

Lines across the desert: mobile phone use and mobility in the context of trans-Saharan migration

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In West and Northern Africa, mobile phone coverage has been expanding parallelly to increased attempts by Africans to migrate overland to Europe. This paper explores possible links between the two phenomena, looking specifically into the role of mobile phones in trans-Saharan migration. It provides a first detailed description of the telecommunication processes underlying contemporary trans-Saharan migration. An analytical framework is presented that helps to explain how mobile phones facilitate migration by interacting with the social and spatial factors shaping migrants' mobility. By drawing on this framework and fieldwork conducted among Congolese migrants in Morocco, it is shown that the expansion of the communication infrastructure is, on the one hand, only one of several factors that have turned the region into a more "transitable" space. On the other hand, the use of mobile phones is demonstrated to be central to the migration process: migrants draw on the unprecedented accessibility of contacts equipped with mobile phones to tie together novel, geographically expansive networks. Phones are also shown to be used by migrants' "helpers" for the purpose of internal coordination.

Keywords: mobile phones; migration; communication; Sahara; migrant network

1. Introduction

Since the 1990s, increasing numbers of migrants from Central and Western Africa have been attempting to reach Europe overland, crossing the Sahara and the Mediterranean Sea. While it is clear that the development of this phenomenon is attributable to a range of factors, it also coincides with the spread of mobile telephony on the African continent. This paper seeks to explain the role of mobile phones in trans-Saharan migration processes by combining research on trans-Saharan migration, scholarship on the developmental impact of mobile phones on the African continent and fieldwork findings. Focussing on the trans-Saharan journeys of Congolese migrants, I seek to explain how their migration practices have been influenced by the introduction of mobile phones.

As late as the 1970s and 1980s, the movement of sub-Saharan Africans northwards, crossing the Sahara, was a rather localized phenomenon. This changed dramatically during the 1990s and 2000s. "In a few decades," Brachet (2007, p. 55) writes, "we have observed the shift from a circumscribed, trans-border migratory space of proximity to an international, even intercontinental migration system connecting far-away places."¹ Many authors concord with Brachet's finding that there now exists a trans-Saharan migration space that, in principle, integrates all of West Africa and parts of Central Africa with most of Europe (Bensaâd, 2005, 2009a; Bredeloup & Pliez, 2005a, 2005b; Collyer, 2006; Ndiaye & Robin, 2009).

Parallel to the expansion of the trans-Saharan migration space, another process has been unfolding: the explosive spread of mobile phones. This, along with the potential impacts on –

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broadly defined – development on the African continent has caught the attention of a second group of scholars (de Bruijn, 2008; Brinkman, de Bruijn, & Bilal, 2009; Donner, 2005, 2006; Hahn & Kibora, 2008; Kibora, 2009; Maroon, 2006; Molony, 2008, 2009; Slater & Kwami, 2005).

A number of scholars proposed that the spread of mobile telephony and Africa-Europe overland migration are causally linked. This argument has been formulated most vocally by Collyer (2007, p. 574). Collyer claims that the fragmented journeys migrants undertake in the trans-Saharan space “would be virtually impossible without cheap mobile communications” (see also: Bensaâd, 2009a; Brachet, 2007; Collyer, 2006; Ndiaye & Robin, 2009; Schapendonk & van Moppes, 2007a; Schapendonk, 2010). This paper helps us to further investigate, test and challenge this claim by making both theoretical and empirical contributions. I first establish an analytical framework in order to help us understand how mobile phones can impact migrants’ mobility. By drawing on interviews conducted with trans-Saharan migrants, I add to this a detailed description of how migrants use mobile phones during their migration journeys.

The paper is organized as follows: the first section outlines the analytical framework; the second summarizes the methods used during five weeks of fieldwork in Morocco; the context necessary to conceive trans-Saharan mobility and position the role of the mobile phone therein is laid out in the third section; the fourth section presents an analysis of the multiple usages of mobile phones during the migration process, drawing on material gathered during fieldwork.

2. Analytical framework: conceiving the interactions between mobile phones and migrants’ mobility

It has been argued that phones, both mobile and landline, rather than having linear, straightforward effects, should be conceived as “facilitating devices” that make possible “action in many directions” and function as “amplifiers of human agency” (de Pool, 1977, pp. 3–4; cf. Donner, 2010). It is therefore not easy to theorize their interaction with a social process as complex as migration. A further complication is the fact that migration theory has very little to say about the migration journey itself, and is almost silent concerning the use of technology therein (cf. Schapendonk, 2010). Therefore, to capture how the use of mobile phones influences trans-Saharan migration processes, I employ an adapted version of the “mobilities” approach developed by sociologist Urry (2007) and others.

One of Urry’s central arguments is that in each case, mobility is materially and socially organized. Without attention to one or the other dimension, explanations of movement are flawed. I thus suggest that we must consider (a) how mobile phones interact with the “spatial, infrastructural and institutional moorings that configure and enable mobilities” (Hannam, Sheller, & Urry, 2006, p. 3) – that is, how the phones interact with what I call in this paper the “topography of mobility;” and (b) how mobile phones influence migrants’ social networks and the scope of services these provide.²

For the first consideration, we must begin by looking into the three major factors constituting the topography of mobility in the trans-Saharan space, all of which have undergone profound transformations in the last two decades. These are: the region’s communications infrastructure, its urban and road infrastructure and changing migration regimes, especially those of the European Union (EU).

The very question of how mobile phones influence trans-Saharan migration has only recently become meaningful in light of the rapidly expanding business operations of mobile telephone providers, who have introduced a substantive and accessible communications infrastructure to large parts of the trans-Saharan space for the first time. This development implies that we not only have to focus on the new benefits of mobile phones over landline phones, but also on basic connectivity as such (Hahn & Kibora, 2008).³

As for the transportation infrastructure, the development of communications is primarily complementary. For one, the development of a communication infrastructure in most cases follows the lines of the existing road and urban network. For another, telecommunications can increase “the effective level of service” that transportation networks can deliver by enabling complementary services (such as the transfer of money) to be offered *en route* (Mokhtarian, 1990, p. 235). With the arrival of the mobile phone, a long-standing trade-off between telecommunications and transportation has also been resolved. As Ling and Yttri point out, previously, “a person in transit was *incomunicado*.” Now, mobile telephony allows for “nearly continuous and ubiquitous communication under transport” (2002, p. 143, emphasis in the original; cf. Levinson, 2006).

Lastly, in the field of migration policy, communication and information technology has made possible new forms of information sharing and cooperation agreements between states. The EU member states especially are increasingly using technology in their attempt to curb migration, this counteracting the facilitation of mobility by the transportation and communication infrastructure. The development of these factors in the trans-Saharan space will be discussed below.

For the second consideration, we have to look at the social ties and networks that migrants draw on to organize their migration journeys, and at how mobile phones influence these. On the one hand, migrants use mobile phones to maintain links to friends and family members. According to Migration Network Theory (MNT), one of the prominent theoretical approaches in migration studies,⁴ these ties serve at least three purposes. First, they can provide a source of vital information for the migrant regarding destinations, work opportunities, routes, transportation arrangements and accommodation. Second, they can act as an insurance mechanism when network members need protection or financial assistance, reducing the potentially severe financial and security risks at the different stages of the migration process. Third, it is assumed that migrant networks lower the emotional or psychological costs of the migration project, since its members can provide each other comfort and company.

In addition or as an alternative to these personal linkages, migrants often enter into professional relationships with third persons (such as smugglers or drivers) who provide key information and logistical support to them. These professional ties are emphasized by proponents of the “migration as business” model.⁵ The question thus is how the use of mobile phones shapes the migrants’ links to these various actors and impacts on the functions the ties provide.

Four effects of mobile phones on social networks are relatively clearly discernible. First, telephones make it possible to add actors to personal networks without the necessity of meetings, thus promoting larger and more powerful networks. Second, telephones help maintain social ties over distance by enabling regular contact regardless of physical separation. Third, telecommunications and especially mobile phones enhance a social network’s functionality by enabling the reachability of network members. If physical connectivity is ensured, the carrier of a mobile phone – if willing to share her number and answer the phone – becomes reachable at any time and place (Castells, Fernandez-Ardevol, Qiu, & Sey, 2007). Lastly and correspondingly, telecommunication permits the coordination of mobility between several persons and loosens the constraint to pre-arrange (Manvell, 2006; Mokhtarian, 1990). Given that all communication partners are endowed with operational mobile phones, this functioning can take the form of “microcoordination,” whereby appointments are made and changed in real-time, providing a great deal of flexibility (de Souza e Silva, 2006, pp. 34–35).

3. Data

Research for the empirical part of this paper was carried out in Rabat, the capital of Morocco, during five weeks in March/April 2010. In recent years, the city has become host to a significant population of clandestine sub-Saharan migrants. As the large majority of migrants enter and

leave Morocco illegally, no official figures exist on their number. However, based on a census conducted in January 2010, Médecins Sans Frontières estimate that there is currently a fluctuating population of 4500 sub-Saharan migrants in Morocco (Médecins Sans Frontières [MSF], 2010). Men make up the large majority of these migrants (around 80% in Collyer's (2007) sample of 100 migrants), although the relative number of women seems to be on the rise (Lahlou, 2005; MSF, 2005). In terms of nationality, migrants from the Democratic Republic of Congo (DRC) and Nigerians are consistently cited among the biggest groups, each constituting around 20–35% of researchers' samples (Barros, Lahlou, Escoffier, Pumares, & Ruspini, 2002; Collyer, 2007; MSF, 2010). Other nationalities frequently encountered by researchers in the field are Malians, Senegalese and Ivoirians. Migrants' level of education ranges from no schooling to university graduate level, but is assumed to be relatively high by sub-Saharan African standards (Lahlou, 2005). Congolese migrants are reputed to be better educated in comparison with other nationalities (Goldschmidt, 2002; Pian, 2009b).

My own sample consists of 20 in-depth interviews with sub-Saharan migrants, each typically lasting about 90 minutes. Since I used snowball sampling, with my first contact being a national of the DRC, my selection of informants is strongly biased toward migrants from the DRC. Of the 13 men I interviewed, 11 come from the DRC, 1 from Côte d'Ivoire and 1 was of Sudanese/Ghanaian origin. Of the seven women, six came from the DRC and one from Congo-Brazzaville. All interviews were conducted in French, and all but two, recorded, transcribed and translated into English.

The strong bias in the sample toward migrants from the DRC means that no claims can be made concerning migrants of other nationalities. This is of particular importance as statements by my informants and in the literature imply that there are significant differences between the experiences of migrants of different nationality (Goldschmidt, 2002). For example, trafficking played no role in the trajectories of my informants, but seems to be an important element in migrations of Nigerian nationals (Carling, 2006; Goldschmidt, 2002). Second, the research approach favored contact with independently traveling migrants. Neither were migrants traveling in tightly controlled groups taken account of, nor those moving under the supervision of highly professional smugglers who would make sure that their customers do not speak with researchers. Hints in the literature and from my informants strongly suggest that these forms of migration exist (Collyer, 2007), but they could not be captured with the methodology pursued here.

4. In context: the topography of mobility of the trans-Saharan space and migrants' social organization

As stated in the analytical framework, migrants' movements and their communication practices can only be understood with reference to the transformations of the topography of mobility that have been unfolding in the trans-Saharan space, and with regards to the social ties migrants draw on during the migration journey. In the following paragraphs, a brief overview of these transformations and the migrants' social organization is therefore presented.

4.1. *Topography of mobility*

A first group of factors shaping mobility in the trans-Saharan space concerns its rapid urbanization and the expansion of its road infrastructure. During the last 50 years, the population of the countries forming the Economic Cooperation Organisation of West African States has quickly been growing, from around 78 million in 1960 to 300 million in 2007, leading to the development of an ever denser urban network in the region (Ndiaye & Robin, 2009). Equally faced with strong demographic growth, North African states have been actively encouraging the

development of secondary cities in their southern border regions (Brachet, 2007; Bredeloup & Zongo, 2005; Pliez, 2004). Alger and Tripoli in particular invested heavily in transportation infrastructure linking their southern regions to their coastal markets and setting up large-scale agricultural projects that provide work opportunities for passing-through migrants (Bensaâd, 2009b; Spiga, 2005). Perhaps the most spectacular example for this process is the Southern Algerian city of Tamanrasset. The city now counts around 100,000 inhabitants, up from 50 in 1920 (Bensaâd, 2009b; Nadi, 2007). When during the 1990s more and more clandestine transit migrants arrived, services adapted. Nowadays, everything the (irregular) trans-Saharan migrants need for their onward journey can be bought or organized in this veritable migration hub (cf. Bilger et al., 2006): water supply, petrol, food, money, shelter and forged papers.

The second transformation concerns the dramatic expansion and improved accessibility of the communication infrastructure in the trans-Saharan space. In many parts of Africa, and especially in the Sahel countries of Mali, Mauritania and Niger, where some of the most important migration hubs are located, the introduction of the mobile phone has been a revolution in basic connectivity. As late as 2001, telephone coverage was extremely low, and the costs were exorbitant. For instance, in Mali, less than 1 telephone per 100 inhabitants existed at that time, and costs were among the highest on the continent – this is one of its poorest countries (Mbarika, Okoli, & Byrd, 2005). Mobile phones and the internet arrived in the late 1990s, but were initially only affordable for the wealthiest layers of society. In 1998, the number of mobile phone subscribers in Mali was 6500, in Algeria 19,000 and in Niger 1300 (United Nations Economic Commission for Africa [UNECA] 2000, www.uneca.org). The steep rise in mobile phone coverage in selected countries dealt with in the paper can be seen in Table 1.

From the mid-2000s on, mobile phones became affordable to the majority population. In Mali, for example, mobile phones spread from the capital to provincial areas from 2005 on (de Bruijn, 2008). The trans-Saharan migration hubs were no exception to this trend. Figure 1 shows a map of the trans-Saharan space featuring the major migration routes and mobile phone network coverage in the region.

As can be seen from the map, all of the major migration hubs (Gao, Agadez, Tamanrasset) in the trans-Saharan space and many smaller settlements strategically placed on the migration routes such as Kidal in Mali and Arlit in Niger had network coverage by the late 2000s.⁶ However, as can also be seen from the map, there remain large stretches where migrants remain “incommunicado while in transit,” especially in the Sahara proper. In parallel to the spread of mobile coverage, what Brachet (2007, p. 192) calls the “Western Union revolution”

Table 1. Mobile and landline phone coverage in selected African countries.

Year	Mobile phones per 100 inhabitants				Landline phones per 100 inhabitants			
	Congo (Dem. Rep.)	Mali	Algeria	Morocco	Congo (Dem. Rep.)	Mali	Algeria	Morocco
2000	0.0	0.1	0.3	8.1	0.0	0.4	5.8	4.9
2001	0.3	0.2	0.3	16.4	0.0	0.5	6.1	4.1
2002	1.0	0.4	1.4	21.0	0.0	0.5	6.2	3.8
2003	2.2	2.2	4.5	24.7	0.0	0.5	6.5	4.1
2004	3.5	3.5	15.1	31.0	0.0	0.6	7.7	4.3
2005	4.6	6.4	41.6	40.6	0.0	0.6	7.8	4.4
2006	7.3	12.5	63.0	51.9	0.0	0.7	8.5	4.1
2007	10.5	20.4	81.4	64.1	0.0	0.6	9.1	7.7
2008	15.5	27.1	78.6	72.2	0.1	0.6	8.9	9.5
2009	14.3	34.2	93.8	79.1	0.1	0.7	7.4	11.0

Source: ITU World Telecommunication/ICT Indicators Database, 2010.

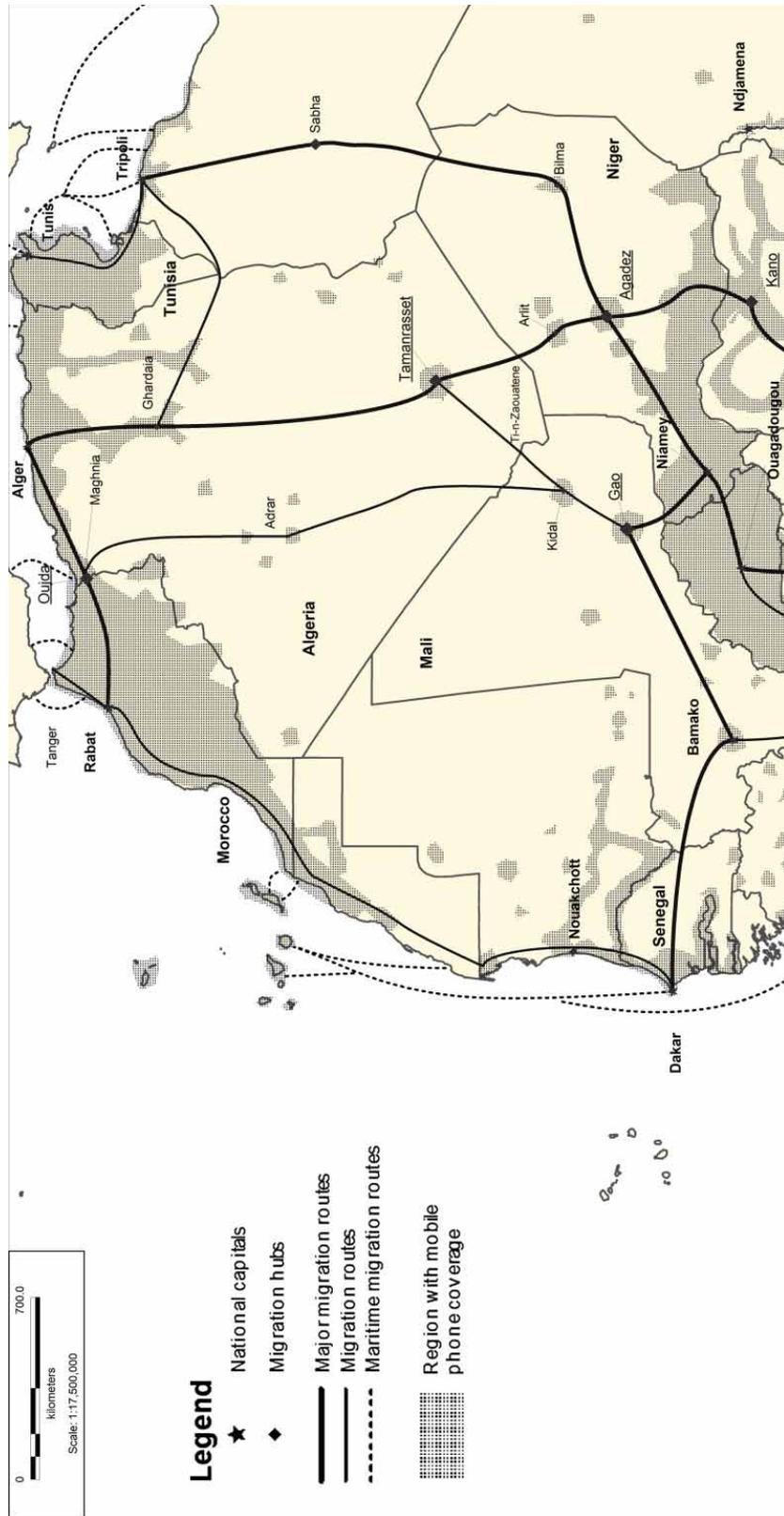


Figure 1. Overland (and maritime) migration routes in the trans-Saharan space and mobile network coverage around 2007 – 2009. Graphic by author based on map by de Haas (2007) and GSMA Coverage World Poster (2009).

has now reached the trans-Saharan space. The company now has branches in the three important migration hubs of Gao, Tamanrasset and Agadez;⁷ in Agadez the first office opened its doors in 2000 (Brachet, 2007). Here migrants can, at least in theory, receive money from virtually any country in the world.

The mobility enabling character of these spatial transformations is in stark contrast with a third factor shaping mobilities in the trans-Saharan space: the transformation and continuous tightening of the regional migration regimes. Especially in the – broadly conceived – European “borderland” (encompassing the Maghreb states and the adjacent countries of the European island territories off the African coast), movement for migrants has become exceedingly difficult due to the tightening of the European migration regime.⁸ Starting in the early 1990s, European countries began to externalize their migration policies, and during the last decades some measures directly affecting the overland transit regions have been initiated. The EU has exerted considerable pressure on Maghrebian and Sahel countries to adopt restrictive immigration legislation. Several states including Morocco, Algeria and Tunisia, which also face strong domestic anti-immigration resentments, subsequently adopted laws largely prohibiting migration of sub-Saharan Africans to and across their territories (Bensaâd, 2009b; Boubakri & Mazzella, 2005; Pian, 2009a).⁹ In addition to this, controls of the Moroccan land borders have been extended under EU sponsorship (Collyer, 2007). Several scholars now cite this process as the major trigger for the development of the overland migration routes. As easier alternative routes are closed down, migrants opt for overland routes. While these are hazardous, they are also harder to control (Bensaâd, 2009c; Collyer, 2007; de Haas, 2008; Goldschmidt, 2002).

EU member states actively rely on communication technology in their bid to curb migration. For one, national authorities intercept migrants’ phone calls made to contacts residing in Europe (though primarily in the context of human trafficking investigations, cp. Prina, 2003). Information and communication technology is also used to detect and apprehend migrants. This occurs on a large scale. An example is *Sistema Integrado de Vigilancia Exterior*, the migration detection system that Spain has erected along some of its maritime borders that has made it extremely hard for irregular migrants to cross the Strait of Gibraltar or reach the Canary Islands without being apprehended (Carling, 2007). In addition to this, the EU has set up a network of Migration Liaison Officers who communicate information on irregular migration to the authorities of various EU member States (for example, on routes, modes of organization, etc.) via ICONet, a web-based communication platform specifically developed for this purpose (Carrera, 2007).

4.2. *Mobility enabling social ties*

In order to orient their migration projects, trans-Saharan migrants, on the one hand, rely on social networks consisting of peer migrants. As outlined by MNT, these provide them with the necessary information on housing, work and transport to continue the journey (cf. Brachet, 2005; Bredeloup & Pliez, 2005a, 2005b; Schapendonk & van Moppes, 2007b; Streiff-Fénard & Poutignat, 2006). Of special importance are “forward linkages” to successfully settled migrants who communicate information to those who stayed behind (Alioua, 2003). On the other hand, and much in line with the Migration Business model, migrants regularly depend on professional linkages to smugglers (Collyer, 2006; MSF, 2005).

In the Sahel, where fewer restrictions are placed on migrants’ movements (and arguably on the operation of migrant businesses) than in the European “borderland,” migrants typically draw on professional smuggling networks. In the case of my informants, these were intermediate-level smuggling operations (i.e. with a certain degree of organization involved, but short of highly organized, mafia-style networks). These networks are led by “small entrepreneurs”

(Schapendonk, 2010, p. 130) who are usually based in one of the migration hubs. The networks generally comprise one “organizing smuggler,” who collaborates with a limited number of “guides” who pick migrants up and accompany them along certain stretches of the journey. All these services are payable. Thus, at least in the Sahel region, there appears to exist a, however imperfect, “smuggling market,” where smugglers offer their services (cf. Bilger et al., 2006). “Migration, that’s a business,” several of my informants stated.

However, especially in Algeria and the Moroccan border regions, smuggling services are carried out not by professionals, but by so-called *chairmen*, the leaders of the self-governing structures that have been set up by generations of migrants in most of the major migration hubs. The *chairmen* system is one of the cornerstones and peculiarities of the trans-Saharan migration space.¹⁰ The self-organization of sub-Saharan migrants in these places is based on the principle that nationals of the same country live together, and are taken care of by a self-appointed or elected *chairman* of their so-defined community.¹¹ Among other functions, *chairmen* are in charge of travel logistics. In the mentioned migration hubs (also see Figures 1 and 2), *chairmen* organize migrants’ onward journeys, often in collaboration with hired “guides” for a fee (in the case of the Congolese community, that fee seems to be a relatively moderate premium on the amount the *chairman* has to use to “organize” necessary papers, pay the “guides,” bribe officials and so on; cf. Pian, 2009b).

Migrants thus use a range of social ties to orient their journeys, drawing on “forward linkages” to succeeded migrants, professional contacts with smugglers and socio-professional links with their respective *chairman*. As these multiple-tie networks combine elements of both MNT and the Migration Business model, they are best described as “hybrid networks” (Schapendonk, 2010).

5. Moving and communicating in the trans-Saharan space

Having set the scene by outlining the spatial and social factors shaping mobility in the trans-Saharan space, I now follow with a section exploring the use of mobile phones in the migration process proper. For the sake of analytical clarity, the journey is subdivided into several legs. I will proceed by presenting interview material first, and then discuss some implications of wider importance. One of the interviews with Bosco,¹² a 33-year-old male migrant from the DRC, due to its high representativeness is used as a paradigmatic case throughout this section. Bosco’s journey is illustrated in Figure 2.

5.1. Preparations

Bosco had left Kinshasa, the capital of the DRC for Cotonou, Benin, in 2002 and had subsequently lived in the Beninese economic capital for five years. However, his life was hard, and so he considered moving on. Calling them on their mobile phones from a telephone booth, he contacted friends with whom he had shared a flat for four years, but who had recently travelled on to Alger. They told him that working conditions and wages were better in Algeria, even though frequent raids by the Algerian migration police posed a problem. Bosco became interested, but contacted another friend in Dakar via email, querying him about the living conditions in Senegal. Weighing up his options, he came to the conclusion that moving on to Algeria was his better choice. He exchanged views with his friends in Algeria a few more times via phone, and eventually decided to leave Benin for Algeria. His friends had given him the number of a smuggler based in Gao, Mali, whom he then called several times to confirm that the information (concerning routes, prices and risks) his friends had given him was correct. (Bosco, personal communication, 7 April 2010)

As in the above example, in a first step aspiring migrants will typically contact a friend located in the country they are heading for. This person subsequently becomes the key informant for the

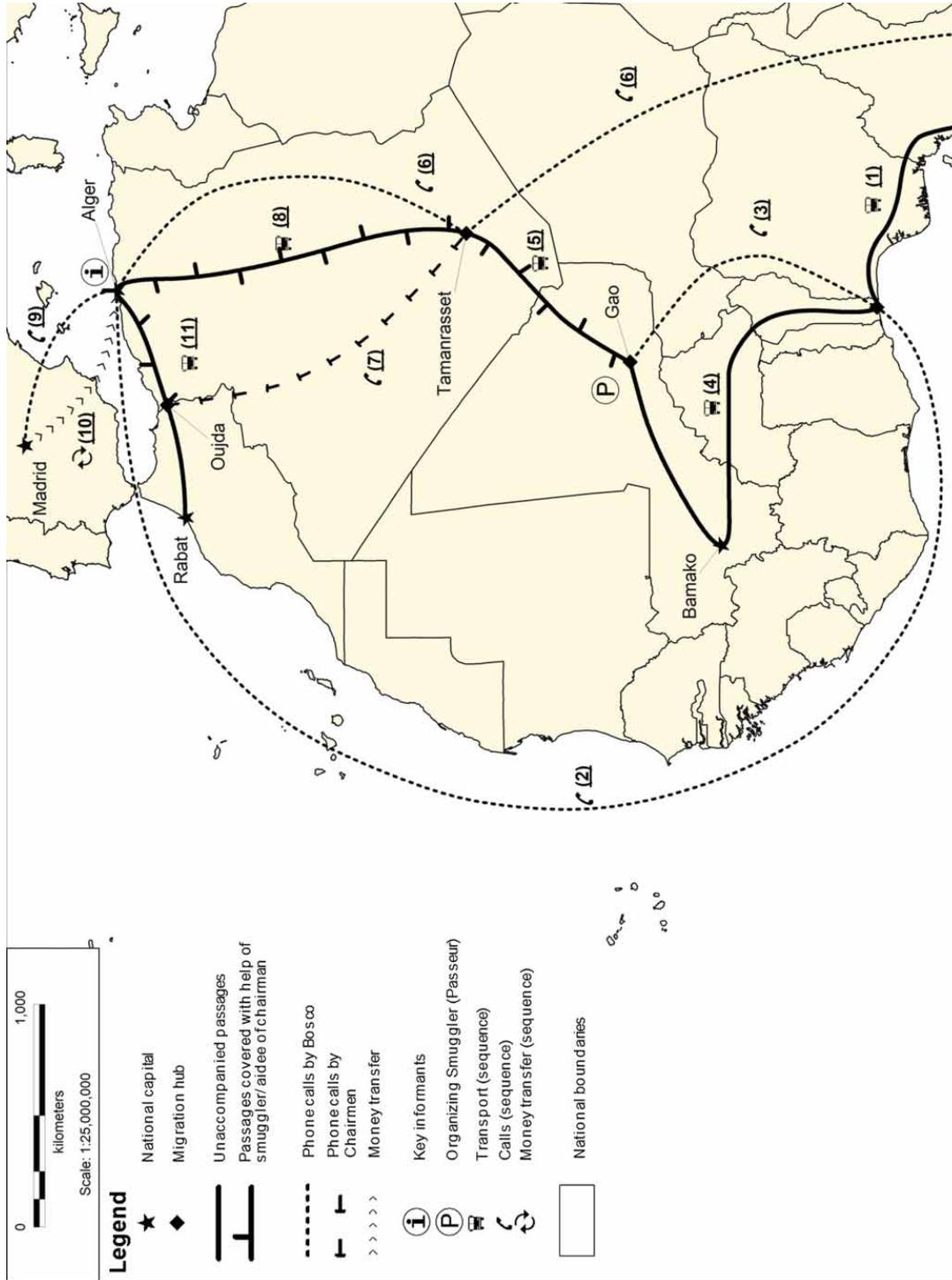


Figure 2. Bosco's trajectory and communications. Map by author.

migrant. The informant, in repeated telephone conversations, will supply the migrant with information on routes and prices and risks involved in the journey. The informant will also give the aspiring migrant the number of a smuggler that he or she knows who will organize the first leg of the journey for the migrant. These communications are regularly conducted via phone.

Modern means of communication thus enable migrants to construct “hybrid networks” consisting of both friends and smugglers. These form the central social institution guiding their movements. Usually, migrants are linked to their key informants by “strong ties” in the sense of Granovetter (1973). Often, the informants are childhood friends or people closely befriended during the journey. Given the centrality of the key informant, migrants try to choose an informant with whom they have previously established a relationship of trust; and they are well advised to do so. While research shows that mobile phones can be used to maintain trust (Licoppe & Heurtin, 2002; Molony, 2006), it also shows that people are more likely to tell lies via phone, especially to people with whom they have had no prior relationship (Valley, Moag, & Bazerman, 1998).

This Anne, a 30-year-old migrant from the DRC and her 33-year-old boyfriend Jean, who relied on a rather distant friends-of-friends-type of key informant (i.e. a “weak-tie”), had to learn by bitter experience. They recount:

Before we left Benin in 2007, we had called a “friend” in Morocco who told us that, given our Congolese papers were in order, we could just take a ferry to Europe. Now that I am here, I realise that this was completely wrong, but at the time we trusted him and decided to come to Rabat. I now also know that our “friend” collaborated with the smuggler we were using. Making us come to Morocco by telling us that it was easy to reach the EU from Morocco would earn him a commission. (Anne, personal communication, 9 April 2010)

The mobile phone can play a crucial role in the construction of hybrid networks mainly because it ensures basic connectivity. For Bosco who used a smuggler based in Gao, a major town in arid northern Mali, and whose friends resided in the Algerian capital – both locations previously connected to the region’s analogue phone network – the construction of the hybrid network could theoretically have been based on landline connections. Other migrants, however, reported that the smuggler they used lived in Arlit, Niger – a small desert town that has been connected to an affordable communication infrastructure only with the arrival of the mobile phone. Especially in these later cases, mobile phones “changed the proximity” (in the sense of Abler, 1977) of the aspiring migrant to the informant and to the smuggler, making possible the construction of a geographically spread out, yet usable network spanning several countries.

5.2. *Journey to the migrant hub*

Embarking on his journey to Algeria, Bosco went by bus first to Ouagadougou, in Burkina Faso, and then to Bamako, the Malian capital. He arrived at dusk but did not know how or where to spend the night, so he called his friends in Alger. They told him to just sleep at the bus stop and then continue to Gao, where the smuggler would welcome him the next day. During the journey, Bosco communicated with his friends and smuggler several times daily, they using their mobiles, he using phone cabins or sending text messages. Having arrived in Gao, he sold his mobile to raise money to pay for the next leg of the journey that would bring him to Ti-n-Zaouatene, a village located at the Malian/Algerian border. (Bosco, personal communication, 7 April 2010)

In a second step, migrants commonly travel to one of the migration hubs – Gao in Mali or Agadez or Arlit in Niger – often coordinating their movement very closely with their key informants and their organizing smuggler.¹³ In the striking example above, Bosco called his friends living over 2000 km away to receive the minor information on how to spend the night. Such close coordination with the key members of the hybrid network is only possible if the migrant’s contacts possess mobile phones. In fact, the migrants themselves do not depend so much on their

phones; in the example, Bosco can even afford to sell his mobile phone *en route*. What migrants do rely on is that their informants carry mobile phones, making them continuously and ubiquitously reachable. It is the reachability of the helpers that makes possible the near “microcoordination” of the migrant’s movement, not their own possession mobile phones.

The reliance on mobile phones is not without risks, however. In order to keep up their network, migrants need to keep account of long and complex international mobile phone numbers. Losing track of them can have severe consequences. “Since mobile phones can be seen as *the* node of a social network, migrants may easily fall out of networks or lose social ties in case they lose their phones,” Schapendonk (2010, p. 23, emphasis in the original) observes. One female migrant I interviewed was desperate because her phone had been stolen. This meant that she had lost contact with nearly all her friends and (potential) helpers. Migrants are very much aware of this problem, and many thus take precautions. Several migrants reported keeping small address books hidden in their clothes in which they copy the most important numbers. They may also store contacts online which they can retrieve if they lose their phones.

5.3. In the “borderland”

Another driver had taken Bosco from Ti-n-Zaouatene to Tamanrasset, the regional capital of Algeria’s desert South. Since he had run out of money, he took up work in the construction of Tamanrasset’s new university. He reduced phone calls to the essential: those for trying to raise money from his migrant friends (in vain, as it turned out). After selling his mobile in Gao, he had to go to the phone cabins in the centre of town in order to make calls – a risky undertaking since he chanced being apprehended by the Algerian migration police, who would deport him back to Ti-n-Zaouatene. After four months of work, he had earned enough money to continue his journey. He thus paid the Congolese chairman to arrange the bus journey for him to Alger, where he joined his friends. (Bosco, personal communication, 7 April 2010)

The third step – the journey through the borderland – involves hazards and unforeseen eventualities for the migrants. In this particular space, with the many climatic and legal constraints on the migrants’ movements, the mobile phone can assume great importance as a tool to alleviate financial problems or other emergencies. These emergencies can be very concrete. For instance, in 2005 the Moroccan authorities deported trans-Saharan migrants, including women and children, *en masse* to the desert border with Algeria after several hundred migrants had stormed the fences of the Spanish enclave Ceuta. Migrants then used their mobile phones to send out calls for help to NGO representatives, journalists and academics.¹⁴

More often, however, migrants use their phones in order to exploit their social networks as a financial insurance mechanism. This can be useful in cases where they have underestimated costs, were overcharged, lost their money or were robbed.¹⁵ However, under the present conditions, receiving money in the trans-Saharan space is a complex process, which has to be understood as rooted in the different layers of the “topography of mobility” and the social aspects of mobility. Some of these issues are raised in the anecdote told by Guy, a 30-year-old man from the DRC, on the problems of receiving money in the space of restricted movement:

In Ti-n-Zaouatene [a settlement on the Malian-Algerian border, see Figure 1]. . . communication is very difficult. . . there are no phones, nothing works. . . To communicate, you have to go to the Tuareg who have satellite phones. If you have someone that will send you money, they will accept that you make a call. Since there is no Western Union in Ti-n-Zaouatene, your friends – if you have any – have to send money to a contact of the Tuareg in Tamanrasset, who will bring the money to Ti-n-Zaouatene. Of course, all this costs. . .

[But] even if you are there [in Tamanrasset], you have to invest a lot in communication. If you do not want to be caught by the police, you have to use a mobile phone, which is expensive, though. . . [what is more] to make your friends send money, you have to call them all the time, every day,

twice a day... So if you earn five Euros a day, you might spend three Euros on communication, because so much depends on it. To leave the place, you need someone who sends you money. (Guy, personal communication, 19 April 2010)

In order to receive money, migrants need access to money transfer services such as Western Union and to telecommunications. However, a location will only be equipped with a money transfer service when there exists a market and the necessary communication infrastructure to support it. Receiving money therefore depends on the general development of a region's topography of mobility.

Given the availability of services, migrants use phones to convey their needs over distance to potential sponsors – typically “strong tie” contacts located elsewhere. Often, multiple calls are necessary to mobilize such help. Two interviewees reported that they had to call their mothers first, who then, with their maternal authority and persuasiveness, would convince potential sponsors (in these cases siblings and friends) to remit money to them. As the costs for communication remain very significant, a further condition enabling migrants to receive money may be the availability of work opportunities. Given that migrants can afford it, they usually prefer to use mobile phones (rather than public landline phone booths, which are also often available in the migration hubs), as this allows them to make calls from the relative safety of their hiding places.

Finally, the mobile phone gains importance for trans-Saharan migration as a tool used by the *chairmen* – the organizers of the desert legs of the journey. While communication between the migrants and the *chairmen* is mainly conducted from person to person, the *chairmen* of the different migrant hubs communicate extensively with each other via mobile phone. This is reflected in what Erik, who served as a *chairman* for the Congolese community in Tamanrasset, reports:

When I was chairman in Tamanrasset, people would come to me to have their onward journey organised. I would make them package deals to Maghnia [a settlement located on the Algerian-Moroccan border, see Figure 1]. I would then call the chairman in Maghnia to tell him that I have sent, say, four people to him... As recompense, the chairman in Maghnia would send me some money. [Author: By Western Union?] No, often he would send me telephone credit. He would buy cards where he was and send me the charging codes, which I could then sell to other people here. (Erik, personal communication, 10 April 2010)¹⁶

Chairmen, and presumably smugglers too,¹⁷ thus use the phone in one of its classical functions: the coordination of mobility. However, in the hands of creative users, the use of the mobile goes beyond this basic functionality. Like Bosco, some migrants turn the phone into an object of investment (cf. A. Bensaâd, personal communication, 1 April 2010). Others, like the *chairmen* of the trans-Saharan space, use the technology as a mode of payment.

(Mobile) communication technologies thus interact with both the social and the material/institutional aspects of trans-Saharan mobility. For one, the phone quite clearly enhances the spatial mobility infrastructure. Money transfer services such as Western Union could not function without telecommunication technology. What is more, from the viewpoint of the migrants these services only function as complementary to the mobility infrastructure if they, too, have access to telecommunications. In the trans-Saharan space, mobiles have made these communications safer and more practical.

As for the ties which form the social dimension of mobility, the mobile phone seems almost omnipresent. The way migrants nowadays forge and use their often geographically extremely stretched-out hybrid networks largely depends on the use of mobile phones by network members, if not so much on the migrant herself. Access to smugglers in remote locations and the near microcoordination of the migrants' movements are not fathomable without the virtual ubiquitous reachability facilitated by mobile phones. *Chairmen*, and presumably smugglers, rely on the mobile to communicate with their peers and coordinate with their collaborators.

Yet there remain legs of the migration routes which for the moment remain without mobile phone coverage. These are the most difficult pieces of the journey for the migrants to traverse in many respects; even so, it is perhaps this very vulnerability migrants experience in the absence of an accessible communication infrastructure that is the best proof of the importance mobile phones have assumed for the migration journey.

6. Conclusion

Mobile phone coverage has expanded in the trans-Saharan space parallel to the increase in over-land migrations. This expansion of the communication infrastructure is one of several spatial transformations that have turned the region into a more “transitable” space. This paper has, for the first time, presented an analytical framework and detailed evidence on how and to what effect mobile phones are used in the process of trans-Saharan migration.

Definitive conclusions concerning the impact of mobile phones remain elusive since data are scarce, and the task of working out the exact influences of a technical novelty that can be used in a plethora of different ways on such a complex social process as migration is extremely ambitious. However, it has been theoretically and empirically shown that mobile phones have a transformative influence on the ways trans-Saharan migration journeys are organized and conducted. In terms of theory, it has been shown that phones have the potential to facilitate migration by enhancing existing infrastructure and by broadening and making more usable migrants’ networks. At the same time, it has been demonstrated that communication technology is also used by state authorities to control and curb migration.

Empirical evidence has been presented to show that migrants use mobile phones to tie together novel, geographically expansive hybrid networks comprising professionals and such migrants who have already succeeded on a leg of their journey. Often, the helpers are located in remote places where basic connectivity has been established for the first time with the arrival of the mobile phone. Mobile phones are used to maintain a usable level of contact between migrants and the other network members. It has been shown that migrants depend much more on their helpers having phones and being reachable than possessing mobiles themselves. Yet for migrants, too, the mobile can be handy, be it as a convenient means of communication from a secure place in the space of restricted movement, or as an investment item that can be sold if additional cash is needed. Several questions concerning the use of mobile phones in the context of trans-Saharan migration, however, remain unanswered and would lend themselves to further fieldwork investigation. For example, do migrants take measures to protect their identity vis-à-vis law enforcing authorities, for example, by using pseudonyms or codes? What about the communication practices of the migrant’s personal and professional helpers? What is the size and composition of their networks? To what extent are smugglers, *chairmen* and other helpers linked to each other? In what ways do these groups of people employ mobile phones? Do migrants and their helpers also draw on other information technology?

As this paper rather narrowly focuses on mobile phone usage, there is a danger to essentialize technology; arguably more important for the migrants’ movements than the phone is the existence of urban centers in the Sahara-Sahel region. Migrants can receive money in Tamanrasset *because* these are urban conglomerations that provide a market for agencies such as Western Union, and the communication infrastructure and work opportunities that enable them to send out calls for support.

What can be said about the future role of the mobile phone in migration? In the industrialized countries, “smart” mobiles approach the status of portable PCs in terms of functionality and begin to make the Internet ubiquitously available. What implications could it have when migrants can, at any point in their journey, access the wealth of information and multiple

means of instant communication that the internet offers? Closer to the trans-Saharan space, in East Africa, instant payment by mobiles is spreading. What if these services become available on the migrant routes as well, making it possible to receive money without having to rely on branches of companies like Western Union? Of course, these potentialities remain far off the current realities of the trans-Saharan space. The basic communication layer remains to be applied to much of the space. Illiteracy may well prevent the use of sophisticated technical devices, poverty the extensive use of “mobile money.” However, as a general trend it seems clear that mobile technologies open up new opportunities for the conduct and organization of mobility.

At the same time, immigration policies will remain one of the most important space-shaping factors. Migrants’ ability to organize their journeys has been enhanced by employing technology and drawing on international networks but, in tandem with this, so has the capability of European states to restrict migration. In their efforts to control migration flows, the latter are also employing powerful technology and setting up potent networks, not least in the form of Migration Liaison Officers. That crossing the Sahara has become easier with access to mobile phones does not mean that reaching Europe has.

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Notes

1. All citations from authors or informants writing or speaking French have been translated by me into English. Any mistakes are my responsibility.
2. My analytical framework shows considerable similarities to de Bruijn’s (2008) approach of “communication ecology” and also bears resemblance to Bensaâd’s (2009c) analysis of migration routes as “interfaces.”
3. In terms of theory, this implies that we can draw on insights developed with reference to mobile and analogue phones. This methodology has also been suggested by Donner (2005, 2010).
4. MNT, like other migration theories, was originally not designed to explain the migration journey, but was developed to explain the perpetuation of migration streams and their directedness; phenomena neoclassical theory failed to explain. In MNT, migration networks are seen as (one of) the determining factors in the migration process and are defined as “sets of interpersonal ties that connect migrants, former migrants, and non-migrants in origin and destination areas through bonds of kinship, friendship, and shared community origin” (Massey et al., 2006, p. 448; see also: Boyd, 1989; de Haas, 2010; MacDonald & MacDonald, 1964; Wilson, 1994).
5. The “migration as business” model sees professional ties as the dominant form of social relations in the migration process. Migration is described as a business, in which actors (migrants, smugglers and the migrant’s family) interact along the lines of profit maximization. Highly organized trafficking networks that practice division of labour are the key organizers of the process and live off the profits they make (Salt & Stein, 1997; cf. Bilger, Hoffmann, & Jandl, 2006; van Moppes & Schapendonk, 2007b; for a critique see Herman, 2006).
6. Interestingly, as can be seen by comparing the GSMA coverage map 2005 (the earliest available to me, www.coveragemaps.com/gsmposter_world.htm) with that from 2009 (www.coveragemaps.com/gsmposter_world.htm), these otherwise minor settlements were among the first places in both, Mali and Niger, to receive network coverage.
7. westernunion.co.uk, 26.04.2010; van Moppes and Schapendonk (2007a).

8. Due to restrictions of space, I will only relatively briefly discuss this process here. For a more in-depth treatment, see: Carling (2002), Collyer (2007), de Haas (2006, 2008), Hamood (2006), Marfaing and Nadi (2009) and Pian (2009). To an extent, this general trend was undermined by European states that retained special immigration regimes for nationals of their former colonies and periodical regularizations of clandestine immigrants (de Haas, 2008).
9. Again, the position of Maghrebian and Sahel countries is more ambiguous than what this general trend suggests. First, countries such as Mauritania and Algeria depend on the cheap labor supplied by sub-Saharan Africans (Bensaâd, 2009b; Choplin, 2008). Second, countries such as Morocco and Mauritania use the presence of sub-Saharan migrants on their territories as political assets, securing them means from, and closer association with the EU (Choplin 2008, p. 11; de Haas 2008, p. 1316). They have thus a certain interest to not clamp down completely on irregular migration.
10. While reading the literature on other clandestine migration movements towards the EU, no comparable actor came up (cf. Bilger et al., 2006; Yüксеker & Brewer, 2006 (www.allacademic.com/meta/p105362_index.html); İçduygu & Toktas, 2002; Papadopoulou, 2004; Roman, 2006).
11. The separation along the lines of nationalities is not completely exclusive. For example, Pian (2009) reports that Gambians often live together with the Senegalese, and the Congolese from both DRC and Republic of Congo are led by the same *chairman*. However, the “default option” is the cited alignment according to nationality, and migrants usually cannot choose their community (P., personal communication, 3 April 2010; Pian 2005, 2009).
12. In order to protect my informants’ identity, I am only citing their first names here.
13. Migrations via the western route traversing Nouakchott in Mauritania seem to rely less on hybrid networks. The findings presented here thus only partly apply to those cases.
14. Interview with Professor Ali Bensaâd (1 April 2010). Professor Bensaâd received a call himself. Migrants also called reporters from Radio France International in Paris.
15. It has been argued that using mobile phones frees the migrants from the need to carry with them large sums of money, reducing the risk of theft and robbery and thus making the migration journey easier (van Moppes & Schapendonk, 2007a). However, while this idea sounds compelling, I found that money transfer services (due to the difficulties described) were only used as a “last resort.” Normally, migrants would set out on their journeys carrying with them all the money they may need.
16. A very similar procedure has been described for the Maghnia-Oujda link by Pian (2009).
17. I lack concrete data on this point, but logic and anecdotal evidence suggests that smugglers are generally making ample use of mobile phones to coordinate with their clients as well as for the purpose of internal coordination (cf. İçduygu & Toktas, 2002).

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