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Mobilities and the Network of Personal Technologies: Refining the Understanding of Mobility Structure

Introduction[1]

The aim of this paper is to investigate the structure of mobility from a new perspective. Over the last 15 years, several studies have been carried out under the umbrella of a "new mobilities paradigm," building upon the original work of John Urry (2000, 2007). This article follows a previous study in which we propounded the idea of mobility as a productive force of social labour (Authors, forthcoming). Here, we argue that there is a need for an outlining of mobility structure, which is not only based on a post-societal approach, but that takes human beings and their bodies as a point of reference. This alternative approach to the new mobilities paradigm is necessary in order to update an object of research, which is inspiring a massive group of sociologists and communication scholars. First, alone (Urry, 2000; 2007), and later, together with several colleagues (e.g., Elliot and Urry, 2010; Larsen, Urry and Axhausen, 2006), John Urry proposed a structural typology of mobility consisting of five mobility types: mobility of objects, corporeal mobility, imaginative mobility, virtual mobility and communicative mobility. Mobility of object refers to the exchange of physical items between people/consumers, producers and retailers. Corporeal or physical mobility includes the travelling of people and goods; imaginative mobility is the representation of mobility as elaborated and broadcasted by media; virtual mobility is the mobility experienced online by Internet users and communicative mobility includes all of the person-to-person communication modalities connected to movement. Our ambition is to refine the understanding of mobility structure by introducing new paths to the investigation and understanding of mobilities (about the

use of singular and plurals, see Kellerman, 2012, pp. 70-74), taking as our point of reference the individual and the human body.

This article focuses especially on mobilities to which mobile and fixed media are closely connected. We propose an alternative heuristic way to understand the structure of mobility, as outlined in macro-, micro-, media and disembodied mobilities. By "macro-mobilities," we refer to the social actions, which imply the consistent physical displacement of people, such as long-distance travels, tours, commuting and walks. By "micro-mobilities," we mean small-scale mobility, including bodily movements and emotions, which are the impalpable movements of the soul. With media mobility, we refer both to the role played by the smartphone in giving mobility to media that traditionally have been fixed and to the penetration of traditional media into the means of transportation and public places, such as restaurants, bars and shops. Finally, disembodied mobility designates the transformations that have taken place within the social order as earlier hierarchies of dimensions, values and meanings have been overturned. This category embraces imaginative, virtual and communication mobilities, as they are interdependent, intermingling (Larsen et al., 2006: 47; Urry, 2007: 26-31) and immaterial. In the present article, this alternative categorisation of mobilities is analysed in relation to the mobile phone that is the pivotal tool of the daily technological ecology or what we call the "network of personal technologies."

Barry Wellman (2001) has introduced the notion of networked individualism, which has provided the theoretical framework for many studies on the use of media. In a networked society, people live and work in multiple sets of sparsely knit social networks that are physically dispersed and may not interact with one another. According to Rainie and Wellman (2012), the individual (not the group) is the focus, and the individual draws

upon and contributes to a set of resources residing in numerous networks to which he/she is connected. Networks consist of strong and weak ties, each holding one or more kinds of value (e.g., emotional support, financial advice, access to gossip, and a place to crash). The main trait of networked individualism is that people function more as connected individuals and less as embedded group members.

Here, we argue that we should look not only at the networking individualism, but also at the network of technologies that surround the individuals. This technological network does not mean only a new cooperation among various media, but also a new division of tasks, affordances and practices of use. Let us give an example. When on the move, many people check their email to be informed about possible urgencies and, in general, to be informed about what is happening. But not all emails are suitable for reading and answering through the smartphone. There are emails that require reasoned answers or have large attachments, and thus, we postpone answering them until we are in front of a desk computer. This behaviour expresses a parcellisation of the same task: reading. The first part of this activity is done on the mobile device, and the next one, on the desk computer, making a chain that bridges the two daily technologies, the mobile device and the desktop computer.

This network of technologies forms a kind of meta-medium in which old and new media converge. There is a continuum of technologies that includes both mobile media, such as tablet computers, laptops and mobile phones, and fixed technologies, such as desktop computers and landlines phones, and that converges in the practices of use towards the same purposes: communicating, searching and creating information, and being in touch. Overall, this technological network supports many different tasks, operations and activities of everyday life, whether this requires connectivity or dis-connectivity. In this network, the

mobile phone, and especially, the smartphone (Authors, 2014) are at the front edge. For this reason, although the main point of reference of this study is the network of technologies used daily by individuals, we treat the mobile phone as the emblematic tool of the growing families of mobile media.

The rest of the article is structured as follows. The next section offers a reflective overview of the main discourses and research done on the mobility structure. Then, a section is devoted to presenting the samples and methodologies applied in the empirical research that sustains our analysis. The following parts are dedicated to discussing the types of mobilities we identify as crucial to understanding the network of personal technologies. In the concluding remarks, we will highlight what we have added to the current debate on the structure of mobilities and on the role played by the network of personal technologies in it.

Blind spots of previous mobility typology

The mobilities paradigm came into being from the "mobile turn" in social sciences (Urry, 2007). The paradigm makes a difference between the movement that refers to the physical travelling from place to place and the mobility that is movement with specific social meanings (Cresswell, 2001, 2006). It was premised on a clever insight that when social life is analyzed through the lens of society, it easily happens that it is seen as static and that people are seen as sedentary entities tied to certain places and countries (Urry, 2000). Mobilities research emerged from a critique of both the notions of deterritorialisation and sedentarism in current social research.

Mobilities studies have evolved predominately around the analysis of five types of mobilities and their interrelationships, as mentioned earlier (Larsen et al., 2006: 47–48;

Urry, 2007: 47). As mobilities studies have largely analyzed mobility systems, which stretch over societal boundaries, the relationships between mobility and the person/body have not captured enough attention. Within the classical typology of mobility structure, which directs the focus on systems and mobility vehicles, “one-sided” pictures of mobile practices have often been produced (Dant and Martin, 2001). This has had several consequences. First, it has led to forgetting that mobilities are also embodied: Mobility is a sign of a living body. Second, Author (2013: 296) has suggested that, as the mobility categories are partly overlapping and interconnected, the systematic application of the typology to quantitative and structured studies is problematic. This, in turn, makes it difficult to determine whether other forms of mobility really correlate with information and communication technology (ICT) usage, including the mobile phone. Third, larger surveys have provided only some support for the thesis of interconnected mobilities. As mobile phones have such a high penetration rate, their ownership is no longer related to higher levels of physical mobility (Authors, 2012a). Author (2014b) also showed that mobile-only Internet use is basically not at all related to higher levels of physical travelling in Finland. While earlier, the specialty of the mobile phone was associated with its independence from place, vis-à-vis the fixed phone, today, the smart phone is characterised by its intimate relationship with the human body (Author et al., in press). Fourth, some scholars have presented that the mobility paradigm overrates, or even fetishizes, the positive effects of mobility (Canzler, Kaufmann and Kesselring, 2008: 2; Otnes, 2006) and may even lead to the appreciation of excessive mobility. At the personal level, a slower and stationary lifestyle may be a deliberate choice (Kellerman, 2006; Author, 2014a). Last, the studies conducted so far have revealed that previous definitions and typologies of mobility do not

capture the intentions, strategies and choices (Canzler et al., 2008) that initiate movement or affect "pre-travelling" and "re-ordering" (Peters, Kloppenburg and Wyatt, 2010).

Methods

This study is based on the theoretical analysis of the relationship between mobility and the network of personalised technologies. Theoretical argumentation is supported, first, by the secondary analysis of official data on tourism, travelling and commuting in Europe (macro-mobility). Second, we count on repeated cross-sectional survey data sets collected from the five most populous European countries (Italy, France, the United Kingdom, Germany and Spain - EU5) in 1996 (N=6,609) and 2009 (N=7,255) concerning the adoption and uses of fixed and mobile media (micro-mobility and media mobility). The main body of the questionnaire was the same in both surveys, although the 2009 study was adapted to the new technological situation. Both questionnaires were pretested with 100 people. In the analysis, we used weighted data to correct distortions relating to age, education, ownership of a computer and access to the Internet, and made the surveys representative at the country level. The studies were funded by Telecom Italia.

The key measures of this study include "moving house," "sociability index" and "emotion." Regarding moving house, the respondents were asked: "How long have you lived at your address?" The answers were recorded in five categories: "from 0 to 5 years," "from 6 to 10 years," "from 11 to 15 years," "from 16 to 20 years" and "from 21 to 78 years." The sociability index was composed of answers to seven sociability questions, such as "Inviting to own home or going to visit friends," with a five-item frequency scale ranging from "Never" to "Several times a week." The composition of the index was the same for 1996 (M=12.07, SD=5.27, range=0–28) and 2009 (M=12.52, SD=5.07, range=0–28) (see more, Authors, 2013). Regarding emotion, it was asked: "What emotions or

feelings do you have about each of the following means of communication?" The respondents were invited to give one word off the top of their heads for each means of communication, which were then classified into 20 predetermined categories, such as interest, enthusiasm and curiosity (Authors, 2012b, 2012c).

In this paper, we make use of bivariate statistical tools. First, we use contingency tables with Pearson's chi-squared test to show if there is a significant relationship between two variables and the standardised residuals to identify the cells of the contingency tables, which are responsible for a significant overall chi-square (Field, 2009: 698–700). Second, we report the differences between the mean values by using a t-test for independent samples. Third, we use a z-test for testing the significance of the difference between two independent proportions in two samples. Two-tail probabilities of z-tests are reported.

Macro-mobilities and the network of personalised technologies

Although mobility is a historically relevant phenomenon, it is overt that, in the last decades, its dimensions have radically changed in at least three respects. First, many more people move today than in the past; second, the distance travelled has lengthened; and third, the speeds reached by mobility is much higher than before. Hence, when the distance travelled is long, extending beyond localities and the mobility refers to larger-scale displacements, we talk about macro-mobilities.

There were almost one billion people in the world who were migrants in 2013. Of these migrants, 232 million were international immigrants (UN, 2013), and about 700 million migrated inside their own countries (Author et al., 2012). Today, accounts of migration show a massification of this experience, which, in the past, involved only some sections of the worldwide population. In addition, the World Tourism Barometer tells us

that, in 2013, the number of international tourists in the world reached 1,087 million (UNWTO, 2014), almost doubling the number in 1995 (529 million). This means that, if we think that the world population is 7 billion[2], this implies that less than a third of the world population is involved in the move at the macro level. On top of this, there is the question of how commuters move, both globally, and especially, trans-locally within nation states. In the absence of global data, we can only report numbers from individual countries, such as Italy. Survey studies conducted by CENSIS (2008, 2012) show that the number of commuters in Italy increased by one million between 2007 and 2012. Today, in Italy, there are 14.195.000 commuters, who correspond to 23.4% of the entire population who is over 14 years of age (CENSIS, 2012). The largest segment of commuting takes place locally. The distance travelled is an average of 24 km, and, on average, it takes 43 minutes for each journey. Commuters "work" more than a month and a half per year, as they spend an average of 72 minutes in the daily commuting round trip (CENSIS, 2008). In daily commuting, 70.2% of commuters, especially workers, use their private cars, and the monthly expenditure borne by commuters is, on average, 45.30 Euros for users of suburban buses and 49.20 Euros for those travelling by train; the monthly expenditure greatly increases among commuter motorists, who spend 109.50 Euros per month only for fuel.

The second element concerns the increase in the travelled distance. It is Urry (2011: XV) who informs us that if people in the US in the nineteenth century travelled 50 meters a day, today, it is 50 kilometres a day. At the global level, people now move 23 billion kilometres. It is the world that is on the move. The third element is the speed of macro-mobility, which is arguably greater than ever before.

This large-scale moving, combined with information technologies and web methodologies, produces substantial data and inspires new methods for researching it. For example, State, Weber and Zagheni (2013) have produced the first global map of short- and long-term mobility flows, which reveals elusive data, such as the pendular rhythms of migration flows, the higher pendularity between countries that are close to each other and the emergence of new hubs of migration, such as India and Brazil.

Macro-mobility has been enhanced, on the one hand, by the development of public means of transportation and the personalisation of transportation means, such as cars, motorcycles and bicycles (Williams, 1974). On the other hand, it has been enhanced by the large-scale diffusion and adoption of ICTs, which, with mobility and space, concur to build together the same socio-technical system (Sheller, 2011: 1). Where mobility has been inflated by the increased number of travellers and commuters, it has also been promoted by the development of affordable means of transportation and the massive diffusion of ICTs.

The numbers relating to ICT diffusion overcome those related to mobility. According to the International Telecommunication Union (ITU) in 2014, there were 1.1 billion fixed-phone subscriptions in the world, 6.9 billion mobile phone subscriptions, 2.3 billion active mobile-broadband subscriptions and 2.9 billion individuals using the Internet (ITU, 2014a).[3] Although ICTs and physical transportation are part of the same sociotechnical system, this does not mean that there is a linear relationship between physical mobility and ICT. Research show, for example, that macro-mobility deals more with the Internet –email, Skype, social networks, etc.– rather than with mobile or fixed telephones. The majority of the telephone traffic –both fixed and mobile– is local (Ling, Bjelland, Sundsøy and Campbell, 2014). However, we need to warn that much of the research that has been carried out has been conducted in a pre-smartphone era, in which the

two worlds –that of the mobile phone and that of the Internet – were almost separated. According to ITU (2014b), there are already almost 3 billion people using the Internet globally in 2014, and the mobile perpetration rate will reach 32% of the population (2.3 billion) by the end of 2014. Mobile broadband penetration has doubled in just three years.

This new macro dimension of mobility makes us think about the social change it has entailed. Ling and Haddon (2003) studied a fundamental question of whether telephony has diminished or increased mobility. Although their study was based on a non-generalizable convenient sample, it suggested that mobile phones were more supportive of physical mobility by car, rather than replacing such mobility. There seems to be a lot of undesired travel that cannot be avoided by using a mobile phone. This argument is in line with observations that indicate the failure of videoconferences. Such conferences should have reduced academic tourism and saved a lot of commuting, but they have not been embraced by workers and unions. Hence, it is worth asking if the increase in social ICT tools has really managed to resolve mobility-related social problems, such as traffic congestion and pollution. This line of research searches for a rational justification for this new phenomenon and attempts to interpret this massive social behaviour in terms of the theory of social action (Weber, 1882). It tries to understand if there is a relation between these two types of travelling and ICTs, and what kind of relation it might be. With representative survey samples, we investigate this possible relation further. This operation allows us to understand, indirectly, the scope and the magnitude of the social change that mobility and ICTs are entailing.

We are also differentiated from the mainstream literature on mobility because we are convinced, like Hägerstrand (1973), that, although they are part of the same mobility system (Urry, 2000, 2006; Sheller, 2011), at times, it is necessary to investigate people,

goods and information separately. While the relationship between goods and their transportation is quite simple, people have a more ambivalent relationship with travelling. For example, while travelling, people have more negotiation power than ever before as regards restaurants, hotels, means of transportation, museums and so on. On the one hand, through the Internet and social media, people have acquired the capability of expressing their opinions and learning about the markets. On the other hand, because tourism has the capacity to offer a vent in the heavy daily routines, mobility has transformed it into a commodity (Ferrarotti, 1999). De-standardised and re-standardised by globalisation, macro-mobility is now, from a certain point of view, an empty shell. The profound meaning of travelling has been emptied, and macro-mobility has been reduced, in many cases, to a fashion (e.g., holiday packages) or a necessity (e.g., refugees). Because individuals are increasingly de-centred from their central psychic nucleus, they are also less and less able to make their inner journeys (Simmel, 1900; Widman, 1999). Consequently, they become prey to the mania of travel, which provides a sense of freedom to travellers. As a traveller, you are not controlled by the immediate social community, nor are you part of the social fabric that you cross with a temporary identity. The tourist travels to see, not to be seen, by the inhabitants of the places he/she visits.

Micro-mobilities

Apart from the mobility of long distance travelling and commuting, there is also mobility understood as movement and displacement (Green, 2002). When the distance travelled is limited, and the mobility refers to small-scale displacements or bodily movements, we talk about micro-mobilities. While traditionally, macro-mobility has been widely investigated within many disciplines, a dimension that has only recently begun to be

explored is micro-mobility (Sheller, 2011). Micro-mobility revolves around the human body, which is the protagonist of the dynamics between mobility and immobility in a double sense (Adey, 2010). First, immobility is the other face of mobility, as societies need a balance between those who move and those who stay. Second, there is immobility inside mobility: When the move is mediated by means of transportation, such as airplanes, trains, buses and ships, the body remains stationary, which is an artificial and even coercive condition for the human body. Life is movement, and to be healthy, humans need to move physically (Markula, 2014; Newman and Giardina, 2014). Macro-mobility and several forms of small-scale mobility represent this dualism of the mobility of the body, in which the immobile body is transported to destinations with an ever increasing speed.

The protagonism of the human body is based on the fact that both macro- and micro-mobilities are forms of embodied mobility. Sometimes, especially with macro-mobility, the body becomes the direct witness of the fact that "I have been there": What could be better than a picture made with the mobile phone or a camera to witness our presence somewhere? The expression "I have been there" is interesting, because it shows that when we talk about our travels, we do not accentuate the move, rather, we position our body in the context. The body is a kind of trophy that we display around the world that we want to explore in person.

Many dimensions of embodied movement have already been explored, such as the forms of dance, biking, rock climbing and walking (Vergunst, 2010). The rhythms of the body have been explored in the past by Simmel (1990) and Lefebvre (2004), and recently, by Edensor (2011). We argue here that micro-mobilities should be seen as the second important layer of the current mobility structure, in which the network of personal technologies meets physical mobility. Previously, the fixed phone, and now, the mobile

phone, plays the most fundamental role among the network of several communication technologies. Telephone calls connect us mainly locally (Quan-Haase, Wellman, Witte and Hampton, 2001: 304). Our EU5 surveys from 1996 and 2009 show that mobile phone ownership predicted sociability in 1996, but no longer in 2009. In 2009, it was the Internet that had become a more pro-social tool than the mobile phone and the computer (Author et al., 2013). This leads us to conclude that socialites today are mainly connected to the Web, which is now embedded in many other technologies and "things." The Internet serves sociability, on the one hand, by allowing the continuous maintenance of an acceptable level of sociability, which, without the Internet, would be much harder. On the other hand, the Internet opens several new possibilities for communicating in a computer-mediated manner (email, chat, instant messaging, skype, social networks), although it might also have some retroactive effects of de-socialization.

Next, we provide a couple of examples of why micro-mobility deserves to be considered an important layer of the mobility structure. Micro-mobility is an invisible, although fundamental, part of both communication and sociability, which are crucial social structures.

Communication is mobility, in the sense that, for communicating, we must go towards others. It is not only a psychological going, opening our minds and hearts to others, but also, a physical going, at least in the co-present situations in which we must put ourselves within earshot of the person with whom we want to communicate. Daily mobile communication, for example, is replete with "performative utterances" (Austin, 1975) that do not only depict what is being done, but that express what is actually accomplished. Regarding mobile communication, phrases such as "I'm coming, I'm coming" are illustrative of communicative acts that strengthen the link between a physiological and

physical going when someone is waiting for us. S*ociability is also mobility*, as Author et al. (2013) have argued. To see and meet friends, we must move. Relationships that take place within the house and family are important, yet not sufficient for a balanced development of the individual. To do things in co-presence with other people, we have to move, and sustaining this movement is a reciprocal activity. To experience concrete forms of sociability, we must coordinate ourselves with others. Sociability is a process (and an ability) whereby individuals feel more reassured and are more reassuring if they can go to a restaurant or theatre together with another or several persons.

The focus of sociability has moved from visiting friends and relatives towards communicative sociability, which takes places in the public sphere (Author et al., 2013). Physically proximate social interactions call for more and more mobility, as their locus has shifted from home to public spaces. It also calls for more communication and concerted actions with non-family members and close friends. However, it is also important to notice that the overall volume of mobility that is connected to sociability has remained quite stable. The sociability index (ranging from 0 to 28) was elaborated to measure the volume of communicative sociability in EU5 countries. It shows statistically significant, yet in absolute terms, not pronounced, changes between 1996 ($M=12.1$, $SD=5.21$) and 2009 ($M=12.6$, $SD=5.02$) ($t=-4.87$, $df=11139.3$, $p<.001$). In sum, we argue that micro-mobility, which endorses the practices of sociability, has been quite stable with regard to its volume.

Moving houses is mobility. Despite heightened attention toward transnational moves and migration that can be considered as expressions of macro-mobility, moving houses are much more common experiences for the majority of people (Coulter, Van Ham and Findlay, 2016). So far, researchers have paid more attention to residential mobility, which

is generally understood as moving houses long-distances, while our focus here is on moving houses short-distances.

Recent studies argue that frequent moving houses is associated with particular characteristics of the self and sociability. People who often change their residential location favour, more duty-free friendships and group memberships (no obligation) as well as personal forms of subjective wellbeing than others do. However, what makes moving houses a double-edged sword is that it is also associated with a lower level of wellbeing and higher mortality risk (Oishi, 2015).

_____The 1996 survey shows that the average time lived by the respondents in the same house is 15.3 years (SD=13.445). A significant association emerged in this research between moving houses and possessing a mobile phone (χ^2=72.966, df=3, p<0.001). This association concerns all those who have moved, except those who declared that they lived in the same house for 11 to 20 years. However, this goes in two different directions: Among those who lived in the same house for more than 21 years, the owners of a mobile phone were less numerous than those who did not have such devices (16.3% vs. 28.5%, standardised residuals (std.res.) 6.4 vs. 2.7). On the contrary, among those who had moved their place of residence in the last five years, 34.9% possessed a mobile phone against 26.7% who did not (std.res. 4.1 vs. -1.8). Among those who had moved to a different house from 6 to 10 years ago, 20.5% had a mobile phone, as opposed to 17.4% who did not have one (std.res. are 2.0 vs. -.8). On the contrary, this kind of mobility did not influence the amount of mobile phone use.

A significant association also emerged between moving houses and the access to the Internet (χ^2=26.533, df=3, p<0.001), as well as the possession of a computer (χ^2=152.154, df=3, p<0.001). Regarding the Internet, it came out that, among those who had moved

during the last 5 years, there were many more people who had Internet access, than people who were not connected (41.1% vs. 27.6%, std.res. 3.3 vs. -.5). Regarding the computer, the ownership of a computer was mainly associated with those who had lived in the same house from 6 to 10 years (20.5% vs. 16.5%, std.res. 2.9 vs. -2.1), and especially, from 11 to 15 years (32.1% vs. 25.2%, std.res. 4.1 vs. -2.9). On the contrary, among those who had not moved in the last 21 years or more, there were many more who did not possess a computer (31.4%) than those who did (17.3%) (std.res. 6.0 vs. -8.5).

Emotions are mobility. Body movements express and convey affects and feelings, and thus, they also need to be investigated (Sheller, 2011: 5). “Motion and emotion are kinaesthetically intertwined and produced together through a conjunction of bodies, technologies, and cultural practices” (Sheller, 2004: 227). Emotions may be imperceptible, but they are the fundamental movement to convey change, which is the engine of life. Emotions represent the movements of the soul, and they find, in mobile phones, the intimate tools that are their ideal repositories (Vincent and Fortunati, 2009). Gabriel Tarde (1893) rightly talks about the emotional heart that shapes a society, and we argue that this heart today is intercepted by mobile phones. Mobile phones assume the role of emotional transformers and mediators, because, as devised, they are close to our ears and mouths, and gain some stability when connected to the human body (Hjorth, 2008). Our survey studies from 1996 and 2009 show that the emotional structure around the mobile phone has changed over the last two decades. The emotion associated with the mobile phone that has increased the most is relaxation. While in 1996, 1.5% of respondents in EU5 countries associated this emotion with the mobile phone, in 2009, the corresponding figure of 16.5 % indicates the highest increase in proportional terms ($p<.001$). This is a sign that reveals how profound the relationship between mobility and mobile phones is. In many research

projects on the use of the mobile phone, anxiety has been very much associated with mobility, and the mobile phone has been considered beneficial in reducing that anxiety. The increased level of relaxation which has grown in parallel with the volume of mobility probably indicates that people really use the mobile phone to reduce the negative sides of mobility.

These are only a few examples of micro-mobility that can be imagined as the most effective site of the social change. Using the famous metaphor of the butterfly, micro-moves generate effects that are comparable to the flapping of wing. According to Lorenz (1979), a simple movement of air molecules generated by the insect's wings beat can cause a chain of movements of other molecules up to unleash a hurricane.[3]

Moving media

There are at least two processes that have added to the mobility of media. First, the old stationary media have received mobility when they have been incorporated in smartphones and other portable ICTs. Second, stationary media have become mobile as they have been transplanted into public places, such as restaurants, bars, shops, and metro and bus stations, which are places characterised by people on the move. Hence, we think that the mobility of media deserves its very own category.

The cornerstone of the first process is the mobile phone, which was the first medium to be carried along. At the beginning of its diffusion, the mobile phone was genuinely the mobile medium par excellence. For the sake of comparison, the Walkman was limited only to music listening, and laptops are unlikely to reach the same level of adoption as mobile phones (Author, 2001). Later, the portability of the mobile phone became a less distinguishing trait, as it gave way to its personalisation. The mobile phone was set free from its compulsory bond with mobility, and it was used ever more similarly in

both mobile and sedentary situations. Regardless of this, the social representation of the mobile phone remains connected to mobility. After the first phase of its diffusion, this device has been conceptualised as following the movements of the body: It becomes stationary when the body is still and mobile when the body is in motion.

The diffusion and adoption of smartphones has signalled a new page in the development of mobile media. In the process of "smartification," the mobile phone has sucked the traditional, stationary electronic media inside of its shell. The smartphone is, in fact, a computer, Internet, radio and television. Owing to these new properties of the mobile phone, accessing the Internet is no longer a sedentary and desk activity. Similarly, the mobile phone has given mobility to television and has further increased the mobility of radio. Jenkins (2006) gave a great impulse to this debate on the convergence among ICTs and mass media. In a certain sense, the idea of the new mobility of the old media has been overshadowed by this debate. We propose calling this mobility "cross-media mobility," which implies a new portability and wearability of media. What this new mobility of the old media means in practice, and how it relates to macro-mobilities, micro-mobilities and new media mobility, requires careful investigation. Right now, we can simply measure the popularity of the adoption of these old media, while people are on the move. For example, we can have a look at the penetration rates of radio and the Internet. It turns out that 83.9% of people possessed a radio and 72.0% had a mobile phone with radio functionality in EU5 in 2009. Only 23.2% reported that they listen to the radio via mobile phone. Similarly, 61.3% reported that they had an Internet connection at home, while, at that time, in 2009, only 11.7% reported also accessing the Internet via a mobile phone. This makes us think that the smartphone thus often represents a secondary channel for using new and old media.

Concerning the second process, stationary media has also become more and more mobile. From our living room or bedroom, television has spread everywhere: restaurants, bars, shops, and especially, the means of transportation. Here, the colonisation of television is very impressive: cars, buses, trains, airplanes and ships, but also, metro, train and bus stations, as well as airports, now often enjoy the presence of television. What has remained is the bodily relationship with television. Television is watched while sitting or being otherwise motionless, for instance, standing. In this respect, television has been the most powerful tool, and it has reached higher penetration rates than computers and the Internet.

Disembodied mobilities

There are also mobilities which can be categorised as disembodied mobilities. Disembodied mobilities combine many previously recognised mobility types, such as television programs, photographs, video, visual mobility (e.g., Urry's imaginative mobility), information mobility (e.g., Urry's virtual mobility), communication mobility and narrative mobility (e.g., Urry's communicative mobility). Although these mobilities have been targets of various rigorous studies, their diverse relationships with material mobility still require some further consideration. Sometimes, disembodied mobility concurs with physical mobility, i.e., it sometimes intersects with physical mobility, enhancing or modifying it. Other times, disembodied mobility acts as a surrogate or a substitute for material mobility.

We further elaborate here three less-studied dimensions of disembodied mobility to open some new paths for empirical analysis. First, various forms of disembodied mobility have supported and enhanced macro- and micro-mobilities, and consequently they have become augmented and networked experiences. Hence, physical mobility could be the

object of substantial development and could entail many social changes, just because of disembodied mobility. The experience of travelling has been enormously strengthened, first with respect to plans for travel preparation and organisation, and then, with respect to plans for information and orientation during travel. Today, people travel in a world that is more known than in the past. On the one side, (social) media has given to humankind the possibility of seeing, talking about and imagining the world. On the other side, these disembodied forms of mobility have contributed to the commodification of the world, making it place to be consumed (Author, 2003).

Second, there are forms of disembodied mobility that have been, so far, largely neglected. Borders and boundaries move, and their mobility profoundly affects cultures. Gabriel Tarde (1893) helps us to understand this subtle mode of mobility by talking about the continuous enlargement of social groups in terms of extension and depth. Regarding depth, social groups have become larger as a result of the disintegration of the boundaries that had separated the social classes. Considering extent, social groups have enlarged due to the disintegration of the borders that had separated neighbouring groups, which gradually merged with each other. The cultures, languages and borders that separate different countries “move” as well, affecting the social system of sentiments, which are thus extended. Another dimension of everyday life, which is “moving,” is the boundary between private and public, which is closely connected to the body. As observed by Williams (1974), the automobile enabled what he called “mobile privatization.” After the advent of personal cars, privacy did not continue to remain sedentary, connected only to the house, but it spread into the public sphere through cars. Generations of youth had their first sexual experiences inside cars.

Third, solutions to problems seem to move from the core to the periphery. When we are not able to directly resolve a problem, which happens often in (post)modern societies, because of the tremendous limitations of our current theories and methodologies and of the psychological de-centration of the modern individual (Simmel, 1900), we devise second or third order solutions. For example, in education, solutions to the core problems of higher education (e.g., what to teach and how to teach) are often sought from the periphery of the problem, using ICTs as tools of salvation. We count on technical achievements and the outstanding features of ICTs, such as the speed of the transmission of information, without addressing the issue of the value of the content conveyed by them (c.f. Simmel, 1900). Amidst the multiple genuine opportunities that ICTs offer for education and many other things, we easily appreciate their secondary abilities.

Concluding remarks

This study has shown that a new kind of mobility structure can be outlined by analysing mobility in close relation to the network of personal technologies and the human body. This new mobility structure emphasises the particularity of people and their bodies, with respect to inanimate material movements, in the mobile world. People develop increasingly intimate relations with their personal ICTs, which they then enact in a consecutive manner, both en route and while being still, to serve their daily needs. Furthermore, the network of personal technologies advocates the study of larger conglomerates of ICTs, instead of separate devices. Finally, the mobility structure outlined in this article is presented as a starting point for more elaborated and rigorous studies on ICT mobilities that make the users and their intentions the focus of study. Modifications and additions to the mobility categories are likely to be found in future studies. For

example, there is still much to be done to further investigate the interlinkages between these new mobility categories, as well as how they are distributed within and between societies.

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Footnotes

[1] An early version of this work was presented in the workshop "Mobile Communication. Mobility, Place, and Locative Media" in Aarhus, Denmark, 20-30 March 2012.

[2] www.worldometers.info/it/