase in transport walking (*p*=0.041) and had no effect on recreational walking. | N/A |
| Janke (2019) | Even though participants were not prompted about the role of having children, 43% of participants (50% of women vs. 30% of men) discussed the effect of this event on their attitude and/or cycling behaviour. Childbirth was associated with a decrease in cycling that was often followed by an increase during pre-school and/or elementary school and a decrease with children's transition to junior high and high school. Development stage of the child, ownership of bicycle equipment, infrastructure, and safety were mentioned as influences on cycling behaviour and attitudes. | Results suggest that the relationship between attitudes and cycling behaviour can be bidirectional (e.g., cycling can also lead to a more favourable attitude). Parents generally emphasized the fun of riding with their children. The lesser impact of having children on men might reflect the typical role of women as primary caregiver. Having a new partner can also change attitude and cycling behaviour. In general, interview data suggested that life events can trigger a deliberation process (e.g., window of opportunity), change social norms, unleash a latent demand for bicycling, and/or change interest in destinations and activities. |
| Jones (2013) | In Boomers (born between 1945-1955) and Echoes (born between 1975-1985), becoming a mother was associated with an increase in walking in the neighbourhood, then walking declined as they returned to employment, especially for Echoes. Echo mothers usually drove when travelling beyond their local area whereas many Boomer mothers did not own a car. Effects of fatherhood were more limited and less direct. A minority of fathers started walking or cycling to work so that a shared car was available for their partner looking after children. | N/A |
| Lanzendorf (2010) | Before birth of the 1st child, 4 mothers traveled mostly by car (25%), 2 used a combination of modes (12.5%) and 10 used mostly AT or PT (62.5%). After birth of the 1st child, 4 mothers traveled mostly by car (25%), 5 used a combination of modes (31.3%) and 7 used mostly AT or PT (43.8%). Mothers described how changes in travel behaviours happened gradually (not suddenly). | Most mothers stayed at home or worked part-time. Mothers with similar travel needs asserted that only one mode was suitable; for some this mode was the car while for others it was PT or cycling. Analyses suggested that 4 key considerations influenced travel behaviour: mobility resources (e.g., access to car), urban form, quality of transport modes, and mediating factors such as time and resources. Reasons for not increasing car use included cost, gender roles (e.g., husband using the family car), and preferences for cycling. After childbirth, mothers’ travel behavior was affected in various ways; by additional leisure and maintenance activities related to the child, additional shopping needs, different transport needs due to accompanying infant on the regular trips, interruption of the educational or professional career, and switching from professional worker to part-time worker or housewife. Mothers mentioned that fatherhood had little impact on travel behaviour, reflecting traditional gender roles. |
| Mbabazi (2016) | Combining available data from Tables 5.4-5.7, we note that the mode share of AT remains 8.6% from entry into the labour market to parenthood while transit decreased from 52.4% to 27.6%, car use increased from 19.5% to 51.7%. The proportion of respondents who did not commute increased from 0% to 12.0%. The increase in driving was particularly large in the subgroup of participants who commuted by car at the time of the interview (from 17.0% to 52.9%) relative to those who used alternate mode (from 22.9% to 40%) | Social constraints related to children's activities led many participants to switch to car use and this was facilitated by having access to a car. Many mothers drove children to these activities, which meant that, in single-car families, several fathers had to use PT. Participants whose commute was not affected by time constraints related to children’s activities were able to maintain their cycling or bus commutes because their partner cared for children and/or because they had a direct route. |
| McCarthy (2019) | Before parenthood, 77% reported frequent car use (≥ 4 days/wk), 20% reported occasional use (1-12 days/month) and 3% reported rare use/never (<12 times/year). PT use: 30% frequent; 39% occasional; 31% rarely/never. Cycling: 8% frequent; 20% occasional; 72% rarely/never. After parenthood, 84% reported frequent car use, 15% reported occasional use and 1% reported rare use/never. PT use: 14% frequent; 34% occasional; 52% rarely/never. Cycling: 4% frequent; 16% occasional; 80% rarely/never. There was an increase in frequent car use and a decrease in frequent PT use and cycling (all *p*<0.01).\* Latent class analysis identified 5 subgroups: “Transit Leavers” (39% of participants), “Consistent Drivers” (25%), “Committed Multimodals” (17%), “Transit Faithfuls” (11%), and “Devoted Cyclists” (8%). | 82% of “Transit Leavers” were women and 68% were the primary caregiver. This group also included the highest proportion of stay-at-home and part-time workers. “Consistent Drivers” were less satisfied with PT and the most likely to own a car, to live in less urban areas and to be in the lowest income group. Compared to “Consistent Drivers”, a larger share of “Committed Multimodals” were men, not the primary caregiver, and lived in more urban areas with better transit service. “Transit Faithfuls” were most likely men, employed full-time, living in middle urban areas, to have higher income, more favourable attitude towards PT, and comparatively low rates of household vehicle ownership. Despite a large increase with parenthood, household car ownership was lowest among “Devoted Cyclists” who tended to live in urban areas and reported pro-environment and pro-transit attitudes. |
| Nakanishi (2016) | The authors state "the driving habit appeared to have been created and reinforced in this stage of the life course, when the interviewees were working and raising families" (p. 609). Participants reported driving children to childcare almost every day, and later on, to school, and after school activities. In some cases, this involved multiple trips per day. | Many interviewees mentioned that they chose to drive because PT in Canberra did not satisfy their travel needs. |
| Oakil (2016) | Birth of a first child was associated with an increased likelihood of shifting from cycling to another travel mode (mostly car or PT) at the *p*<0.1 threshold. Parenthood was not associated with shifts from other modes to cycling (*p*>0.1). | Changes in employment were associated with a higher likelihood of shifting to/from cycling (*p*<0.05). Increased travel time was associated with shifts away from cycling, whereas decreased travel time was associated with shifts to cycling (both *p*<0.01). Shifting from full-time to part-time work was associated with reduced odds of shifting from cycling to another mode (*p*<0.05). Increasing vehicle availability was associated with reduced likelihood of shifting to cycling (*p*<0.05). |
| Prillwitz (2007) | The authors state "family events like marriage or the birth of a first child do not play a significant role" in relation to commute distance (p. 68). | Relocating from a core urban area to a non-core area, relocating to a single-family house, increased income, changes in employment status and vehicle ownership, and use of PT for commuting were associated with increased commute distance. Greater distance at baseline and easy access to PT at follow-up were associated with reduced commute distance (all *p*<0.05). |
| Rau (2016) | After having a child, 18% of participants reported an increase in cycling whereas 42% reported a decrease, 44% reported an increase in walking whereas 22% reported a decrease, 10% reported an increase in PT use whereas 50% reported a decrease, 76% reported an increase in driving whereas 6% reported a decrease, 36% reported an increase in travel as car passenger whereas 6% reported a decrease. | N/A |
| Scheiner (2013a) | Childbirth was associated with a significant decline in car use and PT use and a significant increase in walking (both *p*<0.05). In analyses stratified by gender (data not provided), the increase in walking was found only in women. | Childbirth was also associated with relocation towards suburban areas and an increase in household car ownership. Moving to less urban areas was followed by increased car use and decreases in PT use, cycling, and walking. The opposite was noted for relocations to more urban areas. |
| Scheiner (2013b) | Changes in daily trip rates associated with childbirth were as follows: car as driver: +0.05 trips (-0.02 in men; +0.13 in women); car as passenger: -0.08 (+0.02 in men; -0.18 in women); PT: -0.07 (-0.10 in men and -0.05 in women); walking: +0.10 (0.00 in men and +0.20 in women); cycling: -0.17 (-0.08 in men and -0.26 in women). In multivariate analyses, childbirth was associated with a 8% decline in car trips as passenger, a 7% increase in walking trips, and a 12% decline in cycling trips (all *p*<0.05), but it has no significant effect on trips by PT or as car driver. | Many baseline variables (e.g., gender, number of children in the household, living in a couple, education and employment status, type of urbanization, etc.) were associated with subsequent trip rates suggesting that mode use may change in the absence of any major life events, due to changes that were already planned and high levels of freedom of choice. |
| Scheiner (2014a) | Changes in trip rates associated with childbirth were as follows: car as driver: +0.07 trips (+0.03 in men; +0.11 in women); car as passenger: -0.09 (-0.03 in men; -0.16 in women); PT: -0.09 (-0.10 in men and -0.09 in women); walking: +0.09 (0.01 in men and +0.18 in women); cycling: -0.15 (-0.06 in men and -0.25 in women). In multivariate analyses, childbirth was associated with an increase of 0.25 walking trips/day in women (*p*=0.002), but no change in men (*p*=0.743). It had no effect on fathers’ and mothers’ car and PT trips (all *p*>0.8). | Unadjusted effects were generally similar in magnitude and direction when examining the birth of a child in general, the birth of a first child and the birth of additional children. However, the birth of a first child was associated with a non-significant reduction in travel by car as driver whereas the birth of additional children was associated with a non-significant increase in driving. |
| Scheiner (2014b) | Parenthood was associated with a significant decrease in entropy (*p*<0.05): -0.09 (-0.03 for men; -0.16 for women) and a non-significant increase in trips per tour, i.e., trip complexity: +0.18 (+0.21 for men and +0.14 for women) In multivariate analyses, parenthood had no significant effects on entropy and trip complexity (all *p*>0.15). Interaction terms between parenthood and gender were also non-significant (all *p*>0.5). | A larger number of children <10 years in the household was associated with higher entropy in women compared to men (*p*<0.001). Increased car use was associated with increased entropy and reduced trip complexity. |
| Scheiner (2016) | Childbirth was associated with none of the multimodality indicators (*p*>0.10) and was excluded from multivariate models. | Multimodality increased with children moving out of the household, leaving the labour market, improvement in PT and reduced parking space availability. Multimodality decreased with increased car access (suggesting that car use became predominant) whereas improvement in PT was associated with increased multimodality (all *p*<0.05). |
| Scheiner (2020) | For both women and men respondents, path analysis show that childbirth had no direct effect on their own car use, but it was associated with increased car use among their partners (*p*<0.05). There was some evidence for a moderating effect of car ownership. In households who owned 1 car, birth of a first child was associated with a small decrease in car use among men (standardized β=-0.08) and a small increase in women (β=0.05). Having additional children was associated with small increases in both men (β=0.05) and women (β=0.03). In households with 2 or more cars, birth of a first child was associated with a small decrease in car use among men (standardized β=-0.02) and women (β=-0.05). Having additional children had trivial effects in both men (β=0.01) and women (β=0.00). | Increases in paid work were associated with increased car use for women, while increases in unpaid work were associated with increased car use for men. In households with 1 car, car use was negatively correlated between partners. For men, the birth of a first child was associated with increased trip chain complexity while, among women, it was associated with a decrease in paid work. In households with at least 2 cars, there was a positive correlation in car use between partners, reflecting solo driving. |

Note: AT: active transportation; MVPA: moderate- to vigorous-intensity physical activity; PA: physical activity; PT: public transport. \* We obtained the p-value using a chi-square test for differences in proportions (https://www.medcalc.org/calc/comparison\_of\_proportions.php).

**Table S7.** **Influence of retirement on travel behaviours**

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| **Lead author (year)** | **Effects on travel behaviours** | **Other important results** |
| Barnett (2014) | Before retiring, manual working men and women accumulated 8.3 and 6.8 MET h/wk of transportation PA; non-manual working men and women accumulated 10.3 and 7.0 MET h/wk. After retiring, former manual working men and women accumulated 10.1 and 8.4 MET h/wk; former non-manual working men and women accumulated 8.3 and 5.6 MET h/wk. After controlling for potential confounders, transport PA declined by 1.4 to 2.7 MET h/wk in all groups (*p*≤0.001). | Retirement was associated with significant declines in occupational PA and overall PA, but with increases in recreational PA, household PA, and TV viewing time (all *p*<0.02). |
| Berg (2014) | After retirement, many participants discussed that having more flexibility and time available made it easier to choose to walk to places instead of driving or using PT. They discussed walking or cycling as a way to get out of the house, get fresh air, exercise and maintain good health. | Mobility post-retirement was described as a structural aspect of daily life. It was affected by individuals' preferences and experiences, resources available and negotiation with family members. After retirement, most participants remained active in their community in different ways and it created new constraints for mobility in space and time. The authors concluded that "The transition to retirement is a period in which new mobility patterns are considered, evaluated and practiced". |
| Bonham (2012a, 2012b) | Women who retired or cut back to part-time work in anticipation of retirement reported having more time for cycling which allowed them to spend time with life partners and reduce their carbon footprint. These findings suggest that some women changed their travel behaviour in anticipation of retirement. | Women who returned to cycling later in life emphasized the health/fitness benefits (e.g., losing or not gaining weight, becoming fit/maintaining fitness, preventing degenerative diseases, wanting high quality of life as they aged, managing long-term mental and physical health issues). Some women also returned to cycling because they could no longer practice other sports due to injuries, and some did so to strengthen their relationship with a long-term partner. |
| Clark (2014) | Unlike other major life events examined, the authors did not report the effect of retirement on travel behaviour. | In multivariate models, participants who retired were more likely to report a decrease in household car ownership during the follow-up period (OR=1.59; *p*<0.05). |
| de Haas (2018) | Based on latent transition analysis, participants were classified into one of 6 clusters: "strict car", “car and bike", "bike", "car and walk", "low mobility", and "public transport". Members of the "bike" class at wave 1 were more likely to switch to the "car and walk" class (*p*=0.04). Members of the "low mobility" class were less likely to switch to "public transport" (*p*=0.01). Other changes in class membership were not statistically significant (*p*>0.05). | Many other correlates of changes in class membership are reported in Appendix A (p. 149-150). |
| Jones (2013) | Many Boomers (born between 1945-1955) mentioned that they deliberately include walking, either for transportation or recreation purposes, in their routine. For some Boomers, cycling for transportation was replaced by recreational cycling. These findings suggest an increase in walking and a decrease in cycling. | Most Boomers expressed a positive attitude toward walking and recognized the health benefits. Echoes (born between 1975-1985) had not yet retired. |
| Jones (2018a) | Transport walking time decreased for 40% of participants, remained stable for 19% and increased for 41%. | Recreation walking time decreased for 31% of participants, remained stable for 19% and increased for 50%. Odds of decreased transport walking were higher for those who reported baseline data in the fall (OR=2.41) or reported seeing others walking in their neighborhood (OR=2.38), and lower for persons reporting baseline data in the summer (OR=0.34), from the Los Angeles County site (OR=0.30), with lower levels of pre-retirement transport walking (OR≤0.19), higher density of walking destinations (OR=0.65), and not perceiving litter in their neighborhood (OR=0.46). Odds of increased transport walking were higher for persons reporting baseline data in the spring (OR=1.65), those reporting a decline in self-rated health (OR=2.02), and living with a partner before retirement but not after (OR=2.90), and lower for persons from the Los Angeles County site (OR=0.24). All *p*<0.05. Authors reported several sensitivity analyses indicating that findings may be moderated by socioeconomic position, gender, and retirement age. |
| Jones (2018b) | Retirement was associated with no change in transportation walking (OR=0.99; 95% CI=0.93-1.06) and stratification by socioeconomic position (SEP) and health status did not change this finding. | Retirement was associated with a 10% decrease in MVPA; this decline was larger (24%) in individuals with low SEP and non-significant in those with high SEP. Retirement was associated with a 9% increase in non-walking leisure activity; this increase was only significant in individuals with high SEP. Recreation walking increased by 13%, household/yard activity by 29%, and TV viewing by 15%. These effects were significant in both low and high SEP groups. |
| Kamruzzaman (2014) | Participants who retired during the 2008 Global Financial Crisis were more likely to switch to less environmentally-friendly travel modes (e.g., car driver, car passenger, taxi, and motorcycle; OR=2.119) or to AT (OR=1.713) relative to maintaining the same travel mode (both *p*<0.05). The odds of shifting to transit with retirement were lower (OR=0.785), but the difference was not significant (*p*>0.05). | The Global Financial Crisis was associated with a 5% decrease in the number of car trips in Brisbane. Compared to couples with kids, the number of car trips decreased by 7% in couples with no kids and by 13% in other household types, and increased by 9% in single-parent families. The number of car trips increased by 7% in females vs. males. Relative to nonworkers, car trips decreased in full-time workers and increased in part-time and casual workers. Car trips also decreased in immigrants and individuals with lower income, but it increased among driver license holders and among participants owning more bicycles. All *p*<0.05. |
| Laverty (2018) | Participants who retired were more likely to increase their use of PT between 2008 and 2012 compared to those who worked at both time points (40.7% vs. 31.3%; adjusted OR=1.57; 95% CI=1.29; 1.91). They were also more likely to start using PT (40.1% vs. 32.9%; adjusted OR=1.57; 95% CI=1.17; 2.11). | Since 2006, UK adults aged ≥60 are eligible for a free local bus pass. Eligibility was associated with higher odds of increasing (OR=1.77; 95% CI=1.35; 2.33) and starting to use PT (OR=2.08; 95% CI=1.37; 3.16). Losing access to a car (OR=3.71; 95% CI=2.74; 5.01) and taking up PA (OR=1.80; 95% CI=1.29; 2.49) were also associated with increased PT use. Increasing or taking up PT was associated with reduced BMI in women, but this association was no longer significant after controlling for BMI at baseline (β=-0.40 kg/m2; 95% CI=-0.82; 0.01). |
| Nakanishi (2016) | After retirement (or pre-retirement), 23 participants (62%) said that the car continued to be their main travel mode, and this did not differ by gender, residential location and access to PT. Two participants started to drive more after retirement. Seven said that they avoided traveling in peak hours. Four participants started to use PT and five said that they used PT before retirement and continued to do so. | Many interviewees mentioned that they chose to drive because PT in Canberra did not satisfy their travel needs. |
| Plyushteva (2018) | All participants were 55- to 78-year-old women in relatively poor neighbourhoods in Manila (Philippines) and London (UK). Many described how, with aging, their mobility became more restricted in part because of increased perceived vulnerability due to declining sight or physical abilities. In London, thanks to free transit, many women traveled by bus after retirement to attend church, volunteer activities, exercise classes, and/or just for enjoying a ride. This was more difficult in Manila due to the cost of transit, so many women relied on family members for mobility. | Multigenerational households were common in Manila where many women continued to work after retirement, mostly informally and/or from home. At both sites, many women helped their children in caring for younger children before and after retirement. At both sites, women's stories suggest that mobility does not change abruptly upon life events; instead, it is commonly (re)negotiated in complex ways within households/families. |
| Rau (2016) | After retiring, 60% of participants reported an increase in cycling whereas 0% reported a decrease, 80% reported an increase in walking whereas 0% reported a decrease, 80% reported an increase in transit use whereas 0% reported a decrease, 0% reported an increase in driving whereas 60% reported a decrease, 0% reported an increase in travel as car passenger whereas 20% reported a decrease. Only 5 out of 324 respondents had retired, so results should be interpreted cautiously. | N/A |
| Scheiner (2013b) | In unadjusted and multivariate analyses, retirement was associated with no changes in the frequency of trips by car, transit, walking and cycling (all *p*>0.05). | Many baseline variables (e.g., gender, number of children in the household, living in a couple, education and employment status, type of urbanization, etc.) were associated with subsequent trip rates suggesting that mode use may change in the absence of any major life events, due to changes that were already planned and high levels of freedom of choice. |
| Scheiner (2014a) | On page 55, the authors state that the variable retirement was excluded from multivariate analyses because it had no significant effects on trip frequency. | N/A |
| Scheiner (2014b) | Descriptive analyses indicated that retirement was associated with a significant reduction in trip entropy (-0.01, *p*<0.05). Number of trips per tour decreased in men only (-0.18). Multivariate analyses indicated that retirement was associated with a 7% decrease in trip entropy (*p*=0.002), with a significant interaction with gender (*p*=0.044) indicating that entropy decreases more for men than women. Trip complexity also decreased (-8%), but the difference was not significant (*p*=0.113). | Increased car use was associated with increased entropy and reduced trip complexity. |
| Scheiner (2016) | The sample was split in two halves for analyses. Retirement was associated with an increase in multimodality as evidenced by a significant decrease in Herfindahl-Hirschman Index in one of the split-half samples (*p*=0.03), but it had no significant effect on 7 out of 8 indicators of multimodality (*p*>0.05). | Multimodality increased with children moving out of the household, leaving the labour market, improvement in PT and reduced parking space availability. Multimodality decreased with increased car access (suggesting that car use became predominant) whereas improvement in PT was associated with increased multimodality (all *p*<0.05). |
| Siren (2016) | Between 2009 and 2012, the percentage of recent retirees who drove a car daily decreased from 60.3% to 44.2% whereas it changed from 71.1% to 71.9% of older adults still working (*p*<0.001). Distance driven decreased in all groups, but the decline was larger in recent retirees (*p*<0.001). However, recent retirees reported a significant increase in driving for errands and outdoor activities at the expense of walking and cycling (*p*<0.05). | Car use was greater in men than in women; however, retirement had a larger effect on car use in men than women. |
| Slingerland (2007) | Before retirement, time spent in AT was: hardly ever (24%), <1 hour/wk (16%), 1-2 hours/wk (15%) and >2 hours/wk (45%). After retirement, time spent in AT was: hardly ever (90%), <1 hour/wk (1%), 1-2 hours/wk (1%) and >2 hours/wk (8%). Compared to participants who did not retire, the odd ratio for a decline in AT was 3.03 (1.97-4.65) for those who retired during 13 years of follow-up (*p*=0.001). | Retirement was associated with lower odds of declining leisure-time PA (OR=0.36; 95% CI=0.19-0.68) and did not affect sport participation (*p*>0.05). |
| Sprod (2017) | Participants spent 52 min/day in AT and 85 min/day in motorized transportation. Time spent in AT decreased to 40, 39 and 39 min/day at 3-, 6- and 12-month follow-up. Time spent in motorized transportation decreased to 77, 73 and 72 min/day at 3-, 6- and 12-month follow-up. Differences between baseline vs. follow-ups were all significant (*p*<0.001). | Changes in AT and motorized transportation were not moderated by sex, education and health status. |
| Van Dyck (2016) | Passive transport decreased less strongly in adults who retired during the follow up period (-7 min/week) than in those who had recently retired at baseline (-63 min/week) (*p*<0.05). There was a significant interaction between retirement status and gender (*p*<0.01). Recently retired men and women reported similar decreases (-62 min/week and -71 min/week) whereas retiring men reported a decrease (-63 min/week) and retiring women reported an increase (+72 min/week). Retirement was not associated with transportation cycling (*p*<0.05). For transportation walking, there was an interaction between retirement status and level of education (*p*<0.05). In low-educated participants, only recently retired adults showed a decrease (-48 min/week vs. +1 min/week for retiring adults), while in high-educated participants, retiring adults reported a decline (-6 min/week) and recently retired adults reported an increase (+20 min/week). | Leisure time cycling increased in retiring adults, but decreased in recently retired adults (*p*<0.01). Retiring adults reported a larger increase in computer time than recently retired adults (*p*<0.001) and a decrease in voluntary work (*p*<0.01). Recently retired adults reported an increase in voluntary work (*p*<0.01). |

Note: AT: active transportation; BMI: body mass index; MVPA: moderate- to vigorous-intensity physical activity; PA: physical activity; PT: public transport; SEP: socioeconomic position. \* We obtained the p-value using a chi-square test for differences in proportions (https://www.medcalc.org/calc/comparison\_of\_proportions.php).

**Table S8.** **Influence of relocation on travel behaviours**

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| **Lead author (year)** | **Effects on travel behaviours** | **Other important results** |
| Bamberg (2006) | Percentage of trips pre-relocation: PT: 18.2%; Car: 51.5%; Bike: 11.5%; Walking: 15.8%. Percentage of trips post-relocation: PT: 35.8%; Car: 39.4%; Bike: 7.3%; Walking: 17.5%. Relocating to Stuttgart was associated with a significant increase in PT (+17.6% of trips; *p*<0.001), a decrease in car use (-12.1% of trips; *p*<0.01) and no change in walking and cycling (*p*>0.05). Participants assigned to the experimental group received a 1-day free ticket for PT and an information package. The increase in PT use was much greater in the experimental group (+29% vs. +7%; *p*<0.001). | Relocation was associated with significant increases in attitudes, subjective norms, perceived behavioural control, intention, and habit for PT and significant declines for these constructs in relation to car use (all *p*<0.05). Structural equation models illustrated that the effect of the intervention was mediated by intention (*p*<0.05). After the move, subjective norm no longer predicted intention to use PT whereas the effect of attitude on intention was much greater. Car availability also declined (*p*<0.05). Change in PT use was greater among participants moving from villages or small towns and in those that reported high motivation to change travel behaviour (*p*<0.05). |
| Beenackers (2012) | Only participants who did not cycle for transportation at baseline (n=1289; 90% of the full sample) were included in analyses. After relocation to one of 74 new housing developments in Perth, Australia, 4.89% of participants (n=63) started cycling for transportation. | Increase in residential density (OR=1.54; 95% CI=1.04-2.26), access to parks (OR=2.60; 95% CI=1.58-4.27), or in the number of recreation destinations (OR=1.57; 95% CI=1.12-2.22) were associated with increased odds of taking up cycling after relocation. Higher self-efficacy (OR=1.07; 95% CI=1.03-1.12) and social influence (OR=1.15; 95% CI=1.07-1.23) at baseline were associated with higher odds of taking up cycling for transportation. Connectivity (OR=1.20, 95% CI=1.06-1.35), social influence (OR=1.11; 95% CI=1.04-1.18) and intention (OR=1.17; 95% CI=1.01-1.35) were associated with taking up cycling for recreation, suggesting that determinants vary according to cycling purpose (transportation vs. recreation). |
| Beige (2017) | Main mode to place of education pre-relocation: private transport: 18.5%; PT: 54.0%; bicycle: 16.7%; walking: 10.8%. Main mode to place of employment pre-relocation: private transport: 50.1%; PT: 34.3%; bicycle: 8.4%; walking: 7.2%. Main mode to place of education post-relocation: private transport: 18.8%; PT: 54.3%; bicycle: 15.3%; walking: 11.6%. Main mode to place of employment post-relocation: private transport: 48.6%; PT: 34.6%; bicycle: 9.1%; walking: 7.7%. Relocation had no effect on travel mode (all *p*>0.05). | Over 3,000 relocations were reported in the life course calendars. Descriptive analyses show that, following relocation, the mean distance to places of employment and education declined. Over time, the percentage of respondents in education declined whereas the percentage of respondents employed increased and so did their income. |
| Bhattacharyya (2019) | Individuals expecting to move in the next 3 months were randomly assigned to a focalism treatment group (designed to identify cognitive biases that individuals have towards certain characteristics of a house), a visualization treatment group (designed to help participants identify opportunities for change with relocation), or a control group. Hours/wk spent commuting decreased significantly in the focalism group (from 7.24 to 6.49; *p*=0.02) and did not change in the other groups (*p*>0.05). In the focalism group, there was a general trend towards more sustainable travel with the number of people using AT to work and to visit family/friends increasing at *p*<0.05, while the number of people driving to visit family/friends decreased (*p*=0.03). No changes in travel behaviour were found in the visualization and control group. | Participants assigned to the visualization group reported a significant improvement in happiness (*p*=0.01) whereas no change were observed in the other groups. |
| Bonham (2012a, 2012b) | Depending on circumstances and stages of life, relocation was associated with taking up or giving up cycling. Relocating to the city during childhood was associated with giving up cycling. Later in life, moving to outer suburban and rural areas was associated with stopping cycling. Most women who took up cycling in adulthood had moved to inner suburban areas. | Denser areas were viewed as providing access to more destinations by cycling, despite higher traffic volumes. |
| Cao (2007) | N/A – only examined factors associated with changes in driving and walking after relocation. | Increases in outdoor spaciousness, higher number of vehicles, increased number of kids in household, income, distance to nearest fast food, perceived safety of driving and car dependence were associated with increased driving after relocation. Increase in accessibility, higher age and education level, more socializing in neighbourhood, preference for accessibility, and willingness to minimize driving were associated with less driving. Increases in neighbourhood attractiveness, number of kids, physical activity options, safety, socializing in the neighbourhood, number of business types within 400 m, preferences for neighbourhood attractiveness and pro-bike/walk attitude were associated with increases in walking after relocation. Higher age, being employed, and perceived safety of driving were associated with decreased walking. Note: this list includes any significant direct and/or indirect effects from structural equations models (all *p*<0.05; see p. 550-551 for details). |
| Cao (2017) | Self-reported changes in PT and car use were measured on a 5-point scale. Unadjusted ANOVA results show a significant increase in PT use (*p*<0.001) in the Light Rail Transit corridor relative to control urban and suburban sites, but no change in car use. Structural equations models show that participants who moved the Light Rail Transit corridor increased their PT use to a greater extent than those who moved to urban or suburban control sites (standardized β=0.23; *p*<0.05). Improvements in PT were associated with increased PT use (β=0.20; *p*<0.05) and decreased car use (β=-0.23; *p*<0.05). Moving to a suburban area was associated with reduced PT use (β=-0.35; *p*<0.05). | Moving into the Light Rail Transit corridor was associated with improvement in PT access (β=0.43; p<0.05) whereas moving into a suburban corridor was associated with decreased access (β=-0.31; p<0.05). Preference for PT attributes was associated with increased PT use (β=0.09; *p*<0.10). Change in social attributes (e.g., opportunities to socialize) were associated with decreased car use (β=-0.08; *p*<0.10) whereas increases in household size (β=0.11; *p*<0.05) and car ownership (β=0.18; *p*<0.05) were associated with increased car use. |
| Clark (2014) | 8.87% of participants who relocated reported switching to non-car commute vs. 5.12% of those who did not relocate (*p*<0.0001).\* 9.65% of participants who relocated reported switching to car commute vs. 5.87% of those who did not relocate (*p*<0.0001).\* | In multivariate models, participants who relocated from metropolitan areas (including London) to a smaller urban area or a rural area were 4.10 and 3.86 times more likely to report increasing household car ownership (*p*<0.05). Participants moving to metropolitan areas from an urban or rural area were more 3.22 and 5.01 times more likely to report decreased household car ownership (*p*<0.05). |
| Clark (2016) | 15.1% of individuals who relocated shifted from car to non-car travel; 23.0% shifted from non-car travel to car travel; 38.2% shifted from active to non-active mode; 7.9% shifted from a non-active to an active mode. These proportions were higher than among participants who did not relocate (*p*<0.05). In multivariate models, participants who relocated were more likely to switch to non-car travel (OR=1.80), to car travel (OR=1.68), to AT (OR=1.72) or to non-AT (OR=2.01); all *p*<0.05. However, when restricting the analysis to cases without missing values on commute distance, the effect of relocation was no longer significant. | Changes in commute distance were the strongest determinant of changes in travel behaviour with relocation (*p*<0.001 in all models). Acquiring a driver’s license was associated with a large increase in odds of shift to car travel (OR=16.65; *p*<0.001) while increased population density was associated with a shift to non-car travel (*p*=0.007). Shifting to AT was more likely with a move to mixed land use areas and a decline in the number of cars in the household and availability of a driver’s license (all *p*<0.05). Willingness to act to protect the environment preceded shifts toward non-car and AT (*p*<0.05). |
| Dargay (2007) | 44.6% of participants who changed employer and moved house between two consecutive years reported a change in travel behaviour vs. 32.7% of those who changed employer only, 28.1% of those who moved house only, and 14.0% in those experiencing neither of these changes. Compared to non-movers, all other groups were more likely to report changes in travel behaviour (*p*<0.001).\* The percentage of individuals who used the same mode after relocating was 36.5% for car passengers, 41% for bus users, 42.4% for bicycle users, 43.8% of walkers, 48.9% for motorcycle users, 53.2% for tube users, 59.1% for rail users, and 86.1% for car drivers. Pre- and post-move travel modes are described comprehensively in Table 12. The authors state that of those who changed mode with house relocation, the majority became car drivers or passengers (p. 942). | Descriptive analyses show that changes in household car ownership were much more likely when participants moved house and changed jobs between two consecutive years than if they experienced neither or only one of these changes (Table 5). |
| de Haas (2018) | Based on latent transition analysis, participants were classified into one of 6 clusters: "strict car", “car and bike", "bike", "car and walk", "low mobility", and "public transport". Members of the "car and bike class" show a decreased probability of becoming a "public transport" user (*p*=0.04). Members of the "low mobility" class were more likely to become members of the "car and walk" class (*p*=0.02). Members of the "public transport" class were less likely to shift to the “low mobility” class (*p*<0.01). Odds of other shifts between classes were not significant (p>0.05). Authors stated that membership of unimodal clusters was more stable over time. | Many other correlates of changes in class membership are reported in Appendix A (p. 149-150). The authors state that they could not control for type of urbanization and whether individuals moved to an urban or rural area is likely a key determinant of travel behaviour change. |
| Döring (2019) | Relocation was not independently associated with changes in commute mode (*p*>0.05), and the authors hypothesize that this is due to the large effects of distance, car availability, and mode choice. A decrease in commute distance was associated with higher probability of switching to walking whereas an increase was associated with higher probability of switching to driving (*p*<0.05). | Relocating towards a rural area was associated with a greater increase in car availability than relocating towards the city centre. The opposite effect was found for the likelihood of decreasing car availability. Gender was associated with car availability at baseline and increases in car availability (both higher in men), which was in turn associated with driving at baseline and switching to driving. Positive attitude toward cars was associated with both driving at baseline and switching to driving. Participants who used a given commute mode were most likely to keep using the same mode the following year, underscoring the importance of habits. |
| Fatmi (2016) | Before relocation, 47.69% traveled by car, 16.12% used transit and 35.98% used AT. Post-relocation, 43.49% traveled by car, 18.33% used transit and 37.97% used AT. Changes in travel mode were not significant (all *p*>0.20).\* 67.10% of participants used the same mode after relocation while 32.90% changed mode. Participants who moved closer to the central business district were more likely to switch from car to AT whereas those who moved further were more likely to shift from AT to car (both *p*<0.05). | The presence of a child in the household was associated with higher odds of shifting from transit to car. Higher education was associated with loyalty to transit and higher income was associated with loyalty to car. Higher mode share of AT in the neighbourhood was associated with loyalty to AT. Switching from home ownership to renting associated with shift from car to transit and vice versa. Decrease in number of rooms, losing job in previous 2 years, and moving closer to school or to the nearest park were associated with higher odds of shifting from transit to AT. New household formation and increased income were associated with shift from AT to car. Lower income, increase in number of bedrooms, and higher transit mode share in the neighbourhood were associated with shift from AT to transit. Women were more likely to shift from transit to car as well as from car to AT. All *p*<0.05. |
| Gao (2019) | Moving to a less urbanized area was associated with a 1.64 min/day increase in walking for transportation, but this effect was not statistically significant at the 5% threshold (*p*=0.061). Moving to a more urbanized area was associated with a non-significant decline in walking for transportation (-0.73 min/day). | Relocation had no effect on recreational walking (*p*>0.10). |
| Gerber (2017) | Before relocation from Luxembourg to neighbouring countries (Belgium, France and Germany), 71.5% commuted by car, 20.2% by transit and 8.2% by walking. Post-move, 84.2% drove, 15.1% used transit and 0.7% walked. Relocation was associated with an increase in likelihood of driving to work and a decline in walking and transit use (all *p*<0.001). | Male gender, having children in the household, being aged 35-44 or 55+ (vs. 34 or less), having a larger residence, and having access to more private vehicles, to a company car or to fewer train station were associated with higher odds of car travel (all *p*<0.05). After moving, participants were less satisfied about their commute, but they reported higher quality of life in general and more satisfaction with other areas of life. |
| Giles-Corti (2013) | After relocation to a new housing development, transportation walking decreased by 8.5 min/wk (*p*<0.001) whereas recreational walking increased by 15.5 min/wk (*p*<0.001). | In fully adjusted models, each additional objectively measured transport-related destination was associated with an additional 5.8 min/wk of transport walking (*p*=0.045). For each additional perceived transport-related destination, transport walking increased by 3.0 min/wk (*p*=0.011). These results suggest a dose-response relationship between access to destinations and walking. An increase in the number of perceived recreational destinations was associated with increased walking for recreation (+2.2 min/wk; *p*=0.033), whereas objectively-measured recreational destinations were not significantly associated with walking for recreation (+17.6 min/wk; *p*=0.070) |
| Haque (2019) | Local relocation was not associated with changes in travel mode. Relocation at the regional level was associated with a greater likelihood of shifting to transit from AT or car travel (*t*=3.7). Relocation at the national level was associated with greater odds of shifting to car travel (*t*=2.5). A decrease in distance was associated with greater odds of shifting to AT (*t*=11.2) or car (*t*=10.5) whereas an increase in distance was associated with higher odds of shifting to transit (*t*=10.3) or car travel (*t*=14.5). The authors only reported t-test values without degrees of freedom or *p*-values. | Households who owned cars were more likely to switch to car travel (*t*=7.3), and the likelihood of such a shift was greater when car ownership increased in the previous year (*t*=8.5). Losing a car was associated with a shift from car travel to AT (*t*=3.9) or transit (*t*=2.6). Changes in household size were not associated with changes in travel mode and changes in commute distance were not associated with changes in car ownership. |
| Hirsch (2014) | Transport walking increased from 237.1 ± 358.3 to 306.5 ± 436.4 min/wk (*p*=0.0012).† The proportion of participants who walked at least 150 min/wk for transportation increased from 43.1 to 50.6% (*p*=0.0049).\* | For a 10-point increase in Walk Score® after relocation, transport walking increased by 16.04 min/wk (*p*=0.004), odds of walking ≥ 150 min/wk increased by 11% (*p*=0.01), and BMI decreased by 0.06 kg/m2 (*p*=0.02). Changes in Walk Score® were not associated with changes in recreational walking or odds of shifting to a higher BMI category (both *p*=0.79). |
| Janke (2019) | 62% of interviewees stated that relocating to Davis (California) positively influenced their attitude towards cycling and 56% cycled more after moving. 20% of participants moved to Davis *because* of the cycling-friendly environment, but most other participants were not inclined towards cycling before moving. Aspects such as social norm, peer influence, convenience, cycling infrastructure, and perceived safety encouraged them to cycle and contributed to a positive change in attitude. | Results suggest that the relationship between attitudes towards cycling and cycling behaviour can be bidirectional (e.g., cycling can also lead to a more favourable attitude). Having a new partner can also change attitude and cycling behaviour. In general, interview results suggested that life events can trigger a deliberation process (e.g., window of opportunity), change social norms, unleash a latent demand for bicycling, and/or change interest in destinations and activities. |
| Janke (2020) | Relocating within Davis (California) increased the likelihood of shifting from AT to transit or multimodal travel, from car to multimodal travel and from transit to AT. Moving to another town increased odds of switching from AT to car or transit and with greater odds of shifting from car to multimodal or vice-versa. Relocating to Davis significantly reduced odds of switching from multimodal to strict car use, but it increased the likelihood of switching from transit to AT. All *p<*0.05. | Men were more likely to report engaging in AT and gender differences increased with life stages. Participants living outside Davis were more likely to commute by car, likely because of greater distance. The time interval between baseline and follow-up varied between participants, and a longer interval was associated with greater odds of shifting to strict car use. Life stage did not moderate the effect of major life events on travel behaviour. All *p<*0.05. In general, participants were most likely to keep using the same mode between survey waves, and this stability was greatest for car use. |
| Johansson (2019) | Moving to one of two car-restricted neighbourhoods with good access to PT in Stockholm was associated with a modest increase in the frequency of PT use. Frequency of driving decreased in one neighbourhood and slightly increased in the other. Trivial changes were observed for other modes. Both neighbourhoods had a car-sharing club and the number of users increased over time, especially among participants who do not own a car. Authors only provided descriptive statistics. | After moving, there was a decrease in the number of cars that respondents had access to (from 33 to 23). Qualitative data highlights that changes in car ownership were not necessarily due to parking restriction; in many cases, participants described more complex changes in life circumstances. |
| Jones (2012) | Almost half of participants reported multimodal journeys. Fewer participants used only cycling at follow-up while more participants reported only driving or walking. Some participants changed travel mode immediately after relocation whereas others tried different modes before deciding which worked best. | Participants were motivated by convenience, cost, speed, and reliability when selecting mode. PA was not a primary motivation for changing mode, but it was discussed as a reason for maintaining AT. Main reasons for moving home were to buy a first or a larger house, which mostly involved relocating further away from the city centre and increased commute distance. Relocation was influenced by needs of participants and family members, cost, availability, commute distance, distance to other amenities, and desirability of area. |
| Jones (2013) | Moves to more urban location were generally associated with an increase in walking whereas the opposite was found for moves to a more rural area. | Many Echoes (born between 1975-1985) described moving to the suburbs to raise a family whereas others already lived in the suburbs. |
| Klinger (2016) | Moving from Hamburg to Ruhr was associated with increase in car use and decreased cycling. Moving from Ruhr to Bremen was associated with reduced rail transit use. All *p*<0.05. | Higher age, higher income, being employed, increased number of children, increased car availability, decreased transit availability, higher preference for highway and parking accessibility, lower preference for PT and city centre accessibility, extended activity space, lower transit orientation, and lack of safety were associated with increased car use. Lower age, decreased number of children, decreased car availability and highway and parking accessibility, increased PT availability and accessibility, increased city center accessibility, higher transit orientation of the city, lower car orientation of the city, and "advanced transport policy" of the city were associated with increased rail transit use. Being a student, decrease in income, car and rail transit availability and highway accessibility, increased bike availability, and cycling and walking orientation of the city were associated with increased cycling. Regardless of travel mode, pre-move travel behaviour was the strongest determinant of post-move travel behaviour. All *p*<0.05. |
| Knuiman (2014) | 90% of participants relocated between baseline and 1-year follow-up. The proportion of participants who engaged in walking for transportation decreased from 37% to 28% at 1-year follow-up (*p*<0.001) and returned to 36% at 7-year follow-up (*p*<0.001 for increase from 1-year follow-up).\* | Based on 3 types of regression models, connectivity, land-use mix, access to PT, presence of a railway station within 1600m, and presence of destinations within 1600m (or a 15-min walk) were associated with greater likelihood of engagement in transport walking (all *p*<0.05). Residential density was not associated with walking (*p*>0.05). |
| Krizek (2003) | Increases in neighborhood and regional accessibility due to relocation were associated with significant decreases in vehicle miles traveled, person-miles traveled and number of trips per tour (i.e., trip chains); all *p*<0.05. Increased accessibility measured at the neighborhood level (but not the regional level) was associated with an increase in the number of tours (*p*=0.001). | Increased commute distance (except for the number of trips per tour) and higher income were associated with more driving. Higher number of children at baseline was associated with more tours and less trips/tour, and increased number of children was associated with less trips/tour. Number of vehicles, number of employees at the workplace at baseline, and increases in these variables were associated with increased vehicle and person miles traveled. Driving decreased in those who drove the most at baseline and in households with more adults. Measures of accessibility for the workplace location were not associated with travel behaviour, except for regional accessibility which was associated with reduced vehicle miles traveled and increased number of trips per tour. All *p*<0.05. |
| Kroesen (2014) | Five clusters were identified: "strict bicycle" with 28% of the sample; "strict car": 28%; "limited mobility": 18%; "joint car and bicycle": 17%; and "public transport": 10%. After relocation, most participants remained in the same cluster. Among "light mobility" and "joint car and bicycle" users, relocation did not predict changes in cluster membership (*p*>0.05). "Strict bicycle users" were more likely to switch to the "strict car" cluster than to the "public transport” one after relocation (*p*<0.05). "Strict car users" showed lower odds of switching to the "limited mobility" cluster compared to switching to the "public transport” cluster (*p*<0.05). "Public transport” users had increased odds of switching to the "strict bicycle” cluster (*p*<0.05). | The probability of staying in the same cluster between two survey waves was 0.81 for “strict car”, 0.75 for “strict bicycle”, 0.68 for “limited mobility”, 0.67 for “public transport” and 0.66 for “joint car and bicycle”. The effect of several covariates on changes in cluster membership are described in Table 4 (p. 64). The author concluded that "relocation represents a window of opportunity to accommodate (latent) preferences". |
| Laverty (2018) | Participants who moved during the follow-up were more likely to report an increase in PT use (OR=1.37; 95% CI=1.08-1.72) or to begin using PT (OR=1.53; 95% CI=1.08-2.19). | Since 2006, UK adults ≥60 are eligible for a free local bus pass. Eligibility to this scheme was associated with higher odds of increasing (OR=1.77; 95% CI=1.35; 2.33) and starting to use PT (OR=2.08; 95% CI=1.37; 3.16). Losing access to a car (OR=3.71; 95% CI=2.74; 5.01) and taking up PA (OR=1.80; 95% CI=1.29; 2.49) were also associated with increased PT use. Increasing or taking up PT was associated with reduced BMI in women, but this association was no longer significant after controlling for BMI at baseline (β=-0.40 kg/m2; 95% CI=-0.82; 0.01). |
| Lin (2018) | After moving, participants reported significant increases in trip frequency (3.65 to 5.05), total travel time (82.33 to 106.70 min), non-motorized travel time (33.17 to 38.91 min), car travel time (14.90 to 20.50 min) and PT travel time (34.02 to 46.71 min). All *p*<0.05. | Car ownership increased from 38.4% to 53.3% after relocation (*p*=0.0014).\* According to Table 7 (p. 369), participants who had more social contacts within the same neighbourhood, a larger household size, increased accessibility (to city centre, shopping mall, public services and other facilities), and those who owned a vehicle at baseline or acquired one reported a decrease in travel time. Participants who lived further from the city centre, who had an increase in income or higher income at baseline and who lost a job reported increased travel time. All *p*<0.05. |
| Mbabazi (2016) | When comparing Tables 5.4-5.5 to Tables 5.8-5.9, a large increase in driving from entering the labour market to relocating to one's current home is evident in participants who travelled by car at the time of the interview (from 17.0 to 66.0%) in comparison to a decrease in driving among those who used alternate modes at the time of the interview (from 22.9 to 14.3%). | Participants' decision to move to their current house was motivated by their preferences (i.e., self-selection), either for a good place to raise a family, living close to one's job, to the partners' job or to someone who could mind children, or to be either close or away from the city to accommodate one’s lifestyle. Familiarity with the area and affordability were also important considerations for relocation. |
| Oakil (2016) | Relocation was associated with an increased likelihood of shifting to cycling from another travel mode (mostly car or transit) when using a liberal threshold of *p*<0.10. Relocation was not associated with shifts from cycling to other modes. | Changes in employment were associated with a higher likelihood of shifting to/from cycling (*p*<0.05). Increased travel time was associated with shifts away from cycling, whereas decreased travel time was associated with shifts to cycling (both *p*<0.01). Shifting from full-time to part-time work was associated with reduced odds of shifting from cycling to another mode (*p*<0.05). Increasing vehicle availability was associated with reduced likelihood of shifting to cycling (*p*<0.05). |
| Peer (2019) | Descriptive statistics show that 10.1% of participants cycled before and after university relocation, 3.4% stopped cycling, 8.4% started cycling and the remainder did not cycle to university. Odds of cycling to university were significantly greater after relocation (*p*<0.05; Model 2, p. 63). | According to the best fitting model (Model 2, p. 63), a lower ratio of cycling to transit travel time indicating that cycling is comparatively faster was associated with higher odds of cycling; no other predictors were significant at *p*<0.05. Participants who cycled at the previous location were more likely to cycle at the new location, underscoring the importance of past behaviour. |
| Prillwitz (2007) | Between 1998 and 2003 the average commute distance for the full sample increased by 1.46 km. Changes in commute distance were greater for individuals who relocated job, house, or both (all *p*<0.05). | Relocating from a core urban area to a non-core area or to a single-family house, increased income, changes in employment status and vehicle ownership, and PT use for commuting were associated with increased commute distance. Greater commute distance at baseline and easy access to PT at follow-up were associated with decreased commute distance (all *p*<0.05). |
| Ralph (2019) | Compared to participants who did not move, those who moved were more likely to always use PT (+8.9%) or walk/bike (+13.5%), and to ever use PT (+29.8%) or walk/bike (+41.1%). They reported higher weekly frequency of PT (+1.14 trips) and walk/bike (+1.50 trips). They were less likely to drive always (-54.1%), ever (-49.8%), reported fewer car trips (-1.58 trips/wk) and drove fewer miles/wk (-23.88). Regression models adjusted for gender, distance to campus and access to PT indicate that among students who moved all PT variables increased and all driving variable decreased (all *p*<0.10). None of these variables changed among participants who did not move (Table 3, p. 729-731). | The intervention (e.g., provision of a transit information guide for incoming graduate students) was effective among movers, but not among non-movers. The authors state that the fact that the intervention only worked among movers provides support for the habit discontinuity hypothesis (see Verplanken et al., 2008). |
| Rau (2016) | After moving home or town, 30% of participants reported an increase in cycling whereas 27% reported a decrease, 48% reported an increase in walking whereas 31% reported a decrease, 43% reported an increase in transit use whereas 29% reported a decrease, 35% reported an increase in driving whereas 24% reported a decrease, 22% reported an increase in travel as car passenger whereas 34% reported a decrease. | N/A |
| Rau (2019) | Workplace relocation from inner city to the outskirt of Munich led to an increase in commuting by car (46% to 71%) and eliminated walking (from 17% to 0%) and cycling (from 7% to 0%) (all *p*<0.01).\* Average one-way commute time increased from 33 to 44 minutes (*p*<0.001). Although the proportion of PT users did not change dramatically, there was an increase in the number of transfers. Workplace relocation was associated with a decrease in trip chaining. | 19% of respondents bought a car after workplace relocation. For 37% of them, it was their first car. 9% reported that, due to work relocation, they had moved house or planned to do so in the near future. Increased commute time was negatively associated with commute satisfaction (rho = -0.636; *p*<0.001), especially for employees who lived close to the old work location and shifted from AT to transit. Respondents living with children under the age of 18 reported lower levels of satisfaction with their post-relocation commute (rho=0.214, *p*≤.05). |
| Scheiner (2013a) | Using structural equation modeling, the authors found no direct effect of home relocation on travel mode use. However, relocation to less urbanized areas was associated with a significant increase in car ownership (*p*<0.05), which was associated with increased car use (*p*<0.05), decreased PT use (*p*<0.05), and no changes in walking and cycling (both *p*>0.05). | Relocation to less urbanized areas was associated with reduced objectively-measured quality of, and satisfaction with, PT and shopping in the neighbourhood (*p*<0.05). Decreased satisfaction with PT was associated with increased car use whereas increased satisfaction was associated with increased PT use (*p*<0.05). |
| Scheiner (2013b) | Moving to the periphery was associated with a decrease in walking (-0.17 trips/day; *p*<0.01), but had no effect on trip rates for car travel, PT, and cycling. Relocations to the city centre, to a larger or a smaller municipality were not associated with changes in the frequency of trips using any travel mode (all *p*>0.05). Changes in urbanity were associated with a 3% increase in walking trips per day (*p*<0.01), but had no effect on other travel modes. | Increased variety of neighbourhood facilities accessible by foot was associated with a 4% increase in the frequency of walking trips and a 1% increase in cycling trips (both *p*<0.01), but it had no significant effects on use of motorized travel modes. Authors argued that significant effects of many baseline variables (e.g., gender, number of children in the household, living in a couple, education and employment status, type of urbanization, etc.) on subsequent trip rates suggest that mode use may change in the absence of any major life events, due to changes that were already planned and high levels of freedom of choice. |
| Scheiner (2014a) | Moving to the periphery was associated with a significant decrease in the frequency of walking trips (-0.20 trips/day in men and -0.15 in women; both *p*<0.02), but had no effects on the frequency of car and transit trips. Moving to the city centre was associated with increased frequency of PT trips in women (+0.08 trips/day; *p*=0.043), but not in men. It had no effect on the frequency of trips by any other mode of transportation (all *p*>0.05). | An increase in the variety of neighbourhood facilities accessible by foot was associated with an increased frequency of walking trips (+0.03 trips/day in men and +0.05 in women; both *p*<0.001) and a decrease in car trips (-0.02 trips/day in men and women, both *p*<0.05), but it had no effects on PT trip frequency. |
| Scheiner (2014b) | Relocation had no effect on entropy and trip complexity and it was excluded from multivariate models (p. 96). | Among individuals employed part-time at baseline, there was a significant increase in entropy (*p*<0.001) and a decrease in trips/tour (*p*=0.001). There was a decrease in entropy among unemployed individuals at baseline (*p*<0.001). Leaving the labour market without retiring was associated with reduced entropy, but only for women (*p*=0.002), suggesting that men may replace work with other out-of-home activities. Increased car use was associated with increased entropy and reduced trip complexity. |
| Scheiner (2016) | Relocation was associated with none of the multimodality indicators and it was excluded from multivariate models (p. 154) | Multimodality increased with children moving out of the household, leaving the labour market, improvement in the PT system and reduced parking space availability. Multimodality decreased with increased car access. (all *p*<0.05). |
| Sharmeen (2013) | Relocation was associated with a significant decrease in travel time related to subsistence activities (defined as work and study; *p*<0.1), suggesting that participants relocated closer to their place of work or study. It had no effect on time allocated to maintenance (e.g., groceries, errands, etc.) and leisure (e.g., shopping, dining, social activities) activities and travel time associated with these activities (all *p*>0.1). | Relocation had no effect on the size of individuals' social network (*p*>0.1). |
| Smart (2018) | A significantly greater percentage of movers than non-movers used transit (11% vs. 7%; *p*<0.01). | Participants who moved from areas with high to low exposure to PT and those who moved from areas with low to high exposure to PT were more likely to report using PT than non-movers. Exposure to an area with high transit use at different stages of life, but especially during young adulthood, was associated with reduced car use and greater PT use later in life. |
| Soltani (2019) | Participants who relocated were more likely to report a change in travel mode (Wald=3.915; *p*=0.048). | Participants who changed job were more likely to report a change in travel mode (Wald=16.225; *p*<0.001). |
| Verplanken (2008) | Among participants who moved in the previous year, those who had low and high environmental concerns respectively did 73% and 37% of their trips by car. Among those who did not move, those with low and high environmental concerns did 54% and 64% of their trips by car. Relocation was not associated with a change in commute mode (*p*=0.53). However, ANOVA analysis indicated an interaction demonstrating that participants who had recently moved and had high environmental concerns commuted less frequently by car (*p*<0.001). | Results suggest that environmentally concerned individuals are more likely to act upon their values when experiencing a change in context. |
| von Behren (2018) | Travel time and commuting distance decreased slightly immediately after workplace relocation from a suburban to an urban area, and increased in the two years following relocation (but significance is unclear). Before relocation, 26/53 employees commuted by car or used multiple modes including car; two years after relocation, this proportion was 12/39 (*p*=0.08).\* Respondents who shifted from monomodal car use to multimodality attributed this to better PT accessibility and worse parking facilities at the new location. | Longer travel time was associated with lower satisfaction with commuting (*p*=0.0008). Satisfaction with commuting appeared to increase after relocation, but the significance of this change was not mentioned. |
| Walker (2015) | Before relocation, 8% cycled, 1% took the bus, 60% drove, 8% used car share, 1% used a powered two-wheeler, 15% used the train and 8% walked. Post relocation, 8% cycled, 1% took the bus, 24% drove, 4% used car share, 55% used the train and 8% walked. Workplace relocation associated with promotion and incentives for train use was associated with a large shift from driving to taking the train (*p*<0.0001). | In a workplace characterized by high environmental concern (World Wildlife Fund’s UK headquarters), greater environmental concern was associated with a higher likelihood of changing travel behaviour (OR=2.75; 95% CI=1.06-8.03). Compared to Time 1, habit strength was lower at Time 2 (*p*=0.0001), and Time 3 (*p*=0.04). Following relocation, habit strength for the old mode declined gradually (but did not disappear), whereas habit strength for the new mode increased gradually. Among participants who changed travel mode, habit strength for the new mode was greater than for the old mode at Time 2 (*p*=0.01; Cohen’s *d*=0.59) and Time 3 (*p<*0.0001; *d*=1.27). |
| Yang (2017) | Before relocation, all participants (n=258) were AT users. After relocation, 37.2% (96) shifted to public transport, 24.8% (64) shifted to car, 38% (98) remained using AT (*p*<0.0001 for all modes).\* | Bayesian network analyses showed that travel mode changes were directly associated with changes in commute distance, car ownership, current housing type, and perceived changes in the convenience of bus or subway. |
| Zarabi (2019) | Before moving, 30% of participants drove to work, 55% used PT and 15% used AT. After moving, 55% drove, 40% used PT and 5% used AT. All car users before the move continued to drive and most of them reported high habit strength. 6/11 PT users kept using PT after the move. All participants who used AT before the move reported an increase in distance which led to a shift towards motorized modes. | 8 participants mentioned that they relocated in order to change travel mode, suggesting self-selection. In this process, they also had to consider trade-offs for their partner's commute and/or family needs. Relocation was generally preceded by three stages (activation, information seeking, deliberation) and followed by a re-evaluation stage. However, in some cases, information seeking came after the move. Individuals with stronger habits were less willing to change commute mode. When presented with 8 hypothetical sustainable transport policies, participants who were predominantly car users showed the least interest. |
| Zhao (2018) | Before relocation, participants reported an average of 1.36 ± 3.13 car trips, 3.62 ± 3.86 PT trips and 4.77 ± 5.48 active trips. Mean commute distance was 8.27 ± 9.03 km. Post-relocation, participants reported an average of 1.58 ± 3.35 car trips, 2.83 ± 3.42 PT trips and 5.95 ± 5.89 active trips. Mean commute distance was 7.66 ± 8.30 km. Only the decrease in PT and increase in car trips were significant (both *p*<0.01).\* | Structural equation modeling indicated that household status was associated with increased car ownership and use. Car use was negatively associated with AT and PT. Positive attitude towards driving was associated with increased car ownership and use. Time since relocation was associated with increased car ownership, suggesting a lagged effect. Increasing commuting distance was associated with increasing PT use and reduced AT. All *p*<0.01. |

Note: AT: active transportation; BMI: body mass index; MVPA: moderate- to vigorous-intensity physical activity; PA: physical activity; PT: public transport; SEP: socioeconomic position. \* We obtained the p-value using a chi-square test for differences in proportions (https://www.medcalc.org/calc/comparison\_of\_proportions.php). † We obtained the p-value based on a t-test for independent means.