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Motility - finding a way to mobility attitude and behavior

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Abstract

This paper presents the notion of motility as a way of understanding individual attitude and behavior in relation to mobility. Motility provides an elaborate understanding of the premises for individual mobility, and opens up for a conceptual analysis of mobility management policies. The aim of this analysis is to specify how this policy area aims at delivering changes within the attitude and behavior of travelers. Matching the theoretical notion of motility with a general characterization of mobility management policies show, that these theoretical perspectives could be a useful inclusion in the further work on mobility management policies in Denmark.

Transportation in western societies is something ever-present and seemingly utterly necessary on one hand, yet with derived effects, which are challenging some of the pillars of modern society, on the other. This dichotomy has many potential solutions, which offer new ways of thinking, planning, moving, designing machines, building infrastructure or regulating. Realistically the solution to the ambivalences of transportation is not one or the other, but a combination of many. This paper is asserting a specific sociological understanding, which presents an understanding of the attitude and behavior of individuals in relation to mobility. Theoretically this article draws inspiration from reflexive modern theory and contemporary mobile sociology, which centers around individual reflexive processes, focusing on the mobility in the everyday life of individuals. The theoretical presentation on the subject of behavioral change in individual mobility is carried out with the purpose of outlining corresponding challenges and potentials for a Danish project, called Formel M. The project is focusing on influencing the demand for transport by car. The project began in march 2011, and includes planners from 6 Danish municipalities¹, a private consultancy company named Tetraplan, Roskilde University, The Technical University of Denmark and a triple helix organization named Gate21. During the coming 12 months the project partners will work together on implementing mobility management policies in workplaces and areas with a high density of private companies.

To focus on demand side oriented transport policies, such as mobility management, seems to be an effective way to achieve environmental benefits, reduce congestion and create better access to places (Litman 2011, Cairns 2004: 365, Länsstryrelsen 2007: 78). A large number of European countries are

¹ The municipalities are: Albertslund, Allerød, Ballerup, Copenhagen, Fredericia and Middelfart.

working actively with mobility management policies and cooperating through the European Network for Mobility Management (EPOMM). In addition to this, countries such as Australia, United States and Canada have been working with similar strategies for several decades.

The policies of mobility management seek to change the attitudes and behavior of travelers. Attitude and behavior in relation to transportation are quite complicated entities, which present challenges both for a planning system that is not normally dealing with these sides of transport, but mainly on providing safe and predictable movement without obstacles, and for researchers that try to describe exactly what changes mobility management efforts can create. Simply put, the aims of mobility management policies have three different stages. Influencing and reducing the need for transportation, influencing the choice of transportation, towards a more sustainable mode, and optimizing the usage of unsustainable transport-modes, by for example riding more people in each car. This calls not only for an understanding of the policy instruments of mobility management, but a corresponding understanding of why people travel and what it means to be mobile. This paper is an attempt to provide the latter. This may lead to a clearer understanding of the conditions for changing travelers' attitudes and behavior, and also give insights into the challenges and possibilities of mobility management policies.

Mobilities, attitude and behavior

Mobility is not something that we do or chose, but something that we live our lives through, and something that defines how our society works (Sheller 2006). People, objects and ideas are on the move, in many ways and through many structures created to facilitate these movements. In many respects our society has been created to facilitate free movement and communication and to do so is a natural part of the contemporary daily life. Mobility is a plural term that best can be seen as different *mobilities*. *Spatial mobility* is understood as the movement of people, objects or information from one destination to another. Spatial mobility can best be described as a set of *mobilities* and further broken down into different subcategories, of ways for people or objects to be on the move. Spatial mobilities can be interpreted as consisting of: the *physical movement* of people; the *physical transportation of objects*; the *imaginative travel* through depictions in visual media; *virtual travels* in real time through various internet-based functions; and the *communicative travel* through person to person messages via telephone, e-mail or letters (Urry 2000, Urry 2007). So the basic principle of mobilities is that there are many ways to be spatially mobile and more ways to be spatially mobile than just physical displacement. People, objects and information can travel without having to move physically through new information and communication technologies. Another important point is that many of these forms of movement often can cross paths or take place at the same time. Obvious examples could be, talking on the phone while riding a bus, checking e-mails on the train, using web-based services to find the nearest car-sharing option. The complexity and implications of such crossing or simultaneous mobilities are yet to be thoroughly investigated or fully theoretically understood, with regards to changes in the significance of spatial mobility in the everyday life. But this notion potentially opens for new ways of understanding and influencing travel attitude and behavior. When we integrate our perception of physical displacement with other forms of mobility and recognize that these are interlinked, new ways of perceiving individual mobility will occur. Whether or not this new perception carries solutions to the structural problems of modern transportation is still an unsolved question but in understanding, accepting and working with this understanding, we might find answers to this.

To move in any of the above forms, can be seen not as a conscious action but as a way of belonging to today's society. Mobility is not an isolated part of life in western society, but a central part of the structuring of our lives (Baumann 2000). The imperative to be mobile in today's western societies can be interpreted as the individual's need for mobility to accomplish individual plans and projects (Kesselring 2005). The mobile imperative encourages individuals to be present in time and/or space in order to achieve individual or collective goals. Maintaining a friendship, having a job, raising a family, going to school, practicing leisure activities are all activities that require the individual to use one or several forms of movement. Not unlike any other period in time. What industrialization and modernity added to the mobility imperative, was an almost unlimited supply of physical travel, to individuals with resources living in

western societies. Our range of movement has grown and with the understanding of mobility as a plural term, our ability to use different forms of movement simultaneously adds more dimensions to the notion of unlimited movement (Hannam 2006).

Spatial movement is a way of connecting individuals to social relations, their working life, leisure activities, needs for consumption etc. Creating these connections is not necessarily a free choice but rather a way of structuring one's life through the possibilities put forward by the systems and technologies providing mobility, physical-, virtual- or communicative-. Mobility in this sense cannot be seen as pure freedom but a way for individuals to adapt their individual needs, wishes and demands to collective premises for mobility, a process of creation of one's life through movement while adapting to heteronymous rules and structures (Kesselring 2005). The collective premises can be seen in the way western societies shape the possibilities for travels where highway systems, train-schedules, bus routes, etc. represents flows of movement that the individual have to be able to adapt to, if she wants to travel. This does not mean that we as individuals cannot be free, but that movement in itself is not a form of freedom.

Non-spatial forms of mobility, namely virtual and communicative, are also ways of connecting the individual to important places, people or activities but they do so while changing the perception of need for physical presence. To be physically fixed is not necessarily equivalent to a person not being mobile. Studies on new forms of mobility show that it is very possible to be mobile without physical movement. Acknowledging that non-spatial mobility plays a large part in the everyday lives of free-lance journalists or IT-specialists, tells us that some life-styles are prone to replacing physical mobility with virtual or communicative (Kesselring 2005). Handling the mobility imperative to achieve one's own plans and projects through virtual and communicative movement alone would be quite difficult but so would the opposite for a large number of people in western societies. For many individuals possibly the large majority in contemporary society communicative and virtual mobility are a part of normal everyday activities already. The relation between the everyday use of virtual and communicative mobilities and the need for physical movement to carry out projects and plans, are changing with the increase of new forms of mobility (Kesselring 2005). These changes are not present in the everyday life of everybody, would be a qualified guess. But for those people who incorporate communicative and virtual mobilities into their everyday lives, the connection between being mobile and physically in motion is likely to change.

What this means for our understanding of mobility is that being mobile is not necessarily a set of voluntary actions and that being mobile today is more than just moving physically. Mobility in relation to the individual can thus be seen as the result of different forms of movement, which stems from the individual's imperative to achieve certain plans or projects and is carried out in patterns, partly determined by the adaption to heteronymous rules. In this sense 'to be mobile' means that the individual achieve their plans and projects through different forms of movement. This does not necessarily mean that an accelerated use of physical movement or using a growing number of different mobilities makes individuals more mobile. Having more options or considering more possibilities before determining actions is different than choosing to use these options more rapidly, simultaneously or frequently to carry out plans and projects.

Flexibility becomes a very important factor in the individual's aim for mobility, as it is a way of describing the individual's ability to adapt to the rules of the flows of movement or the systems that provide movement (Kesselring 2004). Flexibility can be seen as knowing and being able to use for example the train schedules, the network of bus routes, the car sharing systems, the highway exits, the best way to get in touch with people or information through the internet and combining this knowledge with the ability to carry out own plans and projects. Broadening or deepening the knowledge of possible ways to achieve mobility through movement, virtual or physical, potentially increases the flexibility of the individual. As a critical voice to the notion of flexibility, *volatility* can be seen as a characterization of the elusiveness created when individuals continuously adapt to new structural conditions (Bauman 2000, Drewes Nielsen 2010). To increase the demand for flexibility from individuals can thus not be seen without acknowledging possible consequences from the pressure of increasing adaptation.

The relation between flexibility and the ability to carry out plans and projects can be described as *motility*. Motility describes the individual's capacity to be mobile through the notions of *access*, *competence* and

appropriation (Kaufmann 2004). The notion of motility is a way of clarifying the individual's access to movement, the competences to use these movements and the appropriate mastering of these forms of movement in relation to own values. Motility can in relation to flexibility be seen as a broadening term for the ability to act within a framework of possible movements.

Access to movement can be seen as both the range of *options* understood as services and equipment surrounding the individual and the *conditions* for using these options at a given time or place. Thus qualifying what degree of access to options for movement that surrounds a given individual at a given time and place. *Options* can be seen in relation to for instance spatial distribution of people and infrastructure, and *conditions* can be for instance barriers for using a form of movement tied to the individual's socio-economic position (Kaufmann 2004). In this way access to movement can be seen as the relation between a specific individual and the options for movement surrounding her in time and space.

The notion of *Competence* is used to describe the individual's skills and abilities to use the different forms of movement available. The distinction of competence goes in three directions: the *physical ability* to move one entity physically from one point to another; the *acquired skills* which are skills needed to act within the rules or regulation within specific forms of movement, such as a drivers license or the ability to read and understand a map; and the *organizational skills* to arrange own activities in a way that abilities and skills are harmonized with the conditions and options for movement surrounding the individual (Kaufmann 2004).

Appropriation, meaning the act of taking into possession, describes the processes, which determines how the individual act upon her access to transportation and skills and abilities to use them (Kaufmann 2004). These reflexive processes include the individual's needs, aspirations, plans and dreams and are shaped by corresponding values, habits or strategies, developed by the individual. Individual reflections on mobility in this respect can either be described as ways of considering whether or not specific mobile behavior is appropriate or as an opening for the evaluation of own skills, access or decisions in relation to different types of movement. This part of a person's motility can very well be described as the attitude towards mobility. Attitude can thus be seen as reflections on appropriate mobility behavior in given situations and reflections on own access to movement and on skills and abilities to use this access.

Motility provides a set of notions, which can give a nuanced picture of an individual's relation to being mobile. It is clear from this understanding that mobility has ties to many different aspects of the life of an individual, and that determining the conditions for mobile actions is a complex task. Attitude and behavior in relation to mobility are not easily accessible stable entities but instead they are complex and individually shaped by both the individual and her circumstances. To gain a better understanding of the attitudes and behavior of individuals and thus be more capable to act upon and influence these, there is a need for further understanding of the correspondence between an individual's *access*, *competences* and reflexive processes understood as *appropriation*, which make up a person's motility. Seen from a broader sociological perspective (Giddens 1984) *access* can be seen as a representation of the structures providing movement, which surrounds a given individual both in terms of physical presence and other forms of availability. *Competences* can be seen as the rules and resources, which exist in the relation between the given structures and the individual. Seen from a structuration-theorist's perspective, access and competences are interlinked and cannot be seen as two separate notions. This means that the resources, skills, authorizations etc. to a large extent are defining how the access to systems of mobility can be perceived and acted upon. Reflexive processes as understood through the notion of *Appropriation* then becomes a central factor in the individual's struggle to adapt to or learn the conditions for utilizing new systems of movement, chose new forms of movement or reflect upon own mobile actions. The perspective provided by the notion of motility thus establishes the individual as the primary actor for change through own reflexive processes. Changing the access to mobile systems, through for example increased proximity or lowering of the economic barriers, has an effect if the individual deem the specific movement, appropriate and if the individual possess the competences required to utilize the systems of movement. This is an important argument for further investigation and work with mobility management policies, where the overall aim can be seen as an increased focus on exactly these aspects of mobility attitude and

behavior. Namely the access to sustainable forms of movement and dissemination of competences or values associated with sustainable mobility.

When mobility behavior and attitude are complex entities that have ties to many different aspects of a person's physical environment, abilities and own reflections, it is also clear that influencing these phenomena demands advanced and complex policy-measures. It is important to integrate the nuances of mobility attitude and behavior, into planning processes, which aim to influence the demand side of transport as a way of understanding for example: the subjects of regulation or communication campaigns; the civil participants in new projects; the rejections from individuals unwilling to make changes; or to achieve a clearer understanding of why efforts to change the attitudes and behavior of travellers achieve success or failure. The notion of motility provides a further deepening of the words we use to describe mobility attitude and behavior and could potentially give more nuanced perspectives on the potentials, limits, effects and failures of mobility management policies.

Mobility management and motility

The motivations for implementing mobility management policies can be many. From reducing congestion, achieving health benefits through more physical exercise, improving social inclusion, reducing environmental effects of transportation to increasing revenue for transport companies or reducing costs relating to transport for employers (Cairns 2004). The policies aim to promote sustainable transport modes and reduce the car use through changing attitudes and behavior of travelers (MAX Research Project 2007). The results of successful mobility management policies are more reliable and accessible travel information, better informed travelers, understood as a better relation between the individual's need for mobility and their knowledge of their options and derived effects of the options surrounding them, and more ways of traveling that are environmentally friendly and efficient. The policies are often site-specific or area based, focusing on locations that generate traffic such as large workplaces, cultural sites, public offices etc. But can be area based around areas with large density of workplaces or residential areas. The efforts are often carried out as partnerships between public and private sector organizations, drawing upon a range of policy-measures.

Mobility management measures are primarily non-physical changes to the relation between traveling individuals and existing systems of transportation or preventive measures for the need of physical transportation. To exemplify what mobility management measures could be the following brief presentation of different aspects is meant to be a thematic structuring of mobility management policies. Of course these are not separate measures in the sense that most often they are used in combination or in relation to each other. The outlining of the following measures draw inspiration from international reports on mobility management, and as such are a piecing together of different mainly European experiences with implementing mobility management (MAX Research Project 2007, Länsstyrelsen 2007, Cairns 2004, Max LuPo 2009, ELTISplus 2011, Lacombe Nielsen 2001). The following is a very rough outlining of what mobility management policies aim at delivering.

To provide better travel information and increasing the availability of information is an important task, when developing mobility management measures. The main aim of providing travel information is to bring reliable information to where the travelers need it. This can be done by providing information to large traffic generating sites, such as workplaces, by using new information channels, such as smart-phones, or through personal travel assistance at specific sites or virtual contact nodes. Increasing the quality and supply of travel information, potentially influences the traveller's awareness of viable transport options available, by creating more knowledge about the *access* to transportation. Information also potentially creates better conditions for the individual's *organizational skills* to arrange activities and different modes of transport in accordance to each other. By personalizing travel information through new information channels such as mobile communicative devices or personal travel assistance, the traveller has the option to integrate knowledge about access to transport with her own needs for mobility, thus using travel information as a way of heightening the *competence* to be mobile.

Campaigns, competitions or games can either educate on the benefits of certain forms of travel or create incentives for choosing sustainable mobility. These measures either inform of the benefits and possibilities of for instance cycling or walking through a campaign, or set up games with prizes or competitive incentives between friends or colleagues to start or continue cycling or walking. These measures are potentially a direct way of influencing the individual's *appropriation*, the reflexive processes behind choosing a mode of transport. The aim would be to change the conditions for the individual's reflexive processes by adding new knowledge about certain modes of transportation through campaigns or creating new incentives to choose a mode of transport through the participation in competitive games.

A group of measures concentrate on providing new modes of transport or creating better conditions for modes of transport to a certain site or area to supplement or replace other forms of transportation. Setting up a ride-sharing network, car-sharing clubs, employee-supplied bikes or creating small-scale infrastructure projects for more sustainable transportation modes could be examples of such measures. This group of measures aims very directly at providing better *access* to transportation, offering alternatives to transport by car to the sites or areas where a large number of people travel. To create a real sense of heightened *access* to mobility the task is not only to create new *options*, but also aim at lowering the *conditions* for the use of alternative transportation modes. This also implies an understanding of the *competences* required to use certain modes of transport and possibly an understanding, of how a new mode of transport is deemed viable and integrated into the everyday life of individuals, who are thought to be new users.

Mobility management can also be a way of applying changes around specific organizational structures, such as municipalities, hospitals, schools, shopping centers, etc. These changes aims at adding goals for the reduction of transportation to the organizational structures, by changing or adding for example working routines, visiting or opening hours, educational programs on travel awareness, policies on business travels, parking policies, access to services by communicative or virtual mobility or on site travel information and awareness-raising. Changing organizational structures implies a broad range of changes to settings of the everyday life for a large number of people. This requires knowledge about the structures within an organization that influences the travels of employees, customers or visitors. Measures may have adverse effects on the *motility* of affected individuals, ranging from attempts to change the values around and competences to be mobile through educational programs in schools, to changing the *conditions* for transport by car through changes in parking policies or the perception of *options* for access to a certain service, changing your name in a public register, or consumption, shopping for groceries, by making it available through communicative or virtual forms of mobility.

Additionally there is the incorporation of transport reduction in planning processes. This can be done by forecasting and calculating the generation of transport from an area, when they are being planned or in the process of planning new built environments in an area. It is then possible to create solutions, either by changing locations of traffic-generating sites or integrating sustainable transport solutions to certain areas in the planning process. This way of implementing transport reduction measures can be seen as a way of influencing *access* for individuals living in or travelling to a certain area, before it is built or before new developments are integrated into the public planning system. This way of planning applies both when new constructions or expansions to existing ones need public approval and when drawing up plans for entirely new areas. An important point when integrating mobility management into planning processes is, that lowering the need for transportation is very much about making as much use out of as few *options* as possible. Meaning that space-efficient transport with low *conditions* for use is a very important part of lowering the need for transport.

Mobility management seems to be able to provide new conditions for individual motility. The main focus of the policies seems to be the structural conditions for transportation and represents only to a small degree participatory or individually processes. This could mean that the main results of successful mobility management is better access to and *conditions* for transport. Implying that individuals receive better and possibly more options for movement and are educated to use them more efficiently. But not necessarily strong evidence that changes in *appropriation* or attitude are integrated into the projects as process that involves dialogue or participation. Changes in attitude are something primarily external, which is affected

primarily through communication, not as something that is incorporated into measures through dialogue or involvement in project development. What this means is that mobility management gives clear indications that it has the potential to change *access* and *conditions* for mobility, but not necessarily the tools to stimulate or fully grasp the changes in *appropriation*. This does not mean that individual reflexive processes are not stimulated by mobility management policies focusing on providing information, campaigns, competitions, organizational change, mobility planning etc. But by not including these reflexive processes in a process of dialogue or participation the knowledge of how attitudes are changing, why they are changing and how they can be further simulated to change are not incorporated in the projects of mobility management. This will hopefully be a task for the work with mobility management in the coming years to provide insight into the reflexive processes that can be associated with changing mobility behavior, and adjust or develop new approaches based on this knowledge.

This limited exercise in deductive analysis of a simplified policy-field show, that there could be a suitable relation between the notion of motility and the policies of mobility management. The understanding of what possible impacts mobility management policies can be more nuanced, when the notions of attitude and behavior become theoretically operationalized, through the notion of motility. In this sense motility can provide a more qualified theoretical approach to understand the sociological impacts of mobility management policies.

Missing pieces and next steps

This article has presented a reflexive modern look at how attitude and behavior of individuals in relation to mobility can be understood. The notion of motility provides tools for understanding how individuals weave their lives through the options for movement available to them. Through this understanding it is possible to further differentiate the effects of mobility management from a conceptual point of view. In this limited analysis of mobility management, motility adds to the perception of how the changing of mobility behavior and attitude links to different policy areas of mobility management. Understanding this relation and further developing theoretical and practical examples of the effects of mobility management from an everyday life perspective, might be an effective way of providing arguments for working with influencing the demand for transport.

Theoretically some pieces still seem to be missing from the notion of motility, which is an argument for further work on the relation between mobility management and reflexive modern mobile sociology. Incidentally these areas also seem to receive little attention in the work with mobility management, which is why further work with focus on motility from an everyday life perspective would benefit both areas of research. The two main pieces that seem to be missing in this paper is further understanding of the search for immobility and the possibilities and restraints on mobility and change in attitude and behavior provided when individuals are acting as or in communities (Freudental-Petersen 2007). The search for immobility can symbolize a search for a different notion of the social construct that is freedom, than the one sought after through mobility. This might add new dimensions to the perception of the mobility imperative and also add new dimensions to understanding of the reflexive processes that deem mobility or immobility appropriate. The importance of membership in different forms of communities as a way for individuals to change patterns of action or premises for their reflections is also something that should be an important addition to the very individual-focused narrative of motility.

Going forward with the Danish mobility management Formel M the notion of motility presents an elaborate view on the conditions for choosing different forms of movement. This understanding could be an important part in the general understanding how transport policies can contribute to social change. But also an understanding of how many other factors such as socio-economic conditions or personal values in many respects frame the potential for changes in individual mobility. A great challenge for mobility management policies is to incorporate an elaborate understanding of mobility behavior and attitude into the objectives and management of local projects as well as potential future regional or national legislation. Proceeding with implementing mobility management is a way of gaining further insights into the conditions for social change in the demand for transport.

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