Exploring the intersection between physical and virtual mobilities in urban South Africa: reflections from two youth-centred studies

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Abstract

The mobile phone is transforming African mobile lives at a variety of scales, from the minutiae of individual spatial orientations to expansive global connectivities. Now-possible fluid interdependencies between corporeal mobility and virtual mobility have the potential to reframe and reshape lives (and world views), especially for young people, who typically have limited financial resources yet are often at the vanguard of mobile phone adoption. This chapter explores the intersection between physical and virtual mobilities among young people in two smaller South African urban centres, drawing on mixed-methods field research, the first study conducted with young people 9 to18 years, the second with a wider age group extending from 9 to 25 years. Following an introduction to relevant literature and the methodology, subsequent sections focus on the transport and related physical mobility challenges young people face in reaching locations [and people] important in their lives, and the role that access to mobile phones is now having in mediating those challenges and associated access patterns in these sites. Particular attention is given to the role of gender in the shaping and reshaping of mobility and access patterns: precarity, safety and security are significant themes.

Introduction

Unlike much of the Global North, few homes in poorer (predominantly black) neighbourhoods in South Africa, urban or rural, ever had access to landlines. Consequently, following on from the first appearance of mobile phones in South Africa in the closing decade of the twentieth century, this technology has taken hold rapidly, and with dramatic impact. It is now transforming African mobile lives at a variety of scales, from the minutiae of individual spatial orientations to expansive global connectivities. Now-possible fluid interdependencies between corporeal mobility and virtual mobility have the potential to

reframe and reshape lives (and world views), especially for young people, who typically have limited financial resources yet are often at the vanguard of mobile phone adoption. This chapter explores the intersection between physical and virtual mobilities among young people in two smaller South African urban centres. It offers reflection on the pace of recent change with particular reference to phone use and daily mobilities.

Our research on young people and mobile phones started in 2006-10 as an unanticipated element in a study focused on young people's daily physical mobility and associated access to transport and services – schools, health centers, markets, leisure activities etc. – across 24 sites in sub-Saharan Africa[1]. We were working only with 9-18 year olds at that time, but - even so - were amazed at the extent to which young people in the South African urban sites, in particular, were already using (mostly basic, not internet-enabled) phones on a regular basis to reshape and mediate their physical mobility patterns. Further funding has enabled us to build on this work on mobile phones more widely (including regarding broader impacts of mobile phones on education, inter-generational relations, health-seeking behaviours, livelihoods etc.), but still with firm reference to linkages with physical mobility (Porter et al. 2015a, b; Hampshire et al. 2015, 2016 in press). We have also extended our age range in this second project to include young people aged 19-25, thus enabling us to follow up on usage patterns for the cohort of young people we first encountered in 2006 who have now moved into their late teens and twenties. In 2006 hardly any of the young people we interviewed had access to smart phones – the standard phone was a basic model. By 2015, internet-enabled smart phones were an essential accoutrement of 'cool youth':

Because technology is advancing so I must also move along with it, I cannot use the same type of phone all my life people will laugh at me. [Gauteng Urban, male 25y]

The two research sites on which we focus in this chapter are poor high-density neighbourhoods in smaller urban centres in South Africa: one in Eastern Cape, the other in Gauteng Province. The young people whom we have researched often lead difficult lives with access to few resources: some reside with an unemployed parent or a pensioner grandparent, or - especially in Eastern Cape - are renting a room in order to attend secondary school in town, having migrated in from a rural area. Among those who have already left

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school, many spend much of their time just waiting at home: these are unemployed young men and women, some of whom still retain the determination to look for a job, despite the low prospects of finding the kind of well-paid, fulfilling work to which they aspire; the lives of other young women are already substantially constrained by babies and child care. Meanwhile, the street scene is often unwelcoming, even hostile, particularly in Eastern Cape-tainted by the threat of violence to innocent bystanders and travellers, especially at night.

Drawing on a substantial mix of qualitative and quantitative data and associated triangulation, we are able to explore how increasing access to mobile phones in these two urban research sites over the past ten years has been impacting on young mobile lives. The chapter first introduces some relevant literature and the methodology employed in the research; subsequent sections focus on the transport and related physical mobility challenges young people face in reaching locations [and people] important in their lives, and the role that access to mobile phones is now playing in mediating those challenges and associated access patterns. Particular attention is given to the role of gender in the shaping and reshaping of mobilties in this era of extensive and intensive phone communication.

The benefits of mobile phones for travel and distance management: reviewing recent debates

Since this chapter is concerned with the impact of phones on urban patterns of daily mobility and transport usage it is best set first within the wider debate on this topic. The emergence of ICT and, in particular, mobile phones, raised early hopes in Western planning circles that some ease in traffic volumes would occur as a response to the substitution of physical journeys with phone and other ICT communication and associated spatial reorganization of daily mobilities, However, empirical evidence to date in Western cities has not supported that contention. Rather, because phones are portable, there are new opportunities to reschedule on the move (Kwan 2006; Line et al. 2011; Taipale 2013). Taipale (2013) describes how, in urban Finland, users have developed a 'virtual reservoir of mobilities' by connecting ICT with urban public transport, and notes that women lead this trend of combining physical mobility with ICT. In addition, as Urry (2012) emphasises, there will remain requirements for continued physical co-presence in many situations, given the need to satisfy social obligations, building and preserving trust and tacit knowledge.

Across sub-Saharan Africa, the conditions within which physical travel takes place are somewhat different: widespread poverty, irregular transport availability in many locations

(including some urban and many peri-urban areas) and potentially hazardous journeys on poor roads in badly maintained vehicles, with added risks of harassment and extortion (from highway robbers, etc.), arguably may weigh more strongly in the balancing of virtual with physical mobility (Porter 2015). Some business-oriented studies, in particular, have presented evidence of respondents reducing their travel as a result of mobile phone communication, because of the low cost of phone messaging and calls compared to the time costs, financial costs and risks associated with travel (e.g. Jagun et al. 2008; Baro and Endouware 2013). However, these studies tend to be focused on prolonged long-distance journeys, where hazards are likely to be particularly substantial, rather than on local travel within a relatively confined urban context. By focusing on young people in two poor, high-density urban areas of South Africa in this Chapter, we offer further insights into this debate.

Another major strand of literature relevant to the Chapter concerns gendered patterns of travel and girls' and women's travel safety in urban areas, both with reference to walking and motorised transport. There is a substantial literature on this issue, extending over many decades (e.g. Lynch and Atkins 1988) but events in recent years (such as the 2012 gang rape of a young woman on a Delhi bus) have brought wider awareness of the scale of this problem and, in some cities, including Mexico City, Dubai and Dhaka (contentious) moves to introduce so-called 'pink' services where women travel separately from men, because of rising complaints by women of sexual harassment on public transport (e.g. Dunckel-Graglia 2013). In South Africa, where concerns about women's travel safety widespread, rape statistics are alarming and violent robbery and car-jacking remarkably commonplace. Much of this is arguably intimately bound up with a crisis of masculinity (Jewkes and Abrahams 2002; Jewkes et al. 2011; Porter 2013).

Despite these concerns about women's travel security, the literature on mobile phones has had, as yet, little to say about their use in such contexts. In the Global North there is more focus on their use by women in "remote mothering", checking on children elsewhere (e.g. Kwan 2007); Ling (2004: 35-55) noted how the mobile phone confers a sense of security that legitimates parents giving children their own phone. The role of phones as a safety/security device *in travel contexts* is mostly absent in these discussion; it has also received little attention in literature on the Global South (though see Porter 2016 on rural contexts). Our data from South Africa below suggests the need for stronger attention to this point in urban-focused research.

Methodology

This paper draws on mixed methods research from two studies. Our original child mobility study conducted in 2006-10 drew on in-depth interviews with children aged 9-18 years, their parents and other key informants (approximately 50 interviews in each of the two South African urban sites) and additional school essays and focus groups with children, followed by a survey of c. 125 children c.9-18 years per site (including 123 in Eastern Cape Urban, 125 in Gauteng Urban). Our household selection in the survey was based on cross-settlement transects, followed by within-household random selection. The questionnaire survey was undertaken towards the end of the qualitative phase, when the majority of the qualitative research had been completed: this allowed information from the qualitative interviews to contribute to shaping the survey questions. Because the likely importance of virtual mobility emerged early in the qualitative phase, all age groups were asked about young people's usage of mobile phones and this led on to very specific questions in the survey regarding young people's access to phones and patterns of use.

The subsequent youth phones study in 2012-2015 in the same research sites followed a similar pattern of qualitative interviews (c. 50 in each of the two South African urban sites) followed by a survey (with questions informed by the qualitative research). Qualitative interviews with young people in this study were built around their phone stories and call registers; other activities included focus groups with diverse ages, school essays, key informant interviews (including with transport operators) and a small number of life histories with people in their late 20s to mid30s. The survey procedure replicated that of the earlier project, but with the focus on phone use rather than physical mobility per se. Importantly, both qualitative and survey components were now conducted with a broader age group, extending from 9 through to 25years, in order to gain some understanding of intersections between physical and virtual mobility among a cohort where many have been conversant with mobile technology for some years. In the survey we aimed to cover the same number of children aged 9-18 in each research site as before (i.e. c. 125), plus an additional 62/63 young people aged 19-25 years per site (i.e. our older cohort, 6 years on). The actual numbers for Eastern Cape Urban were 129 9-18y and 58 19-25y, and for Gauteng urban, 154 9-18y, and 53 19-25y: the slightly lower than desired coverage of 19-25 year-olds reflected the

difficulties of finding people in this older group willing to be interviewed in these two urban high density, high crime, high poverty sites.

Here field work was also potentially dangerous for our RA team, despite positive support from community leaders. It thus required very careful attention to the safety procedures we instituted: RA interviewers worked close together in nearby compounds with easy access to a vehicle (in case it should be necessary to vacate the area quickly). In Eastern Cape Urban, where street violence was particularly strongly in evidence, we benefitted from the well-established links between our lead field co-ordinator and the community.

Contextual information about daily mobility from the child mobility study

The heavy dependence on pedestrian transport for many journeys in both these urban centres (as across much of sub-Saharan Africa) was strongly emphasised in the child mobility study where we have detailed data for 9-18 year olds. This was despite the fact that, in both settlements, almost all those interviewed live within 15 minutes' walk of public transport (and over 60% within 5 minutes' walk). Walking was inevitable for most young people because they lack funds to pay transport fares, but was disliked for numerous reasons, particularly in the Eastern Cape Urban site. Fears of tsotsis, other thugs, thieves and mugging were raised as a major concern in the survey by over one-quarter of girls here, and nearly one-quarter of boys (compared to under one-tenth of girls and just over one-tenth of boys surveyed in Gauteng Urban): *I don't like to travel to school because there are boys who mock us on the way to school. They wait for us on the road where they smoke dagga* (cannabis) *and then they follow* (girl 13y, Eastern Cape U). A slightly younger girl in this settlement identified *places we do not dare to go. There is a small shack where these boys smoke their drugs. It is a short cut but I will not use it because these boys can hurt you…There are some places…where I have to go with my sister or my friends because of the boys in the settlement. They always want to stop you and propose love to you, so it is better to walk with somebody.* Mocking and other forms of harassment are feared not only in themselves, but because of the danger that they may transform into something worse – in particular, rape. In both settlements, around 7% of girls (but no boys) said they specifically feared rape.

Generally, the safest procedure – especially where girls are concerned - is considered to be walking in a group: *We have to walk in groups because there are boys who are not schooling*

who take our money and mobile phones. If we walk in a group it is better, because some are known by other learners (girl 18y, Eastern Cape U). However, boys also reported fears associated with walking alone, especially after dark and similarly often prefer to walk in a group: *it is not safe to walk at night alone. You can be mugged by the tsotsis. Even during the day there are boys who smoke dagga and sit at the street corner. If they don't know you, they will stop you and ask for 2 Rand. If you don't give them they will slap you on the face* (boy 12y). One mother observed, *Walking from the taxi rank to this house is a mission, because you don't know what your child will encounter on the way!* Even walking with an older person does not necessarily offer protection. The potential to encounter violence while walking often appeared to be simply a matter of being in the wrong place, at the wrong time: *when I was walking in our street one day, I saw one boy being shot by some boys who belong to a gang from the other location...I was terrified and ran into one of the houses* (boy 12y); *Sometimes we see dead people on the way to school and that also disturbs our performance* (girl, 15y).

The most commonly used motor-transport in these neighbourhoods is the minibus taxi, especially in Eastern Cape Urban. Here about one third of girls and a quarter of boys surveyed said they travelled by this mode at least once per week, though only around 5% did so on a daily basis. When asked about dangers of travel by motor transport in the survey, the overwhelming emphasis of girls and boys was fear of traffic accidents; no reference was made to danger of rape or robbery/thugs. In the qualitative interviews, by contrast with the survey, girls put emphasis mostly on travel risks associated with harassment and violence: seemingly, it was only within the more informal context of these extended, in-depth conversations that such sensitive elements could rise to the surface. Perhaps the survey context also explains why, in South Africa's 2013 National Household Transport Survey, only 0.2% of females who reported not travelling in the 7 days prior to survey indicated that this was due to security risks on transport, despite the fact that information from operators offers a very different picture (Fia Foundation, 2016).

Minibus taxi drivers are a particular source of harassment in South Africa. The following examples of complaints from each of the urban sites are reflective of wider views (similarly found in the peri-urban and rural research sites):

Sometimes taxi drivers harass us; like if you are a girl and the last to disembark, they want to propose to you and they could just drive around with you and pass your home (girl 17y, Gauteng U).

The thing that I fear about travelling on a minibus taxi is that the drivers propose love to us and they say they want us to be their girlfriends. I am afraid they might kidnap or rape me if I am alone in the taxi. .. the taxi conductors are very rude. Just because we are girls they talk trash and vulgar language to us. They don't have respect. One time I was travelling with my friend from town and when we were disembarking the taxi, the conductor touched my friend's back (buttocks). When we asked him what was his problem, he started talking vulgar language to us and the driver was laughing (girl 12y, Eastern Cape U). The scale of harassment is such that one mother in the Eastern Cape urban site observed that no girls should travel by minibus taxi till they are at least 16 years old: *if they are younger they will be raped by taxi drivers*.

Minibus taxi drivers' (seemingly well-founded) reputation for preying on girls appears to be reinforced by local meanings of masculinity. These men form very powerful, often feared, collective groups in South Africa; consequently, all ages and both genders tend to be extremely careful in their interactions with them*: The taxi is far more relaxing than the bus…The disadvantage of travelling by taxi is that drivers are rude and they talk vulgar language…I don't back-chat taxi drivers. If they say you must do this you must do it, otherwise they will make you disembark their taxi* (boy 12y, Eastern Cape U). Nonetheless, as occasional respondents observed, some young girls fall for these (often older) men, attracted to the potential status and benefits that sexual liaison with a taxi driver may bring – and apparently oblivious to the potential dangers (Leclerc-Madlala 2003:222-3; Luke, 2003; 2005). One minibus taxi driver (a 40-year old), observed: *Girls are actually dating these drivers (who) promise them money. It is shocking as you will see a 16-year-old girl having an affair with a taxi driver* (Eastern Cape U). Despite these issues, minibus taxi remains the main motor transport mode. Only a few young people had parents, friends or neighbours with a private car: nearly three-quarters of both girls and boys in these settlements had never travelled by this means[2].

[2] Bicycles are also rarely a key transport mode. Around four-fifths of girls in both sites said they had never cycled (though nearly half of boys in Eastern Cape Urban cycled occasionally).

Mobility and immobility, we have argued elsewhere, are key factors shaping young people's urban experience and their future life chances in Africa (Porter et al. 2010). The data presented above shows that in these two South African urban neighbourhoods young people's physical mobility – especially girls'- is substantially constrained, not least by the threat of harassment, whether they are on foot or travelling in a minibus taxi (the two main transport modes). Additionally, girls may be perceived as not only vulnerable but also potentially promiscuous and thus the focus of substantial parental/family efforts to constrain their mobility. There are fears that boys, meanwhile, may be persuaded onto the streets and into criminality: drugs, theft and gun crime: *I will praise God if my children do not fall into the temptations of this society. Girls are getting pregnant and boys are stealing and turning into crime* (mother of two girls, one boy, Eastern Cape Urban).

While have mostly focused mostly on the down-side of travel for young people in this section, it is also important to recognise the potential that mobility along city streets also offers for excitement, thrills, inclusion and opportunity; not least, opportunities for meeting members of the opposite sex (ibid 2010). In both positive and negative mobility arenas, however, the potential of mobile phones – whether as an alternative or adjunct to physical mobility - is considerable, as the following section will demonstrate.

Mobile phone usage and its impact on physical mobility in the two urban study neighbourhoods

This section charts the expansion of youth ownership and usage of mobile phones in the two sites and the impact this is having on everyday mobile lives. Even when we conducted the child mobility study in 2006-10, mobile phones were firmly in evidence in the two urban study sites. However, mobile phone ownership has grown substantially in both urban neighbourhoods (as in South Africa as a whole), over the six years between this and our more recent phones study. As we only have data for the 9-18y cohort for the child mobility survey, we are limited to a comparison of this age group for the two surveys periods; even so, the evidence of expansion is impressive.

Table 1: % of young people 9-18y with own phone (all types), 2007/8 and 2013/14

	2007/8 (N=248)		2013/14 (N=285)	
	Female	Male	Female	Male
Eastern Cape Urban	29.8%	32.4%	70.3%	50.8%
Gauteng Urban	27.0%	29.4%	57.7%	65.1%

In these settlements *ownership* looks to have roughly doubled overall (from an average - when calculated as a total of both genders - of 30.3 % to 60% in Eastern Cape and from 28% to 61.7% in Gauteng): the expansion looks particularly strong among females in our sample in Eastern Cape Urban[3].

When we look at phone *usage* in the week prior to survey it is clear, in both survey periods, that usage extends well beyond the individual's personally owned phone: rather, we have widespread evidence of sharing and borrowing of phones (among family, friends and neighbours) in both study periods and from both qualitative and survey data. Nonetheless, there has been a significant expansion in usage for both males and females between the two surveys, especially among males in Gauteng urban (where usage was substantially lower than among females in 2007/8) and females in Eastern Cape urban. In Gauteng three quarters of 9 to 18 year olds of both genders had used a phone in the week prior to the 2013/14 survey, over 90% in Eastern Cape.

Table 2: % of young people 9-18y who had used a mobile phone in the week prior to survey, 2007/8 and 2013/14

	2007/8 (N=248)		2013/14 (N=285)	
	Female	Male	Female	Male
Eastern Cape Urban	73.2%	78.4%	98.5%	90.8%
Gauteng Urban	69.4%	46.9%	74.7%	75.9%

[3] In 2013/14 the figures specifically refer to phones currently owned that are *in working order* whereas we asked simply about current ownership in 2007/8 so expansion may be even greater.

The 2013/14 survey allows us to extend observation to young people aged 19-25 years, many of whom are likely to have been regular phone users for some years. Here, the total sample size is relatively small but ownership looks remarkably high, especially among women[4].

Table 3: % of young people 9-18y and 19-25y currently owning at least one phone in working order (all types) 2013/14

	9-18y (N=285)		19-25y (N=111)	
	Female	Male	Female	Male
Eastern Cape Urban	70.3%	50.8%	90.9 %	76.0%
Gauteng Urban	57.7%	65.1%	100%	84.8%

Usage of phones among 19-25 year olds is, unsurprisingly, even higher than among 9 to 18 year olds. In the case of women aged 19-25, in both sites all had used the phone not merely in the past week but on the day of the survey or the day before. As the qualitative data confirms, for these women the mobile phone is critical to the conduct of daily life.

Table 4: % of young people 9-18y and 19-25y who had used a mobile phone in the week prior to survey, 2013/14

	9-18y (N=285)		19-25y (N=111)	
	Female	Male	Female	Male
Eastern Cape Urban	98.5%	90.8%	100	96.0
Gauteng Urban	74.7%	75.9%	100	87.9

So what does all of this phone use mean for physical mobility and transport usage? Our preliminary research on this theme, based on the 2006-2010 data set, suggested that in the South African urban sites it was girls, in particular, who were already starting to use mobile phones to re-envision their mobility opportunities. The virtual mobility offered by the mobile phone [for planning journeys, organizing clandestine meetings, assessing destination

[4] Parents often buy their children phones, so they can keep in touch, but from adolescence onwards, parents and others (as in our 2006-10 study, see Porter et al. 2012) regularly express concerns about the source of girls' high quality phones. Older men are frequently accused of using these as a lure for sexual favours (Porter et al. 2012): *sugar daddies...They buy them expensive phones, clothes and jewellery* (girl19y).

potential] was starting to present a particularly potent tool in the repertoire of obfuscation and circumvention which young people needed to employ when their mobility was constrained by adult restrictions (Porter et al. 2010). We also observed young people starting to substitute phone communication, on occasions, for physical travel, and using the phone to assist in organisation of transport and travel including in emergency contexts. There were many stories (as in the subsequent 2012-15 study) of lives saved because phone communication enabled timely access to transport, often with reference to obstetric emergencies.

Our 2012-2015 study has enabled us to consider the implications of virtual mobility in greater depth and with reference to the much wider availability and usage of phones since the first study. The addition of an older cohort (19-25y) also enables some wider perspectives from both survey and qualitative research on the use of phones in travel contexts, including among young people who have left school and are pursuing livelihood activities or searching for work.

In the 2013/14 survey we asked respondents of all ages (i.e. 9-25 years) who had used a mobile phone in the past 12 months for communication purposes (thus, not merely use for games or as a calculator etc.) about the perceived impact of their mobile phone usage on their short day-to-day local journeys and irregular long distance journeys (Tables 5 and 6).

Table 5: Perceived impact of phone use on small, day-to-day local journeys, 2013/14

	Eastern Cape Urban		Gauteng Urban	
	Male %	Female %	Male %	Female %
No impact	13.4	14.1	67.4	72.2
More journeys	22.0	26.1	15.7	8.3
Fewer journeys	64.6	59.8	16.9	19.4

Table 6: Perceived impact of phone use on long, irregular journeys 2013/14

	Eastern Cape Urban		Gauteng Urban	
	Male %	Female %	Male %	Female %
No impact	27.2	29.2	63.1	72.2

More journeys	27.2	23.6	9.5	8.3
Fewer journeys	45.7	47.2	27.4	19.4

So far as short and long journeys are concerned, both sites show more reduction than expansion in journeys associated with phone use, which makes sense, in the context of young people's usually constrained financial resources and high motor transport fares. Cheap calls/texts (which can be built round network operators' special promotions such as Vodacom's nightshift, MTN's Mahala Thursday, free 'call backs' and contact through Mxit or WhatsApp) are widely assessed as a satisfactory substitute on many occasions for physical travel[5]. As one young man succinctly explained, with reference to collecting examination results: *if you have R2 airtime you just SMS your student number .. then your results will be sent you, rather than spending a lot of money for transport* [22y, Eastern Cape U]. Phone communication is also recognised as supporting more efficient travel, because it avoids wasted journeys. It is possible to check first to ensure the person to be visited will be at home - and now that most adults in these urban sites have easy access to a mobile phone, this is standard practice.

Unsurprisingly then, a majority of both genders assessed these perceived travel reductions as positive, in both sites (but particularly Eastern Cape Urban); only one-fifth or less across both sites saw the perceived changes as negative. In some cases the phone reduces everyday small journeys such as saying hello to a school mate or organising child care, in others it supports connections which are otherwise rarely feasible, as with family members living in distant parts of the country, or people unwelcome in the family home (often boyfriends, but also a number of estranged parents). Virtual communication is thus widely supporting both intra-familial, inter-generational linkages and intra- and extra-familial linkages with people the same age (Porter et al. 2015b).

In the survey we also asked about the use of mobile phones in the last 12 months where this specifically related to transport *difficulties*. In Eastern Cape Urban, 41% of females and 44 % of males aged 9-25 had used a mobile phone for such purposes, with slightly lower proportions (34% of females, 39% of males) in Gauteng Urban. The main transport

[5] Though there were also cases of schoolchildren buying airtime from the transport money they had been given and walking to school instead.

difficulties which required phone calls in both locations were centred round the fact that no transport was available, that it did not arrive when required or because of traffic jams. However, as Table 5 and 6 indicate, there is a very distinctive and intriguing difference between the two sites regarding perceived overall impact of phone use on travel, which is assessed as far more substantial by Eastern Cape Urban respondents than by those in Gauteng Urban (male and female). This may be related to two factors, firstly the lower usage of phones overall (except among women 19-25y) in Gauteng Urban, which will somewhat reduce the potential to connect by phone to the wider population of contacts, and secondly - and likely to be far more significant - the fact that physical mobility in the Eastern Cape Urban neighbourhood appears to be particularly hazardous for both males and females (as both qualitative and survey data for 2006-10 discussed in the previous section indicates). This may well explain the very substantial perceived reduction in short journeys in Eastern Cape and the fact that this applies to both males and females[6]. Qualitative data from the 2012-15 study adds further texture to this story. Indeed, in Eastern Cape Urban, where life on the street is extremely hazardous, for both genders, the potential for phone theft itself (already becoming evident in the 2006-10 period, see Porter et al. 2010) adds substantially to travel dangers, especially when on foot: *Phone thefts and attacks is a common thing here in both males and females. They (robbers) look at you, if you are not familiar to them, they attack you. Even when you are physically weak or drunk they attack you. They do it almost all the time. In the morning they target learners and people who are going to work (commuters), the same applies in the afternoon and evening. Their hot spots are between [this township and one nearby]. There are many taverns in that vicinity so they stay there and wait for their victims. Sometimes police come and patrol in that vicinity but not all the time. Some of these thugs carry knifes others guns I'm not sure whether those guns are legal or not.* [male, 23y]

Thefts of phones and other valuables were also reported in Gauteng Urban – one young woman aged 17 (whose mother now calls her regularly to check she is safe when she is out on the streets) was just returning home from a local store with her sister one evening when she was attacked at gun point by thieves who made off with her cell phone – but these events seem to be rarer than in Eastern Cape Urban.

[6] Interestingly, when data for all 8 South African sites are combined (i.e. including peri-urban, rural and remote rural sites) females are more likely than males to perceive reductions in their long distance journeys than men. This has led us to suggest that major safety considerations may encourage females, in particular, to reduce long journeys when they are able to do so. The isolation of data for poor, high density, urban areas suggests male vulnerability to attack may be higher here than elsewhere.

While possession of a mobile phone can add to young people's vulnerability to attack on the street, for young women in Eastern Cape Urban, in particular, there is much evidence in the 2012-15 study of the security role phones now sometimes play in terms of organising transport. One 18 year old secondary school girl explained how, if they are late finishing at school, they can call their principal who will then take them home by car, '*since it's not safe here in our township'*. Another recounted how she used to call a taxi to travel home from school in the evening even over very short [walking] distances '*because of the robbers'*. Many urban taxi drivers told us they now give passengers their mobile number as a matter of course, in the hope that this will lead to regular custom. At night, when dangers are especially great, young women often now report using their cell phones to arrange for private taxicabs to take them home, although the cab is expensive: *I use my cell phone to also arrange transport like calling a cab to come and take me, especially when I came late from work. I just call XXX, a cab driver, to come and pick me. The advantage of using a cab – it's safe, like it drops me here in the yard, unlike a taxi that will drop me on the road [where] I become vulnerable to thugs. So it's safer to use a cab. Even in town you know it comes straight to my work place, so I don't have to move around the streets and run away from thugs. But the most disadvantage of it is that its [costly] - hey like it cost R60 from town to here whilst in a [minibus]taxi its only R5 but that does not happen on daily basis* [woman 20y, Eastern Cape Urban].
But perhaps a comparable study of particularly poor and crime-prone high density neighbourhoods in the Global North would uncover similar scenarios.

The phone also presents opportunities to ease travel through virtual escorting and way-finding, as in the following examples. In Gauteng Urban a 12-year-old girl recounted how she had become separated from her sister in the city centre one day- [*suddenly], she was not there. All I could see was just a lot of strangers who were just busy walking around, I was so scared and I wanted to cry. I had my mother's phone with me so I sent a 'Please call me' message because the phone had no airtime. She called me immediately and asked me where I was. She told me to stand [there and] she came and took me.* Another girl around the same age who lives with her grandparents explained how phones came into her travel story when she had taken a taxi home after a visit to her mother in a peri-urban location. Immediately she reached the home taxi stop, she had sent her a *'personalised call me "arrived"'*, but then

her mother called her back to ensure not only that she was safe but that she was still in possession of the cash which had been sent with her for her grandparents.

Dangers associated with carrying money on journeys in this way have encouraged some people to use mobile phone-based banking services such as e-wallet: *I last called [aunt in East London] 2 days ago. . . I asked for money. She said I must wait until the month end. She uses e-wallet to send me money* (Eastern Cape, girl 18y). However, under one-tenth of each gender surveyed (in both settlements) said they had sent money by phone using mobile money services over the previous 12 months, while only a few additional percent had received money by phone (still well under one-fifth: the maximum recorded was 15.5% of males in Eastern Cape Urban). Since many adult South Africans already have bank accounts, bank transfers are a more common mode of moving larger sums of money (including by mobile phone) while small sums are regularly transferred simply by sending airtime [7].

Conclusion: Mobile phones and changing mobilities/transport landscapes

Mobile phones already look to be fulfilling some of their evident potential for supporting distance management across the world, both in emergency and everyday travel contexts, and in urban as well as rural settings. However, while in the Global North mobile phone usage appears to have done little, as yet, to improve traffic congestion and the overall reductions in motorised transport that are essential for reduced carbon emissions, in the two South African urban study sites discussed in this Chapter, the evidence for positive impact looks, in some respects at least, more encouraging.

Young people's physical mobility practices in these sites are substantially shaped not only by low disposable incomes but by fear. The widespread availability of mobile phones now interposes opportunities to both improve personal safety and to make better use of their limited funds for distance management, by substituting virtual for physical travel whenever feasible. While safety appears to be the principal factor behind the substitution of phone

[7] Vodacom is now withdrawing its MPESA services in South Africa because of low uptake: see http://www.bbc.co.uk/news/world-africa-36260348 There is less need for mobile phone-based MPESA-style mobile money services of the type so popular in countries like Kenya and Tanzania. On reflection, we should have asked in the survey about money transfers other than through mobile money services.

communication for many small daily (often pedestrian) journeys of both genders on the streets (especially in Eastern Cape Urban), financial considerations come more strongly into play when it comes to contemplating long (expensive) journeys by motor vehicle (though safety may still figure where the phone is brought to bear as a virtual escort of way-finder).

Taken together, the perceived reductions in both long distance irregular and short everyday journeys appear to be quite substantial. However, these reflections are based on our respondents' stories and perceptions of change: the extent to which they translate into lower than might be anticipated (pedestrian and motorised) traffic flows on the ground in these low income neighbourhoods needs further investigation. And, of course, if there are reduced numbers of people walking on the streets, what does this mean for health (obesity levels) and security? Arguably the presence of fewer people will actually increase the dangers of pedestrian travel, thus encouraging reliance on motorised transport for essential journeys: potentially a vicious, not virtuous, circle! A related question (raised earlier) concerns the extent to which substitution of phone communication for transport may also be occurring in those high density urban neighbourhoods in the Global North where precarity and fear of violence similarly prevail widely. Is widespread mobile phone usage perhaps encouraging substitution of virtual for physical mobility here too, in the absence of safe, good quality public transport? If so, what form does this take? Is growing immobility occasioned by precarity and fear, perhaps, one element contributing to the growing prevalence of obesity among poorer populations? Of course, however, any impact in terms of motor traffic volumes in both Global South and North may well be obscured by the mobility practices of the richer population who dominate private vehicle ownership.

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