Pedestrian Quality Needs

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Summary

In research, policy making and implementation concerning the safe mobility and the quality of life of pedestrians is a rather neglected issue. The difficulties arising from long neglect are so substantial that new research activities and innovative approaches are needed to build on the available knowledge and to further develop the insights gained from earlier projects in order to make a difference to pedestrian conditions in towns and villages in Europe and elsewhere.

The main objective of the project is to provide an essential contribution to systems knowledge of pedestrians’ quality needs, thus stimulating structural and functional interventions, policy making and regulation to support walking conditions throughout the EU and other involved countries.

In transport and traffic safety sciences a comprehensive, integrated systems approach is now the state-of-the-art. This project will follow that path to determine pedestrians’ quality needs (PQN) with regard to physical and social environments, the transport system, and policy making and implementation for a safe and healthy mobility of pedestrians.

The project will be conducted from three perspectives: functionality; perception; durability and future prospects. Special attention will be given to the coherence and integration of these perspectives. The focus will be on pedestrians’ quality needs with regard to the strategic, tactical and operational levels of travel and sojourn decisions of pedestrians, particularly in city outskirts.

Discussion

To what extent are ideas on a system approach implementable in your situation?

Case history and background

Once walking was the main mode of transport. This has changes enormously since then. Walking now is a hidden mode, both in people’s minds, in statistics and in policy making. In 1988 the European Parliament realised this and adopted the European Charter on the Rights of the Pedestrians. Since then a number research projects on the European level were executed, such as the WALCYNG project (1998), ADONIS (1999), PROMISSING (2001), Ageing and Transport (OECD, 2001), COST C6 (2000), HOTEL (2004) and recently COST C11 and PROMPT.

In the United Kingdom it was recognised that the pedestrians needs more explicit attention in the academic and policy-making community. With the support of the British government the WALK21 conferences series were started in 2000. Annually a large conference on walking is organised, this year in Australia. ICTCT also took up the issue. At the General Assembly in
2004 in Tartu it was decided to start a project on walking safety. A task force of ICTCT members (Zuzana Simonova, Dago Antov, Hector Monterde and Rob Methorst) developed a project proposal that was put before the General Assembly in 2005 in Helsinki. This proposal was adopted enthusiastically and it was decided to send out a Call for participation. Within two months over 50 experts, from more than 35 institutes in 20 countries declared their commitment and the Pedestrians’ Quality Needs project was born. The project will be supported by the COST organisation, meaning that travel and meetings costs of the experts can be covered to a large extent out of the COST budget.

**Background**

**Walking is basic**

Walking is such a basic way of travelling that one tends to forget its importance. One can forget its importance when the facilities are available and when the available facilities are adequate for a ‘normal’ person. Only when one becomes (temporary) handicapped, one discovers how crucial it is to be able to walk and that quality is not as good as one would expect it to be.

**Transportation system trends**

Because of increasing car dependency and consequent land use changes, perception and social changes, the nature of walking evolves. Door-to-door walking diminishes, whilst walking to and from other modes increases. In total, the amount of walking per person will decrease somewhat, but due to population growth the total distance travelled on foot will stay approximately constant. Generally the latter form of walking is statistically less visible than the former, creating the false impression that walking becomes less important. This false impression is further supported by a less intensive use of pedestrian facilities because more land is ‘colonised’ and the number of persons per housing unit decreases: this results in fewer pedestrians per square meter walkway.

**Ageing of the population**

Almost all countries will have to deal with an ageing population. For policy development regarding walking this has consequences:

- The elderly walk more than other groups. For the elderly the walking environment poses specific problems; they require better quality pedestrian facilities.
- With the ageing of the population public expenditure will rise. It will be much harder to find adequate budgets for pedestrian facilities\(^1\).

**The health issue**

Health issues are becoming universal. For modern humans exercise is no longer a natural part of everyday life. Technical devices, like cars, elevators, bicycles made life easier, but pose new problems as well. Walking is a solution to many health problems. It is a simple and healthy form of exercise. Promoting walking is an effective strategy to keep the population healthy.

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\(^1\) Public expenditure for pensions, health, transport and many other services will rise. The elderly will be more car-dependent as well, causing demand for higher design standards for car traffic as well. All these foreseeable demands will compete with the urgent needs of a relatively small group (Methorst, 2005: 6.1% of the population in NL in 2000, 9.4% in 2030) of pedestrians that have mobility difficulties.
Policy development: focus on car

Up till now road transport policy development and (road) transport sciences focussed mainly on facilitating motorised traffic. Whenever there is a problem with or for non-motorised traffic, researchers, policy makers and designers generally look for solutions that do not inconvenience motorised traffic more than strictly necessary. Apart from some special projects, they feel that pedestrian and cyclists’ needs can be satisfied by making improvements to the original situation or design. This practise leads to a suboptimal situation for pedestrians and cyclists: routes within the network that vary very much in quality, even to the point that some pedestrians (and cyclists) cannot cope with it. A chain is as strong as its weakest link.

Hardly any support from technology & industry

Up till now walking is considered less applicable for technological developments than other modes. Thus progress could not be made to the extent in which progress for other road users was made. Industrial companies focussed on transport and traffic issues that can easily deal with by industrial applications and ‘gadgets’. By consequence technology driven developments and demand driven challenges to the industry stayed away from the pedestrian sphere.

Different situations in different countries

Conditions for pedestrians vary widely from country to country. There are differences in climate, in spatial conditions, quantity and composition of traffic, legal position, culture regarding walking and presence in public space etc. This asks for different solutions for different countries.

In West European countries the current situation for pedestrians is the result of a gradual adaptation process over many decades. In the Central and East European countries the process of growth in the number of cars and car use is much more violent. Adaptation in such situations is much more difficult and may result in much more serious problems than experienced in the ‘old’ already very motorised countries. This project can help to feed those countries with knowledge that will make it easier and more efficient to deal with these problems.

In Europe motorisation did not yet lead to a bipartition of society where walking as a common travel mode is no longer feasible. Chances are that trends like the up scaling of catchment areas of essential services, increasing car dependency and individualisation may lead to such a situation. Better pedestrian facilities might compensate for that.

Research on walking

Within the urban planning sector there is a movement with a long-standing tradition of attention to pedestrian-friendly design. This is inspired by the fact that qualities or deficiencies of the physical environment are experienced more intensely by pedestrians than by other persons passing by in cars or even on bicycles. In the recent COST Action C6 ‘A city for pedestrians: policymaking and implementation’ (Final report 2002) the position of the pedestrian within the urban environment and the State of the Art are highlighted. The COST Action C11 ‘Green structure and urban planning’ (Final report 2005) offers further insight into pedestrian friendly design.

In the 90’s in many countries there was a rise in attention for sustainable transport. In this context effort was put into the promotion of walking and cycling. Guiding studies on the European level were the EU projects WALCYING (How to enhance WALKing and CYCling instead of shorter trips and to make these modes safer; Final report 1998) and ADONIS (Analysis and Development Of New Insights into Substitution of short car trips by cycling and

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2 This is not a mainstream movement, however. In most urban planning studies pedestrian friendly design is not the central issue.
walking; Final report 1999) followed by research on walking in FP5 “City of Tomorrow and Cultural Heritage”, the so called PROMPT study. Furthermore, in many countries handbooks on pedestrian facilities and facilities for the handicapped were published.

Since some years now the health sector stresses the importance of exercise and promotes that people walk at least 30 minutes daily; medical doctors increasingly often prescribe exercise instead of drugs; studies with regard to the ageing of the population reveal that a connecting, convenient, comfortable, conspicuous and convivial walking network will become a crucial factor enabling the elderly to grow old in place; research within the integrated framework approach by THE PEP: ‘Transport, Health, Environment – Pan-European Programme’ is carried out.

**Systems thinking**

For motorised traffic, system thinking has become more or less the norm. Whereas in the old days policymaking was purely reactive (‘we have a problem and we want to solve it’), nowadays the aim is to plan a flawless system, where traffic can move as safely and freely as possible. Research based policy frameworks like Sustainable Road Safety in the Netherlands and Vision Zero in Sweden are examples of this new direction.

For pedestrians, however, system thinking is music of the future. Most public space and transport authorities do not (yet) recognise the importance of systematically meeting pedestrians’ quality needs. Research and traffic engineering are still largely confined to specific problems. Town planners and architects generally concentrate on aesthetics and investment costs, but generally do not think in terms of functional or Universal Design (design for all). Contributions from disciplines like psychology, sociology, philosophy, ergonomics, history, geography and law are still rather rare.

In relation to systems thinking, at present knowledge is fragmented, incomplete and to a large extent outdated. Statistics do not present a comprehensive picture of walking, its benefits and its risks. Most basic research was done decades ago, in situations that differ greatly from current situations. In systems terms there is no overview.

**Political climate**

In the western world, including Central European countries, the free market philosophy is becoming dominant. Policy is focussed on economic growth, which is to be attained by facilitating market participants, not by governmental guidance. Transport is seen as crucial for economic growth. In this walking plays only a marginal role. Leading politicians agree that social issues are best solved through a free operation of the market and that the governments’ role is limited. In relation to this, governments retreat from policy sectors where they were the dominant force. In such a climate, when promoting interventions for improving walking conditions, one needs particularly well founded (economic) arguments. Since the citizen is assigned a larger role in creating adequate living conditions, low threshold tools are needed to substantiate this new role.

**Aim and research question**

The Pedestrians’ Quality Needs Project (PQN) has been established to identify what people need for their safe and agreeable mobility in public space and to show the added value of a systems approach compared with sectorial approaches. The main objective is to provide knowledge of pedestrians’ quality needs and how those needs relate to structural and functional interventions, policy making and regulation to support walking conditions across the EU and other involved countries.

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3 Thus systems approach does not focus on fighting accidents, but on influencing risk factors within the process. The work thus is aimed at optimizing the process and reaching multiple targets: safe, healthy, agreeable mobility for all, ‘ageing in place’, community development etc. Knowing the citizen’s needs is a prerequisite for an effective approach.
PQN will be informed by and build upon the research published by previous studies (including WALCYNG, ADONIS, PROMPT, Vulnerable Road Users and HOTEL). The project is expected to network 25 countries and is being supported by the COST office of the European Commission.

PQN secondary objectives are:

1. Improve the understanding of how the public space, the transport system and the social, legal and political context interrelate with pedestrians' quality needs.

2. Advance the effectiveness and efficiency of future policy and research by developing a new and coherent system of concepts, theories and models that influence the quality and provision of pedestrian facilities.

3. Enable relevant organisations to work together to identify, prioritise, tackle and prevent current and future restrictions on the full potential for pedestrians by providing an accessible knowledge base and easy to use auditing tools.

4. Stimulate partners to innovate tools and disseminate knowledge that help to shed new light on the issue and stimulate a new enthusiasm to provide for safe and agreeable mobility.

5. Provide recommendations for further research.

Research questions are:

- What are the (limitations in) travel and traffic task competences of pedestrians?
- What facilities and qualities do pedestrians need for their safe and agreeable mobility and staying in public space, now and in the foreseeable future?

Sub-questions are:

- What role has walking within our society? Which changes have occurred over time and which changes can be expected?
- Which tasks are pedestrians to perform? Which (implicit) requirements have to be met?
- To what extent is that possible?
- What facilities are needed to perform these tasks adequately and pleasantly?
- To what extent are the (implicit) requirements and provided facilities at odds? How can that be solved?

The scientific programme for the Pedestrian Quality Needs (PQN) Action is based on a comprehensive conceptual model, describing the general factors that influence the actual decisions by (potential) pedestrians, be it for a door-to-door trip, a trip to other modes or just staying in public space. This deductive ‘back to basics’ approach implies a study of the needs, tasks, competences, requirements of pedestrians, contexts and their performances in the various situations of the participating countries. Past research resulted in substantial knowledge on the requirements for promoting walking in city centres. This study will expand that knowledge to everyday walking, in particular in the outskirts of towns and villages, where in fact most of the walking is done.
The general approach of the study is defined by the view that quality is the sum of three kinds of valuations\(^4\) that together sketch a comprehensive picture of pedestrians’ quality needs:

- **Functional perspective:**
  
  usage value, what is being offered = intrinsic quality supply, looking at the system from the ‘head’. With regard to urgency these needs can be seen as first order needs.

- **Perception perspective:**
  
  what is being requested = subjective quality demand, looking at the system from the ‘heart’, including attitudes towards and of pedestrians. With regard to urgency these needs can be seen as second order needs.

- **Durability and Future Prospects:**
  
  whilst # 1 and # 2 are static quality descriptions, # 3 refers to a dynamic perspective. With regard to urgency these needs can be seen as third order needs.

Quality needs can be identified at several abstraction levels\(^5\). The most concrete level is the operational level. On this level the pedestrian performs the physical task of walking or standing up and reacts directly to impulses, i.e. from other road users, and qualities on the spot.

The second level is the so-called tactical level. On this level the pedestrian decides on the direction he takes, whether or not to cross, where to cross, walking speed and so on. For the physical environment this corresponds with connectivity; for the social context the level corresponds with norms of fellow road and public space users; for the transport system it corresponds with the abstraction level of transport concepts.

The highest level is the strategic level. Here the pedestrian decides whether or not he will travel (motive), where to (destination) and which modes will be used. For the physical

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\(^4\) based on the RARO publication on Spatial Quality (Dutch Advisory Council on Land Use Planning RARO [Raad van advies voor de ruimtelijke ordening]) ‘Naar ruimtelijke kwaliteit’, SDU uitgeverij, Den Haag 1990.

context this level corresponds with Land Use and urban planning, including ‘green’ and ‘blue’ zones; the social context on this abstraction level implies social values; the transport system on this abstraction level is typified by facilities for accommodating travel and transportation needs, including information needs.

**Basic principles and demarcation**

The Pedestrians Quality Needs study will be a multi-disciplinary project, in which architects, sociologists, psychologists, statisticians, geographers, medical doctors and many more disciplines will work together. The results must be evidence based, but also transcend the current data limits. The results will not be seen in isolation, but will be placed in context. The Universal Design principle, meaning that walking facilities, including legislation, education, information and public transport, must be designed for use by all people: children, adults, females, elderly and the handicapped as well. A last principle is that road safety is not about averages, but about the exceptions. While most road users perform excellently, a small minority of people pays the price for substandard behaviour of another small group of offenders and road users that make unfortunate mistakes in traffic. In total however it amounts to a huge collective problem.

The PQN project will focus on the European situation, on human needs (not the transport system as a whole), ‘everyday walking’, walking in public space and on identifying basic needs.

**General approach**

The PQN project can be typified as ‘orchestrated research’. Progress will be monitored, evaluated by the PQN Senior Management Group, consisting of the Chair, Vice Chair and the Working Group Leaders. If significant changes in the scientific programme, strategy or organisation are needed, this committee will submit a proposal to the plenary Management Committee.

In this the Conceptual model has a vital role:

- To picture the project’s theoretical framework
- To direct communication (what do we focus on?)
- To help generating specific research questions
- To help check on comprehensiveness of knowledge and research
- To help detect gaps in knowledge.

The project will be executed in a number of stages:

The **first** stage involves the setup of a conceptual and organisational structure, acquiring commitment for task division and execution of project activities.

In the **second** stage data will be collected, roughly analysed, discussed in a first series of workshops in Summer 2007 and summarised in preliminary reports. Within the context of the work packages of WG1, WG2 and WG3 gaps in knowledge will be identified.

In the **third** stage the available data will be further analysed and whenever possible completed by additional (empirical) research. The preliminary results of WG1, WG2 and WG3 from the second stage will be used as input for WG4. The WG results will be discussed in a second series of Working Group workshops in fall 2008.

At the end of this stage the first and fourth project objectives (‘Improve understanding’ and ‘Tools innovation’) will be substantiated.
The fourth stage covers finalising the research, reporting on the results in WP reports and compiling dedicated articles for the handbook. For WP4 and the thesis\(^6\) this means including and adjusting to the final WG1-3 results. The text of this thesis will be completed at the end of this stage. This stage will be concluded summer 2009 by a third workshop or conference, where the WP reports will be presented and discussed.

With the reports a sound foundation will be laid for the realisation of second project objective (‘Advance effectiveness’).

The fifth stage of the PQN project focuses on the dissemination of the project results and developing ‘aftercare’ and courses. In this stage the Handbook will be compiled and produced. The project will be concluded by an international conference in Fall 2010, where the handbook and other follow-up activities will be presented.

This stage is designed to substantiate the second, third and fifth project objectives (‘Advance effectiveness’, ‘Provide an accessible Knowledge base’ and ‘Recommend further research’).

WP1 – Functional needs

This work package will focus on the physical needs of pedestrians, visible and objective behaviour and the ‘technical’ ergonomics of the physical and social environment and the transport modalities. Studies are expected to explore the presence and behaviour of pedestrians in public space, and the relationship and influence of mobility, safety, physical health and exclusion. Standards will be recommended for land use, public spaces, infrastructure, information, legislation and transport modes and will allow for the substantial different situations in the participating countries and sub-regions.

WP2 – Perceived needs

This work package will focus on the ‘emotional’ perspective and include the perception of walking and how attitudes, expectations and motivations influence behaviour of other road users, planners, policy makers and politicians, and of walkers themselves. Perceptions of physical and social environments, the transport system and their interrelations will be identified. Studies are expected to explore the perception of accessibility, comfort, safety, security, health, social climate, aesthetics and spontaneous mobility in particular. Appropriate interventions will be recommended to influence the determinants of current barriers, to breakdown institutional and social obstacles and improve the quality of life for pedestrians.

WP3 – Durability and future prospects

This work package will focus of the durability of interventions, designs and policy measures and on forecasting the potential of future usability and perceived qualities. The package will explore how the perceived needs evolve over time and what new policy directions are needed. Studies are expected to explore the long-term interventions, designs and measures and pedestrian trends and relationships with the physical and social environments and transport modalities. Positive and negative trends will be indicated and evaluated and the consequences of limiting the functional and perceived needs of pedestrians reported.

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\(^6\) The PQN project also serves as a vehicle for writing a PhD thesis by Rob Methorst.
WP4 - Coherence and integration

This work package will focus on the interrelationships between the first three work packages. A model will be constructed to identify pedestrian needs and main influencers on quality and behaviour, and to identify an optimal policy mix for improving pedestrian quality.

The work package includes monitoring the intrinsic\(^7\) progress of the scientific the research programme, coordination of adjustments in the programme and the preparation of external communication.

At the conclusion of the project gaps in knowledge and processes will be identified. Attempts will be made to determine and justify the options for policy makers and practitioners to support both short and long term commitment to invest in the need for quality to support pedestrian activity.

In Table 1 examples of issues in relation to the working group perspectives are given. The Working Groups 1, 2 and 3 deal with the issues of their row (‘horizontally’); Working Group 4 deals with the interrelation per column (‘vertically’) and between columns.

### Table 1 Coherence in directions of analysis.

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<td>Operational</td>
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<td>Perception perspective</td>
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**Outputs**

Information from the project will be interpreted and published in a variety of formats targeted towards different audiences to have maximum influence on increasing the effectiveness of national and local policies.

PQN will set up an accessible online area to help manage, share and promote information between partners to stimulate debate and develop translatable best practise.

Four individual work package reports will be published and a periodical e-news letter will promote the progress of the project.

\(^{7}\) Management aspects will be dealt with by the Senior Management Group. This WG only deals with scientific content, irrespective of the person, money, timing aspects.
Conferences and courses may be organised nationally and internationally to disseminate the findings of the project. At the conclusion of PQN a special conference will be organised by ICTCT and WALK21 as part of the annual WALK21 International Conference Series.

PQN will specifically publish:

1. A conceptual framework and action plan for the life of the project
2. An analysis of the effectiveness of relevant social, legal and political statistics, research and policy in participating countries
3. A handbook on the needs of pedestrians
4. An easy to use auditing tool for measuring the quality of pedestrian needs
5. A consistent qualitative and quantitative methodology for recording pedestrian activity
6. Guidance on national and local procedures for monitoring the effectiveness of pedestrian investment
7. A system model, responsive to the needs of pedestrians, to steer effective investment which supports and encourages the quality of walking
8. Recommendations for future research

What’s new?

The Pedestrians’ Quality Needs project is new in a number of respects. Up till now:

1. no project on walking focussed on the Systems approach in a holistic way, with the pedestrians as a starting point. With respect to policy making, the project aims at a paradigm shift from problem solving to a proactive approach;
2. projects on walking focussed on walking as a separate mode, but not on walking as integral part of mobility and sojourn in public space;
3. projects on walking focussed on promoting walking (the fun of walking, the walking in town centres) and not so much on providing for basic needs for everyday walking in suburbs and peri-urban areas, on improving the system as a whole;
4. projects focussed on ‘here and now’, but not so much on future prospects.

Discussion

To what extent are ideas on a system approach implementable in your situation?

References