



ARTICLE FROM THE BOOK:

Cyclists & Cycling Around the World – Creating Liveable and Bikeable Cities

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Choosing the Cargo Bike - Experiences from Kisumu and Copenhagen

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Introduction:

People travel every day, using different means of transportation. Mobility is key to generating income, whether the journey leads to the stock market in an expensive automobile or to the local market on bare feet. Our different choices of mobility are guided by various incentives depending on the contextual opportunities for the traveller. This article focuses on the use and potential of cargo bikes as an alternative to more traditional means when transporting people and cargo from A to B. In most cases cargo bikes provide new solutions and opportunities for commuters in both developing and developed countries. In developing countries, the incentives are often the result of restraints, whereas the incentives in developed countries are more often the result of rationality and lifestyle.

The conventional bicycle was primarily invented for carrying people and was upgraded later on with a storage carrier mounted as rack above the back wheel as known today.

The baggage carrier has in itself a great potential to carry both people and cargo, depending on need and alternative modes of transport. However, in this article cargo bikes are defined as non-motorized vehicles designed with the designated purpose of carrying *more* goods or people than conventional bicycles.

Choosing the cargo bike

When we choose our means of transport e.g. car, bicycle, walking etc. we also choose not to use the other available options. This can be described as a competition of different



■ The Conventional bicycle have in itself great potentials of carrying goods and people.

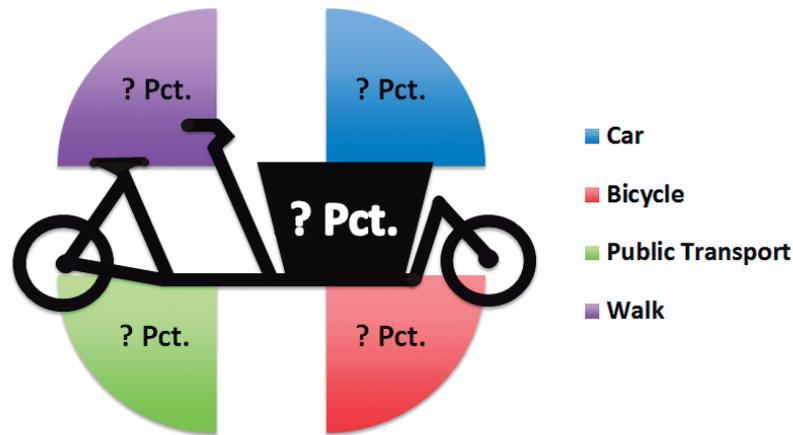
mobility providers or a 'mobility battle', where all possible means of transportation offer a certain solution to our transport needs. (Cycling and society -See appendix)

Our decision of choosing the car, taxi, helicopter, matatu, bicycle or our feet is based on a personal analysis of availability, costs and benefits of each means of transportation. Cargo bikes enter this "mobility battle" competing with vehicles capable of carrying goods and more than one passenger, which historically has been dominated by buses, lorries and other motorized vehicles. Despite a general rise in their use through time, cargo bikes have historically experienced both success and failure. The success of the cargo bike can be linked directly to an increase in disincentives to motorized transport e.g. scarcity of resources, congestion, a green agenda and economic recession.

Catalysed by historical recessions

It wasn't long after the conventional bicycle was invented in 1880 that the cargo bike appeared in the streets. Before the car became the dominant actor in the mobility battle,

The Cargo bike entering the mobility battle



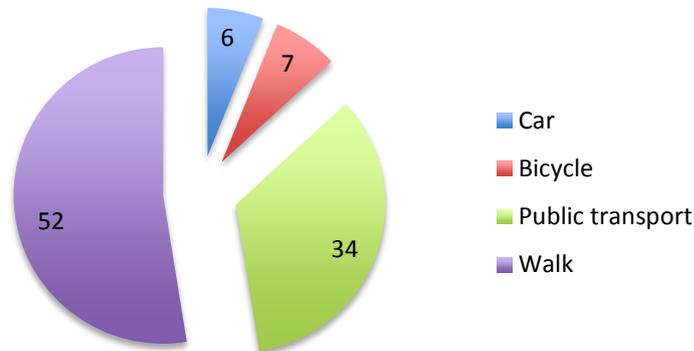
The cargo bike enters the modal split and challenges the existing allocation of commuters between the current means of transportation.

cargo bikes became a common sight and were named after the jobs of people who used the bikes. In Germany the cargo bikes were named a 'Bakers Bike', in United Kingdom the 'Butchers Bike' and Denmark 'Chimney Sweep Bike'.

Following the boom of the automobile in the 20th century starting in North America and currently taking off in Asian and African countries, the usage and number of cargo bikes has decreased. Economic incentives for motorised transport of goods increased due to cheaper production beginning with Henry Fords assembly lines up to the Ulsan car factory in Korea that produce a new car every 13 seconds. The economic incentives for choosing a particular means of transport become evident in wartime, when scarce resources provide incentives for alternatives e.g. non-motorized cargo transport. During the Balkan Wars (1912-1913) Bulgaria catalyzed an extensive use of cargo bikes. In Denmark, the scarcity caused by the Second World War created a market for non-motorized cargo transport, where cargo bikes known as "Svejer bikes" were a common site during 1940s and 1950s. The same occurred in countries like Italy and The Netherlands with a rise and fall of cargo bikes between 1920-1960 linked to economic restraints.

The incentives for cargo bikes vary from city to city, nevertheless it is interesting to see how the cargo bikes have proven to be a great asset for commuters. In the following

Modal split of Kisumu



The modal split shows that more than every second trip in the city of Kisumu is done by foot. (Source: Journal of Civil Engineering 2010)

sections the cargo bike is presented in Kisumu, Kenya and Copenhagen, Denmark as shown below. Despite different geographical contexts, the cargo bike plays a major role and serves the needs for current urban dwellers both north and south of the equator. (Cyclelogistics - See appendix)

Creating income and a cleaner environment in Kisumu

Dickons is the founder of Gasiapoa Waste Management Services in Kisumu, Kenya where cargo bikes recently have been introduced.

"Gasiapoa collects waste from households in the informal settlements and the city centre of Kisumu city. Gasiapoa works with a number of Landlords in the informal settlements to keep their compounds clean"

The waste is collected in a customized cargo bicycle and sorted for different usages. The waste is either sold for recycling or sold directly by Dickons or the other waste-collectors. Along with providing a low-cost solution for waste collection, the job also provides an important income for Dickons and his family in a country with an unemployment rate of 30 %. Based on the above facts, Cycling out of Poverty have developed the project

Bike2Clean to accommodate both the city of Kisumu and Dickon's everyday challenges. The project comprises the design of a converted bicycle that allows small and medium sized enterprises like Dickons to carry double the amount of cargo than before.

"Now I can collect double as much waste as before. Thanks to that also my income doubled!"

By introducing the Bike2Clean cargo bikes into the modal split of Kisumu, small and medium sized enterprises are given a low-cost opportunity to increase the range of mobility considerably. This leads to increased opportunities for income generation and the quantity of goods to be carried without the use of motorized vehicles. The cargo bikes provide an alternative to the different means of transport and cover mobility needs for both goods and people. Cargo bikes provide a sustainable alternative to motorized transport, which is rising rapidly in Kenya and most non-OECD countries.

An increased focus on cargo bikes can play a major role on the modal splits of developing cities. Future economic development is predicted to create a rapid increase in motorized



The cargo bike increases the range of mobility and thus increases business opportunities for the informal workforce in Kisumu.

Photo: Coop-Africa, Bike2Clean project



The Cargo bike doubled Dickons income
Photo: CooP-Africa, Bike2Clean project

transportation, in particular in developing cities. Providing the opportunities for cargo bikes in Kisumu and similar developing cities give the opportunities to develop multimodal mobility systems resilient and adaptable to future conditions, while also being less dependent on fluctuating fossil fuel prices. The cargo bike provides an alternative to following the American mobility trajectory, which is highly dependent on private motorized vehicles. In this regard cargo-bikes meet the requirements for increased mobility solutions leading to the combination of prosperity with a sustained low carbon emission modal split.

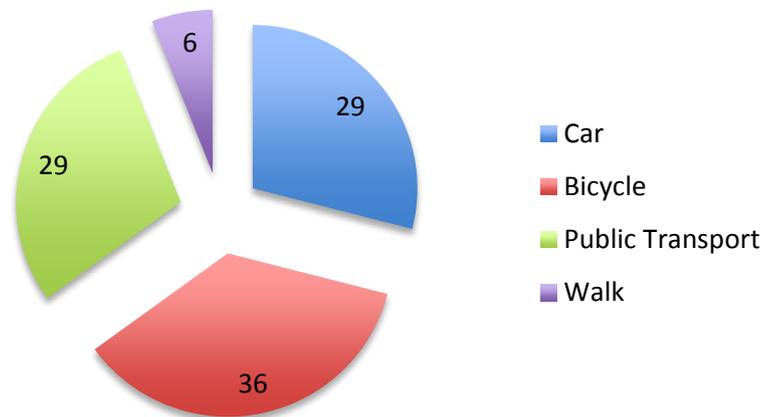
The Bike2Clean has established an income generator for the increasing informal workforce without jobs in Kisumu. This group of the population is widely recognised as one of the key challenges in the future of developing cities. When making the cargo bike available as a mode of transport, Dickons' incentives have primarily been economic, and the increased range of mobility have managed to leapfrog the living standards for him and his family.

Sustaining ease of mobility solutions for Copenhagengers

In their small family, Anne and Erik have never owned a car and have always had their bicycles as their primary means of urban transportation, in line with the 50 % of Copenhagengers who commute to school and work (Copenhagen Bicycle account – see appendix). However, the expansion of the family included mobility challenges with two babies.

The transition from double-income-no-kids to a small family is usually the most normal stage in life to become a car-owner to ease the transport challenges when travelling with children. Conventional bicycles usually provide a safe option for carrying one adult and one baby. However, the conventional bicycle has certain limits that barely cover the needs for young families in Copenhagen. For Anne and Erik and their two small babies the mobility solution either requires investing in a private car, using the public transport system or the cargo bicycle. Along with every sixth family in Copenhagen, Anne and Erik chose a cargo bike to transport their children and the required luggage for a family. The cargo bike serves them for going to the playground, the parks, the grocery store, which would not be possible using a conventional bicycle.

Modal split of Copenhagen



Copenhagens remarkable modal split with 36 pct. of all trips done by bicycle (Source: Urban Audit 2009)



In Copenhagen the cargo provide an alternative to the car.

The cargo bike provide various disincentives for buying a car in Copenhagen.



The cargo bike provides an alternative for the car that sustains the freedom of urban mobility in the same way that a conventional bicycle does. Buying and running a car also includes insurance, parking fees, fuels, maintenance, licenses and taxation, which in Denmark can reach as high as 200 % of the value of the car. For Anne and Erik, the cargo bike is a door-to-door low-cost urban mobility solution, which combines the advantages of a family friendly spacious car with the freedom of the bicycle.

Copenhagen enterprises turn to cargo bikes

The cargo bike as an alternative to the car is not only a suitable solution for young families. In recent years, the increased interest in cargo bikes in Copenhagen has inspired various companies to replace combustion engines with pedal power. Similar to the middle of the 20th century, the Copenhagen based carpentry company Logik og Co has customized a cargo bike for minor projects within the city. The cargo bike can carry 200kg of tools and material. It is designed so that the carpenters can organize their tools properly as well as

avoid heavy lifting by ergonomic design of the lightweight “toolbox”. The bicycle is the first of its kind and is an easy and convenient alternative, which also supports a green policy within the company. According to the company, the initial idea of the Carpenter Bicycle is not grounded in a green agenda, but is a consequence of increased traffic congestion and parking expenses for the company. For Logik & Co it was convenience that was presented as the key incentives for developing the Carpenter Bicycle.

(Re)introduction of cargo bikes to existing modal splits

In Kisumu the cargo bike provides an instant increase in the range of mobility leading to job opportunities and improved urban basic services. In Copenhagen it provides a convenient, low-cost and environmentally sustainable alternative for cars and vans that assures the consistent range of mobility for families and enterprises.

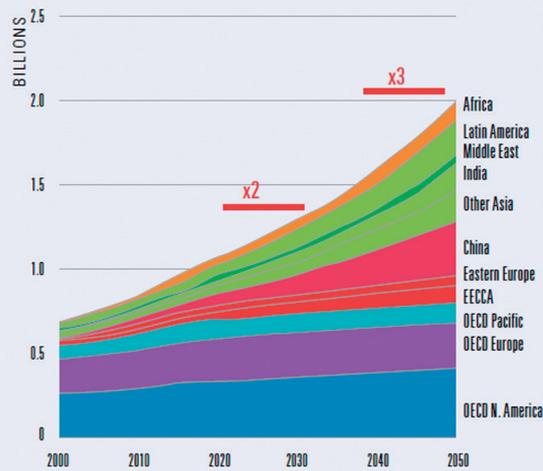


The Cargo bike prevents the carpenter from parking issues and congestion and supports the company's corporate social responsible and economy.
Photo: Logik & CO.

The Carpenter Bicycle allows, the carpenter to use the bicycle infrastructure where cars are not allowed and thus avoids traffic congestions.
Photo: Logik & Co



FIGURE 2 TOTAL STOCK OF LIGHT-DUTY VEHICLES BY REGION



Source: WBCSD 2004.

A tripling of light duty vehicles in 50 years will primarily take place in non-OECD countries with proportional pressure on developing cities urban mobility systems.

In the different contexts and modal splits of Kisumu and Copenhagen the incentives for introducing cargo bikes become increasingly evident. The Kisumu and Copenhagen cases display the various usages of cargo bikes and thus competitiveness in the mobility battle for accommodating urban commuters and their cargo delivery.

In both cities, the use of the cargo bike revolves around the same incentives as conventional bicycles and comprise, according to the European Cyclist Federation, five major assets of cycling, which include:

- 1) Offering an alternative means of transport where there is no increase in prices of fossil fuel
- 2) Cost effective transport
- 3) Climate change and deteriorating air quality in the city
- 4) Health and the challenge of obesity
- 5) Growing cities and the quality of life. (See appendix)

The five assets described above are slowly gaining momentum for non-motorized transportation in developed cities, and the cargo bike has started to gain political interest in urban freight management in leading cities such as Copenhagen and London. However, the greatest challenges with urban mobility are to be found in developing cities.

A combination of rapid urbanization and growing wealth increase the travel demand and thus pose a potential threat for the existing urban mobility systems in developing cities, like Kisumu, as the World Business Council for Sustainable Development predicts. As the figures show, the rapid increase of light duty vehicles – private cars – will almost solely take place in non-OECD countries. This mobility challenge of the next decades can be accommodated by improving provision, policies and promotion of sustainable urban mobility and cargo bikes play a major role when taking people and goods from A to B.

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