

# International Cycling Conference 2017

bridging the gap between research and practice

For our Environment

Umwelt   
Bundesamt

# Imprint

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# 1 Preface

## Maria Krautzberger

President of German Environment Agency (UBA)



Cycling and walking are two of the most sustainable modes of transport. They emit no greenhouse gases, are quiet, need less space, are flexible, and low-cost. Furthermore, they are good for our health and connect people to each other. Once you have learned to cycle, it is very easy. One of the latest success stories is the popularity of electric bikes, which increase achievable distances and have a high CO2 reduction potential. The obvious conclusion: we need more cycling and walking in Germany, in Europe and globally.

People cycle for any number of reasons, they have different needs and abilities, and their cultural and structural environment varies. In some countries, cycling is still the mode of transport for the poor. In others, cycling for women is seen as inappropriate because it implies too much freedom. Some countries only cycle for leisure purposes. And we know examples from all over the world – cyclists wiggling between cars, buses and trucks or struggling forward along muddy trails – that prove that cycling is possible in the most difficult of surroundings.

Cycling has direct references to eleven SDGs. It is therefore not surprising that cycling has become part of an international change movement committed to improving our cities by transforming them into more livable places. At the International Cycling Conference (ICC) 2017 in Mannheim, we can feel the strength of that spirit very clearly, with so many experts among us working to promote active mobility.

The increased relevance of active mobility is also visible in the growing numbers of researchers who are dealing with the topic from the perspectives of a wide range of disciplines: urban and transport planning, economics,

sociology, political science, law, public health, accident research, psychology, engineering, statistics, geography and many more. Their findings could be of great benefit for practitioners. However, researchers need to render their scientific discourses intelligible for potential users and for scientists in other disciplines. And it is also essential that scientists are aware of the questions that practitioners need answers to in their daily routines. The problem is that both practitioners and scientists are very caught up in their own respective domains of work, and incentives to make space and time for interaction with each other are few and far between.

The question is, therefore, how we are to bridge the gap between practitioners and researchers. The German Environment Agency is located at the intersection between research and practice. Based on our research and knowledge, we provide information and advice to public and federal bodies such as the Ministry of the Environment. We especially want to learn from international practical experience and research results. The answer to our call for papers for this conference was overwhelming, with about 160 abstracts submitted from almost all continents. Our scientific committee has selected more than 60 speakers and numerous posters. At this point, I would like to thank all partners for their commitment and their endeavors to make this conference a great success.

In this respect, the International Cycling Conference 2017 is dedicated to overcoming the gap and finding the best way to build a bridge between research and practice.

And what better way to cross that bridge to the future than on a bicycle or on foot.

## Rita Schwarzelühr-Sutter

Parliamentary State Secretary of Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety Germany (BMUB)



In celebrating 200 years of cycling, we are also highlighting active mobility. Besides cycling, active mobility also includes walking and other modes of transport powered by muscular strength. Many societies in the world are faced with the fact that people are moving less and less. The resultant health costs are enormous. According to the World Health Organisation (WHO), just 30 minutes of physical activity five times per week helps to prevent non-communicable diseases like cardiovascular disease, diabetes and cancer. The European Cyclists' Federation has estimated the economic benefits of cycling in the European Union, and health benefits account for a major part, at 191 billion Euros out of a total of 513 billion Euros.

But active mobility is not just good for our health; it is also a relevant factor with regard to climate protection. For years now, the transport sector has been a matter of concern in this respect – and not only in Germany. In Germany, we have committed ourselves to reducing GHG emissions in the transport sector by 40 to 42% by the year 2030. To reach this goal, great efforts are needed in every field – especially in terms of changing the energy supply for transport, but also by changing the modal share of transportation towards more environmental friendly modes like cycling and walking.

Furthermore, active mobility makes our cities more liveable places. The architect Jan Gehl has promoted the principle that cities should be designed for people and not for vehicles. Public space has to invite people to be outside on the streets, in parks and squares. It is well known that public space which is attractive for cyclists and pedestrians also has a better quality. At the same time, better quality of public space means better quality of life in the city. People have room to meet each other and to be part of public life. This contributes to happiness and well-being. It is therefore our task to reshape street space and to effectuate a fairer distribution between the various modes of transport. The Federal Ministry for the

Environment, Nature Conservation, Building and Nuclear Safety (BMUB) is responsible for a range of government policies which are reflected in the name of the ministry itself and, since 2013, also for other things like urban development and housing. Active mobility is an important part of our agenda for a more sustainable transport sector.

Finally, there are some very simple good reasons for active mobility. On your bicycle or on foot, you are very flexible and this makes you feel free. You don't have to look for a parking space; you can stop easily almost anywhere. Cycling and walking enable you to experience your environment in a very exceptional way. You feel the wind and the sun; you see things around you that you would never have seen from a car. These are the ingredients that make us happy. And, in the meantime, even children, shopping and other goods can easily be transported using cargo bikes.

Active mobility is more than just a mode of transport. It is the most natural way to move, and we would be well advised to value and promote it in every possible way. The International Cycling Conference (ICC) is a perfect opportunity to bring together important players in the field of active mobility. It is even fair to claim that the ICC is unique in assembling all these international and national institutions, organisations and people in Mannheim. The ICC is a part of an international mosaic, when we think of all the festivities celebrated worldwide in this 200th anniversary year of cycling, for example the European Mobility Week, which is taking place at about the same time as the ICC conference. Cities all over Europe will be promoting sustainable mobility in 2017 by getting involved in an impressive range of activities. This year, we are celebrating active mobility together, making a lasting contribution to achieving sustainability at local, regional and global scale.

## 2 Statements



### Federal Ministry of Transport and Digital Infrastructure, Germany

#### **Birgitta Worringen**

*Head of Directorate Sustainable Mobility, Energy, Logistics at the Federal Ministry of Transport and Digital Infrastructure, National Cycling Officer, Germany*

#### **The pan-European Masterplan for Cycling Promotion**

200 years ago, the bicycle was invented in Germany. Today, Germany is strong with regard to cycling and cycling policy. Germany was among the first EU countries to launch a National Cycling Strategy as early as in 2002. On average, our nationwide cycling share is at around 12 percent. In some cities and regions, even 30 percent of all trips are made by bicycle. The Federal Government intends to promote cycling and make it attractive all over Germany. In this regard, electric mobility and the digital transformation offer new possibilities. The Federal Ministry of Transport and Digital Infrastructure was actively involved in the development of the THE PEP Masterplan on Cycling Promotion right from the outset. We would like to share our knowledge and experience gained in the field of cycling policy with other countries in order to advance cycling and consequently climate-friendly mobility at national, European and international levels.



### Federal Ministry of Health, Germany

#### **Dr. Ute Winkler**

*Head of Division, Federal Ministry of Health, Germany*

Physical activity in everyday life promotes health for people of all ages. Regular cycling is an important contribution to this. It has various positive effects on health and well-being. For instance, muscles, lungs and the cardiovascular system are strengthened and, in addition, the metabolism is stimulated, more calories are burned, and the joints are relieved. Furthermore, cycling has a positive effect on general well-being, as it also reduces stress.

This knowledge should make people even more aware and motivate them to lead an active lifestyle that benefits both health and the environment.



## Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety, Germany

### **Dr. Norbert Salomon**

*Head of Directorate “Immission Control, Safety of Installations and Transport”, Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety, Germany*

Cycling is an active contribution to climate protection. At the same time, bicycle traffic contributes to the reduction of air pollution and noise and needs considerably less space than other means of transport.

Cycling is thus an important pillar of sustainable transport and, above and beyond climate protection, promotes quality of life, especially in the cities.

For these reasons the Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety encourages municipalities to improve cycling conditions and promotes bicycle traffic as a climate protection measure by means of the federal competition “Climate protection through cycling“ and the “Municipal Guideline” of the National Climate Protection Initiative.



## Federal Ministry for Economic Affairs and Energy, Germany

### **Alexander Stedtfeld**

*Federal Ministry for Economic Affairs and Energy, Germany*

### **Economic Benefits of Cycling Tourism**

Tourism is an important, in some countries even the main driver for economic growth, employment and training. Cycling has a significant and growing share in the economic success of the tourism industry. Investments in the touristic cycling infrastructure of travel destinations and the spread of electric bikes spur this development, aided by the growing sensitivity of travelers for sustainability. Among the noteworthy contributions of cycling to sustainable tourism as a prerequisite for lasting value creation are, in addition to ecological benefits, that cycling tourism can be a vital economic factor for rural, structurally often weak, but culturally and naturally attractive regions.

## 3 Endorsements



### City of Mannheim

**Dr. Peter Kurz**

*Lord Mayor of the City of Mannheim*

This year, Mannheim is celebrating the 200th anniversary of the bicycle. On 12th June 1817, Karl Drais rode his two-wheeled „running machine“ through the streets of our city. This maiden voyage was the start of bicycle history. For us, the anniversary is not only an occasion to celebrate an important event in the history of our city, but also an opportunity to give centre stage to the future significance of the bicycle in terms of active and sustainable mobility. Like many German cities, Mannheim is not a classic bicycle city. But the future belongs to pedestrian and bicycle traffic. Our strategic objective is to increase the share of bicycle traffic from 13% in 2008 to 25% in 2020. Thanks to a multitude of events and professional discourse in this anniversary year, we have gained additional tailwind and many new impulses on our way towards increasing bicycle traffic. The ICC will help us in furthering international perspectives. At the same time, the conference also marks the closing of the anniversary year in Mannheim.

I wish all participants stimulating discussions and a pleasant stay in our city. We are honoured to be your host.

Yours faithfully,  
Dr. Peter Kurz

EST.  1817

**MONNEM  
BIKE**

WO ALLES BEGANN



## World Bicycle Relief

### Winner of the Bertha-Carl-Benz Award 2017 of the City of Mannheim

At World Bicycle Relief we believe that mobility is fundamental to breaking the cycle of poverty. With mobility, people are empowered to make new economies and move forward. Especially in rural developing regions where distance is a barrier to education, healthcare and jobs, the bicycle has proved to be a simple and efficient solution to overcome daily challenges. By providing strong, reliable bicycles and by training mechanics, we create opportunity, independence and livelihood for people in need.

Celebrating the 200-year anniversary of the bicycle, we can look back on an incredible success story. The bicycle

has made mobility possible for all people regardless of geography, age, gender and income, and its potential impact remains compelling today. It enables us to go farther and faster. We can transport goods with minimal impact on our environment. It is a tool for people to change their lives by their own power as well as a motor for economic development.

World Bicycle Relief especially empowers girls and women, enabling them to access education and economic opportunities. With bicycles, we see individuals, families and communities move from poverty into shared prosperity.



## 4 Organizer and Partners of the ICC

### German Environment Agency (UBA)

#### Dr. Harry Lehmann

*General Director Division I, German Environment Agency (UBA)*



The motto of the German Environment Agency (UBA), “For our environment” (“Für Mensch und Umwelt”) sums up our mission pretty well, we feel. As Germany’s main environmental protection agency, our task is to ensure that our fellow citizens have a healthy environment with clean air and water, free of pollutants to the greatest extent possible. We concern ourselves with an extremely broad spectrum of issues, including waste avoidance, climate protection, and pesticide approvals.

Climate protection is one of the biggest challenges now facing humanity. Climate change is a problem that can only be mastered if energy efficiency is improved and more of the energy used is derived from renewable resources.

Motorized traffic is one of the most serious environmental problems facing us today. Apart from our work on technologies aimed at reducing motor vehicle-related environmental degradation, we are also investigating non-technical strategies aimed at encouraging people to switch to environmentally sustainable means of transportation. The goal is for all motorized transportation modalities to become quieter, use fewer raw materials and generate less waste and lower emissions so as to improve air quality by reducing pollution.

The UBA publication “Tomorrow’s Cities – Environmentally friendly mobility, low noise, green spaces, compact housing and mixed-use districts” paints a picture of how a sustainable city might look and which measures are necessary to get there.

In the framework of European Mobility Week 2017, UBA and GIZ discuss the vision of Tomorrow’s Cities in light of innovation processes in emerging and developing countries and how these might inspire new approaches in Germany. Case studies for possible “Reverse Innovation” will be presented in a publication.

Of course, active mobility is an essential element of the sustainable city. We need conferences like the ICC to strengthen the exchange of knowledge and to connect to each other. The ICC is really unique in bringing together international researchers and practitioners as well as the European perspective through PASTA and THE PEP.

THE PEP – Transport, Health and Environment Pan-European Programme – combines three different sectors and encourages environmentally and healthy sustainable transport in the European UNECE/WHO region. We are therefore very pleased that we have been able to win representatives of four different German Federal Ministries: Environment, Transport, Health and Economy. All support the idea of promoting active mobility. And active mobility, as we know very well, combines environmental and health protection better than any other means of transport. This is why we are working to push cycling and walking forward, in line with our motto:

For the people and for the environment!



**UBA** The German Environment Agency (UBA) is Germany's central environmental authority. In addition to 'purely scientific work', the enforcement of environmental law and providing information to the general public about environmental protection issues are key areas of its daily work.



**Difu** The German Institute of Urban Affairs (Difu) is the largest urban research institute in the German-speaking territories and is the research, further training and information institution for cities, municipalities, administrative districts, municipal associations and planning departments.



**GIZ** The GIZ assists the German Government in the field of international cooperation. On behalf of the Federal Ministry of Economic Cooperation and Development, GIZ's Sustainable Urban Transport Project facilitates knowledge exchange on cycling and mobility worldwide.



**City of Mannheim** Mannheim, the birthplace of the bicycle, celebrates the anniversary of the bicycle with the motto "Monnem Bike" and an engaging year-round festival programme.



**ECF- Scientists for Cycling** The Scientists for Cycling network connects research, research plans and scientific-based publications on cycling or cycling-related matters to other scientists, to professionals and to volunteers who work on cycling, contributing to ECF's mission: to improve and to increase cycling.

## 5 PASTA



**Walk it. Bike it. Live it.**

### **PASTA – Physical Activity Through Sustainable Transport Approaches**

The human body was meant to move, but these days we are moving too much without moving enough! Europe and indeed other countries worldwide are facing a huge inactivity problem:

- Physical inactivity is one of the leading risk factors for death worldwide.
- In the World Health Organization’s (WHO) European Region, physical inactivity is estimated to cause 1 million deaths per year.
- 6 out of 10 people (over 15 years old) in the European Union (EU) are not physically active at recommended levels for good health.
- Economic consequences of physical inactivity include substantial direct costs for health care and even greater indirect costs from lower economic output due to associated illnesses and premature death.

Encouraging health-enhancing physical activity is a public health issue of growing urgency for towns and cities worldwide. It is not only a question of health for the individual, but also extends to embrace the well-being of communities, protection of the environment and investment in future generations.

Active living is a way of life that integrates physical activity into daily routines. The goal, as outlined in the WHO Global recommendations on physical activity for health, is to achieve at least 150 minutes of moderate-intensity physical activity throughout the week for adults. Individuals can do this in a variety of ways, such as walking

or cycling for transport, going to the gym, doing sports, playing in the park, working in the garden, and taking the stairs!

The EU-funded research project, PASTA - Physical Activity Through Sustainable Transport Approaches, builds on this premise of active living, looking specifically at the link between transport and health. And this link is indeed promising. Considering that we spend between 70 to 80 min per day travelling and that 50% of all car trips (in Europe) are shorter than 5 km, active mobility has an enormous potential to get people more active.

Working across seven European cities: Antwerp, Barcelona, London, Örebro, Rome, Vienna and Zürich, PASTA has brought together city practitioners and academics in the field of transport and health to build up the evidence base promoting health-enhancing transport measures. As part of this three-year project:

Researchers conducted interviews and workshops with transport and health practitioners to look at specific transport measures, enabling factors for active mobility, barriers and challenges, and the link to health. These workshops also shed light on interdepartmental relationships and presented an opportunity to discuss the approach needed to promote active mobility in the urban environment.

PASTA ran a two-year study which looked at the travel patterns of over 10,000 residents in the seven cities to analyse individual mobility and activity behaviour, to reveal traffic safety risks of cycling and to evaluate active mobility measures like “Super-blocks” in Barcelona or “Individual mobility consulting” in Vienna.

### **Building on good practices and tools**

By bridging the gap between local government practitioners and academics, PASTA's aims are twofold. First, to identify high-impact policies and practices promoting behaviour change from cars towards opting for active and sustainable modes of transport such as walking and cycling. Second, to provide evidence to enable action e.g. through updating the Health Economic Assessment Tool (HEAT). Launched in 2009 by the WHO, HEAT is used by many local authorities to help make the case for new investment in walking and cycling measures.

The health benefits of active mobility are clear. It raises physical activity, makes people healthier, helps to save money on health care and transport services and creates more liveable environments and cities. Putting this into practice, however, requires local, national and EU levels of governance to work together interdepartmentally and with academics through projects like PASTA in planning and implementing an active living strategy for all.

### **Funding statement**

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## 6 THE PEP

### The Transport, Health and Environment Pan-European Programme - makes the link

About one million deaths per year are attributable to insufficient physical activity in the UNECE-WHO European region. Nearly half a million deaths are caused by ambient air pollution; 85,000 by road traffic injuries. Though crucial for people's access to services, jobs, education and amenities, as well as for economic activities, transport patterns and policies contribute, directly or indirectly, to the above-mentioned adverse effects. At the same time, sustainable transport policies that promote public transport, safe cycling and walking, and electric mobility – especially when integrated with compact urban planning – can improve health, reduce pollution and traffic congestion, support action to address climate change, and make cities more livable and attractive.

For the last 15 years, policymakers and experts of 56 countries of the United Nations Economic Commission for Europe (UNECE) and of the WHO Regional Office for Europe have been working together under the framework of the Transport, Health and Environment Pan-European Programme (THE PEP) to fulfill the vision of “Green and healthy mobility and transport for sustainable livelihoods for all”. Supported by a joint secretariat provided by UNECE and WHO, THE PEP was established in 2002 as a unique policy platform and model through which Ministries of Transport, Health and Environment of the pan-European Region aim to achieve intersectoral policy coordination, international cooperation and exchange of

good practice.

THE PEP places a special emphasis on promoting active mobility, along with public transport, as a key factor for attaining multiple benefits for health, the environment and the prosperity of communities.

At the International Cycling Conference, THE PEP will provide policy makers with an opportunity to “bridge the gap” between science and policy by facilitating interactions between scientists, practitioners and policy makers, and presenting to them the latest scientific evidence of the co-benefits of active mobility policies. In particular, THE PEP will highlight some of the key results of research conducted under the “Physical Activity through Sustainable Transport Approaches” (PASTA) project. This will include a demonstration of the updated version of the “Health Economic Assessment Tool” (HEAT), a user-friendly on-line tool developed by WHO under THE PEP to quantify the economic value of reduced mortality from active mobility. Thanks to developments which took place within the “Physical Activity through Sustainable Transport Approaches” (PASTA) EU-supported project, the HEAT also takes into account the effects of injuries, of air pollution, and of reductions in emissions of greenhouse gas. In addition, THE PEP will promote a discussion on pan-European policy developments in the area of cycling, presenting the content of a Pan-European Master Plan for Cycling Promotion. The Master Plan, currently under development, is expected to be launched at the Fifth High Level Meeting on Transport, Health and the Environment, to be hosted by Austria in Vienna in 2019.

# THE PEP

Transport, Health  
and Environment  
Pan-European Programme



UNECE



World Health  
Organization

REGIONAL OFFICE FOR  
Europe

## 7 Keynote Speakers



**Prof. Dr. Lucia A. Reisch**

Copenhagen Business School, Denmark

### **“Bicycle first!” – Can we nudge people into active mobility?**

Mannheim, 200 years ago: the birth of the bicycle. The innovative entrepreneur who designed this “Drahtesel” (“Wire Donkey”) – as it is known in German – might have hoped for fast adoption of his innovation by the masses. Back then, as is the case today, consumers and users played an active and often decisive role in the adoption and spread of innovative technologies, products, and lifestyles. The question is how such adoption and the required behavioural and mental changes can be supported, and how barriers to change and counteracting forces within a society can be overcome.

My talk provides an overview of “what works” regarding policies for sustainable and active mobility. It focuses on walking and in particular on biking, and on the systematic design of “affordances” in people’s environment to support both. It is based on recent research in consumer research, behavioural economics, and behavioural public policy; it also draws on practical experience gained within the City of Copenhagen, where I have been living for 15 years.

The aim of changing people’s lifestyles towards more sustainable consumption patterns has been at the core of policies for sustainable consumption for more than two decades. To date, research and practice have developed and tested many promising and practically feasible ways to gradually change behavioural patterns and guide people into more sustainable and healthier choices. Intentional, normative, habitual and situational factors have been found to influence people’s choices.

Personal mobility is one of the key consumption areas with heavy ecological and social impact. Yet, particularly in urban areas, travellers can typically choose between more or less sustainable options of mobility. Due to decades of information campaigns and environmental education, the impacts of the different choices on the environment, health and quality of life are rather obvious and clear for most consumers – and many people experience these impacts personally and on a daily basis (e.g. particulate matter, congestion, lack of safe public space).

Nevertheless, while there have been some successes (e.g. car sharing; connected mobility; increase of bike travel in cities), behavioural change seems to be surprisingly slow, given the evident advantages of the “better choices” (e.g. physical activity, costs, parking hassle, time). The barriers to switching choices and opting for less damaging modes of transport (e.g. public transport, bicycles, walking) seem to be prohibitively high.

### **What are the reasons? And which policy measures might help to overcome these barriers?**

For many, active mobility is an intrinsic need in itself (e.g. when people enjoy physical activity, biking, walking, or travel for tourism). At the same time, mobility is also largely derived and shaped by the way we live, work, shop, go to school, and spend our free time. Undoubtedly, mobility is best viewed systemically as a social practice embedded in an ecological and social frame. It goes without saying that pro-environmental values in general (and here: cycling values) are helpful for people to develop and maintain sustainable lifestyles in general and sustainable mobility styles in particular. However, individual mobility is also highly dependent on the availability, affordability and accessibility of the choices in our immediate environment: on the physical infrastructure, the (urban) landscape and topography and the climate; on the availability of comfortable and safe public transport and bike lanes; and on the affordability of attractive and diverse vehicles that cater for the different needs of speed, use and comfort for diverse user groups (e.g. electric and/or carrier bikes).

Beyond the physical environment and available options, the “timescapes” of the social surroundings, the temporalities and rhythms (e.g. opening hours, speed limits) as well as the “cultural speed” of places and lifestyles (“human scale of speed”) also influence these choices. Social norms, expectations and values as well as collective agreements on status goods also play their role (“social safety”). Last, but not least, a less tangible but clearly discernible sense of “cultural safety” depending on the mobility culture of a place (e.g., “cars first” or “bikes first” places; transport mix or segregation) also impacts on our choices of modes of transport.

Consumer research and policy have developed and tested an array of political initiatives and instruments to overcome these barriers and people’s profound resistance to change (or: “status quo bias”), the most important being: regulation (e.g., parking management); financial measures changing relative prices (e.g., subsidies for e-cars, free use of public transport); public campaigns, educational programmes and information including hands-on real-time information (e.g., mobility apps); urban design, spatial planning and architecture (e.g., bike and walk friendly cities, bike highways); and behaviourally based policies such as framing (e.g., win or lose frames), social norms, defaults, simplification (e.g., easy interoperability) and choice architecture – policies that have been coined “nudges”. While there is no silver bullet in the policy toolbox, a smart mix of classic and behaviourally inspired policies might provide the necessary stimulus to nudge people into more active mobility.







## Manfred Neun

President of the European Cyclists' Federation (ECF) and Chair of the Advisory Board Scientisis for Cycling (S4C), Belgium

## Framing for cycling practitioners and researchers

Mark Carney, Governor of the Bank of England, issued a wake-up call earlier this year when he underlined “both the growing trend for businesses to consider the impact of climate change on their operations, and for institutional investors to demand better information from them” (Medland 2017). And he got a strong response – the global Financial Stability Board’s Task Force on Climate-related Financial Disclosures (TCFD) has just announced this as official policy. For some, this may well have been an economic earthquake; for others, it was simply an acknowledgement of reality for sustainable decision-making.

The real consequence is that a new frame has been set, one which changes the world immediately. It doesn’t matter whether Mark Carney was acting as a researcher or as a practitioner; he simply used his power to set a new framework. And he acted with others by analyzing evidence, urgency and potential consequences. Let’s take this as an example of the power of transformative framing.

The frames we use make the world we perceive (Tversky and Kaneman, 1981). We all use frames – in our thinking, our daily life, in business, in research - and there is a growing recognition of the importance of political framing (Wehling 2016). In cycling advocacy and related research we practiced it explicitly when we changed our frame from NMT (non-motorized-transport) to Active Mobility (Held et al. 2015). Framing was essential to the introduction of a new frame for “Cycling economy/economics” (Neun 2011, 2013; Neun/Haubold 2016). Framing can also be work in progress, as demonstrated by the Active Mobility Agenda and its individual steps (Neun 2015a,b).

We are not alone. One of the key issues of the Active Mobility Agenda we introduced at Velo-city 2012 in Vancouver (Sabelis/Kloof, 2012) was named “Diversity of Cultures”, and it was already discussed in a comprehensive way (Cox 2015). The impact of this frame is intended to be high for transformation towards sustainability, as it was introduced as “Eigenart” to a “Normative Compass for a Great Transformation” by the WBGU, the German Advisory Council on Global Change (2016).

In some areas we are still at the beginning, but we are learning that complex realities need higher efforts

in framing. For example, when we started to test whether cycling had a place in the UN SDGs and UN Settlement Report (UN Habitat 2016), the contributions of cycling were initially collected from scratch, but then systematically increased by using the frames of the Active Mobility Agenda (ECF et al. 2015). By the time we started working on the UN Settlement Report, our framing was beginning to pay off; our story has become stronger and more impactful at each iteration.

Framing is now essential for the mobility of the future. Urgency already emanates from the many new terms and approaches like ITS, MAAS, Internet of Things, Smart Cities, Smarter Cycling, Autonomous Driving, etc. Understanding of these topics is often diverse and the discussions are far-reaching, e.g. the “Disruption of the Automotive Industry” (Jungwirth 2016). But, at the same time, this challenging situation offers great opportunities if we can frame cycling technologies in line with the increasing recognition of all cycling as part of the solution for many societal issues. For our industry, we are

reframing its image as a globally important provider of hybrid solutions and innovations in connected mobility. These challenges and opportunities need framing so that our approaches are systemic and sustainable, and so that they elevate Active Mobility to the level of other major players in political decision-making.

Finally, if we intended researcher and practitioner networks (e.g. S4C 2017) to be seen as living and learning communities, we cannot afford to miss opportunities for framing. There is a huge leveraging effect to be gained by using this momentum and cultural consciousness to establish the frames we need, also with regard to winning tenders for further research, and to overcoming the BAU, the non-sustainable business-as-usual.

In short, framing is essential for the cycling world. In terms of political framing we have made an important step forward with the European Cycling Strategy (2017). And, with the “International Mosaic”, we will actively start to invest in and practice framing at this ICC.



## 8 International Mosaic

### Framing exercises on Active Mobility to bridge the gap between research and practice

*Moderators: Heike Bunte (UBA), Manfred Neun (ECF)*

- I** Whether we call it “From Fragmentation to Collaboration”, “Agenda Setting and Framing” (Neun 2015a) or “Cycling Cultures, Culture and Cycling” (Cox 2015) – the question that needs to be discussed remains the same: how to get different systems, approaches, methodologies or policies tuned to each other in order to overcome the (ideological) gap between research and practice. Researchers seem reticent to leave their ivory tower of knowledge, while practitioners (or the civil service) are being faced with new forms of grass-roots participation which put effective pressure on the system. From this perspective, “bridging” the gap between the two domains seems impossible. We can experience this in practice at any conference on cycling. The situation is overwhelming, and hinders us in our ongoing attempts to „tune the gears“ of the two domains. What a dilemma!
- II** Karl Drais’ “Veloziped” was invented 200 years ago and his idea soon went global. His original “running machine” has evolved into bicycles in many different forms and shapes all over the world. It is a breadwinning tool and a status symbol at the same time. It substantially extends active mobility and emphasizes gender equality (Lehner-Lierz 2003; Bunte 2012; Kloof 2015), improves health (OECD 2013; WHO 2017), has huge economic effects (e.g. Neun/Haubold 2016), and makes cities more liveable (UBA 2017). It is this range of separate benefits of cycling as a system that have so far guaranteed the success of the bicycle. A mosaic is an appropriate image for the many components and facets of a bicycle – a multidimensional picture composed of thousands of integrated pieces. A mosaic invites you to take a look from a distance to get the big picture while at the same time fascinating you with the structural qualities of its surface details, which you can only appreciate when you look at it close up.
- III** As experts in our respective fields, we are all working hard in this current transitional period on promoting active mobility as a positive game changer for social and economic welfare around the globe. We need to find ways to overcome “fragmentation” between the domains in order to achieve productive collaboration. The domain of “research” needs to assess their viewpoints on different methodologies. The domain of “practice” needs to find answers for different target groups while at the same time using research results effectively. Getting these systems to work together without loss of respective identities and cultures, and coordinating the foundations of our so-called common understanding of what cycling and walking means, is rather like the task of working on the little details of a mosaic in order to compose a harmonious big picture. Today, active mobility represents a unifying and sustainable concept for global living conditions. Complementary collaboration between research and practice will broaden and strengthen this concept. This is why it is so vital that we bridge the gap between the two domains.





### The International Mosaic, the idea

The International Mosaic will bring together six renowned experts on cycling policy from different countries. They will present their own “stories” on challenges and chances for cycling in their countries: Chile, India, Uganda, Mexico, Portugal, and Taiwan. As diverse as the world is, the International Cycling Conference will provide an overview of the various framework conditions and activities in these countries. In this way, the Mosaic will provide a picture of the role that the bicycle can play with regard to urban and rural mobility, but also to economic and social issues.

In line with the central theme of the conference, the participants will also provide their view on how to bridge the gap between research and practice and how to benefit from international exchange. The “International Mosaic” will be the starting point of the conference and its participants will be joining the subsequent sessions to comment and provide deeper insights into the situation in their respective countries. In the closing session of Day Two of the conference, they will summarize what they have heard during the conference days and what new insights they will be taking home with them.

**Difu:** Sebastian Bührmann, Sabine Schulten



### The International Mosaic, a bridging ICC format

We have invited cycling professionals from all over the world to represent the **diversity of cycling cultures**. We will be meeting them at the ICC at three panel sessions. The lense in the first session, which will start off the conference, will be the question: (1) Where do you come from – what’s unique or typical in your world region? The second session will conclude Day 1 of the ICC with the lense: (2) What did you perceive during the ICC sessions about the global uniqueness of cycling? Are there general characteristics for people everywhere? And finally, to round of Day 2 of the ICC, they will give their views on the lense: (3) Which frames did you perceive as supporting cycling well? Where do we need to invest more in framing for the future? The moderators will focus both on lenses and framing, and on the overarching goals “bridging the gap between research and practice” and “transformation towards sustainability through active mobility”. We take pleasure in crediting Sebastian Bührmann and Sabine Schulten from DIFU as the source of inspiration for the “International Mosaic”. Based on their idea, we developed this ICC panel format as a new and hopefully inspiring exercise in framing cycling based on the diversity of global cultures and taking the wider frames of sustainability, active mobility and international collaboration into focus.

Manfred Neun (ECF) and Heike Bunte (UBA)



## Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)

### Armin Wagner

*Head of TUMI Secretariat, Germany*

When Karl Drais invented the bicycle in Mannheim, he could not know that it was the beginning of a mobility revolution that would enable millions of people worldwide to get to school and work, or carry crops to the closest market. 200 years after its invention, the bicycle is much more than just a piece of leisure equipment. It's a real means of transport for millions of people worldwide!

On behalf of German Federal Ministry for Economic Cooperation and Development (BMZ), we support cities in providing more liveable and simply better mobility for their inhabitants. Through our Transformative Urban Mobility Initiative (TUMI), we enhance local capacity to plan sustainable mobility infrastructure and services and provide financial resources to implement them. This also includes bicycles. In the Ukraine, for instance, we have been working for many years with local stakeholders towards substantially enhancing the cycling infrastructure and strengthening political awareness for cycling.



### The International Mosaic, why we support it

Cycling is a universal form of mobility practised by millions of people in all five continents, and yet cycling cultures and framework conditions vary from country to country. Therefore, for us at the GIZ, promoting cycling and other forms of sustainable mobility in cities around the world means adapting to local contexts and peculiarities while at the same time pushing a global agenda. We believe that this is done most effectively through an international dialogue. Solutions can only be transferred from research to practice and approaches can only spread from one city to another if those involved have the opportunity to meet each other and exchange ideas and opinions. For this reason, the BMZ launched the Transformative Urban Mobility Initiative with numerous partners including the GIZ, which builds capacity and facilitates exchange between urban leaders, and gladly supports the International Mosaic.

## 9 Mosaic Ambassadors



**Prof. Dr. Lake Sagaris**

Pontifical Catholic University of Chile

In the scientific world and particularly in academic publications, which are key to validating our research results, we find that English is the main language and the field is dominated by publications based in the developed world. There is a tendency to assume that this is where the knowledge or main lessons are to be found. But most of these countries have followed a high-consumption, resource-intensive style of life and, in the case of urban planning, centred on the car as cultural icon, industrial product, economic driver and social aspiration (automobility, as described by Beckmann, Urry and Sheller).

There is a great risk that we will study our developing, lower consumption, more diverse and very equality-challenged societies through the same lens, missing key components of our living systems that could contribute enormously to sustainability.



**Alejandra Leal**

Director of Céntrico, Mexico

Local governments in Latin-American countries face challenges every day that distract attention from planning and evaluation of policies. In addition, government periods are short and there is a lot of rotation. Pilot projects in sustainable mobility have proven to be one way to get things implemented in the short term. But researchers need to get involved in the evaluation of such projects to identify their success, and to modify and replicate them so that governments don't have to start again from scratch and can learn from past experience.



**Dr. Anvita Arora**

Innovative Transport Solutions, India

Both research and practice in sustainable urban transport need to have a more holistic vision and approach. Practitioners, in particular, approach the cycling infrastructure and systems in isolation from other modes of transport as well as from other aspects of sustainability like inclusion, health, energy, equity and livelihoods. Researchers, on the other hand, are not interested in comprehensively quantifying the benefits of sustainable transport in general and of cycling in particular that would help the projectization of cycling projects and enable policy support and investments in them. Especially in the developing world, this situation results in great discussions, but sadly no investments in cycling infrastructure.



**Amanda Ngabirano Aziidah**

Urban and Regional Planner, Lecturer at Makerere University Kampala, Uganda

For most of Africa, the experiences in active mobility are not pleasant, as can be seen in the film “Cycologic”. Such experiences could form the basis for discussion on challenges between research and practice, especially for cycling. I dream of a safe cycling infrastructure for Africa’s future. A future where everyone can cycle anywhere, where our children will no longer be restricted to riding in our houses and compounds, but will be able to get out on the streets and remain safe; where everyone, no matter their age, gender and status, will smile as they pedal along streets with better air quality; where men will safely pause and admire their healthy families as they move, and be proud not only of where they belong but also of their leadership. And, to be honest, I dream of leaders who have this same dream.



**Prof. Dr. Ana Santos**

Universidade de Lisboa, Portugal

This text is about problems I have faced in trying to influence best practices in the implementation of existing mobility plans (PAMUS). For our politicians, survival of their political careers is often more important than the inherent value of decisions to be taken, especially, as in the case of bicycles, when these decisions go against the flow. Change needs leadership, leadership needs recognition, and recognition is a mix of status combined with achievements and charisma. For example, there is a profound lack of knowledge about the economic benefits associated with cycling tourism. In order to collect data, the collaboration of several different entities is required. To enable such collaboration, these different entities have to understand the value and necessity of such data – a vicious circle that is difficult to break!



**Prof. Dr. Jason Chang**

National Taiwan University

As a member of the advisory board for the „Asian“ part of „Scientists for Cycling“, in recent years I have experienced different perspectives from all over the world. We have to implement active mobility as a sustainable and integrated transport solution. The urgent challenge is to overcome not only the fractioning between different sustainable modes of transport but also the differences between research and practice. In particular, we need to bridge the differences in the triangle of Asia, America and Europe. This is a crucial game changer, not only for the refinement of future research questions but also, and much more, for the transformation of global societies.

## 10 Head of the Scientific Committee



**Prof. Dr. Regine Gerike**

Technical University of Dresden, Germany

Transport planners in city administrations and consultancies, together with political decision-makers and other stakeholders, are perfectly capable of designing and implementing infrastructures and services for cycling and walking without any research. It is already a laborious process to identify all relevant stakeholders within the administration and beyond, including civil society, and to get them all involved. Collaboration may also be useful with stakeholders from other planning disciplines such as urban planning, public health, clean air planning and noise abatement, climate protection or climate adaptation. Collaboration with research always comes on top of all this, and is not an easy task. Researchers ask for data and information, and it may take them years to answer apparently simple questions such as: “Are coloured cycle lanes safer than non-coloured ones?” Researchers sometimes find out that implemented policy measures have failed to yield any significant change or success. This is not particularly helpful for the political discussion. And research rarely generates simple answers. Presentations of research results often begin with: “It depends.”

Researchers are perfectly capable of doing their research without any contact to practitioners. Researchers collect their own data, develop their own concepts and models, publish their results and discuss these results with other researchers at scientific conferences. Such research does not depend on fragmented and inconsistent real-world data from practitioners or on delayed policy measures for evaluation studies, or on hierarchies within administrations when information and data can only be provided after lengthy approval procedures. Furthermore, various opportunities exist to widen one’s own horizon within the research community. Cycling and active mobility have links to many disciplines. It is often easier to move from disciplinary to interdisciplinary approaches than to transdisciplinary collaborations with practitioners.

So why should practitioners and researchers collaborate? The answer is simple: Because, together, researchers and practitioners can do things better.

Practitioners can get more support and resources if they tell better stories; if they make better cases for their proposed projects. Based on insights from research, they



can show the expected necessity and benefits of planned projects.

Evidence-based policy-making promotes cycling and active mobility and monitors the results. Support for subsequent activities can be increased by this active dissemination of achieved successes. Cities often have lots of data but no resources for analysing such data. Research produces numbers and figures that can support arguments and help sell ideas. Practitioners who collaborate with researchers can influence what results are produced. Research may also provide direct resources for practice, in the form of funding for investment, e.g. for innovative vehicles, or in the form of staff. Research can inspire practice with ideas from other regions and countries, as well as with insights from ongoing research projects.

Researchers who collaborate with practitioners benefit from the immense innovation potential in planning practice. Cities all over the world are promoting cycling and active mobility, and using a wide variety of policy

measures. They are trying out new things all the time. Cities are, so to speak, living laboratories. They are in constant change not only because framework conditions are changing constantly but also because planners are actively shaping the built environment and transport systems. Research needs to incorporate and anticipate these developments in order to be successful and in order to support practitioners in their work.

This comparison of the pros and cons of collaboration between research and practice clearly shows that there is no alternative. The gap between research and practice needs to be bridged. Both practitioners and researchers are striving to strengthen cycling and active mobility. They will make greater progress if they work together.

Both researchers and practitioners can shape this collaboration. They can decide, on a case-by-case basis, whether and how intensively they will work together. Bridging the gap between practice and research only makes sense if the benefits outweigh the additional costs of such transdisciplinary approaches. I am optimistic that this is often the case.



# 11 Bridging the Gap between Research and Practice

## A1 : Re-thinking infrastructure

Undoubtedly, the paradigm that shapes infrastructure for cycle traffic is the dominating influence of motor traffic. The challenge is to replace acceptance of this hegemony with the development of an understanding that, given the option, mobility practices would be heterogeneous, just like we are as human beings. Transport is designed as a system, and systems are most easily designed where standardisation and conformity are the norms. But the challenge is to design for human beings, with all our capricious behavioural responses to external stimuli provided by infrastructure. My working definition of a professional is someone who clearly knows the limits of their ability, and remains open-minded to the contributions of others within and beyond their discipline. The traffic engineer needs to listen to and appreciate the sociologist, and the urban designer needs to listen to and appreciate the transport planner. Progress can only be made through dialogue, and this conference, and this session, provide the opportunity for exactly that.



**Prof. Dr. John Parkin**  
*University of the West of  
England, UK*

## B1 : Attitudes, Behaviour and Choice

Bicycles policies in cities (and transportation policies in general, for that matter) are defined based on technical parameters of engineering and, in some cases, urban planning. Input from the social sciences is generally relegated to the category 'anecdotal evidence' that may or may not support other "technical" decisions. Yet research in this area is very broad and has created a wealth of understanding of how citizens and users in general perceive cycling and how their use would be greater if certain aspects were better integrated into planning processes. There is, however, a relatively large gap between highly theoretical work on cycling perceptions and actual implications for practice in e.g. bikeway design or cycling policies as a whole. This session will address some of these issues and will show how attitudes and behaviour can be a great predictor of how well bicycle policies are being developed and delivered.



**Carlosfelipe Pardo**  
*Despacio, Colombia*

## **C1 : Health and Active Mobility**

Health is one of the greatest drivers behind the current interest in promoting walking and cycling in cities. The increasing amount of research indeed highlights the benefits of active mobility, particularly from the gains in physical activity that can be integrated seamlessly as part of daily routines. An important challenge remains in demonstrating and quantifying how specific policies can lead to measurable health benefits using longitudinal data in real-world natural experiments. Generating this type of robust evidence requires strong partnerships between research and practice to design studies and collect data. But perhaps even more important is understanding how the evidence can be translated effectively to engage both politicians and practitioners into creating health-promoting urban designs. Whether through joint funding mechanisms, training, or events, it is essential to create trans-disciplinary partnerships. The goal is for practitioners to come to realize how decisions in their sector may impact other sectors, and to provide incentives for joint solutions which lead to healthier cities.



**Dr. Audrey de Nazelle**  
*Centre for Environmental Policy, Faculty of Natural Sciences, Imperial College London, UK*

## **A2 : Designing Future Infrastructure**

Infrastructure is one of the most sensitive topics when it comes to promoting cycling. Whereas the debate about the definition of which typology of infrastructure to adopt (to segregate or not to segregate) generates passionate and not always consensual discussions, the question of the criteria for their planning is a less controversial issue: they must be safe, fast and fun. Significant investment has been made in Europe into bicycle infrastructure. However, it is noticeable that we have a very wide range of different realities: from starter to climber or champion cycling cities. In some cases, territorial qualification efforts will require more significant resources and carefully crafted territorial and mobility policies. In others, there is an effort to innovate in terms of the quality of infrastructure (from energy generation to sensorization and data production) and to deepen the relationship with new public policy agendas (e.g. smart mobility). Both cases pose challenges to national, regional and local decision-makers and require cooperation between partners (business sector, university, advocacy groups and public authorities) to create collective mobilization for the bicycle and to promote its economic and social value.



**Prof. Dr. José Carlos Mota**  
*University of Aveiro, Portugal*

## **B2 : Policy and Strategies**

The session “Policy and Strategies” highlights a wealth of experience from contexts as diverse as those to be found in Germany, the United Kingdom, South Africa, Brazil, Malaysia, and Austria. The research questions addressed are therefore also a reflection of the different stages at which these countries or cities are situated with respect to cycling. In situations where cycling is a mainstream travel mode with a developed set of policies, research questions may be prompted towards evaluating the effectiveness of interventions. In situations where cycling is struggling to become mainstream, research questions may cluster towards understanding the determinants and enablers of a cultural and political shift that could result in more “pro-cycling” policies, and in the long-term sustainability of investments into cycling. As a result, researchers need to acknowledge that the gaps to be bridged are highly context-dependent. Admittedly, in locations where cycling is still being developed or painstakingly re-introduced there is certainly scope to consider experiences from locations where cycling has developed or is developing into a mainstream transport mode. But the assessment of transferability requires a very careful analysis of the context in terms of culture, attitudes, social norms and perceptions towards cycling, objective and perceived safety aspects, allocation of public space, quality and type of existing infrastructures and services, as well as of the overarching political and societal priorities.



**Francesca Racioppi**  
*World Health Organization  
(WHO)*

## **C2 : Mobility Cultures and Education**

“Do you know how to ride a bike?” Your answer to this question will greatly depend on where and how you grew up. In China, the bicycle is often perceived as a mode for the poor; in the Netherlands as the normal extension of your legs. A large part of the adult population worldwide has never ridden a bike. Also, within one country, perception of cycling depends largely on your cultural circle. The culture of cycling is produced by cyclists and it ‘produces’ cyclists at the same time. This is why it is so important that civil society has taken broad initiatives to mainstream the ability to cycle. But education doesn’t stop there: sensitizing transport planners and non-cyclists to show more consideration for cyclists in their daily routine has a great impact on cycling safety and comfort. Due to cultural differences, educational methods vary tremendously, and research results are not easily transferable. This session will review a broad variety of educational approaches to cycling and discuss what differences and common grounds exist in the field.



**Jakob Baum**  
*Deutsche Gesellschaft für  
Internationale Zusammenarbeit (GIZ), Germany*

### **B3 : Economic Benefits of Cycling**

Quantifying the economic benefits of cycling represents an important contribution to the promotion of cycling. It gives practitioners and policy-makers concrete arguments for investment in infrastructural improvements and other measures that make cycling more attractive. However, while techniques like cost-benefit-analysis are commonplace for rail or road infrastructure projects, they have so far rarely been used for cycling projects, and without a standardised approach. This means that there is a clear need for researchers to develop a harmonised methodology for cost-benefit-analysis of cycling projects that can be used by practitioners. At the same time, this also presents an opportunity to rethink the underlying paradigms for the appraisal of benefits in transport in general. Until now, these have focussed very much on time gains for motorised transport and paid less attention to aspects like public health gains through increased physical activity, environmental factors such as air quality or the improvement of public space. Using the knowledge we have so far accumulated on the benefits of cycling and following a more comprehensive approach in cost-benefit analysis will help to shape a more sustainable mobility system in the future.



**Holger Haubold**

*European Cyclists' Federation (ECF) and Scientists for Cycling (S4C), Belgium*

### **C3 : Digital and Data**

The digital transformation is strongly related to the availability of more and more data. When it comes to understanding and promoting cycling traffic, high-quality information and data sources play a vital role. By exploiting new sensing and communication technologies (e.g., smart phones, social media or wireless sensor networks), we can gather data in higher resolution, lower latency, higher quality, and at lower costs than ever before. As a result, data collection is no longer limited to costly surveys performed by research institutes or cities, but can even be initiated by citizens' initiatives. However, the digital transformation not only improves data collection. It also enables new applications and new levels of citizen engagement through gamification and activity-promoting health apps. It even improves the maintenance of cycling paths. In this session, we will review examples from Turin, Reading, Bogotá, Trondheim, Dublin and Rome on how the digital transformation and new data collection methods can help to shape a cycling friendly future.



**Prof. Dr. Daniela Nicklas**

*University of Bamberg, Germany*

#### **B4 : Safety**

Increasing safety for cyclists is still a challenge in most countries. Engineering, enforcement and education already offer a range of tested tools to influence this area positively, but are not always applied effectively. For practitioners, a lot of barriers make it difficult to apply state-of-the-art measures that improve cyclists' safety, e.g. coordination of multi-stakeholder processes, conflicts regarding distribution of road space, or lack of resources. Researchers and practitioners have gathered a lot of knowledge on how to design cycling infrastructure that is relatively safe. In some areas, however, we still lack insights, e.g. which infrastructure, besides being safe, also “feels safe” for different groups of cyclists. More research is needed to fill this gap. We also need more effective measures to influence behavior via education and enforcement. New insights from research and model projects often take a very long time to influence national regulations. As a result, there are often long delays before practitioners finally experience the benefits of research and “experiments”.



**Sabine Schulten**  
*German Institute of  
Urban Affairs (Difu)*



**Sebastian Bührmann**  
*German Institute of  
Urban Affairs (Difu)*

#### **C4 : Bike-Sharing, Electric Bikes and Intermodality**

The defining construct for the various adaptations of the bicycle into bike share systems, e-bikes, cargo bikes and other avatars is technology. Technology, however, is ever-changing, constantly innovating to the needs of the recipients. Trends like smart phones, e-commerce and a tech savvy generation Z are changing the mobility patterns of the city and attracting younger people to cycling. While entrepreneurs and practitioners are keeping pace with these changes, the domain of academic research does not have the same level of adaptability and agility. Whereas precedent/established research and journal papers are mandatory for academics, practitioners are open to ideas/concepts without precedent and entrepreneurs are innovating with new ideas every day. To bridge this gap, we should ensure that the need for precedent should act as a platform rather a gate to be crossed to reach the next level. Technology incubation units of universities, supported by multidisciplinary research bringing together software development, mechanical engineering, transportation planning, product design and urban design, could help achieve the desired synchronization.



**Parvesh Kumar Sharawat**  
*TERI University, Dehli, India*

## 12 The UBA promotes Active Mobility

Mobility is an important driver of our economy and a basic need of humans. However, traffic causes many environmental problems. In densely populated settlement areas, the high volume of motorized traffic leads to high levels of noise and pollution, which affect health and reduce quality of life. Furthermore, motorized traffic increases global warming and land drawdowns. Passenger cars need enormous amounts of space for parking in cities. To counteract these negative effects, it is essential that we develop and implement integrated, sustainable mobility concepts. Walking and cycling are important elements in this endeavor. Both modes of transport need little space, and produce neither emissions nor noise. Half of the car trips in cities are shorter than five kilometers. This indicates the huge positive potential of a shift from motorized short-distance traffic to „ecomobility“ (composed of local public transport, walking and cycling). In this regard, the promotion of intermodality and environmentally friendly modes of transport is a promising measure and should be encouraged, particularly in cities.

The task of the UBA is to give sustainable mobility a boost. The transport sector is responsible for about 18% of the greenhouse gas emissions in Germany. Traffic causes air and noise pollution in cities and consumes a lot of space for traffic areas. We need to reduce these harmful environmental and social impacts. The UBA therefore considers a transport transition to be necessary. Active mobility is a key to the sustainable and healthy city since it avoids the above-mentioned negative effects. Our section addresses cross-sectoral/overlapping transport issues. Here, we identify environmental stress and provide information for effective measures against it. Conferences like the ICC are an important instrument for us to raise awareness, discuss and exchange knowledge.

The UBA is the German scientific environmental authority. Our work is based on research findings and we share this information with the public, administration and politics. From our daily work, we are very well aware of the gap between research and practice. Researchers provide complex information, in many cases too complex to understand when research is not your full-time job. Practitioners have only limited time to read the many pages of a scientific publication. Additionally, you first have to know the methods before you are able to understand the text. The question we are confronted with every day is how to connect research and practice without simplifying too much and losing important details. We launched the ICC because we think that bridging the gap is crucial for a sustainable and effective transport policy.



**Martin Schmied**  
*Head of Department I 3  
„Transport, Noise and Spatial Development“*



**Dr. Katrin Dziekan**  
*Head of Section I 3.1 „Environment and Transport“*



**Dr. Katherina Graf**  
*Research Associate in  
Section „Environment and  
Transport“, ICC coordinator*

One of the reasons for organising the ICC is the 200th cycling anniversary in 2017. There could be no better occasion than the commemoration of the invention of the Draisine. 200 years later, cycling in Germany is reinventing itself and we are now on the move to something new. When I proposed the idea in 2015 to the team, we intended to make use of this momentum. We chose Mannheim as the venue not only because it is the birth place of the bicycle but also because it is a medium-sized city in Germany and could be exemplary for similar cities. The bicycle, originally a German innovation, has long since become an international success story. For the UBA, it is important to be involved in the international discourse on active mobility. We believe that the principle “Think globally, act locally” is transferable to the promotion of active mobility.



**Heike Bunte**

*Research Associate in  
Section „Environment and  
Transport“*

International cooperation in the field of environmental protection has taken on an ever increasing importance over the past two decades. The main cooperation partners for the German Environment Agency in this regard are European Union and United Nations organisms, the OECD, and Central and Eastern European states. We need to be aware of the crucial connection between transport, health and the environment.

THE PEP – the Transport, Health and Environment Pan-European Programme – serviced by UNECE and WHO/Europe makes the link. The UBA therefore supports THE PEP and its transnational and cross-sectoral approach. The UBA is also the National Focal Point for THE PEP. We coordinate THE PEP issues for the German ministries for Environment, Transport and Health.



**Kilian Frey**

*Research Associate in  
Section „Environment and  
Transport“, National Focal  
Point THE PEP*

Walking and cycling are the most environmentally friendly modes of transportation, zero-emission, quiet and space-saving. Moreover, active mobility (e.g. walking and cycling) has an essential role to play in the maintenance of the quality and safety of our cities. Pedestrians and cyclists bring a spirit of life to urban areas and promote human interaction and communication. They encourage retail businesses, local supply, the local economy and gastronomy. In this way, walking and cycling make a major contribution to the achievement of livable inner cities and residential quarters. Implementation of forms of active mobility in daily routines helps to reduce cardiovascular diseases and diabetes. Improved framework conditions for walking and cycling support a socially fair and gender-neutral form of mobility and also enable people of all ages and social classes to be mobile. It is therefore essential to highlight the importance of walking as the most natural form of mobility, to show the benefits of active mobility and to encourage walking and cycling as important aspects of sustainable mobility.



**Alena Büttner**

*Section „Environment and  
Transport“*







## 13 Appendix

- Bunte, H. 2012. *Sustainability of cycling courses for migrant women. International Cycling and Safety Conference 2013, Helmond, NL.* <http://icsc2013.blogspot.de/p/papers.html> [accessed: 23.08.2017].
- Cox, P. 2015. *Introduction: Why cycling cultures.* In: Cox, P. 2015 (Ed.). *Cycling Cultures.* University of Chester Press, Chester (UK).
- ECF 2017 (Ed.). *European Cycling Strategy – Recommendations for Delivering Green Growth and an Effective Mobility System in 2030.* Launched at Velo-city Arnhem-Nijmegen, June 2017. Available at: [https://ecf.com/sites/ecf.com/files/EUCS\\_full\\_doc\\_small\\_file.pdf](https://ecf.com/sites/ecf.com/files/EUCS_full_doc_small_file.pdf) [accessed: 25.06.2017].
- ECF/World Cycling Alliance (WCA) 2015. *Cycling Delivers on the Global Goals – Cycling and Active Mobility contributions to the UN Sustainable Development Goals.* Available at: <https://ecf.com/groups/cycling-delivers-global-goals> [accessed: 15.10.2016].
- Held, M./Schindler, J./Litmann, T. 2015. *Cycling and Active Mobility – Establishing a Third Pillar of Transport Policy.* In: Gerike, R./Parkin, J. 2015 (Eds.). *Cycling Futures. From Research into Practice.* Ashgate, Surrey (UK) and Burlington (US).
- Jungwirth, J. 2016. *Disruption of the Automotive Industry – How the Digital Transformation changes Volkswagen. Keynote speech at International Automotive Congress – Mobility goes Digital. Wolfsburg, October 17, 2016.* Available at: [https://www.izb-kongress.com/fileadmin/IZB-Kongress/Kongress\\_2016/Downloads/Jungwirth\\_IZB\\_Digital\\_Transformation\\_Volkswagen\\_Group.pdf](https://www.izb-kongress.com/fileadmin/IZB-Kongress/Kongress_2016/Downloads/Jungwirth_IZB_Digital_Transformation_Volkswagen_Group.pdf) [accessed: 27.03.2017].
- Kloof, A.v.d. 2015. *Lessons learned through training immigrant women in the Netherlands to cycle.* In: Cox, P. (Ed.). *Cycling Cultures,* Chester, UK: University of Chester (UK).
- Lehner-Lierz, U. 2003. *The role of cycling for women.* In: Tolley, R. 2003 (Ed.). *Sustainable transport, planning for walking and cycling in urban environments.* (pp. 123-143). Oxford, UK: Woodhead.
- Medland, D. 2017. *Banks And Insurers Support Task Force Recommendations On Climate-Related Financial Disclosure. Published by Forbes,* Jun 29, 2017. Available at: <https://www.forbes.com/sites/dinamedland/2017/06/29/banks-and-insurers-support-task-force-recommendations-on-climate-related-financial-disclosure/#280e90fb5c0e> [accessed: 04.07.2017].
- Neun, M. 2011. *Cycling Economy – A wider Frame for Sustainable Investments in Cycling Mobility.* Key-note speech at Velo-city 2011, Seville. Available at: <http://www.ecf.com/wp-content/uploads/2011/10/The-Cycling-Economy.pdf> [accessed: 10.09.2014].
- Neun, M. 2013. *Cycling Economy 2.0 – The Human Rights Approach.* Article to the Velo-city 2013 conference magazine ‘Sound of Cycling’. Vienna, June 2013. Available at: [http://velo-city2013.com/wp-content/uploads/Velo-city-2013-Conference-Magazine\\_THE-SOUND-OF-CYCLING\\_ENG\\_web.pdf](http://velo-city2013.com/wp-content/uploads/Velo-city-2013-Conference-Magazine_THE-SOUND-OF-CYCLING_ENG_web.pdf) [accessed: 10.09.2014].
- Neun, M. 2015a. *Preface – Agenda setting, framing, key-issues and Active Mobility.* In: Gerike, R./Parkin, J. 2015 (Eds.). *Cycling Futures. From Research into Practice.* Ashgate, Surrey (UK) and Burlington (US).

- Neun, M. 2015b. *Why Walking is my Favourite mode – the Case for an Active Mobility Alliance*. The Walk 21 Vienna conference magazine, October 20.-23.2015, p. 62. Available in print and at: <https://www.wien.gv.at/stadtentwicklung/studien/pdf/b008449.pdf> [accessed: 15.11.2015].
- Neun, M. 2015 c. *Cycling Futures. From Research into Practice. A personal Introduction*. In: Gerike, R. /Parkin, J. 2015 (Eds.). *Cycling Futures. From Research into Practice*. Ashgate, Surrey (UK) and Burlington (US).
- Neun, M./Haubold, H. 2016. *The EU Cycling Economy – Arguments for an integrated cycling policy*. European Cyclists' Federation, Brussels, December 2016. Available in print and at: [https://ecf.com/sites/ecf.com/files/FINAL%20THE%20EU%20CYCLING%20ECONOMY\\_low%20res.pdf](https://ecf.com/sites/ecf.com/files/FINAL%20THE%20EU%20CYCLING%20ECONOMY_low%20res.pdf) [accessed: 06.12.2016].
- OECD. 2013. *Cycling, Health and Safety*. <http://dx.doi.org/10.1787/9789282105955-en> [accessed: 23.08.2017].
- Sabelis, I./Kloof, A.v.d. 2012. 'Cycling Cultures – Upbeat to a comparative study of human scale mobility'. Keynote at the Scientists-for-Cycling colloquium, UBC/Cecil Green Park House, Vancouver, June 14, 2012.
- S4C 2017. *Scientists for Cycling Colloquium*, at Velo-city 2017 Arnhem-Nijmegen, The Netherlands, June 12, 2017. Overview and program available at: <https://www.velo-city2017.com/extracurricular/scientific-colloquium/> [accessed: 01.07.2017].
- Tversky, A./Kahneman, D. 1981. *The Framing of Decisions and the Psychology of Choice*. In: Science, Vol. 211, No. 4481, pp. 453-457.
- UBA 2017. *Tomorrow's Cities*. German Environment Agency (Ed.), Dessau-Roßlau. Available in print and at: [https://www.umweltbundesamt.de/sites/default/files/medien/421/publikationen/20170814\\_stadt\\_von\\_morgen\\_version\\_2\\_englisch\\_web.pdf](https://www.umweltbundesamt.de/sites/default/files/medien/421/publikationen/20170814_stadt_von_morgen_version_2_englisch_web.pdf) [accessed: 24.08.2017].
- UN 2015. *The Sustainable Development Goals – 17 goals to transform the world*. <http://www.un.org/sustainabledevelopment/sustainable-development-goals/> [accessed: 10.09.2016].
- UN Habitat 2016. *The New Urban Agenda, adopted at Habitat III*, Quito (Ecuador), October 20, 2016. Available at: <http://habitat3.org/the-new-urban-agenda/> [accessed: 01.06.2017].
- WBGU – German Advisory Council on Global Change 2016. *Humanity on the move: Unlocking the transformative power of cities. A Contribution to Habitat III*. Flagship Report 2016. Berlin: WBGU. Full report available in print and at: [http://www.wbgu.de/fileadmin/user\\_upload/wbgu.de/templates/dateien/veroeffentlichungen/hauptgutachten/hg2016/hg2016\\_en.pdf](http://www.wbgu.de/fileadmin/user_upload/wbgu.de/templates/dateien/veroeffentlichungen/hauptgutachten/hg2016/hg2016_en.pdf) [accessed: 01.06.2017].
- Wehling, E. 2016. *Politisches Framing. Wie eine Nation sich ihr Denken einredet und daraus Politik macht*. Edition medienpraxis, 14. Köln: Halmen.
- WHO 2017. *Physical activity*. <http://www.who.int/mediacentre/factsheets/fs385/en/> [accessed: 23.08.2017].



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