Ann Legeby, Daniel Koch
**The changing of urban habits during
the Corona pandemic in Sweden**

Abstract
During the Corona pandemic, extensive interventions have been introduced to limit the spread of Covid-19. Authorities, companies, and organisations introduce comprehensive restrictions. To capture new routines, we launched a web questionnaire (PPGIS) including maps in three cities in Sweden; Stockholm, Uppsala and Gothenburg. From the first month results, we see dramatic changes of habits. Places still used are primarily where people find service, while places people avoid are where they normally work or study. Places used more, are where people find seclusion; primarily green spaces and easy to access. This pandemic reinforces existing urban inequalities. Access to urban resources and green spaces becomes even more important in areas characterized by poverty and overcrowding.

Parole Chiave
Coronavirus pandemic — Change of habits — Unequal living conditions — Diversity of public space — Sustainability

Introduction: a pandemic that leaves an imprint on the city

During the Coronavirus pandemic, life in Stockholm has undergone comprehensive changes, and people use spaces in new ways. Starting in early March, several restrictions were introduced that dramatically limited people's movement patterns and the use of the city (Region Stockholm webpage). Physical distancing was proclaimed to be the most effective measure to curb the spread of the virus (Prem et al., 2020). The restriction that anyone with symptoms should stay at home was followed by a recommendation to work from home and avoid public transportation unless absolutely necessary. Universities and upper secondary schools shifted to distance learning. Gatherings of more than 50 people were forbidden. The fact that physical distancing would inevitably influence everyday practices and routines became apparent in all parts of the city. But the conditions for being able to practice physical distancing and working and studying from home vary considerably, and neighbourhoods characterised by overcrowding and a high dependency on public transportation saw the most obvious negative effects (Hansson et al., 2020). At the same time, access to nature and parks has been shown to be essential, as these spaces offer seclusion and are beneficial to the well-being of city dwellers (Hartig and Kahn 2016, Samuelsson et al., 2018).

To capture the changes in how we use the city, we launched a web questionnaire (PPGIS) on 25 March in three Swedish cities: Stockholm, Uppsala, and Gothenburg, , The informants are asked to describe how their habits have changed in terms of the places they use more, use the same, or avoid by marking places on a map and adding information about what they do there. The aim is to better understand how the pandemic and subsequent restrictions influence habits and to capture what places are used or avoided and why.

This study contributes to the further development of earlier research concerning how the city provides places that may counteract segregation, how unequal living conditions produce and reproduce patterns of segregation (Legeby 2013, Legeby and Marcus 2011), and how architecture, the material and spatial arrangements of cities, and configuration are related to power and representation (Koch et al., 2019). The study also contributes to research into mechanisms of and conditions for avoidance (Koch 2016). Public urban space is seen as crucial for an ongoing exchange and negotiation between citizens (Young 1996, Zukin 2005, Amin 2012), where configurative properties create conditions for various social processes (Hillier 1996, Hanson 2000, Vaughan and Arbaci 2011). Architecture and the built environment create a landscape of opportunities where the living conditions that are created in different neighbourhoods are influenced by access to various societal resources. Groups with fewer resources are especially dependent on amenities and resources found in close proximity to their neighbourhoods (Fainstein 2010, Tonkiss 2013). As a result of the outbreak of the pandemic and the restrictions that followed, many have been homebound, for example as a result of distance working, distance education, unemployment, or being laid off. As people are advised or forced to stay at home, they become highly dependent on the services and opportunities that are locally accessible. The crisis has made inequalities an even more urgent issue, placing people with limited access to societal resources and services at an even greater disadvantage.

This paper will specifically look at places that people have started to use more frequently according to self-reported data from a web questionnaire. The results show that during this pandemic, people are still visiting places, for example to access services, but they have also sought out other places to access nature, to visit parks and other green areas. The informants report that one reason they visit these places is that they are easy to access. The results illustrate the importance of having services in close proximity to one's neighbourhood and having easy access to parks and green areas. We argue that this calls for a need to reduce inequalities in urban areas and to ensure the creation of a walkable or bikeable city where people can access services, workplaces, and societal resources just a brief walk or bike ride away.

Results

The results of the survey, which was initiated on 25 March, cover the first month of the study in three cities and include 2,297 answers. The informants responded by marking where they live on a map, what places they still use, what places they avoid, and places they have used to a larger extent than before the Coronavirus outbreak and the restrictions. For each place respondents marked, they have reported what they do at these places or what they normally would do at the places they now avoid. A comparison between the three cities shows that the share of places used to a greater extent is rather similar. However, in Gothenburg, the share of places avoided is smaller compared with Stockholm and Uppsala, which also means that the share of places that are still visited is larger in Gothenburg. This indicates that the changes in habits have been more evident in Stockholm and Uppsala, cities that have seen a much greater impact from the COVID-19 outbreak.
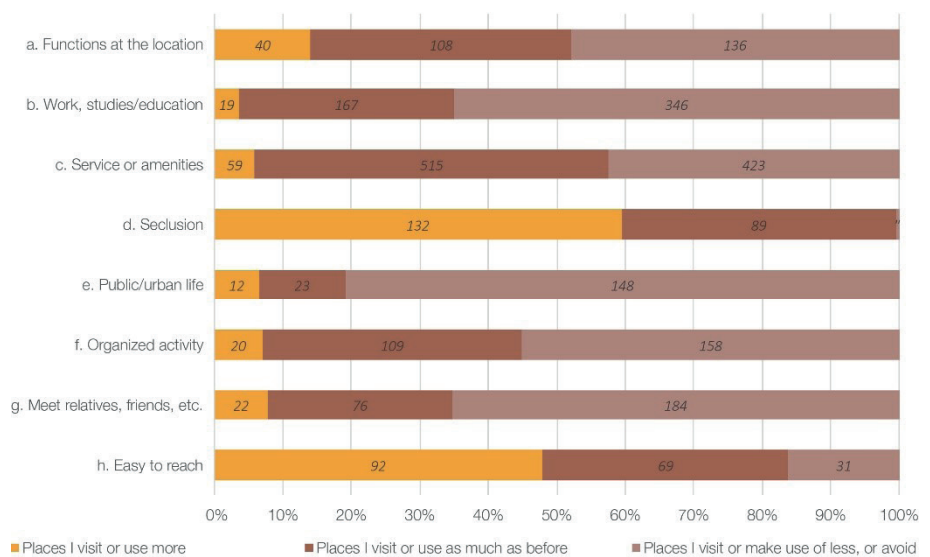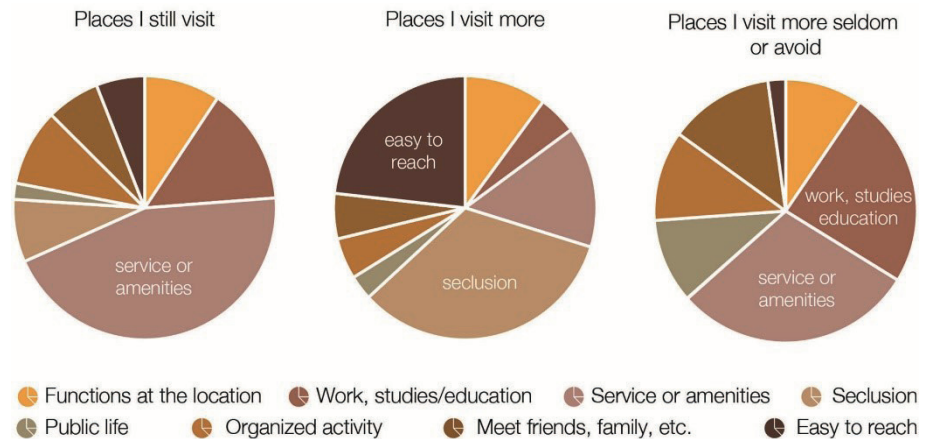
This paper will primarily focus on the survey responses from Stockholm, which includes 895 answers. The majority of the informants are women, and the dominant age group is between 25-64 years.

Fig. 1
The distribution between places, all three cities
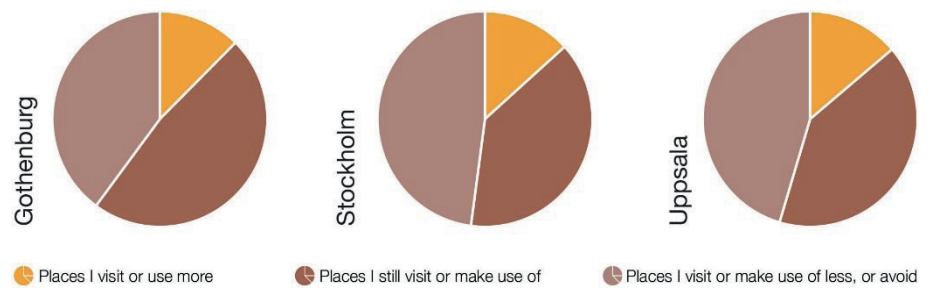

Fig. 2-3
The distribution of uses

Of all the places reported, 44% are places that people still visit. The main reason given for visiting these places is to access a service (e.g. shops, health care, restaurants, etc.). Other reasons reported to a notable but lesser degree are, for example to work or study, participate in an organised activity, access key functions at the destination (e.g. playground, bus stop, etc.), and to find seclusion.

Places that people report that they avoid or use less constitute 42% of all places reported. Similar to places that are still visited to the same extent, the informants report that these destinations were normally used to access a service or a location where they worked or studied. To a lesser degree, respondents report that places they avoid are locations where they would normally meet friends and family, participate in an organised activity, seek urban life, or use facilities such as playgrounds and bus stops.
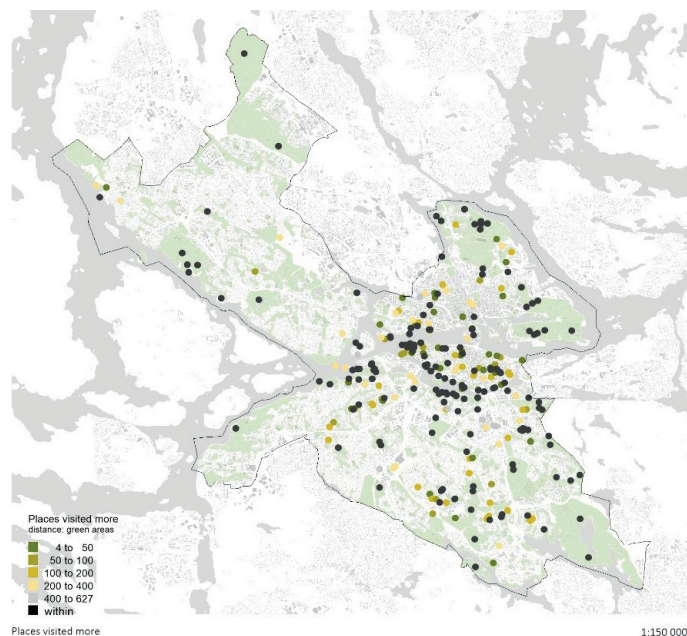
Places respondents reported that they used more constitute 14% of all places. These places are primarily visited to find seclusion, but the fact that these

Fig. 4
Places avoided, where those re-
lated to work/study, are marked
in black.

Platser som undviks, svart = arbetar eller studerar   1:150 000
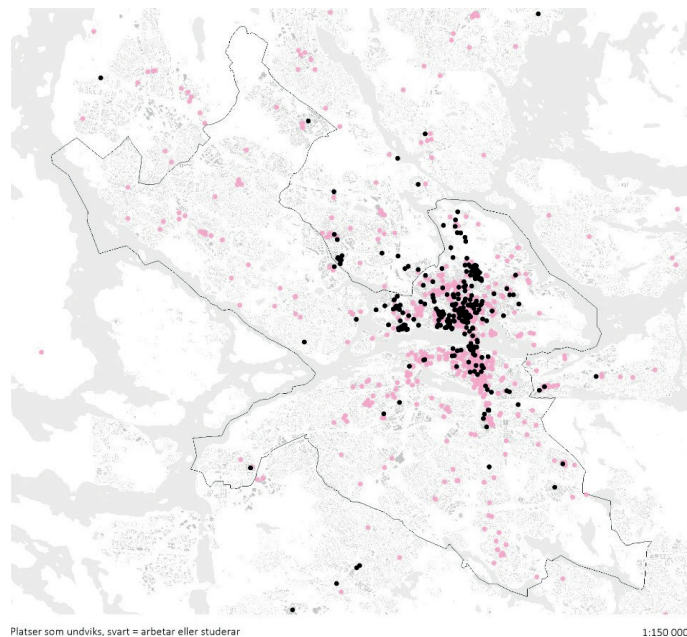
Fig. 5
Places visited more and their re-
lation to parks and nature

Places visited more
distance: green areas
■ 4 to 50
■ 50 to 100
■ 100 to 200
■ 200 to 400
■ 400 to 627
■ within
Places visited more   1:150 000

places are also easy to access is another factor. Thus, new everyday routi-
nes include using places in proximity to where people live. In the written
comments, respondents frequently note that they seek out these places for a
walk, contemplation, to access nature, access the forest, or for recreation and
relaxation, hiking, or excursions. This indicates that parks and other green
spaces have been important during the pandemic. We therefore performed
an analysis of where the reported locations are in relation to green areas. Of
all the 434 places noted, almost 2/3 are located within a green area . Of those
places that are not within a park or a green area, 43% are located less than
100 metres from a park or green area.

Conclusions
It is evident from the results that people have changed their habits due to the
pandemic. Respondents report that they still visit places to access certain
services, while they avoid places they normally visited for work, studies,
or to access other. The fact that 'service' is an important category in all th-
ree response alternatives suggests a reconfiguration in who is using which

services (for instance shifting closer to home) or a shift in what types of services are prioritised. In a smaller share of the answers, respondents report places that they visit more frequently, mainly to find seclusion in places that are easy to access. These places that have now become a part of peoples' everyday routines are, to a large extent, located within or in proximity to urban green spaces, parks, and natural areas.

This means that cities or neighbourhoods with poor access to parks and green spaces provide unfavourable conditions for people to cope with the pandemic and restrictions. This implies that people in these areas will be more negatively affected by limitations to their movement patterns, self-isolation, or practicing physical distancing, which restricts their ability to access services and make use of secluded public spaces, or forces them to travel longer distances—potentially by using public transport. Thus, we argue that cities and neighbourhoods that provide access to parks and green spaces are more resilient towards these kinds of crises. But the results also illustrate that the use of services is still important to residents, suggesting that access to amenities, such as grocery stores, health care, and playgrounds is critical, as is access to cultural institutions, such as libraries. Adequate access becomes especially important in neighbourhoods characterised by overcrowding, lower income levels, or high unemployment rates. This relates to concepts such as accessible cities (Marcus and Koch 2017), or walkable cities, that are associated with a continuous street network (Hillier et al., 2010, Vaughan et al., 2015, Legeby 2013). The mayor of Paris has highlighted a similar concept during the pandemic: the "Fifteen-minute city" . We argue that a planning practice that more accurately accommodates a more varied set of urban practices can better prepare our cities for crises that may arise in the future. From a sustainability and a resilience perspective, urban planning and architectural practice need to create equal living conditions and create greater diversity in public spaces, places that accommodate a vibrant social urban lifestyle on the one hand, which counteracts segregation, and places that allow residents to seek out seclusion, on the other hand.

Notes

[1] The Sociotope map of Stockholm used include parks and green areas larger than 0.5 hectares.
[2] https://www.bloomberg.com/news/articles/2020-02-18/paris-mayor-pledges-a-greener-15-minutes-city

Bibliography

AMIN A. (2012) – *Land of Strangers*. Polity, Cambridge.

FAINSTEIN S. S. (2010) – *The Just City*. Cornell University Press, New York.

HANSON J. (2000) – "Urban Transformations: A History of Design Ideas". Urban Design International, 5, 97–122

HANSSON E., Albin M., Rasmussen M. and Jakobsson K. (2020) – "Stora skillnader i överdödlighet våren 2020 utifrån födelseland". Läkartidningen, 2920: 117:20113.

HARTIG T. and Kahn Jr P. H. (2016) – "Living in cities, naturally". Science, 352(6288), 938–940.

HILLIER B. (1996) – *Space is the Machine: a configurational theory of architecture*. Cambridge University Press, Cambridge.

HILLIER B. (2010) – "What Do We Need to Add to a Social Network to Get a Society?". The Journal of Space Syntax, 1(1), 41–58.

KOCH D. (2016) – "On Avoidance: Reflections on Processes of Socio-spatial structuring". Civil Engineering and Architecture, 4(2), 67-78.

KOCH D., Legeby A. and Miranda Carranza P. (2019) "Suburbs and Power: Configuration, Direct and Symbolic Presence, Absence, and Power in The Swedish Suburb Gottsunda". In: Proceedings of the 12th Space Syntax Symposium, Beijing Jiatong University, Beijing.

LEGEBY A. (2013) – *Patterns of Co-Presence: Spatial Configuration and Social Segregation*. Stockholm, KTH.

LEGEBY A. and MARCUS L. (2011) – "Does Urban Structure of Swedish Cities Inhibit the Sharing of Public Space?". Built Environment, 37(2), 155–169.

MARCUS L. and KOCH D. (2017) – "Cities as implements or facilities – The need for a spatial morphology in smart city systems". Environment and Planning B, 44(2), 214-226.

PREM K., LIU Y., RUSSELL T. W., KUCHARSKI A. J., EGGO R. M., DAVIES N., Centre for the Mathematical Modelling of Infectious Diseases COVID-19 Working Group, JIT M. and KLEPAC P. (2020) – "The effect of control strategies to reduce social mixing on outcomes of the COVID-19 epidemic in Wuhan, China, a modelling study. The Lancet, Public Health, 5(5), e261-270.

VAUGHAN L. and ARBACI S. (2011) – "The Challenges of Understanding Urban Segregation", Built Environment, 37(2), 128–38.

VAUGHANL. (2015) – *Suburban Urbanities: Suburbs and the Life of the High Street*. UCL, London.

SAMUELSSON K., GIUSTI M., PETERSON G. D., LEGEBY A., BRANDT S. A., and BARTHEL S. (2018) – "Impact of environment on people's everyday experiences in Stockholm".Landscape and Urban Planning, 171, 7–17

TONKISS F (2013) – *Cities by design: the social life of urban form. Polity*, Cambridge.

YOUNG I. M. (1996) – "City Life and Difference". In. S. S. Fainstein and S. Campbell (eds.), Readings in Urban Theory. Blackwell, Oxford.

ZUKIN S. (1995) – *The Culture of Cities*. Blackwell, Oxford.

Daniel Koch is a Docent in Architecture and Researcher at KTH School of Architecture, whose research investigates spatial configurations, diagrams and abstractions, and processes of subjectification within the larger frame of architectural theory and urban design. Lately his research has focused on the role of memory, projection and imagination within observation-based research and our understanding of relations between architecture and social structures. Daniel is co-director of the Masters' Programme in Sustainable Urban Planning and Design, and in the Urban Design research area, he is heading the profile Critical Morphology, where he is involved in several research projects with external funding including work within the Senseable Stockholm Lab.

Ann Legeby, PhD, Professor in Applied Urban Design at KTH, School of Architecture. Ann is specialised in urban design with a special focus on social aspects. Central for the research is to increase the understanding of society-space relations, for example, the role of architecture and urban design in relation to social segregation and unequal living conditions as well as urban life. Spatial analysis is central including methodologies how to analyse, model, and visualize spatial configuration as defined by urban form, and how urban form relates to social processes. Ann is also engaged in practice and works with urban design in several cities in Sweden.