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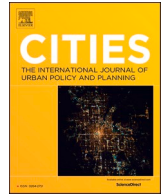
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Urban mobility injustice and imagined sociospatial differences in cities

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ABSTRACT

Cities today are confronted with pressing issues of mobilities - not only concerning greener movement but also more just movement. This article explores the physical and imaginary aspects of urban mobility injustice and its (re)production through a study of two neighbourhoods in Copenhagen. It examines the interplay between city dwellers' experiences of (im)mobility and the social and spatial structure of neighbourhoods that shape and are simultaneously shaped by images of these places. Through interviews and focus groups, residents' mobility capacity and mobility providers' decision-making are scrutinised. The study demonstrates that residents' experiences of mobility vary remarkably between places in a relatively equal city, and this is intensified by territorial images of being deprived. The paper argues that paying attention to neighbourhoods' sociospatial composition in relation to their internal and external reputation helps to understand experiences of mobility injustice and how such injustice is reproduced in planning decisions.

1. Introduction

Urbanisation and smart mobility systems are increasingly characterising contemporary societies and cities and are enhancing the movement of their inhabitants. However, this does not mean that everyone has become empowered by the mobility advanced city. In this paper, we explore experiences of uneven mobilities in relation to differences in the physical and imagined landscape of neighbourhoods in Copenhagen, the capital of Denmark.

Much literature has studied the socio-spatial division in cities from a perspective of housing policy, the allocation of accommodation and the composition of residents (Andersen, 2002; Haandrikman et al., 2023; Larsen & Lund Hansen, 2009; Marciniak et al., 2016). However, urban segregation does not only depend on residential patterns but also on the opportunities provided by being mobile, i.e., access to services, institutions and social activities. Sociospatial segregation and exclusion have also been studied in the field of transport research (e.g., Church et al., 2000; Lucas, 2012). Since 2000, when Urry published the book *Sociology Beyond Societies: Mobilities for the Twenty-First Century*, an increasing number of authors have focused on mobilities as a concept that better captures the multitude of physical and virtual movements and the social and cultural impacts these new connections and movements entail (Freudendal-Pedersen et al., 2020; Sheller & Urry, 2006; Urry, 2000). Mobility is essential for citizens' participation in society as it allows social relationships to be maintained and provides access to

socioeconomic opportunities. The capacity to move in space is enabled and constrained depending on the political, social, and physical landscape where everyday life plays out, and the freedom of some is often dependent on the immobility of others (Freudendal-Pedersen, 2009, 2015; Jensen, 2019). Many aspects influence city dwellers' mobility capacity. As stated by Hidayati et al. (2021), this includes individual abilities that are intricately interlinked with the spatial environment, political discourses, and cultural norms. Being mobile in this sense does not only entail access to transportation, welfare institutions and services in the city, it also includes the individual's capacity to appropriate these opportunities (Kaufmann et al., 2004). The specific interactions between social and spatial factors are here decisive for residents' mobility in different urban neighbourhoods. Focusing on uneven mobilities provides an opportunity for scholars working with social inequality and segregation in cities to advance the understanding of a field that has historically mainly been studied from a static perspective (Cook & Butz, 2019).

Studies outside the mobilities literature have illustrated that experiences of social exclusion and segregation extend beyond the physical and social attributes of neighbourhoods. Public and shared narratives of some social groups and places are factors that contribute to social marginalisation (Wacquant, 2013). Stigmatisation based on a territory narrative, as Wacquant puts it, has a strong negative influence on how residents are perceived by others and even on how they perceive themselves (ibid.). Negative narratives translated into public images of

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places play an essential role in shaping and maintaining inequalities in cities and the resulting consequences. A negative reputation of a neighbourhood and the factors influencing this reputation often differ from the image of the area found among the residents (Andersen, 2002). While scholars have recently begun paying attention to the imaginary aspect of mobility (Salazar, 2020), the marginalisation of urban neighbourhoods through negative narratives and the resulting consequences for residents' mobility still remain under explored.

Based on an empirical study of two socioeconomically different neighbourhoods in Copenhagen, a high-income and a low-income area, we suggest that critical experiences of immobility often result from the co-occurrence of social, physical and reputational factors. In our study, it seems that the existing sociospatial conditions of the two areas played an essential role in shaping the experience of (im)mobility while their territorial images played a part in shaping these conditions. The high-income area has a sustainable and advanced mobility profile, which seems to align with the residents' own perception of the area. In contrast, negative social associations are attached to the low-income area, which seems to contrast with the residents' experiences of living in this area. Although, the residents in the low-income area did experience disadvantages related to their physical mobility, it is clear that the reputations of the neighbourhoods influenced mobility planning, thereby creating unequal opportunities of the areas. This is exemplified by external operators, whose investment decisions were influenced by the reputations of the areas.

Denmark has a relatively low degree of socioeconomic inequality compared to most other countries in the world (The World Bank, 2022 [2019]) and Copenhagen, the capital, is viewed as a front-runner in terms of inclusive and sustainable city planning (C40Cities, 2016). However, as this paper emphasises, despite the city's well-planned infrastructure systems and the promotion of planning on a human scale (Copenhagen Municipality, 2017), issues of mobility injustice remain a problem in the city. The paper demonstrates that remarkable differences in experiences of mobility opportunities exist in Copenhagen, which is a relatively equal city. This is, among other things, related to territorial images, which are derived from the sociospatial context of the areas and which simultaneously produce this context. In our case, this is illustrated by unequal mobility investment, which was founded on prejudiced perceptions of the neighbourhoods. Although these investments are not representative of general mobility planning, they do highlight the danger of reproducing mobility injustice in planning when transport operators adopt preconstructed images of neighbourhoods.

The paper begins with a presentation of the theoretical framework for the analysis as well as the methods used to generate the empirical material which forms the basis for the analysis. In the paper, we analyse residents' experiences of constrained and enabled movement in Copenhagen in relation to the social, physical and imagined landscape of their neighbourhoods. We do so by paying attention to both residents' individual experiences of mobility and external transport operators' view of the areas of interest through an empirical study of two socioeconomically different areas in Copenhagen. The empirical analysis illustrates the significance of both the sociospatial and imagined profile of an urban neighbourhood for citizens' experience of (im)mobility.

2. Uneven spatial and imaginary mobilities in cities

Urban neighbourhoods are not just defined by their geographical administrative boundaries but also their social relations, which are shaped and maintained by mobilities (Massey, 1994; Sheller, 2015). Urban inequalities are, therefore, also a matter of uneven mobilities. In their literature review, Hidayati et al. (2021) demonstrate that research on mobility inequality focuses on the 'differences in the ability and capacity to move, investigating the causes and impacts of such differences' (Hidayati et al., 2021: 2). The authors illustrate that mobility inequality studies consider both the intrinsic factors such as age and social class and extrinsic factors including spatial conditions such as location,

material formation and access to transportation (ibid.). They argue that awareness of the various factors influencing mobility capacities facilitates an understanding of the scales and complexity of unjust structures of mobilities *experienced by individuals in different contexts* (ibid.: 4). Marginalised groups are highlighted as experiencing immobility to a greater extent and are frequently not involved in decision-making that affects them, which makes them more vulnerable to social isolation and exclusion (ibid.). It is not uncommon for marginalised groups to suffer in city planning and design, which Sheller suggests often favours the upper middle-class, healthy, white male body (Sheller, 2018a: 55). The variety of uneven mobilities is an issue of injustice when they are intertwined with power structures that limit the movement of specific social groups and the accessibility of places. In this paper, the experienced physical and imaginary unequal mobilities are captured through the concept of mobility injustice.

2.1. Different scales of mobility injustice in urban neighbourhoods

Sheller (2018a) investigates mobility (in)justice on interrelated scales, which provides an opportunity to investigate specific sociospatial contexts. Movement is considered a '*foundational condition of being, space, subjects, and power*' in Sheller's concept of justice (Sheller, 2018a: 9), and it is, thus, fundamental to understanding the relational geographies of urban transformation (McFarlane, 2020). In this paper, two levels of mobility justice related to (i) *the spatial layout of neighbourhoods* and (ii) *the images of neighbourhoods* are presented. This analytical division is inspired by Sheller's conceptualisation of bodily and street scale and concepts of place-based narratives and imagined geographies, which ought to be incorporated in order to identify the root causes of mobility injustice.

2.1.1. Spatial level of neighbourhoods

At this scale, we examine the sociospatial layout of neighbourhoods and the way in which it is experienced by residents in relation to their mobility capacity. Sheller refers to the street scale as '*the shaping of built environments by infrastructures and land use*' (ibid.: 24), which forms movement in space. The environment, infrastructure and places frame bodily movements, capacities and limitations, which result from this interplay between bodies and space. The movement of some bodies is often favoured over others in specific urban spaces. Hidayati et al. (2021) emphasise that bodily inscribed differences in movement capacity are often neglected in conventional traffic planning as such '*planning often succumbs to providing physical infrastructures by assuming that all individuals have similar mobility levels*' (Hidayati et al., 2021: 2). This type of planning runs the risk of unintentionally reproducing or even reinforcing mobility injustice as it fails to consider the fact that the spatial layout favours certain bodies more than others. The spatial environment in which we move is not detached from the people who move in space, thus "[t]he problem of mobility injustice begins with our bodies" (Sheller, 2018b: 24). Devoting analytical attention to the bodily scale reveals that mobilities are socially differentiated in relation to hierarchies such as gender, culture, and social class. (ibid.). This does not imply that an individual's movement capacity is determined by such factors alone, but rather that identity and individual experiences have a hand in shaping our movement capacities. Whereas the *spatial level* focuses on how different elements in the sociospatial environment shape the experience of movement, this next level refers to the physical and imaginary relationships that exist between areas in cities and how they influence local mobility.

2.1.2. Imagined level of neighbourhoods

This scale refers to the imaginary and symbolic aspects of different settlements, which shape and are simultaneously shaped by the social and physical landscape. Neighbourhoods are not just defined by the built environments '*materialized through planning and building*' (Gorman-Murray, 2006), they are also *imagined places*. Multiple scholars have

examined this relationship between the material and imagined place (Lynch, 1960; Said, 1978; Soja, 2010). From a sociological perspective, negative territorial images have been shown to negatively affect other people's perceptions of areas and their residents and sometimes even the residents' sense of identity (Wacquant, 2013). A negative image may influence the flow of capital and people to an area (Andersen, 2002). According to Wacquant, a stigma becomes attached to an area from the bottom during everyday interactions and conversations and from the top through media and political representation, which results in some areas becoming tainted (Wacquant, 2013). Rijpers and Smeets (1998) identify the following three types of images attached to neighbourhoods: (i) The (*internal*) image among the residents; (ii) the (*self-reflecting*) image which residents believe is present among people living outside the area; and (iii) the (*external*) image found among people not living in the neighbourhood (Rijpers & Smeets, 1998; referred to in Andersen, 2002: 163). The composition of residents, the visual quality of the built environment, social problems and accessibility to services are components that, to varying degrees, have been shown to have an influence on the identified images of neighbourhoods (Andersen, 2008: 84). The three types of images are, however, not only related to the housing estates of neighbourhoods (as illustrated by Rijpers & Smeets, 1998, Andersen, 2002, 2008) but also to their mobility, as illustrated in this article. Salazar has studied mobilities and finds that they are shaped by and shape processes of imagination (Salazar, 2020: 774). Images or imaginaries of others interact with the individual imagination and 'are used as meaning-making devices [...] [o]nce imaginaries are formed it becomes very hard to change them, precisely because they are culturally shared and socially transmitted' (Salazar, 2020: 770–71). As investigated in this study, images of urban neighbourhoods and mobilities are relational and play an active role in shaping decision-making and planning strategies as well as being shaped by them.

The difference in people's mobility capacities cannot be separated from the imagined, spatial and cultural context. Studying the interplay between physical and imagined mobility and the complexity of the specific socio-spatial contexts facilitates an understanding of injustice on a larger scale while at the same time making it more tangible. In this article, based on these two scales, we analyse mobility injustice in the following two neighbourhoods in Copenhagen: Folehaven and Nordhavn.

3. Methodology

This study is part of the research project Sustainable Innovative Mobility Solutions (SIMS). The focus of the SIMS project is to investigate how to facilitate the sustainable transition of everyday urban mobilities through experiments with multi-modal mobility services in two urban areas in Copenhagen. The Danish capital is a relatively well-connected and socio-economically equal city. The residents of the two neighbourhoods are characterised by different socioeconomic and -cultural positions that shape their experiences of mobility and immobility. The class division is distinctive for the two areas, but, as Sayer explains 'we occupy different positions, not only according to class, gender and race, but in terms of age and relations to parents and dependants' (Sayer, 2005: 140). In this paper, we mainly focus on the socio-economic differences between the residents in the two neighbourhoods, which means that other factors such as gender, ethnicity and culture are not investigated. The empirical data that was generated during the interviews and focus groups with residents from the two neighbourhoods were permeated by different mobility experiences. While the focus of the interviews was on everyday movement, neighbourhood and sustainability, the focus group was dedicated to participants' visions of future mobility in their area and in the city at large. The interviews and focus groups were carried out in the autumn of 2020 and 2022, and participants were recruited through email requests or phone calls.

Interviews with residents: In this paper, we draw on eighteen semi-structured interviews with households from the two neighbourhoods,

Folehaven and Nordhavn; nine in each area and two focus groups, one with residents from each neighbourhood. In the household interviews, one to three of the households' adult members between 20 and 65 years old participated. Around half of the interviewees in Folehaven were unemployed. In Nordhavn, all except one student were in full-time employment. On average, the interviews lasted for approximately one-and-a-half hours, and the majority of the interviews were conducted in the participants' homes. Due to the Covid-19 pandemic, some of them were also conducted online through Zoom or TEAMS as infection rates had increased during the interview period.

Focus groups with residents: In Folehaven, the focus group had eight adult participants and was conducted in a local charity shop. The participants were aged between 60 and 80 years old and were mostly in part-time employment or were unemployed. The focus group with residents from Nordhavn was conducted at the headquarters of By & Havn¹ and had four adult participants who were aged 40–50 years old. All of them had full-time jobs. Maps of the three neighbourhoods in the SIMS project provided the focal point of discussions about the differences between the neighbourhoods and the identification of feasible mobility solutions.

While the empirical material generated in Folehaven and Nordhavn was being processed, unequal opportunities, understandings, experiences and narratives in the areas came to the forefront. The interlocutors in the interviews and focus groups were primarily Danish descendants. This is not representative of Folehaven residents as the area contains a large group of non-Danish descendants. In the recruitment phase, we were not able to get a more equal representation which raises a bias when investigating the residents' experience of mobility in the area. For further research, this would be an important aspect along with other social factors to include. In addition, to the interviews and focus group in Folehaven, we set up a stall for a local event in the area, where the residents walking by had the opportunity to explain what they thought about the area through posters and maps and here the representation was more equal.

Interviews with mobility operators: Interviews with operators working with shared mobilities were conducted to gain additional information on how the areas are seen by external transport professionals, especially around the area's social and spatial profile and what it meant for mobility development. The interviews focused on the providers' business models and the areas they found relevant to invest in. Narratives of the neighbourhoods were also present among the mobility providers, which results in a different interest in the areas. The operators were selected because they were active in Nordhavn but withdrew from Folehaven. The interviews were conducted virtually due to the Covid-19 lockdown in the spring of 2021.

All interviews and focus groups were transcribed and analysed through NVivo using 13 different codes. The codes were set up after several preliminary readings and discussions of transcribed interviews among researchers in the SIMS project around everyday mobility, differences in neighbourhoods and attached local experiences and narratives. In this paper, we draw on four of these codes (1) *physical, material, and infrastructural conditions*, (2) *socio-economic parameters*, (3) *perceptions of freedoms* and (4) *stories of your neighbourhood*. All the transcripts were anonymised, and the interviewees were given pseudonyms. Before turning to the analysis, a short description of the two neighbourhoods is provided.

3.1. The neighbourhoods of Folehaven and Nordhavn

Like many cities around the world, Copenhagen is constantly being developed. The capital consists of a historical city centre and a number

¹ By & Havn is an urban development company owned by the Municipality of Copenhagen and the Danish State. The company is one of the partners of the SIMS project.

of districts, which were built in different periods. Its built neighbourhoods are undergoing a process of regeneration and former industrial and green areas are being turned into expensive residential neighbourhoods. Although the city is by and large wealthy and well connected, the last 20 years' growth has not benefitted all parts of the city equally. Increasing housing prices are excluding low-income groups from a growing number of neighbourhoods in the city and, while it has not yet reached the scale of other major cities, uneven investment and gentrification are producing increasingly uneven geographies.

The two neighbourhoods used as empirical examples in this paper are Nordhavn and Folehaven. Nordhavn is a newly developed and combined residential and business area located on the harbour front, where some of the most expensive housing in Denmark is currently found (Realkreditrådet, 2021). While it contains both rental and student housing, most of the housing stock is privately owned. Nordhavn is situated just a few kilometres from the city centre. In contrast, Folehaven² is an old working-class area on the outskirts of Copenhagen, which contains both single family houses and social housing apartments, where the state has the right to assign citizens to 30 % of the housing units. Until recently, Folehaven was listed on the Danish police's SUB-list of 'special disadvantaged neighbourhoods' (Mouvielle, 2021). Nordhavn is portrayed as the new sustainable city district (By & Havn, n.d.). It is pedestrian and cycle-friendly with easy access to public transport and also easy access for cars, making it well-connected both locally and regionally, not least due to in the opening of a new Metro line to the area and a tunnel for cars, which connects Nordhavn to the motorway system surrounding Copenhagen. Folehaven is demarcated by three large access roads to inner Copenhagen, which generate heavy traffic. The area is also connected with bus lines, bike and pedestrian infrastructure, but the car infrastructure is dominant compared to Nordhavn and accessing public transport mostly involves having to cross one of the large roads. A comprehensive urban renewal plan including mobility related initiatives is currently being prepared by the local authorities (Copenhagen Municipality, 2018a). The neighbourhoods are very different and represent two different renewal strategies of the city. In the areas, it is evident that multiple facilities and transportation are favoured and concentrated in certain city spaces over others (Map 1).

4. Differences in physical and imagined urban mobility

In our study, the socio-spatial division between urban areas is illustrated by differences in residents' mobility experiences. These experiences of (im)mobility are related to the images of neighbourhoods and not just their physical attributes in terms of services and transportation. The negative reputation of an area is enhanced by narratives of disadvantaged groups, values, types of living and choice of transportation. The analysis explores alignments and mismatches between residents' experiences of (im)mobility and external images of the areas held by mobility operators. The analysis is divided into two interrelated levels:

1. Firstly, the *spatial level* concerns the sociospatial differences between the areas and how they affect the residents' experiences of mobility. It includes the residents' perception of the built environment in relation to its: (i) road infrastructure, (ii) services opportunities, and (iii) transportation opportunities.
2. Secondly, the *imagined level* concerns narratives of the neighbourhoods and their relationship to experiences of (im)mobility and mobility planning. It follows Rijpers and Smeets distinction between neighbourhood images and includes: (i) the (*internal*) image of the areas among the residents, (ii) the (*self-reflecting*) image that residents believe is present among people not living in the area, and (iii)

outsiders' (*external*) image of the area and its consequences when employed by mobility operators.

4.1. Spatial level: sociospatial differences and the experiences of (im)mobility

When interviewing residents about their mobility patterns, we discovered that the experienced capacity to move varies significantly between the neighbourhoods despite the fact that both areas are located in a relatively well-connected and socio-economically equal city. This is related to the physical infrastructural layout of the areas.

4.1.1. Experienced differences in road infrastructure

The physical infrastructure of Folehaven was seen as an obstacle to the interviewed residents' mobility. The three heavily trafficked roads that fence the neighbourhood were highlighted as being problematic in almost all the interviews and were identified as a dominant factor for the area, causing a feeling of isolation. As illustrated on the map of Folehaven, the roads, especially the intersection, were clearly marked as being critical by the residents (Map 2). The roads impaired both the quality of living and movement in the area. A feeling of stress and discomfort due to pollution and noise inside and outside the interviewees' homes was a recurrent theme in the interviews, especially in those held with the residents living closest to the roads in the social housing of Folehaven. Furthermore, the roads were highlighted as being problematic as they result in a feeling of insecurity among residents when they walk or bike in and to/from the neighbourhood. As one interviewee living in the social housing explains '*it can be hard to cross the road in one attempt if you don't walk quickly*' (Interview with Halfdan, Folehaven, 2020). In the following quote, a resident who lives in the single-family houses in Folehaven explains that the residents of Grøntorvet, a new neighbourhood bordering Folehaven, are worried about sending their children to school in Folehaven due to the large roads.

'They say like: 'Then we have to let our children cross [the road] Folehaven'. The thought of if there was a path system where you could bike, you would be comfortable as a parent sending your children off.

(Interview with Ella, Folehaven, 2020)

It follows that social integration is hindered by the roads as inclusive and sustainable mobility modes such as walking and biking are discouraged. Instead, the roads function as exclusion fences. These consequences are experienced most intensely by the elderly, people with disabilities and children, the interviewees explained, as they identified these groups as suffering the most from inadequate and perilous mobilities. One resident thus explained:

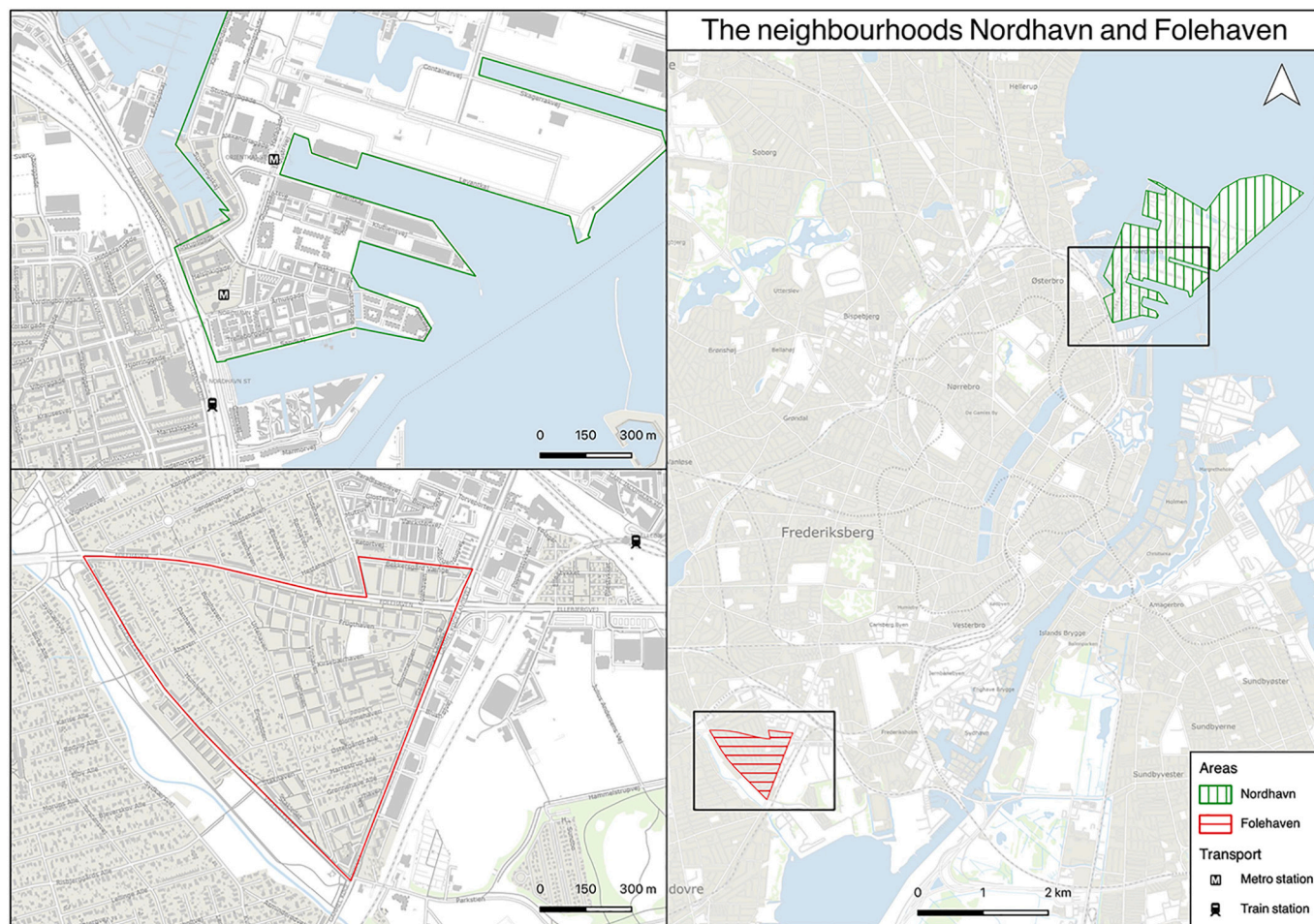
'I can't stop thinking that you as an elderly mobility-impaired person, you do not even reach the middle [of the road Folehaven]. So, [the road] cut off [the neighbourhood] like that [...] Some of us hope that we will get a cycling bridge which preferably connects all four corners [of the intersection]'

(Interview with Halfdan, Folehaven, 2020)

Although it is not uncommon that the elderly and people with disabilities suffer due to planning designs and feel that their mobility is restricted, the differences between the areas in terms of conditions for inclusive mobility modes were conspicuous when talking to the residents.

Experiencing discomfort in terms of excessive noise and insecurity in relation to road infrastructure was also brought up in the focus group with the Nordhavn residents. The participants considered that one particular road in Nordhavn limited non-car-based mobility in the area. One resident explained that she was a little worried about her child

² The neighbourhood of Folehaven encompasses both Folehaven and Elleparken but, in the remainder of this paper, it is just referred to as Folehaven.



Map 1. Map of the neighbourhoods Nordhavn and Folehaven. Map produced in QGIS by authors themselves using Dataforsyningen's basemap, Open data from Copenhagen Municipality (Opendata.dk), and marker from QGIS Resource Sharing.



Map 2. A map was set up in Folehaven where the residents could point out what they liked and did not liked in the area by using stickers.



Map 3. Traffic structure of inner Nordhavn proposed in the district plan (Edited legend to english: [Copenhagen Municipality, 2018b](#))

crossing that road, *'she is six years old, so she knows how to behave when crossing a road, but I think if there were no cars – you can move more freely without any traffic as a child'* (Focus group with residents, Nordhavn, 2022). However, when we asked how the annoyances connected to the road, insecurity and pollution compared with other places they had lived, the problem was moderated. The same residents said: *'No, where we live, there is not much traffic'* (Focus group with residents, Nordhavn, 2022). Another resident added *'No, we used to live on Østerbrogade [another part of CPH], so that cannot be compared. It was also the reason we moved to [an area, Nordhavn, with] some air and water'* (Focus group with residents, Nordhavn, 2022). Besides this one remark, no one in Nordhavn complained about immobility for any social groups related to the physical infrastructure of the area or in general.

The case of Folehaven is an example of how feelings of insecurity are amplified in a car-oriented environment (Hidayati et al., 2021). The physical infrastructure of the area seems to create a barrier effect and enhance some people's freedom of movement at the expense of others (Jensen, 2019). One of the interviewees, a car-owner from the single-family housing part of Folehaven, considered the roads to be beneficial because of the easy access they gave to other places by car, especially outside Copenhagen: *'No, I don't really feel it [disconnected living in Folehaven], but many out here feel that way'*. In Nordhavn, car infrastructure is also present, but the strategy for the area is that at least one-third of the infrastructure should be for biking, one-third should be for public transportation and not more than one-third should be for cars (By & Havn, n.d.). This includes car parks that limit car parking in public spaces and pedestrian and bicycle-friendly zones around the housing (Map 3). These differences in infrastructural planning did, obvious as it may seem, have a significant influence on the way in which the residents experienced their moveability. Compared to Folehaven, where the road infrastructure is considered to limit mobility, the mixed infrastructure and no-car zone means greater flexibility for the residents of Nordhavn.

4.1.2. Experienced differences in access to service opportunities

In Nordhavn, there is easy access to many services, workplaces, modes of public transport, shared mobilities, car-infrastructure, and there is a pedestrian friendly environment around the housing. In the interviews and focus group with the Nordhavn residents, several of them explained that they valued the fact that Nordhavn offers a variety of shopping and transportation opportunities. For example, access to a variety of food retail outlets was brought up during the focus group in Nordhavn:

'There is a Netto, Lidl and MENY, so there are different levels of quality and price groups, and you can get a bit of everything'.

(Focus group with residents, Nordhavn, 2022)

'I'm the type who buys food while I'm cooking, so that you can just run down the stairs [for groceries] I love everything about it [...] So having a store close by that you want to shop in is important'.

(Focus group with residents, Nordhavn, 2022)

The experience of freedom of movement; of a physical and social infrastructure that empowers mobility and allows a variety of needs to be met permeated the narratives from Nordhavn, but this was not found to the same degree among the residents in Folehaven. Food retailers are also present in Folehaven, but access to shopping facilities such as an adequate supermarket and a pharmacy was considered problematic by several residents. According to one of the interviewees:

'It would be a really good idea to implement that [minibus] again because you need to look at what kind of people live in Folehaven and what kind of needs they have. The pharmacy is closed; what are the elderly going to do? It would be nice if they could take a bus to the pharmacy in Valby...'

(Interview with Benedicte, Folehaven, 2020)

As the quote highlights, the issue concerns access to services in

Folehaven such as a pharmacy. She thinks that the restructuring of the public transportation is awful and feels that the planners *'do not care about people's needs'* (Interview with Benedicte, Folehaven, 2020). She further stresses that several shops in Folehaven have been closed and that no attention is being paid to this or the problem of accessing services elsewhere. Referring to the lack of awareness of the residents' needs, she strongly emphasises the relationship between the distribution of service facilities and access to modes of mobility, specifically public transportation.

4.1.3. Experienced differences in transportation opportunities

In Folehaven, several of the interviewed residents experience limited mobility opportunities, while in Nordhavn, the residents feel they are able to choose between multiple modes of mobility. All the Nordhavn interviewees expressed a feeling of being very flexible in their everyday lives. They feel that they can move with ease and can switch between mobilities in order to negotiate the challenges that arise in everyday life.

'It is just a huge benefit that there is a metro right here in Nordhavn, and then it is so easy to bike to the city. It is something I thought about, maybe it is mostly in my subconscious, but the biking route from here to work is really good'.

(Interview with Frederikke, Nordhavn, 2020)

Another interviewee preferred to bike or run to work even though he owned a car:

'[biking is] a nice distraction, if you don't want to run or your legs hurt [...] Biking is fun, but sometimes it is also nice just to take the train and get going'.

(Interview with Carsten, Nordhavn, 2020)

This interviewee explained that he switches effortlessly between running, biking or using public transportation to commute to work depending on the weather and his daily tasks. Many residents in Nordhavn can be said to experience a high capacity for mobility, which is not only related to the physical attributes of the area but also a social surplus to engage in different mobilities such as being in a job, being economically stable and physically fit. Again, this is in contrast to Folehaven, where many felt insufficient access to public transportation. Although bus lines and a train station are available in or close to the area, the access to public transportation was insufficient according to several interviewees. The high level of dependence on public transportation meant that the interviewees considered the recent years of restructuring of public transportation as problematic. The restructuring involved the relocation of a train station, the rerouting of several bus lines, and the discontinuance of a local minibus route. It is important, however, to acknowledge the potential asymmetry between citizens' experience of mobility and the actual mobility opportunities in different urban neighbourhoods (Kaufmann et al., 2004). The experienced mobility capacity among the interviewees in Folehaven is not critical but compared to Nordhavn it can be considered as low both due to the difference in physical attributes in the areas, the resident's social positions and the images of the areas.

4.1.4. Perceived awareness of differences between the areas

The placement and size of various infrastructures is clearly a factor in relation to uneven mobility and the narratives between the neighbourhoods. The difference in how residents view their opportunities for mobility is not only a consequence of urban development taking place in the individual neighbourhoods. The areas in the city mutually construct each other physically and imaginary (Soja, 2010). This relational aspect was discussed in the focus group in Folehaven. We asked the participants to discuss the mobility of Folehaven and Nordhavn, and the contributions were really intense when these two locations were being compared. In comparison, most of the interviewees in Nordhavn did not know of Folehaven and had never visited the area. When the topic of

Nordhavn was raised in Folehaven, the focus group participants expressed a feeling of unequal treatment between their own neighbourhood and more prosperous parts of the city as illustrated below.

E: You would think it wasn't necessarily because Nordhavn is extremely central in relation to out here in Valby. So, they don't need a car.

D: Right and they just got a station next to the housing buildings.

E: And a metro. So, they can just use that.

O: It's a little further to things from here [Folehaven]. We've got a little longer. They take our busses and everything from here.

Y: Yes, they do.

E: And we're the ones who are the last [place] to get the metro.

O: Yeah, but also the buses. They have reduced them [the busses].

(Focus group with residents, Folehaven, 2020)

As the extract indicates, the residents of Folehaven felt overlooked in terms of investment in local transport infrastructure. They felt that Nordhavn had attracted a lot of investment, such as the metro, whereas Folehaven experienced disinvestment and cuts in public transport. While discussing transportation, one participant added '*we are the most deprived one*' (Focus group, Folehaven, 2020). Such a statement, of course, depends on which areas are being compared. As illustrated in the next section, a territorial image of being deprived seem to impact experiences of connectivity and eventually mobility (dis)investment.

4.2. Imagined level: narratives of urban areas and their consequences for mobility

The contrasting cases of Nordhavn and Folehaven in terms of individual experience of mobility with some residents feeling enabled movement and others feeling fenced-in were reflected in different narratives of the neighbourhoods. This section begins by examining the *internal* and *self-reflecting* image of the area in relation to experiences of mobility, and it ends by discussing how this relates to the *external* image of the area employed by mobility operators.

4.2.1. Narratives of urban neighbourhoods – internal and self-reflecting image

Without having it as a pre-defined question in the interviews, the residents told stories about how they perceived their area and how they thought others perceived it. Thus, to varying extents, the residents reflected on the identity connected to where they lived. A similarity between the two neighbourhoods was that residents of both areas talked about a village atmosphere, although this was more pronounced in Nordhavn. A resident here explains:

'You come to a little oasis when going from Østerbro to Nordhavn, which feels like its own little part of the city, which I found quite nice'.

(Interview with Frederikke, Nordhavn, 2020)

In Nordhavn, this was partly because many of the current residents moved to the area at the same time. For this reason, they felt that they had taken part in defining it. Also, they quickly got to know each other, as another resident explained:

'Then you come out here and then you are suddenly in a village. Especially because we have been part of it from the beginning and I think that others feel the same way. People say hello to each other and pick up garbage. It's a little strange to live in the middle of the city and still it's like a village, but with the benefit of living in a metropolis'.

(Interview with Holger, Nordhavn, 2020)

Another reason why the residents moved to the area was to be a part of Nordhavn's advertised green profile, which is something that resonated in many of the interviews. The sustainable and mixed mobility

profile of Nordhavn seems to align with the residents' perception of the area along with a feeling of a village atmosphere. The positive feeling of living in a small local community was also expressed by some of the interviewees from Folehaven. Many residents have lived in Folehaven for a long time compared to Nordhavn. It is not clear whether the feeling of living in a village is associated with Folehaven's secluded location, the voluntary work in the area, the similar social background of many residents, or something else. However, Folehaven's negative social reputation seems to overshadow residents' positive narratives of the area. Experiences of social problems were also expressed during the interviews, but they did not significantly influence the safety or movement of the residents. The neighbourhood has a label of being deprived attached to it, which was mentioned during interviews with both residents and outsiders:

'It's so frustrating that Folehaven has a very mixed reputation. It's like a village in the city [...] When you live here, you have the feeling of community. It's just everyone outside [the neighbourhood] that seems to have problems with Folehaven'.

(Interview with Ella, Folehaven, 2020)

Such stigmatisation of Folehaven as deprived and disconnected is not surprising considering its previous inclusion on the Danish police's list of *special disadvantaged neighbourhoods* which may enhance a negative public image of the area (Wacquant, 2012). However, as the interviewee expressed, the residents feel that there is a mismatch between the predominant narrative about the area and what it is actually like to live there.

'It is marginalised for other [people, but] it is not a marginalised [place] for the people living here'.

(Interview with Emilie, Folehaven, 2020)

How a neighbourhood is perceived from the outside often deviates from how it is perceived from the inside. A young resident who grew up in the single-family housing part of Folehaven stated that she '*never felt insecure, which is a little strange because when I got older, I understood that [Folehaven] is what you would call a ghetto or something like that*' (Interview with Emilie, Folehaven, 2020). These perceptions of Folehaven, she said, represent an inappropriate, frustrating and sad narrative. Instead of hiding where they are from, she and her family embrace the feeling of belonging to a diverse and inclusive community. In line with some of the residents' wishes, Copenhagen municipality initiated a regeneration project (2018) to address the negative stigma and convert the neighbourhood into a place where people would like to live (Copenhagen Municipality, 2018a, 2019). Although there is a mismatch between the reputation of Folehaven and the internal image held by the residents, several residents also felt physically disconnected. A resident who was assigned accommodation in Folehaven by the municipality describes how he '*felt it was a deportation to come to this middle of nowhere*' and that its location was like '*the back door of Copenhagen*' (Interview with Gustav, Folehaven, 2020). As discussed in the previous section, this can partly be ascribed to the fact that Folehaven is demarcated by three large roads. Almost all interviewees identified the infrastructure that prioritises the car as having a negative effect on liveability in the area.

'A lot of people you encounter say [Folehaven is far away] and it is not that far away [...] But it is clear that it does feel disconnected from the rest of the city, also for people living here, and I blame the 46,000 cars on Folehaven (road) to a large extent'.

(Interview with Franz, Folehaven, 2020)

A resident living in the single-family housing part of Folehaven blames the cars and the supporting infrastructure for the prevailing perception of the neighbourhood as being disconnected. In literature, car-centric planning and policies have often been associated with segregation of urban neighbourhoods and with negative side effects for

the lived life (Gehl, 2010; Kesselring & Freudendal-Pedersen, 2021; Sheller & Urry, 2006), while Szell (2018) refers to a history paved with social injustice (Szell, 2018). As previously mentioned, many of the interviewees in Folehaven felt that the externalities connected to the car infrastructure represented a mobility disadvantage in terms of noise, pollution and limited movement.

The images of Folehaven and Nordhavn are both related to the socio-economic and material composition of the areas, which influences the experience of connectivity to the rest of the city. Comparing the neighbourhoods reveals how different places are materially and imaginatively intertwined.

4.2.2. Consequences of territorial narratives for mobility development – external image

So far, we have examined mobility injustice from the residents' perspective. In the following, we explore decision-making in relation to mobility investments and how they are influenced by narratives of neighbourhoods. This point is important for understanding neighbourhood narratives' role in producing mobility inequality.

Narratives shape identity, experiences and community within the neighbourhoods, but they also have a life outside the area. They live outside the neighbourhood when they comprise the framework of planning decisions made on the aggregate level (Freudendal-Pedersen, 2020; Freudendal-Pedersen et al., 2019). They produce and reproduce in planning and policies and thereby influence what mobility futures becomes possible where. This became clear in our case, where mobility operators were unequally dedicated to investing in the two areas Folehaven and Nordhavn, and tapped into very different narratives of the neighbourhoods when reasoning investment decisions. The interviews with mobility operators reveal that providers actively tried to avoid engaging with areas such as Folehaven. One provider stated:

I: It's no secret that I made quite an effort to persuade [the project owners] to find some other areas to look at other than Folehaven. Nordhavn is interesting, because there, people are in a life phase where they are more receptive to changing habits. But when you look at Folehaven, our experiences are just not very good in more socially challenged areas.

M: What experiences did you have there?

I: We have a car placed in Sydhavn and we can also see that, for example, the parts of Nørrebro where we do not have cars placed are the areas with social housing. It seems that when you don't own your own home, you might want to buy your own car.

(Interview with Car-Sharing-Operator, 2021)

This is an example of mobility providers having a clear idea about which neighbourhoods are suited for investment and which are not. According to this perception, Folehaven ticks the box of a "socially deprived area". Once put into this box, the experiences the mobility company has had from other areas also put in the box – in this case, Sydhavnen and parts of Nørrebro – are transferred to Folehaven. Their previous experiences were used as a reason not to invest, and thus the decision seems to have been largely influenced by the perception of the neighbourhoods as similar and the stigma attached to them when described as deprived areas and areas with much social housing. The mobility provider expressed disappointment that other neighbourhoods in Copenhagen, more affluent ones, were not chosen for the SIMS project, as they considered people living there to be "first movers" (Interview with Sharing-Car-Operator, 2021). The above quote is also an example of a decision being rationalised by a professional tapping into territorial narratives and coupling them to stories of mobility practices. In this case, a story of ownership of cars and housing is introduced by the phrase: "it seems that when you don't own your own home, you might want to buy your own car". The mobility operator formulates this as a generalised story, referring to "you" rather than specific people or experiences. In his reasoning, the story appears as a general, shared truth that the mobility provider does not see a need to elaborate. This story

rationalises a decision not to invest in Folehaven due to the perception that residents in social housing have a lower capacity to change habits, which reflects a resource-oriented territory-based perspective. It seems clear that the positive narrative of Folehaven expressed by residents through their feeling part of a village community in the city is not enough to change outsiders' perceptions and by extension its reputation.

In contrast, the mobility provider expects the already privileged neighbourhood, Nordhavn, to represent a *good business case*. In an interview with another mobility operator offering shared electric bikes, more affluent inner-city neighbourhoods are also highlighted as promising cases because *'it is something about values and life approach, while the other area [Folehaven], they have completely different challenges in their lives than the way of transport and whether it is sustainable and healthy; they are from another planet'*. (Interview with Sharing-Bike-Operator, 2021). In this narrative, the two neighbourhoods are not only five kilometres apart, they are worlds apart, or, as the provider states, even planets apart. Again, images of neighbourhoods and stories about what residents in different areas prioritise in their life come into play. This seems to play a decisive role for the mobility providers resulting in their decision not to invest in Folehaven, which in turn has an influence on which mobility solutions become available to whom. In Nordhavn, the providers linked the residents with a higher capacity to live a sustainable lifestyle. The reverse story was told about residents in deprived neighbourhoods: *'You don't care about living healthily or sustainably if you have other troubles in your life'* (Interview with Sharing-Bike-Operator, 2021).

Interestingly, and in contrast to these stories, the interviews in Folehaven revealed predominantly positive attitudes towards the new mobility solutions. However, the operators did not survey the attitudes among residents. Rather than investigating the potential, decisions about whether to invest were based on territorial images and prejudiced stories about peoples' mobility practices based on where they lived.

The external image of Nordhavn as a sustainable and mobility rich area seems to resonate with the residents' own perception of the area. Although residents did experience mobility disadvantages related to the physical environment, the negative social reputation of Folehaven seems to be in contrast to residents' experiences of living in the area. In contrast to the expectations of the mobility operators, residents of Folehaven did express interest in sustainable interventions and in general transport investments due to what they considered to be insufficient public transport and road infrastructure. Existing mobility inequalities between the areas are likely to be strengthened when providers rationalise decisions on the basis of narratives of neighbourhoods and residents' lifestyles. Furthermore, it can be misleading to lump together "disadvantaged" neighbourhoods as they are socially and spatially different, and marginalised groups are heterogeneous with different lifestyles and needs (Uitermark & Nicholls, 2017). Consequently, when it is utilised to rationalise decisions not to invest in mobility and other planning decisions, it may also result in insufficient traffic planning. The interviews with mobility operators explicitly illustrate the territorial narratives' influence on private investment decisions making. These examples are not generally representative of public or private mobility planning but do highlight the potential danger of reproducing socio-spatial mobility inequality by uncritically adopting preconstructed images of different places.

5. Concluding remarks

In this paper, we have studied the segregation of areas in Copenhagen from a mobility perspective. The investigation of two urban neighbourhoods revealed that the way residents perceive their capacity to move varies significantly between neighbourhoods even though Copenhagen is a relatively equal city in socioeconomic terms. This has been explored by focusing on residents' experiences of mobility related to the sociospatial disparity between the areas and how these contexts produce and are simultaneously produced by different territorial images.

The neighbourhood of Nordhavn is generally considered as a well-connected area with many facilities, and it supports more mobility and flexibility. In contrast, Folehaven is generally considered to be an isolated and deprived part of Copenhagen, which is partly due to the car infrastructure, which dominates the area and partly due to its socio-economic profile. The residents' perception of Folehaven as a secluded area seems to be primarily linked to the physical environment rather than its socioeconomic profile. Its internal image as a local community with a village atmosphere is in contrast to how it is perceived externally, but the positive internal image does not seem to have any influence on the external image of the area. The narrative of a socioeconomically deprived area seems to influence Folehaven's reputation to a much greater degree resulting in a lack of private investment. Hence, the disparity in terms of mobilities between the areas is defined by the intersection of their social, spatial and imagined context. This meant that residents of Nordhavn experienced high mobility capacities and felt that the area was a well-integrated part of the city compared to Folehaven. The physical and imagined sociospatial mobility differences of the areas seem to intensify each other and to be an aspect of segregation in Copenhagen.

The narratives connected to the neighbourhoods had an influence on the mobility operators' decisions about whether to invest in the case study areas and thus play a role in the sustainable mobility possibilities in the areas. Although these mobility operators are not representative of private or public transportation decision-making, they illustrate that pre-conceived notions about neighbourhoods are incorporated into planning and decision-making, which eventually re-produces spatial and mobility injustice. As such, this reveals some of the mechanisms involved in the production and reproduction of existing spatial and mobility inequalities in the city. Analysing the narratives about the neighbourhoods has provided a lens for understanding how these rationalisations emerge. Neighbourhood narratives about the good and sustainable urban life will probably result in urban strategies that benefit affluent neighbourhoods when urban mobility services and infrastructure are the priority. As illustrated, the territorial images were decisive in determining where mobility futures became possible. Besides, the difference in opportunities the mobility investment entails, uneven development may contribute to an increasingly polarised image of city areas, stigmatising some while idealising others.

To avoid reproducing mobility injustice in urban planning, it is crucial to pay attention to citizens' experienced mobility capacity and how it is linked to the dynamics and distribution of mobility in the city. Achieving more just mobility planning and urban development is not only about providing equal opportunities, the needs of the mobility deprived must also be included. Thus, the contextual differences between areas of the city need to be in focus. Also, understanding the power of narratives in planning is crucial (Fischer & Gottweis, 2012) as is recognising the way neighbourhoods are imagined influences decisions about mobility planning. This also offers the opportunity to confront existing territorial narratives with stories that open new perspectives and direct us towards more equitable and sustainable mobility futures in cities. The finding that the mobility providers do not have an equal incentive to engage in the two areas underlines the need for public investments, especially in disadvantaged neighbourhoods, to nurture inclusive and sustainable mobilities across city spaces. However, as explained, images of neighbourhoods likely also shape rationalisations at these planning levels, which in our case, seem to favour affluent neighbourhoods, thereby contributing to the (re)production of sociospatial mobility inequalities.

The empirical focus on sociospatial mobility injustice has its origins in a research project on sustainable mobility. Although sustainability has not been the focus here, the article demonstrates that sustainable development cannot be separated from its consequences for social life and, thus, it cannot be examined without being vigilant to social inequality (Beck, 2016).

In summary, it is crucial to recognise the differences in experienced

mobility capacities to understand what it means to live in different areas of cities. In essence, to understand the relationship between urban segregation and different mobility capacities that are shaped by the physical and imagined environment. Furthermore, it is important to recognise the power of predefined territorial narratives in planning to understand how mobility injustice is produced and reproduced. Highlighting differences in citizens' needs and counteracting prejudiced perceptions of urban neighbourhoods in planning provides an opportunity to create more just urban mobility.

CRedit authorship contribution statement

Nikolaj Grauslund Kristensen: Main conceptualization, Methodology, Investigation, Formal analysis, Writing-Original draft preparation.

Malene Rudolf Lindberg: Conceptualization, Methodology, Investigation, Formal analysis, Writing-Reviewing and Editing.

Malene Freudendal-Pedersen: Conceptualization, Methodology, Supervision, Writing- Reviewing and Editing.

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The authors declare that they have no competing interests or personal relationships that could have influenced the work of this paper.

Data availability

The data that has been used is confidential.

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