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Proposal for a new COST Action

COST Action 358

Pedestrians' Quality Needs

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DRAFT
MEMORANDUM OF UNDERSTANDING
For the implementation of a European Concerted Research Action
designated as

COST ACTION 358

Pedestrians' Quality Needs (PQN)

The Signatories to this 'Memorandum of Understanding', declaring their common intention to participate in the concerted Action referred to above and described in the 'Technical Annex to the Memorandum', have reached the following understanding:

1. The Action will be carried out in accordance with the provisions of document COST 400/01 'Rules and Procedures for Implementing COST Actions' the contents of which the Signatories are fully aware of.
2. The main objective of the Action is to provide an essential contribution to systems knowledge of pedestrians' quality needs and the requirements derived from those needs, thus stimulating structural and functional interventions, policy making and regulation to support walking conditions throughout the EU and other involved countries.
3. The economic dimension of the activities carried out under the Action has been estimated, on the basis of information available during the planning of the Action, at approximately 9 million EUR in 2006 prices.
4. The Memorandum of Understanding will take effect on being signed by at least five Signatories.
5. The Memorandum of Understanding will remain in force for a period of four years, calculated from the date of the first meeting of the Management Committee, unless the duration of the Action is modified according to the provisions of Chapter 6 of the document referred to in Point 1 above.

COST ACTION 358

Pedestrians' Quality Needs (PQN)

A. Abstract

In research, policy making and implementation concerning the safe mobility and the quality of life of pedestrians is a rather neglected issue. Nevertheless, earlier research projects started to deal with the issue and have made it possible to get some grip on the topic. The difficulties arising from long neglect, however, are so substantial that new research activities 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 Action 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 COST Action 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.

This Action 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.

The newfound knowledge will be disseminated through the dedicated networks of International Cooperation on Theories and Concepts in Traffic Safety (ICTCT), the network of the yearly WALK21 conferences and OECD/ECMT as well as relevant congresses and journals.

Keywords: pedestrians, road safety, mobility needs, accessibility, quality of life, health, systems approach, road and public space design, legislation, education, communication, enforcement.

B. Background

Walking is basic

The fate of common things is oblivion. Walking is such a basic way of travelling that its importance is often forgotten, especially when the facilities for walking are available and adequate for a 'normal' person. Only when they are absent or one becomes (temporarily) handicapped, does one rediscover how crucial it is to be able to walk or that the quality of the facilities are not as good as they ought to be.

Walking can be seen as the lubricating oil for the transport system; without it the system cannot function. Walking and pedestrians, however, are not associated with commercial profits. It is not a multibillion dollar industry such as the car industry that is capable of generating large sums of money for research and development. Although there is agreement on the importance of walking for the functioning of the transport system, research on walking and pedestrians' quality needs has proved to be commercially unattractive. Providing for pedestrians is universally perceived to be a public task, therefore reliant on government attention and funding.

It is universally agreed that it is important to have pedestrian facilities, but almost no one has it at the top of their political agenda. Most of the time other transport issues seem to be more urgent and waiting for action. The general public sees taking care of pedestrians as a public duty and does not want to make a fuss from a lowly position (who wants to be perceived as being vulnerable?). Central government sees the care of pedestrians as a local authority task, but at the local level pedestrian issues have to compete with other important transport issues. Providing for pedestrians ranks low on the transport scale, except in public areas where there is a dominant economic or social reason to care for pedestrians, such as in shopping areas or parks.

Transport system trends

Because of increasing car dependency and consequent land-use changes, plus perception and social changes, the nature of walking has evolved. Origin-to-destination (door-to-door) walking has diminished, while walking to and from other modes of transport has increased. In total, the amount of walking per person will decrease somewhat, but because of 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 has become 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 has decreased: this results in fewer pedestrians per square metre of walkway.

Ageing population

Almost all countries will have to deal with an ageing population. For policy development relating to 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.
- Demands on the public purse will rise with an ageing population; it will be much harder to find adequate budgets for pedestrian facilities¹.

Health issues

Health issues are becoming universal. For modern humans, exercise is no longer a natural part of everyday life. Technical devices such as cars, elevators and bicycles make life easier but pose new problems. Walking is a solution to many health problems because it is a simple, inexpensive and healthy form of exercise. Promoting walking is an effective strategy

1. Public expenditure on 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. 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.

to keep the population healthy as well as a cost-effective measure to counteract typically western diseases such as cardiovascular and respiratory diseases, obesity, even cancer, ageing deterioration included. Even mental health related to environmental aspects and lifestyle is positively influenced by regular walking while car use and hours spent in traffic jams represent an important stress factor, influencing both mental and physical well-being.

Policy development: focus on the car

Until now, road transport policy development and (road) transport sciences focused 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 sub-optimal situation for pedestrians and cyclists: routes within the transport network that vary very much in quality, even to the point that some pedestrians and cyclists cannot cope with them. A chain is as strong as its weakest link.

Minimal support from technology and industry

Walking is considered less suitable for technological development than other modes of moving around; therefore progress has not been made to the same extent as for other road users. Industrial companies have focused on transport and traffic issues that can easily be dealt with by industrial applications and gadgets, so technology-driven developments and demand-driven challenges to the industry avoided the pedestrian sphere. As a consequence pedestrian interests are more dependent on other fields such as urban planning, road design and traffic control. However, roadside applications could have a potential for pedestrian safety and pedestrian quality of life. Likewise, advanced technological devices worn by the pedestrian could have a positive impact. The potential of technology to satisfy pedestrians' quality needs has yet to be discovered.

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, legislation and culture regarding walking and a person's presence in public space. This means there must be different solutions for different countries.

The position of the pedestrian in society and in the transport system changes over time.

In western European countries the current pedestrian situation is the result of a gradual adaptation process over many decades. In central and eastern European countries the process of growth in the number of cars and car use is much more extreme. 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 Action will help provide those 'newly motorised' countries with knowledge that will make it easier and more efficient for them to deal with pedestrian problems.

In Europe, motorisation has not yet led to a partition of society where walking as a common travel mode is no longer feasible. The chances are that trends such as 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 longstanding tradition of pedestrian-friendly design². This is inspired by the fact that qualities or deficiencies of the physical environment are experienced more intensely by pedestrians than by drivers or even cyclists. A classic study is *The Image of the City* by Kevin Lynch (1960)³. In the COST Action C6 'A city for pedestrians: policy making 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 1990s, in many countries there was a rise in interest for sustainable transport. In this context, effort was put into the promotion of walking and cycling. Guiding studies at the European level were the EU projects WALCYNG (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 walking; Final report 1999) followed by research on walking in the Fifth Framework Programme's 'City of Tomorrow and Cultural Heritage', the PROMPT Action. Furthermore, in many countries, handbooks on pedestrian facilities and facilities for the handicapped were published.

For some years the health sector has stressed the importance of exercise and promotes to walk for at least 30 minutes a day. Medical practitioners increasingly often prescribe exercise instead of drugs. Studies relating 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 WHO's Transport, Health, Environment – Pan-European Programme (THE PEP) is being carried out.

The Joint ECMT/OECD Transport Research Centre is planning to set up a working group on Pedestrian Safety, Urban Space and Health' (Programme of Work 2007-2009). This project will probably start in 2008 and be completed in 2009. The study will involve identifying key factors, benchmarking, improvements and conclusions regarding measures at the national level.

Systems thinking

For motorised traffic, systems thinking has become more or less the norm. Whereas formerly, policy making 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 such as Sustainable Road Safety in the Netherlands and Vision Zero in Sweden are examples of this new direction. The Joint Transport Research Centre (JTRC) of the OECD and ECMT has a working group, Achieving Ambitious Road Safety Targets that will publish a report on the state-of-the-art of safety management.

For pedestrians, however, system thinking is a dream 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

2. This is not a mainstream movement, however. In most urban planning studies pedestrian friendly design is not the central issue.

3. Lynch, Kevin *The Image of the City*. Massachusetts Institute of Technology and Harvard University (1960).

(design for all). Contributions from disciplines such as 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 focused on economic growth, which is to be attained by facilitating market participants, not by government guidance. Transport is seen as crucial for economic growth, but 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 government's role should be limited. In relation to this, governments retreat from policy sectors where they were once 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 now assigned a larger role in creating his/her adequate living conditions, low-threshold tools are needed to support this new role.

Why a COST Action?

The urgency of providing for walking and the changing pedestrians' needs is growing. Thus there is an increasing need for knowledge on the issue. Little has been done on the European level since the FP5 project 'City of Tomorrow' and the COST Action C6 'A city for pedestrians: policy-making and implementation'.

Although there are many good examples of pedestrian friendly streets or areas, the general situation and context is far from ideal and not automatically getting better. The good examples are merely 'islands of quality in a sea of misery'. A more fundamental approach that also takes social and political trends into account is needed. With regard to such a systems perspective of the quality needs of pedestrians there are gaps in current knowledge.

In most countries there is no critical mass for a general interdisciplinary systems approach study on this issue. Although there are many researchers and policy developers interested in the issue, as yet it is difficult to get joint research and policy development funded nationally. A practical solution is to join forces internationally and benefit from individual qualities. COST offers an effective and efficient framework for international and interdisciplinary research. Since there are not many professionals working on the issue, the joining of forces also reduces the chance of duplication of research. A COST Action implies a less heavy administrative burden than a Framework Programme project; this is a favourable condition for researchers joining the Action.

One of the basic factors in effectiveness of dissemination is the credibility of the source. A COST Action ensures that state-of-the-art knowledge will be disseminated and that the recipients attach credibility to the source of information, thus facilitating and stimulating more and better local interventions, based on scientific evidence.

C. Objectives and benefits

The main objective of the Action is to provide an essential contribution to systems knowledge of pedestrians' quality needs and the requirements stemming from those needs,

thus stimulating structural and functional interventions, policy making and regulation to support walking conditions throughout the EU and other involved countries.

The research aims are:

1. To improve the understanding of pedestrians' quality needs with regard to public space, the transport system and the social, legal and political context and their interrelations, thus developing an essential tool for the stakeholders (such as decision makers, politicians, planners as well as NGOs) that can implement better conditions for walking and pedestrians' quality of life.
2. Describe the state-of-the-art, identify an agreed set of requirements and develop a new paradigm (a coherent system of theories and models regarding adequate pedestrian facilities and qualities) that can be used by stakeholders for analysing and improving reality.
3. Provide an accessible knowledge base and easy to use auditing scheme that enables authorities and possibly interest groups to tackle, prevent and prioritise current and future problems regarding pedestrian mobility and presence in public space.
4. To stimulate partners to innovate tools and disseminate knowledge that helps in shedding new light on the issue and stimulates a new spirit in providing for safe mobility of the pedestrian.
5. To provide recommendations for further research.

European situation

The Action focuses on the current European situation and aims at providing useful information for policy development in European countries and to a lesser extent, North America, Australia and Japan. Conclusions may not be valid for other continents.

Human needs

The Action focuses on the pedestrian as a human being and his/her role in transport and traffic; the physical and social environments and the transport system should be there to support the pedestrian's needs. Safe mobility and being unthreatened while in a public space are basic needs.

Everyday walking

A pedestrian is anyone who walks or is present in a public space. The Action will highlight everyday walking, that is 'functional' or utilitarian walking: walking from an origin to a destination, which can also be a vehicle or a public transport stop. Leisure walking or just staying in a public space, such as talking to neighbours, enjoying the sun are also included, but using public space for sports (jogging, marathon walking) or parades is excluded in the Action. De luxe modes that are legally pedestrian, such as skates, stepping bikes, Segways⁴ are also excluded. On the other hand, walking aids (e.g. a walking frame), electric scooters and wheelchairs will be included. The Action explicitly includes multimodal walking. Walking to and from other modes of transport is seen as a basic transport link.

Walking in a public space

⁴ A Segway is a two-wheeled human electronic (gyrator) transporter. It is driven by balancing. See: <http://segway.com/>

Public space is any space that is open for all citizens and includes the road infrastructure, sidewalks/pavements and footpaths, the access (intermediary) spaces to private space, but excludes gated shopping malls, private property and the interior of buildings.

Identify basic needs

This Action focuses on identifying the minimal ergonomic, perception and durability qualities that are needed for safe mobility and a safe presence in a public space for the vast majority of pedestrians, thus defining 'basic quality'.

Focus on prevention within the foreseeable political contexts

The Action focuses on 'organic' optimising of land use, the physical environment, the transport system, and the social and legal context, thus preventing problems for pedestrians within all foreseeable political contexts.

D. Scientific programme

Research questions are:

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

Sub-questions are:

- What role does walking have within our society? What changes have occurred over time and what changes can be expected?
- What task does a pedestrian have to perform? What (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 this Action will be 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 journey to other modes of transport or just staying in a public space. This deductive 'back to basics' approach implies a study of the needs, tasks and competences of pedestrians, plus the contexts and pedestrian performance in various situations in the participating countries. Past research resulted in substantial knowledge on the requirements for promoting walking in city centres. This Action will expand that knowledge to cover everyday walking, in particular in the outskirts of towns and villages, where in fact most of walking is done.

The general approach of the Action is defined by the point of view that quality is the sum of three kinds of valuations⁵ that together draw a comprehensive picture of pedestrians' quality needs:

⁵ 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.

1. *Functional perspective:*
usage value, what is being offered = intrinsic quality supply, looking at the system from the 'head'
2. *Perception perspective:*
what is being requested = subjective quality demand, looking at the system from the 'heart', including attitudes towards and of pedestrians.
3. *Durability and future prospects:*
while No. 1 and No. 2 are static quality descriptions, No. 3 refers to a dynamic perspective.

Quality needs can be identified at several abstract levels⁶. 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 circumstances on the spot.

The second level is the *tactical* level. On this level the pedestrian decides on the direction s/he takes, whether or not to cross the road, 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 abstract 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 of transport will be used. For the physical context this level corresponds with land use and urban planning, including 'green' and 'blue' zones; the social context on this abstract level implies social values; the transport system on this abstract level is typified by facilities for accommodating travel and transport needs, including information needs.

In Table 1 a first provisional impression is presented regarding the valuations and the respective abstract levels.

With regard to the three abstract levels the following items will be studied:

1. The current situation and its context in the participating countries
2. Theories regarding mechanisms that can explain the current situation
3. Ideas, theories, concepts regarding the optimal situation
4. Requirement programmes, choices and arguments
5. Evaluation of (commonly used) models, theories and paradigms
6. Evaluation of common and best practices.

Whenever possible, the Action is based on current knowledge and available statistical data and literature. Specific gaps in knowledge can be filled by low-cost empirical studies.

⁶ See: 'Dealing with dangers', J.A. Michon, Groningen 1979 and 'Vulnerable Road Users', Methorst, Rotterdam 2003 regarding the Pizza-model.

Table 1 Quality-related issues

	Operational	Tactical	Strategic
Functional perspective	<ul style="list-style-type: none"> - Physical quality - Comfort - Action related risk for pedestrians in specific situation 	<ul style="list-style-type: none"> - Connectivity - Convenience - Accessibility - Tactic related risk for pedestrians in specific routes 	<ul style="list-style-type: none"> - Pedestrian mobility - Health - Strategy related risk for pedestrians for generalised situations
Perception perspective	<ul style="list-style-type: none"> - Amenity - Communication - Time/space specific subjective risk 	<ul style="list-style-type: none"> - Convivial / security - Conspicuous - Space specific / time generic subjective risk 	<ul style="list-style-type: none"> - Mobility constraints - Security - Time/space generic subjective risk
Durability and future prospects	<ul style="list-style-type: none"> - Site qualities - Potential objective and subjective risk in specific situation 	<ul style="list-style-type: none"> - Objective&subjective connectivity projects - Convenience prospects - Potential objective and subjective risk 	<ul style="list-style-type: none"> - Technical and subjective mobility - Health - Potential objective and subjective risk in generalised situations

Products

In relation to the objectives of the Action the following deliverables will be prepared:

Intermediary projects (public, but mainly for internal use):

1. Report on the conceptual framework of the Action
2. Country reports regarding the state-of-the-art, including the perception of institutional actors and available knowledge on PQN
3. A prognosis report (time horizon 2030)
4. Report on quality needs in relation to various contexts
5. State-of-the-art reports regarding the functional perspective, perception perspective, durability and future prospects, and knowledge on compliancy of institutional actors and options for citizens and interest groups
6. An integration and coherence report, displaying the interrelations between the qualities, various contexts and activities of institutional actors, interest groups and citizen groups

Deliverables (for the general public):

7. Guidelines for a pedestrians' quality needs audit
8. Handbook on Pedestrians' Quality Needs, in which the secondary aims of the project are met.

Basic principles and preconditions

Multidisciplinary action

The Action is not limited to a certain discipline such as traffic engineering or town planning, but is set up as a holistic multidisciplinary approach. Pedestrian needs and qualities will be studied from various points of view: traffic engineering, town planning, architecture, design, ergonomics, psychology, sociology and (human) geography, economics, etc. Road safety, although an important element, is not necessarily the common umbrella.

Evidence-based 'helicopter view'

This Action aims at a comprehensive covering of the pedestrian issue at 'helicopter-view'-level. Conclusions must be evidence based.

Currently, academic knowledge is incomplete, rather fragmented and partly outdated. A systems approach will be used to trace gaps in knowledge; in some cases new evidence must be gathered.

Transcending 'What you don't count, does not count'

Developments that are not monitored are usually not noticed: what you don't count does not count. In statistics and other (research-based) signals to the managers of public space, pedestrian issues are not properly represented. Better data can place the issue higher on the political agenda; in time this will lead to better facilities. In other words: there is a relationship between the quality of data and the quality of facilities.

Placed in context

Pedestrian safety and other needs will be compared with risks and needs of other road users and public space users. A situation will be regarded as relatively unsafe or inadequate for (groups of) pedestrians when they are more often involved in accidents per trip, per time unit or per distance travelled, or when they are disadvantaged in comparison with the average for all groups of road or public space users.

Universal Design principle

The Universal Design principle⁷ implies that the spatial system, the transport system and the social system are designed to enable (almost) any pedestrian to function adequately. Design, in the broadest sense, must be directed at including those who have the most trouble coping with the system, i.e. children, the elderly and the handicapped. In other words: quality does not depend only on the average user but also on the small part of the population that deviates most from the mean.

Road safety is about exceptions

Like quality, road safety is about exceptions and not about averages, but road safety is also about the mismatch between the components of the system: road users, vehicles and the environment. Accidents rarely happen because of average circumstances, but because of an exceptional coincidence of events and critical behaviour. People with marginal competences and high fragility are more at risk than highly competent and alert road users. Fortunately most of the trips made by the less competent can be made without accidents or serious incidents. Most road users behave safely in traffic most of the time, while only a small minority violates safety rules on a regular basis, creating potentially dangerous situations. The latter group is however involved in a disproportionately large number of accidents and conflicts with pedestrians. Remedies are to be found in all components and relations within the system, such as vehicle design, the characteristics of the transport system, the physical

7. Universal Design is also known as Design for All (D4A).

environment (place, network and land use), social environment (other road users, social context, norms and values, legislation and enforcement), road users (equipment, training and education, organisation and representation)⁸.

E. Organisation

The managing body of the Action is the Management Committee. The Action work will be divided into four working groups:

- WG1 Functional perspective
- WG2 Perception perspective
- WG3 Durability and future prospects
- WG4 Coherence and integration

The WG participants will communicate through the WG leaders and not directly to the Action chairperson. The WG leaders will make regular WG progress reports and present a brief Programme Decisions Paper for the MC. The MC will decide on those programme issues and will post regular Action progress reports on a (secure) internet site.

For special tasks, such as organising meetings, workshops and other events, reviewing reports and papers, ad hoc task force consisting of WG leaders will be formed, working under the responsibility of the MC. For quality control a special external group will be set up.

The working groups will produce a work plan that describes how the key questions will be answered. The project will start with a questionnaire survey amongst all participating countries on the current pedestrian situation (i.e. mobility, safety, legislation, policy and attitudes of (institutional) actors).

WG1. Functional perspective

- Focus on visible ('objective') behaviour of pedestrians
 - What is known about presence, mobility and safety characteristics of pedestrians in public space?
- 'Technical' perspective of ergonomics
 - What tasks does a pedestrian have to perform?
 - To what extent are (groups) of people impeded in their safe mobility?
 - Which items should be included in (minimum and optimum) requirement programmes? Which standards should be met?
 - To what extent can intelligent transport system (ITS) applications be as effective as other types of countermeasures?
- Comprehensive: includes valuation of infrastructure, land use, information, legislation, relation to transport modes, etc.

WG2. Perception perspective

- Focus on the perception of the current situation, behavioural attitudes, motives and desires
- Human Factors perspective
 - Which human factors influence the safety and freedom of walking?
 - What is known about the needs and expectations of pedestrians?

8. A system of options for interventions is worked out in the Conceptual Model Paper for the project.

- To what extent do pedestrians experience inter- and intrapersonal conflicts in relation to their mobility and movement in a public space?
- What is known about the effects of communication on the perception of qualities and shortcomings of facilities for pedestrians (in the broadest sense, including ITS applications)?
- Comprehensive: includes perception of physical and social environments, transport system and communication aspects
 - Which interventions are needed and possible to improve the pedestrians' quality of life?

WG3. Durability and future prospects

- Focus on durability aspects of design and materials used and on trends in walking, its context and consequences for quality needs
 - What trends are there regarding the mobility and safety of pedestrians?
 - Which factors influence the presence and safe mobility in public space?
 - Which design and organisational issues need (constant) attention?
- Future prospects concerning usability and perceived qualities
 - Which interventions are needed to prevent degradation of the quality of life or to ensure the safe mobility of pedestrians?

WG4. Coherence and integration

- Focus on identifying interrelations and improvement options among the three valuations and best practices on the various policy levels.
 - How do the three valuations of quality for pedestrians interrelate and interact?
- Integrative perspective:
 - What gaps in knowledge are there? What developments need to be monitored?
 - What improvements are needed and are in theory politically feasible?
 - What best practices and experiences are there?
 - What policy strategies are needed for improving the safe mobility of pedestrians and their unthreatened presence in public space?
- **Coordination of the working groups, web site communication (both within the research group and for the public) and organisation of meetings.**

F. Timetable

The Action will last for four years

Phase 1. Forming working group study groups

- Kick-off meeting

- collecting the literature
- compiling a references database for each of the sub-questions
- searching for sources (statistical data, expert networks, relevant institutes etc.
- preparing a questionnaire – active search for funding for total or specific working groups
- formulate practical (empirical) data collection projects, filling in important gaps
- formulate working group project plans
- formulate outline of working group reports
- identify (empirical) data collection projects
- identify minimum and optimum scenarios
- formulate communication plan
- consultation with the Joint ECMT/OECD Transport Research Centre regarding their additional requirements for their (planned) project Pedestrian Safety, Urban Space and Health.

Phase 2. Data collection

- data/information collection
- try for additional funding and perhaps extend the project
- preliminary data/information analysis
- define gaps to be filled in
- (if possible) international (ICTCT⁹) workshop for partners of the project; exchange information regarding outlines and practical options

Phase 3. Analysis, evaluation and filling in gaps

- formulate need for additional data/information
- collection of additional information
- draft report per working group
- **international (ICTCT and/or WALK21¹⁰) workshop for partners of the project**
- consultation with the Joint ECMT/OECD Transport Research Centre regarding their additional requirements for their (planned) project Pedestrian Safety, Urban Space and Health.

Phase 4. Compilation of working group reports

- additional research
- finalising draft reports
- recommendations for integrated report on communication
- **presentation of working groups results at ICTCT 2007 and/or WALK21**
- communicate provisional results of the working groups to the JTRC working group on Pedestrian Safety, Urban Space and Health

Phase 5. Compiling and editing the handbook

- integration of papers for state-of-the-art report
- writing final report

Phase 6. Dissemination

- **organisation of a final conference**
- press releases
- fundraising for dissemination at local level in the participating countries
- articles in relevant periodicals including national, regional and local media
- presentations at relevant conferences
- organisation of courses and demonstrations of use of developed tools at local levels in the participating countries

Phase 7. Aftercare

- disseminate conference reactions and planned follow-up activities

9. ICTCT stands for International Cooperation on Theories and Concepts in Traffic Safety. ICTCT is an association developed out of an international working group of safety experts with the aim to identify and analyse dangerous situations in road traffic on the basis of criteria other than past accidents, analogous to the methods of air and industrial safety. International cooperation in the identification and analysis of potentially dangerous situations in road traffic, and their causes, on the basis of relevant safety data derived from observations and surveys.

The aim of ICTCT is to achieve a deeper understanding of problems in the area, to harmonise future research activities, and to provide means for an optimal use of research results from different countries. To fulfil these aims ICTCT has been involved in a number of cooperative research efforts (workshops, calibration studies, formulation of international guidelines, clearing house for reports, etc.). ICTCT organises at least one workshop (70-100 delegates) per year. See also: www.ictct.org

10. WALK21 started as a UK framework for walking officers. Since 1999 WALK21 (large) yearly conferences on walking throughout the world. WALK21 has created a worldwide network of walking advocates, researchers, designers and policy makers.

- attend to questions related to the deliverables and other products of the project
- initial stimulation and supporting of dissemination at the local level

Table 2. Timetable of the Action

Timetable PQN project																
year	year 1				year 2				year 3				year 4			
quarter	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Phase 1	Forming working groups															
	MC															
Phase 2	Data collection															
	MC, WG1, WG2, WG3															
Phase 3	Analysis															
	MC, WG1, WG2, WG3															
Phase 4	WP reports															
	MC, WG1, WG2, WG3															
Phase 5	Compiling Handbook															
	MC, WG1, WG2, WG3															
Phase 6	Dissemination															
	MC, WG4															
Phase 7	Aftercare															

K= Kick-off meeting (experts only)

X = Workshop (open to all experts, NGO's and politicians)

C = Final Conference (Open to all experts, NGO's and politicians)

- Working Groups 1, 2 and 3 start at the beginning of the project and end after Phase 4

- Working Group 4 starts at the beginning of the project and ends after Phase 7

G. Economic dimension

The following COST countries have actively participated in the preparation of the Action or otherwise indicated their interest:

Austria, Belgium, Croatia, Czech Republic, Estonia, Finland, France, Hungary, Germany, Greece, Israel, Italy, Latvia, Macedonia, Netherlands (proposing country), Norway, Portugal, Romania, Serbia & Montenegro, Spain, Sweden, Switzerland, United Kingdom.

On the basis of national estimates provided by the representatives of these countries, the economic dimension of the activities to be carried out under the Action has been estimated, in 2006 prices, at approximately 9 million EUR.

This estimate is valid on the assumption that all the countries mentioned above but no other countries will participate in the Action. Any departure from this will change the total cost accordingly.

The following non-COST countries have also expressed their interest: Australia, India, and Jordan.

H. Dissemination plan

Dissemination aims

The dissemination of the results of the Action aims at:

- Providing practitioners with reports and other traceable information on pedestrians' needs
- Improving know-how in the scientific community
- Influencing policy making at the national level
- improved awareness of pedestrian quality needs at the local level
 - improved statistics on walking
 - (start of) public discussion on the issue
 - expertise transfer to local authorities and NGOs (local conferences and courses).

Internal communication

For the participants a password protected website will be created, where interim results, working documents and draft papers will be posted. A shielded e-mail forum will be used for internal communication (comparable to the ICTCT e-mail group on Yahoo). There will be monthly progress reports made by the MC, based on information given to the WG leaders.

At the end of each phase, meetings will be organised to discuss and evaluate the results. These meetings will also be used to discuss the planned activities in the next phase.

External dissemination

Dedicated fora websites receive more visitors than an independent website. General information will therefore be posted on a public website related to the dedicated ICTCT and WALK21 fora as well as on the websites of the partners of the Action (either as link to the dedicated websites or as specific pages in the language of the country):

1. Report on the conceptual framework of the Action.
2. Country reports regarding the state of affairs, including the perception of institutional actors and available knowledge on PQN.
3. A prognosis report (time horizon 2030).
4. Report on pedestrian quality needs in relation to various contexts.
5. State-of-the-art reports regarding Functional perspective, Perception perspective, Durability and future prospects, and knowledge on compliancy of institutional actors and options for citizens and interest groups.
6. An integration and coherence report, displaying the interrelations between the qualities, various contexts and activities of institutional actors, interest groups and citizen groups.
7. Periodical e-news letters on the progress and intermediary results of the Action.

For the same reason, the existing ICTCT and WALK21 networks, meetings and workshops will be used for dissemination of results of the projects. The meetings will be open for all experts, NGOs and politicians at a reasonable conference fee. In 2006 the Action will be promoted during the WALK21 conference in Melbourne, the ICTCT workshop in Minsk and various other conferences. In 2007 and 2008, progress will be communicated in the same fora and collaboration will be sought with the Joint ECMT/OECD Transport Research Centre.

The latter is a renowned source to policy makers at the national level in the ECMT/OECD countries.

The final results will be presented at the WALK21, ICTCT and other relevant congresses (e.g. TRB, TRANSED, Road Safety on Four Continents).

Final dissemination

At the end of the project various reports published and articles will be submitted to scientific journals such as *Accident Analysis and Prevention* and *Transportation Research*. Deliverables will be:

1. Guidelines for a pedestrians' quality needs audit
2. Handbook on Pedestrians' Quality Needs.

Furthermore, the topic of this Action is expected to be researched in the context of some PhD theses.

Popular versions of the scientific reports, if possible translated into national languages, will be produced for use by local authorities, interest groups and the media. These popular versions will be distributed to decision makers and interest groups through the appropriate national channels (seminars, national and regional conventions of local authorities, relevant NGOs).

The Action will be concluded by a special conference, organised in cooperation with ICTCT and Walk21. This will ensure a larger audience than can be expected for a solo event. The conference will be open to all experts, NGOs and politicians at a reasonable fee. At the conference the deliverables will be presented and discussed.

After the final conference, after care will be offered: courses for practitioners and NGOs will be given, the publications will be promoted locally by the participants and relevant NGOs, and questions regarding the Action results will be answered.

COST ACTION 358

Pedestrians' Quality Needs (PQN)

**ADDITIONAL INFORMATION
NOT PART OF THE MoU**

1. History of the proposal

Up till 2000 the Dutch Pedestrians Association had an active function in gathering knowledge on pedestrians' issues. In that year the association merged with two other road safety organisations into 3VO. Part of the scientific staff (Rob Methorst and Willem Vermeulen) transferred to the Transport Research Centre AVV of the Ministry of Transport and Public Works.

In 2001 the Dutch Ministry of Transport and Public work commissioned the Action on a knowledge base for development of an integrated and comprehensive systems approach regarding vulnerable road users. This Action resulted in a report; currently policy development is under way.

Within AVV it was felt that the accumulated knowledge on pedestrian issues should be secured. A PhD thesis was thought to be a good option.

Meanwhile at the ICTCT¹¹ General Assembly in Tartu (Estonia, October 2004) it appeared that a majority of the delegates had affinity for vulnerable road users and the pedestrian issue in particular. It was decided to form a task force to gather the available knowledge on pedestrians' issues and come up with a work plan for a joint project on the matter. The task force included Zuzana Simonova (Italy), Dago Antov (Estonia), Hector Monterde I Bort (Spain) and Rob Methorst (The Netherlands). Methorst agreed to pull the project and develop a draft work plan.

In October 2005 a draft work plan was presented at the ICTCT workshop in Helsinki. At the following General Assembly a large majority of the delegates expressed their interest in participating. It was decided to release a Call for Participation via the ICTCT website and e-mail to known experts and. Within a month some 45 experts from 35 institutions in 20 countries reacted and expressed their interest.

11. ICTCT stands for International Cooperation on Theories and Concepts in Traffic Safety

Basic Conceptual Model

In separate Conceptual Model Paper definitions, context and the basic conceptual model that will be leading for the work within the 4 working groups are described. Through the perspectives of pedestrians regarding functionality, perception, durability and future prospects the system will be analysed and needs and requirements identified. In the working group Coherence and Integration the perspectives will be integrated.

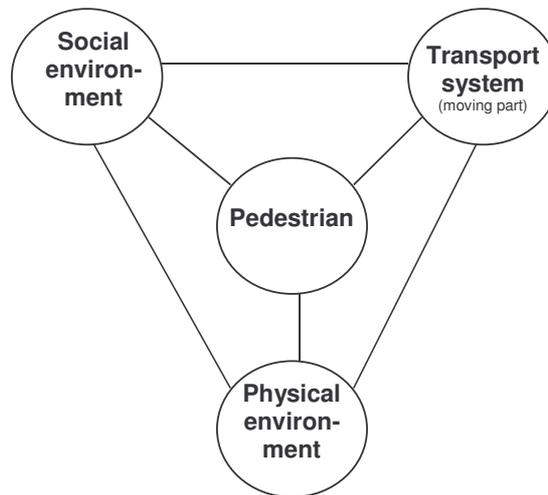


Figure 1. The system around the pedestrian

'Social environment' includes communication between pedestrians and other modes in the frame of traffic processes, often reflecting disturbances and risks for pedestrians. Not least, such communication is the outcome of societal attitudes, such as the priorities taken with respect to walking as a transport mode, by politicians and decision makers, connected to media reporting, often because of a car centred perspective that perceives pedestrians as obstacles for smooth traffic flow implementation.

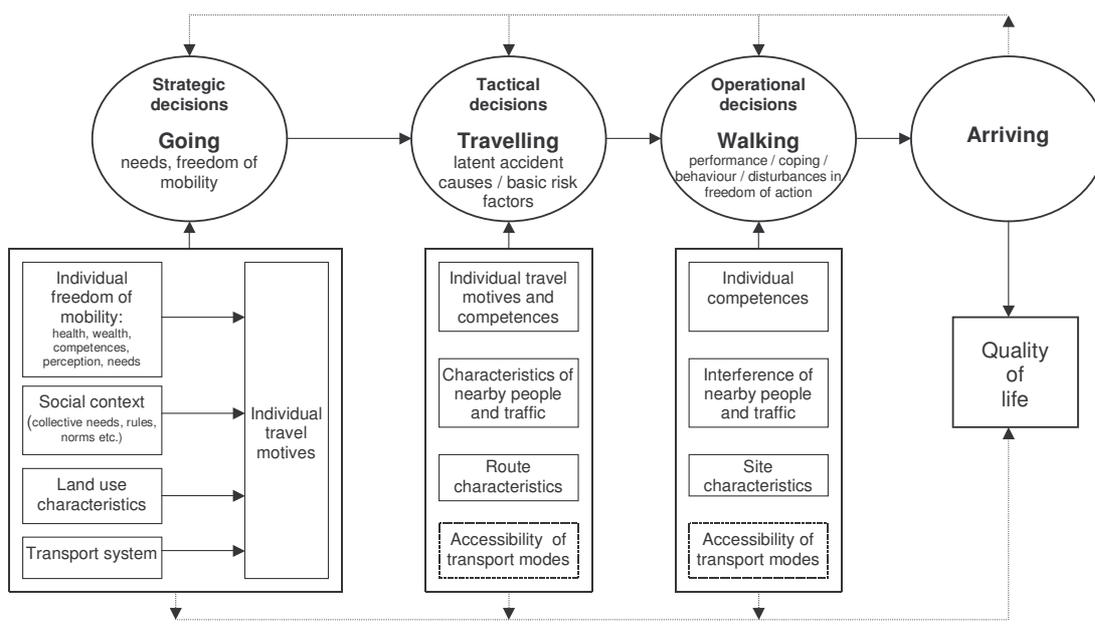


Figure 2. Conceptual Model PQN

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3. Some recent publications (in which interested experts had a role)

ADONIS Final Report, Brussels 1999

Berge, G., Fyhri, a. & Jacobsen, J.K.S. (2000): The experience of landscape in everyday life 481/2000, Institute of Transport Economics, Oslo 2000

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Ekman, Lars: On the treatment of flow in traffic safety analysis - a non-parametric approach applied on vulnerable road users, Department of Traffic planning an Engineering, Bulletin 136, Lund (Sweden) 1996

Fischer, D. Risser, R & Ausserer, K.: Thesenpapier zur Förderung des Fußgängerverkehrs - Psychologische und sozialwissenschaftliche Überlegungen zum Thema Gehen, FACTUM, Vienna 2005

Methorst, R.: Vulnerable Road Users - Report on the knowledge base for an effective policy to promote the safe mobility of vulnerable road users, AVV Transport Research Centre, Rotterdam 2003

Mollenkopf, H. c.s.: Ageing and outdoor mobility - a European Action, IOS press, Amsterdam 2005

Kirschbaum, J.B., Axelson, P.W. and others: Designing sidewalks and trails for access (Part 1 - review of existing guidelines and practises, 1999; Part 2 Best practises Design Guide), Department of Transport, Washington 1999/2001

HOTEL - How to analyse quality of life - state-of-the-art report, Vienna 2003

OECD: Ageing and Transport - Mobility and safety issues, Paris 2001

PROMPT - New means to PROMote Pedestrian Traffic in cities, Helsinki/Roma/Brussels 2005

Wittink, R., Promotion of mobility and safety of vulnerable road users (PROMISING Final Report), SWOV, Leidschendam 2001

WALCYNG Final Report, Lund 1998

Wegman, F. & Aarts, L. Door met Duurzaam Veilig, SWOV, Leidschendam 2005

WHO, 2000: Transport, Environment and Health. WHO Regional Publications. European Series No 89, Copenhagen

WHO, 2002: A Physically Active Life through Everyday Transport. With a special focus on children and older people. Examples and approaches from Europe, Copenhagen

4. Recent research

Besides a great number of specific studies on pedestrians, in the last two decades several international outlines of the position of the pedestrian are conducted. Reports were produced by leading organisations such as European Commission, WHO, OECD, ECMT, NATO-CCMS, ETSC. Also pressure groups published a large number of publications. But the results of all these investments did not yet contribute directly to a better position of the pedestrians in traffic.

Some facts about statistics. In the 25 countries of the European Union occur on a yearly base approximately 7.000 pedestrian fatalities and are more than 15.000 pedestrians hospitalized. At least 70.000 pedestrians need a treatment from a medical doctor. But as one knows, statistics for pedestrian accidents are not complete, not representative and they vary annually. It is a well know fact that there is a high level of underreporting accidents involving pedestrians. There is also a lack of exposure data.

There are large differences in accidents between countries because of the different measures implemented such as information and education, provisions for pedestrians and legislation. But there is no doubt, older road users as pedestrians and child pedestrians are high-risk groups.

The safety of pedestrians in the Southern, Eastern and central European Countries (the "SEC Belt") is obvious worse as in Western Europe.

The most important statements and recommendations made by international organisations are briefly summarised.

Besides shortcomings in statistics about pedestrian accidents the problem is merely the fact of vulnerable mobility (exposure) for these road users in their walking trips, or as before and after walks as part of using another mode of transport in between. In other terms, the time a pedestrian spends in traffic is 30 percent of the total time spent by all road users. And it is important to realize that 25 percent of all trips are made on foot¹².

There is imbalance between the safety of high-risk groups such as pedestrians, older road users and children, and the mobility of vehicle users in urban and residential areas (AA Foundation, 1994; ECMT, 1997; European Communities, 2003).

Mobility and safety issues should be linked to each other to meet pedestrians' transport needs. We still do not know the extent of their total trips, distances, and time spent in traffic and their destinations (ADONIS, 1998; OECD, 2001).

Road traffic injuries constitute a major public health problem. Too little attention has yet been paid to health, fitness and wellness programmes in order to help to reduce frailty of the pedestrian. In this context there is need for Actioning the relationship between quality of life welfare and health costs and the degree of mobility of pedestrians (OECD, 2001). Policies to encourage walking need to be safety-oriented or the casualty problem will get worse (ETSC, 1999; WHO, 2001).

The Marketing-approach and use of related communication models were envisaged in the EU-project WALCYNG (Hydèn et al. 1998) in order to enhance problem awareness and to more easily overcome societal and political barriers for the improvement of walking preconditions of all types.

12. There are indications (Voetenwerk rapportage, Methorst, 2006) that approximately half of the time spent and distance covered on foot is made during multi modal trips. In most national statistics this exposure is not included.

ECMT (2000) stated that more awareness must be developed to see pedestrian safety as a serious problem that requires a comprehensive and coherent approach and incorporate pedestrian safety into all decisions concerning locomotion-related policies at national and local level.

In relation to road infrastructure more attention has to be directed to the prevention of road traffic accidents with pedestrians. The infrastructure for pedestrians must be adapted to the limitations of human capacity through proper road design to protect the vulnerable human being as effectively as possible. This can be done by preventing unintended road use, by preventing big differences in speed and by preventing uncertainty in road users behaviour (SWOV, 1992 / 2005).

Our urban centres are being choked by ever-rising numbers of cars. We have the engineering know-how to transform our cities into peaceful and safe places to live (COST, 2003). It is necessary to change the existing car-oriented policies in designing and building the infrastructure. This means that city renewal should be adapted to the needs and requirements of the pedestrians to move safely and freely and that the citizens can get opportunities to experience the city life on foot. Green areas in cities are positively related to health. Special attention must be given to disabled persons, children and the elderly in the planning and design of road infrastructure, buildings and amenities (COST, 2001; COST, 2005).

In relation with car manufacturers there is still a lot to do. To make life safer for pedestrians, safety standards for the design of car fronts could help save up to 700 lives a year in the EU. An agreement with the industry is still under discussion, but the profits are clear (ETSC, 1997, 1999; White Paper, 2001; ECMT, 2000; European Communities, 2003).

There is a strong need to raise the public's awareness of safety among road users and particularly pedestrians; but also among those responsible for transport. Encourage people to walk more, given that it is economical, environmentally beneficial and healthy (ECMT, 2000).

While each country may undertake efforts to address this challenge on its own, collaboration on research and sharing of the best practices and relevant information offer great potential. It would also be of importance to calculate the cost/effective ratio of promising countermeasures in order to convince the relevant authorities. Rational decision-making is essential when choosing between conflicting social and economic objectives (ETSC, 1997, 1999; WHO, 2001; White Paper, 2001; OECD, 2001; European Communities, 2003).

In the studied literature little to none attention has been given to information, campaigns, education, enforcement and legislation regarding pedestrians. Only ETSC recommends more attention to these issues, especially research on the effects on casualty reduction of particular interventions (ETSC, 2005).

One has to understand and accept that going on foot in traffic is a problematic dilemma for many potential pedestrians. Think about the image of the car, being a second level citizen on foot, bringing your young schoolchild to school by car or on foot, the weather influence, etc. Research into modal shift potential in favour of the pedestrian should be studied in more detail and has to deal with their objective and subjective aspects of road traffic safety. There are potentials for such a modal shift by knowing that 15-20 percent of all car trips in Europe are shorter than 1 km. And also arguments of health, flexibility of movement and environmental consciousness can be elaborated (Gut zu Fusz, Wien, 2003). On the other hand there probably is only a potential when pedestrians are willing and able to shift from one mode to another one. Therefore, more research is wanted into behavioural factors affecting modal choice (ADONIS, 1998).

A key word is quality of life. The safe mobility of the pedestrian can be improved by a better quality of life and vice versa. Or, in other words, how can the traffic system be organised better, integrating to the needs of pedestrians. Important for an assessment of quality of life is insight in the nature of a number of dimensions and their interpretations: the social dimension (accessibility to health and social services, accident risks, etc.), the environmental dimension (energy consumptions by different modes of transport, noise, air quality, etc.), the economical dimension ((use of resources, capacity of traffic, fluidity of traffic, etc.) and the political dimension (price policy, laws, tax systems, etc.). These dimensions have to be studied; the results have to be translated into actions. Feelings of security, comfort, perceived costs, spontaneous mobility and perceived accessibility play also a role (HOTEL, 2003; HOTEL, 2004).

And finally, walking as a means of transport to develop a pedestrian policy (ADONIS, 1998). The ECMT concluded that pedestrian safety should be given an important role in national road safety policies with measures concerning pedestrians with due weight in legislation, regulations and programmes of action (ECMT, 2000). The need of a safe, secure and convenient environment for pedestrians should be given priority in investment programs, law making and local actions (COST, 2001). The PROMPT project furthered that knowledge.

The conclusions and recommendations of the cited international organisations all go into the same direction. The question is, why national and regional authorities do not take over the already existing and well defined knowledge in order to improve the safety of the pedestrian? Don't they realize that the magnitude of the problem is growing because of increasing car and truck mobility at one side and the growing group of elderly pedestrians in traffic on the other side?

The main conclusion is that the knowledge of the pedestrian is still fragmented and not yet adequately underlined by basic contributions from psychology (perceptual capacities, cognitive capacities, motor capacities), sociology, ergonomics, economics, etc. And this means in return that it is hardly possible to figure out what the most effective and efficient countermeasures will be. Which are the impediments of the pedestrian as a human being in encountering other road users; and visa versa? How can an interrelated approach or a systems approach be developed?

It appears that even available knowledge is not fully exploited. In policy making and implementation explicit targets, strategies, policies and indications of what services will be provided for the safe mobility of pedestrians, are is far from common.

Until now, walking as a mode of transport has been more or less neglected in politics, planning and science (COST, 2001). The challenge of this Action is to provide effective tools to improve the quality of life for the pedestrian by a better use of research results and adequate countermeasures in the many fields mentioned before. For this a multi-functional system approach will be developed. The pedestrian needs as much attention and at least equal treatment as the other road users.

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- * Koornstra e.a., Naar een duurzaam veilig wegverkeer 1990/2010 (Sustainable Road Safety), SWOV, Leidschendam 1992
- * PROMPT - New means to Promote Pedestrian Traffic in cities, summary of the PROMPT project and its results, Rotostampa/Rome, 2003
- * Wegman & Aarts, Door met Duurzaam Veilig (new prospects for Sustainable Road Safety), SWOV, Leidschendam 2005
- * WALCYNG How to enhance WALKing and CYcliNG in stead of shorter trips and to make these modes safer; Final report 1998 (Hydèn et al.). Lund, 1998.

Further remarks

With regard to the importance of the issue the following facts are significant:

- The number of killed pedestrians varies from country to country (see figure 2). The Netherlands and Sweden are relatively safe for pedestrians; Portugal and Greece are the riskiest countries. In the United Kingdom, one of the safest countries concerning traffic, pedestrians have a comparatively high risk of getting killed in traffic.
- A relative large part of the pedestrians injured in public space, are not traffic victims by definition. A road accident is only an accident when a vehicle is involved. Injured and killed pedestrians otherwise are not included in statistics. In the Netherlands the number of victims that need to be treated by a doctor is approximately 70,000 (= 4,500 per million inhabitants per year, making the risk higher than cycling).
- More than half of the problem is masked, not only because of definitions but also because registration is inadequate. In mobility statistics short trips are severely underreported. What is worse is that multi modal walking (walking to and from other modes) is not specified; pilot studies in the Netherlands revealed that approximately half of the walking is multi modal walking.
- More than 50% of the trips made walking are made by people who have no other option. Especially children, the elderly, handicapped persons, persons without cars, are not able to travel independently.
- In research this modality receives hardly any attention, while it represents approximately 30% of all time spent in traffic and 25% of all trips. Mobility is not about the number of kilometres travelled, but about the freedom to travel.
- Trends such as ageing of the population, decreasing intensity of land use, the rise of car use and of heavy traffic will make it more difficult to travel on foot.

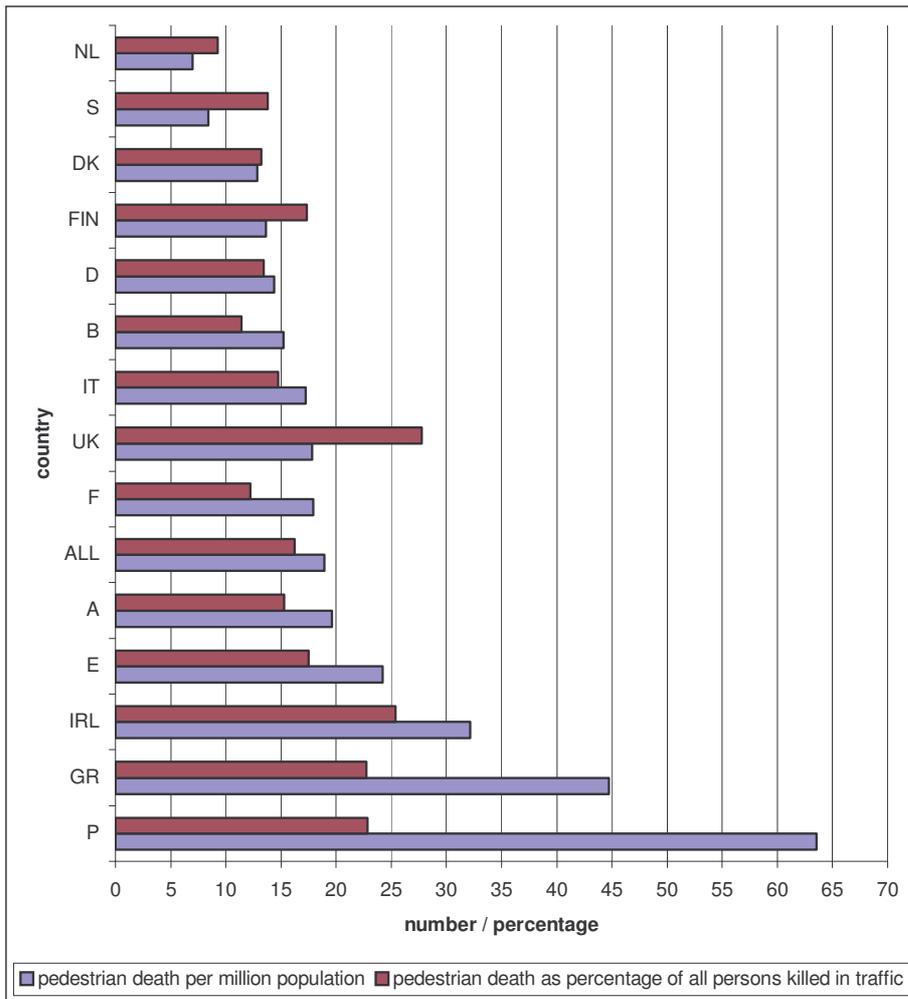


Figure 3 Pedestrians killed in traffic