

Practic-ing culture: exploring the implications of pre-existing mobility cultures on (post-) pandemic practices in Norway, Ireland, and the United States

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ABSTRACT

Issues of culture have to date been underexplored in practice-theoretical approaches to consumption. As a disruptive force affecting citizen mobility all over the world, the COVID-19 pandemic provides a unique empirical context to explore how culture and practice intersect, specifically concerning how unsettling events affect practices across different cultural and governing settings. Applying a combined mobility-culture and practice-theoretical framework, we conceptualize mobility cultures as setting-specific arrangements of practices that shape and reflect distinct, temporally unfolding, socio-material contexts. Comparing three cities with different mobility cultures in Norway, Ireland, and the United States, we combine 63 qualitative interviews with a contextual analysis of mobility settings to explore how daily urban mobilities have been transformed. We find that existing variation in mobility cultures, including bundles of place-specific mobility-related norms and infrastructures, mediate the impact of disruption, shaping how changes in modes, meanings, and performances of mobilities transpire. Notably, the analysis reveals how underlying cultures of mobility shape how practice trajectories respond and are reconfigured in a pandemic health-risk society. The article concludes by discussing the implications of the findings for understanding how culture and practice intersect and calls for further comparative culture-focused analysis in social science research on consumption. We consider how cross-cultural analysis can inform science and policy efforts focused on transitions toward low-carbon mobilities.

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Introduction

This article explores the interaction of culture and practice in relation to how mobilities have responded to the COVID-19 disruption across different urban settings. It focuses on exploring culturally-distinct and shared ways in which the pandemic has unsettled and altered infrastructures, performances, and shared meanings concerning daily mobility practices, including those encompassing car driving, cycling, and getting around on public transport. Prior to the pandemic, 72% of all global greenhouse gas (GHG) emissions could be attributed to final consumption in households, with daily mobility practices – as the daily “consumption of distance” (Heisserer and Rau 2018) – accounting for a significant component (approximately one third) of the standard domestic carbon footprint (Dubois et al.

2019). In this milieu, there is widespread agreement that transitioning toward low-carbon daily mobilities is a crucial component of climate-mitigation efforts (Dubois et al. 2019; Ceder 2021).

Disruption has previously been pointed to as an opportunity for pursuing sustainable mobility (Williams, Chatterton, and Parkhurst 2012; Cass et al. 2015; Marsden et al. 2020). Quickly following the onset of the COVID-19 outbreak, sustainability scholars and practitioners started looking to forms of widespread systemic disruption as a possible means to rethink the status quo of unsustainable production and consumption (Cohen 2020) and possible opportunities for (post-)pandemic cities (Barbarossa 2020). However, as of yet, little work has explored the impacts of disruptive events on daily mobilities across different urban contexts. This

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reflects a broader neglect of issues of culture and comparative analysis in the study of daily consumption practices (Welch, Halkier, and Keller 2020; Sonnberger and Graf 2021). It has been suggested by Welch, Halkier, and Keller (2020, 327) that the “practice turn,” in attending to the ordinary, routine, and implicit dimensions of everyday life, has in fact overcorrected for perceived limitations of the “cultural turn” with its emphasis on more explicit and symbolic aspects of consumption. In light of this situation, they call for greater attention to theorizing and studying the cultural in practice-theoretical work on consumption.¹

In response to these appeals, this article draws together literature on mobility cultures, social practices, and societal disruptions to explore the potential of major disturbances for understanding cultural dynamics of daily mobilities. In doing so, we compare the impact of COVID-19 on mobility practices across three cities with distinct mobility cultures: Oslo, Norway (a public transport city); Dublin, Ireland (a starter cycling city), and Seattle, United States (a congested, car-dominated city). Combining contextual analysis of mobility trends with in-depth interviews conducted with 63 households in these cities during the first wave of the pandemic (spring to early summer of 2020), we explore the interconnections between disruption, culture, and practices and the implications that arise for future mobility transitions. Specifically, we ask, how do changes in practices in response to COVID-19 interact with existing mobility cultures and practice trajectories, including place-specific mobility norms, understandings, and infrastructures? In addressing this question, we explore how mobility cultures shape how practices respond under disruption to produce different configurations of mobility meanings and performances across the distinct urban settings under investigation. Throughout the analysis, we develop insights relevant for work concerning culture and practice as well as mobility-transitions research more broadly.

Mobility practices, transformation, and disruptions

We begin by theoretically situating our cultural comparison of the impact of COVID-19 on mobility practices. Responding to gaps concerning issues of culture in recent practice-theoretical work on sustainable consumption, we outline our combined practice-theory and mobility-culture approach to studying daily mobilities. Following this discussion, we introduce previous practice-theory engagement with the notion of disruption and reflect on the specific disruptive characteristics of the pandemic,

especially concerning the possible emergence of culturally-distinct meanings, doings, and competences associated with navigating risk in a new pandemic health risk society² which may influence mobility-practice trajectories.

Social practices and mobility cultures

The field of mobility-transitions research is characterized by diverse disciplinary traditions and perspectives. Still, despite the “mobility turn” in the social sciences (see Urry 2007), travel policy remains informed by relatively utilitarian perspectives that focus on explaining behaviors through rational deliberation and decision-making (Haustein and Nielsen 2016). Such interpretations assume that transport decisions are made by more or less rational consumers who consciously review and optimize travel-related information to make the most cost-effective, temporally efficient, and comfortable travel choices (see Pronello and Gaborieau 2018). Positing individuals as rational decision-makers, choices surrounding transport are understood within behaviorist research and policy approaches to be made consciously and constantly with the optimal travel behavior chosen for each travel trip. Travel policies influenced by behaviorist insights have sought to encourage more sustainable behaviors through information-provisioning campaigns and price signals that appeal to the rational responsibility of individuals to act to protect the environment. For example, policies enacted by the European Union (EU) to encourage sustainable mobility have tended to stress information campaigns, increasing awareness of sustainable options, and communicating best practices (Haustein and Nielsen 2016).

However, an increasing body of research reveals that much of everyday practice, including that relating to daily mobility, takes place with little reflexive deliberation and is strongly influenced by social dynamics beyond individual control. A recent trend in mobility research has been to focus on social practices as a way to understand travel demand and patterns. These accounts reframe the discussion away from behaviorist or techno-economic thinking toward the dynamics of practices (e.g., Greene and Rau 2018; Barr and Prillwitz 2014). Sociological theory regards social practices as comprising different elements, integrating meanings (including norms and images), competences (including skills and know-how), and materials (including infrastructure, technologies and “stuff”) in one conceptual formulation (Shove, Pantzar, and Watson 2012), and practical understanding (know-how), rules (procedures), teleoaffective structures (goals), and general

understandings in another (Schatzki 2002).³ Mobility researchers adopting a practice approach have reframed research questions to conceptualize mobility not as a function of individual behavior but as a “nexus of practices” (see Hui, Schatzki, and Shove 2017) and have revealed how everyday mobilities are connected to wider daily routines (Cass and Faulconbridge 2017) and culturally-distinct systems of provision (Aldred and Jungnickel 2014). Accordingly, practice-based approaches move beyond a focus on individual travel behaviors to explore how mobility expectations and performances evolve in tandem with broader normative, infrastructural, socio-technical, governance, and development contexts (Greene and Rau 2018).

Despite emphasis within theories of practice on understanding action in time and space, conceptually the relationship between culture and practice has been far from clear. Indeed, many recent accounts of practice and their empirical application to consumption tend to marginalize issues of culture (Welch, Halkier, and Keller 2020). However, despite this trend, different accounts from sociology (as well as the related field of human geography) offer some directions for considering how to theorize the culture-practice relation. Some scholars, such as Reckwitz (2002) and Swindler (2005), view social practices as always and necessarily cultural practices, reflecting as they do the cultural fabric and way of life of particular societies. From this perspective, culture is rooted in forms of shared meanings and understandings concerning appropriate conduct and prevailing conventions and norms surrounding practice. Other accounts that consider practices as the intersection of lifestyles and systems of provision (see Spaargaren 2003) also point to the cultural situatedness of action as it emerges within distinct socio-technical settings (e.g., Greene 2018). Welch, Halkier, and Keller (2020) argue that practice theories, in their focus on practical (i.e., tacit, dispositional, and embodied) understandings, provide an account of “implicit culture.” For example, descriptions that highlight how bicycle cultures are comprised in part by the cycling know-how capture this understanding (e.g., see Pelzer 2010; Aldred and Jungnickel 2014). However, the emphasis within practice theories on implicit, tacit aspects of culture has led to a corresponding tendency to elide or ignore explicit culture that is “symbolic, declarative, reflexive” (Welch, Halkier, and Keller 2020, 330). In response, Welch, Halkier, and Keller (2020) outline a conceptualization of “culture-in-practice” that attends to the routine and implicit dimensions of practices as well as their more discursive, symbolic, and social dimensions.

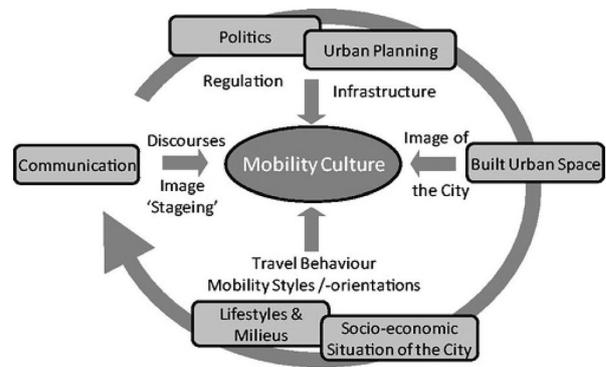


Figure 1. The mobility culture framework. Source: Deffner et al. (2012, 6).

While these accounts provide some direction for theorizing culture-in-practice, they tend to neglect the wider governing and material contexts of practices (Welch, Halkier, and Keller 2020). To this end, scholarship from within the mobility-cultures paradigm offers some useful insights. Work on “mobility cultures” has emerged in efforts to more explicitly explore and explain distinct cultural differences in routine travel patterns between regions and cultures. Haustein and Nielsen (2016, 6) define mobility cultures as “specific socio-cultural settings consisting of travel patterns, the built environment, and mobility-related discourses.” Mobility cultures have thus been characterized as constituted by both the socially constructed and material dimensions of mobility settings (Klinger, Kenworthy, and Lanzendorf 2013) and comparative work that analyzes these dimensions across urban or national settings has been an important component of mobility-cultures research.⁴ As outlined in Figure 1, Deffner et al.’s (2012) mobility-cultures framework captures and integrates key social and material components, such as built urban space, urban planning priorities and practices, politics, socio-economic conditions of a city, communication, and lifestyles, all of which combine in constituting the mobility culture of a specific locality, for example, that of a particular city. In their framework, Deffner and colleagues position these components as influencing the mobility culture of a locality through specific mechanisms or channels such as discourses, regulations, infrastructures and mobility orientations (see also Sonnberger and Graf 2021). A key value of this approach is its explicit recognition of the material, socio-economic, and governing contexts that shape mobilities, which, as argued by Welch, Halkier, and Keller (2020), have been missing from practice accounts of culture.

However, while the mobility-culture framework encompasses an explicit array of contextual dimensions, its proponents have less frequently considered the ways in which mobility cultures are reproduced and sustained through situated performances and interconnecting practices (Sonnberger and Graf

2021). Although “lifestyles” are considered, mobility-culture approaches have tended to view individuals’ actions through behaviorist understandings of travel (e.g., Klinger and Lazendorf 2016). These formulations miss the wider nexus of practices to which peoples’ everyday activities are enmeshed and connected, including those relating to material arrangements, governance, urban planning, and work. They furthermore obscure the situatedness of action within specific socio-historical or space-time locations, something which a practice approach can address.

In bringing together mobility cultures and a practice-theoretical frame, we adopt an understanding of mobility cultures that recognizes the situatedness of daily urban mobilities within practice bundles constitutive of their socio-material settings. Our account also stresses the importance of cultural socialization and learning for sustaining culturally distinct meanings and performances over time. Regarding practice-as-nexus thinking, recent discussions of theorizing “large phenomena” (Nicolini 2016) – understood as bundles of practices extending in time-space – can be usefully applied here to consider how mobility cultures and practices interact.⁵ From this view, large phenomena, including aspects of economy, mobility systems, and governance, are made up of nexus of interconnecting practices. How practices within a nexus are “entangled” and relate to each other – how they are “laid out or hang together” in their evolution over time – shapes how patterns of human action in specific time-spaces come to be and form distinct aspects of cultures.

In developing our framework, we were inspired by research indicating that it is at the scale of place-specific “nexus of practice” that culture and practice meet. For example, Aldred and Jungnickel (2014) employ a practice analysis to reveal how cycling cultures in different UK cities have distinct place-based elements, in which meanings and identities associated with cycling are connected to material and social (e.g., social class) settings and competencies. Comparing cities with higher than average and lower than average cycling rates, they demonstrate how place-based cultures contribute to or impede cycling uptake, with meanings, competencies, and materials needed to participate in cycling varying according to context. For example, in places where cycling is marginalized and poor infrastructure exists, higher levels of competence and less easily available materials are often required to effectively and safely cycle.

In a similar vein, Pelzer (2010) offers an interesting account of how cycling in the Netherlands is linked to Dutch culture and identity. His analysis unpacks the social and material constellation of the

phenomenon of Dutch “bicycle culture,” highlighting its rootedness in histories of space, culture, and identity. Pelzer suggests that to understand place-specific mobility practices it is necessary to appreciate how material, socially constructed, and discursive elements of mobilities interact and are “dependent upon historical contingency and geographical particularity” (Pelzer 2010, 9).

Building on these recent accounts, we advance a theory of mobility cultures as setting-specific bundles of practices constitutive of temporally unfolding and embedded socio-material arrangements and settings. We understand such setting-specific bundles as comprised of interconnected practices relating to everyday mobilities; domestic and work settings; and wider social, normative, infrastructural, and urban contexts. In thinking further about how people – as “practitioners” – come to embody and internalize the logics of the practice cultures in which their lives progress, we also draw on practice-theoretical accounts of socialization (e.g., Bourdieu 1984; Hards 2011) and mobility biographies (e.g., Greene and Rau 2018). Here Bourdieusian-inspired accounts direct attention to how cultural learning shapes an individual’s propensity to act in particular, routinized ways that are in synchronization with the norms and expectations of their culture, leading to the reproduction of socially shared meanings and understandings concerning appropriate action (e.g., Anantharaman 2017).

Both practice-as-nexus and practice approaches to cultural socialization point to the importance of studying practices across contexts for uncovering cultural patterns, including prevailing prescriptions and norms and the influence of different place-based settings on the evolution of practices over time. Integrating these perspectives into our theory of mobility cultures, we use the empirical situation of the COVID-19 pandemic as a disruptive event to study the interaction of culture and practice. Such insights might be useful for informing efforts to change practices necessary for sustainability transitions. In the next section, we add to our conceptual framing by considering disruption in practice-informed sustainability literature.

Disruptions and transformation

In recent years, within consumption scholarship there has been increasing attention to the role and potential of disruptions as catalysts for practice change and sustainability transitions. This work has revealed that while mobility practices are generally perceived to be stable, they are also subject to periods of more rapid change that can be influenced by disruptive events (Marsden et al. 2020). Disruptions

have been approached in different ways in practice-theoretical research, from ongoing mundane troubles that are regular features of daily life (Cass et al. 2015; Kent, Dowling, and Maalsen 2017) to more significant life transitions or events in biographic life courses (Chatterjee et al. 2013; Greene and Rau 2018) to macro-level social crises and full-blown breakdowns (Marsden and Docherty 2013). Indeed, practice work has become more attentive to disruptive events because

[d]isruptions can reveal the situated nature of all change processes, emphasising the inherent importance of understanding the embedded social and cultural complexities that make change possible (or impossible) in any context. (Cass et al. 2015, 7)

Drawing on these and other practice-based accounts of disruption (e.g., Williams, Chatterton, and Parkhurst 2012), we emphasize social disruptions as an underexplored context for investigating dynamics of culture-in-practice across different contexts. As Chappells and Trentmann (2018, 198) argue, “Disruptions give us short, momentary glimpses of the fabric of ‘normality’ as it is fraying and reveal the patterns in which practices and infrastructures are woven together.” Disruptions, in temporarily breaking the flow of routine practice, offer opportunity for reflecting on culturally distinct and previously unquestioned ways of doing daily mobilities.

In the case of the COVID-19 pandemic, speculative and emerging work suggests that a changing risk landscape is leading to shifts in the performance of, and meanings tied to, different mobilities (De Vos 2020; Freudendal-Pedersen and Kesselring 2021; Gkiotsalitis and Cats 2021; Hong, McArthur, and Raturi 2020). As Freudendal-Pedersen and Kesselring (2021, 82) note, “Rules and norms previously taken for granted regarding how, when, with whom, and where to travel have been re-negotiated and re-defined.” In practice-theoretical terms, it is feasible to explore how meanings, competences, and performances of everyday (mobility) practices may be changing during and following the pandemic in a new health “risk society” (Beck 1992). Specifically, shared meanings that cut across many mobility practices concerning convenience, safety, and risk may be reorganized in societies in which pandemic risk, responsibility, and social distancing prevail. It is also possible to explore how differences between mobility cultures in relation to these changes may be shaped by the wider place-specific bundles of practices, including unfolding meanings and infrastructures, in which everyday mobilities connect and are enmeshed. Considering how practices respond to measures triggered by the pandemic across different mobility cultures is important for considering how practice histories and contexts shape how daily

mobilities respond in the present, as well as how this could influence future practice trajectories.

In summary, this article seeks to explore how existing mobility cultures, as specific socio-material practice-bundle settings, shape how mobilities respond under disruption in a pandemic health-risk society. A culture-in-practice lens sensitizes our research to how mobility responses to disruption are likely to be shaped by past trajectories and arrangements of practices and collective experiences of what is normal (Chappells, Medd, and Shove 2011). It furthermore alerts our analysis to the influence of practices of governance and socio-technical (infra-)structures on the experience and impact of disruption. We explore how different kinds of norms, governance arrangements, and socio-technical settings shape how practices respond under disruption, affecting the extent to which everyday mobility practices – including performances, meanings, and competencies – transform during and following a disruptive period such as the COVID-19 lockdown.

Methodology

To capture aspects of culture-in-practice in transition, our methodology involved an in-depth qualitative investigation into everyday-mobility experiences during COVID-19. This was contextualized with an analysis of aggregate trends in mobility practices and settings before and following the first pandemic-impelled lockdowns in Spring 2020. The contextual analysis involved a literature review of aggregate trends in mobility-mode patterns, as well as mobility-related urban planning, governance, and policies. Documents reviewed included reports, published mobility research literature focused on the cities under study, and mobility surveys and statistics. This aspect of the methodology sought to capture elements of the mobility culture in three different cities as the wider practice arrangements in which daily mobility practices are embedded.

The qualitative analysis was based on 63 in-depth interviews conducted between May and July 2020. We recruited respondents through social networks. The sampling strategy aimed to capture a diversity of urban dwellers to explore differentiation in mobility practices according to household composition (e.g., living alone, couples, families with children) and working arrangements (e.g., employment situation, able to work from home or not). Our sample was relatively socio-economically privileged and thus the analysis below does not reflect the extreme economic hardship some people experienced (and at the time of writing in some cases continue to experience) as a result of COVID-19. Nevertheless, several participants were unemployed,

at least partially or temporarily, and others in the sample could not work from home. For our purposes, the relative socio-economic advantage of the respondents meant there was a high representation of participants who could work from home and thus did not need to travel to a place of work. Furthermore, many of our interviewees had the financial resources to own a car, and thus could choose to drive rather than take public transport if this was desired.

We interviewed 28 households in Oslo (Norway), 24 households in Dublin (Ireland), and 11 households in Seattle and surrounding King County (United States) using a shared interview guide that we developed and deployed in each city context.⁶ Interviews explored participants' everyday routines during lockdown and how stay-at-home orders affected arrangements of daily practices, including those relating to work, mobility, eating, and leisure. Such rich experiential data facilitated exploration of the nexus of practices to which mobility practices are connected.

All interviews were semi-structured, lasting up to 90 minutes, and took place through online-video calls, with some in-person interviews conducted where COVID-19 restrictions allowed. The interviews were audio recorded and transcribed for analysis, with participants allocated pseudonyms (age, country) to ensure anonymity.

The analytical process involved in-depth investigation of contextual and qualitative data in each city case followed by comparison between cases. This procedure involved zooming in and out (Nicolini 2009) of an examination of wider analysis of trends in each city to an analysis of changes in specific modes of mobility (i.e., car driving, public transport, and cycling) and mobility-practice elements (i.e., meanings, competences, materials) emerging in the qualitative accounts of the respondents. In developing our analysis and writing, we held regular virtual meetings to discuss the insights and codes emerging from the comparative data and their inferences in light of key concepts from the literature on social practices, mobility cultures, and disruptions.

Contextual analysis of mobility cultures

In this section, we point to differences in some of the important dimensions of mobility-culture settings in the cities of Oslo, Dublin, and Seattle. While our qualitative interviews occurred in two key urban locations (Dublin and Galway) within Ireland, to compare quantitative data we have chosen to focus primarily on Dublin and not Galway in this analysis. We begin with a comparison of pre-pandemic mobility cultures, paying

particular attention to mobility modes and arrangements of policies, infrastructures, and mobility discourses in the different cities as a backdrop for considering distinct mobility cultures. This discussion is followed by an aggregate overview of changes to mobility patterns following lockdown in the three cities.

Pre-pandemic mobility contexts

Given the challenges of a cross-country comparison (Wilhite et al. 1996) and the different constituent parts of aggregated data, direct comparison of mobility modes and contexts is difficult. However, combining modal share data with analysis on mobility-policy trends allowed us to construct a picture of pre-existing mobility cultures in each of the three cities.

Public transit and active travel in everyday life are central to Oslo's mobility culture. The European Commission cites "[i]mprovements in cycling and public transport infrastructure, the introduction of car free zones, and encouraging the use of electric vehicles" as key reasons why Oslo was awarded the title "Green Capital" of Europe in 2019 (European Commission 2019). Survey data indicate that the Norwegian city has a relatively high modal share for public transport, cycling, and walking – as well as a relatively low modal share of driving – in relation to commutes to workplaces located within the municipal borders of the city and for leisure trips to the city center.⁷ Reduced driving in Oslo's city center and increased use of public transport have been trends over the past few decades (Hagen and Tennøy 2021; Prosam 2021) and this is reflected in representative surveys of peoples' travel practices (see e.g., NPRA 2019).

The "socio-cultural setting" (Haustein and Nielsen 2016, 6) that makes up Oslo's mobility culture is reflected not only in patterns of mobility performances, but also in the built environment and normative public discourses around mobility. For example, the motive to reduce automobility in the city center is clear in the municipal government's planning strategy (Oslo Municipality 2021). Through "radical and rapid reallocations of street space from cars to other modes and uses," local authorities have sought to realize "a more vibrant, enjoyable, pleasant, and lively city center" while also "facilitating more public life, accelerating the shift from private cars to other modes, and reducing greenhouse gas emissions" (Hagen and Tennøy 2021, 2). These changes are also reflected in implementation. For instance, between 2017 and 2019 approximately 50% of on-street parking spaces for visitors (approximately 760 of a total 1,450) were

removed and remodeled into infrastructure to support walking and cycling (Hagen and Tennøy 2021, 4). This reallocation was coupled with new municipal regulations to “reduce car driving and prevent through-traffic in the city center” (Hagen and Tennøy 2021, 4). As driving routes have been redirected away from the city center, people traveling to, from, and within the city center have increasingly taken up and become “locked-in” to alternative modes of mobility. This phenomenon is reflected in data showing that prior to the onset of the pandemic the number of households owning cars in Oslo had been on the decline (NPRA 2019, 14).⁸ Accordingly, the existing and increasing embeddedness of public transport within the daily lives of its residents makes Oslo an interesting exemplar for exploring the impact of COVID-19-related disruption on travel practices.

Mobility culture is not as distinctly oriented around public transport in Dublin and Seattle. While these cities have ambitions to transition beyond automobility, relative to Oslo infrastructural investment in multimodal mobility is not as advanced and a clear implementation gap prevails. While in 2017, Dublin was identified as a starter cycling city and *Wired* magazine (a publication that focuses on how emerging technologies shape culture, society, and politics) described the Irish capital as “inspirational for the rest of the world” (Colville-Andersen 2017), this characterization was largely based on ambitious investment plans and only a small part of this infrastructure has to date been built (Laker 2019).

Although a number of policies have been implemented to promote cycling in the city (Tsepenta, Spyropoulou, and Ahern 2021), studies of cyclists in Dublin have emphasized continuing concerns about a lack of safety (Lawson et al. 2013, Egan 2021). Deaths of cyclists in Ireland have increased an average of 8% each year since 2010 compared to an annual decrease of 5% in motorized road-user deaths and in 2018 the country made headlines for having the highest annual increase in cyclist fatality rates among all EU members (ETSC 2020). Survey data for Ireland and Dublin indeed show low cycling rates compared to other travel modes.⁹ While the aforementioned implementation gap continues to impede the realization of Dublin’s ambitious cycle plans, cycling has nonetheless entered public debate and discourse as a desirable and possible alternative to car driving. A timely question is therefore whether an altered pandemic-mobility landscape, with fewer cars on the road and travel distances restricted to cyclable journeys, could create the necessary conditions for positively influencing everyday cycling practices. On these grounds, Dublin also makes for a relevant case study in terms

of changing mobility cultures during and after the pandemic.

Among the three cities, mobility culture is most characterized by automobility in Seattle. A 2016 survey found that 37% of commutes, including car-pooling, occurred in the car (EMRC 2016, 5).¹⁰ It is worth noting the extensive suburban sprawl in Seattle, with 45% of commuters traveling from outside the city (EMRC 2016, 18) and 50% traveling over 16 kilometers (km) (10 miles) each way to work (EMRC 2016, 21). This distance distinguishes Seattle from Oslo and Dublin. Despite having similar populations, the variation in the size of the metropolitan area of Seattle (9,447 square kilometers (km²) or 3,647 square miles (m²)) (Census Reporter 2019) compared to Oslo (454 km² or 175 m²) (Thorsnaes 2021) and Dublin (318 km² or 122 m²) (WPR 2021) is remarkable and an important material component of the pre-existing mobility cultures of each city. Seattle was ranked in 2015 as the sixth most congested metropolitan area in the United States (INRIX 2015, 5). However, while the city is dominated by car-centric infrastructure, there has been increasing investment in creating integrated public transport and sharing schemes for bicycles, cars, and rides (Moscholidou and Pangbourne 2020). Indeed, Seattle made headlines in 2019 for having the most per capita investment in public transit infrastructure and the largest decline in solo-car commuting out of the 100 largest metropolitan areas in the United States (Balk 2019). Against these infrastructural and governance developments, it is interesting to explore how new risks and meanings of traveling associated with COVID-19 have affected car driving during the pandemic. Seattle thus offers an opportunity to explore how mobility practices have responded to pandemic-related disruption in a car-centric city that is making efforts to address automobility dependency.

Lockdown changes to mobility patterns

After generating a contextual picture of pre-COVID mobility in each city, we now explore how travel modes responded in Oslo, Dublin, and Seattle following the onset of the pandemic. Since it was a challenge to identify comparable datasets, we draw on mobility data from Apple Maps’ (2021) Mobility Trends Reports for each city. Based on mobility-trip searches, these data, displayed in Figure 2, capture the relative volume of direction requests for various mobility modes (i.e., driving, public transport, and walking) to a baseline volume on January 13, 2020. The Mobility Trends data set “features daily changes in requests for directions by transportation type for all available countries/regions, sub-regions, and



Figure 2. Trip searches in Oslo, Dublin, and Seattle from January 13 to January 26, 2021. *Source:* Apple Maps (2021).

cities” and is based on trip searches and not actual travel patterns. Despite this limitation, it has been widely used to study mobility during the pandemic (in some cases along with Google Community Mobility Reports which capture changes in activity in specific locations rather than in mobility modes) (see e.g., Nouvellet et al. 2021; Cot, Giacomo, and Francesco 2021). Praharaj et al. (2020) found that Apple’s trip-search data matched Google’s location-based dataset in one case. This indicates that, despite their limitations, in cases where actual data are not available, Apple’s data can provide valuable insight into aggregate differences in mobility patterns across geographies which is what we were interested in investigating in this study.

In terms of overall patterns (Figure 2), the three cities experienced a rapid reduction in all travel modes during the first lockdowns that began in March 2020. Some increases in mobility patterns occurred due to a loosening of rules over the summer, followed by another relative decline in the latter quarter of 2020 as the cities entered second and extended lockdowns. Thus, across the three urban sites, broad trends in opening and closing societies were reflected in mobility patterns. However, some key differences emerged as we discuss below.

First, in both Oslo and Seattle overall trip searches increased from May, while in Dublin there was essentially no point during the year that online inquiries went above the pandemic baseline. This is indicative of different COVID-19 travel restrictions and enforcement; for example, in Ireland, official guidance advised the public to refrain from traveling more than 2 km, which later extended to 5 km and then 20 km, away from home (see Appendix 1). These Irish mobility restrictions were monitored and enforced through police checkpoints on roads (Roche 2020), a development not seen in the other urban contexts. Second, regarding public transport, differences also emerged. From the trip-search data, in Seattle public transport remained at a reduced usage level even when overall mobility started to pick up in the city. In effect, public transport use

appears to effectively have become decoupled from broader travel trends. In contrast, in Oslo and Dublin public transport follows a similar pattern to overall mobility with the number of searches increasing again as mobility restrictions loosened (albeit lower than pre-COVID times). Third, regarding car driving, Seattle again stands out as the only city in our study with an overall increase of 6% in car-driving trip searches during the delineated period. Both Dublin and Oslo, by comparison, experienced overall reductions in travel inquiries at rates of 58% and 28%, respectively. These patterns in Apple trip searches point to the possible influence of distinct mobility cultures and COVID-19 measures on pandemic-mobility patterns which we investigate below in the relation to individuals’ experiences.

To complement this contextual analysis, Appendix 1 provides an overview of the travel and social distancing measures in each city/country for the specified period. Throughout the rest of the analysis, the differential aggregate trends are explored further in an examination of the impact of COVID-19 disruption on mobility performances, meanings, and modes across the three mobility cultures.

Comparing mobility cultures-in-practice

In this section, we present qualitative data generated during the interviews with our respondents. We unpack dynamics in mobility performances, meanings, and competencies relating to different mobility modes (specifically car driving, public transport, and cycling) in the urban pandemic-mobility landscapes under investigation.

Car-as-sanctuary in a “mobile risk society”

We first compare the experience of Seattleites with respondents in the relatively less car-dominant contexts of Oslo and Dublin to better understand how the impact of COVID-19 disruption interacted with car-centric infrastructures and rationalities of varying degrees. Across the sample, most participants

reported on reduced car usage following the start of the lockdown due to overall mobility restrictions. American and Irish participants in particular described vehicles unused in driveways or garages and infrequent trips to petrol/gas stations. Reflections on the length of daily driving prior to the lockdown were common among Seattleites and Dubliners, but stood out especially among the Seattle sample, with many respondents indicating that sitting in traffic for 30 minutes—2 hour one-way commutes by personal car was a normal feature of pre-pandemic daily life. Participants' accounts shed light on a car-centric practice nexus, including mobility infrastructures and norms, that structured their daily lives. This was reflected in the enmeshment and dependency of their daily practices – including those related to food, work, and leisure – on car driving. Automobile travel was spoken about by many Seattleites as the only convenient and accessible mode by which they felt they could navigate spatial distances between sites and services important for everyday living. For example, Nancy (47, United States) would have driven “on average 3–4 hours a day in the car pre-COVID” to make the forty-mile round trip to drop her 13 year-old daughter off at school.

As the data in [Figure 2](#) suggest, aspirations to travel by car in Seattle increased relatively rapidly following the initial lockdown and this was reflected in the dominance of “automobile rationalities” (Freudendal-Pedersen and Kesselring 2021, 83) in accounts of the Seattle participants. By contrast, in Oslo and Dublin some evidence suggested that the lockdown offered a window for questioning the centrality of the personal vehicle in daily life and worked to encourage a modal shift away from car driving toward alternative mobility modes, such as cycling (discussed further below). This adjustment was not observed to the same extent among Seattle respondents. Rather, participants reported quickly returning to using their cars as restrictions were lifted and the taken-for-granted position of car driving as the foremost mode for daily mobility prevailed (or in some instances was actually strengthened). For instance, as Lucy (29, United States) observed, “The car is basically the only thing that we use to actually get to places.” Indeed, for many of the American interviewees, the idea of shopping without a car seemed perplexing: “The grocery store is at least a mile away, so doing a big shop that’s going to keep us all fed for a week is not something to do by foot!” (Nancy, 47, United States).

While across the three cases, participants emphasized the cargo function of cars as a way to limit exposure to COVID-19, in Norway and Ireland,

traveling shorter distances by foot or bicycle for food shopping or other daily practices was discussed as a way to reduce risk exposure and maintain health in the new pandemic landscape. The relative absence of these reflections among the American sample point to a possible effect of existing car-centric norms and infrastructures leading to a reinforcement of car-driving practices in this context (see Mattioli, Anable, and Vrotsou 2016).

While among the Seattleites car driving was particularly deeply embedded in daily life, evidence that suggested a reinforced notion of the car as a convenient “zone of protection” for mitigating threats in a pandemic-risk society emerged across the sample. Some Norwegian participants, who generally reported using public transport prior to lockdown, were using the individualized mode of the car – and bicycle – more than usual. For instance, Karl (39, Norway) and his family (partner and two young children) had replaced public transit with cycling, walking, and, in some cases, driving, as these modes offered predictable, convenient, and lower risk mobility during the lockdown.

Before, we used bus and public transport more often. We still take the bus at times, but I guess we’ve gotten better at [opting for] cycling... it’s probably about the awareness that the buses could be a source of infection. The buses could be full... and you risk having to pass on it.

While Karl and his household owned a car, they did not use it very much prior to the lockdown. But following onset of the pandemic to perform some practices safely they had somewhat reluctantly replaced public transit with automobility.

The times we went hiking [in the forest outside the city], we did drive the car... And we wouldn’t do that otherwise, we’re supporters of using public transport. So, we’ve actually driven a bit more [since the beginning of lockdown]. (Karl, 39, Norway)

These trends are also reflected in [Figure 2](#) with car driving-trip searches increasing as Oslo emerged from the first lockdown from April/May onwards.

Similarly, in Ireland, some respondents highlighted the replacement of public transport use with the private car, with the personal vehicle being attached to meanings of risk avoidance and protection in the pandemic-risk society. For example, it has been a common practice among Dubliners over the age of 66 to use a public travel pass distributed to seniors for engaging in leisure activities. However, for a number of older-aged participants in our sample, bus use was no longer considered a viable option. As Martha, an older-aged woman who usually relied on public transport with her husband, commented,

It'll always be the car now, we will drive somewhere, we will drive up the mountains and go for a walk. We'd usually take the bus but I don't think we will use public transport for a long time now. (Martha, 62, Ireland)

After travel restrictions were lifted, fears of infection remained for many respondents and Urry's (2006, 27) description of the car as "sanctuary, a zone of protection" appeared to strengthen in being linked with pandemic-risk mitigation. Across the different contexts, the private car as a "sanctuary" in the new "mobile risk society" (Freudendal-Pedersen and Kesselring 2021) was reinforced in participants' narratives in several ways. First and foremost, the car was presented by participants as providing a near (infection) risk-free mode of transport. While this was especially apparent for respondents with underlying vulnerabilities, our data suggest that associations of mobility-related health risk and the car-as-sanctuary were emerging among the mobility practices of otherwise healthy individuals as well as those who were not regular car users before the pandemic.

Second, the ways in which car-driving practices responded was influenced by context-specific bundles of practices to which they are connected, including those relating to wider systems of provision and work policies. A majority of participants saw the car as an increasingly convenient mode in a context in which the normal rhythm and functioning of mobility services and systems were disrupted and unreliable. Having access to a personal vehicle enabled our interviewees to have agency to maintain mobility during lockdown immobility. This phenomenon was evident in Oslo where mobility systems of provision are usually reliable and especially well integrated into daily life practices. It also emerged in Dublin where the government reinforced ongoing disruptions by enforcing explicit restrictions on mobility. Furthermore, in many instances car driving (as well as walking and cycling) was in some ways (inadvertently) incentivized by the COVID-19 mitigation policies of institutions. For example, in Oslo, some workplaces invited those driving a car, walking, or cycling to return partially to the office following the lockdown while encouraging employees who were dependent on public transport to work from home. For a number of participants, this led to increased car driving. One of our respondents, Gudrun (41, Norway) remarked that "not being supposed to take public transport... that's caused me to drive to work all the time now."

Third, for interviewees with access to the material resource of a car, driving also made it possible to maintain mobility in the emerging health-risk society (Freudendal-Pedersen and Kesselring 2021). Access to a car enabled those who usually relied on public transport to continue to engage in leisure activities when

travel restrictions were in place. While the local government has worked toward reducing cars in Oslo (Hagen and Tennøy 2021), increased car driving (as indicated in Figure 2 and evident in the qualitative accounts of participants) suggests that Oslovian automobile owners had more freedom to move with minimal exposure to risk of infection. Such trends may lead to new patterns of social inequity and differentiation in how car driving, and the practices it supports in daily life, are performed.

Finally, despite the prevalence of car-centric norms in Seattle, there was nevertheless some evidence to suggest that the temporary disruption to driving brought about by COVID-19 encouraged some respondents to reflect on "inessential" travel and the possibilities afforded by "digital mobility" (Urry 2007) for rearranging daily life and achieving greater well-being. For instance, Brian (25, United States) described how experiencing his regular routine without a long commute stimulated him to consider moving more centrally in Seattle where mobility infrastructures were less car dominant and the possibility of traveling by public transport was a reasonable option. He noted that "[i]f I could take the bus, just one bus, I would be so happy. I hate driving so much." Similarly, Jenny (38, United States) was considering working remotely full-time, something she would have not thought feasible prior to the pandemic due to perceived social pressure to be at the office.

Before COVID... I never did it (work from home) because it was easier for me to go into work and not stress about it. Even if it was anywhere from 35 minutes to over an hour commute one way.

These anecdotes suggest new emerging meanings of mobility in a health-risk society that could potentially support more sustainable practice arrangements in daily life. However, notwithstanding these cases, across the sample, understandings of the car as a sanctuary space increasingly essential for the maintenance of mobility, were pronounced. However, we observed differences across settings in this regard. Overall, questioning of car use, and its central prominence in daily practice arrangements, was less prevalent among the Seattleites relative to their Irish and Norwegian counterparts. Indeed, among the majority of American participants, the taken-for-granted qualities and reinforcement of car use described above was a more widespread theme to emerge than that of a reflexive questioning of normal automobile use.

Public transport: meanings and competences for navigating risk

The risk of exposure to COVID-19 on public transport, as noted above, altered practices of traveling

on buses, trains, and trams. However, like car driving, the way in which public transport practices responded to pandemic-impelled measures differed across contexts suggesting the influence of different mobility cultures and regimes on practice outcomes. Despite some loosening of pandemic restrictions following the first lockdown, public transport patterns remained low in both Seattle and Dublin (Figure 2). This situation stands in contrast with the experience in Oslo where public transport use showed some recovery. We investigate these dynamics to further consider how existing mobility cultures shape practice outcomes by exploring how mobility modes, meanings, and competences responded. We draw in this section primarily on our data from Oslo and Dublin.

In general, discussions about the impact of the pandemic on everyday public transportation featured more prominently in the Norwegian and Irish data. While across all cases evidence suggests public transport performances and meanings were attached to notions of risk, among the Irish participants more negative meanings were expressed toward public transport practices than was the case for Oslo. As indicated above, at the time of interviewing, many Dubliners reported that, despite loosening restrictions, they were unlikely to return to public transport use any time in the foreseeable future and expressed a lack of trust in governance measures to increase safety of use. Participants not in an “at-risk” category also avoided public transport to protect a friend or family member. As Philip (52, Ireland) noted, “I don’t think I’d be comfortable with the bus. Partly because I’m protecting somebody who’s vulnerable.” Attached to practices of avoiding public transport were discourses of risk mitigation and a lack of agency to control the practices of others.

My fears around using public transport, it would be the close proximity you have to be to other people...I would be afraid...I don’t know who else is going to be on the bus and how much they’re going to respect the guidance, the social distancing. (Trish, 33, Ireland)

In comparison, in Oslo, despite fears of infection, many of our participants gradually returned to using public transport at the time of the interviews as society began reopening again. Several respondents reflected on how they negotiated mobilities to avoid contagion risk while fulfilling practical needs. They particularly tried to avoid “jampacked” buses, trams, and trains as restrictions slowly lifted.

I take the tram downtown...it’s filling up more and more...we’re very conscious about the restrictions that are in place, we avoid stuffing ourselves into a full bus...or a full tram. (Harald, 28, Norway)

Several Norwegian participants discussed a heightened sensitivity and cautiousness when moving around. The new risk landscape is one in which “people get absolutely paranoid” (Peter, 27, Norway), especially if someone showed signs of illness. As Linda (66, Norway) observed, “if you clear your throat a little...you receive nasty looks.” In mitigating this new risker terrain, Oslovians discussed the emergence of new competencies for negotiating risk, which now required more planning and deliberate action in responding to the COVID-19 measures.

I think about...when I take the metro, I should keep distance, watching all the signs, there are stickers all over on the floors...[it] takes some energy...like, “Oh, did I act correctly just now? Fuck, did I forget to wash my hands there? Now I think that person is a little close to me on the metro!” That kind of stuff. (Emilie, 30, Norway)

These differential impacts of the pandemic on situated practices reveal already existing cultural differences in public transport use. In Oslo, this travel mode was already more embedded within the range of intersecting practices making up the daily lives of local residents, with this sensibility appearing to support the evolution of competences for negotiating risk while journeying on public transport in a pandemic landscape. In contrast, in Dublin and Seattle, it was more common for participants to avoid the use of public transport altogether.

Active travel: new confidence, freedom, and joy

During the first lockdown there was an increase in walking and cycling with evidence suggesting bicycles also became a “sanctuary” mobility mode as an alternative to public transport. Qualitative analysis revealed differences in terms of the impact of the pandemic on the cycling practices of residents, with pre-existing mobility cultures and infrastructures influencing this situation.

In the United States, walking and cycling were taken up mainly as leisure activities, although two participants in our study did commute by foot or bicycle during the pre-COVID period. In Ireland and Norway, efforts to seek alternatives to public transport led many respondents to discuss shifting to more active and sustainable ways of traveling to work or shopping. In Oslo, a number of participants discussed how they took up cycling as a replacement to public transport. This travel mode was framed through positive meanings that emphasized the role of cycling as a means to maintain mobility freedom in the context of disrupted mobility systems.

Now...I’ve bought a bike...it wouldn’t have happened otherwise [without lockdown]...I think it’s absolutely amazing, all that freedom that it gives [me] now. (Kari, 62, Norway)

The prevalence of cycling in Ireland and Norway was likely also facilitated by material, governance, and infrastructural conditions. Oslo has relatively well-developed cycling infrastructure and cycling commuters have reported a high rate of satisfaction (see Hagen and Tennøy 2021). Meanwhile, in Ireland cycling infrastructure is less developed and, as emerged during the contextual analysis, generally considered unsafe. In Dublin, fewer drivers on the roads during lockdown and the implementation of temporary cycle lanes, provided an opportunity for new recruits to take up this travel mode and for associated competences to develop.

One of the reasons why I wasn't such a regular cyclist before, even though I like my bike, is because it's frankly terrifying to cycle around Dublin... but in the middle of the pandemic I felt safe to go out and it was absolutely a joy to cycle. There was space, there were fewer cars parked on the road so the roads felt wider, there was less traffic driving around. (Trish, 33, Ireland)

As alluded to here, the altered mobility landscape created space for participants to develop competencies in cycling. They discussed a safer and more accessible urban environment to grow confidence cycling on what are usually busy and car-dominated roads lacking safe cycling infrastructure. The COVID-19 disruption led to change from a mobility order where the automobile was a dominant modality and where cycling was avoided, toward one where the car lost its absolute centrality and cycling was, at least temporarily in some instances, reconsidered as a safe and accessible option. New meanings were attached to the potential of cycling as a possible primary mode of mobility. Instead of being understood as unsafe, the bicycle was construed as a "healthier" and/or "safer" option (relative to car driving and public transport) with potential longer-term impacts.

I think I'll continue to use the bike even when the traffic picks up because I've gotten used to it, my confidence has been gradually building up over the last week. (Sandra, 40, Ireland)

However, in Ireland, many who took up cycling during the lockdown indicated that for them to maintain this travel mode post-lockdown and to continue to develop cycling competencies, larger changes to cycling infrastructure would be needed. The significant efforts by public actors in attempting to transition Dublin to a better cycling city prior to the pandemic appear to have affected meanings concerning possibilities and desirability of cycling as a mobility mode; this was important in creating conditions for participants to take to their bikes during the temporary lockdown. However, they also suggest the importance of implementation of infrastructure

plans for supporting the lock-in of positive changes over the long term.

Conclusion

Our aim in this article has been to explore if and how disruption – in this case COVID-19 – can reconfigure urban mobility practices and interact with existing mobility cultures. By conceptualizing mobility cultures through a nexus-of-practices approach, we analyzed the impact of the pandemic on everyday mobility practices across three urban settings. We have sought to contribute to understanding of culture-in-practice (Welch, Halkier, and Keller 2020), showing how practice changes resulting from COVID-19 were strongly mediated by place-based and already-existing practice arrangements constitutive of distinct mobility cultures. In doing so, the study offers a number of insights into socio-material mechanisms shaping urban mobilities.

First, in revealing the influence of place-based practice contexts on mobilities under disruption, the study illustrates the value of comparative practice work in researching underexplored cultural dimensions of daily consumption (Mögele and Rau 2020; Sonnberger and Graf 2021). In some settings, pre-existing mobility practices showed particular resilience and stability during the pandemic-impelled lockdown. For example, in Seattle, a city with a history of car-centric planning and a deeply rooted automobility rationality (emblematic of much of the United States) (Mattioli et al. 2020), car-driving practices were only temporarily affected and quickly bounced back. Similarly, in Oslo, where a multimodal public transport infrastructure is more embedded within the range of intersecting practices making up the daily lives of its residents (see Hagen and Tennøy 2021), the shift away from public transport was shorter and less pronounced. In other places, where pre-pandemic mobility cultures were on a cusp of change, the COVID-19 closures, in further destabilizing dominant mobility-practice arrangements, acted as a window of opportunity for niche practices to scale up. In Dublin, a city with growing pre-pandemic civic campaigning and ambitious policies for cycling infrastructure, the altered mobility landscape, with fewer cars parked and driving on roads, led to an uptake of cycling practices. These developments stimulated a transition in shared meanings of cycling from unsafe and risky to an accessible mode allowing freedom of movement. These circumstances for cycling recruitment presented in Dublin opportunities for people with already existing aspirations to cycle to participate in the practice and to gain new competencies and confidence for cycling on roads.

Second, comparing mobilities under disruption across the three cities, we observed a new health-risk society, shaping the emergence of collective, yet culturally distinct meanings associated with risk in negotiations of daily mobility. Shared meanings, like the practice concept of “general understandings” (Schatzki 2002), stretch across multiple practices (Welch, Halkier, and Keller 2020) and “condition the manner in which practices are carried out and are expressed in their performance” (Welch and Warde 2017, 184). Like convenience, authenticity, or productivity – which are general understandings that have previously influenced travel and mobility practices (Mattioli et al. 2020) – mobility practices were reorganized around new cultures of pandemic responsibility, social distancing, and risk. In the pandemic health-risk society, we found that these shared notions cut across daily mobilities shaping their ongoing negotiation and performance. However, despite these similarities, the analysis revealed culturally distinct nuances in how risk and negotiation in daily mobilities played out. For example, despite some exceptions, Oslo residents took a riskier public transport in stride. While they may have avoided jam-packed buses, trains, and trams and described additional energy exerted to following new rules (e.g., “Fuck, did I forget to wash my hands?”), public transport prevailed as a largely accessible and normalized mobility practice. By contrast, in Seattle and Dublin, where public transport culture had not been as established during the pre-pandemic period, this form of mobility was affected more significantly. Nonetheless across all contexts, the notion of the car as sanctuary was reinforced as a particularly significant zone of protection enabling continued mobility in a context of disrupted and unreliable systems of provision. This observation suggests that, regardless of important cultural differences, certain shared meanings and general understandings associated with negotiating pandemic-related risk in daily mobilities were evident in all three cities.

Finally, despite evidence of reflexive questioning about car use prompted by the lockdown – and the described differences between settings – the freedom of movement and protective function provided by the car in relation to the risk posed by COVID-19 suggests the stickiness of car use and possible increases in recruitment across all cases. The growth of niche developments such as drive-in concerts, cinemas, and even high-school graduations in Seattle suggests that the emergence of new car-dependent practices in response to the pandemic may lead to deeper embedding of car driving in everyday life practices in the future (see also Mattioli, Anable, and Vrotsou 2016). In the United

States, a study centered on the Boston metropolitan area found that “one in five currently car-less households intended to purchase a car because of COVID-19” (Basu and Ferreira 2021), with further evidence suggesting increases in the price of second-hand cars following a “pandemic-surge” (Tanzi 2021). Similarly, in Ireland, a survey found that over 50% of car-less households were considering buying a car due to COVID-19 (Carzone 2021). As outlined, participants without personal vehicles in Oslo reported feeling greater mobility restriction during the initial lockdown phase, while those with cars were to a greater extent able to work in offices and leave the city center to access forests, green spaces, and private cabins. These findings point to the potential of the pandemic to recruit new regular car drivers, even in situations where weaker car-centric mobility cultures prevail. More academic and policy attention is needed to work out what variety of transportation-policy measures will be required to overcome the strengthening of the car-as-sanctuary paradigm (Urry 2006; Griffiths, Del Rio, and Sovacool 2021) in a (post-)pandemic urban governance landscape.

In summary, studying practices under disruption across three distinct spatial contexts has enabled us to look at how meanings, modes, and doings of mobility associated with risk mitigation in a pandemic landscape occur in culturally distinct and shared ways. In doing so, we have revealed that how risk becomes manifest in negotiations concerning modes and performances of daily mobilities and depends on previous setting- and place-specific practice contexts. To date, little work has considered an understanding of practice-in-culture that attends to the place and setting-specific evolution of practice arrangements. We call for further research that considers when and how place and culture matter for the ways in which practices respond to disruptions and change of various kinds. The framework presented in this article has sought to advance discussions of how culture and practice interact and to highlight the potential of comparative practice work that combines contextual analysis with qualitative insights into mobility experiences. However, certain challenges remain, specifically concerning the consistency of data for capturing mobility cultures and how to best situate experiences and performances as constitutive of them. Furthermore, our study is limited because it only provides a cross-sectional snapshot of mobility practices under disruption. Further work is needed to build on this discussion and to consider how mobility cultures, or indeed other aspects of consumption cultures, can be conceptualized, measured, and analyzed through a practice-theoretical framework that situates action in space

and time. We contend that comparative longitudinal practice research offers useful potential for uncovering the interaction between culture and practices in ways that can fruitfully inform efforts to transition mobility practices toward sustainable futures.

Ethics statement

This research has received ethical approval by the Ethics Commission, Geneva School of Social Sciences, University of Geneva. Code number: CER-SDS-25-2020.

Disclosure statement

No potential conflict of interest was reported by the authors.

Notes

1. See other articles in the 2020 special issue of *Cultural Sociology* edited by Daniel Welch, Bente Halkier, and Margit Keller.
2. The pandemic health-risk society is one that is preoccupied with containing the spread of pathogens and improving safety.
3. For example, the practice of car driving entails the integration of necessary skills in operating (competences), access, surrounding infrastructural environment (materials), and images associating the activity with convenience and freedom (meanings) (Greene and Rau 2018).
4. Mobility-cultures work has been conducted through both qualitative (Pelzer 2010; Aldred and Jungnickel 2014; Klinger and Lazendorf 2016) and quantitative ((Haustein and Nielsen 2016; Klinger, Kenworthy, and Lanzendorf 2013) approaches. Qualitative mobility-cultures research has highlighted the importance of cultural and subcultural identities in shaping variation in mobility practices, stressing the identity-related, symbolic, and normative dimensions of mobility cultures (cf. Elliott and Urry 2010). Quantitative accounts have been useful for mapping and categorizing various mobility cultures and for suggesting that transport policies should be tailored to different starting points. However, in cultural mobility scholarship there has been to date little effort to connect insights from qualitative experiential data with aggregate trends.
5. Practice theories emphasize a flat ontology which encourages a movement away from theorizing the social in terms of different layers (e.g., “micro” or “macro”) and instead focuses on understanding the social as comprising a nexus of interlinking practices that form “the site of the social” – where all “social life takes place” – and structure the everyday patterns of human action (Schatzki 2002, 123).
6. Some of the Dublin-based qualitative insights in the article are complemented by additional insights from interviews conducted in Galway city, another urban site in Ireland that has very similar mobility governance and practice challenges to Dublin.
7. In their survey, Hagen and Tennøy (2021, 9) found that among people visiting the city center for leisure purposes between 2017 and 2019 ($N = 5,457$ and

6,018), 66–69% used public transit, 7–11% cycled, 11% walked, and 7–9% drove cars. Among those commuting to work in the city center between 2015 and 2019 ($N = 548$ and 1,611), 65–73% used public transit, 13–18% cycled, 6–10% walked, and only 4–7% drove cars (Hagen and Tennøy 2021, 7). However, driving increased to 15–21% and public transport decreased to 53–56% for general commutes in Oslo for 2015–2019 (i.e., not necessarily in the city center; see Hagen and Tennøy 2021, iii). Though not based on a representative sample, these modal shares indicate a clear tendency toward active and shared mobilities in Oslo.

8. For general commutes in Oslo, the modal share for driving (15–21%) is lower than the share of people with access to cars (78–81%) (see Hagen and Tennøy 2021, iii; 2021b, 77).
9. A two-day monitoring of traffic in November 2016 that surveyed the modes of travel of inbound commuters at 33 locations between 7am and 10am, found that 30% drove cars, 51% used public transport, 3% cycled, and 12% walked (NTA 2018, 4).
10. Meanwhile, 47% used public transport, 3% cycled, and 6% walked (EMRC 2016, 5).

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Appendix 1. Summary of relevant COVID-19 measures March to December 2020 in Oslo, Dublin, and Seattle

2020	Oslo/Norway	Dublin/Ireland	Seattle/Washington State, United States
March/April	<p>March 12: First (soft) lockdown, advice against unnecessary travel and use of public transport, events with 50+ people prohibited, closure of businesses, schools, and universities.</p> <p>End of March: Stronger legal enforcing of social distancing, government issues a controversial "cabin ban" (making overnight stays in private cabins outside one's home municipality illegal). Public transport use at a low point in Oslo with close to 80% reduction in passengers. Public transport timetables are scaled back.</p>	<p>March 12–14: First (soft) lockdown, schools and childcare, then pubs, shut.</p> <p>March 27: Stay at home orders except for essential workers and other limited exceptions. Public mobility is curtailed to 2 km beyond the home. Non-essential retail and services are closed. All public and private gatherings of any number of people are banned and over 70s are to remain at home.</p> <p>April 8: Special police-enforcement rights to monitor, question, fine and arrest those not adhering to mobility restrictions come into effect.</p> <p>March 30: Public transport timetables scaled back to 80% capacity</p>	<p>March 12: School closures and working from home if possible. Gatherings of more than 250 people banned.</p> <p>March 23: Order to stay home, all non-essential travel banned and businesses closed.</p> <p>April 3: Center for Disease Control issued guidance for use of cloth-face coverings in public areas to reduce spread, based on increasing evidence of transmission in the absence of symptoms</p>
May/June	<p>May: Schools re-open, public events with 50 people allowed, less strict social distancing. Working from home still recommended. Government issues a national roadmap for public transport focusing on <i>passenger-information campaigns</i> and the implementation of social distancing and hygiene routines in transit. 70% of seating in trams and metros is closed off.</p> <p>June: more services reopen, gatherings of up to 200 people allowed.</p>	<p>May 5: Mobility restriction order was extended from 2 to 5 km.^a</p> <p>June 8: Move from "stay home" to "stay local" sees public mobility restriction order extended from 5 to 20 km and then to anywhere within your county. Most public transport timetables back to pre-COVID levels but buses and Dart (Dublin city-train service) restricted to 20% capacity to maintain social distancing. Most shops are allowed open. The public is permitted to meet up to six people (inside and outside) from outside their household.</p> <p>June 29: Some reopening of restaurants and socializing with other households.</p>	<p>May: Washington State eases restrictions. Some reopening – with hairdressers, outdoor spaces, bars, restaurants with outdoor space, beaches opening up to the public. Travel is more widely accepted.</p> <p>Washington State Governor Inslee sets out phased approach to reopening businesses. These phases can vary by county according to the degree of COVID containment; counties with fewer than 10 new cases per 100,000 residents across a 14-day period can apply to reopen faster.</p> <p>June: Some restaurants reopen, large outdoor gatherings remain banned.</p>
July/August	<p>July: Restrictions on travel abroad eased.</p> <p>August: Reopening is put on hold. Wearing of facemasks on public transport officially advised.</p>	<p>July: Wearing of facemasks on public transport to increase capacity officially advised, with fines for noncompliance. Accompanied by government campaign and guidelines to travel safely on public transport includes details about appropriate use of facemasks on public transport services.</p> <p>August 18: Government advice is to avoid public transport where possible.</p> <p>August 27: Schools start to reopen.</p>	
September/October	<p>September: Facemasks on public transport are made mandatory. Home office advised.</p> <p>Late October: Stronger restrictions on gatherings and mobility enforced. Home office mandatory when possible.</p>	<p>September 19: Dublin progresses to Level 3 of the "Reopening Ireland" plan and is back to 50% capacity on public transport.</p> <p>October 21: Every county in Ireland progresses to Level 5 of the "Reopening Ireland" plan and is back to – 25% capacity for public transport compared to pre-COVID times</p>	<p>September: Schools remain online and do not reopen</p>
November/December	Continued restrictions		<p>November: Restrictions for indoor gatherings with other households, restaurants and gyms closed once again.</p>

This order restricted the movement of residents in Ireland beyond the specific range outside their home with exceptions made for certain essential purposes (such as attending medical appointments or engaging in "essential" work). The permitted mobility range by which the public were allowed to travel outside their homes moved from 2 to 5 km, and then to 20 km and later, as restrictions loosened further, to within county distances (for example, residents living in the country of Dublin were allowed to travel anywhere in that county but not beyond this delimited area).