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The Commented Walk method as a way of highlighting precise daily mobility difficulties – a case study focusing on cognitive or mental diseases

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Abstract

The French Act of 11 February 2005 on equal rights and opportunities, participation and citizenship of people with disabilities highlights the need "for people with disabilities or reduced mobility" to have access to the complete mobility chain of the transport system. This law was initially planned to apply from 2015. Many efforts have been made to improve life for those with physical, visual and, to a lesser extent, hearing impairments. But there is a lot of room for improvement in situations regarding psychological, cognitive and mental impairment. This is largely due to a lack of knowledge on the difficulties experienced by the above when they travel.

The national quantitative surveys including the Disabilities Dependency survey conducted by INSEE in 2008, questioned a range of people experiencing daily mobility difficulties linked to a disability. However, they did not give precise details of these difficulties.

A qualitative methodology called 'commented walks' (Thibaud, 2001) is employed by urbanists to investigate the quality of the urban environment using videos. This paper will show how this method is also useful to complete quantitative approaches and to point out the difficulties encountered by people with disabilities in the urban space.

The main recommendations from this research are:

- need for a coherent and foolproof continuity of informational systems (staking, numbering of buildings in the street, bus destination displays...)

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- necessity to minimize the 'affordances' (Gibson, 1977) that might become highly disruptive cognitive attractors (Chevrier, Juguët, 2003) (i.e. advertising, illuminated signs that divert the focus of attention ...).
- need for a simplification and systematization of the cognitive procedures required to reach a destination.
- need for staff training : human assistance remains essential and can't be replaced by any automatons.

The videos resulting from the 'commented walk' methodology are important, firstly to explore the difficulties experienced, then to inform the necessary authorities and finally to feed into training programs designed for logistic officers or bus drivers.

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Keywords: Daily mobility; cognitive and mental diseases; 'commented walk' method; qualitative sociology; universal design

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1. Introduction

Our contribution came about as a result of two remarkable factors: First we noticed the lack of available knowledge about the daily mobility habits of people with disabilities; then we observed the special case of people with mental, psychological and cognitive disabilities who are even less well studied as their disabilities are invisible.

According to Laurent Saby (2012) a mental disability can be defined as the result of a developmental disability. It can be considered as a more limited capacity for learning linked to a significantly below average intellectual development. It results in difficulties more or less severe in areas of reflection, conceptualization, communication and decision making.

A cognitive disability is the result of cognitive dysfunctions. These troubles are linked to attention, memory, adaptation to change, language, perceptual (gnosies) and gestual (praxis) identifications. A cognitive disability implies no particular intellectual impairment only difficulties in mobilizing capabilities.

A psychological disability is the result of psychological blocking factors. Like the cognitive disability, a psychological disability is not linked with an intellectual disability. It is characterized by an alternating calm or tense mental state and by difficulties in acquiring or expressing psychosocial skills. A lack of attention and some difficulties to plan and follow activity programs can occur. A psychological disability often leads to anxiety and relational and communication difficulties.

The French Act of 11 February 2005 on equal rights and opportunities, participation and citizenship of people with disabilities highlights the need "for people with disabilities or reduced mobility" to have access to the complete mobility chain. This law was initially planned to apply from 2015 but a maximum 9 year extension has been given to local authorities on the condition that they list and promise to carry out all the listed improvements. Many efforts have been made to improve travel situations for people with physical, visual and, to a lesser extent, hearing disabilities. But there is still great room for improvement for situations involving those with psychological, cognitive and mental disabilities. This is largely due to the lack of knowledge of precise difficulties experienced by those people with the aforementioned disabilities. Our research began thanks to the city of Amiens which was expecting specific recommendations issued by the French state services.

This paper is divided into five sections. Following this introduction, we then discuss, in the second section, how the mobility of people with mental, cognitive or psychic troubles may be taken into account in French quantitative surveys. Information has been gathered both from the already available mobility and disability surveys. The third section explores the literature on the 'commented walk' methodology. The fourth section presents our own methodological choices and the difficulties we have faced. Finally, the fifth section lists the benefits of this method. The conclusion advocates a formalization and an implementation of this methodological process.

2. Overview of available datas

In France, various surveys are used to study the daily mobility of people with disabilities. At national level, two sorts of surveys bring us this information: those focusing on mobility and those focusing on disability.

Since the late 60s, five national mobility surveys have been conducted by INSEE and the department of Transport (1966-67, 1973-74, 1981-82, 1993-94 and 2007- 08). These surveys are the largest mobility surveys in France, with a sample size of 20,000 households, and consider all trips irrespective of their purpose, length, duration, transport mode, or the period of year or time of day. They allow the precise study of people's daily mobility in terms of for example the number of trips, distances, duration, means of transport and purpose.

However, only the following question appears in the questionnaire: "(NAME) is he/she physically limited or limited in their journey away from home (regardless of the means of transport used)?" Although this question allows us to identify people with disabilities it does not allow us to accurately detect those with mental or cognitive disabilities.

Regarding disability, two surveys have been conducted by INSEE since the late 90s: the "Handicap Incapacité Dépendance" (Handicap Disability Dependency survey -1999) and "Handicap Santé" (Disability healthcare survey - 2007). Unlike previous surveys, they enable us to observe accurately people's impairments and disabilities and therefore to detect people with cognitive or mental disabilities. We can find in their questionnaires some information about their mobility and their difficulties with accessibility. For example, time spent at home and if traveling the difficult places to access.

However, the quantitative approaches used to obtain representative analyzes of the general population in France and to establish a causal link between the socioeconomic variables and situations of disability or mobility behavior are limited. Firstly, the entire chain of travel can't be studied and secondly the specific difficulties faced by individuals and their causes are not stated. Thus, in addition to these quantitative approaches, some qualitative approaches are needed to obtain a thorough comprehensive analysis.

Semi-structured interviews combined with participant observations (Rissera, Iwarssonb, Ståhlc, 2012) as well as focus group interviews and expert interviews (Rosenkvist, 2008) have already been performed abroad by researchers interested in people with cognitive functional limitations (MAPLE consortium, 2003 ; Barham, 2005). In France, only a few works have been conducted, especially by state services (Charzat, 2002 ; Dejeammes, 2006). They are mostly based on quantitative datas issued from the "Handicap Incapacité Dépendance" survey (Roussel, 2006) and sometimes on expert interviews (Alauzet, Conte, Sanchez, Velche, 2010). As for us, we used a new methodology called "commented walk".

3. The „commented walks” methodology

A qualitative methodology called 'commented walks' (Thibaud, 2001) used by urbanists to investigate the quality of urban environment using either photos or videos. This method was popularized in France, by the Research Center on Sonic space & Urban environment (CRESSON research laboratory - School of Architecture of Grenoble). It relies on the "thinking aloud" technique devised by Alan Newell and Herbert Simon (1972) in the US. «This is a journey with a real-time storytelling» (Miaux, 2008). That is to say, the researcher follows the interviewed person while they are interacting with several other players (e.g. bystanders) and objects (e.g. urban furniture...) which they may encounter on their route.

While walking the interviewed person verbalizes what they are doing and what they are thinking. On the road, the researcher gets a subjective point of view. (Petiteau, Pasquier, 2001). The interviewed person talks about the incidents taking place during the walk (Miaux, 2008). A cameraman tries to catch reflective pauses, paces, movement variations or noticeable emotional changes. Although it may seem artificial to ask someone to verbalize their action, thanks to unpredictable and random urban phenomena, people behave relatively naturally.

The "commented walks" methodology leads to a very precise analysis of mobility choices process. For example, Sophie Pene (1999) narrates the tactics of a person in a hurry to leave her workplace. "The run starts at the door of the office. If the elevator fails then she rushes down the stairs. If a group of chatty colleagues stays in the lobby, she makes a detour to avoid chatting ; if there is a performance on the square, she chooses the underground, if the queue at the ticket office is too long, she opts for the automatic teller..." (Pene, 1999)

We were looking for a method to give us a better understanding of mobility behaviours, especially with people with disabilities. We were also looking more precisely for a method suitable for participants with verbal or non structured verbal difficulties. So, we carried out 4 'commented walks' in the city of Amiens in order to test the methodology:

- Marie and Etienne have trisomy 21.
- Fabien has an intellectual disability; he is illiterate but knows how to read figures.
- Marion has a dyspraxia.

As the goal is for us to study mobility in urban environments we have adapted the methodological protocol according to Chevrier and Juguet's advices. For sure, the learned skills coming from the experience of a routine route is of great interest. But the unfamiliarity of a path leads people to draw on their former experiences, which is very interesting too. As Marie, Fabien and Marion seemed relatively autonomous on public transport, we asked them to add slight challenges.

- In the morning Marie was going to her workplace with her father by car. She was returning alone, by bus. We suggested she tried an outward journey by public transport for the first time.
- Fabien seemed really capable of dealing with public transport in his daily routine. So we asked him to go to the zoo, a place he was not familiar with.
- Marion has excellent communication skills. One day she got lost in Amiens, so we asked her to try to find the path she had taken that day.

According to Chevrier & Juguet's work (2003), such a script is an in situ test. It aims to ask the traveler to face realistically a set of situations which forces them to adjust their action plans. Typically, people in public transport run on autopilot. Guided by their habits, they follow some procedures without questioning their practices. These practices become automatic. Indeed our films show clearly that a fictitious situation causes a break in the routine action chain. And they show how people face more unexpected events and less known routes.

In short, our aim was to test a method originally designed to study the urban environment through mobility then to adapt it in order to study the daily mobility of people with a less structured verbal expression in the unpredictability of an urban context.

4. Our survey in Amiens

The survey was conducted in Amiens (France) in 2012. A 'commented walk' must be prepared in advance. First, the researcher has to hire a cameraman. A technical solution must be found to record on the video everything the person says; even if this person is walking 20 or 30 meters ahead the cameraman.

Then the survey preparation usually focuses on:

- The recruitment of interviewed volunteers
- The presentation of the purpose of the survey.
- The explanation of the survey protocol.
- The necessity to make oneself available for half a day long.
- The presence of a camera.

On the chosen day the first half-an-hour is usually spent teaching the interviewee how to "think aloud". Then the journey can begin. Due to the presence of people with disabilities, it took us more time:

- to reach them (thanks to local authorities we managed to reach local parents associations; thanks to a local foster home we also managed to reach some people).
- to explain the investigation process to the interviewee.
- to reassure these interviewees.

- to precisely inform parents of minors and adult's guardians.
- to obtain from the guardianship judge the appropriate authorization to record.

On D-Day, the interview began on the routine route (to work or to school). No hardships were suggested at the beginning. They only came afterwards when the interviewee seemed capable enough to deal with them.

Definitive results coming from the 'commented walks' methodology are not based on a representative sample. The main quality of this method is illustrative; and this quality isn't anecdotal. It is complementary to quantitative methods which:

- doesn't assess how much both public transport and public areas induce some difficulties or not.
- doesn't precisely identify these difficulties.

In fact, our method manages to explain what those difficulties are for people with mental, cognitive or psychological disabilities. That's the reason why we think it may be useful to complete quantitative approaches and to point out the difficulties encountered by people with disabilities in urban spaces.

5. Results

5.1. An information discontinuity

During her route, Marion hesitates. The video shows her struggling to know where she is. She says: "there were no road works there the last time." An impromptu event disrupts the routine route and is often problematic. For example, a situation involving road works or any unpredictable situation which requires people to find an unfamiliar path (need for bypasses) requires some urban arrangements. If a path made from stickers pasted on the ground may seem childish, it is especially appreciated by people with disabilities in these circumstances.

Usually when Marie returns from work by bus No. 9 and arrives in the downtown interchange bus station of Amiens, she gets off the bus at a stop located near a pedestrian crossing. As she was trying the outward journey by public transport for the first time she placed herself on the other side of the pedestrian crossing. Indeed this is how she had been taught to catch a bus going in the opposite direction. Therefore, she was trying to apply a rule that told her to wait on the other side of the street in order to catch it. But this rule does not work in such an interchange station.

On the video, Marie is seen waiting with other passersby at the pedestrian crossing. When bus No. 9 passed it didn't stop. We helped her to find the right bus stop. However, the line was split into two directions along the route and in order to get the right bus it was necessary to know the buses final destination. Another problem for Marie was that she couldn't know the final destination because she had arrived from the back of the bus where there was only the bus number on display.

In both situations, Marie tried to carefully follow the rules but she failed in her task due to break downs in the information chain. These examples show that both the continuity of the information chain and the standardization of the displayed information are important.

5.2. Disruptive cognitive attractors

The video shows that Marion was unable to recognize a crossroads that she had already passed by for the third time. This can be explained by the fact that she arrived from three different directions. But the film also shows that the presence of advertisements on the road contributed to her confusion as they distracted her from looking for relevant information.

Basically, situations of mental, cognitive and psychic disabilities do not require their own new language of communication. They require more consistency and seamless continuity in languages that already exist. It is necessary to better highlight the informational devices. Concretely, that means minimize - and in some contexts such as an interchange station eradicate - messages that might 'pollute' the relevant information (advertising, illuminated signs that divert the focus of attention...).

According to Gibson (1977), public space is full of 'affordances'. These signs can either relieve the perceptual activity of the user (i.e.: function of directional signage), or invite him to perform a particular action that he was not thinking of doing (i.e.: the trash bin invites us to throw away, the public mailbox reminds us to post a letter...). Our videos show that the 'affordances' may also become some highly disruptive cognitive attractors (Chevrier, Juguet, 2003 ; Denis, Pontille 2008 ; 2010).

5.3. *Too complex cognitive procedures to reach a destination*

The video shows Marion saying she particularly appreciates the pictures of major buildings or places on the city maps: "Without that, it's not even worth trying to read the map". In fact Marion doesn't bother with city maps because for her, most of the city maps require too many complex cognitive procedures to reach a destination.

She tried to explain to us that the locations of city maps are badly placed. Usually located on the back of advertising hoardings, these geocentric local maps should permit a simple cognitive projection on the ground with north directly in front of the user thereby no longer requiring an additional cognitive operation such as turning in order to face north.

5.4. *Human assistance : some needs for trainings*

Fabien is illiterate. He has an excellent relationship with the staff of the transport company of Amiens. He talks to the drivers and is able to put questions to anyone wearing a uniform. We suggested he changed his usual route to get to the zoo. In Amiens's main interchange bus station, Fabien spontaneously questioned an employee of the transport company. The employee advised Fabien to take bus No. 1 to get to the zoo. Unfortunately he didn't think of indicating either the right direction and final destination or the location of the bus stop. This employee was probably lacking training.

This was also a problem for Marie when she realized her mistake in taking the wrong No. 9 bus. She asked for the driver's help. The driver answered that "As a rule, every other bus should go to Zone Industrielle (her final destination)". Therefore, the driver should have told her to get off the bus and wait for the next one. But the driver failed to do this possibly due to a lack of training.

Human assistance must remain a priority because it is often difficult to replace it with any technological alternatives. People with disabilities especially rely on men and women in uniform (employees of public transport, police, doctors...). They see them as resources. But in France these employees are not always aware of their importance to the public. This discrepancy emphasizes the great need for increased training for these employees.

6. Conclusions

Our findings come from a qualitative methodology aiming to complement quantitative approaches. Indeed, quantitative approaches are not able to go further than the concept of 'difficulty'. Furthermore they are inadequate when describing the precise problems faced by people with mental, cognitive or psychological disabilities. We have adapted the "commented walks" methodology originally designed to analyze urban environments.

We used that methodology to understand how people with disabilities behave in public spaces while commuting daily. We also adapted that methodology in order to understand how people manage when traveling to less familiar destinations.

The main recommendations from our research are:

- need for a coherent and foolproof continuity of informational systems (staking, numbering of buildings in the street, bus destination displays...)
- necessity to minimize the 'affordances' that may become highly disruptive cognitive attractors (i.e. advertising, illuminated signs that divert the focus of attention ...).
- need for a simplification and systematization of cognitive procedures to reach a destination.
- need for staff training: human assistance remains essential and can't always be replaced by a device.

Our results reveal the effectiveness of the "commented walks" methodology which could be more formally introduced in order to explore in each city the reality and the details of the problems encountered by people with disabilities. This method seems especially relevant for people with difficulties of expression because their behavior can be just as meaningful as language in describing their problems. Furthermore this methodology produces videos that can be used to convince local authorities of the necessity to include people with less visible disabilities. Finally, videos can also contribute to staff training. For example, they are useful in teaching employees working in public transport: both those in the front line dealing with customers and those who design transport networks.

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