On World-wide Experience, Traffic calming and its relevance for cycling
The Bonn Experience

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Initial Question:

Traffic Calming in residential Areas – what has it to do with cycling?

Bonn City Council has a long term policy of traffic calming programmes, which started in 1978. Since 1985 there is a programme of introducing speed limit zones, where allowed speed is reduced to 30 km/h.

The first sheet shows the implemented areas of zonal speed limit (orange) and those in the pipeline (yellow). It also indicates parts of the (secondary) main road network, where a speed limit of 30 km/h was implemented.

See figures 1 and 2

The experience is that there is in general a high consistency of commitment towards traffic calming in residential areas even throughout changes in political majorities in the council. But it be admitted that speed limits on secondary main road are sometimes heavily discussed.

How is it put into practice?

See figure 3

a) You can simply put up a sign, believing in the good in mankind – improving nothing but your statistics.

b) You can do something more: Reducing the road-width at the entrance to the area, planting one ore more trees, indicating: This street is different from the main road you're just about to leave, requiring a different behaviour as car driver.

If you have some more money to spend, for example, because of funding from the government for an urban renewal scheme, you can rebuild roads totally by changing the surface material, planting rows of trees, re- designing junctions by paving them over, rearranging parking spaces, introducing specially designed street lamps, banks, paper baskets and other street furniture.

Bonn could do things like that as part of its comprehensive urban renewal scheme for the 19th century area of the Nordstadt.

See figure 4

But this is a story from better days a long time ago – nowadays this would be an exception.

In more peripheral residential areas there are less intensive measures, built in mainly at certain points e.g. crossings in the course of pupil's ways to school. This one has a bypass for cyclists (and for rain-water).

See figure 5

Pedestrian crossings are built as road humps. Bus stops are built as "capes", where no overtaking of the bus is possible, which could endanger dismounting children.

See figure 6

Points of criticism towards road humps are:

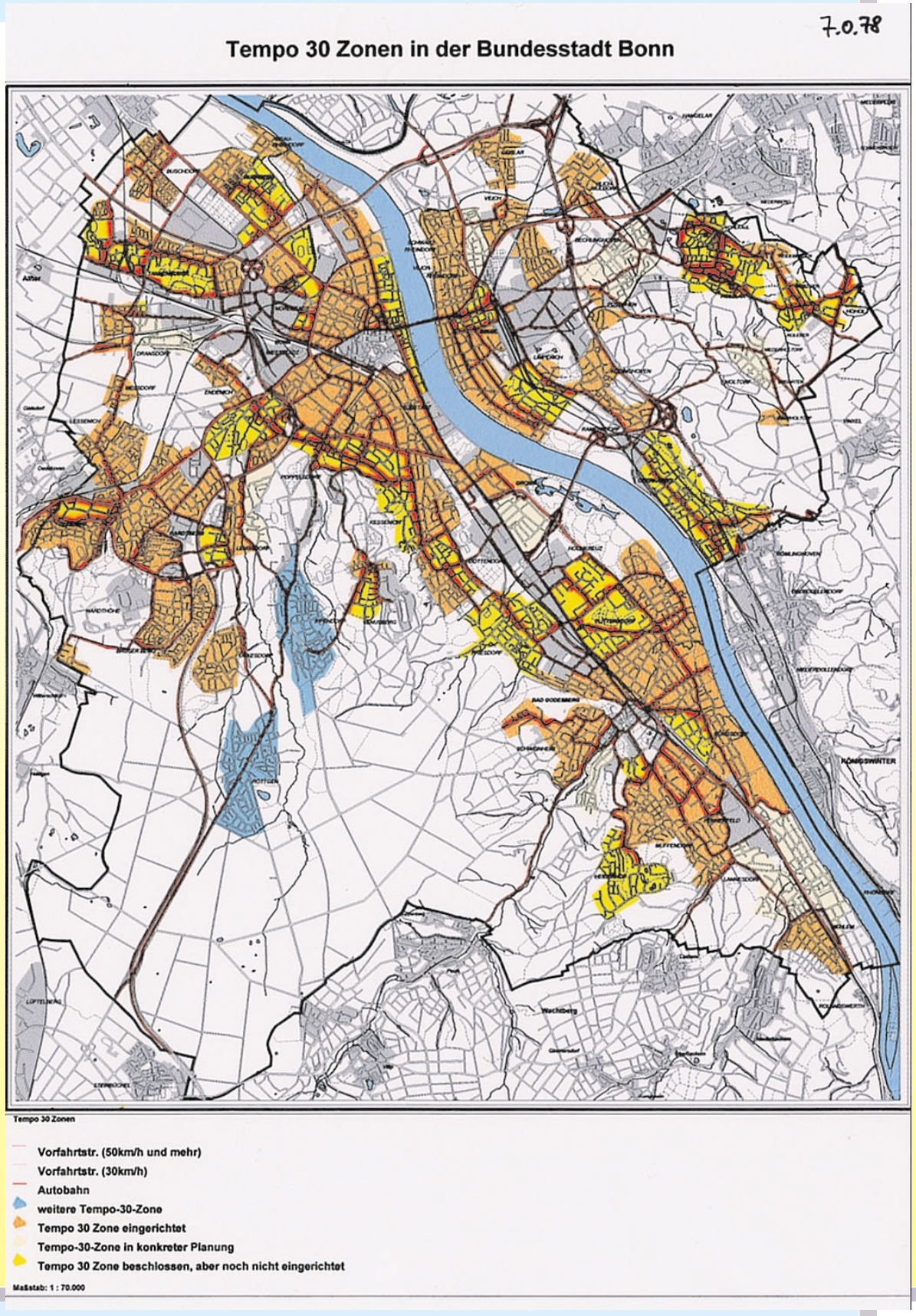
- the slowing down and speeding up of cars causes additional noise
- on paved surfaces cars make more noise.

Sometimes the local residents want traffic calming in their area. Let us hope that they also drive carefully and slow in front of other people's doors.

See figure 7

Features of Urban Transport in Bonn

"Tempo 30" Speed Limit Zones



Bundesstadt Bonn 61-3 / 60-2

Figure 1

Traffic calming and improving the residential environment 1985 - 1997

Die Verkehrszeichen 274.1 und 325: Beginn der Tempo-30-Zone und des verkehrsberuhigten Bereichs

1975 **start up of improving residential environments**

1978-92 **planning and realization**

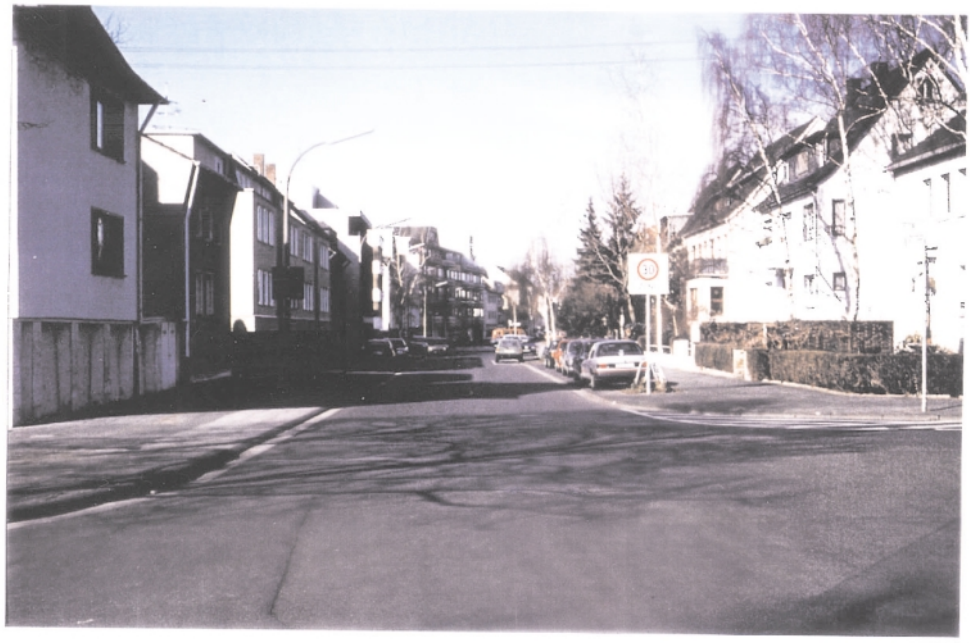
1978-92 **start up of traffic calming programmes**

1985-97 **speed limit zones (Tempo 30)**

Figure 2

Features of Urban Transport in Bonn

Traffic calming - Reducing the road width



Rheinaustraße / Ringstraße 1991
Beuel-Mitte

Rheinaustraße / Ringstraße 1995
Beuel-Mitte

Figure 3

Features of Urban Transport in Bonn

Traffic calming - "Tempo 30"-zone Nordstadt

Adolfstraße/Georgstraße/Tempo 30-Zone Nordstadt
Mai 1999

Figure 4

Features of Urban Transport in Bonn

Traffic calming - Reducing the road width

Pennenfeld / Paracelsusstraße

Bundesstadt Bonn 61-3 /60-2

Figure 5

Features of Urban Transport in Bonn

Pedestrian crossings and road humps

Kapellenweg / Mendelssohnstraße 1994
Ringsdorf

Donatusstraße 1995
Plittersdorf

Figure 6

Citizens' protest for traffic calming

Bürgerprotest 1990
Vilich

Bürgerprotest 1993
Buschdorf

Figure 7

How to get from the north to the south?

Bonn has a large pedestrian area in the inner city. In order to improve the possibilities for cyclists to get from the northern to the southern parts of the city on safe routes, some pedestrianized streets have been opened to cyclists. The selection of streets was made according to the width of the street in relation to the frequency of pedestrians. Before this, cyclists had to use main roads and to take longer ways.

See figure 8

What have we achieved so far?

See figure 9

If a child jumps into the street in front of your car at a distance of 18 m: – If you travel at 50 km/h you hit. – If you travel at 30 km/h you could stop right in time.

An evaluation survey carried out in 1999 shows:

- reduction of car use
- increase of bicycle use
- increase of public transport use
- decrease of pedestrians
- but overall a gain on the side of environmental friendly means of transport.

See figures 10-15

Back to the initial question: What has traffic calming to do with cycling ?

- Slowing down cars give safety in objective terms.
- Improving the design gives safety in subjective terms.

This makes cyclists feel at home in the street.

Experience of traffic calming:

What we have learned is:

- Technical or engineering measures doing only half of the job, it needs a bit of good design to change the "atmosphere" of a street or an area as well to succeed.
- Well designed punctual measures, put into the right places, are of a high efficiency.
- You have to convince – you can't force it, neither technically nor politically.

What else was done in Bonn to improve cycling facilities?

- Our network of cycle ways was expanded and will grow further:
  See figures 16-18
- For example: *See figure 19*
- protective cycle tracks on the carriageway: *See figures 20-22*
- opening of one-way-streets for cyclists: *See figures 23-24*

Bonn Bicycle Congress

Bonn City Planning Department is always keen on learning from other cities and from experts. We also are happy to share our experience with others.

See figure 25

The Bonn Bicycle Congress which took place for the fourth time in 1999 (the 5th is on schedule for 2001) is the most important forum for bicycle experts from theory and practice in Germany – to hear about new developments and to discuss practical experience.

You are invited to Bonn to take part in this Congress, prospected for September 2001.

For more information please contact: fahrrad@bonn.de. Further information will be available at the homepage of the City of Bonn (www.bonn.de) in spring/summer 2001.

Main Pedestrian Zone

- first pedestrian street	1967
- area of all pedestrian zones	110 000 m≈
- area of the central pedestrian zone	68 000 m≈

Figure 8

Traffic calming - Tempo 30

Results:

- **speed reducing around 30%**

- **high acceptance of Tempo 30-zones based on intensive public relations**

- **reducing of serious accidents around 30 %**

Figure 9

Aims/Measures

Aims

- more road safety
- more environment protection
- more attractive residential areas
- less private car traffic

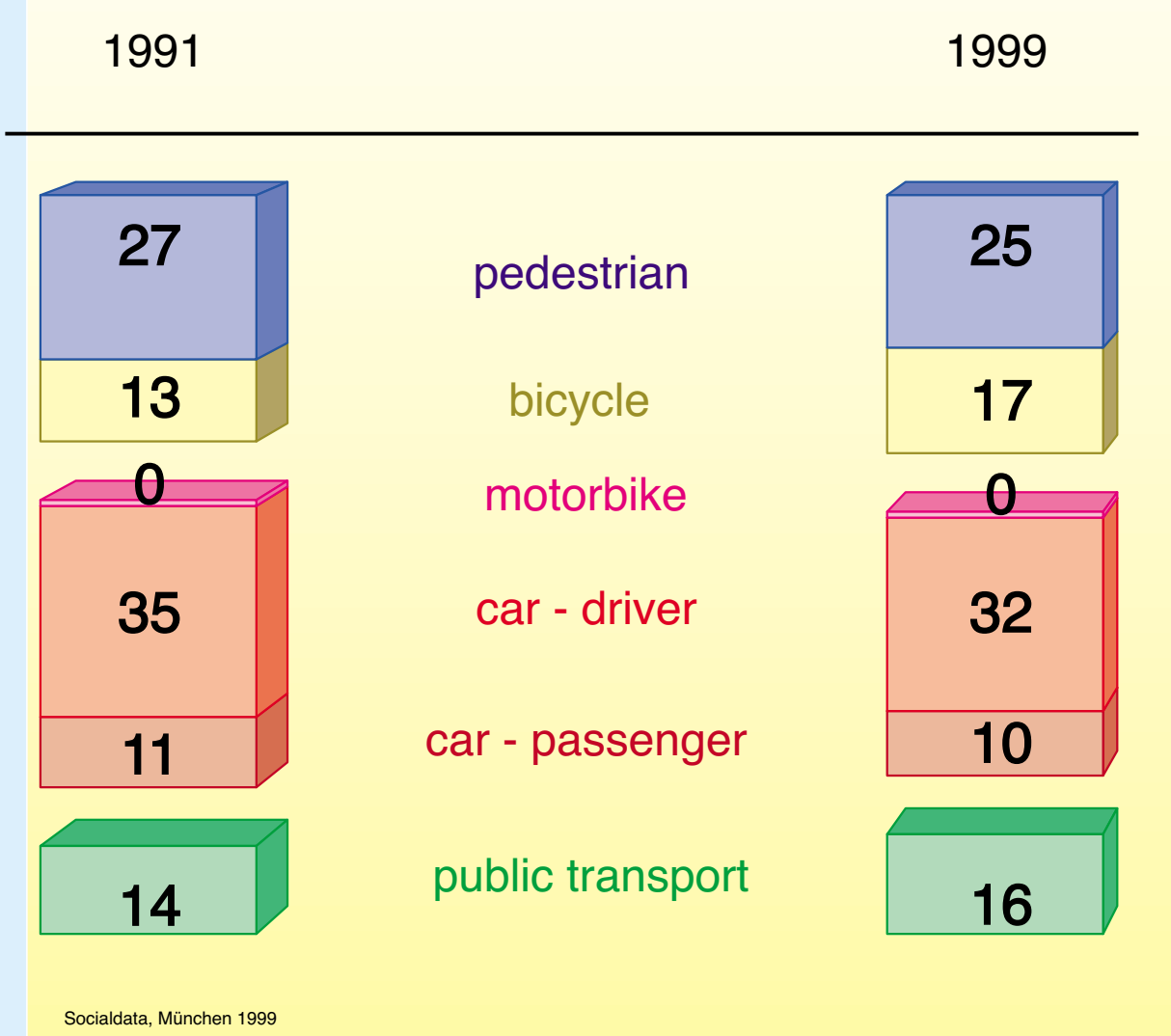
Measures

traffic calming:	- speed limit zones - improvement of residential areas
improvement of bike transport:	- bike tracks - bike routes - bike signs (guide) - bike parking - cycling against one-way-roads - bike roads - bike service station - bike congress
improvement of public transport:	- acceleration of buses - bus lanes - job-/student ticket - public transport plan
regulations of individual car use:	- bypassing residential and shopping areas - parking fee - parking guide system - reduction of free parking spaces

Figure 10

Features of Urban Transport in Bonn

Change of Modal Split 1991-1999

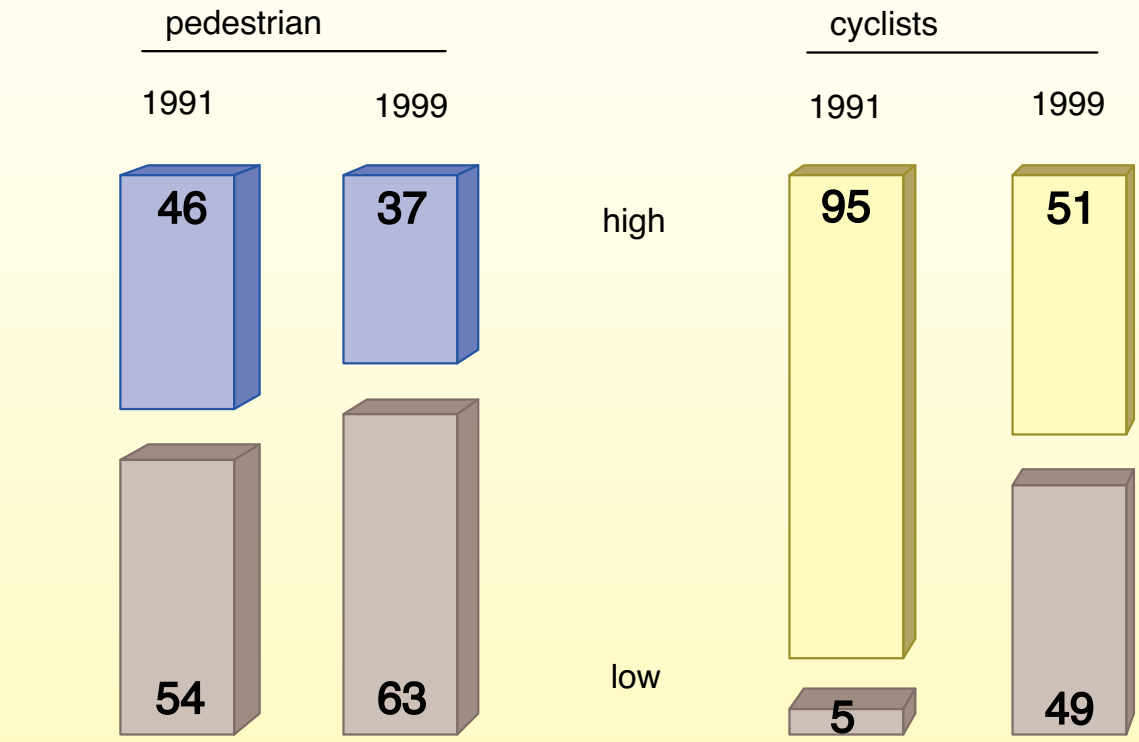


Socialdata, München 1999

Figure 11

Features of Urban Transport in Bonn

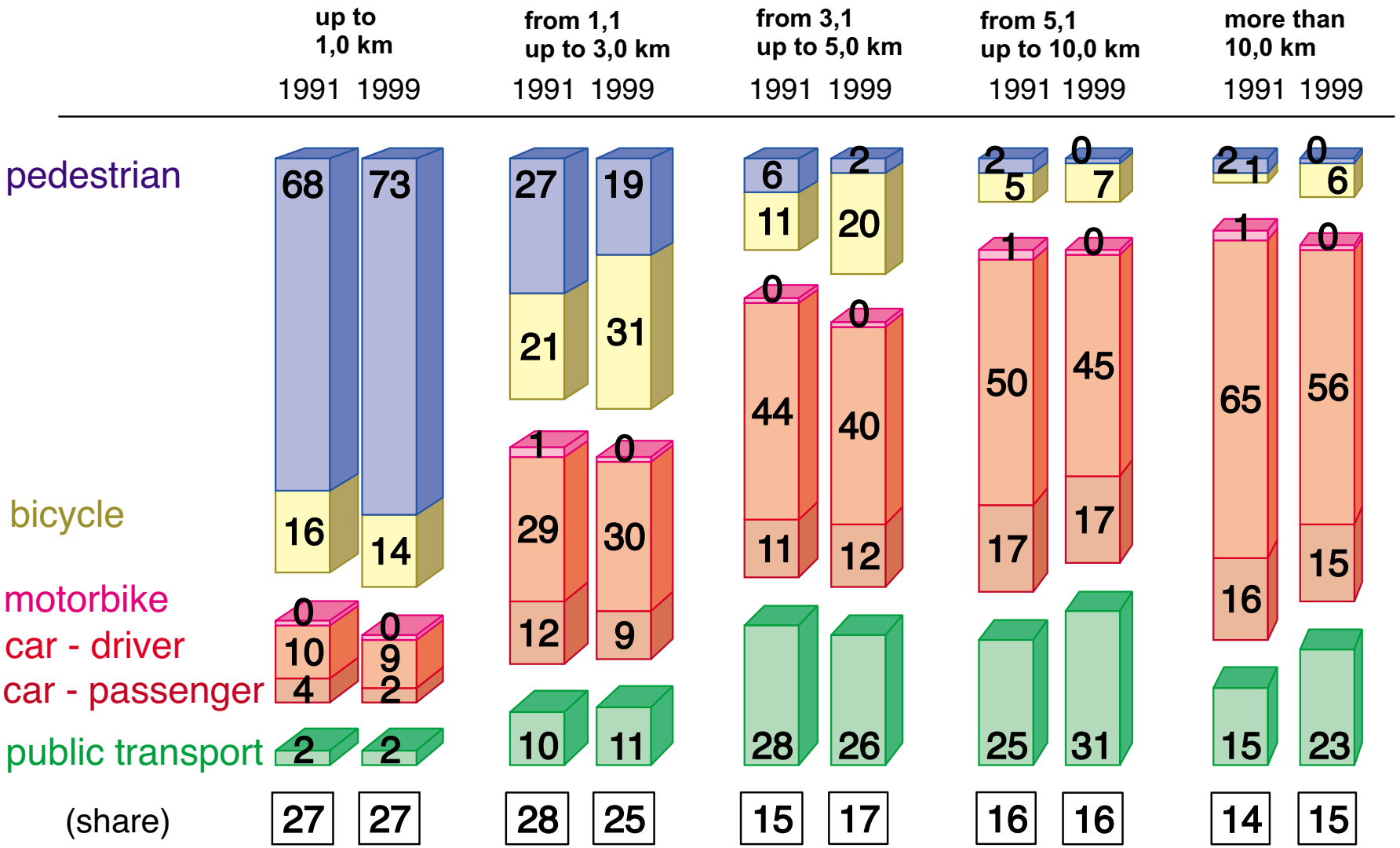
Estimation of Accident Risk



Socialdata, München 1999

Figure 12

Choice of means of transport according to travelling distance



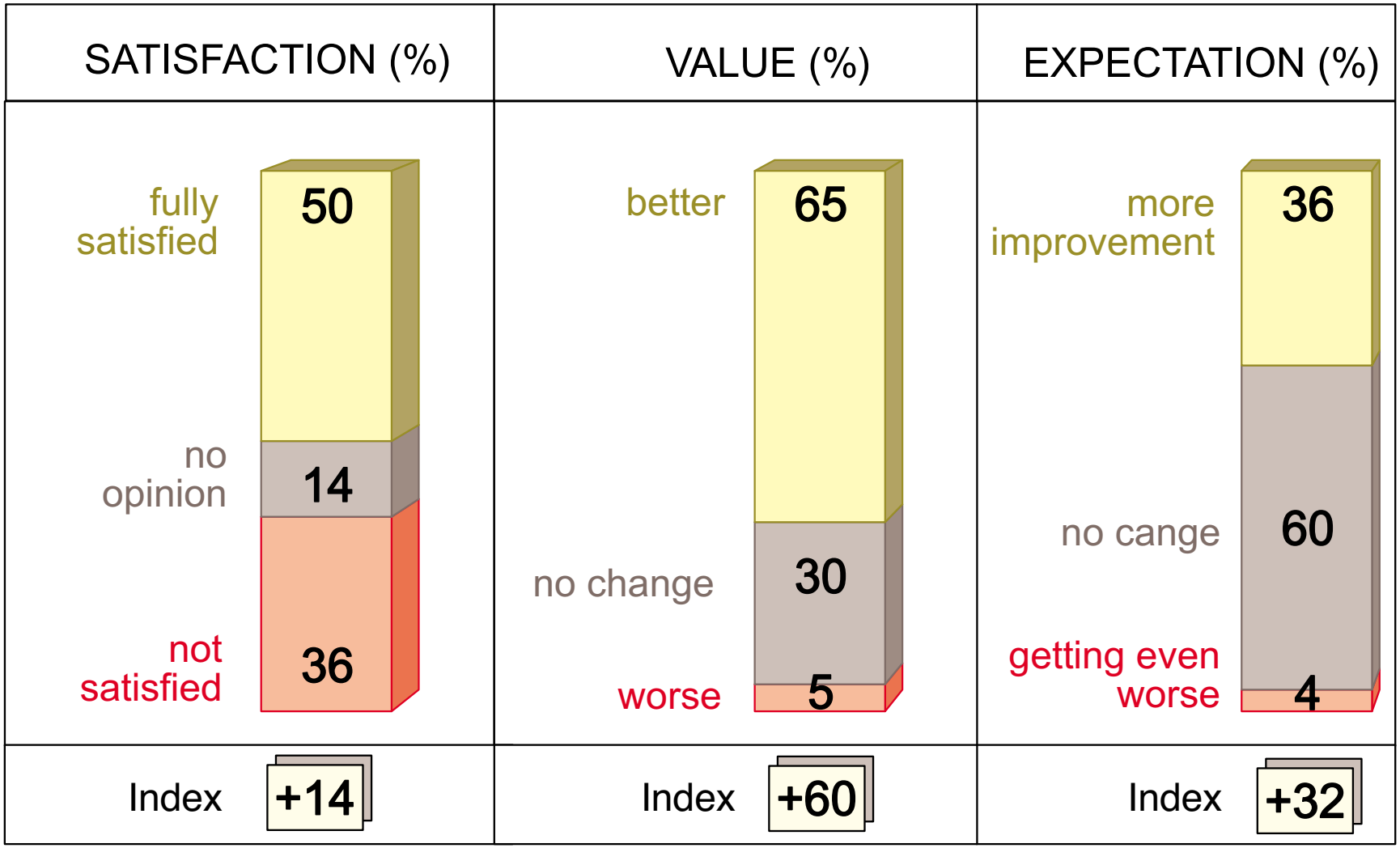
Socialdata, München 1999

Figure 13

Bundesstadt Bonn, 60-2; 2000

ESTIMATION OF CYCLING INFRASTRUCTURE

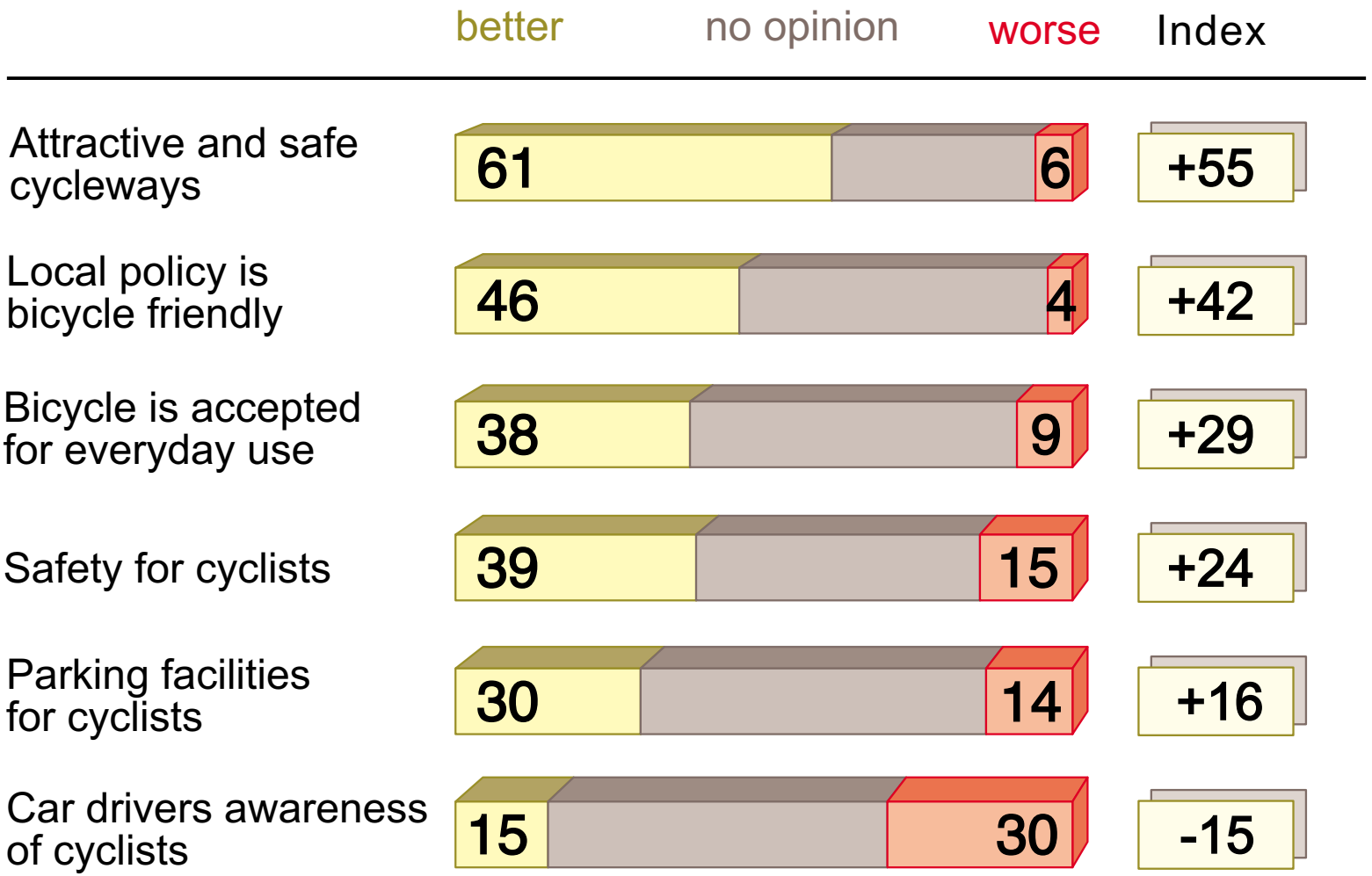
- 1999 -



Socialdata, München 1999

Figure 14

Estimation of change in recent years



Socialdata, München 1999

Figure 15

Features of Urban Transport in Bonn

Cycle Network Bonn

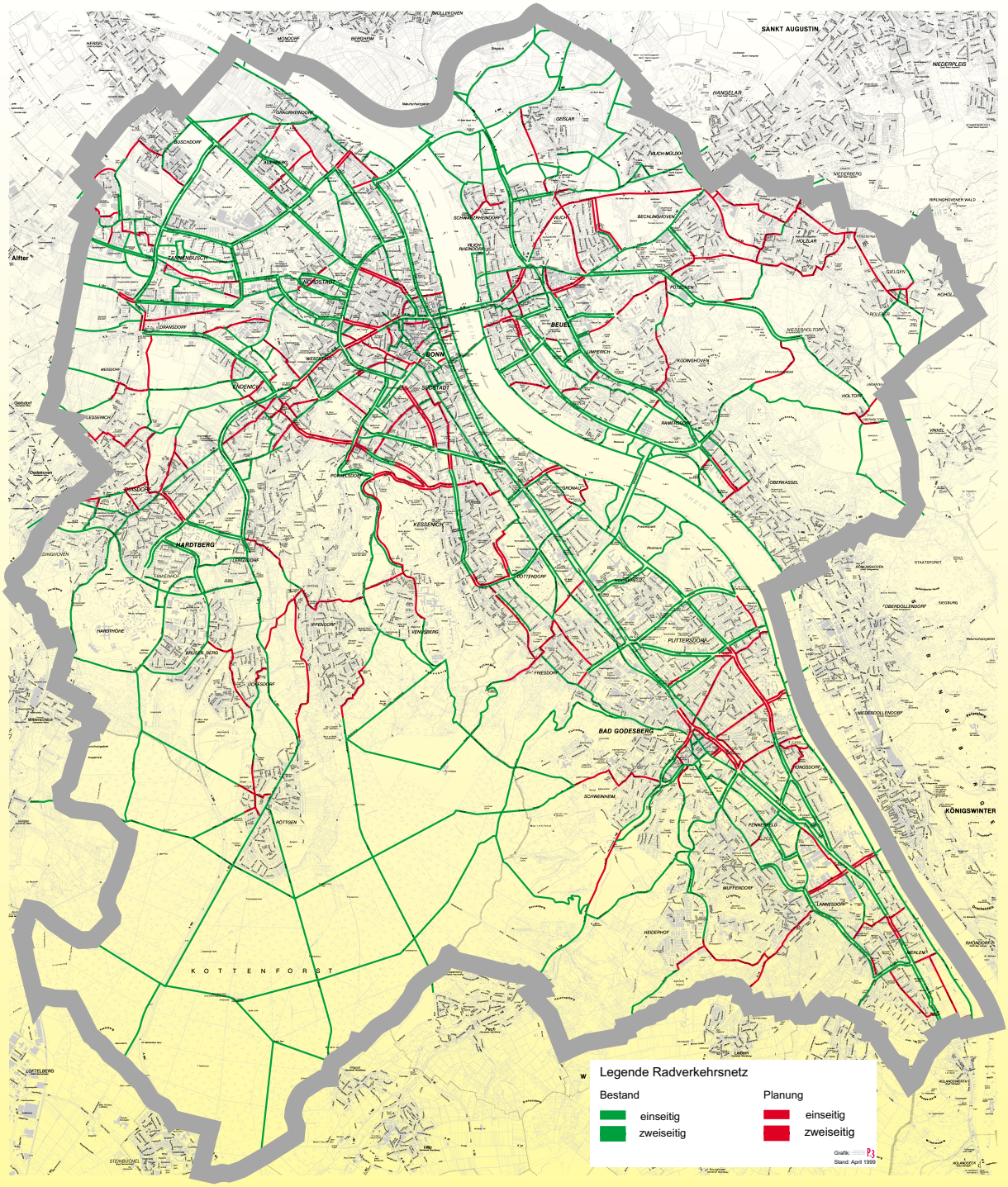


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Figure 16

Features of Urban Transport in Bonn

Traffic Network 1999

Road Network	**751 km**
Cycleway Network	**244 km**
- Constructed Cycleways	**110 km**
- Signposted Cycleways a. Routes	**94 km**
- Marked Cycletracks	**25 km**
- Protective Cycletracks	**13 km**
- Bus Lanes (joint use)	**2 km**
Rail Network	**77 km**
- Light Train	**57 km**
- Tram	**20 km**
Bus Network	**458 km**

Figure 17

Features of Urban Transport in Bonn

Improvment of bike transport 1978-2000

1978	**start up planning bike tracks**
1978-1999	**244 km cycleway network**
1991	**1. bike congress in Bonn**
1993	**2. bike congress in Bonn**
1995	**joining the consortium “Fahrradfreundliche Städte und Gemeinden in NRW”**
1992-2000	**realization of bike streeets, bike parking, several bike tracks**
1997	**3. bike congress in Bonn**
1999	**4. bike congress in Bonn**
2000	**opening of a bike service station at the railway station**

Figure 18

Cycling in the City of Bonn

A. Constructed Cycleways

B. Cycle streets

C. Marked cycle tracks

D. Protective cycle tracks

E. Implementation of cycling against one way streets

F. Facilities for bicycle parking / bike station

Fahrradstraße Nassestraße

Figure 19

Features of Urban Transport in Bonn

Protective cycle tracks on the carriageway

Bundesstadt Bonn 61-3 /60-2

Figure 20

Features of Urban Transport in Bonn

Protective cycle tracks on the carriageway

Bundesstadt Bonn 61-3 /60-2

Figure 21

Protective cycle tracks

Koblenzer Tor
18.000 Pkw-E/24 Std

2,15 1,40

Figure 22

Cycling against one way streets

An Sankt Josef, Beuel-Mitte

Figure 23

Cycling against one way streets

Maxstraße, Nordstadt

Figure 24

Cycling in the City of Bonn

Organization of one of the most important bicycle congress in Germany

Figure 25