Manfred Neun - EcoMobility, Suwon 2013

Manfred Neun:
“Active Mobility – Achieving human rights through cycling”
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European Cyclists’ Federation
Manfred Neun, ECF President
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Abstract
Every day seems to bring news that levels of cycling are growing in cities across the world, as citizens and public authorities alike realise the benefits that can come with Active Mobility. The EcoMobility vision
is highlighting and targeting this development.

With further investments into Active Mobility, we can implement the changes needed to ensure the transition from non-sustainability to sustainability, so that our children inherit a more human and fairer world. Within just one year by support of the ECF I was able to go three valuable steps forward to implement this new thinking and to boost the pre-conditions of this global development: (1) Signing the Charter of Vancouver\(^2\) [June 2012], (2) introducing the Human Rights approach for global sustainability by Active Mobility to the 5\(^{th}\) World Forum on Human Rights [May 2013, Nantes], and (3) showcasing the economic benefits as well as the recognition of Human Rights with the “Cycling Economy 2.0” [June 2013, Velo-city Vienna].

These insights will help decision makers to find the way out of their business-as-usual daily politics. They can use the new tools to overcome current barriers and to improve the way we think about further investments, using cycling as the trigger.

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1. Active Mobility – an essential for EcoMobility

The concept of Active Mobility was introduced on the intergovernmental level at the International Transport Forum (ITF) 2011. From the very beginning this concept was highly welcomed, showing not only the easy understanding based on the clear and simple structure, but also the high demand for a concept like this.

1.1. Active Mobility and Passive Mobility

Active Mobility is:
- When you are powering yourself
- In the human dimension
- Good for health and wellbeing
- Saving energy

Good to know that people’s demand is high, but the potential of growth for more Active Mobility is also high. For cities Active Mobility is an essential, making them liveable, safe, and healthier. To improve this quality of life Active Mobility need cities designed for people – not for cars.

Passive Mobility is:
- When you need additional energy for transportation
- Technical solutions, where speed increases distances

The global demand for passive mobility is increasingly high, but we are not able to continue with these fossil based, energy and space intensive transport systems. At the International Transport Forum in 2011 the world renowned economist Jeffrey Sachs put these enormous limitations into a global perspective.

1.2. The Mobility Pyramid

The Mobility Pyramid was introduced primarily as an accessible tool to analyse the individual mobility behaviour and to increase sustainable mobility behaviour. At the moment people are working towards the system, which is well known as “integrated transport”. This implies:
• Active and Passive Mobility are part of a complementary System … … not in competition until now, however this must change.

The potential of Active Mobility through walking and cycling is highly underestimated. And there is a new, fast growing opportunity in the hybrid sector combining Active and Passive Mobility (in the green belt of the graph): it is the E-bike, the Pedelec.

The consequences from that point of view should be:

Less Passive Mobility, especially by cars
• No place in policy priorities in the future
• No two-class societies as a consequence
• Opening up Public Space that is space for all people

More Active Mobility
• Due to all the advantages and needs:

In Summary: As little personal motorized transport as necessary and as much walking and cycling as possible.

1.3. Active Mobility for EcoMobility

Drawing the Mobility Pyramid in car centred cities the result is a caricature, an upside-down pyramid: broad at the top with too much Passive Mobility and small at the bottom with too little Active Mobility. There can be no doubts that a Mobility Pyramid according to EcoMobility must be in the shape of a real pyramid, with a broad basis of much more Active Mobility.

In result: for EcoMobile cities the Active Mobility approach must be substantial.

Everybody should understand now also that we prefer the term “Active Mobility” instead of “non-motorized transport” in common use now. If we would like to overcome the car centred thinking, we must take also the wording seriously. Active Mobility is positive.

Additionally let us ask the question: Do we need to know more about the difference between Active Mobility and Passive Mobility?
Yes, there is a tremendous difference, as you will see: It is the Human Rights approach.
2. Human Rights – what decision makers must know

The Human Rights approach for ‘Children and Cycling’ was introduced with the ‘Charter of Vancouver’ in 2012, and the frame for Active Mobility and cycling was enlarged with the presentation to the 5th World Forum on Human Rights in 2013.

2.1. The Charter of Vancouver

The Charter of Vancouver focuses on the future of children, worldwide. A part of culture and daily habits, education and health, and environmental sustainability, cycling produces undeniable positive effects on our lives. The right of children to cycle should be universal and ever present; because children who take to jumping on a bike a regular part of their lives today can grow up to be healthy, happy and environmentally conscious adults.

The Charter of Vancouver was launched during the Velo-city Global 2012 conference as a step towards reaching the goal of a sustainable future, by focusing on cycling and children today.

“We’re calling upon the United Nations and we call upon you, Ban Ki-moon, to give all children access to cycling,” said Bernhard Ensink, Secretary General of the European Cyclists’ Federation.

Linking to the Convention of the Rights of the Child, the Charter calls upon the UN and other institutions to consider cycling as a human right for children and “to include cycling as part of all sustainable transport policies and strategies.”

When I was initiating the Charter these intentions were clear, as described then in my speech before signing in Vancouver. Additionally Paul Tranter from the University of New South Wales presented the relevant criteria for the needs and rights of children. I must credit the inspiration I got from him; his presentation at Velo-city Global 2012 Vancouver on the human rights of children complemented so perfectly the work I had done in preparing ECF’s “Charter of Vancouver”. He enabled me to bring wider concepts about the impact of cycling on Sustainable Development to the 5th World Forum on Human Rights (WFHR) this year in Nantes.

2.2. The Human Rights approach: Protection, Provision, Participation

Tranter’s concept shows three criteria for the respect of human rights: Provision, Protection and Participation. Based on that and outlined in the WFHR presentation, the development was as follows:

- The wider frame for Active Mobility, as cycling is part of Active Mobility.
- The wider frame for all people, for what is good for children – must be good for all people.
- The new order of the three criteria for the respect of human rights: Protection, Provision
and Participation. This is exactly the order of the historic development of these criteria in the history of Human Rights, beginning with protection against crime, wars, violence etc.

2.2.1. Protection

Good reasons:
- Protection from traffic and stranger danger
- Protection from pollution danger – clean air
- Protection from social exclusion
- Protection from poverty
- Reduced lifestyle diseases
- Short term and long term

1. Protection under all aspects is the contrary of over-protection. For children it is important to be protected, but to learn at the same time to be aware of any risks. This is the reason why children growing up in Venice do not drown because they learn to master the risky environment of the Canal Grande and other channels in Venice, as we learned from the educational scientist Francesco Tonnucci at Velo-city 2011. His essential conclusion on road safety was condensed in the quote: “Streets without children are unsafe streets.”

2. Generally it is more important to invest in traffic infrastructure that encourages users to be highly aware of each other then to invest wrongly in segregation. Especially speed reduction is a necessary and appropriate solution to produce road safety by adaptive behaviour. The risk of serious injuries from 30 to 50 km/h lies in a 1 : 8 relationship.

Due to that the European Parliament is asking for concrete steps towards a 30 km/h speed limit:

4. “The European Parliament is once again supporting 30 km/h speed limits by calling on the EU Commission to provide an overview of urban areas with a 30 km/h speed limit and the effects of that limit on reducing fatalities and serious injuries.”
2.2.2. Provision

Good reasons:
• The right to play (not only for children)
• Freedom to playfully explore their environment, mastering a risky, challenging activity
• Freedom to explore their city and extent their (play) territory
• Social play – meet people
• The right to get access to cycling – and public space!

Provision of Active Mobility means allowance for people’s freedom of movement. A key-issue is the accessibility to public space: are there barriers or even discriminating barriers leading to fringe groups? Do all people get access to public space or are there limitations leading to a two-class society?

Accessibility depends on rules and regulations, on infrastructure, on education and lots of other factors. So it is to be identified as a cultural issue showing the different values societies may have, but it is always related to people’s freedom of movement. And there can be no exception on age: Why should the adults get more freedom of movement by car use while their children are getting poorer, may-be even losing their freedom of movement completely?

This is a crucial situation in most of the rich and so called developed countries with dominance of car use, and it explains the dimension and importance of provision. No doubt: for the development of children it is an essential, why I already stated: „Child’s play is the child’s key to the world – cycling is one of the last keys to the real world“.
2.2.3. Participation

Good reasons:

• Children as present citizens, not just future citizens – and: cyclists as present citizens, ... there must be no 2nd or 3rd or 4th class society. Social inclusion means all people’s inclusion.
• Participating in planning – public participation
• Participating in community life
• With cycling, we make people visible and connected
• And we stimulate the social life and the civil society
• Active Mobility let people meet in public space – a basic life condition for democratic societies

Participation by Active Mobility is what we already know from liveable and cycling friendly cities. When people meet in Active Mobility they meet each other, having lots of social contacts. In contrary we know from motorized cities that with the isolation of people sitting in their cars, closed containers, armed like knights in the middle ages, aggressive behaviour can be seen quite often. Especially children are isolated in the “mama & papa taxi”, also this is another example for overprotection.

2.3. Human Rights and Active Mobility: Cycling is the trigger

All those three criteria are of importance, and they are in an interactive way strengthening or – if missing – devitalizing people’s living conditions.

But also the quality of life by Active Mobility is an asset for healthier and wealthier societies. So people and their societies can win by more Active Mobility, especially be more people cycling more often.
As we also have seen under all the three aspects, the situation very often is crucial for children and their development. Their rights for protection, provision and participation are mostly neglected. Therefore it is worth to remember what Enrique Peñalosa quoted at the ITF 2011 in Leipzig:

"Children are a kind of indicator species. If we can build a successful city for children, we will have a successful city for all people."  

The tremendous need for accessibility to public space cannot be allowed only by traffic lights, as the picture shows. This is limited too much. We need more space taken from cars.

As public space is space for all, we need a better balancing between the modes of transport and we need more shared space, succeeding to have enough space for Active Mobility.

There must be a right to cycle for all people – there must be a right to walk for all people – there must be a right for Active Mobility in public space.

This means a fundamental chance in transport values: people are not there for transport, but transport must be there for people. Active Mobility is focusing this human perspective.

There must be a Human Right on Active Mobility for all people – and there must be investments to provide!
3. Impacts of cycling – for sustainability and society

3.1. Key-issues

ECF started in 2008 with “Setting Agendas for Cycling Policy in Europe”. It was exciting to see that these developments show how we can and must launch new thinking about cycling that keeps it at the forefront of political thought. With the increasing global demand for new transport solutions we worked on all political fields discovering how cycling can be part of the solution of global problems in general. This process was encouraged under the lead of the Advisory board of the global ECF network “Scientists for Cycling”. Evidence based we currently identified eight key-issues.

For decision makers these eight key-issues are explaining different fields for investments in cycling to unleash the huge potentials, and the simple message is: “Invest in one, get 7 for free!”

Additionally a great example from Seville, drafting the relationship to costs for different modes of transport:

- A functioning cycling network cost 32 million euros, and transports 66,000 people daily.
- In comparison, Seville’s single-line metro system cost 600 million Euro and carries only 40,000 people daily …
- … and its motorways cost 6 million Euro per kilometer.

3.2. Cycling for sustainability and society

In 2011 the International Transport Forum’s motto was “Transport for Society”, and cycling benefits were introduced on the international level to all the OECD transport ministers.
The sustainable impact of cycling is evidence based, underlined by best practice. The balancing and boosting factors for sustainability I was able to draft with the “Sustainability Cube”, which can be used as another tool by those who are interested. For the global academic society it can be seen as a contribution for discussing the context of Human Rights and sustainability – currently a wide and open discussion.

The impact of cycling for sustainability and society should also become another valuable contribution for EcoMobility. Cycling friendly societies are implementing the sustainable behaviour in their daily life. Practically another great example for that comes from the Danes where the current cabinet already was cycling for official events also: Denmark’s first ever female prime minister Helle Thorning-Schmidt and ministers from the Liberal party decided to arrive by bicycle at the Queen’s residence. Means: they already know and demonstrate that the Impact of Cycling is enormously high – Cycling is the Trigger!

In result, the impact of cycling is:

- A valuable contribution to the global problems, not solving them all, but delivering a significant and valuable contribution
- A leveraging investment with an outstanding return-on-investment
- Good for sustainability
- Good for society

3.3. Velo-city series

Where can you learn more about cycling benefits and investments? Velo-city is the world’s premier international cycling planning conference. The annual conferences are designed to share best practices for creating and sustaining cycling-friendly cities, where bicycles are valued as part of daily transport and recreation. The Velo-city 2013 in Vienna attracted about 1,400 participants.
delegates from more than 50 different countries from around the world.

In 2014 Adelaide will be the first city in Australia to host the Velo-city Global event. So we are proud to invite all preferred participants and potential speakers from the Asia Pacific Region.

Velo-city Global aims to achieve contributions and participants from all six continents. The program and structure of the conference are also developed using a global context.

**Active Mobility Workshop**
Continuing development of the Velo-city series we will now have an international workshop that captures the main themes from the conference series.

We invite academics, other researchers and interested practitioners to come to Tutzing at the shore of Lake of Starnberg halfway between Munich and the Alps.

This international workshop brings together expertise from a broad range of disciplines to share the current state of research and to identify knowledge gaps in the search for sustainable future scenarios. We use the language of Active Mobility to emphasise the importance of people, their needs and aspirations for a good life. Active Mobility is about public space and the role of places, the design of infrastructure and technology as well as the means and practices of mobility, walking and cycling.

The call for presentations is open until Sep 19, 2013 – more about the program: web.ev-akademie-tutzing.de
4. From Economy to Cycling Economy

4.1. About Economy – some needs in general

I have worked on economic issues for 40 years. But searching for ‘Economy+success’ in the web became a new experience. Nothing found about profit or money on a first view, but lots of arrows upwards, green trees and even cabbage, and: one jump showing some risky behaviour.

My first thought: would be great, if this could become a self-fulfilling prophecy for sustainable economic behaviour. But for the first and current moment we can be sure: there must be an increasing demand for these (green) desires. And what about the role of cycling to fulfil criteria like these?

The perfect match for green (macro-)economics, based on the benefits of cycling.

Back to my roots in economy: Measuring success is widely understood by criteria like Profit, Return on investment, cost-benefit-ratio, growth, or successful risk management, for example. And again the question: what about the role of cycling to fulfil criteria like these?

Introducing Cycling Economy I already pointed out the classic economic benefits about housekeeping, saving (public) money, small investments with fast return on investment etc. The example from Seville (pt. 3.1) is speaking clear economic figures and best cost-benefit-ratio. But the real big figures you will get when looking into the health key-issue – it is one of the eight ECF key-issues (see also pt. 3.1).

How impressive the figures are can be seen in the WHO Heat tool, an online resource to estimate the economic savings resulting from reductions in mortality as a consequence of regular cycling and/or walking. Discussed in the WHO workshop at Velo-city 2013 in Vienna also crucial aspects can be eliminated: “Although the costs related to cycling accidents, road infrastructure, air pollution are high, the cost-benefits (ratio) of being physically active on a daily basis outweigh these ‘negative’ costs”.

But until now it is not a common match to make a merger with health and transport budgets for bettering people’s health when investing in transport. Never-the-less there is the chance to bring
both together in cities, when asking: Which City do you want?

With the desires of a better, healthier, and more liveable city the decision makers easily can find the right criteria to invest. And we will help them, with the economic approach of the Cycling Economy.

4.2. The Cycling Economy 2.0

Since 2011, when I introduced the first “Cycling Economy” framework³⁹, we have seen how experts and partners have responded, widened the frame for investments in cycling, bringing together all the components I highlighted.

This is amazing and another example for me and for ECF, it shows that we can and must launch new thinking about cycling that keeps it at the forefront of political thought as a precondition of further action. The Cycling Economy framework has developed well alongside other key concepts such as Active Mobility (see pt. 1) and the key-issues of the ECF agenda setting (see pt. 2.1). All these approaches have been widely adopted because of the global demand for new transport solutions.

However two years later I realize that this is not enough. The economic crises of the recent past have made it increasingly clear that we need a new economic model for our society that puts people, not financial institutions at the core. Let us start again with the question:

Which City do you want for your people – even for yourself?

Putting this desire into the center of thinking, you may all understand that I have been inspired by the concept that puts human rights at the heart of Cycling Economy, accessible via the criteria protection, provision and participation (see pt. 2.2), and implementing Active Mobility systematically (see 2.3). This encouraged and undermined my speech at Velo-city 2013 “Cycling – The Best Investment to Combine Economic Benefits and Quality of Life.”⁴⁰

Cycling is the perfect fit

Any investment has to respect Human Rights. And cycling, as it turns out, is the perfect fit: it has the potential to provide economic benefits as well as the recognition of human rights. Therefore, in order to make better economic decisions, we have to ask ourselves the following questions:

- Have our existing human rights previously been recognised? If not, we have to insist that this changes.
**Is there a human right to cycle? If yes, then all (public) investors in urban and transport development must respect this right.**

Based on these questions we will develop a new framework for all investments, which hopefully will ultimately result in a new economic model. Please see here the condensed overview:

### 4.3. “The Cycling Economy Grid” – bringing it all together

The purpose of the Cycling Economy Grid is to bring together the Human Rights approach with economic and investment thinking for our community to use. With this grid we can identify who the actors are, why the economic effects are enormously high, what the new leverages are, why we can expect further increases and how the Human Rights for Active Mobility deliver a new approach for decision makers which cannot be neglected further on in budgeting and investing on all governmental levels.

I invite you to discover the three levels of the grid. On these levels and between them there are strong interrelationships with reasonable multiplying effects between the economic results and the assets development as well:

- **The Human Rights level** is the first and premium level, bringing in Protection, Provision and Participation as high level concerns.
- **The Best Assets level** is where we bring in the impact of cycling investments, plus sustainability and society concerns.
- **The Business level** is showing the actors and decision makers from public authorities, urban mobility experts and cycling businesses. There decisions are targeting much further and longer then expected mostly by themselves. They are the people delivering space, mobility, accessibilities and abilities for people and cities, also the preconditions for intermodality in transport. To know this is of high importance for integrated mobility solutions and sustainable economy concerns.
This is another inspirational new step for me, but equally exciting is that it presents further opportunities for ECF to work in a collaborative, open source way with all our partners worldwide to turn this into a shared resource that can further improve the way we think about cycling investments. Think for a moment of the elements and experts we can bring together to create a new way of thinking:

- From Human Rights we bring Protection, Provision and Participation as high level concerns.
- As actors we bring public authorities, urban mobility experts and cycling businesses.
- And as assets we bring all the cycling issues we have worked on together, plus sustainability and society.

**A global approach**

My objective is that the Cycling Economy Grid will develop to become a powerful tool for decision makers and investors. Human Rights is a “premium” argument for investment providing the overarching objective and global approach that is so badly needed in order to develop more solid and sustainable economic concepts.
5. Conclusions – based on “The Cycling Economy Grid”

I would like that all decision makers can see the leveraging effects of investing significant more in cycling and Active Mobility in total.

It is really an outstanding situation to create a liveable world. Referring to the three levels of “The Cycling Economy Grid” I call to all decision makers please consider:

- You have the unique opportunity to built a human world
- You have the unique opportunity to built a sustainable world
- You all are the decision makers – take the chance:

Active Mobility
It’s a human need and right, and
Cycling is the Trigger!
6. APPENDIX

6.1. About the ECF and the speaker

With over 70 members across nearly 40 countries, the European Cyclists’ Federation unites cyclists’ associations from across the globe, giving them a voice on the international level. Our aim is to get more people cycling more often by influencing policy in favour of cycling within political, economic and social institutions. We are organizing the Velo-city series of conferences that are widely considered as the premier international planning conferences on cycling. The conferences are designed to encourage cycling as part of daily transport and recreation.\footnote{1}

The Velo-city series are also providing and stimulating the development of cycling friendly cities, and it doesn’t matter on which level of development they start: as starter, climber or for-runner cities. Current examples are the host-cities of the last few years as in 2010 Copenhagen (Denmark), 2011 Seville (Spain), 2012 Vancouver (BC, Canada), 2013 Vienna (Austria) and 2014 Adelaide (South Australia).

President of the ECF since 2005 is Manfred Neun, a key figure in the world of global cycling advocacy. By initiating a scientific based approach to content, he has ensured that important global decision makers are hearing the ECF’s key messages. At the 2011 OECD International Transport Forum he ensured that 51 transport ministers endorsed the importance of cycling. Based on his business background, he is bridging the gap between cycling advocates, industry, politicians and experts. He has initiated the ECF’s expanding global network “Scientists for Cycling”, as well as growing the ECF’s city network “Cities for Cyclists” and the “Cycling Industry Club” worldwide.

Neun’s professional life began with a banker’s apprenticeship after studying economics, and psychology at the University of Augsburg. He has been active in research, studying the economic and psychological aspects of sustainable mobility development, and has lectured at a number of universities. Manfred Neun has held the position of President of the German Two-Wheel Wholesalers’ Association, and Executive Vice-President of the Chamber of Industry and Commerce in his hometown. As the CEO of a cycling company, he became known as the “Father of the Trekking Bike”, which he pioneered as a model in 1986.

Contact /Address of the European Cyclists’ Federation:
Kevin Mayne, Development Director
European Cyclists’ Federation asbl, Rue Franklin 28, B-1000 Brussels
Tel: +32 2 880 92 74; Fax: +32 2 880 92 75; Email: k.mayne@ecf.com; www.ecf.com
6.2. The Charter of Vancouver

CHARTER OF VANCOUVER on ‘CHILDREN AND CYCLING’

As the UN stress in their Convention on the Rights of the Child (*):

- Childhood is entitled to special care and assistance;
- Education should be directed toward the development of the child’s personality, talents and abilities to their fullest potential and respect for the natural environment;
- Governments recognize the right of every child to a standard of living adequate for the child’s physical, mental, spiritual, moral and social development;
- Governments shall respect and promote the right of the child to participate fully in cultural and artistic life and shall encourage the provision of appropriate and equal opportunities for cultural, artistic, recreational and leisure activity.

And as cycling helps to ensure children’s needs and rights worldwide because:

- Cycling means that children are physically active, can explore their communities and learn about their environment; cycling means that children create essential benefits for their physical and social development.
- Cycling allows children to explore their environment and more fully access their communities, move longer distances, and travel to school, shops, parks and other places important to the daily lives of children.
- Cycling, and other forms of active transportation, means that children can create a substantial contribution to the livability, safety and prosperity of their neighborhoods, towns, cities and the environment.

The undersigned, on the occasion of the Velocity Global 2012 conference in Vancouver, call on the United Nations and all governmental, intergovernmental and non-governmental organizations and institutes.

a) To adopt a goal to improve the situation of children around the world in part through sustainable transport policies and strategies;
b) To include cycling as part of all sustainable transport policies and strategies;
c) To adopt a target of providing opportunities to cycle for all people around the world;
d) To promote active mobility for people of all ages and abilities and to improve the safety and accessibility of roads and public spaces, especially for children;
e) To develop and promote programs that encourage walking and cycling to school;
f) To develop and provide cycling skills training to all children at an early age; and

g) To cooperate closely with cycling advocacy and promotion organizations and other citizens’ organizations to encourage more children to cycle more often.

(*) This Charter refers to the United Nations Convention on the Rights of the Child (in force since 2 September 1990) and UNICEF’s mission to advocate for the protection of children’s rights, to help meet their basic needs and to expand their opportunities to reach their full potential.
5 See e.g.: Gehl, Jan [2010]: Cities for People. Washington/Covelo/London: Island Press.
10 http://www.ecomobility.org/home/features-of-an-ecomobile-city/
11 The Charter of Vancouver: see pt 6 [Appendix] or ibid. pt.1
12 Neun, Manfred [2013]: Public Space and the Human Right on Active Mobility: How to use the impact of cycling for sustainability and Human Rights’ consideration. Presentation at the 5th World Forum on Human Rights on May 25th, 2013, Nantes.
15 See ibid. pt.12
16 See ibid. pt.12
20 Parkin, John 2013: Issues in design and planning for cycle traffic. Scientists-for-Cycling side event at Velo-city 2013, Vienna. Outlining the question: Where segregation is appropriate, what are the best methods for overall sharing of the public realm?
22 Neun, Manfred [2013]: Public Space and the Human Right on Active Mobility. WFHR 2013, Nantes.
25 ECF [2008]: Human Powered Mobility conference “Setting Agendas for Cycling Policy in Europe”, Protestant Academy Tübingen. Further developed under the lead of the global ECF network “Scientists-for-Cycling (S4C)”.
26 Global ECF network „Scientists-for-Cycling (S4C): http://www.ecf.com/projects/scientists-for-cycling/
27 See: www.cyclingmobility.com/feature/the-circle-of-life
28 Neun, Manfred [2011]: see ibid. pt.3
29 Ensink, Bernhard [2011]: Cycling, a key mode of transport for sustainable cities. Key-note at EcoMobility
Changwon 2011, World Congress on Mobility for the future of sustainable cities, Changwon. 
33 Steering-Committee: Tilman Bracher (D), Dr. Peter Cox (UK), Prof. Dr. Regine Gerike (A), Prof. Dr. Bas de Geus (B), Prof. Dr. Georg Hauger (A), Dr. Martin Held (D), Prof. Dr. Markus Mailer (A), Manfred Neun (D/B), Prof. Dr. John Parkin (UK), Dr. Ida Sabelis (NL).
36 See more http://www.euro.who.int/HEAT
37 HEAT for Cycling symposium [2013]: “The HEAT tool: Economic quantification of the health benefits of cycling: can it support changes in policy and practice? A review of experiences using the WHO Health Economic Assessment Tool (HEAT)” by Christian Schweitzer (WHO, Switzerland), Nick Cavill (Cavill Associates) and Robert Thaler (Federal Ministry of Environment, Austria), chaired by Francesca Racioppi (WHO); “Health Benefits and Cycling Economy” session at Velo-city 2013, Vienna - See more at: http://velo-city2013.com/?p=5461#sthash.tvL11hHk.dpuf
39 Neun, Manfred [2011]: ibid. pt. 35
40 Neun, Manfred [2013]: Cycling – The Best Investment to Combine Economic Benefits and Quality of Life.” Plenary speech at Velo-city 2013, Vienna.
41 About Velo-city see more at: http://www.ecf.com/projects/velo-city-2/what-is-velo-city-2/#sthash.4rPOe3lj.dpuf