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# Restructuring urban planning to facilitate sustainable consumption

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Food, mobility, and housing are essential and fundamental to human life. At the same time, these consumption areas have the highest climate impact. To achieve a higher degree of climate-friendly consumption, radical changes in everyday practices of food, mobility, and housing are needed. In this paper, empirical data demonstrates that time is perceived as a limited resource in everyday life which drives (un)sustainable practices. Through discussions of the perception of time and related practices, it becomes visible that urban mobility planning connects specific food and housing practices through an understanding of historical and contemporary urban planning supporting time efficiency. This indicates that rethinking urban forms and infrastructure can provide frames that can restructure everyday practices to become more sustainable. To exemplify this, the 15-minute city concept is used as a speculative example of how to restructure everyday practices and facilitate a planning approach that is aligned with sustainable consumption.

## KEYWORDS

sustainable consumption, time, urban planning, 15-minute city, everyday practices

## Introduction

Currently, societies are striving to reduce CO<sub>2</sub> emissions to prevent severe climate change. This is partly due to resource-intensive consumption practices in high-income societies (Jouzi et al., 2021). A significant proportion of CO<sub>2</sub> emissions comes from consumer activities connected to food, mobility, and housing—fundamental pillars of human life (Fuchs et al., 2021). However, it has proven difficult so far to redirect consumption practices onto more climate-friendly paths. This is despite political agreements and governance<sup>1</sup> as well as research pointing to the importance of a strong focus on these consumption areas (Lorek and Fuchs, 2019). In this paper, we argue that to prevent severe climate change and enhance sustainable consumption, a focus on connected consumption practices of food, mobility, and housing is needed. Practices which take place in the urban mobile everyday life.

Within the field of sustainable consumption and everyday practices, time is seen as an important resource (Heisserer and Rau, 2017; Jouzi et al., 2021). Research indicates that sustainable consumption is often seen as time-consuming, which is a potential

<sup>1</sup> See Fuchs and Lorek (2005) and Lorek and Fuchs (2019) for discussions on sustainable consumption governance with notions of “hard” and “soft” sustainability governance.

reason for sustainable practices not being performed (Chai et al., 2015; Jouzi et al., 2021). People simply perceive limited time in their everyday lives (Shove et al., 2009; Arbuthnott and Scerbe, 2017; Smetschka et al., 2019; Jouzi et al., 2021). To encourage sustainable consumption practices, rhythms of everyday life and relationships between practices and temporalities need further investigation (Jouzi et al., 2021).

The perception of a lack of time can be traced back to how modern society is built to enhance efficient mobilities. Mobilities focus on large-scale flows of people, goods, capital, and information, as well as more local processes of daily transportation, communication, and the movement of artifacts (Urry, 2000). The primary focus of planning throughout modernity has been on speed and flows, aiming to facilitate the distribution of artifacts and the modern individual's freedom and flexibility (Freudendal-Pedersen and Kesselring, 2016). Planning for a mobile life and modernity meant planning for effectiveness. Cities were constructed to support specialized areas for working, living, and studying (Manzini, 2022). Urban planning has supported effectiveness and fast paces, which has resulted in spaces with a lack of sensitivity to time (Gwiazdzinski, 2014; Chair Entrepreneurship Territory Innovation, 2020). Thus, mobilities are considered fundamental in (re)structuring modern urban social life (Cresswell, 2006; Sheller and Urry, 2006; Canzler et al., 2008; Urry, 2011; Freudendal-Pedersen, 2022).

In this paper, we argue that speeding up and lack of sensitivity to time in planning promote unsustainable consumption practices. The paper empirically demonstrates how time is perceived as a limited resource in everyday practices. Mobilities often connect food and housing practices, hence, predominantly empirical data related to time perception of mobility is presented. Based on empirical data, it is highlighted how urban form and infrastructure relate to the perception of limited time. Therefore, we argue that time perceptions and urban form and infrastructure should be focal research points to facilitate sustainable consumption.

In this paper, we consider urban space to be a potential enabler of sustainable consumption:

*“Urban life is at the heart of the problem [climate crisis, mass extinction of biodiversity, environmental issues, etc.], and it can only be the source of the solution. Becoming aware of the existing dissociation between space and time is a key step in order to be able to question in depth our lifestyles, production and consumption, including ultimately our displacements, which are consequently large consumers of linear time” (Moreno, 2020, n.p.).*

We follow the argument that urban planning can challenge the pace of urban life (Moreno, 2019; Chair Entrepreneurship Territory Innovation, 2020; Manzini, 2022). To exemplify this, the urban form concept of the 15-minute city is applied. The

15-minute city focuses on ideas of function closeness and physical movement through walking and cycling (Moreno, 2020; Moreno et al., 2021; Allam et al., 2022; Manzini, 2022). The concept is operationalized in this paper as an inspiration that illustrates how urban planning can foster sustainable consumption practices based on “two essential components of urban life: time and space” (Moreno, 2019, n.p.).

The paper is structured as follows: First, the conceptual and theoretical foundation is introduced, structured around three sub-sections: theories of practices, planning for urban mobilities, and the evolution of time perceptions based on urban planning and effective mobilities. Next, the methodology is presented followed by the conceptual and theoretical foundation of empirical data on everyday practices. The empirical data is in the next part discussed with planning and we use the 15-minute city as a framing to illustrate the importance of new planning approaches. In the concluding remarks section, we point to the potential of urban planning to facilitate sustainable consumption.

## Conceptual and theoretical foundations

This section lays the ground for the empirical data presented in the following section. First, we briefly introduce how theories of practices enable us to bundle and connect food, mobility, and housing practices, as well as look at their context and materials. Mobilities and urban planning shape consumption practices and here we specifically focus on the connection between time perception and sustainable consumption practices.

### Theories of practice: Connected practices and their context

Theories of practice have gained interest among social researchers in conceptualizing and explaining the way living and consuming are socially and temporally organized (Reckwitz, 2002; Schatzki, 2002; Warde, 2005; Nicolini, 2009; Shove et al., 2009; Blue, 2019). Insights into how consumption practices are organized allow us to understand what drives and hinders certain practices (Warde, 2005). Exploring everyday life consumption highlights the resources (such as time, space, and objects) of importance for climate-friendly consumption, in the context where consumption “happens” (Heisserer and Rau, 2017). With a practice-theoretical approach, we are giving voice to the (mobile) everyday life, which is essential for the sustainable transition (Freudendal-Pedersen, 2022).

Traditionally, consumption of food, mobility, and housing have been researched in-depth separately to understand the practice “elements” ascribed to these specific practices (e.g.,

Gram-Hanssen, 2010; Halkier and Jensen, 2011; Shove et al., 2012; Spotswood et al., 2015; Heisserer and Rau, 2017). This paper explores connected food, mobility, and housing practices to highlight how the entangled everyday life impacts consumption practices. Theories of practices provide the opportunity to understand the connectedness between multiple socially organized, performed, and intersecting practices to, in turn, understand the drivers of social life (Schatzki, 2002; Shove et al., 2012; Castelo et al., 2021).

Moreover, within theories of practice, Schatzki (2005) argues that it is imperative to understand the context or site in which practices are performed, and Reckwitz (2002) points to how, “objects are necessary components of many practices—just as indispensable as bodily and mental activities. Carrying out a practice very often means using particular things in a certain way” (Reckwitz, 2002, p. 11). In this paper, these theoretical perspectives are utilized to argue that it is essential to understand the context (e.g., urban forms and cities) as well as the objects (e.g., urban infrastructure) for sustainable transitions, “The inclusion of material aspects into practice theory is argued to be vital for understanding consumption practices, more generally, and commuting, in particular, many of which rely on complex infrastructure” (Heisserer and Rau, 2017, p. 580). How the “complex infrastructure” has developed is unfolded in the coming section.

## Mobilities and urban planning forming consumption practices

To understand how mobilities impact consumption practices, it is necessary to understand the evolution of travel and transport: Travel and transport have progressed from walking and horse-drawn carriages as the main transport modes to the technological development of the bike, the railway system, and finally the automobile. The bike “paved the way for the car and for its subsequent domination of paths and pavements, roads and freeways” (Urry, 2007, p. 112), and today the automobile is the dominant transport mode and it defines contemporary urban spaces (Sheller and Urry, 2000; Urry, 2004, 2007; Brown et al., 2009; Freudendal-Pedersen and Kesselring, 2018; Moreno et al., 2021). Construction of wide and comfortable roads that favor travel by automobile is still an underlying priority in the majority of urban planning (Glaeser, 2012; Kärrholm and Kopljar, 2020). Contemporary urban objects such as junctions, roundabouts, and ramps are created to control automobiles. This infrastructure defines how other mobilities, such as pedestrians or bicycles, interact with the urban context as well as other mobilities. The design of urban space is about flow and functions (such as buildings, roads, or parks) and guides and fosters certain practices (Jensen, 2013; Gwiazdzinski, 2014). Moreno et al. (2021 p. 93) write that, “in cities, cars changed

the dynamics of urban planning, opening doors for linear and perpendicular city grids and the devastating consequences of urban sprawl.” Not only did the automobile take over the urban space and mirrored the “success” of the automobile, the “success” further led to urban sprawl and flourishing suburbs (Jacobs, 1992; Urry, 2007; Glaeser, 2012; Freudendal-Pedersen and Kesselring, 2018; Moreno et al., 2021).

Not only is the physical infrastructure of importance in understanding how mobilities impact consumption practices but also social dynamics and culture (Mögele and Rau, 2020; Freudendal-Pedersen, 2022). Hence mobilities and urban planning have formed and are forming contemporary consumption practices. Consumption practices are mobile, and the mobile everyday life fosters consumption practices, “Consumption is also increasingly mobilized today, in the sense that it is being grounded in mobility. This goes for shopping for groceries, clothes, electronics, furniture, etc., and also for cultural events, education, and so forth” (Freudendal-Pedersen and Kesselring, 2018, p. 9). This analysis of the evolution of travel, mobilities, and urban planning clearly illustrates that contemporary practices are deeply embedded in physical locked-in and path-dependent structures in society, which not only define the physical infrastructure development but also define the social lived everyday life. As Moreno et al. (2021) put it, “Today, our car-dependent urban planning legacy outlines deep-rooted inequalities, especially in the social and economic spheres, and has become the center for unsustainable practices” (Moreno et al., 2021, p. 94).

## The influence of mobility planning on time perceptions

In line with planning for modernity, the development of transport modes re-ordered the contours of time and space (Urry, 2007). The public transport system had clock time as a central element with the implementation of timetables, “the objective clock-time of the modernist railway timetable constitutes a public mobilization, squeezing trains and people we might say into a given and circulated timetable” (Urry, 2007, p. 97). The users of the railway system became dependent on clock time and transformed the modern mobile society into a system in which time should be planned tightly (Urry, 2007). As the automobile was introduced and became popular, it allowed people to be “free” from time constraints. Automobile drivers developed their own timetables in their social lives, which gave them the feeling that their dependency on someone else’s clock time had been reduced.

As the automobile allowed people to move away from the strict and “tyrannical” clock time (Bissell, 2010), the automobile came to hold the promise of flexibility and freedom (Freudendal-Pedersen, 2009). With the automobile as a technology for

everyone and the introduction of the Internet, instantaneous time became part of everyday life (Urry, 2000). The opportunity to react to new impulses in a nanosecond and the expectation that others would do the same created what Eriksen (2001) calls “the tyranny of the moment” and what Bauman (2000) frames as “liquid modernity”. Instantaneous time brought the expectation of efficiency, which is today inscribed in everyday life (Jouzi et al., 2021).

This modernistic and technocratic way of planning and the perception of time has produced the firmly rooted idea that “time is money” (e.g., Adam, 2003), which has become an integral part of the modern way of living and consuming. The turning point for capitalism is production, and production needs hard workers (Harvey, 1989) and, therefore, being mobile “*in part may have emerged from associated economic, business and more generally competitive neo-liberal rationales of productivity and a concern that time needs to be utilized more productively in order to be more profitable*” (Bissell, 2010, p. 280). Capitalism and neo-liberalism demand that hard-earned money is spent to maintain the system, and this circulation has put endless consumption at the center of modern everyday life (Fuchs et al., 2021); an endless consumption opportunity that in the rich and modern world leads to time pressure (Fuchs et al., 2021):

*“Money or energy (to be spent or used) and time (to be allocated) are not balanced, and this results in an extra time pressure, which people feel in their daily lives. Unlimited access to money or energy threatens our limited time. We do not have enough time to spend the money that comes from unlimited growth. We do not have enough time to use the unlimited renewable energies that we have access to”* (Jouzi et al., 2021, p. 12).

Not only is it impossible to store time like other resources (e.g., money), but, “*people lose some ‘quality time-related value’ when they exchange their time for money, unless their working hours are quality time*” (Jouzi et al., 2021, p. 10). The perception of time is not only that it is a limited objective resource, but there is a lack of “quality time.” However, “*extra time will not directly lead to more sustainable lifestyles unless it is properly managed. People do not want ‘more free time’ but ‘enough time for meaningful things’*” (Jouzi et al., 2021, p. 3). Changing everyday practices in a sustainable direction, perceptions of how much time is available come to the center:

*“We know that we should do more than what might, or would most likely, be the best for ourselves and the environment, but the complex and time-pressured everyday*

*life demands other forms of behavior than ‘the right one’ when there is so much knowledge that needs to be integrated when making decisions”* (Freudendal-Pedersen, 2020, p. 22).

For consumption practices to become sustainable, they need to be changed. The perception of time shows how time frames the mobile and fast-paced effective everyday life. Knowing this, it is worth emphasizing the notions of sufficiency and stillness for stimulating changes. While efficiency is about stacking activities in a way that provides the opportunity for more activities in everyday life (Eriksen, 2001), sufficiency is about reducing activities and critically relating to what is necessary; the sufficiency approach highlights changes in social values and the perception of quality of life (Fuchs and Lorek, 2005; Jouzi et al., 2021). Bissell and Fuller (2011) suggest that emphasis should be placed on the concept of “stillness” as a way of moving beyond the tyranny of efficiency and speed, “*Still here is posed as a solution to the problems of consumption, movement and activity. Still becomes enrolled as a powerful trope for environmental, economic, political and ethical sustainability*” (Bissell and Fuller, 2011, p. 6). Stillness is simply about allowing practices to slow down.

Slowing down time has received more attention in the last two decades, driven, in particular, by the fact that stress has become a common welfare disease and the COVID-19 pandemic, which brought the world to a standstill and changed everyday life for many people (Freudendal-Pedersen and Kesselring, 2021). Despite this, the idea of efficiency is an important element in everyday life. This is partly a result of the urban infrastructure, which has guided specific practices for a long time. We will discuss this with empirical findings from a research project on sustainable transition. Before moving into this discussion, we will introduce the methodology of the research project.

## Methodology

The empirical data presented below is collected as part of a research project focusing on everyday practices of food, mobility, and housing, and the transition toward a sustainable everyday life. The practice-theoretical approach was adopted to understand mundane everyday life (e.g., Freudendal-Pedersen, 2022), as well as to move beyond the behavioral approach to transitions (Jackson, 2006; Strengers and Maller, 2016; Schäfer et al., 2018). As already stated, connecting food, mobility, and housing is in focus to understand the complexity of everyday life, which aligns with the practice-theoretical approach.

To understand how time is perceived in connected food, mobility, and housing practices, interviews were conducted with young adults. The empirical data is derived from semi-structured interviews, which were held with ~30 young adults (aged 25–35). The interviewees are anonymous in this paper

<sup>2</sup> See Fuchs et al. (2021) for discussions of how the good life or “meaningful things” are related to sustainable consumption.

and, hence, details on gender, city, partner status, or similar, are not mentioned (the pronoun “they” is used). The interviews were conducted in autumn 2021 and were then transcribed and coded. The code that was activated for this paper is related to “time.” Within this code, perception of time is included, both mentioned by the young adults themselves (e.g., “I don’t have the time to do this”) or when time was implicitly embedded (e.g., “I like to take the fastest route” or “be efficient”). We did ask the young adults about how much time they spent on different practices, but the perception of time often emerged spontaneously (e.g., “I don’t have time in the mornings to do this”).

The interviewed young adults differed in terms of household constellation, city, age, educational background, gender, income, and other socio-demographic factors. However, what the young adults had in common was a desire or plan to move within the coming year. Some researchers (e.g., [Hunt, 2017](#)) argue that it is within life course transitions, such as moving or having children, that people are most likely to change practices<sup>3</sup>, which is also evident within mobility ([Rau and Manton, 2016](#); [Scheiner, 2017](#); [Scheiner and Rau, 2020](#)). Moving is one of the major transition phases and it is less likely to occur than changes in mobility and food practices. For this reason, it was decided that all the young adults should be in the process of moving or having a desire to move. People of this age have probably experienced major life events such as completing an education, moving in with a partner, or starting a family—events that may include a need or desire for a new housing situation. Besides this, present-day young adults are educated and raised in a time when sustainability is high on the societal and political agenda. The research topic was, therefore, not expected to be unfamiliar to them.

The young adults were living in the four largest cities in Denmark (Copenhagen, Aarhus, Aalborg, and Odense). With a population of 5.8 million inhabitants, Denmark, which is located in Northern Europe, is a relatively small country. It is often considered a frontrunner within sustainability. The capital of Denmark is Copenhagen, and 1.3 million people live in its greater region. The second largest city is Aarhus (with ~300,000 inhabitants), followed by Odense (with ~180,000 inhabitants), and Aalborg (with ~120,000 inhabitants). All these cities have educational institutions and they, therefore, attract many young people for studying. In these four cities, extensive public transport systems and a large selection of supermarkets are available, and the homes are, in general, relatively small. Despite that sustainability of cities has been discussed (e.g., [Day and Hall, 2016](#)), we find it relevant to work with cities and the urban scale due to the presence of many mobility opportunities, smaller housing units, and a variety of food supplies that could be considered sustainable (e.g., [Glaeser, 2012](#)). The relevance of

the urban context was thereby activated by interviewing young adults living in these cities.

## Empirically framing (un)sustainable consumption practices

As the conceptual and theoretical section illustrated, mobility has for a long time impacted urban planning, perception of time, and consumption in the mobile world. The empirical data we present in the following section illustrates that instantaneous or effective time is still invading and framing everyday life consumption practices. The empirical data reveals how time perceptions limit or support sustainable practices, as well as how urban infrastructure comes into play. As stated, the empirical data predominately includes quotes related to mobility practices, as they often connect food and housing practices.

### Perceived time based on effectiveness

When asked about barriers to sustainable consumption, the young adults frequently mentioned limited time in everyday life. In the following quote, a young adult expresses how they are, in general, very concerned about sustainability. However, when it comes to, especially, mobility, time wins, “*I wouldn’t say that [sustainability] always dictates my choices because sometimes time wins. Sometimes more importance is attached to time than to sustainability*” (interview October 11, 2021, translated by authors). In the following quote, the interviewee identifies the main barrier to sustainable practices:

*“It’s the time perspective. It would be obvious for me to change habits in relation to transport. But I think it takes more time, and it’s more expensive to take public transport. And here time wins, the time/money view. It would be easier for me if it was faster, with more direct connections. Well, there are actually very direct connections to where I’m going, but there are so many stops on the way. It would be an obvious place to do something because I’m actually like trying to do [sustainability] stuff in other areas”* (interview October 11, 2021, translated by authors).

Time as a limited resource is what hinders this young adult from increasing the sustainability of their mobility practice. The young adult is aware that their current transport practice is unsustainable, which aligns with [Freudendal-Pedersen’s \(2020\)](#) point about awareness of the “right” environmental practice, but time is the limiting barrier. The interviewee reflects on how the urban context could foster sustainable mobility (using public transport) but does not see the value of it. The interviewee then went on to say that time on the train could be used for something else, such as listening to a podcast or working. Either way, if time is spent on enjoyable activities (“quality time”) (listening to a

<sup>3</sup> For wider perspectives on changes of practices within life course transitions, see [Schäfer et al. \(2012\)](#).

podcast) or being more effective (working), this young adult may value spending time traveling on public transport more highly. The quote implies that to foster sustainable mobility, transport-time needs to be used in additional ways instead of “simply” time spent on transport. Stillness is not enough; time must be utilized effectively.

The following quote demonstrates the influence of social relationships on mobility practices, resulting in an unsustainable mobility practice:

*“The other day at work, we went to a small city in another part of Denmark for a workshop. We went by airplane and took a taxi from the airport. It was my boss who decided that. She has two kids—that’s why her time ... Yeah you know, her time is something else, you could say. Or it has another value than... or how can you frame it... You know, she has a partner, and ... I would feel fine by taking the train despite it being a long day. Like, I would have to leave at six or seven in the morning and then be back at like eight in the evening. It would be a long day, and I would spend more than half of the day transporting myself. The workshop would last like four hours. So that’s why we decided to take the airplane”* (interview October 15, 2021, translated by authors).

Subsequently, the young adult was asked to elaborate on the time perception mentioned about the boss. To that, the young adult replied:

*“Well, her hourly wage is higher. And then it’s the whole thing about that she must be home with her family at a decent time. Like seven in the evening. That’s important to her. For me, it doesn’t matter if I’m home early as no one depends on me, so it doesn’t matter. And now I’m thinking about it, I can absolutely see how it was not super sustainable, but yeah... that’s how it goes”* (interview October 15, 2021, translated by authors).

This shows how time is perceived and valued differently. For the boss, spending time on mobility is not considered as valuable as spending time on social relationships. Moreover, the young adult points to how the boss’s hourly wage is higher. Efficiency and “time is money” are embedded in understanding time perception and used as an explanation for unsustainable practices. It would have been sufficient for the young adult to take the more sustainable train but being efficient and/or having a desire to spend time with a loved one led to the unsustainable practice of flying.

One of the young adults talks about time constraints in terms of an opportunity to be efficient: *“I have this thing with efficient routes. If I’m going out, I like to bring the trash on the way, so I can do several things at the same time”* (interview October 3, 2021, translated by authors). Another young adult explains how sorting waste is dependent on their perception

of time constraints: *“Often I’m not in really good time and then I prioritize catching the bus instead of sorting the waste”* (interview October 4, 2021, translated by authors). Proximity is at the forefront here: If waste management systems are near the home and sorting the waste is, hence, not time consuming, it is prioritized. The connected practices within everyday life illustrate its complexity. Understanding the complexity reveals where the barriers to or drivers of sustainable practices occur in everyday life. For the first quote here, efficiency is the driver of the sustainable practice of waste management, while the second quote shows how efficiency is a barrier to performing waste management. Either way, acknowledging that efficiency is embedded in everyday life demonstrates how it drives decisions in everyday practices.

Another element of the connected consumption practices and how time efficiency is important is exemplified in the following quote. The quote is about the daily route to and from work:

*“I haven’t chosen these supermarkets because they are the best in the city. But they just happen to be there on the way, and I don’t want to spend extra time, so I sort of figured it is a good compromise that I go to these supermarkets and make the best of it”* (interview September 29, 2021, translated by authors).

Proximity is, once again, at the forefront: The supermarket near the daily route is chosen and food practices then become as sustainable as the stock in this supermarket allows. In this matter, space and the availability of different functions come together with perceived time constraints. The connectedness of food, mobility, and housing is very visible in this quote, and this is a recurrent issue with all the interviewed young adults.

## Perception of limited time based on locked-in mobility planning

One young adult uses different kinds of mobilities and the decision regarding which mode to choose is often dictated by the time available. If they have enough time in the morning, they walk or bike to the station. If time is limited, they take the car to work. The daily routine is tied to the “tyrannical” clock time, which can limit sustainable practices. The young adult estimates that it takes 15 min to get to work by car, and 50 min by public transport. However, it takes 15 min, *“only if I leave at the ‘right’ time”* (interview October 11, 2021, translated by authors), otherwise, it takes a longer time. This brings the matter of urban space into play: The planning of the urban area is focused on easy accessibility for the automobile instead of prioritizing other more sustainable mobility modes, as pointed out earlier. This focus has meant that it is very convenient

for this young adult to take the automobile, which supports the practice of automobile driving. Another interesting element in evaluating time is what is included in the time perception for this young adult. The 50-minute trip by public transport includes the trip to and from the station, while the 15-minute trip by automobile only includes the actual drive (and not getting to the automobile and parking it). Time is perceived differently depending on the transport mode, which here leads to a preference for the more unsustainable practice of driving the automobile.

Many temporal reflections are made daily concerning the young adults' practice of going to work. One young adult explains that they calculate whether they have enough time to bike or walk in the morning, and if not, they must calculate whether they can leave the house "at the right time" by automobile in order not to be late for work. The experience of time-use defines whether the transport mode is sustainable or not. The young adult further explains that, "*it's easier to just get in the car and go to work than to plan how to take public transport, also in relation to time*" (interview October 11, 2021, translated by authors). This notion of time is supported by the primary focus on decades of planning for the automobile. Even if the young adult mentions that the automobile is only fast if they leave the house at a certain time and frames this mobility within a clock time regime, the car is still considered to be time saving and flexible. There is more value for young adults to take the automobile than not.

In the above quotes, time is given as an explanation for everyday practices. Other young adults mention time indirectly and use terms such as "easy," "fastest," or "laziness" to explain why certain practices are (not) prioritized. When asked about when they use a bike, one of the young adults answered, "*when it's the fastest option*" (interview September 29, 2021, translated by authors). The mode of transport is not (solely) based on the urban infrastructure and its services [e.g., being able to go through an enjoyable park (getting "quality time") or parking without payment], the bike is chosen when it is the fastest mode of transport. The sustainable practice of biking is chosen because it is seen as time optimizing and hence effective. One reason this is the case is the way that cycling has been planned in the big cities in Denmark, where an increasing amount of space is being allocated solely to biking. The fast pace is still prioritized when planning for biking, which is in line with the understanding of planning for efficiency. The locked-in system and mentality of planning for efficiency are upheld, though in this case while still supporting and enhancing sustainable mobility modes, i.e., biking.

Another example that displays how organizing space matters for consumption practices is seen in the case of a couple who have two automobiles available. The workplace of one of the young adults is located downtown, where it is not possible to park in close proximity to work. In contrast, the

partner's workplace is located outside the city, where car parking is possible. The distance to their respective workplaces is approximately the same, but the urban form and infrastructure guides different mobility practices: One of the young adults takes public transport to work (downtown), while the other young adult takes the car (to the outskirts of town). Moreover, for this couple, their soon-to-be home is required by law to have two parking spots on the plot as automobiles must not be parked on the street. Even if residents do not own an automobile, there must still be space for two parking spots on their plot. These two examples illustrate how urban planning regulations set the agenda for everyday practices, as well as how parking spots define and foster, in these cases, sustainable and unsustainable practices. Planning for the automobile continues to be the default, and this example shows how the planning of mobilities impacts practices.

What the above sections have demonstrated is that perceived time is still used as an argument—as well as guidance—for many (un)sustainable practices. Acknowledging the importance of connecting food, mobility, and housing raises the question of how planning could play a role in ordering different space/time frames around these everyday practices. We argue that it is important that urban spaces foster proximity and connectedness within the lived (urban) space to promote sustainable practices. Having the elements necessary for everyday life, i.e., food, mobility, and housing in close proximity to each other would reduce the stress associated with instantaneous time and the expectation of having to be effective at all times. We argue that considering proximity and connectedness in the urban forms and infrastructure would support sufficient consumption practices and would benefit from the idea of stillness.

## Planning for time: Introducing the 15-minute city concept

Based on the theoretical and conceptual foundation that was discussed with the empirical data, this paper demonstrates how time perceptions, urban form and infrastructure, and consumption practices are related to everyday practices. To discuss the effect on consumption practices from urban planning, the following section introduces the 15-minute city concept. We use the 15-minute city concept due to its focus on time and investigate if this can restructure everyday life and influence perceptions of time to foster sustainable practices.

### The 15-minute city concept

Within the last decade, new planning concepts to encourage sustainable consumption have been envisioned and implemented around the world, one example being the 15-minute city (Da Silva et al., 2019).

*“The 15-minute city runs counter to modern-day urban planning, in which planning by infrastructure has in some cases been a factor for spatial segregation, due to widespread functional specialization. The exacerbated separation of space and time ended up pitting the two elements against one another, stripping us of something precious to urban life, and the essence of life itself: the value of usable time. The 15-minute city is aimed at bringing living time—usable living time—back to the center of urban life, in order to preserve quality of life as a whole. It proposes a different form of living, in which our relationship to time, and above all, time in mobility, is changed” (Chair Entrepreneurship Territory Innovation, 2020, p. 8).*

The fundamental principle upon which the concept is based is that basic urban amenities should be located in close proximity<sup>4</sup> to urban centers so that they are within a 15-minute radius by bike or walking. These are the everyday life activities of living, working, business, healthcare, education, and entertainment. This planning concept, which very explicitly considers time and space, was introduced in 2016 by the French urban researcher, Carlos Moreno. The 15 min is an overall framing as the individual urban context determines whether it takes 5, 20, or 30 min to reach the basic urban amenities. The concept underlines the importance of proximity-based planning to ensure that basic urban amenities are reachable by sustainable mobility modes (Moreno et al., 2021; Manzini, 2022).

The concept is based on chrono-urbanism, which conceptualizes cities in terms of time: *“Chrono-urbanism proposes to integrate the temporal dimension into urban planning, to combine places, movements and time, i.e., the built environment, flows and schedules” (Chair Entrepreneurship Territory Innovation, 2020, p. 8).* Moreno et al. (2021) argue that:

*“The proponent of this concept envisions that within a 15-min radius, residents will manage to experience a higher quality of life as they will be required to travel less to access basic facilities such as public spaces, with increased time and opportunities to interact with other members of the community and accomplish other social functions, which are increasingly important but which have been lacking as a core function of contemporary urban planning models” (Moreno et al., 2021, p. 106).*

The purpose of the 15-minute city is to limit the use of automobiles, which would reduce greenhouse gas emissions and improve the quality of urban spaces. Also, Moreno et al. (2021) emphasize that the concept is not only an approach to achieving

a sustainable city but also a resilient city, which could have been valuable in the recent COVID-19 pandemic.

The focus of the 15-minute city concept is on the timely, spatial, and functional use and organization of the neighborhoods based on accessibility, proximity, and connectedness (Pozoukidou and Chatziyiannaki, 2021). This way of understanding the organization of the city has its historical roots in previous planning traditions [e.g., the compact city (Jenks et al., 1996) or central place theory (Christaller, 1933)], but it integrates this with contemporary planning needs [e.g., resilience or cities that care (Manzini, 2022)]. Sheller and Urry (2000) argue that to overcome the locked-in mobility system, changes are needed to redesign “the city of automobility.” They point to approaches such as car-free zones in city centers, denser living patterns, integrated land-use patterns, and greater coordination of transport systems—all of which are elements in the 15-minute city concept.

The 15-minute city is centered around time and space. Time is an explicit defining feature and proximity is defined in terms of time. Furthermore, the use of space is anchored in time as the physical spaces and urban infrastructure have multiple uses and purposes, depending on time. The urban space and infrastructure in the 15-minute city are supposed to be shared (e.g., bikes or housing), hybrid with multiple uses (e.g., a cafe for dining and working), modular (e.g., tables for dining in the evening and workstations in the daytime), while usage can rotate (e.g., a park in the wintertime and a circus-area in the summertime). The borders between usages are blurry, which creates “third-level spaces”—a mix of different activities that take place within the same space. The spaces are used differently depending on time, which points to the importance of understanding time and space as features guiding practices.

The 15-minute city is in its early stages and no long-term evaluations of its consequences for sustainable consumption exist. Most of the critique against the idea is very much related to processes of gentrification and that it is not a new idea but more “old vine on new bottles” (Pozoukidou and Chatziyiannaki, 2021). These critiques are often based on a functionalistic urban planning tradition and often overlook the overarching time space discussions on which the idea is based on Moreno (2019, 2020), Pozoukidou and Chatziyiannaki (2021). We find the 15-minute city concept interesting to use as a reference point in the following discussion as it frames a shift from a productive, efficient, and modernistic view on urban space into a view on lived urban spaces forming human cities.

## Everyday practices in the 15-minute city

Considering the above-presented perception of limited time and how the urban form and infrastructure guide consumption practices, further development and integration of the 15-minute city concept is seen as a potential approach for achieving

<sup>4</sup> See Manzini (2022) for reflections on what “proximity” entails (e.g., geographical, social, and cognitive proximity).



sustainable cities which support sustainable consumption. The 15-minute city concept considers the need for proximity and connectedness—both of which are present in the empirical data as essential elements that foster sustainable practices.

Everyday life entails connected practices, in this research highlighted by food, mobility, and housing. The 15-minute city is based on the understanding that practices (living, working, business, healthcare, education, and entertainment) are connected. Proximity is extremely important in planning for sustainable consumption. The empirical research echoed how people want to be efficient: They prefer it when waste management services are in close proximity to their home, or when they can perform two activities at the same time such as doing grocery shopping on their daily commute. Consumption takes time, and time needs to be valuable and have meaning. If the urban form and infrastructure can support “valuable time” by providing sufficient resources within walking or biking distance, it will support the sustainable transition. Even though the 15-minute city does not explicitly point to stillness, we argue that stillness will be enhanced by proximity and connectedness. Overall, what the 15-minute city enables is an emphasis on time and space; an emphasis this research has demonstrated is essential for sustainable consumption to happen.

## The relationship between (un)sustainable consumption and urban planning—concluding remarks

This paper has theoretically and empirically illustrated how time is still perceived as a limited resource in everyday life, where decisions regarding activities connected to food, mobility, and housing are being constantly made. Everyday life is tied to an understanding of being effective, which sometimes hinders sustainable consumption practices. People’s perceptions of time can mean that unsustainable transport modes (e.g., the automobile or airplane) are favored as the transport mode as it makes room for other practices, or that waste management is not prioritized due to the perception of it being too time-consuming. However, the aim for efficiency does not necessarily lead to unsustainable practices; this paper asserts that the aim for efficiency can also support sustainable practices such as doing waste management on the go. Hence, efficiency must be considered to understand what drives certain practices.

Moreover, with a practice-theoretical approach, we have highlighted the importance of understanding *where* practices take place. This is to understand the full context of what makes practices happen. To this end, we point to the importance of the urban form and infrastructure in fostering consumption. A lack of time sensitivity in historical and contemporary urban planning and planning with the automobile at the center has created a framing around everyday life that challenges sustainable practices. By understanding the importance of time

in a spatial context, it becomes apparent that by organizing space in a new way, the urban form and infrastructure can be activated to facilitate sustainable consumption. This paper argues that we need urban planning approaches that favor connectedness and proximity. A city that “gives more valuable time” to its inhabitants. It is suggested that the concept of the 15-minute city can do this. By living, working, doing business, healthcare, education, and entertainment within a short distance, efficiency can be related to more sustainable practices (Moreno et al., 2021). It allows for stillness and sufficiency as solutions to unsustainable consumption practices.

This paper has highlighted that the concept of the 15-minute city can meet the need for a sustainable transition while not underestimating mobile everyday life. With the title of this paper, “*Restructuring urban planning to facilitate sustainable consumption*” we wish to point to the need for further discussions on urban form and infrastructure with sustainable consumption. This might not be framed as a 15-minute city, but what is important is that attention is paid to understanding the connection between temporality and consumption practices. A critique of the 15-minute city concept may be that it will create a gentrification process, which creates highly unequal access and living conditions. However, the current planning system based on automobility is also highly unequal through its distribution of noise and pollution. Research is needed on the impact of the 15-minute city as well as a general critical approach of the concept, not least concerning inequality and mobility justice (Sheller, 2018). Most importantly, it is not necessarily the 15-minute city but also other concepts that facilitate a mobile world in which proximity and connectedness foster sufficient sustainable consumption practices that need investigation. While the empirical part of this paper was confined to Denmark, we argue that understanding connected consumption practices and their associated resources (time, space, and objects) offers valuable options for further research on sustainable transitions. Cities that are aiming for sustainability could pay attention to the importance of temporality, proximity, and a connected understanding of several consumption areas.

## Data availability statement

The datasets presented in this article are not readily available, because data is sensitive personal data. Requests to access the datasets should be directed to CS, [carolines@plan.aau.dk](mailto:carolines@plan.aau.dk).

## Author contributions

CS conducted the interviews and wrote the first draft of the article based on the empirical data collected from the interview sessions. MF-P took part in structuring, guiding, and editing the article. CS and MF-P wrote the manuscript and accountable for

the content of the work. Both authors contributed to the article and approved the submitted version.

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