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Living and working in the (post-pandemic) city: a research agenda

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ABSTRACT

During the COVID-19 pandemic, Work from home (WFH) received much public attention. Imposing such a measure was feasible in the context of labour markets' flexibilisation, which has reshaped urban live-work relationships. However, the pandemic's effects on those relationships have rarely been explored in housing and planning studies. This paper draws a research agenda based on a literature review of the changes in urban live-work relationships, which were accelerated and legitimised under COVID-19. The latter is considered an exogenous shock contingent upon several other shocks, embedded in structural crises and accelerating ongoing trends. The literature confirms the acceleration of hybrid work for those able to do so, which has fuelled debates on home usage and legitimated planning discourses based on urban proximity, densification and mixed use. Hence, we encourage critical research on (i) the conceptualisations of WFH and COVID-19, (ii) housing policy responses to accumulated uncertainties and regulations for quality and resilient housing, and (iii) the critical analysis of WFH-oriented planning.

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Exogenous shock; housing supply; live-work relationships; planning principles; COVID-19 pandemic; work from home (WFH)

1. Introduction

The COVID-19 pandemic and related stay-at-home measures have genuinely brought into question how and where we live and work in cities. Those able to work from home (WFH) were requested to do so during the pandemic. Homeworkers and their living and working conditions received much attention in academia, policy and the media, at the expense of more vulnerable groups. Nonetheless, these peoples' intense practice of home-based telework and the public attention received are expected to have spatial, policy and institutional consequences in the fields of housing and planning. We consider COVID-19 a shock event that has fuelled structural crises—especially the housing crisis—and accelerated ongoing societal trends, among which

the flexibilisation of work and its implications for housing and planning is one of the most apparent.

Imposing WFH to contribute to tackling the pandemic was feasible in the context of labour markets' flexibilization, which began in the 1970s—under the development of information and communication technology (ICT) and the advent of the new economy (Hutton, 2009; van Meel & Vos, 2001)—and facilitated bringing work back into the home. The flexibilisation of work materialised in different 'generations' of telework (Messenger & Gschwind, 2016), referring to work performed outside of the employer's premises by using technology (Aguilera *et al.*, 2016). Although the concept of WFH could include any kind of 'work' performed at home, the way it was experienced during COVID-19 and understood in the literature may be assimilated with the first generation of home-based telework (or 'remote work' for full-time home-based work). Conversely, more recent forms of mobile telework (or multilocal work) and virtual telework can be performed anytime and anywhere. All of these flexible working arrangements can be summarised under the umbrella term 'flexwork' (Pajević, 2021).

Notably, the flexibilisation and dematerialisation of work have affected home meanings and practices (Bergan *et al.*, 2020; Doling & Arundel, 2020; Tunstall, 2023) and impacted housing provision, especially in large cities. These cities have increasingly integrated live-work goals in their urban development and regeneration strategies, by fostering densification and mixed-use development to create attractive live-work environments in the context of accelerated globalisation, advanced capitalism and competitiveness, hence creating new urban live-work relationships (Uyttebrouck, De Decker, *et al.*, 2021; Uyttebrouck, Remøy, *et al.*, 2021).

The pandemic's effects on these live-work relationships have rarely been explored from the perspective of housing or planning studies. Yet, changes in these relationships during and after COVID-19 raise multiple questions ranging from home meanings to the geography of work and residential preferences. The way these questions are addressed further relies on conceptualising COVID-19 as a study object and articulating it with contingent shocks, structural crises, long-term trends and local policies and institutions. Hence, COVID-19's impact on live-work relationships not only handles spatial and policy challenges, but their exploration also requires adequate analytical frameworks. This paper aims to deliver a research agenda for housing and urban studies, starting from the following question: What changes in urban live-work relationships made apparent under COVID-19 require further research? To identify current academic discourses and relevant avenues for housing and urban research, we reviewed the most relevant sources resulting from a systematic mapping of the literature on urban living and working during the pandemic.

The next section clarifies our analytical approach to COVID-19 and its embeddedness in contingent shocks, crises and trends. It further provides a background on the impact of past major crises on labour markets' flexibilisation, urban housing provision and the present structural global housing crisis. [Section 3](#) presents the methodological aspects and first insights from the systematic literature mapping. The qualitative review of the retained sources ([Section 4](#)) then focuses on the accelerated shift to hybrid work, debates on post-pandemic housing during the crisis context and legitimated planning discourses. Finally, the research agenda ([Section](#)

5) builds upon three research axes: the conceptualisation of WFH and COVID-19, 'post-pandemic' housing provision and related planning issues.

2. COVID-19's effects on urban living and working: analytical framework and theoretical background

2.1. COVID-19 as a shock event

Whether they are of a financial, institutional or health nature, crises rely on threat, urgency and uncertainty and can affect several systems simultaneously (Boin, 2009). Much more than a health crisis, COVID-19 has been a 'syndemic' with complex interactions involving multiple socio-economic and environmental factors, including socio-spatial inequalities (Ellis *et al.*, 2021). Capano *et al.* (2022) framed the COVID-19 crisis as an 'exogenous shock' and an 'episode of collective stress' leading to three overlapping reconfigurations of policy-making: normalisation (path disruption leading to a 'new normal'), adaptation (path continuity with policy realignment) and acceleration (path clearing speeding up evolutionary policy dynamics). These concepts build upon historical institutionalism and policy change theory.

The pandemic was seen as a 'critical juncture' leading to path disruption in its initial stages (e.g. Dupont *et al.*, 2020). In planning studies, critical junctures are moments of crisis that make it possible for new institutions to be established under 'major changes [that] are triggered primarily by exogenous forces' (Sorensen, 2015, p. 25). Although COVID-19 enabled temporary policy changes that had been locked until then (e.g. housing the homeless or suspending evictions; see Section 4), these radical policy decisions often did not 'normalise' and remained temporary. Therefore, both academia and public opinion have focused on the adaptation (e.g. reinforced planning paradigms; see Section 4) and acceleration consequences (e.g. accelerated digitalisation and WFH for white-collar workers Vyas, 2022) of the COVID-19 shock. Hogan *et al.* (2022) embraced the latter approach by viewing COVID-19 as a 'path-clearing' event that has accelerated ongoing trends and facilitated change since policy responses to the pandemic drew on strong path dependencies and paradigms.

Beyond the health emergency context, the effects of the pandemic are difficult to isolate because of COVID-19's contingency upon several shocks (e.g. the war in Ukraine) and embeddedness in structural crises and long-term changes (e.g. digitalisation, flexibilisation). In particular, the pandemic, the war in Ukraine and the related energy shock have worsened the global housing crisis (see next subsection), which is evident in large cities subject to market-driven housing provision and financialisation (Wijburg, 2021). Other structural effects may take longer to be revealed. For example, crisis periods generate economic and regulatory disruptions that influence local 'investor landscapes', allowing new actors to emerge (Taşan-kok *et al.*, 2021).

Hence, our analytical approach situates the pandemic as one event among many shocks that have fuelled a structural global housing crisis, accelerated the long process of the digitalization and flexibilisation of living and working places, and directly affected urban housing provision (Figure 1). In what follows, we briefly

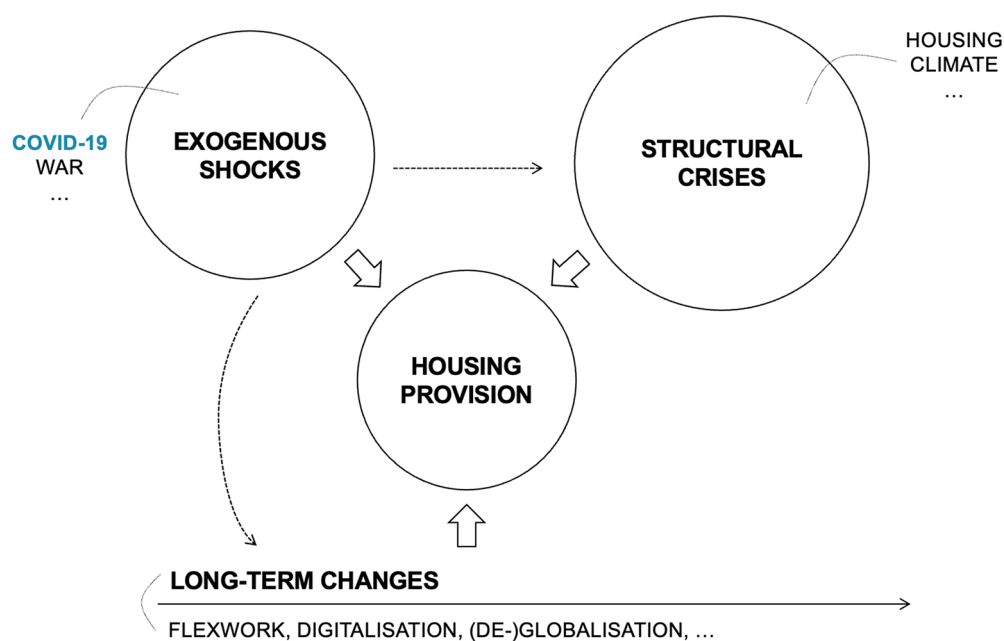


Figure 1. Analytical framework: Covid-19 as an exogenous shock fuelling structural crises and accelerating long-term changes.

introduce past crises' impacts on housing provision as well as the effects of labour flexibilisation on urban living and working environments.

2.2. Crises, urban housing provision and the flexibilisation of living and working environments

Given their role in respiratory infections and mental health issues, housing conditions are a central determinant of health, (Krieger & Higgins, 2002). Historically, epidemic diseases have led to sanitary movements that translated into urban renewal operations, slum clearance and new housing regulations (Francke & Korevaar, 2021; Nayar, 1997). In the nineteenth century, governments addressed health crises through housing regulations requiring improved physical housing conditions and contributing to clearing 'unsanitary areas' (McKie, 1974). In the US, this facilitated the emergence of contemporary urban planning based on a 'sanitary city' discourse (Corburn, 2005, 2007). In Paris, successive cholera outbreaks paved the way for the Haussmannisation policies of the 1850s, which tackled 'unhealthy' medieval areas (Francke & Korevaar, 2021). Moreover, from an economic perspective, the Spanish flu, which remains the closest pandemic to COVID-19, led to increased housing prices in Spain and the reallocation of capital away from highly affected urban areas towards urbanised regions with less mortality, thereby contributing to their industrialisation (Basco *et al.*, 2022).

Industrialisation profoundly marked these periods and led to the spatial segregation of living and working activities in reaction to concerns regarding the high-density juxtaposition of homes and industries, resulting in a Fordist city model

(Doling & Arundel, 2020). This modernist effort continued after the Second World War through massive housing programmes delivering affordable housing segregated from noxious industries (Corburn, 2007) and slum clearance operations. From the 1970s onwards, the development of ICT, the shift towards the ‘new economy’ and knowledge-intensive services (Hutton, 2009), and the later digitisation of these services (Pajević, 2021) enabled flexible—and increasingly mobile—work arrangements for highly-educated workers (Felstead *et al.*, 2002). These changes have transformed the labour market and impacted both housing provision and urban development at various levels.

At the housing level, the development of flexwork among precarious workers and ‘young professionals’—who are expected to be mobile (Bergan *et al.*, 2020)—has contributed to enhancing flexible housing markets (Hochstenbach & Ronald, 2020), be it with regard to tenure or housing forms (typically shared housing with short-term rent). Since the global financial crisis (GFC)—which first led to a steep decline in housing prices where they had grown the most rapidly (Aalbers, 2015)—increasing market pressure and housing costs (Tromp, 2020) have encouraged a reduction in housing standards, including domestic space shrinking (Harris & Nowicki, 2020). In response to the GFC’s burden on housing provision, several Western European governments have attempted to stabilise housing markets (Boelhouwer, 2017) and stimulate affordable housing production (Wijburg, 2021). However, these measures did not prevent housing commodification and financialisation through different channels (e.g. rental properties; Aalbers, 2017) in certain countries. The ‘housing crisis’ concept has been used to describe housing shortages and low levels of affordability and accessibility, particularly in urban contexts. Since the GFC, the crisis has been considered ‘global’ because it has touched many national housing markets concomitantly (Aalbers, 2015). Nevertheless, this narrative must be used carefully because it tends to indicate *structurally* unsustainable housing provision (Madden & Marcuse, 2016) and legitimate neoliberal policies leading to further deregulation and financialisation (Heslop & Ormerod, 2020).

At the urban level, the emergence of WFH and new workplaces (e.g. co-working spaces) has contributed to transforming residential areas into live-work neighbourhoods (Reuschke & Ekinsmyth, 2021). Such transformations were involved in planning movements (e.g. New Urbanism in North America) drawing on compacity and proximity—notably through density and mixed use—to stem urban sprawl and address environmental issues (e.g. Meijer & Jonkman, 2020). Strategic spatial planning has integrated the creation of such environments, particularly in office or industrial areas subject to urban regeneration (Ferm & Jones, 2016).

At the regional scale, the flexibilisation of work has impacted the geography of work and residential locations. Services and knowledge-based economic activities have been concentrated in ‘global cities’ (Sassen, 1991) and polycentric regions (Rader Olsson & Cars, 2011). However, flexible work arrangements tend to relax home-work constraints (Doling & Arundel, 2020) and encourage longer commuting distances (Uyttebrouck *et al.*, 2022). Hence, in certain countries, people are more ready to accept a job further away if they can WFH (e.g. in the Netherlands: de Vos *et al.*, 2018) and thus have more flexibility in residential choices (Bontje *et al.*,

2017). Section 4 returns to these trends by identifying current discourses—particularly the assumed shift towards ‘hybrid work’—and providing evidence on COVID-19 and urban live-work relationships.

3. Systematic literature mapping

We conducted systematic literature mapping (SLM) to delineate the themes and disciplines underpinning COVID-19’s impacts on urban living and working¹ before the qualitative review of its most relevant sources to provide evidence and narratives on this topic. The analysis followed an abductive approach and drove us to revise our pre-analytical framework and the positioning of COVID-19 as a vector of change.

SLM facilitates the review of broad thematic literature before focusing on specific questions (Soaita *et al.*, 2020), thus making it appropriate for examining COVID-19-related issues (e.g. social harm; Gurney, 2021) given the extensive volume of research published on this topic. However, biases related to the chosen database, the publication language and the authors’ own experience of WFH must be considered. Searches of two online scientific databases (Scopus and Web of Science; performed on 16 February 2023) associated the four areas underpinning living and working in a city during the pandemic (Table 1). The Scopus search² prioritised the housing-pandemic relationship over other connections and excluded irrelevant fields (703 references collected). The second search in Web of Science excluded similar fields (e.g. medicine, engineering, biotechnologies)³ and identified 400 references, including 61 duplicates with the Scopus search.

We screened the references of our ‘raw’ sample ($n=1042$ with duplicates removed) to classify them according to their relevance. Rejected references covered a theme (e.g. air quality) or discipline (e.g. environmental studies) that was too weakly related to the research question. Within the final sample ($n=336$; Figure 2), we distinguished highly relevant (e.g. theme related to home meanings or the post-pandemic city) and less relevant (e.g. sociology of work or mobility approaches) sources. The qualitative literature review (Section 4) used ‘highly relevant’ sources only ($n=108$, as well as a few additional sources collected ‘manually’). Although the searches did not exclude any geographical area, the final sample overrepresents evidence from Western countries.

To provide general insights from the SLM, we generated maps of word occurrences ($n \geq 10$, after excluding irrelevant words, such as period, author or variable) using the abstracts of highly relevant and less relevant references using VOSviewer. The network visualisation (Figure 3) shows the weightiest words and their relatedness. Although a small city-housing cluster is apparent, the largest clusters relate to

Table 1. Study dimensions and corresponding keywords used in the requests.

Dimensions	Keywords
Housing	Housing; Home; House; Dwelling
Telework	Telework; Home office; Remote work; Home working; Working from home
Covid-19	Covid-19; Pandemic; Coronavirus; Covid
Urban development	Urban; City; Cities; Built environment; Living environment; Planning

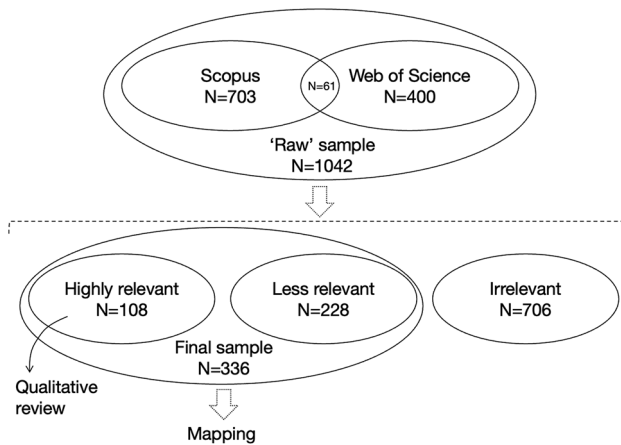


Figure 2. Sampling process for the SLM.

mobility (e.g. ‘travel’, ‘trip’), working conditions (‘employee’ cluster, including, e.g. ‘productivity’, which hides the ‘space’ cluster) and labour-market research (e.g. ‘company’, ‘strategy’).

A second request (Figure 4) was performed on ‘highly relevant’ sources (occurrences ≥ 5 after excluding irrelevant words such as ‘paper’ and ‘researcher’). Although the clusters appear more intertwined, the spatial (e.g. ‘architecture’, ‘environment’) and housing-market (e.g. ‘demand’, ‘price’) dimensions are more prominent. Other clusters relate to urban aspects (‘area’ cluster, including ‘amenity’ and ‘density’) as well as living and working conditions (practice and activity clusters). These visualisations demonstrate that there is a gap to fill in design-oriented and policy- or governance-oriented housing and urban research on the studied topic. We have also created our map (Figure 5) of the themes and concepts used in the sample of highly relevant sources to provide the reader with an overview of the qualitative review.

4. Changes in urban live-work relationships under COVID-19

4.1. COVID-19 has accelerated the shift to hybrid work for those able to engage in it

The COVID-19 crisis has normalised WFH in advanced services and sectors of the knowledge and tech economies (Chapple & Schmahmann, 2023; Conway *et al.*, 2020; Reuschke & Ekinsmyth, 2021). However, this trend has been more moderate than expected (e.g. in Montreal; Shearmur *et al.*, 2021). Notably, fewer people are able—and allowed—to WFH than admitted in public opinion. The journalistic discourse during the pandemic has largely focused on homeworkers’ practices, yet an investigation of US newspapers found that their reporting of essential workers’ experiences helped contextualise the middle-class bias related to this discourse (Creech & Maddox, 2022). Blue-collar workers were either directly exposed to health risks or stayed home, unable to work; however, their

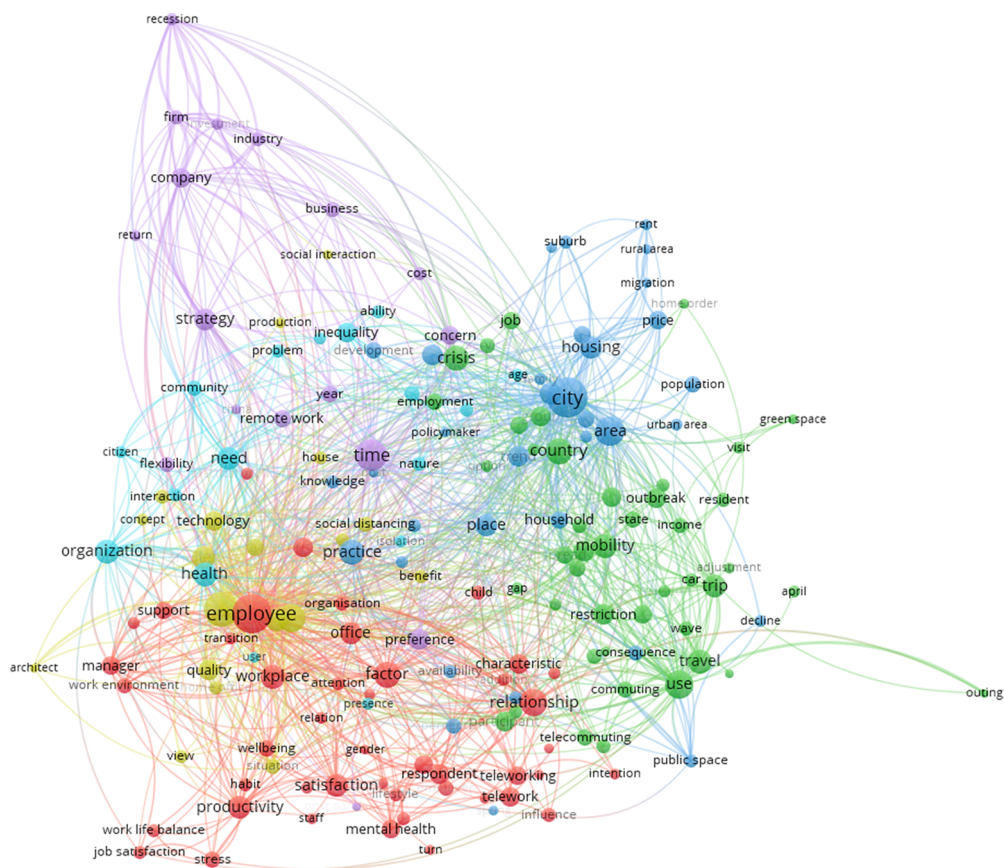


Figure 3. Network visualisation map generated with Vosviewer on word occurrences ($n \geq 10$) in abstracts of the sample ($n = 336$).

work practices were affected one way or another (Vyas, 2022). WFH concerns predominantly highly-educated and higher-income workers with office-based employment in densely-populated areas—particularly urban areas with technology infrastructure and available jobs that can be performed virtually (Ceinar & Mariotti, 2021; Crowley & Doran, 2020; Dingel & Neiman, 2020; Doling & Arundel, 2020; Paul, 2022; Salon *et al.*, 2021; Shearmur *et al.*, 2021). During the pandemic, intensified WFH magnified socio-economic inequalities (e.g. according to race or gender; Gallent *et al.*, 2022) and unequal access to digital services (Reddick *et al.*, 2020).

Although increased virtual collaboration might stimulate ‘remote-by-design’ labour markets (Bonacini *et al.*, 2021; Stephany *et al.*, 2020), full-time telework has been strongly questioned given its issues in terms of boundaries, life satisfaction, productivity and creativity (Cho, 2020; Schieman & Badawy, 2020; Shearmur *et al.*, 2021). Conversely, a shift to hybrid work for those able to is expected, with implications for workplaces and office markets. Despite high levels of office vacancy during the lockdowns and an increase in office conversions to housing or mixed-use

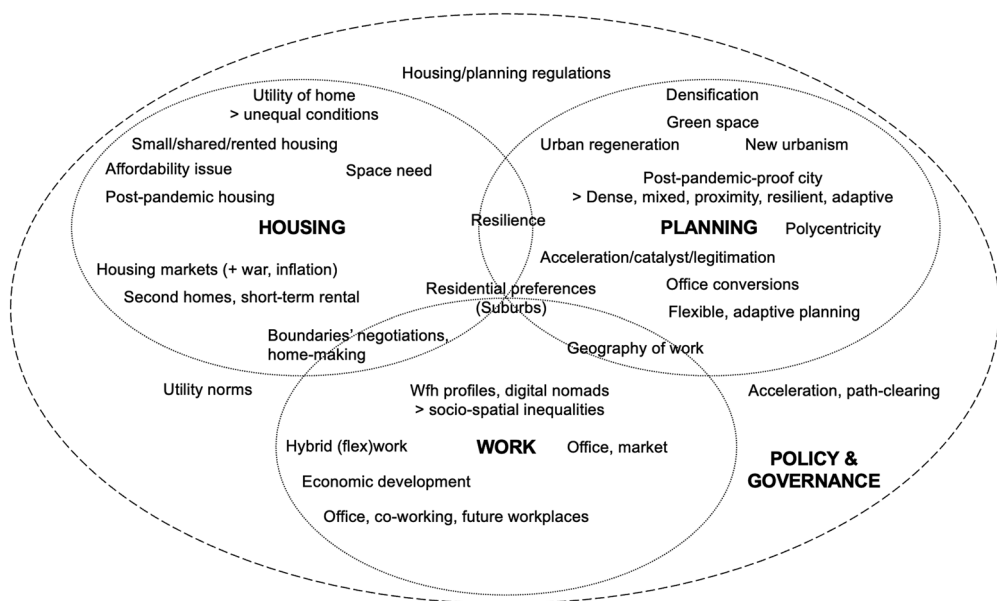


Figure 5. Authors' own map of the themes and concepts found in the sample of highly relevant sources.

2021; Preece, McKee, Flint, *et al.*, 2021). Embedding work into the home has triggered 'ambiguous meanings of home' (Tunstall, 2023, p. 78) and requires negotiations of domestic boundaries (Gurney, 2020; Larrea-Araujo *et al.*, 2021) and home orderings following specific social norms (Azevedo *et al.*, 2022). Altering home-making and work-home boundaries can be done either through segmentation or integration, depending on factors such as tenure, wealth, household composition and—more broadly—(in)equitable housing systems (Goodwin *et al.*, 2021).

Small housing units were not designed to accommodate multiple functions, including work (Blanc & Scanlon, 2022; Horne *et al.*, 2020). Similarly, tenants who worked from home in shared housing arrangements faced privacy and noise issues and had to adapt physical spaces and reframe relationships with the other residents (Blanc & Scanlon, 2022). Such observations question the large-scale production of co-living and micro-apartments in cities over the last decade (Hubbard *et al.*, 2021). WFH also placed pressure on the homes of growing families (e.g. in the UK; Hipwood, 2022). These difficulties caused psychological issues, especially for people with insecure tenure and little resources (Amerio *et al.*, 2020; Bower *et al.*, 2021). For instance, vulnerable renters in the private sector faced mental health issues related to the uncertainty and precarity inherent in their tenure and lower-quality living environment (Oswald *et al.*, 2022; Waldron, 2022). More generally, the pandemic has worsened the affordability issues of financialised, market-driven housing provision (Üçoğlu *et al.*, 2021). Inadequate workspace and small housing arrangements often concern young tenants (Luppi *et al.*, 2021), whereas good-quality workspace is more common for male homeowners aged 55+ with socio-economic stability (Arroyo *et al.*, 2021; Cuerdo-Vilches *et al.*, 2021; Doling & Arundel, 2020). Therefore, the disruption to daily life caused by COVID-19 may reshape small

housing arrangements for younger and lower-income groups (Preece, McKee, Robinson, *et al.*, 2021).

The expansion of WFH has led to demand for more private residential space (Boesel *et al.*, 2021) and affected residential location choices (Schwartz & Wachter, 2022; see next subsection). However, the need for more space conflicts with property price increases in large cities (Barinova *et al.*, 2021; Buitelaar, Pen, *et al.*, 2021; Xu, 2021) and their suburbs (Dolls *et al.*, 2022) despite the uncertainty related to the combination of the pandemic, the war in Ukraine, inflation peaks and growing interest rates (Van Nieuwerburgh, 2023). In the UK, increased housing prices in suburban and rural areas are primarily driven by investment in second homes; however, other long-term effects are expected since housing is a preferred asset class in times of crisis (Gallent *et al.*, 2022).

The above observations have fuelled discussions about what ‘post-pandemic housing’ should be as well as opportunities for policy changes that were previously deemed impossible (Baxter *et al.*, 2021; Rogers & Power, 2020). During the pandemic, emergency measures were taken, such as housing the homeless (e.g. in Australia; Parsell *et al.*, 2022), restricting the possibility of eviction (e.g. in the US; Benfer *et al.*, 2022) and supporting mortgage holders (e.g. in the UK, Belgium and France; Tunstall, 2023). For the future, academics advocate for transition and adaptive spaces (Keenan, 2020; Valizadeh & Iranmanesh, 2021) and the integration of WFH in the ‘post-pandemic housing discourse’ through policy, normative and spatial adaptations (e.g. utility minimum regulation) to improve flexibility and resilience (Blanc & Scanlon, 2022; Cuerdo-Vilches *et al.*, 2021; Horne *et al.*, 2020). Following this discourse, housing regulations and standards should be reassessed to suit future lifestyles and needs (Blanc & Scanlon, 2022), such as by integrating appropriate workspaces—including in social housing—to contribute to a fairer economy (Holliss, 2021). Furthermore, Elrayies (2022) pleaded for ‘pandemic-resilient’ housing that can accommodate several functions through adequate size and comfort, resilience to future shocks, adaptability and flexibility. Housing affordability, quality and tenure security should also be placed at the top of the policy agenda (Baxter *et al.*, 2021; Bower *et al.*, 2021; Buitelaar, Pen, *et al.*, 2021; Callison *et al.*, 2021; Gallent & Madeddu, 2021; Hof, 2021; Rosenberg *et al.*, 2020; Waldron, 2022).

4.3. Hybrid work legitimates planning discourses and regulatory changes based on urban proximity, densification and mixed-use

Much like past health crises, the COVID-19 pandemic has shown that urban density and proximity may become harmful in the case of poor design and inadequate services (Ceinar & Mariotti, 2021; Ellis *et al.*, 2021). Density apprehension and the flexibility in residential choices for hybrid workers have fuelled concerns regarding decreased urban attractiveness (Balemi *et al.*, 2021; Barinova *et al.*, 2021; Dolls *et al.*, 2022; Kahn, 2022; S. Liu & Su, 2021). The deconcentration of skilled jobs in urban areas might lead to residential relocations within commuting distance (Balemi *et al.*, 2021; Denham, 2021; Doling & Arundel, 2020). Such an increased urban exodus

would revive urban-rural dichotomies (Freudendal-Pedersen & Kesselring, 2021), challenge sustainable policy goals (Habib & Anik, 2021) and enhance ‘rural gentrification’ and ‘inefficient polycentrism’ (Delventhal *et al.*, 2021; Denham, 2021).

Initial studies conducted during the COVID-19 pandemic highlighted low rates of relocations and smooth workplace shifts in the continuity of pre-pandemic trends (Buitelaar, Bastiaanssen, *et al.*, 2021; Shearmur *et al.*, 2021). However, in the US, real estate economists observed relocations from metropolitan areas towards their suburbs, with increased house and rent prices in these zones (Gupta *et al.*, 2022; Van Nieuwerburgh, 2023). In Europe, academics have presented evidence of *short-term* relocations (i.e. demand for short-term rentals and second homes) in smaller cities and rural areas, especially for privileged classes working in the cultural and knowledge industries (Colomb & Gallent, 2022). However, such movements seem to have returned to pre-pandemic trends (Rowe *et al.*, 2023). Lockdowns have also inclined digital nomads to temporarily relocate to places with easy access to welfare and health services (Holleran, 2022). Within metropolitan regions, the secondary cities with advanced broadband infrastructure and a high share of knowledge workers are more suitable to host remote workers (e.g. in the metropolitan region of Milan; Mariotti, Di Matteo, *et al.*, 2022; Moser *et al.*, 2022).

Nevertheless, the pandemic’s effects have been nuanced since the war in Ukraine—coupled with rising inflation and energy costs—is more likely to be a turning point (Colomb & Gallent, 2022). To date, suburban relocations have been more common in the US than in Europe (Mariotti, Di Matteo, *et al.*, 2022), whilst the migration towards rural areas has been lower than media predictions (González-Leonardo *et al.*, 2022). Moreover, people who are able to WFH (in a hybrid work mode) tend to maintain similar residential preferences, which have always included suburban locations (de Abreu e Silva, 2022; Jeong & Lim, 2023). Overall, metropolitan areas are better adapted to telework development (Irlacher & Koch, 2021; Reuschke & Felstead, 2020) and stimulate the mobility of highly skilled workers. Despite this, accelerated digitalisation and its effects on labour markets may reduce interregional migration (Barinova *et al.*, 2021) and affect metropolitan dynamics in the long term.

Still, in response to the temporary disruptions of the pandemic, planning discourses based on new understandings of pre-pandemic principles—such as densification (coupled with more room for open space) and mixed-use development—have been conveyed, primarily in discourses situating COVID-19 within concerns about climate change (e.g. Grant, 2020). Despite the pandemic’s variegated territorial impact (de Rosa & Mannarini, 2021), the literature emphasises global principles such as ‘gentle density’ (Grant, 2020). Under WFH expansion, New Urbanism—which is based on mixed-use, compact, walkable and live-work neighbourhoods (see Section 2)—was both legitimated and criticised for creating attractive environments for affluent homeworkers and worsening socio-spatial inequality in lower-income neighbourhoods (Daniels, 2021; Zenkteler, Hearn, *et al.*, 2022). Instead, planning policy should also focus on neighbourhoods where WFH is less likely (Zenkteler, Hearn, *et al.*, 2022).

Similarly, public opinion has widely framed the pandemic as a catalyser of short live-work distances and the so-called ‘15-minute city’. This controversial concept and other proximity-based approaches to planning engage in the ‘chrono urbanism’

of the 1990s, which aimed to ensure access to essential services, including workplaces, local economic activities and green space (Abdelfattah *et al.*, 2022; Di Marino *et al.*, 2022). Some scholars have supported variations of this concept (e.g. ‘walkable’ and ‘20-minute neighbourhoods’) for large European cities to mitigate inequalities in urban services (Boussauw & De Boeck, 2022; Horne *et al.*, 2020; Kato *et al.*, 2021), whilst others have criticised it for exacerbating such inequalities (Oosterlynck & Beeckmans, 2021).

Moreover, academics defend a ‘post-pandemic’ city that is resilient to shocks and adaptive (Abd Elrahman, 2021; J. Liu *et al.*, 2021; Pirlone & Spadaro, 2020; Vicino *et al.*, 2022), favouring ‘deceleration’ and ‘degrowth’ (Freudendal-Pedersen & Kesselring, 2021). This pandemic-resilient city offers improved economic, social and physical conditions and policies for public health and housing provision (Nathan, 2021). Such discourses also apply to second-tier cities (Song *et al.*, 2021) and value nature (Elrayies, 2022), social justice (Gallent & Madeddu, 2021; Oswald *et al.*, 2022) and care (Angel & Blei, 2020; Ellis *et al.*, 2021; Morrow & Parker, 2020). Conversely, the smart city discourse remains more timid (Kunzmann, 2020), drawing on older conceptions of ‘electronic urbanism’ (Charitonidou, 2021).

These discourses have consequences for planning policy and regulations. For some, urban regeneration strategies and planning regulations should integrate flexible uses and third places for remote workers in suburban environments (Glackin *et al.*, 2022; Zenkteler, Foth, *et al.*, 2022); however, this, once again, raises questions of inequality. More broadly, scholars advocate for planning systems that embrace complexity, uncertainty and adaptability (Muldoon-Smith & Moreton, 2022), support live-work housing suitable for different kinds of work (Holliss, 2021) and envision broader scales (Vicino *et al.*, 2022).

5. Research agenda

This paper identified current evidence and academic discourses regarding the effects of COVID-19 on urban live-work relationships to draw a research agenda for housing and urban studies. We considered the COVID-19 pandemic to be an exogenous shock contingent upon other shocks, embedded in a structural global housing crisis and accelerating the digitalisation and flexibilisation of living and working places. Past health and economic crises have all affected urban housing provision in one way or another and this one is no different; however, its embeddedness may complicate the identification of its effects between normalisation, adaptation and acceleration.

Our literature review of living and working in cities during the COVID-19 pandemic confirms that this crisis has firstly *accelerated* the shift towards hybrid work in urbanised areas with technology infrastructure, for those able to do so. This has enhanced the mutation of workplaces and resulted in spatial consequences. Secondly, increased attention to the living and working conditions of homeworkers has highlighted changes in home usage, the unsuitability of small and shared housing arrangements to such changes and the inequalities of WFH across tenure, gender and lifetime among other factors. Under rising property prices, post-pandemic housing

discourses have supported *normalisation* through quality housing design and recalled the need for housing policies that address structural affordability and tenure security issues. Thirdly, hybrid work has legitimated planning discourses (*adaptation*) based on density, mixed use and short live-work distances, which are partly driven by environmental concerns. However, such models may exacerbate socio-spatial inequalities. Both housing and planning discourses draw on resilience as a central concept that is translated into flexibility and adaptability at different scales.

Based on these observations, we suggest a research agenda structured in three axes. The first axis concerns the conceptualisation of WFH and COVID-19 as a study object. First, although WFH has been studied across disciplines, ambiguity between WFH and home-based telework remains. The literature written since the beginning of the pandemic tends to assimilate the former into the latter. However, *telework* relies on the use of technology, whereas *WFH* could embrace any kind of work conducted at home, including unpaid work often carried out by women, as widely discussed in gender studies (e.g. Burchi, 2018). Such a broader, intersectional definition would help move beyond the inequalities inherent to telework and more inclusively reintegrate different types of work (e.g. productive activities) into different types of housing (e.g. social housing). Also, the way that WFH was experienced during the pandemic paradoxically corresponds to older forms of home-based telework; however, its expansion in the lockdown context required digital innovations (e.g. online meetings and seminar tools). The upscaling role of COVID-19 could be further analysed using innovation cycles, for example. Second, given the complex articulation between COVID-19 and other accumulated shocks and crises, we encourage prospective interdisciplinary research to discuss the pandemic's long-term structural effects on living and working in cities. Although we know that the pandemic has reinforced existing live-work paradigms to date, we still have few indications of how they may evolve. What has been unanimously recognised as a short-term catalyser may appear more disruptive—or remain incremental—in the future. Efforts should be continued to understand COVID-19-related changes, their institutionalisation (e.g. through new actors or instruments) across different local institutional frameworks and their relationships with other disruptive events.

Moving to the second axis, we recommend housing studies to further compare actors' policy responses to accumulated uncertainties in terms of housing provision in various housing systems. In the context of an enduring housing crisis, the pandemic offers opportunities to establish relevant policies and reduce implementation gaps—beyond emergency measures—that should not be missed. Another key aspect of the review is the need to explore how the pandemic may enable design principles and regulations that foster housing quality and resilience. In particular, the effects of WFH on housing provision in the context of 'shrinking domesticities' (Harris *et al.*, 2023) deserve in-depth investigation. More broadly, the conceptualisation of housing as a 'capital good' (Doling & Arundel, 2020) requires experimenting with urban housing typologies that address the complex combination of issues relating to health, space needs, flexibility and shared amenities, beyond market and economic constraints. The same is true for 'flexible' workplaces—although those are not the

focus of this paper. Moreover, qualitative indicators should be found to assess such typologies alongside the usual quantitative indicators.

Finally, the third research axis relates to planning issues, with an initial need for critical investigations of the opportunities and risks of WFH-oriented planning and urban regeneration strategies centred on remote workers, in terms of inequalities and urban commodification. Such planning principles and strategies should be challenged by exploring alternative ways of planning post-pandemic or pandemic-resilient cities and translating them into design tools and planning principles adapted to different planning regimes. Although many studies have analysed residential relocations during the pandemic at the metropolitan and regional scales, similar investigations should be continued in the future to challenge the 'back to status quo' assumption and improve knowledge of the post-pandemic geography of metropolitan living and working. Moreover, identifying possible reallocations of capital in second-tier cities and regions—as observed during the Spanish flu—would help in discussing opportunities for reducing inequalities at broader scales.

Overall, this article helps apprehend the state of the art and current academic discourses on the future of urban living and working by originally situating the discussion at the intersection of work, housing and planning whilst providing research perspectives that strengthen these links. Although our sampling choices have certain limitations and biases (e.g. the overrepresentation of Anglo-Saxon literature and occidental geographical areas) and our focus remains relatively broad, through a threefold research agenda, these choices allowed us to raise relevant questions for housing and urban studies following WFH expansion during the COVID-19 pandemic and stress the need for new conceptualisations and analytical frameworks to address these questions.

Notes

1. The design of the SLM was built upon a preliminary media framing of COVID-19's effects on urban live-work relationships.
 2. (TITLE-ABS-KEY (("Housing" OR "Home" OR "House" OR "Dwelling") AND ("COVID-19" OR "Pandemic" OR "Coronavirus" OR "COVID"))) AND ALL (("Telework" OR "Home office" OR "Remote work" OR "Home working" OR "Working from home") AND ("Urban" OR "City" OR "Cities" OR "Built environment" OR "Living environment" OR "Planning")))
- AND (EXCLUDE (SUBJAREA, "MEDI") OR EXCLUDE (SUBJAREA, "COMP") OR EXCLUDE (SUBJAREA, "MATH") OR EXCLUDE (SUBJAREA, "BIOC") OR EXCLUDE (SUBJAREA, "NURS") OR EXCLUDE (SUBJAREA, "HEAL") OR EXCLUDE (SUBJAREA, "AGRI") OR EXCLUDE (SUBJAREA, "EART") OR EXCLUDE (SUBJAREA, "NEUR") OR EXCLUDE (SUBJAREA, "PHYS") OR EXCLUDE (SUBJAREA, "PHAR") OR EXCLUDE (SUBJAREA, "VETE") OR EXCLUDE (SUBJAREA, "MATE") OR EXCLUDE (SUBJAREA, "CENG") OR EXCLUDE (SUBJAREA, "CHEM") OR EXCLUDE (SUBJAREA, "IMMU") OR EXCLUDE (SUBJAREA, "ENER")).
3. TS=((Housing OR Home OR House OR Dwelling) AND (COVID-19 OR Pandemic OR Coronavirus OR COVID) AND (Telework OR Home office OR Remote work OR Home working OR Working from home) AND (Urban OR City OR Cities OR Built environment OR Living environment OR Planning)).

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