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Living without commuting: experiences of a less mobile life under COVID-19

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ABSTRACT

Understanding experiences of a less mobile life under COVID-19 offers insights into the taken-for-granted meanings of mobility in daily life, and into new opportunities for low-carbon mobility transitions associated with working from home. Drawing on 50 written interviews, this article explores meanings attributed to living without commuting during lockdown, examining what people missed and what they appreciated. The results indicate that the majority of respondents miss multiple aspects of daily mobility but have also discovered new experiences and routines that hold their daily life together and make it pleasant. Our findings thereby emphasize an often-neglected aspect in transport research: the complexity and ambivalence of people's relationship with daily mobility. Here, commuting is seen simultaneously as a tiresome burden, but also as a key source of interaction with the wider world which is important in sustaining people's sense of daily balance. Furthermore, 'compensatory mobilities' emerge as a widespread practice which helps people retain aspects they miss about commuting while working from home. This practice, we suggest, underscores the intrinsic enjoyment associated with being on the move, and is important for unraveling the potential impacts of working from home on people's mobility carbon footprint.

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1. Introduction

Despite ongoing discussions on the contribution of high carbon mobilities to climate change, reducing individual mobility remains a political 'taboo' (Gössling and Cohen 2014). At the same time, access to high carbon mobilities is unevenly distributed (Nikolaeva et al. 2019). For those who already enjoy the benefits of high carbon mobility, a less mobile life is usually imagined, if at all, as an undesirable hardship. This manifests itself in the mainstream societal discussion in most countries, which usually invests hope into some sort of techno-solutionist approach—from the

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electrification of mobility to making multimodal journeys more attractive *via* Mobility-as-a-Service platforms (Ferreira et al. 2020; Morgan 2018). Reducing mobility is hence not part of usual sustainable mobility policies; up to 2020, attempts to substantially curtail high carbon mobility largely remained the privy of voluntary individual efforts associated with an unusual, activist stance. In 2020, however, the worldwide implementation of governmental restrictions to daily mobility as a result of the COVID-19 global pandemic completely changed this for dozens of millions of people.

These measures limiting individual movement offer an opportunity to explore how a less or differently mobile world could look. From the perspective of the 'new mobilities' paradigm (Cresswell 2010; Sheller and Urry 2006), the 'natural experiment' created by the COVID-19 pandemic offers a unique opportunity to dissect the meaning of mobility at an individual level. In other words, when once completely normal and taken-for-granted daily practices of mobility are no longer possible for many people, the meanings of those practices become clearer. What do people miss, and what do they appreciate about no longer commuting to work? How does this experience of immobility (or greatly reduced mobility) change the meanings attributed to previous and new forms of mobility, and (how) does this impact other daily practices? If we aspire to achieve a transition to a less (or differently) mobile world, it is important to explore how this transition can maintain positive aspects of mobility, such as sociability, health and exercise, yet avoid the fragility that an intense dependence on mobility entails. Such a transition requires not just a change in the sheer amount of physical *movement*, but also a change of *practices* and *meanings* of mobility (Adey et al. 2021).

So far, most empirical research on the impact of COVID-19 on mobility has focused on the reduction of travel demand and changing trip patterns, experiences of working from home across different population groups, and the role of working from home in the aftermath of the pandemic (e.g. Beck et al., 2020; Borkowski et al. 2021; Fatmi 2020; van der Drift et al. 2022). A few studies have explored differences in commute appreciation during lockdowns between people using different modes of travel or spending different amounts of time on commuting prior to the pandemic (Aoustin and Levinson 2021; Rubin et al. 2020). Their findings indirectly point out that mobilities have a non-instrumental meaning and are missed for a variety of reasons. However, from the results of these surveys it is difficult to deduce what the reasons for 'longing to travel' are, and mobilities are still mostly attributed instrumental meanings: for instance, active modes are seen as physical exercise, and using public transportation as an opportunity to multitask (Aoustin and Levinson 2021). Except for a few reflexive commentaries (not based on empirical research) on the meaning of mobility as both exposed and challenged by the global pandemic (Cresswell 2021; Freudendal-Pedersen and Kesselring 2021), the meaning of mobilities as revealed through new individual experiences of a less mobile life has not been prominently addressed in scholarly debate.

This article explores how individuals experienced not being able to commute to work or study as a result of COVID-19 restrictions. More specifically, the article examines what the lack of (previously regular) daily mobility for commuting purposes meant for people *in their own words*. We intentionally focus on the experiences behind the numbers: quite literally so, as the study is a follow-up of a survey with 1009 respondents globally (Rubin et al. 2020). The study employed the written narrative interview method, and a two-stage coding process, not driven by a predetermined theoretical framework, which allowed us to center on our participants' individual perceptions. The interviews provide a unique insight into lived experiences of immobility around the world, as a qualitative counterpart to quantitative research on mobility during the global pandemic.

In the section that follows, we set the scene through a literature review on the affective and social meanings of mobility—and more specifically commuting—in daily life. Next, we outline the research design and methods of data collection and analysis. We then proceed to present the results, structured according to the main categories developed during the analysis. In the closing section, we summarize the main findings, review their implications for understanding the meaning of commuting and low carbon mobility transitions, and suggest directions for future research. Among the main findings of the article, we draw attention to the importance of

'compensatory mobilities'—practices that help people make up for the missed aspects of commute—for understanding the intrinsic enjoyment associated with being on the move and for unraveling the potential impacts of working from home on people's mobility carbon footprint.

2. Literature review

While transport research has traditionally tended to consider daily travel and modal choice as being motivated by 'objective' or instrumental considerations (e.g. time, distance and cost), a substantial body of literature exists which draws attention to the importance of affective and symbolic elements in shaping people's travel practices (Adey 2009; Cass and Faulconbridge 2017; Cresswell, 2010; Sheller 2004; Urry 2007). More recently, research has underscored the importance of those elements for understanding the pathways to low-carbon mobility transitions and obstacles to change (Adey et al. 2021; Meinherz and Fritz 2021). In this article, we build on these insights by examining people's experience of immobility (or reduced mobility) primarily through the affective dimension, thereby addressing the limited attention it has received within the context of the impact of COVID-19 (and telework more broadly). In addition, and drawing upon the strand of literature which highlights the critical importance of daily mobility in enabling and fostering social interaction within our immediate community (Te Brömmelstroet et al. 2017), we also examine people's experiences of (im)mobility through this perspective. Below, we briefly review these two sets of literature, which provide the theoretical background for our article.

2.1. Affective meanings of commuting

The bulk of existing literature on the affective meanings of commuting has focused on aspects such as mood, stress, and satisfaction, and how these vary according to factors such as travel mode and distance (Lorenz 2018; Chatterjee et al. 2020). Despite some variation between individual studies, the main findings which emerge from research in this area appear to be very consistent. Indeed, the majority of studies have found that people who travel using active modes tend to be 'happier' commuters than those who take the car or use public transport, which are associated with greater levels of stress and lower levels of satisfaction (e.g. Gatersleben and David Uzzell, 2007; Lancée, Veenhoven, and Burger 2017; Ye and Titheridge 2017). Likewise, multiple studies have found that people with longer commute times tend to report lower job and leisure time satisfaction, and increased strain and poorer mental health (Clark et al. 2020; Lorenz 2018). Indeed, recent research suggests that greater commuter satisfaction among active travelers may be mainly explained by shorter trip duration rather than mode choice (de Vos, Le, and Kroesen 2022). However, other research suggests that, for active modes, longer commuting times may even result in an improvement in well-being due to the 'intrinsic enjoyment … gained from the exercise or relaxation associated with active travel' (Martin, Goryakin, and Suhrcke 2014, 301; Lancée, Veenhoven, and Burger 2017; Wild and Woodward 2019).

While commuting is often experienced as a disutility, it is important to not only view it as a derived demand. Commuting also entails positive utilities, including aspects, such as providing a transition between home and work, opportunities for social interaction or enjoying the surroundings—resulting in an average ideal commuting time of sixteen rather than zero minutes (Redmond and Mokhtarian 2001). Travel time is sometimes even perceived as a 'gift' due to its function as 'transition time' or 'time out' (Jain and Lyons 2008). Humagain and Singleton (2020) found that many people would rather commute than—were it possible—teleport to work, particularly if their commute occurs on foot or by bike. While the notion of a universal time budget is contested, these and other findings suggest that some sort of a basic need for daily travel exists. This need may in fact be related to evolutionary or bio-psychological needs (Ahmed and Stopher 2014).

The COVID-19 pandemic provided an unexpected 'natural experiment' which, for many, entailed the suppression of usual commuting journeys. This study takes a closer qualitative look at the results of this 'experiment' and thereby contributes to the literature on affective meanings of commuting by exploring people's emotional reactions to the exceptional situation of finding themselves suddenly *not* commuting to work.

2.2. The social meanings of commuting

Parallel to the literature focusing on commuting and well-being, a more specific research direction has emerged in recent years focusing on the role played by commuting—and travel more broadly—in fostering social interaction and a sense of connectedness (Te Brömmelstroet et al. 2017). Different levels and types of social interaction afforded by different modes of transport are likely to have important implications for both individual and communal levels of social engagement, interaction, and sense of belonging (Te Brömmelstroet 2017; Nixon 2014). Car drivers, for instance, may reach large geographical areas but are likely to experience limited interaction with others as a result of being isolated in an individual 'cocoon', while pedestrians, cyclists or public transport users are more likely to interact with strangers. Walking, in particular, has been discussed as 'an inherently social activity' (Bean, Kearns, and Collins 2008, 2832). While some have warned against romanticizing walking and overstating its effects across diverse groups (Middleton 2018), various studies suggest that walking is conducive to spontaneous interactions with passers-by and neighbors (Lund 2003) and that in walkable, mixed-use neighborhoods, people are more likely to develop social ties and be engaged in the local community (Leyden 2003). Dating back to Appleyard and Lintell's, (1972) study of various streets in San Francisco, substantial evidence indicates that motorized traffic tends to decrease neighborhoods' social interaction and cohesion, while low traffic levels are likely to be associated with greater levels of social interaction at a neighborhood level (Mindell and Karlsen 2012).

Drawing upon the literature introduced above, the possibility for changes in meanings of commute related to sociality as a result of reduced (or transformed) mobility is of particular interest for this article. It is likely that people experience changes in their daily social experiences under the conditions of lockdown; however, whether or not the lack of commute is seen as a distinct factor in those changes may provide new insights for the debate on the social meaning of daily mobilities.

3. Research design and methodology

3.1. Interviewee sample

This research is a follow-up of a non-representative survey with 1009 respondents globally that aimed to explore people's experiences with working from home and not commuting in April 2020 (Rubin et al. 2020). The target audience of this survey consisted of people who had not (or had hardly) worked from home before the global pandemic started and began working from home all or most of the time since the introduction of restrictions related to COVID-19.

In June 2020, written interview requests were sent to 300 people from the pool of survey respondents who had expressed interest in participating in a potential follow-up study. As a result, 50 people (22 women and 28 men) from 12 countries completed the written interview (see Table 1). The interview request was written in English, and participants were encouraged to respond in any of the 11 languages spoken by the members of the research team. At the moment of participation, all respondents worked exclusively from home or, in some cases, most of the time (after a period of having worked only from home).

We used a combination of purposive and convenience sampling techniques, which resulted in a *relatively* diverse sample in terms of places of residence, mostly in Global North countries, yet relatively homogenous in terms of types of occupation: for the most part respondents were white-collar

Table 1. List of interviewees.

Gender	Language	Age	Country	Occupation
F	English	64	UK	Advocate
F	Hebrew	38	USA	Scientist
F	English	29	Belgium	Doctoral researcher
F	Dutch	55	Belgium	Project officer
M	English	41	Netherlands	Civil servant
M	Dutch	26	Netherlands	Road engineer
F	English	51	Austria	Musician/teacher
F	English	52	Australia	Local government
M	English	32	UK	PhD student
M	Dutch	64	Netherlands	Consultant
M	Dutch	47	Netherlands	Public servant
M	English	53	Australia	Climate scientist/academic
M	Dutch	25	Netherlands	Software Engineer
F	English	52	Spain	Cellist/cello teacher
M	English	32	UK	Active travel officer
F	English	28	Australia	Urban planner
F	English	55	Germany	Employee
M	English	40	Netherlands	Lecturer
M	English	56	UK	University professor
M	English	43	Germany	Marketing consultant
M	English	26	Netherlands	Mobility consultant
F	English	30	Netherlands	Researcher at a government institute
F	English	32	Poland	Economist/lecturer
M	English	27	USA	IT engineer
F	Dutch	51	Netherlands	Consultant
M	English	43	Netherlands	Facilitator
F	Dutch	40	Netherlands	Office worker
M	English	35	Germany	Research associate
M	English	33	USA	Security Operations Center Supervisor
F	English	30	Germany	Events and communication
M	German	31	Austria	High school teacher
M	Dutch	46	Netherlands	Government/public servant
M	English	51	Netherlands	Personal development coach
M	English	26	Netherlands	Consultant
F	English	55	USA	Senior office administrator
F	French	45	France	Civil servant
M	English	47	UK	Charity worker
F	Dutch	38	Netherlands	General remedial educationalist
F	Hebrew	55	Israel	Teacher
F	English	31	Malaysia	Lecturer
F	Dutch	48	Netherlands	Jurist
M	English	38	Italy	Researcher
M	English	34	Spain	Project manager
F	English	56	UK	Public health practitioner
M	Dutch	57	Germany	Social engineer
M	English	53	Netherlands	HR director
M	English	23	USA	Student
F	English	58	Israel	Scientist
M	English	47	Netherlands	Senior lecturer at uni
M	English	30	Italy	Research fellow

Source: Authors' own research.

workers who could perform their work tasks almost fully from home. We wish to emphasize two reasons for us to be satisfied with this sample for the purposes of our research. First, the aim of this study was to elicit different individual stories about the meaning of mobility in daily life, rather than to provide definitive answers on the impact of COVID-19 on people's relationship with mobility. For this purpose, it sufficed that the differences between interviewees' life circumstances and experiences of restricted mobility were significant, instead of them being representative of the general population. Second, it appears that white-collar workers are the primary target group of current discussions on telework and its potential implications on mobility and mobility transitions (Beck and

Table 2. Main coding categories.

	Positive impact of the change	Negative impact of the change
Reflection on previous experience	Immobility as relief (18)	Immobility as loss (41)
Discovery of new experiences	Immobility as boon (36)	Immobility as burden (17)

Source: Authors' own work.

Hensher 2021), since it is this group who, theoretically, could most easily make the switch to teleworking (and had to make it in 2020).

3.2. Data collection: written narrative interviews

The written interview format—instead of traditional conversational format—was chosen for a number of reasons. The first is that we decided to adopt a *narrative interview* approach: instead of asking people a series of questions, we wanted to encourage them to tell us a *story* about their experiences, thoughts and feelings with as little as possible guidance on our side (Ayres 2012). In such narrative approaches, the narrator is given the conditions to develop their narrative structure depending on their own experience and is encouraged to take responsibility for the meaning and interpretation of their story (Chase 1995; Polanyi 1985). Our goal was to explore people's subjective experiences in an unprecedented situation and to chart temporary, yet dramatic change in daily mobilities. The uniqueness of this moment, in our opinion, demanded an open-ended, exploratory approach; *written* narrative interviews aiming to elicit a story, shared in a free form, were a good fit for this approach.

The second reason for choosing written interviews *via* email (i.e. 'email interviewing'), instead of interviews in person (or, due to COVID-19 restrictions, *via* programs such as Skype or Zoom) was also driven by practical and ethical considerations. We needed to take into consideration potentially challenging personal situations of our interviewees (such as work and household demands, lack of privacy at home, 'Zoom fatigue', etc.). A written interview that could be filled in within two weeks offered more flexibility to the respondents, and created an opportunity for the research team to collect stories across large distances. Written interviews or 'email interviews', though relatively uncommon among qualitative researchers, have been considered as having not only clear advantages in terms of efficiency (saving time and travel costs, reaching wider populations) but also ethical advantages. Participants may have a greater sense of control when they have time to consider questions, edit their responses and send them back when they are comfortable to do so (Fritz and Vandermause 2018; Hawkins 2018). There are potential risks and disadvantages associated with the method[1], such as the necessity to rely on a written narrative without any non-verbal cues, possible interpretation limitations as well as potential exclusion of people for whom such a method may not be a good fit. Yet, since on average white-collar commuters have high computer literacy, and the interviews were a follow-up to an already computer-based survey research, the advantages of this method outweighed the disadvantages.

The narrative interview consisted of a single question: 'How has COVID-19 changed your daily mobility, and how do you feel about these changes?' It was followed, after a large blank space, by an elaboration and some optional questions that could be used as writing prompts (see Annex I). A consent form, in which the handling of personal data and the rights of the participants were explained, was sent alongside the interview request for signing.

3.3. Data analysis

The gathered data was analyzed using a two-stage qualitative coding technique: during the first stage, open coding was applied, which led to four main categories of codes which could be paired into two opposite sets, resulting in a quadrant model as indicated in Table 2. The

Table 3. Overview of the main themes, compiled by the authors.

Immobility as a relief	Immobility as loss	Immobility as burden	Immobility as boon
Not having to spend time and energy on commuting	Loss of previous work-life balance and separation between different spheres of life	Monotony, boredom and loneliness	A more leisurely sense of time
Relief from the stress of commuting	Loss of time for oneself Missing physical movement Missing the commute itself associated with freedom, spontaneity and encounter Missing social contact as a result of not 'going to work'	Poor concentration	Deeper engagement with the local community

numbers in brackets indicate the number of people who shared experiences that we coded under a particular category. We use the term 'immobility' as a complex label that does not necessarily refer to literal lack of mobility, but captures the absence of regular, usual, routine mobility for commuting.

During the second stage, the research team members went through the data, coding each story along these four categories as well as inductively assigning codes to capture particular themes within each category. This process consolidated the four top categories and resulted in identifying 11 main themes (Table 3). Furthermore, this resulted in the identification of a new category that is related to the eleven themes yet stands apart: 'compensatory mobilities' (discussed in Section 4.6). The lead researcher coordinated the coding and checked it for consistency.

4. Results

In this section, we present our results, beginning with each of the four main categories in Subsections 4.1–4.4. Table 3 presents an overview of the main themes within each category. Themes belonging to the categories *Immobility as Loss* and *Immobility as Boon* came up in data more often than others, so the respective sections are also longer. In Section 4.5, we proceed to discuss interviewees' accounts of their feelings related to not having to commute and consider what these reveal about the meanings of commuting in their daily lives. Finally, in Section 4.6, we discuss the ambivalence and complexity felt by many interviewees in relation to being less mobile: typically, most interviewees experienced immobility *both* as a positive and negative experience.

4.1. Immobility as relief

An important recurrent element in the stories was a certain sense of *relief* that the reduction in mobility brought with it. Eighteen interviewees mentioned factors they related somehow to commuting and that they were happy to no longer have in their lives. Two key themes in this category were (1) not having to spend time and energy on commuting and (2) relief from the stress of commuting.

In terms of time and energy spent on commuting, many people saw the new situation under the restrictions as time and energy won back, to use for things they enjoyed more. For example,

> My daily life feels less rushed in terms of the need to be out of the house on time to commute to work – never quite knowing what the traffic would be like and hold ups was a stressor.[2] (F, 56, UK[3])

> From a world where I spent on average 15 hours a week in my car, commuting to [and] from work, I found myself with a lot of extra time and energy. Although driving can be a relaxing and energizing activity for some, I found it dreadful. (M, 53, Netherlands)

As these examples also highlight, interviewees often explicitly noted that they were glad to be rid of their commuting experience, especially because they associated it with stress, the second key theme in this category. The theme of relief from stress manifested in other ways too, however; for example, in relation to the stress experienced specifically from commuting by a particular transport mode. Whenever a specific mode was mentioned explicitly in relation to relief to be rid of the commute, this was either the car or public transport. In relation to the car, the previous quote exemplifies this:

> There is nothing about my car commute to work that I miss. I hate driving and try to do it as little as possible, so having back the 50-60 minutes that my round-trip commute takes up is great. (M, 33, USA)

Examples of relief felt due to no longer having to commute by train are given by two other respondents:

> I didn't miss the anxiety of getting the train at the right time, in order to be able to arrive to work or home in time for all the already planned things. I didn't miss the frequent and regular delays of the trains. I didn't miss the crowd on the train (I often travel standing and squished among tens of other people within two square meters). I don't miss the loss of time (2,5 hours per day) to commute. (F, 30, Italy)

> The train journey that I mention is not unpleasant in that it is almost entirely along the beautiful east coast but the trains are crowded and it takes a lot of time which I have been able to make better use of usually doing some extra exercise. (F, 64, UK)

Relief was thus an important feeling people were left with in relation to how the pandemic affected their mobility, or lack thereof. It highlights very particular negative associations with commuting among the surveyed group, related mostly to the loss of time and energy, and the increase of stress.

4.2. Immobility as loss

For 41 out of 50 interviewees, the transition to working from home meant a loss of what was once appreciated about commuting itself, as well as about the destination. Within this category, we identified five main themes: (1) loss of previous work-life balance and separation between different spheres of life; (2) loss of time for oneself (3) missing physical movement; (4) missing the commute itself for the sense of freedom, spontaneity, exploration and encounter (5) loss of social contact as a result of not 'going to work' and other restrictions.

Before the pandemic, the delineation between the work sphere and the private sphere was formed in a multitude of ways. First, simply as the physical separation of office space from home, and the different activities conducted in each of these spaces. In the eyes of 13 interviewees, this separation has disappeared, as exemplified by the following quote:

> My table in the living room was at the same time my desk and dining table, and my living room was also my office space, eating space and leisure space. I found that very difficult, everything constantly flowed into the other without a clear separation in space and time. (F, 55, Belgium)

Second, work and home were separated temporally as two different time frames during the workday, with commuting demarcating the transition between the two. Without commuting, this separation had vanished:

> But I do miss my commute. I also miss the activity which created such a good break between work and home, and find it harder to differentiate now, spending many more hours working because there is no clear end point. (F, 52, Australia)

> Travelling to and back to work helps to build focus and also to gradually relax afterwards. (M, 41, Netherlands)

Commuting as a transition activity was perceived as important emotionally. Interviewees repeatedly reflected on the general feeling that travelling gave them: simply the act of arriving and leaving served as an important 'ritual' for them to mark the beginning and the end of the workday.

Beyond the loss of the ability to emotionally prepare for upcoming tasks, for several interviewees commuting served as a period of time which could be claimed for oneself, unlike activities in the work and family sphere that usually involved others. Depending on the mode used, travel time offered for some interviewees a unique opportunity to engage in solo activities in an otherwise busy schedule. Especially transit commuters noted how commuting also meant pursuing leisurely activities or doing nothing in particular:

> Having a moment in the day which is only yours and not of the work or the family/friends and in which you can relax and think by yourself, while reading a book, or listening to music, or sleeping, or just thinking. (F, 30, Italy)

The third prominent theme in this category is the experience of loss of physical movement and exercise, both in terms of their role for one's health and well-being as well as the sheer pleasure associated with movement. This theme was especially pronounced in the stories of those who used to commute by bicycle. Two interviewees referred in surprisingly similar terms to the positive feelings cycling provided them:

> I missed the fact that even if I had a bad morning and I was sleepy and moody, after my bike ride to work I always felt great. This was always better than a cup of coffee. (F, 32, Poland)

> The morning journey is a necessary 'buffer' to begin the day. It allows me to arrive at work wide awake and intellectually functioning. In the morning, I sleep on the train but the ensuing bike ride wakes me up and sharpens my senses. (F, 45, France)

Being able to travel offered freedom to combine regular activities with irregular activities and to make haphazard decisions on where and when to go, a sense of spontaneity and encounter (with people or environment)—the fourth theme that we have identified in this category. One interviewee talks about the freedom of movement that 'does not feel like freedom anymore' (F, 38, the Netherlands). Seeing people and places is an important part of this:

> Travelling itself – I miss that, but then mostly being on the move and seeing things spontaneously and encountering people … Everything has become more efficient, and maybe that sounds like music to economists' ears, but for me there is something essential that I miss. (F, 51, Netherlands)

> I really like my ride because it makes me feel connected to the neighbourhoods I ride through and to people along the way. I often run into friends along the way and can catch up, so there is also a social element. (F, 52, Australia)

Until now, all four discussed themes in this section focused on the experience of mobility itself. However, another prominent theme in this category is related to destinations that people could not go to: missing social contact as a result of not 'going' to work. For many interviewees, colleagues form an important part of their social network. Interestingly, for some, interacting with colleagues for social purposes was what made work a spatially constrained activity that preferably is done at the designated workplace, unlike the actual work tasks, for which the home was a suitable alternative:

> The only part it's made me realize is how little of my work is really necessary to be in the office for. I could do 90% of work from home; however, the social aspect of seeing colleagues is VERY important for mental health and productivity. (M, 26, Netherlands, emphasis in the original)

Certainly, the negative impact the constrained movement had on interviewees was especially significant for their social contacts outside the work sphere. While these 'missed' mobilities are not central for the aim of our article, one may plausibly suggest that their absence also may have had an impact on a sense of loneliness and boredom that the next section will discuss in more detail.

4.3. Immobility as burden

Seventeen interviewees wrote about negative experiences as a result of not going to work or study. These themes revolve around both unpleasant experiences with the actual process of working (or studying) from home during the global pandemic, which is not directly connected to a lack of commute, as well as around feelings directly caused by a greatly reduced mobility.

Two key themes recurrently appeared: (1) monotony, boredom and loneliness and (2) poor concentration.

The experience of monotony, boredom and loneliness was for many related to fatigue from exclusively digital communication and lack of movement. One interviewee summarizes these feelings as follows:

> During the first two weeks of lockdown I found [it] really difficult to force myself to follow a routine. I couldn't focus and I couldn't follow any schedule. […] Partially because being at home all the time, waking up alone, living alone, eating alone, working in the same room every day and never changing the environment was not giving me the motivation to have regular days, regular meals, regular working hours. But this was making me sad and even more demoralized. (F, 30, Italy)

For others, the technological solutions for working from home were challenging at best, if not annoying and tiresome.

> Obviously there is a limit to working virtually. You find after a period of 1-2 months that the communicating tools are also tiring and connections can be grueling. (M, 53, Netherlands)

Another interviewee combines several burdens in relation to monotony in the following quote:

> Work has come to dominate life in an unpleasant way. Going to the office normally allows me to have some distance, now everything is absorbed into [an] amorphous blob and a small house does not allow for separation between intimate domestic space and the domain of my employer. I hate the communications technologies available. The way that they level all communication to a single undistinguished plane of distorted visual and compressed audio signal. (M, 56, UK)

The second theme, the burden of poor concentration, was felt often by respondents who either had difficulty with the lack of distance between work and home, or those who had children living at home. One interviewee made this very visual by describing,

> Another thing that was really difficult: I am in a two-hour teams meeting, my wife is teaching and having conferences on teams and our son is on skype, doing homework with a friend. Three people talking, using the same internet connection. It's not pretty. (M, 43, Germany)

Another interviewee noted:

> I got so stressed that I called my supervisor. I arranged with work that I would only work two days a week and take care of my children on the other days. (F, 40, Netherlands)

For many with kids at home, the challenge was also in taking on teaching tasks, and organizing the schedules of kids as well as their own, meaning that each day felt like constant work although for the formal job not much had been accomplished. For some, working from home has worsened their concentration because 'home' conditions were not suitable for working from home, for instance due to traffic noise, or limitations of variety in the local area for catching a breath in between work.

4.4. Immobility as boon

Thirty-six respondents discussed new positive experiences in their lives without commuting. Their stories suggest that positive appreciations of not commuting were clustered around two main subjects: (1) a more leisurely sense of time and (2) a deeper engagement with the

neighborhood and local community. Interviewees' responses also show that these two themes are closely interlinked: being largely restricted to the local neighborhood and not having to commute was for some interviewees a major factor leading to having more time, and this increase in available time made it possible for them to engage more deeply than usual with their immediate surroundings.

In contrast to people experiencing higher pressure to work more of their time (see Section 4.3), 19 out of 50 interviewees recounted the opposite experience: they felt they had more time, better time control or flexibility, or felt that the pace of their daily life had slowed down and become more leisurely. This was experienced in a positive light by most interviewees, who considered their previous 'regular' lives to be excessively busy or stressful in certain respects. As an interviewee succinctly noted, 'My life is much less frantic, which is most pleasant' (F, 64, UK).

For many interviewees, this new sense of having more time was largely attributable to the time gained from not having to commute to work. As one interviewee put it:

> Thanks to not having to travel I've lost that hurried feeling; we can eat a bit earlier, or I have extra time for small chores in the house or the garden. I also find it nice to be home with my family. (F, 48, Netherlands)

In some cases, this gain in time was also attributed to the fact that interviewees had experienced working from home as more efficient, productive, or more conducive to concentration (although, as the previous section discussed, the opposite was true for other interviewees).

In addition, many interviewees remarked that working from home had resulted in a more flexible schedule which had also freed up extra time within their daily routine:

> I am saving a little more than an hour per day that I used to spend commuting. I had to drive about 30 km to the office. I am spending these hours on doing more sports and mental health (meditation). I walk for an hour regularly and, unlike before, I bike now two or three times per week (on a racing bike). I use this extra flexibility sometimes also to sleep an extra hour or for some extensive cooking. (M, 25, Netherlands)

Various interviewees noted that being at home better allowed them to manage their time and balance the competing demands of work and home activities. The following quote illustrates this point:

> I truly enjoy my new morning routine. I get to have lunch with my husband, check on my flowers in the garden, take an hour off when I am waiting on materials from others, and can fill that time with something useful at home. (F, 55, Netherlands)

As a result of having more time on their hands, various interviewees reported that they had been able to devote more time and energy to other activities: hobbies, DIY, cooking, creativity, introversion as well as more physical exercise, local walks and bike rides (we focus on these 'new' mobility practices in Section 4.6). Admittedly, these responses need to be understood in the light of the context of the pandemic, which severely limited the range of recreational and leisure options available to people, generally encouraging home-based or solitary activities over more social or commercial ones. Furthermore, various interviewees also noted that they simply had less work to do as a result of the effects of COVID-19 pandemic on their job.

For many interviewees, the result of having more free time and simultaneously facing restrictions in terms of movement and activities was a renewed sense of engagement with their local neighborhood. Indeed, 17 out of 50 interviewees emphasized that being more immobile (at least as far as long distances are concerned) had led them to discover, enjoy or better familiarize themselves with their local neighborhood. This was strongly associated with an increase in daily walks in the local area (reported by 10 interviewees), often without a clear purpose. As the following quote notes,

> Since mid-March, almost all my mobility is on foot or by bicycle. This also results in a rather limited travel area: I'm in my own city or in its immediate environs most of the time. While this can feel limiting at times, I also have the feeling it contributed to getting to know my own city and region better and appreciating it more. (M, 47, Netherlands)

Table 4. The meanings of commuting derived from the interview analysis.

Immobility as a relief	Immobility as loss	Immobility as burden	Immobility as boon
Commuting as …	Commuting as …	Commuting as …	Commuting as …
1. A time-consuming and tiring activity 2. A source of stress	3. A transition activity, a way to orient oneself in time and space, to prepare emotionally for tasks and encounters ahead 4. A possibility to be alone and, if desired, pursue other activities 5. Physical movement and well-being booster 6. Freedom, exploration and encounter 7. Pre-condition for seeing people at work	8. An activity that 'contains' work, naturally limiting working hours 9. An activity that allows reaching places, seeing other people face to face and having a variety of experiences on daily basis	10. A time-consuming activity that structures the day too rigidly 11. An activity that may disconnect one from their local environment and community, as a side-effect of time spent on commute and connections to other places and social circles

In some cases, interviewees had also started cycling or even driving more frequently as a means of exploring their surroundings, rather than to reach a specific destination (see Section 4.2). The upsurge in local walks also appears to have led to an increasing appreciation of nature. As an interviewee noted,

> … Because I try to go on a daily walk through my neighborhood (about 45 mins) I spend a lot more time in my direct environment than before. I have noticed things that I didn't really notice before – breeding birds, for example … (F, 30, Netherlands).

In part, this increasing appreciation of nature was also enhanced by the fact that many streets and urban areas were quieter than usual, largely as the result of a drop in noise pollution from motorized transport (see Section 4.1). Likewise, spending more time at home and going for more frequent walks in the local neighborhood appears to have led to more direct contact with neighbors, as well as a greater sense of local community. The following quotes clearly illustrate this process:

> As we have walked more (than riding to specific destinations), we have learned a bit more about our neighborhood and have enjoyed being here more. (M, 53 Australia)

> During the period that I was home based I could also focus more on my well-being and social interactions with the ones closest to me. More time with family and close friends, although the social distancing rules made some of that difficult. I found additional energy with local social work and supporting neighbours, cleaning the street etc. I feel more connected with the neighbours and the neighbourhood, and that pays out in better social relations. (M, 53, Netherlands)

4.5. The meaning of commuting

Previous sections focused on what it means not to commute, that is, not to have those daily routines associated with mobility that people had relied on before the pandemic. In this section, we make an additional analytical step, and reconstruct what commuting meant to our interviewees. We have done this by carefully 'translating' the themes capturing the meaning of immobility (see Table 3) into the corresponding meanings of commuting (see Table 4).

4.6. Beyond commuting: compensatory mobilities

Thus far, we have discussed differences in how people felt about not commuting in the context of the global pandemic. In this section, we highlight two interrelated findings that help us to see how this mosaic of diverse experiences contributes to a novel understanding of the meaning of mobility in daily life and, subsequently to facilitating low-carbon transitions.

First, we see complexity and ambivalence *within* many individual stories. Most interviewees described *both* positive and negative experiences, and for many there was no clear bottom line or simple conclusion. Not commuting meant losing important daily experiences and gaining new ones, and the prominence of these (imposed) trade-offs is reflected in the fact that the two corresponding categories *Immobility as a loss* and *Immobility as a boon* were identified in the data most frequently. The following quote illustrates how they manifest within a single interview:

> I do not like commuting and I welcome the increased time for sleep and relaxation. (…) Part of the reason for this is also that my train commute takes place on a very crowded route and I often have to stand for part of the journey. I do notice that I do not read as much anymore, as I usually do this during my train ride. I also have to put in more effort to stay active and go for a walk during the day now that I do not have my regular routine of biking 2x15 minutes and walking 2x20 minutes a day.
>
> One part of work commuting that I do miss are the trips to other locations – for example for interviews (a significant part of my work). I enjoy visiting other parts of the country and being 'on the road', and these trips usually take place during off-peak hours to have more opportunity to work in the train or to relax. (F, 30, Netherlands)

If we turn to Table 4, this quote emphasizes negative meanings of commuting (1) and (2), yet also positive associations (5), (6) and (7). In the following quote we also see the ambivalent impact of working from home on the social ties of another respondent. Commuting connects and separates at the same time, and so does the absence of it as we see the positive meanings of commute (7) and (9) and a negative meaning (11) articulated by the same person:

> I also miss the simple daily informal meeting opportunities like going for lunch or a drink with colleagues. On the other hand, because I recently chose to become more active in a local organization (…), I am building up new social networks in my city. (M, 47, Netherlands)

Second—most probably as reflection of this complexity—we observed a recurrent theme in our data that can be labeled *'compensatory mobilities'*. Thirty-four respondents mentioned attempting to reproduce what they missed about their commute, while often simultaneously making use of perceived advantages of not commuting, such as flexibility or extra time.

The relationship between the ambivalent and complex meanings of commuting, extra time and flexibility gained by not commuting, and 'compensatory mobilities' manifests itself in the experience of this interviewee:

> Even though my commute before the COVID-19 lockdown by bicycle was less than 10 minutes each way, I feel that I have much more time in the day without it. However, I also feel that my daily routine has become very inactive, and I have had to specifically plan taking walks or bike rides since the COVID-19 lockdown … On the other hand, taking undirected walks and bike rides allowed me to explore new places in the city, learn new streets, and notice aspects that I had not previously seen. … I have been quite happy with the change and would like to see it remain going forward. (F, 29, Belgium)

In discussing these new compensatory mobility practices, the interviewee clearly refers to the four meanings of commuting, captured as themes (3), (4), (5) and (6) (see Table 4). Thus, sixteen interviewees wrote about compensatory mobilities that correspond to the meaning of commuting *Freedom, exploration and encounter* (see Table 4, theme 6), as for example:

> I cycle and I walk much more, though it can also surely have to do with the fact that it was spring. Very rarely I go for a car drive, because it is nice. I never did that before. More than half of my trips by car, bike or on foot have no goal except for clearing my head, enjoying the surroundings, doing sports or just seeing the sun. (M, 25, Netherlands)

Fourteen interviewees have tried to compensate for missing the commute as *Physical movement and well-being booster* (see Table 4, theme 5), like the following:

> I do miss my daily ride into work, but I've replaced it with daily walks, workouts and bike rides to different places. (F, 28, Australia)

Seven interviewees used compensatory mobility practices in order to demarcate the start and the end of the working day, performing some form of 'fake' commute, which corresponds to the meaning *Transition activity* (see Table 4, theme 3):

> To make up for that disruptive new schedule, I found it vital to create a routine I had not needed in my 10 years of self-employment. I got up early-ish (but later than for a 2-hour commute), got dressed, made coffee, poured the coffee into my thermos, and left the house. "I'm going to the office," is what I said to family. Then I walked through our village until my coffee was done. Then I went home. And checked in at work. Going to the "office" provided a great structure of starting the day. (M, 43, Germany)

> Now, I will often get to walk the dog before "work" and enjoy the summer mornings. (…) I get to have a walk each lunchtime which breaks up the day, being in one place all day is however monotonous. At the end of most working days (…) I change straight into cycle clothes and get out for anything between 30-60 minutes of cycling … (F, 56, UK)

One respondent mentioned long walks as a way to compensate for *A possibility to be alone* (see Table 4, theme 4)—'the necessary me-time', in her own words (F, 40, the Netherlands).

Before we can conclude that commuting satisfied specific needs that can easily be compensated by other mobility practices, we should point out that five respondents shared that they tried to make up for the commute in one way or another but did not succeed. Two respondents who used to cycle to work discussed missing a destination in their compensatory cycling practices. One interviewee shared that no amount of walking added up sufficiently to make up for her bike ride to work. Finally, in two interviews the complexity of the meaning of commute surfaced again as the reason behind the difficulty of replacing it as expressed by this responded:

> The change of surroundings, the people around you and the physical distance between home and work are pleasant and these ones you miss now. In my opinion there is no compensation for this, not even due to the higher frequency of the walks that I like to take. (M, 64, Netherlands)

Interestingly, people who, in contrast, reported being happy with their compensatory walks and bike rides often connected them with the experiences of social encounter and interaction. These compensatory mobilities have led to experiencing immobility as a boon (see Section 4.4, second theme) by strengthening their connection to the local community and environment:

> I have been taking my dogs for much longer walks around the local neighbourhood. (…) This helps me get some exercise that I miss from commuting, and the social element, since I often see people I know and can have a quick chat. It has developed relationships with neighbours more than before (…) I've also seen many more of my local streets than ever before, and have taken an interest in the architecture of the houses I pass, sometimes taking photos of styles I like. (F, 52, Australia)

Writing about positive experiences of compensatory mobilities, interviewees often discussed the role of their surrounding environment. Walkable or cycling-friendly neighborhoods, access to shops and facilities at a walking distance and closeness to parks or nice natural areas were often mentioned in these stories:

> I am (re-)discovering nice walking and cycling routes through the city and the region, for example, and sometimes I 'discover' streets in my city I did not really know before. I especially appreciate living near a park and also not far from a forest; I already appreciated that, but now definitely more than before. (M, 47, Netherlands)

A few interviewees described their neighborhoods or cities as hostile to walking and cycling to the point of impossibility and were clearly frustrated about this, while a few others have noted improved conditions for active modes in streets and public spaces since the beginning of the pandemic.

Finally, it is worth mentioning that most interviewees discussed walking and cycling as their compensatory mobilities, and just in two cases driving for pleasure was mentioned (though both interviewees mentioned 'compensatory' walking and cycling as well).

5. Conclusions and discussion

5.1. The complex and ambivalent meanings of daily mobility

The majority of interviewees missed quite a few aspects of going to work, yet also discovered new experiences, routines and meanings that held their daily life together and made it pleasant. These

findings once again underscore that the notion of mobility as wasted time, which needs to be shortened or eliminated altogether, is rather simplistic (Humagain and Singleton 2020; Jain and Lyons 2008; Mokhtarian and Salomon 2001). Empirically, our findings are unique as they provide an insight into the missed experiences in the context of the absence of commute. What makes our contribution stand out in the debate on the role of mobility in daily life is that it highlights the complexity and ambivalence of people's relationship with daily mobility. These are often missed in transport research, especially when only quantitative methods are used. Daily mobility clearly performs a variety of functions in people's life and has multiple meanings, even for the same person: the same commute is a source of frustration and discovery, pleasant physical exertion and stress, me-time and time that could be spent differently. It is often impossible for an individual to frame the commute or a lack thereof in exclusively positive or negative terms.

Methodologically, these findings clearly call for more qualitative and mixed-methods research into experiences of daily mobility, and reduced mobility in particular. Our own research project is a case in point: from our earlier survey with 1004 participants, we concluded that during the first months of lockdown in the spring of 2020 cyclists and pedestrians missed their commutes more than car and transit commuters (Rubin et al. 2020), confirming the findings of earlier studies on commute appreciation (see Section 2.1). However, the qualitative accounts that we analyzed in this study present us with a more complex picture: for instance, some cyclists report appreciating the absence of commuting because they enjoy the benefits of (perceived) 'extra time', flexibility and newly developed community ties. Likewise, public transport users may not miss the stress, lack of flexibility and the crowds, yet miss the exposure to various environments, a sense of adventure, solitude and a boundary around their working time.

5.2. Compensatory mobilities, working from home and low-carbon transitions

Practices which we labeled 'compensatory mobilities' emerged as a partial replacement for certain positive experiences associated with mobility, as well as a response to certain negative feelings related to working from home, including a feeling of monotony, boredom and isolation. In particular, some interviewees attempted to compensate for the lack of physical movement and kinesthetic pleasure, for missed experiences of exploration, freedom and encounter, for the absence of a transition activity before and after work, and for the lack of time alone. While some respondents found a way to more or less reproduce the experiences they missed through other forms of mobility, mainly using active modes, others pointed out that the mere act of movement did not add up to the complexity of the commuting experience. Interestingly, many respondents associated compensatory bike rides and walks with social encounter and interactions as well as a deeper engagement with the built and natural environment, and assessed these experiences very positively. Such positive accounts also often featured discussions of the local environment as walking or cycling-friendly, providing easy access to facilities and natural areas. Thus, while other research confirms the surge of travel for travel's sake during the lockdown (e.g. Hook et al. 2021), our contribution reveals the specific motivations around such mobilities, and suggests the importance of local environment conditions (in particular, bikeability and walkability) in shaping such practices.

Compensatory mobilities appear to be key for understanding the meaning of mobility in daily life and the intrinsic enjoyment associated with being on the move, but they are also important for unraveling the potential impacts of car dependency and car-centric planning on the carbon footprint of working from home. If people engage in commuting compensation mainly by driving rather than by cycling or walking, then this may essentially negate the expected effects of working from home on CO_2 emissions (Su et al. 2021). Low carbon policy plans which focus on working from home cannot assume favorable outcomes by default. More research is needed on these 'compensatory mobilities' and how they are shaped by various factors, including the built environment. We thus support the call by Meinherz and Fritz (2021) to explore 'structural constraints inhibiting the spread of pleasurable

lowcarbon everyday mobilities' (838) by extending it to the current situation of more widespread teleworking practices in the aftermath of the COVID-19 pandemic.

Furthermore, our findings on compensatory mobilities resonate with the existing work on the meaning of mobilities grounded in practice theory. Thus, Cass and Faulconbridge (2017) have pointed out that 'mobility allows other valued practices to be achieved' (98) while Spurling et al. (2013) talk about 'substituting practices' as 'more sustainable practices (new or old) [that] can fulfil the same needs' (51). Compensatory mobilities, especially those performed by foot or by bike *and* compensating for high carbon travel (driving to work or flying for business trips), perhaps can be seen as such 'substituting practices' that allow people to keep the most appreciated experiences associated with mobility while reducing their carbon footprint. While it is difficult to provide more definitive conclusions on whether such substitution occurs on the basis of our study alone, due to the nature of our sample and approach, the findings from the large survey in Belgium by Hook et al. (2021) found an increase in undirected walking and cycling trips during the lockdown among people who used to drive to work in 2020. The possible importance of this shift is underscored by the insight on the strong impact of mobility behavior on attitudes to specific modes (Kroesen, Handy, and Chorus 2017), which means that is worth interrogating if all the compensatory walking and cycling may eventually lead some drivers to embrace active modes for other purposes.

5.3. Commuting and everyday sociality

Our study also contributes to the discussion on the important role mobility plays in supporting and shaping everyday sociality. Many interviewees commented on how walking and cycling—as opposed to commuting by car or public transport—has facilitated developing or renewing their interest in their own neighborhood and local community. Our study thus supports the idea that active modes—for instance, those walks and bike rides that we labeled 'compensatory mobilities'—encourage spontaneous interaction in the neighborhood, sense of connectedness and the formation of social capital (Lund 2003; Te Brömmelstroet et al. 2017). This calls out for more attention to urban design and facilitating sociality through accommodating low-carbon mobility as part of policies aiming at stimulating working from home.

However, our results also point to a peculiar trade-off: not commuting also meant feeling isolated from other important social circles and missing fleeting encounters with strangers. This loss of social engagement due to reduced mobility indirectly suggests that mobility infrastructures are not only physical structures but also should be viewed as social infrastructures (Tonnelat and Kornblum 2017; Klinenberg 2018). Thus, planning for (reduced) mobility also means intervening in the urban social fabric, facilitating some connections and cutting others. These findings generate questions for further research: does this mean that people who commute regularly were very disconnected from their neighborhoods in their 'normal' pre-corona life? Is this new sense of connection the result of the total impact of the pandemic (diminished options not just to travel but to socialize and go out), or does the lack of commuting play a decisive role in it?

5.4. Limitations

Our sample was limited to (mostly) white-collar workers who did not mention significant personal hardship. The fact that we focused on those who were able to continue to work remotely during the global pandemic, means that the study does not account for experiences of those who lost their job or had to continue to commute, possibly experiencing more stress and risk than before. Importantly, the responses focusing on mobility might have been influenced by various circumstances related to the pandemic, including stress, anxiety and a sense of isolation resulting from additional COVID-19 restrictions other than the imperative to work from home. Due to the nature of the recruitment process, it is possible that those who chose to participate in this research are more

interested in reflecting on their mobility than most people and might be more critical of dominating practices, e.g. high carbon mobility. Furthermore, we could not account for how respondents' experiences were influenced by their perception of the temporary nature of the restrictions.

Finally, our chosen method has limitations related to the lack of back-and-forth communication between researcher and respondent, lack of possibility for clarification, and potential interpretation issues related to the absence of synchronous face-to-face communication (for a full overview of limitations of written interviews, please see Fritz and Vandermause (2018)). Future studies could engage with more diverse populations and combine mixed methods strategies to better understand the patterns and experience of immobility among different groups, as well as follow up how mobility patterns evolve after COVID-19-related restrictions are lifted.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Notes

1. For an overview of advantages and disadvantages of email interviewing see Fritz and Vandermause (2018).
2. All quotations in language other than English were translated by the research team.
3. Hereinafter we provide gender, age and the country of residence as they were indicated by the interviewees.

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Annex I Interview Sheet

Dear participant,

Thank you for agreeing to take part in this research. We are interested in understanding how your experience of daily mobility has changed since the outbreak of COVID-19. This is our main question for you:

How has COVID-19 changed your daily mobility, and how do you feel about these changes?

We are primarily referring here to the period when you worked from home all the time. However, some of you may have already stopped working from home at least partially, so you are welcome to reflect on those changes too as well as how you see your daily mobilities in the near future.

We are interested in your individual story and personal reflections, rather than factual summaries. Feel free to write about what you find most interesting, or whatever issue comes to mind first. It does not have to be a structured answer, and there is no right or wrong way to answer. Please use as much as space as you need (e.g. multiple pages). You are welcome to write in the following languages: English, Dutch, German, French, Spanish, Catalan, Portuguese, Italian, Russian, Mandarin or Hebrew.

…

If you still feel like you do not quite know what to write about and how to start, here are some reference questions to help you think along:

- *How has the rhythm of your daily life changed because of changes in your travel behavior since COVID-19? What are the reasons for the change? Is it due to public measures or your own risk assessment? How do you feel about this?*
- *Do you miss certain aspects of your previous daily travel practices? If so, which ones? Have you tried to make up for them in other ways?*
- *You might be traveling now in new ways (or to new destinations) which you enjoy. What is this new travel? What do you (not) enjoy about it?*
- *What have you discovered about the role of different mobilities in your daily life since COVID-19?*
- *Have your views of your street or neighborhood changed since COVID-19?*

You are welcome to explore any other questions.