Cycling for Everyone: The Key to Public and Political Support

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Reasons for *everyone* to support cycling:

- More daily physical activity and better personal health
- Reduced medical costs for everyone, directly and indirectly
- Improved traffic safety and more livable neighborhoods
- Better Environment: Reduced air, water, and ground pollution; less noise; less disruption of natural ecosystems
- Reduced Greenhouse Gases and global warming
- Improved accessibility and increased social and economic integration of all groups
- Reduced traffic congestion, parking needs, energy use

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Lots of Potential for Increased Cycling in the USA: Short trips

Many daily trips in American urban areas are short enough to make by bike!

- 25% of all trips in U.S. metro areas were a mile or shorter in 2001
- 40% of all trips were shorter than two miles
Lots of Potential for Increased Cycling in the USA: Many bikes

American households already have bikes available for use:

• 44% of all U.S. households have at least one bike
• 26% of all households have two or more bikes

Every American family could afford more bikes:

• Average cost of new bike at mass retailers is $80
• Cheap used bikes available for sale everywhere
• Bike libraries can provide free bike loans for poor

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Lots of Potential for Increased Cycling in the USA:

Almost EVERYONE could bike!

As shown by the Netherlands, Denmark, Germany, and other countries:

• Except for very young and very old, cycling is possible at any age
• Women can cycle every bit as well as men, if not better!
• People with some kinds of disabilities can cycle better than walk
• You do NOT have to be Mr. Muscle or Ms. Fit to be able to cycle

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Bike Share of all Local Trips in North America, Australia, and Europe
(Percentage of total local trips by bike)

Cycling and walking can provide valuable physical activity for almost everyone

• Both for daily, practical travel and for recreation

• Cheaper, easier, and more dependable than formal exercise routines that require trips to gym, home exercise equipment, organized sports events

• Can be integrated into daily lifestyle since cycling and walking can be used for purposeful travel and thus achieve practical objectives

• Urgent need to increase physical activity levels of Americans

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Crucial importance of regular physical exercise:

- Obviously, the daily physical exercise of walking and cycling for practical travel helps burn up calories and helps avoid the problems of *overweight and obesity*

- Moreover:

  "*Whether normal-weight, overweight, or obese, physically inactive persons are 2 to 3 times more likely to die prematurely.*"

Huge Health Benefits of Even Small Increases in Physical Activity

Percent of total burden of disease attributed to selected risk factors

Burden of Disease study, AIHW 1999

- Tobacco
- Physical inactivity
- Hypertension
- Alcohol harm
- Obesity
- Illicit drugs
- Cholesterol
- Low fruit/veg
- Unsafe sex
- Alcohol benefit

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Obesity Rate by Country (Body Mass Index ≥ 30)


Does speaking English make us fat?

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Obesity Trends* Among U.S. Adults
BRFSS, 1990, 1995, 2005
(*BMI ≥ 30, or about 30 lbs overweight for 5’4” person)
Worsening Obesity Epidemic among American Children and Adolescents, 1963-2002 (% with body mass index of 30+)

SOURCE: CDC/NCHS, NHES and NHANES
Does auto-dependency make us fat? Obesity falls sharply with increased walking, cycling, and transit use!

Need to make cycling safe, convenient, attractive, and feasible for: 

EVERYONE!!
Women can cycle as well as men, if not better!!

- Levels of cycling by women in northern Europe are much higher than in North America.

- Surveys show that women generally prefer separate facilities.

ONLY where cycling attracts women is it really a success!!
Women's Share of Total Bike Trips in North America, Australia, and Europe

<table>
<thead>
<tr>
<th>Country</th>
<th>Percentage of Bike Trips Made by Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>21%</td>
</tr>
<tr>
<td>USA</td>
<td>32%</td>
</tr>
<tr>
<td>Canada</td>
<td>36%</td>
</tr>
<tr>
<td>Denmark</td>
<td>45%</td>
</tr>
<tr>
<td>Germany</td>
<td>49%</td>
</tr>
<tr>
<td>Netherlands</td>
<td>55%</td>
</tr>
</tbody>
</table>
Average Cycling Kilometers per Capita per Day in the USA, Denmark, Germany, and the Netherlands by Gender (2000-2002)

<table>
<thead>
<tr>
<th>Country</th>
<th>All</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>0.1</td>
<td>0.15</td>
<td>0.1</td>
</tr>
<tr>
<td>Denmark</td>
<td>1.2</td>
<td>1.4</td>
<td>1.1</td>
</tr>
<tr>
<td>Germany</td>
<td>1.2</td>
<td>1.2</td>
<td>0.8</td>
</tr>
<tr>
<td>Netherlands</td>
<td>2.5</td>
<td>2.7</td>
<td>2.3</td>
</tr>
</tbody>
</table>

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CYCLING IS DIVINE!!

How Catholic nuns get around in Muenster, Germany

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Cycling can start at a very young age indeed

Foto by Marie Demers

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And we can keep cycling all life long!!!
Bike Share of Local Trips by Age Group in the USA, Germany, Denmark, and the Netherlands (2000-2002)

Make Cycling Safe for Everyone!

• Cycling safety is important for everyone, but especially crucial for the young, the old, for anyone with disabilities, for the timid or risk-averse

• Women generally are more sensitive to safety than men

• Improving cycling safety would greatly enhance the attractiveness of cycling to a broad spectrum of society

• The much greater safety of cycling in Northern Europe might explain why so many children, elderly, and women cycle
Walking and Cycling **CAN** be made very safe, as in the Netherlands

Fatality Rates and Non-Fatal Injury Rates in the USA, Germany and the Netherlands, 2000


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Cycling Safety in Muenster, Germany

- Population of 265,000
- 135 million bike trips per year (370,000 per day)
- Bike share of total trips: 35%
- Most complete and most separate bicycling facilities of any German city
- Only 222 cyclist injuries per year:

ONE CYCLING INJURY PER 608,000 BIKE TRIPS!
Cycling Fatality Rates in North America and Europe, 2002
(cyclist deaths per 100 million km cycled)

Source: Organisation for Economic Cooperation and Development (2005); European Union (2003);
and U.S. Department of Transportation (2003 and 2005)
SAFETY IN NUMBERS

• As levels of cycling and walking increase, injury and fatality rates per trip and per km traveled fall dramatically.

• Fatality rates per trip and per km are much lower for countries and cities with high bicycling and walking shares of total travel, and fatality rates fall for any given country or city as cycling and walking levels rise.

• Thus, it is quite likely that increased cycling and walking in Australia, Canada, and the USA would be safer than they are today.

We CAN increase cycling!

• The necessary measures are known and proven

• Many successful policies and programs in cities around the world have greatly increased cycling

• Northern Europe has been at the forefront of best policies, but there have been isolated successes in North America and Australia as well

• The SAME policies that make cycling more convenient, faster, more pleasant, and more attractive ALSO make cycling safer for everyone

• Rest of talk will explain and illustrate the most important measures
How to Encourage More Cycling while Improving Safety

• Better cycling facilities (incl. bike-friendly roads!)
• Integration of bike with public transport
• Traffic calming of residential neighborhoods
• Mixed-use zoning and improved urban design
• Restrictions on motor vehicle use
• Traffic education
• Traffic regulations and enforcement
Better cycling facilities

• **Bike paths and lanes** with exclusive rights of way, providing a **connected, integrated, comprehensive bike route** network that serves all parts of the metro area

• **Auto-free zones and special bicycling streets** covering much of city center

• **Make all streets more bikeable** to enhance route network

• **Extensive, secure, sheltered bike parking** at appropriate locations

• **Intersection modifications** that minimize dangers for cyclists making turns and crossing roads

• **Advance green lights** for cyclists (to cross intersections before motor vehicles)
Most European cities have extensive car-free districts ideal for walking and cycling, such as here in Muenster, Germany.
Bikes and buses take up much less space than cars!!

Demonstration on main street of Muenster how much space cars take compared to buses or bikes to transport the same number of people.

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*Fahrradstrassen* in Germany, *bicycle streets* where cyclists have absolute priority over cars for entire width of roadway

Car-free John in Nuernberg

Muenster

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Bicycle expressway-beltway in Muenster, Germany

This 6 km beltway encircles central city and connects 16 major bike paths radiating outward toward the suburbs and 26 bike paths and lanes leading to Cathedral Square.

Note exclusive cycle path in middle and completely separate pedestrian walkways on both sides.
Car-free zones in the USA: Davis, California
Peaceful co-existence of trams, bicyclists, and pedestrians in Freiburg’s center
German Cycling Boom Engineered by Explicit Shifts in Transport Policy in 1970s

<table>
<thead>
<tr>
<th>City</th>
<th>Time Period</th>
<th>Change in Bicycle Modal Split Share</th>
<th>Percentage Increase in Bicycle Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Munich</td>
<td>1976 to 1996</td>
<td>6% to 13%</td>
<td>+117%</td>
</tr>
<tr>
<td>Nuremberg</td>
<td>1976 to 2001</td>
<td>4% to 9%</td>
<td>+125%</td>
</tr>
<tr>
<td>Cologne</td>
<td>1976 to 1998</td>
<td>6% to 12%</td>
<td>+100%</td>
</tr>
<tr>
<td>Freiburg</td>
<td>1976 to 1998</td>
<td>12% to 19%</td>
<td>+58%</td>
</tr>
<tr>
<td>Stuttgart</td>
<td>1976 to 2000</td>
<td>2% to 6%</td>
<td>+200%</td>
</tr>
<tr>
<td>Bremen</td>
<td>1976 to 1997</td>
<td>16% to 21%</td>
<td>+31%</td>
</tr>
<tr>
<td>Muenster</td>
<td>1976 to 2001</td>
<td>29% to 35%</td>
<td>+21%</td>
</tr>
<tr>
<td>Average for all urban areas in Western Germany</td>
<td>1972 to 2002</td>
<td>8% to 10%</td>
<td>+25%</td>
</tr>
</tbody>
</table>


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Bicycling facilities in Berlin, Germany’s capital and largest city

- 860 km of completely separate bike paths
- 60 km of bike lanes on streets
- 70 km of combined bike/bus lanes on streets
- 100 km of combined pedestrian/bike paths
- 3,800 km of city streets (72%) are traffic calmed, with speed limit of 30km/hr or less, and thus ideal for cycling on street, without any special lanes or paths

10% of all trips in Berlin are by bike

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Muenster offers 280 km of separate bike lanes and paths, and shared bus-bike lanes.
Special contraflow lanes in Toronto and Melbourne that permit cyclists to travel in both directions.
Relaxing traffic restrictions for cyclists by permitting bi-directional travel on one-way streets, turns, and thru-travel for bikes where prohibited for cars.
Convenient bike cut-thru for cyclists in Melbourne

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Some Australian successes: Extensive ped-bike cut-throughs and dead-ends for cars in Newtown (Sydney)

(on Car-free John’s daily route to University of Sydney)
Cycling paths, signs and signals in Montreal

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Why are parked cars allowed to obstruct cyclists on such bike lanes in Melbourne?

Lots of obstacles to bicycling
WHY do polluting, congesting, petrol-guzzling motorists in Melbourne get priority over cyclists and pedestrians?
By law, every new suburban development around Muenster has sidewalks and cycle paths. This new design further separates cyclists from motor vehicles.
This bike bridge connects town of Greven (near Muenster) to its suburban rail station.

Muenster has over 350km of such lightly traveled roads for cycling that exclude all motor vehicle traffic except for street residents.

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Extensive, fully-integrated bikeway network in Freiburg, Germany

CRUCIAL to have full connectivity of cycling facilities!
Usually lacking in North America

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Bike lanes and paths in Amsterdam designed to reduce traffic conflicts with other modes
Bike paths and lanes must be promptly cleared of snow in winter, as here in Muenster.
Regular laser inspection of bikeway surfaces for preventive maintenance!

Bike lanes sprayed with salt water and cleared before rest of roadway!
Convenient, safe, and attractive cycling facilities such as the Goodwill Bridge in Brisbane encourage all age groups to cycle, even middle-aged Car-free John!
Brisbane’s floating bikeway

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Floating Bike Path in Portland, Oregon

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Special traffic signals and signs give priority to cyclists.
Giving cyclists the green light in Canada

Toronto, Vancouver, and Victoria have been installing bike-activated sensors in road surfaces at intersections to trigger green lights for cyclists.
Highly visible red bike lanes for intersection crossings on all four sides, connected with red brick sidepaths on both sides of every road

Muenster, Germany
Denmark: Ubiquitous short-cuts for right-hand turns and full-speed ahead for cyclists at red lights at T-intersections

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Three lanes for cyclists, two for cars

It’s all a matter of priorities !!!

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Bike lane, advance stop line, and priority signal for cyclists in Muenster
Special bike lane to permit direct access to intersection
Left-hand turn, in two stages, with special waiting space reserved for cyclists, and advance green light for cyclists.
Who is that running the red cyclist light in Montreal??
Car-free John! No helmet, no lycra!
Green wave for *cyclists* in Odense, Denmark: Traffic lights synchronized for *cyclist* speeds!!

Troels Andersen, “Cycling in Odense, Denmark”
Traffic Calming of Residential Neighborhoods

• Speed limited *by law* to 30km per hour (19mph) or less

• *Physical measures* that force cars to slow down:
  
  • Road narrowing, zigzag routing, chicanes
  
  • Raised intersections and crosswalks
  
  • Traffic circles
  
  • Speed humps and bumps
  
  • Mid-block closures and artificial dead-ends
  
  • Bulb-outs at intersections and crosswalks, with sidewalk widening
Traffic-calmed neighborhood in Amsterdam
Woonerfs (super traffic calming) in the Netherlands and Germany

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Bike and Ride in Germany for metros, trams, and suburban rail
Over 50,000 buses in the USA now come equipped with bike racks, as here in Seattle
Extensive bike parking facilities at all train stations, including state-of-the-art bike parking garages with bike rentals, bike repairs, and direct access to train platforms
Millennium Park Bike Station, Chicago

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On-street car parking in German and Dutch cities often replaced by bike parking
Conversion of car parking to bike parking in San Francisco!
• Every year, the City of Toronto installs 1,000 of its famous post-and-ring bike stands as part of its long-range bicycling plan.

• Over 15,000 such bike stands so far, the most bike parking in North America
Cycling Can Serve Many Different Travel Purposes

• Commuting to work
• Traveling to school or university
• Shopping
• Recreation and exercise
• Visiting friends, running errands, etc.
Many potential uses of bikes
Police are friendlier and more effective on bikes!

NSW Police patrolling coastal path from Bondi to Coogee

Melbourne Bike Police

Foto by John Pucher who nagged these bike police to pose several times for the perfect shot! And they are still smiling!!
Postal deliveries by bike in Germany and Denmark
For Employees: Company bicycles provided by firms for business trips during the day

The perfect zero emissions vehicles!!

Troels Andersen, “Cycling in Odense, Denmark”

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Cycling, eating, and drinking wine along 80km of the **car-free** German Wine Route every August

On Sundays in August, **cars are banned** from 80km of the German Wine Route connecting dozens of scenic wine villages in southwest Germany

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MARKETING CYCLING TO
ALL SOCIAL GROUPS

• Very diverse needs of different groups
• Need to tailor cycling facilities, policies, and programs to serve this broad range
• Be as inclusive as possible
• Need good facilities as well as active marketing of cycling, with different approaches to each potential group of cyclists
Cycling Duckie for very young kids in Odense, Denmark

Troels Andersen, “Cycling in Odense, Denmark”
Cycling competitions for somewhat older kids in Odense, Denmark
Get on a bike and lose weight!

“Get rid of the sack” Campaign aimed at overweight middle-aged men with pot bellies

Troels Andersen, “Cycling in Odense, Denmark”

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Guided Bicycle Tours for Seniors

Troels Andersen, “Cycling in Odense, Denmark”

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Travel Smart: Individualized Marketing of Sustainable Transport

• Personalized advice to each household on how it can walk, bike, and take transit more often

• Results suggest considerable success throughout the world

• Bike share of travel has generally risen by one or two percentage points

• Must have good cycling facilities and bikeable roads first, but Travel Smart can be a valuable complement to any pro-bike programs
Increase in Bike Mode Share due to Travel Smart Programs in the UK and Australia

UK
- Nottingham Meadow
- Nottingham Lady Bay
- Kingston/London
- Gloucester
- Bristol North
- Bristol South

Australia
- Brisbane
- Fremantle
- Melville
- Cambridge
- Subiaco
- South Perth

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Free internet bike trip planning in Berlin

• Cyclists enter origin, intermediate stops and final destination of their intended bike trips

• Cyclists can indicate preferences for route speeds, whether main streets or side roads, type of pavement, whether on separate bikeways, light or heavy traffic, through parks, etc.

• Program determines optimal route, shows route on map, and provides exact directions, segment by segment

• For recommended route, program calculates the total trip length, total trip time, and number of traffic lights encountered
Recommended route appears in red on computer screen, as shown below, along with trip details shown at top of screen.
Bike Route Planning by Mobile Phone, with suggested route shown on LCD display
Traffic Education

• Improved motorist training, with *much* more emphasis on how to avoid endangering pedestrians and cyclists

• Compulsory traffic safety lessons for all school children by the age of 10, with testing by traffic police on actual traffic test courses, to ensure safe and defensive walking and cycling by an early age (as in the Netherlands and Germany)
All German and Dutch children take cycling lessons by the 3rd or 4th grade and must pass a police-administered cycling safety test!
German traffic laws generally favor cyclists and pedestrians over motorists.
Mixed-Use Zoning and Better Urban Design

• Inclusion of *sidewalks and bikeways or bike lanes* in all new suburban developments and retrofitting of existing developments, where possible

• *Mixed land use zoning* so that residential units are within easy walking or cycling distance of cultural facilities, shopping, and service establishments

• Encouragement of *compact, mixed-use development around transit stops* to facilitate walking/bicycling communities (transit-oriented development) through subsidies, mortgage bonuses, and zoning.

• *Restrict parking lots* to locations behind buildings rather than between buildings and the street (as with most strip mall development in USA).
Traffic Regulations and Enforcement

• **Revise traffic laws** to place burden of proof on motorists, with the assumption that motorist is guilty unless it can be shown otherwise, especially when children or elderly are involved in crashes (forcing motorists to be extra careful to avoid crashes with pedestrians and cyclists)

• **Enforce existing legal rights of pedestrians and cyclists**, with strict penalties and fines for motorist violations of ped/bike rights of way in crosswalks, bike lanes, intersection crossings.

• **Traffic cameras at intersections** to photograph motorists failing to stop or yield when required to do so, with automatic ticketing for violations
CONCLUSIONS:

• Almost everyone has the potential to cycle
• Many local trips in American cities are short enough to cover by bike
• Crucial to design cycling policies and programs for everyone!
• Must cater to huge range of cycling preferences and meet the diverse needs of different groups
• Must be inclusive in cycling policies and programs to encourage widespread cycling and thus generate widespread public and political support
• Massive public information campaign needed to emphasize both direct and indirect benefits of cycling
• Broad range of economic, environmental, social, and personal health benefits of cycling have potential to provide widespread political support for more sustainable transport policies
For any questions or further information, please contact:

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