For a more transformational zero tariff debate: reflections from the study of mainly English and German-language discussion over the last two years

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Por um debate mais transformador sobre a Tarifa Zero: reflexões para o estudo com base na discussão do tema, principalmente em inglês e alemão, durante os últimos dois anos

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Abstract

The core question of this text is whether the current intensified debate on zero tariff in the context of the Covid-19 pandemic, the consequences of its management, and of inflation resp. rising energy and food prices especially due to the Ukraine war offers possibilities to strengthen the idea and concept of zero tariff as a transformational instrument. The analysis of the discussion and literature on practical zero tariff experiences shows that the challenge is to target the debate on the long term, focusing upon the predictability of positive outcomes as an issue of public health. The focus must be on socially and ecologically sustainable mobility, on the development of public transport and the strong relativisation of the car as a means of satisfying mobility needs.

Keywords: socio-ecological transformation, SGD2030, socially and ecologically sustainable mobility, zero tariff in public transport, public health.

Resumo

A questão central deste texto é se a intensificação atual do debate sobre Tarifa Zero no contexto da pandemia de Covid-19, oferece possibilidades de fortalecer a ideia e o conceito de Tarifa Zero como um instrumento transformador. Também serão analisadas as consequências de sua gestão em meio à inflação relacionada especialmente ao aumento dos preços de energia e alimentos devido à Guerra da Ucrânia. A análise da discussão e da literatura sobre experiências práticas de Tarifa Zero mostra que o desafio é focar o debate no longo prazo, ressaltando a previsibilidade de resultados positivos tardios como a questão da saúde pública. O foco deve estar na mobilidade social e ecologicamente sustentável, no desenvolvimento do transporte público e na forte relativização do carro como meio de satisfazer as necessidades de mobilidade.

Palavras-chave: transformação socioecológica, ODS2030, mobilidade social e ecologicamente sustentável, Tarifa Zero no transporte público, saúde pública.

Introduction

Since the outbreak of the Covid-19 pandemic, the debate on zero-tariff public transport — the use of public transport without buying fares — has again become lively (DELLHEIM, 2021) and reached a momentum. Alone in Brazil, the number of municipalities with a universal free pass jumped from 30 at the end of 2020 to 52 in 2022. In this period, the number of people benefiting from it more than doubled, from 1 million to 2.3 million (SANTINI, 2022). The question is whether such developments and the debate about them can be used to reinforce socially and ecologically sustainable mobility and thus just socio-ecological transformation processes. In this context, there is a particular interest in finding out how actors trying to apply the tariff-zero tool deal with the structural push-back and ultimate overcoming of poverty/social exclusion and structural reduction of the use and demand for cars, as well as of the supply and production of those. This interest shapes the analysis of the discussion and experiences of the relevant, mainly English and German-language literature, during the period under consideration. This analysis cannot be complete and is making use of the sources available online. It consists of two parts: the first on the urgent social issue, the second on the issue of reducing car traffic. The work is based upon long-term research activity on socio-ecological transformation. It could also rely upon experiences in active participation in the preparation and implementation of workshops and conferences, but also from experience in actions of social movements. Moreover, based on the contributions of academics, social and political actors, as well as on communication and cooperation with them, and her work in cooperation with Michael Brie (BRIE, DELLHEIM, 2020), the author has elaborated five main conclusions:

1. The international debate on zero tariff in public transport dates back to the 1960s and has been undertaken by very different actors with very different interests and motivations. Although it is very difficult to generalise international experiences due to the very specific conditions under which concrete actors have introduced zero tariffs, much can be learned from them. One of these lessons to be learned is that, in our opinion, in Europe a zero tariff has never been introduced in public transport without it applying to specific groups of people and/or specific routes or zones. Furthermore, it can be said that a zero tariff has become a long-term fact where:
    a) before its introduction, the supply of public passenger transport had grown;
    b) public passenger transport has been progressively expanded both in terms of vehicles and frequency and in terms of the routes travelled;
    c) other measures have been implemented to enrich public life in the municipality.
2. The crucial questions are: Who wants a zero tariff in public transport, for whom and why, and how should it be financed by whom? Which zero tariff concept had or has which effects on the practical activity and development of its creators, the dynamics of political power

relations, living together in society and its metabolism with nature — why did this occur, and what can be learned from this?

3. Which zero tariff concept is needed in the context of which political strategies and problem-solving concepts, where and how can this be implemented, in order to concretely, sustainably and structurally improve the societal situation of people in social need, to make the living environment more attractive, to enable more self-determination, to make cohabitation among people more solidary and society progressively more just, civil, democratic, social and ecological?
4. In the debate on a zero tariff in public transport as an instrument of politics of transformation towards a socially and ecologically sustainable development and a new society, two extremes are evident: either the zero tariff is discussed as a universal instrument that can solve all important problems and is thus overestimated, or the zero tariff is underestimated, and not seen as a means of a politics of transformation and development. To support one's own position, reference is often made to real-life examples that either were not — or are not — at all connected to transformational politics or that prove, once again, that a zero tariff cannot solve all problems.
5. Policies that aim at socially as well as ecologically sustainable development and intend to use the zero tariff in public transport for this purpose must be oriented towards the protection, democratisation and democratic strengthening of the public sphere, including also and especially of public property.

A brief reflection on the mainly English and German-language debate on zero tariff in public transport over the last two years

Public transport is an integral focus of SDG2030: Transport alone contributes directly to five goals: 1. Road Safety (Target 3.6), 2. Energy Efficiency (Target 7.3), 3. Sustainable Infrastructure (Target 9.1), 4. Urban Access (Target 11.2) and 5. Fossil Fuel Subsidies (Target 12). Yet the 17 goals which partly contradict each other (orientation on “growth”, use of nuclear power) taken altogether finally orient towards a life of dignity in intact nature (Goals 13, 14, 15), free from pressure and fear of poverty (Goal 1), physical and psychological injury (Goals 6, 16). Sufficient healthy food (Goal 2) and drinking water (Goal 6), self-determination (Goals 1, 5, 10) and social participation (Goals 4, 17), meaningful work (Goal 8), decent housing (Goals 1, 6, 11), education (Goal 4), health care (Goal 3), leisure (Goals 3, 5, 10) are elementary conditions for such a life in dignity. But participation in these goods requires stress-free or low-stress and ecologically sustainable mobility (Goals 9, 10, 11) in sustainable cities, villages resp. communities (Goal 11). This requires a socio-ecological reconstruction of production and consumption structures (Goals 7, 8, 9, 12). Notwithstanding the complex interconnectedness of public passenger transport in the complex of the global Sustainable Development Goals 2030 (SDG2030), this is hardly directly found in the literature

on zero tariff in the period under consideration (an exception: ECONOMIST, 2022). But according to a UN study 2020 (UN, 2020), only half of the global urban population had convenient access to public transport in 2019. The report measured the share of population within 500 meters of buses and trams, and within 1km of high-capacity transport like trains, subways and ferries (UN, 2020, p. 16). Surveys in Korea and the United Kingdom show the majority of car holders would not give up their private cars even if they could use free public transport (ZHEN, 2021). This was likely because sitting in a car is more comfortable.

Nevertheless, dealing with poverty, social exclusion, the discrimination of poor people and especially of poor people of color, and again, especially women and transgender among them, is very much a substantial issue in the discussion on zero tariff at public transport. In many cases, the current debate on free public transport is, above all, a discussion of compensation of income loss in consequence of lockdowns and inflation resp. rising living costs. Effective dealing with poverty and social exclusion has a transformational impact. Effective dealing with car traffic to achieve clean air and attractive communities has another transformational impact. Both are interconnected within a process of socio-ecological transformation. Here, both dimensions should be discussed briefly.

Part I: The social dimension

The University of Leeds researchers examined household expenditure data on home energy and motor fuel from 275,614 households across 27 European countries, provided by the European Household Budget Surveys. They combined expenditure data with emission factors, what delivers an estimate of annual greenhouse gas emissions per household for home energy and motor fuels. Then, the researchers analysed the impact of introducing two different compensation strategies to mitigate the influence of new carbon taxes on low-income households. They concluded that giving cash back through tax rebates would lead to only small reductions in home energy and motor fuel emissions. However, the introduction of universal green vouchers with expanded renewable electricity generation and public transport could reduce home energy emissions by 13.4 per cent, and motor fuel emissions by 23.8 per cent. If green vouchers and infrastructure were provided without introducing carbon taxes, the reduction of emission would be insignificantly lower, but 4.1 and 2.2 per cent of households would be freed from fuel and transport poverty. Further, the combination of carbon taxes and cash compensation would increase fuel and transport poverty by 4.1 per cent and 1.8 per cent (E&T, 2021). In conclusion, policies that aim at compensating unjust distributional impacts of carbon taxes combined with ecological interventions have a real potential for promoting free public transport, but just distribution combined with ecological policies have a real potential for forcing free public transport as an essential factor of socio-ecological transformation.

The current US zero tariff debate is a mixture of arguments: On the one hand, it is about solving an economic problem linked to the decline in passengers during the pandemic. On the other hand, it is about social help for poor people and, thirdly, it is about a concrete change in everyday social life. However, for

the time being, this change only concerns a concrete territory and not the societal way of life, which is primarily connected to the societal division of labour–and the production structures and consumption structures associated with them. They are a fundament of societal power relations.

If public transport companies receive funding from authorities according to the mass of passengers transported or the number of journeys made, passengers not travelling are an economic problem. The problem grows in proportion to the share of fares in the coverage of operating costs. If this share is small and the zero tariff is used primarily to solve this problem, it is neither a stable solution nor linked to a strategy for solving social problems and better cohabitation among the population. Then, the expansion of public transport, a more attractive community design for the population and the replacement of car traffic are not (seriously) discussed.

The Covid-19 pandemic made especially clear that public transport is a lifeline for essential workers and that even modest fares could be a burden to them. Some cities like Los Angeles and Kansas City, Missouri suspended fare collection during the height of the pandemic to minimise human contact and to ensure that residents without alternative travel options could easily reach working places, services at hospitals, grocery stores and offices.

D.C.‘s permanent zero tariff plan came at a time when cities like Boston and Denver and states like Connecticut were already considering broader zero tariff policies to improve equity and help regain ridership that was lost during the Covid-19 pandemic. Columbia’s administration will begin offering free bus fares to residents in the summer of 2023 (YE&THE ASSOCIATED PRESS). Los Angeles Metro has been testing a fare-capping plan: riders pay for travel until they reach a fixed dollar amount and then ride free after that. A two-phase pilot offers free trips for low-income bus and rail riders. In August 2022, fareless travel was extended to all K-12 students in L.A. County. 70 per cent of underground riders make less than $35,000 a year and are qualified for free trips under the current pilot proposal. The project is running to June 2023, then another decision has to be taken (FONSECA, 2021). The pilot covers Metro bus and rail services, but not all of them. Projections of pilot boardings, the readiness of operational and security elements, detailed cost estimates for the pilot, and identification of all possible sources of Federal, State, and local funding are determined. The community has been brightly informed. The project meets the primary goal of providing a more equitable transport service (SCHWEIGER, 2021).

In D.C., however, bus ridership stands at about 74% of pre-pandemic levels on weekdays compared to 40% for Metrorail. The $2 fares will be given up in favour of riders boarding Metrobuses within the city limits. The project will start around the beginning of July 2023. The D.C. Council also decided to expand bus service to 24 hours on 12 major routes downtown. About 68% of D.C. residents who use the bus have household incomes below $50,000. The riders are disproportionately Black and Latino compared with underground passengers. In D.C., bus fares amount to only 7% of total transit operating revenues. The

transport agency will be able to deal with losses from zero tariff. City taxpayers will gain from speeding up boarding as well as reducing traffic congestion and eliminating the need for measures against fare evaders.

In Kansas City, zero-tariff for buses has been working since March 2020 and has no planned end date. It has already helped boosting ridership, which has risen by 13%. The zero tariff amounts to an $8 million revenue loss. It will be covered also by federal Covid aid. (YEN&THE ASSOCIATED PRESS, 2022). Alexandria, Va., made all buses free in 2021. There is a long list of other cities that tested zero tariff at a smaller scale and offered free rides for a short period or on a few bus routes or for a particular target group like nurses at hospitals or children. Some high-profile political personalities have advocated free public transport in their constituencies, e.g. Utah Gov. Spencer Cox, Boston Mayor Michelle Wu and Los Angeles Mayor Karen Bass.

The independent, non-partisan policy think tank MassINC Polling Group has found that 61 per cent of Massachusetts voters support free buses, 71 per cent support free buses only in low-income neighborhoods and 79 per cent support low-income fare discounts. Free subways and fareless commuter rail travel also received majority support in the poll (KASHINSKY; SNYDER, 2022).

At least four factors should be considered before assuming that the benefits of free public transport outweigh the costs: The complexity of the public transport system has to be assessed. Does the system consist of multiple modes of travel (e.g. bus, subway, commuter rail)? Will introducing zero tariff assist a majority of riders? Do the majority of riders transfer between modes to make their trips? Will zero tariff on one mode affect what can be charged for another mode? (SCHWEIGER, 2021) It should be taken into account that in the USA there is usually a class division in public passenger transport: Buses tend to be the means of public transport for the poor and poorer, the metro is used by passengers with higher incomes. That is why the Los Angeles example is atypical and particularly interesting. Here, it is also known that low-income riders, in the main, are highly time-sensitive. A missed bus can cost the job, reprimand on the job, late fees or childcare penalties.

The transit think tank, TransitCenter, which wrote two reports on free transit, advocates targeted subsidies for riders who need it and calls for encouraging employers to offer free transit passes to workers, rather than eliminating fares across the board (EDITORIAL STAFF, 2022). A senior fellow at the D.C.-based Cato Institute, said it more drastically: Government subsidies to help lower-income people buy cars would be more effective because not everyone has easy access to public transport, which operates on fixed routes (YEN&THE ASSOCIATED PRESS, 2022). Opponents of zero tariffs in public transport repeatedly bring up the argument of “problem riders”. They certainly exist. The studies cited as arguments, a 2002 National Center for Transportation Research Report (PERONE, 2002) and a 2012 National Academies Report (VOLINSKI, 2012), also put this issue into perspective, but they relativise it.

Moreover, it is self-evident that passenger escorting in public transport must be increased – not (only) primarily because of the threat of vandalism, but – for reasons of service and social communication.

It will be interesting to see how the zero-tariff demonstration project in Olympia, the Canadian Washington's state capital, works and if it is confronted with "problem riders". The project started in 2021. Olympia's Intercity Transit increased the bus fleet by 51 per cent and hired 130 new transport workers. In its first month of operations, weekend ridership increased by 50 per cent compared to the previous year, while weekday ridership rose by 15 per cent. This project is planned for five years, allowing the city to analyse conditions for moving to zero tariff (BRULÉ, 2021).

Malta's zero tariff model started in October, 2022. The October to December period, 2022 saw an increase in bus use by 50% compared to the same period in 2021. In December 2022, the number of passengers travelling by bus exceeded the pre-pandemic numbers for the first time by 8%. After Luxembourg, Malta is the second country in the world which introduced a universal zero tariff for public transport. Free public transport already existed for 14–20 years old persons. Since 1. October 2022, residents must have a valid Tallinja bus card to travel for free. Anyone without this card must pay a fine. (CALLEJA, 2023). Currently. Malta's government plans to expand the bus fleet. The additional buses would all be electric, and the existing ones would be replaced by electric busses. The discussion on metro lines is still going on. Like in Malta, Luxembourg and Tallinn, especially people with low incomes highly appreciate the support given them by a zero-tariff policy. Being confronted with rising energy and fuel costs, the Estonian government wants to keep free public transport where it is provided at its current level in Estonia's 15 counties. These efforts do not exclude revisions at some points of the route network (ERR, 2022).

46% of Luxembourg's workforce consists of international commuters: ca. 110,000 come from France and ca. 50,000 each from Germany and Belgium. Many do so because of high housing costs. In 2021, the average rent in the cities of southern Luxembourg was 1,200 euros, in border towns such as Arlon in Belgium, average rents are around 700 euros. The result is a daily mass exodus in and out of Luxembourg. The roads and rush hour trains across the border are overcrowded. The most significant divide in Luxembourg is between those who can afford to live inside the borders and those who cannot. Accordingly, abolishing fares constitutes a modest subsidy for those who cannot afford to live in Luxembourg (O'SULLIVAN, 2022).

Certain Danish islands have temporarily made public transport free in order of bolstering the tourist industry after the Covid-19 lockdown. In the summer of 2020 and 2021, taking a ferry to these islands was free for travelers without cars and the ticket costs for public transport were significantly lowered during the summer season of 2022 (ÜNVEREN, 2022).

On 1. September 2022, free train tickets were introduced for short and medium-distance journeys in Spain. The measure was meant to last three months to help people struggling with rising living costs. Nevertheless, the success led the government to extend this experiment throughout 2023 and to include those long-distance coaches which are part of the state concession network. This bus scheme would save

more than 350 million liters of fuel and prevent the emission of one million tons of carbon dioxide emissions into the atmosphere during 2023. Currently, people can purchase tickets from companies operating state-owned bus routes at 100% discount. To apply, people have to purchase season or multi-trip tickets (in batches of 10, 20 or 30) and pay a 20-euro deposit. Thanks to the extensive bus network owned by the state, which covers 1,837 municipalities throughout the country, people can travel huge distances across Spain, e.g. from Madrid to Barcelona. The scheme is aimed at passengers from all over the world (TORRES, 2022). The zero tariff is being paid out of a windfall tax on energy companies and banks that the government believes will be worth seven billion euros over two years (KOBIE, 2022). In Spanish Balearic, the government announced in November 2022 that public transport would be free from 2023 to encourage people to leave their cars at home. The central administration in Madrid will cover all costs calculated at 43 million euros. To gain access to the zero-tariff scheme for buses and trains, people must have the Balearic transport Travel Card. The move was welcomed and should significantly reduce traffic congestion on main local roads, especially during the summer months (MOORE, 2022).

As part of a series of measures to limit the cost of living, the Irish government reduced the cost of public transport fares by 20% in the spring of 2022. Budget 2023 made the change permanent, but social initiatives demand making public transport free. This demand is connected to another one: to make sure that no car is needed and that also rural transport is without exceptions, frequent, flexible, reliable and accessible.

Sydney's public transport patronage experienced a zero-tariff initiative with more than 13.2 million trips across the city over 12 days. Ferries were one of the most popular options during the test period from 14-26 April 2022, including the Easter and Anzac Day holidays.

Some ferry boardings were up by 64 per cent and 34 per cent respectively, compared with Easter 2021. The pre-history is interesting: In February, the dispute resulted in the state government ordering the lockdown of Sydney's trains. The Rail, Tram and Bus Union (RTBU) had threatened to take weekly industrial action to force the government to offer zero tariff Fridays to commuters until the end of June to compensate for the February lockdown (CAREY, 2022).

The Tasmanian government in Australia made buses free for five weeks in 2022 to compensate for cost of living increases. But public transport in Australia is more heavily used by residents of inner cities or of central suburbs traveling to central business districts — people living in expensive neighborhoods commuting to well-paying jobs. The further away people live from central areas, the more likely they are to rely on cars to travel to their workplaces. So zero tariff benefits wealthier people rather than those on low incomes (KOBIE, 2022). These heavily subsidised fares are attractive when compared to the cost of running, insuring, maintaining, and parking cars. A zero tariff could enlarge the attractivity of well-working public transport for drivers (FERGUSON, 2022).

With more than 360 thousand inhabitants, Caucaia (Ceará) is the largest city in Brazil where bus users are not charged. In this municipality, 500 thousand of tickets were paid for by July 2021, when public transport became free. In January 2022, the zero-tariff program achieved a margin of 2 million passengers. According to the municipality of Caucaia, located on the coast, it was common to see people who did not know the sea until the introduction of the zero tariff (SUMMIT, 2022). Such experiences also spark interest in India. Here, already before Covid-19, the official share of women in the labour force has been extremely low, at 20.3%, according to the Female Labour Force Participation Rate 2018-19. Following the pandemic, it has fallen further. This is the primary argument for leveraging female economic mobility through zero tariff at public transportation. In 2019, the Delhi government operationalised zero tariff for all women on the Delhi Transport Corporation (DTC) buses. Punjab, Tamil Nadu followed and recently Puducherry followed, too. Their administrations do know that Indian women are more dependent on public transport than men. But lockdown policies and the rising cost of fuel have led to a crisis of many transport companies which then try to survive by increasing ticket prices. This, again, makes it evident that free public transport is a complex issue going far beyond fare prices. It must be discussed as an issue of sustainable mobility (NAGRIKAL, 2021).

Lisbon plans to follow in the footsteps of Tallinn, Riga and Luxembourg City, which offer free transport for all residents. In contrast some other capitals like Berlin, London and Paris offer free travel for some children and/or elderly residents. Central Lisbon has introduced free public transport for all residents under the age of 18, students up to the age of 23 and seniors over 65, valid on the subway system, public buses, most rail lines, and the yellow trams that criss-cross the city. The measure costs Lisbon a lot of money and should be an argument for positioning Lisbon in the Champions League of cities against climate change. The measure also aims at helping to defend the poorest people against soaring fuel and energy prices (GONCALVES, 2022).

Likewise, in other countries like New Zealand, Ireland and Germany, fares were reduced for a longer or shorter period to at least partially compensate for an increased cost of living. This has been made use of time and again by social movements in order to demand the extension and expansion of these measures and a plan to introduce zero tariff in public transport. Curiously, instead of a monthly ticket for regional transport of nine euros for a total period of three months, the transport ministers of the German federal states wanted to introduce a zero tariff for this period. In doing so, they drew attention to the additional administrative expense of 2.5 billion euros for administering the nine-euro ticket (MENDGEN, 2022). The cost of ticketing also plays a role in the growing German discussions on adopting the Vienna model – a yearly 350-euro ticket – for using public transport in the Austrian capital. 20% of the income of German transport companies is spent on making the ticket system function (UG ES, 2022). The highest cost, however, is imprisonment. Around a third of people at a Berlin prison are there for riding without a ticket. That adds up to spending millions of euros per year just to torture poor people, and enforce the ticket system (FLAKIN, 2022).

It is worth learning from Poland, where more than 30 municipalities have abolished fares to address the issue of mobility (ŠTRAUB, 2021). They are mainly smaller and medium-sized Polish towns.

In conclusion, the debate on zero tariff experiences provides much interesting and new knowledge related to the social dimension. The study of the accessible sources also generates the need and interest to take a closer look into details than could be achieved before based on the material analysed. But only the websites and media of social movements like the Swedish *planca nu,* or those for fare-free and accessible public transport in Toronto, Ottawa and Edmonton, or of the left parties like in Sweden, Germany, Austria and Scotland develop a complete imagination of how free public transport can be integrated into a strategy for dealing with social, ecological and global problems effectively, while starting by pro-actively fighting poverty, social exclusion, and the climate and biodiversity crises.

Part II: The dimension of motorised mobility

It is no coincidence that in the debate on setting carbon dioxide reduction targets and the steps to achieve them, transport has turned out to be the very field where, in Germany and the European Union. The biggest problems can be identified. Concerning the very issue of transport, positions and interests diverge greatly, because a key link in current production and consumption structures is at stake here. Its restructuring requires enormous investments and interventions into many sectors, including industrial, transport, research, foreign trade, regional, employment, social, educational policies, into the shaping of the development of cities, villages, rural areas – i.e. into the whole complex of a societal policy. It would be naïve to believe that a zero tariff in public transport could be a main lever to force the transformation of these complex economic, political and societal contexts and processes towards achieving social and ecological sustainability, towards the aim of climate, environmental, resource, social and global justice. It would be a lost chance, however, not to make use of the various concepts, demands and especially social movements for a zero fare in public transport according to the existing possibilities to support and accelerate the socio-ecological transformation, as it is urgently needed.

After 10 years of continuous growth, as an effect of the Covid-19 pandemic, world car production saw a decline in 2019. Global production decreased by more than 5%. In 2019, manufacturers produced approximately 92 million vehicles worldwide – 67 million cars and 25 million commercial vehicles. The cumulative data for the period from Jan. 2020 to Sept. 2020 has shown a further 22.9% decrease in global automobile production compared to the same period in 2019 (GORTON, 2021). In 2021, almost 80 million motor vehicles were produced worldwide. This was an increase of around 3 per cent compared to 2020. China, Japan, and Germany were the largest producers of vehicles in 2020 (PLACEK, 2022). But the slumps had not been used to critically re-examine the very model of care mobility. In the EU, almost 80% of inland journeys are made by car. 246 million cars are on the road in the EU today. The budgets of the EU member states receive 374.6 billion euros per year from the sale and use of passenger cars. About five

million European cars were exported worldwide in 2021, worth nearly 127 billion euros (ACEA, 2022). Of course, these numbers are lower than those before the start of the Covid-19 pandemic.

One of the main reasons why people support free public transport is its potential to take cars off the streets, with the effect of a decrease in greenhouse gas emissions. However, there would be no significant impact unless transport connections improve so that public transport becomes a viable option even for the wealthy to ditch their cars, as Watson and her friends do think (WATSON, 2022). Of course, they see a real problem that must be tackled. But, moving further, Watson and friends must raise the question about the interests of workers and all those who earn from car production connected with energy, raw and basic materials, agribusiness, finance, military-industrial complex, high technology and their suppliers, i.e. the whole 'car system' linked to car service and construction, to maintaining roads and special buildings, to the availability of services and consulting … A crucial question here concerns the real alternatives available (and to be found) for workers, freelancers, small entrepreneurs. Whoever works on the issue of free public transport should not ignore the questions of the complex conversion needed, as well as that about an alliance to be developed with trade unionists. Here it is a crucial challenge to open a debate about social and ecological justice decidedly, asking for an abolishing of harmful subsidies and for fully including the car industry into financing zero tariff for a significantly extended and improved public transport – and workers and especially trade union activists should join the struggle for these demands.

The cost borne by the general public for car traffic in Germany amounts to around 5000 euros per car per year (GÖSSLING; KEES; LITMAN, 2022, p.1). In the last 20 years, the price of public transport has risen more than twice as much as the price of buying and maintaining a car: by 79% for public transport, but only 36% for cars. However, the costs of pollution, greenhouse gas emissions and damage to health are not integrated into this price calculation. There are several options for reducing the existing privileges of the car: Financial incentives for car ownership, such as the company car privilege, should be abolished immediately. The funds generated from this should be invested in public transport or in payment of a reward for households that get rid of their cars. Fundamental reform in the tax system is also needed in order to make vehicle tax and new registration tax fairer. Possible instruments like tolls for pricing in the costs of car traffic should be made an issue of public debate (KONZEPTWERK, 2022, p. 5). Moreover, all the subsidies for everything that is connected to cars have to be abolished in a socially just way.

Reducing car traffic is a multifactorial challenge:

- priority must be given to traffic avoidance and to a voluntary, stress-free and ecologically sustainable mobility,
- where real alternatives to the car exist, individuals must be culturally, morally, economically and legally motivated to make use of these alternatives;
- where alternatives do not exist, they must be created, also at the cost of the car industry;

- traffic and spatial planning within municipalities must be organised from the point of view of children, people with disabilities and the elderly;
- public spaces and public areas must be largely designed as "green lungs" and as meeting places;
- public transport must be financed by society as a public good and offered to be used free of charge; the car industry must be increasingly financially involved in this;
- the car industry must lose its subsidies and be forced to be increasingly involved in financing the infrastructure for car transport,
- the car industry should increasingly participate in the costs of public health care for the treatment of people who have been caught up in traffic accidents and have suffered damage from traffic noise and air pollution.

This conclusion was drawn from the analysis of individual examples. This analysis also includes the Tallinn success story, although, since the introduction of zero tariff in public transport 2013, the share of cars has risen from 42 per cent of the trips to 48 per cent in 2022 (MIN, 2022). In May 2022, congestion on Luxembourg's roads was — depending on location — nearly equivalent to or even higher than in May 2019, before the free public transport policy started. It means, zero tariff does not in itself lure people away from their cars. It cannot, as such, overcome the problems of overcrowded, delayed or canceled trains, or compete with the convenience of door-to-door travel. The most enthusiastic adopters of free travel policies seem to be people who would have otherwise walked or cycled. However, the city of Luxembourg has embarked on a significant series of improvements in transport service: a tramway in Luxembourg City that opened in 2017 and was extended by September 2022. Four lines are planned to be added by 2030. As part of the country's mobility plan for 2035, Luxembourg will embark on 14 major rail improvements. It will also redesign urban streets, and it plans to introduce rapid bus transit and carpooling lanes on main roads (O'SULLIVAN, 2022). In Utah, rides during zero tariff February 2022 were likely made by different riders: those, who otherwise walked or rode a bike took public transport. This was societally valuable, but it did not reduce greenhouse gas emissions. To accomplish that, free public transport must win over a significant number of people who would have driven a car. But car owners tend to be wealthier and their access to a private vehicle makes them more unwilling to tolerate the problems of bus transfers, due to waiting time, and to slow and dropped journeys. Especially in a region lacking frequent and fast bus service zero tariff cannot convince many drivers not to drive. This is confirmed by the experience from French Dunkirk and Czech Frydek-Mistek. Researchers in Santiago de Chile, researchers randomly assigned residents two-week zero tariff passes. They took 12% more trips overall, but they did not drive less (O'SULLIVAN, 2022). An extensive 2012 study by the US - American National Academies of Sciences is often used to explain why an introduction of a zero tariff has failed to reduce driving. In addition, it is said that the study has shown that most new trips were taken by those lacking access to a car. Furthermore, the other way round for the

car drivers: "Surveys in Breckenridge, Colorado, revealed that people would prefer to move their cars more often than pay a fare for multiple short trips. Eliminating the fare encourages those people who might otherwise walk or take short car trips to wait for the bus" (VOLINSKI, 2012, p. 24). Nevertheless, the same study stated concerning the zero-tariff experiment in Austin: "… the percentage of new trips that had been made from people changing from private vehicles was notable (30% or less), but not as large as agencies might have hoped for." (etc., p. 59). But surveys for rural and small urban communities in 2008 indicate that over 50% of public transport passengers enjoying zero tariff had a car available for their trip. Ten years before that, the figure was 25% (etc., p. 80). In resort communities, passengers answered the question, "Did fare-free transit cause any increase in development or an influx of residents or employment?", in the following ways:

"• Walkability and multi-modality (we have a car share program that links to our free system and a bike share program is in the works)—car-free living—community vitality—tourist experience.

• Yes. Expansion of community transportation services and enhanced quality of life.

• It is a great asset to the community for both residents and visitors.

• Sure, fare-free is a positive thing on an individual basis, but in reality, there is no such thing as really free because someone is paying for the services through taxes and assessments.

• Less traffic congestion, pollution, and more walkability are just a few." (etc., p. 84).

This illustrates the importance of a detailed analysis of concrete community reality, transportation policy, planning and strategy.

Emissions reduction is usually not the most important argument for zero tariff in public transport. Equity is usually mentioned first. The key to fewer cars on the streets is an appropriate and frequent service offered around the clock. It could and should be financed by abolishing the existing longstanding subsidies for urban driving. A strategy of decongestion pricing forces drivers to pay for the slowdowns they impose on other road users. Many effective instruments like high parking fees seem to be unused because of fears of electoral defeats. This is also a sound grounding for making use of tools of participatory democracy challenging facts and arguments for concrete recommendation or decision-making and, at least, partly decoupling factual issues of party and personality preferences. Such tools should be based on opinion polls which often show more progressive thinking than election results do reflect. E.g., a survey of citizens took place in the small Polish town of Trójmiasto. The question was about personal changes related to mobility "if public transport were free". 3638 persons participated in the survey, which led to the following results:

Share of respondents in per cent	If public transport were free, I would
30	switch from car to tram/bus/trolleybus
30	choose public transport more often, but not every day
20	continue to use public transport as before
17	not change anything because a car is the only solution for me
3	cycle less and walk less

Source: KOROLCZUK, 2022.

In conclusion, the use of public transport would undoubtedly increase by more than 30 and the potential for saving carbon dioxide emissions this way is remarkable. Trójmiasto, as an exemplary case of a democratically desired growth of the public transport/sphere, would, in generalization, focus on strategic decisions in long-term investment planning and the involvement of the car industry as a decades-long beneficiary. This may well produce transformational effects and, in perspective, benefit people, the environment and the climate. However, the economic prerequisites are huge – and they would require a stable policy shift towards a global, socially as well as ecologically sustainable development. Individual and public health are the most important indicators of any progress in the direction of such a development.

Conclusion

It was a coincidence that the finalisation of our work on the zero tariff book (BRIE; DELLHEIM, 2020) coincided with a Covid-19-related lockdown, but road construction and the car industry do indeed have a stake in the pandemic: they are part and parcel of an economic system that destroys biodiversity and thus brings animal viruses closer to humans. The air pollution produced by this economic system has accelerated the virus's rapid spread. After the global financial crisis erupted in 2008, the Covid-19 crisis has once again shown that "things cannot go on like this" if the possibility is to be preserved for every human being to live in a self-determined way, in dignity, solidarity and within an intact nature. During the lockdowns, the author was invited to many video conferences on the topic of zero tariff in public transport, but she feared that due to the burden on public budgets, the general very limited practice of zero tariffs in public transport would be further restricted. In addition, due to hygiene regulations, no street actions for a zero tariff in public transport could occur. Practical experience then has shown, indeed, that some planned projects for the gradual introduction of zero tariffs were stopped or postponed. This applies, for example, to the highly interesting and attractive project in Brussels, the capital of Belgium and the central location of European Union institutions. This also applies to the German city of Bremen. But all in all, there has been a relatively intensive process of discussion and experimentation on zero tariff worldwide. This included, e.g. the aim of avoidance of social contacts in order to prevent the transmission of the Covid-19 virus and thus of face-to-face ticket sales and ticket controls, the appreciation of people in "system-relevant areas" such as health care by waiving the fare, the confrontation with a further increase of poverty, which disproportionately affects people of colour, migrants and refugees. "Equity" became the buzzword of such

discussions. However, the pandemic also highlighted the privileging of car holders (here, the poor among the car holders – often living in the car – are excluded). With the increased role of work in the home office, many car owners said that, after the pandemic, they might drive to work more often again in the future.

In the public debate, the link between the car industry, car traffic and the pandemic has been brought to attention and stressed only exceptionally. It was frequently pointed out that poor people were particularly affected by the pandemic as well as by the social effects of dealing with it. However, the following connections were and are mostly left out: that between fighting poverty/social exclusion and tackling air pollution, stress, traffic noise, traffic accidents, hectic lifestyles, mobility poverty/ social loneliness, frightening and depressing housing environments, and improving public health by development of public transport usable for zero tariff. But such an approach to the issue of a zero tariff is much more comprehensive than approaches that mainly treat it as a somewhat isolated instrument of social policy or in a policy of increasing the number of riders. The mainly relatively narrow public debate has not been changed even when, since the Russian invasion of Ukraine and the onset of inflation, zero tariff public transport became more widely practiced as a means for a partial compensation for the increased cost of living – especially acknowledging the fact that again the poor are particularly affected by these price increases. But especially the Ukraine war (including its global strategic dimension) and its effects on the producers and exporters of arms clearly have shown again that "things cannot go on like this". The category of weapons includes an array of specific vehicles, and here again, the link between energy, raw materials and fuels, transport, the military-industrial complex, high technologies and finance makes itself brutally felt. A completely different kind of policy and development is needed in this respect, i.e. a policy and development that is oriented towards social and ecological sustainability and, accordingly, places issues superficially analysed as being just 'departmental' or 'minor details' in the comprehensive societal context in which they effectively belong. The evaluation of zero tariff experiments is, unfortunately, usually carried out after only short periods and just on the basis of increased ridership, looking especially at the extent to which car drivers have been successfully attracted to public transport. In this kind of analysis, four factors are usually disregarded:

- the expansion and improvement of public transport that took place before the introduction of the zero tariff and during its operation, or the failure to realise expansions and improvements,

- the main motives of car drivers to use public transport are time-saving, lack of parking facilities and high parking fees; it should be explicitly analysed how have these motives been reflected in zero tariff policies concerning public transport?

- the prevailing focus on leaving the car behind is not enough: the car had to be bought and registered. It must be kept roadworthy. This means a financial outlay that makes no sense with a vehicle just standing around. What has to be looked for is a strategy to convince people to give up their personal cars, what car drivers will not be ready to do without any convincing ongoing process of developing and

improving alternatives to car transport and without the realistic confidence that "if I really need a car for a special occasion, I can get it for that moment at favourable terms";

- the question of switching from car to public transport is to be integrated into the broader question of a strategy for achieving socially and ecologically sustainable mobility and, consequently of how to confront the car industry and the entire car industrial complex (see also KĘBLOWSKI, 2019).

Challenging the car industry means abolishing subsidies for car traffic to force it to at least contribute progressively more to the societal costs of car production and traffic and their effects, imposing regulatory requirements on it that are oriented towards raising public health. The zero tariff in public transport plays a relevant role as a starting point for doing this. However, it needs the creation of long-term socio-political alliances for public health, socially and ecologically sustainable mobility and development. But such an approach also needs to make existing zero tariff projects success stories in the sense just highlighted. Tallinn, Caucaia, Maricá as well as some other communities in Brazil, Poland, France, Sweden, Germany, Canada, Australia, US and many other countries could help here resp. should become able to promote development oriented at public health and socially and ecologically sustainable mobility as a crucial condition for a socially as well as ecologically sustainable society. The key question for such strategies is whether they succeed in democratizing decisions about the use of resources. That is why the zero tariff debate is always linked to a democratization debate and, in particular, to a discussion about the possibilities of participatory democracy.

CRediT

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