Within the social studies of children and children's geographies a long-standing concern has been to study children's everyday mobility, where mobility has been thought about as an individual independent capacity. In this paper we argue for a conception of mobility as an effect (or product) of multiple human, social, material including technological interdependent relationships and connections. We draw upon Actor-Network Theory, particularly in the way it has been developed in the so-called 'new wave' social studies of childhood and in relation to perspectives in wider studies of mobility. Bringing these frameworks to the study of children's mobility suggests that everyday technologies, like the pushchair, can act as extensions of the self, having a key role in creating, changing and (de)stabilising the networks of interactions that compose the social life of children and families. In illustrating and discussing some of these ideas we focus on a simple ethnographic account: a family journey to a playgroup. We unfold the role of the pushchair in young children's mobility as a non-human artefact performing a circulatory role in different directions and as an extension of different agencies.

KEYWORDS: Children's mobility, Agency, Actor-Network Theory, Technologies.
Life of pavement stones. We are walking my son and I. He is three years old and we now move at his pace. A few minutes earlier I had tried to gently pull him along with me - making encouraging noises and comments: "Come on, now let's go!" but then I became fascinated with his preoccupation with 'seeing the surface of the pavement stones' as if it was the first time. The pavement stone we had stopped at was full of life – the life of a few ants running in different directions. My son follows one of the ants with his finger maybe in an clumsy attempt to touch it? This is for me a magic moment of the everyday, which I am now sure I would have missed if we not both had looked down to the ground, to our feet, bending down, touching and looking at life from many different angles (Author 2, family notes 1987).

"Lisa chose to walk for a bit. Already for a little while she had strenuously attempted to crawl out of the pushchair. Her mum Gabrielle had just stopped to offer her a supporting hand to get onto her feet. Now standing next to us, Gabrielle told Lisa to hold my hand, encouragingly asking me: ‘Can you hold her hand?’ I did. The sidewalk was quite narrow, so Gabrielle was walking in front with the pushchair carrying Jasmine, who is still a baby on her arm. (...) Our walk was very slow and often interrupted, as Lisa stopped at flowers she spotted at the side of the road: ‘Look at that one!’ she would say to me pointing to a flower. I replied dutifully: ‘Oh, yes, tulips!’ or ‘oh, orange flowers’ and ‘purple flowers’ then beginning to feel real engagement in Lisa’s company and the flowers we encountered, I asked: ‘Which one do you like the most, Lisa?’ and so on, and then add ‘ok, let’s go Lisa’ as I was aware we were slowing down the walk home. Every so often I observed Gabrielle made a halt to see whether we were catching up with her (...) After a while Gabrielle asked Lisa if she wanted to go on the buggy again and Lisa agreed. She climbed onto her seat (...) we kept walking, but for the remainder of the walk I noticed how I was now chatting with Gabrielle, whom I had direct eye contact with, and none of us spoke to Lisa, who sat with her back to us looking ahead on the pavement”. Today, I realised that often I have used my walks to and from shops or playgroup to talk with the parents, - now when everybody is walking, the dynamic of our relationships is very different, and the rhythm is marked by children’s own pace and experiences. (Author 1, Fieldnotes, walking to church playgroup with Lisa, Jasmine and Gabrielle, 29/04/14).

Introduction

As an everyday technology, the pushchair allows adults and children to move forward together at the same pace. In the fieldwork notes above, it becomes apparent that the pushchair forms an important part of a ‘network of walking’ that influences how interaction between the humans takes place and how they experience their environment, including, for example, encountering flowers. Imagine the smooth rolling of the pushchair’s wheels on the asphalted pavement that allows steady and quite speedy progress on the road. However, when Lisa (the young girl) is in the street as a pedestrian, walking and holding hands of the researcher, the patterns of movement and interaction change. Instead of sitting relatively passively in the pushchair, Lisa emerges as a powerful influence on the
pace, direction and rhythm of the walk: stopping, stepping forward, taking a new
direction, stopping, moving ahead. The social interactions change to lively point-
ing, looking and chatting – contrasting with when she sits in the pushchair being
pushed forward by her mum, when the main communication becomes one be-
tween the researcher and her mum. With both feet on the ground Lisa also di-
rects attention to the flowers, the soil and the asphalted surface of the street
and thus changes the view and experience of the street.

In this article we discuss the role of everyday technologies in children’s mo-
bilites from both theoretical and methodological points of view. In doing so, we
draw upon Actor-N etw ork perspectives of the social (Latour, 1993, 1999a, 2005),
particularly as developed by Alan Prout (2000b, 2005) and André Turmel (2008)
in relation to childhood and technologies. From this theoretical point of view we
reflect on ethnographic data from studies of children’s mobility. In the paper our
starting point is the notion of “everyday mobility”, although we later will go on
to problematise it. Everyday mobility refers to the whole spectrum of bodily mo-
tion that children engage in during their daily activities (WHO, 1998), from the
stationary activities made while staying in place to the more vigorous physical
activities made within a place (Casey, 1996), including the notion of everyday
mobility in terms of travel between places, defined as:

... all travel from home undertaken on a temporary basis. This includes
frequent and regular trips such as the journey to school or to work; less
regular but still frequent trips to visit friends or relatives, to shop, for sport
and for other leisure activities including children’s play; and trips under-
taken only once or twice a year such as holidays and visits to distant rel-

Research on children’s mobility within the social studies of childhood and
children’s geographies has mainly focused on children’s journeys between home
and school and to some extent their wider use of their local communities. This
research has contributed to establishing a knowledge base and significant public
debate, arguing that within the last two generations European and North Amer-
ican children’s mobility patterns have changed radically (Hillman et al., 1990;
Karsten, 2005; Keim, 2005; O’Brien et al., 2000). Compared to the childhood(s)
of their grandparents, children in contemporary Europe and North America are
subject to markedly greater restrictions on their everyday movements (Pooley,
C., Turnbull, J. & Adams, M. 2005, p. 139-157). This increased regulation and
monitoring of children’s outdoor activities (O’Brien et al., 2000; Valentine, 1997),
it has been argued, arose out of a greater institutionalization of childhood (James
et al., 1998; Rasmussen & Smidt, 2003; Smith & Barker, 2000), and heightened
risk awareness among parents and children themselves (Hillman, Adams, &
Observations of children’s increased dependency on adults for everyday journeys
led childhood researchers to argue for a focus on children’s independent mobility
as a lost common good.

A suite of studies developed in the context of the new social studies of child-
hood emphasises on the idea of agency as a key concept in the understanding
of children (James and Prout 1990/1997). The radical decrease of children’s in-
deependent mobility observed, within this framework, was understood as a crit-
ical phenomenon detrimental of children’s agency. Methodologically this implied a preference for studying children ‘on their own’ (Kraftl, 2013), implicitly celebrating the physical absence of adults, as the key characteristic of children’s independent mobility (Author 2, 2009). But this approach provoked questions: where are the rest of the community, among whom the children live, and from whom we can barely hear a distorted voice, or see a hint of a foot? Where are the elders of these children and how do their mobilities relate to the children’s?

The idea of independent mobility has contributed to greater understanding of the societal changes that have re-shaped children’s mobility practices over time. But the concept of ‘independent mobility’ has been used without clarifying or questioning its theoretical underpinnings (Author 2, 2009). Most studies rely on the developmental assumption that young children are essentially dependent on adults but only as a stage to be overcome. This is an assumption that may well have contributed to an apparent lack of research concerned with the mobility of young children. The consequence is that research on children’s mobility focuses on the age at which children are expected to move ‘on their own’, namely without adult company, thus cutting the wider networks in which children’s movements are located (Author 2, 2009). This body of work views mobility “from the perspectives of adults and not from children’s own meanings of it (...) and reflects a cultural focus on individuality and autonomy” (Author 2, 2009:39, 40).

Treating the idea of agency underpinning children’s independent mobility as an essentialist and humanist concept: agency is here comprehended as a human attribute that belongs to (independent) individuals (Prout, 2005; Turmel, 2008).

Mobility is usually referred to as the physical movement of people, leaving out of the picture other ways of movement such as virtual, communicative and imaginary and the movement of things, ideas and images that are currently taken into account as part of a wide range of mobilities characterising contemporary societies (Cresswell, 2010a, 2010b, 2012; Urry, 2007). Studying children’s mobility with an emphasis on children ‘on their own’ has, as a consequence, advocated an understanding of children as isolated beings whose lives are not analytically connected to wider social, economic and cultural processes that take place at not necessarily immediate scales but to which children are connected through more complex forms of circulation and mobilities. The problem involved here, we would argue, relates to a dualistic approach that has characterised the ‘new social studies of childhood’, particularly in relation to the concept of agency and structure (Prout, 2005). In this paper our aim is to re-think children’s mobilities drawing on ANT and particularly some recent tenets of ‘the new wave’ childhood studies that attempts to take the study of childhood beyond the traditional dichotomies (Ansell, 2009; Kraftl, 2013; Prout, 2000a, 2005; Ryan, 2012; Turmel, 2008).

1. The social as an assemblage of heterogeneous entities

Agency has usually been understood as an attribute that certain humans or groups of humans may posses, as opposed to the forces of structural power. This picture of society makes sense in the frame of predefined hierarchies of power relations. Actor-Network Theory (ANT) is one of the attempts for understanding society in a
different way, in which circulation rather than structure is the metaphor for visualising how the collective is organised, changed and stabilised. Among its main propositions, ANT embraces the principle of symmetry, arguing that social analysis needs to level the distinction between diverse actors in terms of power or their position in society, but also in terms of their ‘nature’: human and non-humans, social and technological, and by logical extension adults and children (Turmel, 2008). This principle aims, in the end, at registering differences or asymmetries that compose the social fabric, unveiling the practical means through which some collectives dominate others (Latour, 1993) but not taking them for granted from the beginning: inequalities should appear as a result of sociological empirical inquiry, not as the starting point of them (Latour, 2005; Prout, 2005; Turmel, 2008). As a result of levelling the status of different actors, the heterogeneous entities – human and non-human - that are part of the social fabric become visible and their role as circulating entities unveiled. The non-human entities are seen not as simple intermediaries between human actors, but as ‘extensions of the self’ (Strathern 1999, in Turmel, 2008) considered as mediators in the network of relationships they are part of. As mediators, these non-human entities have the ‘capacity to translate what they transport, to redefine it, redeploy it, and also betray it’ (Latour, 1993: 81). Turmel refers to technical devices as the extension of the self, human action and its scale: “allowing certain human capacities to migrate to objects... (which) ...in turn become efficient, intelligent, coordinated or ‘purposeful’” (Turmel, 2008: 50). This is not to say that technological devices or other non-human entities necessarily possess their own subjectivity or that machines operate like social actors (Turmel, 2008), but that any collective extends its social fabric to non-human entities or to what has been called quasi-objects and quasi-subjects. These can be considered as collective (and therefore part of the social world) because they attach humans to each other and through their circulation form and sometimes define the social bonds between people (Latour, 1993: 89). This perspective shifts the traditional understanding of human and technology as separated and opposite entities, now seen as intertwined parts of the social as a network of relationships that “does hold, mobilize and stabilize itself with and through the non-human objects (graphs etc) which mainstream sociology considers as a residue” (Turmel, 2008: 47-8).

Latour (1999b) distinguishes different operations in the mediation of these technical devices. Among them, we identify enrolment, mobilization and displacement as particularly important in our understanding of technologies in children’s mobilities. Enrolment refers to the ways in which non-human entities are induced into the collective; once enrolled, non-humans are mobilized inside the collective, so that they add new resources to it, resulting in the creation of new hybrid entities that form part of the collective; displacement refers to the new direction that the collective takes once its shape, extent and composition have been altered by the enrolment and mobilization of new actants (Turmel, 2008: 50). The nature of these technical devices is hybrid or ‘impure’, so that they cannot be completely attached neither to nature nor to culture; neither to the social nor technology: “In reality there is much (but not everything) about technological artefacts that is ‘natural’, just as there is much (but not everything) that is ‘social’.” (Prout, 2005: 56). As “hybrids of culture and nature” technologies cannot be defined in an essentialist way, as they change according to the assemblage within
which they perform. The particular contexts and connections between human
and non-human entities are endlessly constructed and reconstructed, in the
same way that what it means to be a child is not an unchanging, stable entity
(Prout, 2005: 120).

2. Re-thinking agency, childhood, children and mobility

Within this theoretical framework the concepts of agency, childhood, children
and mobility are reconstituted. Agency and competence (children’s and adults’
alike) are no longer the essential properties of human individuals, but “the effect
of the relations, the connections and the circulation made between a heteroge-
neous array of materials including bodies, representations, objects and technolo-
gies” (Turmel, 2008: 44. See also Author 2, 1998). Childhood can be thought of
as “a heterogeneous assembly in which the social, technological and biological
aspects of childhood are already ‘impure’ entities”, or hybrids of nature and cul-
ture, social and technological” (Prout, 2005: 58). The person, child or adult, is
seen as “an intersection in a network of relationships upon which it broadly de-
pends” (Turmel, 2008: 44), so that children might be understood as ‘nodes of
material connections to places near and far”, taking into account that these are
embodied nodes that perceive, act, express and are connected to other humans
and non humans, natural and social beings (Ansell, 2009:199). It also implies that
the world children are part of and interact with extends beyond their immediate
surroundings, being the product of “events, policies, discourses and decisions
with diverse origins in time and space” (Ansell, 2009:200). In this way, children’s
direct experiences contain “intrusions from further afield”, whilst at the same
time “children infiltrate many spaces from which they remain physically absent
and often unaware” (Ansell, 2009:200-202). The theoretical tenets of ANT have
been also the base for what has been called the ‘mobilities perspective’, which
proposes an integrated approach to movement across diverse scales, emphasiz-
ing its key role in social life (Cresswell, 2010a; Urry, 2007). We will now explore
how these new ways of conceptualising agency, childhood, children and mobili-
ties can be drawn upon in our understanding of children’s everyday mobilities
and the role of technologies within them.

3. Technologies in children’s everyday mobilities

Introducing this article we presented two sets of notes. One focused on the ex-
periences of a mum walking with a young boy and how she became led by him
up close to life on a pavement stone. Similarly the second account, involving the
technology of a pushchair, alerted the ethnographer to the different spatial and
social arrangements accentuated by a young girl’s (Lisa’s) changing mobility.
‘Keeping in pace’ was central to both these accounts, resonating the demands
of an accelerated society where journeys are underscored by keeping up speed
and tempo. In this next section we will explore in more detail how everyday mo-
bile technologies connect children to other actors such as parents, other children, animals, institutions and us, as researchers and show how these technologies extend children’s and adult’s actions and scales of movement.

In a study carried out by Author 1 in a town in the Midlands in England, she observed the mobility patterns and experiences of young children aged up to 5-years-old. Contrary to the conventional assumptions, she was not looking at children ‘on their own’, but at the joint mobility practices in which parents – mostly mothers – were involved. A key feature of the young children’s mobility was that it involved many more entities than the children and their families. It is not possible to recall from this fieldwork any journey in which a parent and a child would go out of their home with nothing other than themselves, walking together and just holding hands. Some sort of artefact or more than one always mediated their mobilities: children’s leashes, pushchairs, cocoons, car seats and restraints, cars and buses (with their different spatial positions and distribution), among others. The familiarity of these artefacts should not make us ignore their historical and cultural particularity, or underestimate their role in shaping children-adults relationships on the move. The nature of artefacts cannot be taken for granted, as Prout (2005) warns in relation to technologies, their definition varies according to the context and particular assemblage they are part of, assemblages emerging as complex interdependent networks.

3.1 Taking the bus, unfolding the pushchair

One winter morning a family of two girls, Lisa (2-years-old) and Jasmine (7-months-old), and their mother Gabrielle are going to a church playgroup in a neighbouring town. Mark, the father, has taken the car to work, so the rest of the family ‘take the bus’. ‘Taking the bus’ is an abbreviation of how the journey is actually performed: they use a double pushchair where Jasmine’s cocoon is placed underneath the chair where Lisa sits. Gabrielle pushes the buggy down the road to the bus stop. There they take the first bus, placing the pushchair in the pram area. After a 10 minutes journey they alight, Gabrielle pushes the buggy down the steps of the bus and then onto to the next bus. After another 10 minutes or so they alight again and Gabrielle walks pushing the pushchair for a couple of minutes to the church. Meanwhile, Lisa has been looking around inside and outside the bus, singing and swinging her legs; Jasmine fell asleep at the beginning of the trip, and when she wakes up she is in a completely new place.

Narrating this journey in a little more detail than just ‘taking the bus’ unveils the complexity of this joint mobility practice, involving three people (and a fourth one that, although not present, has partly defined the nature of this journey by his own mobility) and at least three transport media – walking, public bus and pushchair. The complexity also relates to the purpose of the journey - to attend a baby and toddler playgroup –, which is not clearly attachable to one single person.

This complexity and unity of purposes and entities articulated in the journey can be seen as an assemblage – actually seen in the picture below (Photo 1).
As we observe Gabrielle unfolding the pushchair and putting together its different parts the pushchair emerges not as a single artefact but as an assemblage of different parts that can be put together or taken apart according to the entities involved: it allows a baby to lie down into a cocoon, which is a separated but attachable artefact; it allows a toddler to sit down on the top of the structure; a whether plastic protector can be attached, and diverse items can be placed on the net at the bottom. The pushchair does not move on its own, but has to be pushed by a person who needs to comply with certain size and strength characteristics. However, the materiality and structure of its parts defines a particular quality of the movement. The size of the whole structure is also related to the design and spatial distribution of the public bus, where it can fit provided that the single space dedicated to that purpose has not been already occupied (which is not rare). And there are more features that we could attempt to disentangle: the safety measures embodied by safety belts, for instance, relates to safety standards or regulations in national or wider scales. These are all features shaping Lisa, Jasmine and Gabrielle’s interactions along the journey, and their experience of it.

The image of this assemblage of heterogeneous entities – some of them physically present in the journey, some of them transported or translated through technology – allows us to think about technology as extensions of the self in a rather plural and complex way. For example, we may wonder whose extension is the pushchair? This question can be thought about in terms of which interactions between diverse entities the pushchair allows or encourages. As an extension of the self, the pushchair allows all three people involved to reach a longer distance and scale of movement than their bodies ‘on their own’ would allow. In doing so, it brings with it, in its very design and structure, particular representations of children’s bodies, the composition of their families, and the demands of safety regulation. However, neither does the pushchair accomplish its role ‘on its own’ but as part of an assemblage of other transport means (the buses), urban infrastructure (the pavement), human strength (Gabrielle’s), size, and behaviour (Lisa, Jasmine and Gabrielle’s). On the other hand, as described in the introductory vignette about the researcher’s walk with Lisa and her family, enrolling the pushchair into their mobility practices made a difference to the social interactions of the family and others who became enrolled.
Endnote: This paper has focused on the role that technologies play in children’s everyday mobilities. However, it also invites reflection on the role that technologies have in researching children’s mobilities: technologies that are already part of the collective we as researchers come into relationship with (such as the pushchair), but also the technologies that researchers bring into the research process (the digital recorder, the camera, GPS, mobile phones, etc). This will be the topic of a future publication (Christensen, Mikkelsen, Nielsen, Harder, 2011).

Conclusion

In this paper we argue for a conception of children’s mobility as an effect (or product) of multiple human, social, material including technological relationships, connections and circulations. From this perspective agency, childhood, children and mobilities appear as relational concepts rather than fixed and dichotomous ideas. Technologies (such as the pushchair) act as extensions of the self with a key role in creating, changing and thus (de)stabilising the networks of interactions that compose the social.

Our focus has been on unfolding the role of the pushchair in a practice of mobility showing how it performs a circulatory role in different directions and as an extension of different agencies: first as a transport medium it extends physical capacities and thus the scale of movement of the humans involved; second, it circulates particular representations of young children’s bodies, families’ composition and needs, as well as safety standards (as well as fashions) encoded in the design and material ordering of the artefact. The pushchair also acts in relation to other entities: the bodies of the children it transports, the strength and physical skills of the person who pushes it, other non-human elements such as the bus and its design, the pavement, the weather and natural elements such as rain and wind, and the public transport system.

This brief analysis aims to awaken awareness of the complexity of children’s mobilities and the manifold interactions that compose them. Our interest is to approach children’s mobilities and to situate them as ‘nodes of material connections near and far’ (Ansell, 2009), therefore making explicit the interdependent networks that shape children’s mobility and experiences. In this sense our argument extends what has been previously argued by Mikkelsen and Christensen (2009) that children’s mobilities are performed in relation to a range of actors wider than only adults-parents. In addition to this, their relationship to others in mobility is not necessarily direct (co-presence) but mediated through technology or other artefacts (Mikkelsen and Christensen, 2009). In this paper this argument has allowed the creation of a narrative that demonstrates how children’s mobile experiences and practices are embedded in wider socio-technical-material networks.

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