LEARNING FROM THE DUTCH LABORATORY

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SUMMARY

This paper provides inside arguments, as to why the Netherlands is NOT a 'Bicycle Paradise'. The most important one is that in urban planning and management the Dutch don't discriminate between modal split. They simply provide simultaneous facilities for cars, public transport, cycling and walking and subsequently try to influence mobility choice by the citizen.

Furthermore, in this paper I propose that the Dutch experience and knowledge represents great value if we can see it as a Laboratory for cycling and integrated planning of land-use and transportation. There are many 'laborant specialists' (including politicians, professionals and advocates) who have made this possible. A wide variety of existing and new cycling plots can be analysed, assessed and reported. Identifying the (ongoing) development urban management mechanisms and qualifying criteria is more important than deriving standard solutions. This hands-on experience is the Dutch value.

This paper supplies the latest 'spectacles' for the Dutch Modern Bicycle Lab to understand the real picture. In relation to successful cycling planning and engineering, I will further explain Dutch cycling culture. It is the egalitarian society and favourable economic circumstances which also facilitate wide spread cycling. One of the key questions is which colours and flavours of Dutch cycling are applicable elsewhere?

1 - CYCLING PARADISE?

1.1 Introduction

Visitors travelling around The Netherlands are quite surprised to see such intensive use of the bicycle. Many are encouraged by the high share of cyclists in the modal split of cities and towns. This is due to people's high awareness of cycling, the density of cycle facilities, and to the variety of cycle shops, amongst others. The Netherlands has a population of 16 million people, 20 million bicycles, and 7 million private cars. It's a modern, well developed country and despite ongoing motorisation everybody make use of the bicycle. Cycling is not limited by status or gender issues, age, etc.

However, after having returned from The Netherlands to their cities and towns many seem to become paralysed and don't know where to start: cycling first or infrastructure first, focus on cyclists or focus on politicians? The 'Call for papers' for Velo-City 2005 Dublin is stating that some people 'are disappointed at their achievements relative to cycle-oriented cities in The Netherlands, Denmark and elsewhere'.

There is no such thing as one Dutch cycling model that can simply be copied or promoted. Cycling facilities have been developed more and more as part of transportation & traffic planning. Existing and newly started cycling schemes can be analysed, assessed and reported. Identifying the (ongoing) development mechanisms and qualifying criteria is more important than deriving standard solutions. Cycling around The Netherlands presents a good opportunity to see and experience the cities and towns through a cyclists' eye.

Many politicians, planners and cyclists from abroad consider The Netherlands as a 'Bicycle Paradise'. Dutch people are modest in their perception of cycling. Cycling is part of their life and daily activities. They do not consider themselves a 'cyclist'. However, I prefer to assess the Netherlands as a 'Modern Cycling Lab'. In this laboratory a wide variety of cycling items can be seen and experienced. Cycling issues are constantly bubbling there…...

2 - CYCLING PARADOX

2.1 Introduction

Cyclists do not need much room: therefore in many situations we don't give them any. Cyclists can move quickly in towns and cities: therefore we often introduce detours. Bicycles are easy to steel: therefore we don't provide safe parking spaces everywhere. Cycling is relatively cheap: therefore we charge cyclists for bringing their cycles on board of public transport vehicles.

Using a bicycle for shopping is easy: therefore we do not allow bicycles in a pedestrian precinct. Cycling does not cause air pollution: therefore we on not include them in clean(er) air policies (nor set limits to private car usage). The bicycle movement radius is physically limited: therefore we plan housing areas at long distances from schools, offices and shopping malls. And in the end some researchers even dear to ask us why we don't use the bicycle.
Well, is that not obvious!

This paper is about cycling. It is about cycling practice and about cycling policy. In fact it deals with us, our practice and our policy. Even in a modern urbanized society the cyclists still have to fight for good public space treatment. It is still not self-evident that modern urban management does include the basic needs of safe and comfortable cycling; even in The Netherlands.

2.2 Cycle-friendly

How to create a cycling friendly urban environment? Urban conditions can be justified as 'cycle-friendly' if a human being of any age feels safe and comfortable enough to use his/her bicycle, under varying social and economic circumstances. This does not necessarily apply to cycle facilities only. On the contrary, the real challenge in urban areas is to leave out as much as possible 'cycle-only facilities' and to improve 'the integrated quality' by adapting areas, routes (road sections plus intersections, streets) and /or spots (including squares). Cycle-friendly urban infrastructure is more than just cycling-only infrastructure.

If cycle facilities are implemented they must be carefully harmonised with the characteristics of cyclists. Some of these characteristics are very different from those of motorised vehicles and their drivers. Cyclists are vulnerable road users, have narrow wheels and no suspension, are impatient and avoid detours and are a very heterogeneous group.
The planner and engineer of any cycle-friendly infrastructure (be it separated from or integrated with other urban transport functions) should be familiar with the behavioural limitations and technical possibilities of both cyclist and bicycle. The cyclist is driver, equilibrist and propulsion all at the same time.

2.3 Five main requirements

The characteristics and demands of an urban 'cycle-cyclist system' are embodied in five main requirements:

- Road safety: the (cycling) infrastructure must maximise or prioritise the road safety of cyclists in relation to other road users.
- Coherence: the (cycling) infrastructure must form a coherent and continuous unit, linking all origin and destination points for cyclists.
- Directness: the (cycling) infrastructure must offer as direct a route as possible, keeping any detour to a minimum. Likewise time delays at

intersections, because policies such as of waiting for motor vehicles, must be kept to a minimum.
- Attractiveness: the (cycling) infrastructure must be planned and built in a way that makes cycling attractive, by day and by night, in good and bad weather.
- Comfort: the (cycling) infrastructure must ensure a quick and comfortable flow of bicycle traffic.

2.4 Opportunities

As a consequence any 'cycling inclusive' urban plan must identify opportunities for (lost and new) cycle-friendly development and bring about suggestions and options for practical interventions. Urban change in favour of cycling needs to be provided for in planning schemes. Going from one phase to the next phase are crucial decision making moments, in fact they are policy action opportunities.

Opportunities to switch over to cycling friendly plans, housing plans, parks, offices, business areas, new roads, tunnels, railways, and so on. Every town and city has plenty of these crucial planning moments. One of the most common examples is renovation or implementing a sewerage pipe in an urban road. As part of the re-instatement the local government could easily provide traffic calming or another cycling-friendly design.

The interventions could be summarized as five different themes (5E's):

- Experimenting – scaling up: if interventions are effective and efficient on micro level they generally will be effective on macro level; scaling up and down is an important planning instrument; experimenting is not limited to engineering but can also be of legal, financial etc. character.
- Engineering – manuals: technical interventions have to be of non-morised-friendly type; they can successfully be copied from other cities and towns and retrofitted, if not compromised.
- Enforcement – safe/secure: precondition for interventions within local context is that they will be attractive enough for users without enforcement by officials.
- Enhancement – modal diversity: this means no car-dominance and therefore a balanced use of all modes of urban transport, non-motorised and motorised, because that has been proven to remove many of the quality constraints of public space. A necessity here is a well run and accessible public transport system.
- Education – capacity building: interventions can be characterised as newly planned (built) or meant for retrofitting in existing urban areas, (can be unplanned areas as well); planning and engineering education programmes within and outside existing governmental organizations must make this distinction.

3 - KNOWLEDGE MANAGEMENT

3.1 Public space

The five main requirements simply state: cycling should be respected as modern mode of transport, cycling is part of modal diversity. These requirements can be applied anywhere. Of course planning & engineering is always confronted with dilemmas on sharing public space. The question whether enough space is available for retrofitting or including cycling facilities is the wrong one. This question is mostly raised by planners & engineers who first donated urban space to cars.

The key question is how much space are we allocating to the various modes of transport in relation to other public functions. How do we facilitate accessibility for all people, how do different modes of transport contribute to the kind of public space and accessibility we want. So we should set priorities for the different requirements of different modes of transport and balance them against our ambitions for public space.

If urban change seriously implies goals & targets for saving expensive urban space, for avoiding traffic noise and saving energy and natural resources, cycling does contribute to urban change. Simply because use of motorvehicles (private cars) is replaced by cycling, without loosing levels of house hold mobility. Cycling needs an improvement of the urban environment (if not yet available), and at the same time cycling contributes to improvement of the urban environment.

Cities where governments have decided to give more public space (roads, streets, squares) to cycling in turn provide more room for social encounters and recreational activities. In these places the overall accessibility for all citizens has improved. Car-oriented road and street planning does not support social security although many people think they are safe in their machines.
Urban change in these cities and towns can be seen as a result of wide public and community involvement both in policy development and in daily practice.

3.2 Cycling partnership

In almost every city in the world the introduction, expansion and improvement of cycling is preceded by campaigning for political awareness. Awareness that cycling is a serious urban transport mode, for improved integration of transportation and land use planning. Implementing cycling in urban situations can be considered as ‘environmental innovation’ as part of programs for city development.

To fulfil that ambition cycling advocacy is a good starting point, but not enough. Environmental improvement is best accomplished by the creation of partnerships between representatives of consumer circles (cyclists), governmental circles and professional circles, including consultancies, universities, industries, etc. These representatives can be seen as stakeholders in the urban development planning process. Interaction and communication between all three ‘corners of this triangle platform’ is essential for making progress in urban change.

The Netherlands has a long tradition in public participation. It shows a widely accepted role of advocating groups for cycling and road safety issues; some local governments are even financially supporting cycling campaigners.
These public platforms are needed to organise ‘shared cycling expertise’ amongst all road users. In recent years local branches of Dutch cyclists’ union are assessing local cycle policies based on a standard scientific approved methodology. This benchmarking shows an annual contest for ‘best-cycle-town of The Netherlands’.

3.3 Cycling expertise development

This paper provides inside arguments, as to why the Netherlands is NOT a 'Cycling Paradise', but should be seen as Cycling Lab. One of the most important arguments is that in urban planning and management the Dutch don't discriminate between modal split. They simply provide simultaneous facilities for cars, public transport, cycling and walking and subsequently try to influence mobility choice by the citizen. Variety in mobility options is key in developing sustainable urban transport.

I cannot deny that in The Netherlands also much can and should be improved to meet the requirements for cycling. But what others can learn from The Netherlands is that we impose less ideology on motorised mobility (private cars) versus non-motorised mobility (cycling) than other countries. Relatively the Dutch are more pragmatic and have a more functional approach towards transportation aims for the society.

In the 70's and 80's many Dutch cities developed so-called TCPs, Traffic Circulation Plans (in Dutch VCP's). Endorsement of such multimodal plans for a period of 10 years was a condition to qualify for (re-)construction subsidies. The budget came from two targeted national funds: one for cycling infrastructure and one for public transport infrastructure.

Because of the qualifying nature of the TCP's there was a special subsidy provision for the incidental costs of hiring expertise needed for developing TCP's that would meet the subsidy criteria for cycling and public transport. This subsidy for hiring expertise was a notable impuls for consultancy firms (private sector) as well as larger municipalities (public sector) to create specialists on cycling and public transport.

Cycling expertise does not come to existence out of the blue, it is a (integrated) specialism the development of which needs to be driven by a 'market mechanism'. The famous Dutch national programme for providing for cycling (Masterplan Fiets) in the 90's had great impact on the level of debate on cycling policies and best practices. In fact the broad series of debates, on-street-experiments, new data collection, developing of cycling manuals new style (including for cycle parking), and so on in fact has delivered three main items. It brought new arguments for integrated cycling policies, new cycling expertise and instruments.

4 - CYCLING CULTURE

4.1 Cultural context

The Netherlands shows in many ways a bicycle culture. One needs good 'spectacles' to understand the real picture of the Dutch Cycling lab. Dutch cycling culture is much more than the result of applying bicycle policies, including to successful cycling planning and engineering. It is the egalitarian society and favourable economic circumstances which also facilitate wide spread cycling.

The Netherlands has a no-claim culture, enough room for experiments, of which technological, social and economical aspects are reflected in before-and-after studies. Making planning & engineering mistakes in urban change is acceptable if occurring on a small scale. It can demonstrate the role of cycling within an integrated strategy of urban growth and urban change.

The Netherlands has a long (urban) planning tradition. A key element here is the strong local governmental position and responsibility for public underground services (sewerage, water, etc.) and for public space treatment, including roads and streets. One successful example is the invention and implementation of the traffic calming concept, around 1970 in the town of Delft.
This traffic management concept has been copied and applied in many towns and cities worldwide, following visits or study tours in The Netherlands.

4.2 Strategic model

To understand cultural blockages for cycling one needs to apply a 'holistic approach'. Within that definition or approach every culture has always its own social, economical and technological aspects. And so does every bicycle culture in any country, region, city or town. Many of the attitudes, opportunities and barriers towards durable cycling can be explained. To understand opportunities for any successful urban cycling program one always need to take into account ones own 'cultural context'.

The cultural conditions 'dictate' any policy action program. These programs have be structured around the three main corners of the Cultural Triangle, i.e. social, economical and technological components. If one misunderstands the context one will never be successful in making potential cycling come into reality.

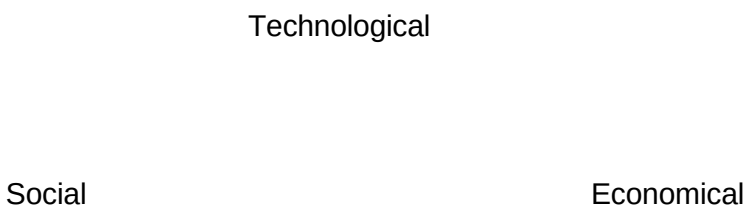

Figure 1: Cultural Triangle

4.3 Some examples

Gender issues, in cases where women are not expected to use a bicycle for whatever reason, are 'social components' in this triangle model. The level of availability of bicycle selling and repair shops, the difficulty to gain spare parts, etc. belongs to the 'technological' corner.

In many low-income countries urban inhabitants cannot afford to buy a bicycle and/or the bus fares. This is a very critical point in urban bicycle policy action plans, because is refers very much to urban poverty. This comes under the 'economical component' of the cultural triangle. In this sense the cultural triangle invites to a broad view on how blockages for cycling in cities and towns can be revealed.

4.4 Transferability

Visitors to the Dutch Cycling Lab have different back ground and come from different directions. They travel from Europe, from other continents and even more and more from developing countries. What can European citizens learn from cycling in The Netherlands? What can people from other continents learn be they advocates politicians, professionals, and business people?

Each town, city, country has its own stage of cycling promotion, being it introduction, expansion and/or improvement of cycling. Every visitor of the Dutch Cycling Lab has to define his/her own constraints, his/her own perceptions need to be taken into account, before they can take away 'success stories' from the Netherlands. Different stages ask for different policies, different action plans. The transferability highly depends on the right assessment of the stage of cycling practice and the acceptance of potential role of cycling in any policy action.

4.5 Training

Some guidance (in many cases preferably provided as interactive training) helps to check against the visitors' needs. Worldwide most training courses on cycling concentrate on technological skills (engineering), but modern programs should provide a strong emphasis on the social and economic components as well. Especially when it comes to questions as 'how to organise users' participation and users' involvement.

The technological aspects can be dealt with in special workshops on the bicycle and on bicycle parking facilities. Infrastructure planning and engineering (including for bicycle facilities),of course is part of the training package. It should all be inspired by three dimensions of the cultural triangle, as described before in this paper.

5. A GLANCE IN THE LAB

5.1 Dutch value

Favourable social and economical circumstances are the best promoters for cycle usage. Cycling policy therefore (also) should be embedded in non-transport sectors. Cycling policies can never be successful if only presented and financed as separate policies. I propose that the Dutch experience and knowledge represents great value if we can see it as a Laboratory for cycling and integrated planning of land-use and transportation.

There are many 'laborant specialists' (including politicians, professionals and advocates) who have made this possible. A wide variety of existing and new cycling plots can be analysed, assessed and reported. Identifying the (ongoing) development urban management mechanisms and qualifying criteria is more important than deriving standard solutions. This hands-on experience is the Dutch value.

5.2 Capita selecta

The Netherlands shows a sustainable source of cycling expertise and experts. Many flavours and colours from the Dutch Cycling Lab can be applied elsewhere:

Traffic calming: a culture of careful prepared experiments with urban infrastructure and mobility. Many housing developments nowadays are based on experiments and experiences with traffic calming.

Quality of life: no hard borders between public and private premises, transparency in housing areas, no gated communities, no fencing/walls, no dead-end streets (cul-de-sac).

Treatment of public space: Integrating of rainwater storage and greening in housing and business areas in combination with walking and cycling facilities are highly appreciated.

Urban management: each local authority applies a yearly budget for maintenance of public utilities and services, including cleaning and repairing cycling-only infrastructure. Treatment of cycling issues in assignment and tender procedures and getting building permits.

CBD-traffic management: dividing town and city centre into sectors with borders which can be crossed by pedestrians and cyclists where the private car has make a planned detour.

Levy-system: housing developers have to contribute financially to area-wide services, including cycling friendly roads and streets.

Integrated spatial planning approach: completion of local cycling networks in city plans, land use framework plans and area action plans. Traffic and transport paragraphs are obligatory in legal spatial planning documents.

Bicycle parking: wide variety of parking facilities from open-air to safe-guarded in-house cycle parking facilities. Some are obligatory based on a national by-law for local governments in providing building permits. Local experimenting with size of bicycle parking facilities (mini-midi-maxi) and parking free-of-charge, financially backed-up by car parking revenues.

Manual development: in The Netherlands (civil) engineers have to use special cycling manuals. This has caused a shift from applying strict standards towards a set of criteria for the design, implementation and auditing of cycling friendliness. Planners and engineers have developed road categorisation rules and integrated flow charts for co-operation in the urban planning and designing process.

New research: economic impact of nation-wide recreational cycling (long distance cycling routes, car restricted wetland islands).

Public transport: Central government supported financially doubling capacity of cycle parking facilities at 60% of all railway stations.

Schools: introduction of a new generation of experimental projects to restore safe-routes-to-school.

Bicycle shops: country wide system of bicycle dealers (shop keepers), provided by high quality bicycles from (mainly Dutch) bicycle factories.

5.3 Lab in summary

The Dutch Cycling Lab delivers arguments for integrated cycling policies, cycling planning & engineering expertise and a variety of planning instruments & concepts. Typical Dutch concepts successfully applied in The Netherlands are:

- road sharing & traffic calming
- integrating public transport (train, tram and bus) and cycling
- reducing public space for private car parking
- integration of various water and green features in planning
- transparent accessibility for walking and cycling in housing areas (no gated communities)

Variety in concepts, ideas, designs, criteria, policies, fact finding etc in the Cycling Lab is crucial. Unity and applying traditional standards do not contribute enough to sustainability.

6 - C(ycle)-MOTIONS

6.1 Three statements

Favourable social and economical circumstances are the best promoters for cycle usage. Cycling policy therefore (also) should be embedded in non-transport sectors. Cycling policies can never be successful if only presented and financed as separate policies.

Based on the Dutch Cycling Lab I can define a new challenge: three shifts in planning for cycling are necessary.

1. *Shift from social point of view:*

In an urbanizing society the cyclists should not have to fight for good public space treatment. Consequently it should be self-evident that modern urban management governments and urban designers do include the basic needs of safe and comfortable cycling.

2. *Shift from technical point of view:*

To improve the learning curve urban planners and engineers need to move away from applying fixed (and copied) standards towards defining cycling oriented requirements (quality criteria) and even further to integrated 'decision making trees'. We need to develop a discipline or profession of 'cycling inclusive' urban designers.

3. *Shift from economical point of view:*

Cycling potential in many town and cities is highly underestimated due to the fact that cycling mostly is just seen as a 'transport' issue, and not truly integrated both in transport sectors and other policy areas such as health, education, industry. Consequently the economic benefits are highly underestimated.

Final remark: Identifying the mechanism(s) of bicycle culture and urban change is a precondition for 'copying' successful Dutch cycling concepts and success stories. By doing so cycling does contribute to urban change and makes a cycling friendly environment in our towns and cities feasible.