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# **Exploring the effects of the Covid-19 pandemic on people's relationships with gardens**

Thea Gordon-Rawlings<sup>1</sup>, Alessio Russo<sup>1\*</sup>

1 School of Arts, University of Gloucestershire, Cheltenham, GL50 4AZ United Kingdom

\*Corresponding author [arusso@glos.ac.uk](mailto:arusso@glos.ac.uk) [alessio.landscape@gmail.com](mailto:alessio.landscape@gmail.com)

## **Exploring the effects of the Covid-19 pandemic on people's relationships with gardens**

### **Abstract**

Gardens are places where science and art combine to create environments that often offer restorative and therapeutic experience to those who encounter them. During the Covid-19 pandemic, in the UK and elsewhere there has been a surge of interest in gardening. Public appreciation of gardens and other green spaces has grown and inequality of access to gardens and outdoor spaces has been extensively documented. Gardens are prevalent and of cultural significance in the UK, where their salutary properties have been documented for centuries. Yet people's relationships with gardens during the pandemic have been relatively underexplored in academia and were already under-researched prior to the pandemic's inception. This qualitative study investigates the relationships between people and gardens during the Covid-19 pandemic. Specifically, through thematic analysis based on in-depth interviews with 12 participants, it explores the effects that the pandemic had on people's relationships with gardens during an approximately 9-month period after the first national lockdown began in the UK. It places emphasis on health and wellbeing and garden design, using the concepts of agency and affordances as lenses through which to explore people's relationships with gardens. The results of this paper support others which have found people to be more supportive of nature-friendly garden design and to feel more connected with nature since the pandemic began.

**Keywords:** private gardens; wellbeing; affordances; pandemic; agency

### **1. Introduction**

On the 23rd of March 2020, in response to the Covid-19 pandemic, the UK's Prime Minister instructed the nation to stay at home (Johnson, 2020). This marked the beginning of a phase of government-imposed restrictions on private and public life known as "lockdown".

The periods of social isolation imposed during the pandemic have had implications for health and wellbeing (Pietrabissa & Simpson, 2020). According to longitudinal studies, mental health symptoms were reported to be on the rise during the Covid-19 pandemic (Robinson, Sutin, Daly, & Jones, 2021).

Therefore, the health burden of the pandemic is vast. Even before it began, mental health conditions accounted for about 13% of the global burden of disease (The Lancet Infectious Diseases, 2020). To minimise its impact, it will be important to address the significant unmet mental health needs of societies, which disproportionately affect the most deprived. New evidence based on data gathered prior to the pandemic highlights that gardens may have a role as a public health resource and that it is important to ensure their benefit is available universally (Andreucci, Russo, & Olszewska-Guizzo, 2019; de Bell et al., 2020). During the first national lockdown and the months that followed, the important role that being in and engaging with the outdoors played in maintaining, regulating, or improving people's health and wellbeing was covered extensively by mainstream media (Crossley and Russo, 2022; Duncan, P., McIntyre, N. and Cutler, 2020; Hanley, 2020). The negative impact that inequality of access to outdoor spaces was having upon people's health and wellbeing was also covered (ibid). These topics were also the subject matter of many surveys and other forms of research carried out by government agencies, charities and other organisations including academic institutions (Lemmey, 2020; Spain, 2020). The pandemic illuminated a relationship between inequality of access and proximity to green space and health and wellbeing that has been studied for some time (Geary et al., 2021; Honey-Rosés et al., 2020; Lehberger, Kleih, & Sparke, 2021). Greener environments were found to reduce levels of depression, anxiety, and fatigue and the salutary

effects are greatest for more deprived groups, with inequality in mental wellbeing narrower in deprived groups with good access to greenspace (Gascon et al., 2015; Houlden, Weich, & Jarvis, 2017; Maury-Mora, Gómez-Villarino, & Varela-Martínez, 2022; Public Health England, 2020).

While parks in the UK remained open, many gardens normally open to the public had to close, with some community gardens also restricting access to both members and the public.

In May 2020, gardening was listed as the second most popular lockdown activity people planned to do after watching TV (Appleby, 2020). By late September 2020, there was increased demand for homes with gardens, and prices hit a 4-year high (Romei, 2020). At the same time, the extent and connectivity of natural spaces, especially in urban areas, are under increasing pressure. This is due to factors including population growth, housing demand and increasing land values, and the vitality of these spaces is threatened by environmental change and biodiversity loss (Lin et al., 2017).

Jennifer Atkinson (2020) posits that gardening has become so popular during the pandemic because of people's desire to engage their bodies and due to a longing for nature in a time of ecological loss (Atkinson, 2020). During the pandemic, gardening was stated to be beneficial for nature connection, individual stress release, outdoor physical activity, and food provision (Egerer et al., 2022). During the time of increasing interest in gardens brought on by the Covid-19 pandemic, the garden served as a refuge (Marsh et al., 2021). Specifically, gardens served as what Marsh et. al (2021) termed therapeutic landscapes. The concept of therapeutic landscapes identifies temporal changes in the wellbeing potential of people's place encounters and permits consideration of the various sensory, social, cultural, and physical aspects of experience that influence those changes; changes that are particularly pertinent in light of the global Covid-19 pandemic (Jellard & Bell, 2021).

As noted by de Bell et al. (2020), it is important to understand the relationship between gardens and human health and wellbeing, particularly in relation to garden access and health inequalities and how having access to a garden may affect the use of other urban green spaces. This is highly important for designers to consider in the context of restricted access to urban and other green spaces associated with Covid-19.

A study conducted during the pandemic found that having more green views and access to private gardens were both associated with enhanced mental resilience (Spano et al., 2021). According to Ugolini et al. (2020), people's motivations for visiting urban green spaces have shifted from non-essential to important during the pandemic (Ugolini et al., 2020).

Megahed & Ghoneim (2020) recognise the pandemic as a design problem, noting that social distancing could change the design and planning process and recommending that, among other things, architecture and other built environment professions ought to refocus on green spaces, specifically gardens, and self-sufficient strategies such as urban farming. Observing that the shaping of the built environment has a strong historic relationship with diseases, they question whether post-pandemic housing should allow citizens to be more self-sufficient and ask whether Covid-19 could be a catalyst for "healthy housing and sustainable buildings" (Megahed and Ghoneim, 2020:3). Domestic gardens, especially for older individuals under protracted house quarantine, may provide an outlet for mental activity while also improving physical health in these extraordinary times of uncertainty and stress (Corley et al., 2021).

If gardens are to form a more important part of the post-pandemic constructed environment, to maximise the benefits that they provide it is necessary to develop understandings of people's relationships with them and the perceived roles they play in people's lives. The concept of affordances (i.e., the interaction between environment and organism as determined by environmental properties and an organism's capacities) (Heras-Escribano & De Pinedo-García, 2018) provides a helpful framework for exploring these relationships. Arguing for the

inclusion of the concept of affordance in an ecological approach towards the design of gardens and outdoor spaces, Heft, (2010:9) notes that “... the way that environmental psychologists and designers think about processes of perceiving has a direct bearing on how they think about the visual experience of landscape, and in turn how they approach landscape perception research and aesthetics.” In the ecological approach, rather than the environment being something immediately perceived as an array of two-dimensional forms or mental constructions, it becomes something which has relational properties (Heft, 2010). This concept of affordance introduced by Gibson in 1979 (Gibson, 2014) is still overlooked by the standard, dualistic psychological theory it transcends, which has influenced the process of design for centuries and which is akin to the nature-culture dualism which some forms of landscape theory attempt to overcome. Affordances are meaningful, value-rich features of experience and are thus inherently qualitative and relate to affective experience (Heft, 2010). Affordances thus offer a means of bridging between landscape theory, actor-network theory and ecological psychology, for example through ‘processual landscape theory’ which evokes a strong notion of agency as the execution of power (Heras-Escribano & De Pinedo-García, 2018). The agent (or actor/actant) perceives the proximate affordances, grasps them, and contributes to the creation of a landscape with their own actions (Heras-Escribano & De Pinedo-García, 2018; Menatti & Casado da Rocha, 2016).

In actor-network theory, a constructivist approach, all elements of the actor-network are actors/actants (i.e., human beings or nonhuman actors / actants) which have agency/actancy (Jackson, 2015). Both latter terms are intended to de-centre the human subject.

Actors’/actants’ identities and qualities are relational – emergent from the network into which they are bound (Jones, 2009).

Processual landscape theory and ecological psychology are both situated and embodied approaches (Heras-Escribano & De Pinedo-García, 2018). Affordances are inherently

relational and laced with meaning (Little, 2010). They help to bridge the divide between the natural and the cultural in philosophy, psychology, and landscape theory. Generally, the user of the garden will have much more agency over its design and management in the domestic or private setting, with land, organisational or home ownership structures moderating this relationship. The level of involvement of landscape architects and designers is dependent upon factors including the knowledge and capacities of the owner or occupier, the style of tenancy if the home is rented and those involved in the design of the home.

Using the concept of affordances, this paper focuses on the relationships between people and gardens during the Covid-19 pandemic. Specifically, it explores the following questions:

- I. How has the pandemic affected people's engagement with gardens?
- II. What does the pandemic reveal about garden design for times of stress or crisis?

## **2. Materials and Methods**

Qualitative interviews were selected as the most appropriate method of data collection for the research. Semi-structured interviews were conducted to allow for the varied experiences and contexts of the participants and the gardens about which they spoke to shape the discussion. The semi-structured format allowed the research to produce more situated knowledge about specific events and circumstances which were particularly relevant to them and their context, which could not have been anticipated in advance (Mason, 2018). An interview template was created and used as a prompt sheet to help steer the interviews back towards the research topic and questions.

Participants were recruited on the basis that they had been able to access a private garden during the pandemic (Figure 1). Most of the gardens were private, domestic gardens. One garden was associated with a residential home for elderly people, one with a hospital, one a GP surgery and one a community tree nursery. None of the gardens were open to the public



during the pandemic and thus all were considered to be private spaces. Key to their inclusion was the designer's or owner's intention to provide the user with a sense of privacy and separation from the outside world. In most cases the presence of a physical boundary supported that separation.



Figure 1: Examples of gardens included in this study (images from participants).

Participants were recruited via email, which included an introduction to the research and invited them to ask any questions about the research. Once they had expressed an interest in participating, potential participants were sent a consent form and an ethical statement, after

which the interviews were scheduled. In the interviews, participants were asked some pre-established questions designed to help elucidate their relationships with the garden or gardens. The questions invited participants to explain how they normally used and accessed the garden, how they thought and felt about the garden in relation to their health and wellbeing, and how they considered all of these factors in relation to the pandemic. They were also invited to share any changes they or others had made to the garden's design since the beginning of the pandemic.

Interviews took place between the 30<sup>th</sup> of November and 17<sup>th</sup> of December 2020, with most being conducted on an online platform, Zoom, or over the phone.

Twelve interviews were held in total and the recording of each interview was transcribed using Otter software to produce a verbatim transcript before applying the six-step process of analysis by Braun & Clarke (2013) to the data. Subsequently, NVivo 12 Pro software was used to facilitate analysis. Two "sweeps" of coding were taken through the data, going through each transcript in turn. In the first sweep an initial set of codes were found and in the second sweep some codes were merged, removed, or tweaked, with any data that had been overlooked during the first sweep then being included in the second. A mostly inductive, data-driven approach was taken to analysing the data which attempted to avoid a pre-existing framework or preconceptions about the themes which might emerge (Thomas, 2006).

Codes were then grouped into themes and subthemes, with codes which no longer seemed relevant, or which appeared very infrequently relative to others being discarded and some codes becoming themes or sub themes in their own right. The themes were then reviewed to ensure that their names were succinct and easily understandable and that they could be useful in providing an understanding of the data through relating directly to the theoretical framework, research topic and research questions. Some themes, such as "connection", were not one of the original codes in and of themselves but were used due to there being a cluster

of related subthemes, which in this case included connection to self, other people, or nature, for example. Other themes, such as “agency”, were one of the original codes which appeared many times in the data. To manage the occurrence of researcher interpretations, the themes implicit in the interview questions were not assumed to be codes or themes during the process of analysing the data.

### 3. Results and discussions

Table 1 shows the themes and subthemes as they were ultimately defined during the analysis process to provide the most helpful means of analysing the data.

A summary of the quotes is available in the supplementary material.

Themes	Subthemes
Accessibility	Physical capacity; Organisational capacity; Key worker status
Agency	Agency; Idealising and improvement; Organisational structure and ownership; Time
Connection	Connection to nature or something larger than oneself; Connection to other people; Connection to self; Connection to or sense of place
Health and Wellbeing	Rest, recovery and healing; Managing and maintaining health and wellbeing
Safety and Security	Privacy; Routine and consistency; Safety and security; Self-sufficiency
Self-expression and Design	Control and freedom; Design and personal style
Work, Learning and Purpose	Seasonality of work; Self-development; Sense of contribution; Style of organisation

Table 1: Themes and subthemes discovered through thematic analysis.

#### 3.1 Agency

Some participants' levels of agency over their ability to maintain a relationship with the garden had evidently shifted during the pandemic due to numerous factors. These included participants' adaptability, such as the need to change access to the garden to comply with the

government's social distancing policy. The level of agency possessed by participants had a direct bearing on their ability to perceive or experience affordances in the garden. Those participants who spoke about their relationship with a private domestic garden of which they were the owner appeared generally to have been less affected by the pandemic in terms of how it had impacted their agency. This was partly due to the sense of authority over the space that ownership of the garden afforded them, partly due to the relative ease with which they could make adjustments to the garden's design to meet their shifting needs and desires, and partly due to the domestic garden typically being an extension to the dwelling, which promoted ease of access. For example, participant 1, who was the owner of the domestic garden about which he spoke, explained that his relationship with the garden had changed very little since the arrival of the pandemic. He did not explicitly link the fact that he owned his garden with the levels of agency he possessed to continue to enjoy the affordances associated with it during the pandemic, but a connection between the two was implicit in his description of the relationship he had with it.

Researcher: *"...has your relationship with the garden changed since the arrival of Covid-19 and the lockdowns?"*

Participant 1: *"...I've always really enjoyed it and maybe a little bit more this year, the realisation that I'm very privileged to have one ... I think I spent more time out there this year than normal. Partially because obviously I couldn't travel or be out and about, so it was a nice little safe haven to be in."*

Participant 2 described the sense of privilege he felt in association with having had access to a garden during the pandemic in terms of social justice. While social justice has not formed a large part of this study in terms of its research focus or theoretical framework, it has a strong relationship with theories of landscape and agency. Setten and Brown (2013:247) describe social justice as being "folded into the landscape", Setten & Brown (2013) and Hutton (2018)

argue that the food justice movement, that insists on and visualises the linkages between land use ecological dynamics and social justice, has the potential to stimulate political praxis for design. The privilege highlighted by several participants that they possessed in having had more agency over their access to the outdoors through being able to access a garden during the pandemic might serve to stimulate designers to consider how the affordances people have experienced through this access might be extended to others.

Participant 2: *“And it is a human rights issue at some level, for me ... It is an excuse, and it's an easy one to say ... people don't like getting their hands dirty. People don't like nature ... They don't need access to the gardens. That's a decision that's been made on people's behalf ... But when we're having so many rights curtailed ... and the pandemic is exacerbating all of it, the importance and value of gardens takes on just such greater meaning, particularly for those who don't have access to them ... that's where the injustice of it all is manifested.”*

Several participants expressed a tension between wanting to have some control over the design of the garden and wanting to perceive the agency of other actors/actants in the garden too, whether “nature”, “bulbs” or something else. This tension or perhaps dynamic equilibrium between the agency of humans and others afforded some of the participants a sense of being connected to and perhaps collaborating with something larger or more powerful than themselves. Factors relating to the pandemic which had impacted participants’ levels of agency with regard to the affordances they experienced in the garden included the amount of time they were able to devote to being in or working on the garden and the structure of the organisation that governed the space.

It is quite possible that the ownership of and associated rules within the private garden introduced a dynamic into the actor-network or set of relationships between the actors/actants within it that afforded participants a greater sense of agency to act within the garden. This may have been facilitated by a sense of safety and raises questions with the knowledge that access

to gardens and outdoor spaces has been vastly unequal during the pandemic, about how conditions that lead to people experiencing feelings of safety and to perceiving affordances could be enhanced in public spaces so that more people are able to experience the benefits to health and wellbeing of being in and interacting with nature. It also raises questions about how the apparent elevated level of agency of people within private outdoor spaces might impact upon the agency of non-human actors/actants.

### 3.2 Accessibility

The capacity of gardens to accommodate those who would normally have had access to them was found to have shifted during the phase of the pandemic considered in the research.

Factors such as physical capacity in terms of scale and layout, organisational capacity to adapt to the changing situation of the pandemic and the relationship between Covid-19 legislation and the working status of volunteers were all found to have affected levels of access.

One participant mentioned that a smaller group of volunteers had been visiting the community tree nursery where she worked, but that they had been attending more often than prior to the pandemic. This implied that the reduction in visits by some people had provided an opportunity for others to visit the space more frequently than they normally would have. Some participants shared or reported on the behalf of others that the pandemic had caused some people to choose not to access some outdoor spaces, including public green spaces or private gardens they had visited previously – a quasi-self-imposed limitation on access to the outdoors. All participants had visited the gardens about which they spoke during the period of the pandemic under consideration and had not felt the need or wanted to moderate the number of visits they made to the space. The designation of some participants' roles in the garden as those of "key workers" was found to be of great importance to their ability to continue accessing a garden during the pandemic. All five of the twelve participants who had

working relationships with the spaces discussed were authorised to work during the pandemic due to key worker status whose work was deemed essential. For some people, this had meant an increase in access to the space due to other forms of work becoming inaccessible to them during the pandemic, which had given them more free time. In other cases, key worker status had not affected the amount that participants were able to visit the outdoor space; they carried on with their usual working routine.

### 3.3 Connection to nature or spiritual connection

Some participants referred to having access to a garden as having provided them with an opportunity to connect with something larger than themselves. This sometimes took the form of an appreciation of the natural environment or other living beings and sometimes participants described a more spiritual experience. For many participants this relationship had taken on a greater significance in their lives since the beginning of the pandemic. Three participants shared that they had observed people's relationships with nature to have taken on a greater importance in their own and other people's lives during the pandemic. This supports the widely reported phenomenon of heightened public appreciation of nature during the pandemic and findings of quantitative studies such as a Forest Research survey that found two-thirds of people reported an increase in 'time taken to appreciate nature' and 'feelings of connection to nature' during the phase of the pandemic surveyed in spring to autumn 2020 (O'Brien & Forster, 2020). Some participants described a relationship with the garden that was sometimes experienced as a spiritual connection. Some used words to describe the space that are sometimes associated with religion, such as "haven" and "sanctuary". One of the participants was currently working with his son to convert some of the buildings on the farm where he lived into a centre that would provide therapeutic experiences to people recovering from stress and trauma through activities which would encourage them to connect with nature. He was particularly excited about the project and confident about the positive effects it could have after



having experienced what he described as the “healing power of nature” in an ICU garden when being treated for Covid-19 symptoms.

Several participants shared that they had observed the idea of connecting with nature to have taken on a greater importance in other people’s lives during the pandemic, as well as their own.

Participant 9: “And I haven't really ever been in a space quite like that size that feels so sort of abundant ... in wildlife and that's really changed my perspective of what's possible in an urban space ... I'd hazard a guess that's been important for other people as well. But maybe for different reasons, perhaps, whether it's a safe space, whether it's something like just being out in nature ... because not everybody has the space, like private space to do that...”

Participant 10: “And I think we've all noticed this kind of appreciation of nature ... these tiny little green shoots were pricked up all over the soil and I honestly can't tell you it was the most exciting moment to know that life had generated...”

Participant 7: “We're in the middle of an extraordinary revolution in human attitudes towards wilderness, wildlife, nature, therapy and so on, which had already started last year, or the last two or three years, but a new perception of the landscape and countryside ... But the point is that this atmosphere was here with so many people already over the last year or so, and then Covid-19 has come along and transformed people's attitudes towards gardens. And I think we should cherish that and welcome it as the silver lining of a ghastly pandemic which has ruined so many lives, but it's also shown us how we can live in harmony.”

### 3.4 Connection to other people

Gardens were also found to have provided participants with a space in which they were able to connect with other people during the pandemic. Some participants had made adjustments to the garden’s design so that it could allow them to socialise with each other in a more comfortable environment, for example by adding extra seating to their gardens which would allow members of their household to spend more time out there and also to socialise with people



from outside their household more easily. Some participants suggested that the garden had provided a more relaxing or pleasant space within which they could connect with other members of their household.

Some participants had experienced an increase in the value of their relationships with those with whom they shared a garden during the pandemic, with the garden offering them a space in which to develop those relationships. One participant, who had moved into a flat which shared a garden with three other flats a week before the first lockdown associated with the pandemic, reflected upon the opportunity that having access to the garden had given her to spend more time than she otherwise might have getting to know her neighbours. She was pleased that she had been able to have the time and space to connect with some of her neighbours who she described as being elderly, isolated and vulnerable.

Participant 5 was pleased that she had been able to have the time and space to connect with some of her neighbours who she described as being elderly, isolated and vulnerable.

Participant 5: *“I think it's obviously been a very isolating and lonely time for all of us. But for someone who lives on their own and is quite vulnerable, actually having that space to have a chat with someone that's at a safe distance, it's outside, it's not inside her property where, where things are riskier. It's probably been quite important for her.”*

### 3.5 Connection to self

Most participants described the garden as being somewhere that had enabled them to experience a sense of connection with themselves. For some, the garden had taken on a greater role in supporting this relationship during the pandemic, when access to other spaces which might have provided a similar experience or affordances had become less accessible or inaccessible. Some participants described a sense of escapism which was afforded by simply being able to access the garden as an outdoor space during a time of great restriction. Others described more of a sense of the garden as a space for ‘being’, perhaps where they could

contemplate their lives and through doing so experience relaxation and restoration, rather than as a space for 'doing' where they were more focused on an activity, task or actively listening to another person, for example. Others gave a more explicit description of the support the garden provided to participants' relationships with themselves, highlighting the time it afforded them to spend with themselves through tending the space, for example, as well as offering an opportunity to take some time away from some of the pressures they experienced through cohabiting with others during a time of restricted movement.

Some participants described how certain tasks or activities they were able to carry out in the garden or specific features of the garden reminded them of friends or relatives about whom they felt fondly but who were not present with them in the garden. However, none of the participants explicitly said that this experience had taken on a greater meaning during the pandemic.

### 3.6 Connection to or sense of place

While the gardens participants were interviewed about were private spaces, they appeared to offer a strong contribution to the sense of place some participants had with regard to the garden as a component of their locality or the city in which they lived, and had apparently offered a means of remaining connected to or in some cases deepening that sense of place for some people during the pandemic. For example, one participant expressed the great appreciation she felt for the views over the city in which she lived that were afforded to her by the hillside location of her allotment. For other participants, the sense of place they described was more strongly associated with the garden itself. For some participants, there appeared to be overlaps between their connection to a sense of place and a sense of being connected to nature or something spiritual or sacred, or to a neighbourhood or community.

Two participants also seemed to derive a strong sense of place through being in the private communal garden they managed, the continuity between the garden's present day design and

its Victorian layout, and its association with the history of the area in which they lived, with which there is a strong cultural association with communal garden squares. It was, however, unclear as to whether this relationship had been affected by the pandemic.

### 3.7 Health and wellbeing

Many participants described the garden as somewhere they were able to relax and rest. Some participants referenced specific experiences they had in the garden which facilitated these feelings of relaxation and restoration. These included being able to feel the sun on their skin, and spending some time involved in a physical task such as weeding which diverted their attention away from the stresses and strains associated with daily life, as well as bigger societal and global issues, most specifically the pandemic and lockdown.

Some participants also attributed qualities which enhanced their ability to recover from stress and illness to the garden, in some cases associating it with the concept of healing.

Participant 7 commented: “... *the idea will be to come here into this very tranquil, beautiful environment and experience the healing power of nature... And my particular involvement is because it worked for me when I was in hospital.*”

Most participants described themselves as having developed a more acute awareness of the positive effects that spending time in the garden and various elements or attributes of the garden had on their health and their wellbeing during the pandemic. Several described the garden as possessing therapeutic qualities that had helped them to manage their mental health and wellbeing. One participant, when asked about whether the garden had helped him to manage his health and wellbeing during the pandemic, said that it “has been a lifesaver”. He was aware of the “natural lift” he felt through being able to be outside and attributed some of the positive effects that his voluntary role at a food-growing site had upon his wellbeing to working with other people, which prevented him from feelings of loneliness. Another participant described an observation she had made and something she valued about the activity of gardening itself

as opening up a space for her and the people she gardened with to be more vulnerable with each other, which had a therapeutic effect on her. She explained that being able to continue to visit the food-growing site where she had volunteered during the pandemic had helped her to manage her “mental wellbeing”. The ability to connect with other people while carrying out physical tasks outdoors and the continuity of the project had provided her with a sense of community. This had supported her mental wellbeing during a period of relative isolation and challenging relationships at home.

### 3.8 Safety and Security

Having access to a private garden was found to have provided many participants with a means of continuing to access the outdoors and to carry out activities outdoors during the pandemic in a way that enabled them to feel safe and secure. The features of the garden that facilitated feelings of safety and security varied between participants. For multiple participants they included the presence of a physical boundary such as a fence or hedge and sometimes a locked door between the participant in the garden and the outside world. For others, features included the presence of other people in the space or a set of organisational rules that determined who could and could not access the space and how those who have access to the space are expected to behave when there, for example by observing social distancing guidelines. All of these features either invoke a sense of privacy or represent privacy through ownership and an associated set of rules. This privacy appears to have offered participants a sense of safety which may have enhanced their ability to perceive affordances and then contribute to the creation of a landscape with their own actions. None of the participants mentioned the proximity of the garden to their home as being a factor that contributed to their feelings of safety and security.

### 3.9 Self-expression and Design

Some participants shared that the garden had been a space where they had possessed the freedom to express a desire to control the environment around them during a period of great uncertainty. Some participants expressed a tension they felt between wanting to have some control over the design of the garden and wanting to perceive the agency of other actors/actants in the garden, whether “nature” or “the soil” or something else. Several participants stated a preference for allowing nature to do a lot of the “work” in the garden, leaving more space for surprise and surrendering control to other actors/actants, or indeed “designing with nature”. Most of the changes to a garden’s design that had taken place during the pandemic which were mentioned by participants had been more practical changes, rather than changes relating to personal style or which had come from a place of wanting to express a facet of their identities.

#### 3.9.1 Work, Learning and Purpose

The ability or sometimes necessity to carry out tasks in the garden had been important to several of the participants during the pandemic. Some had experienced an increase in a sense of responsibility they felt towards tending or caring for the garden. One participant shared that those who had continued to use the food-growing cooperative’s service during the pandemic had been keen to look after the fruit and vegetables they had planted throughout the summer. He explained that this regular activity to which the service users had attached a sense of responsibility had been a way of preventing them from experiencing further isolation.

Some participants described the garden as a place which provided them with meaningful ways to pass the time during the pandemic, when it was more challenging than usual to find things to do that were purpose-driven. Several participants described a sense of enhanced

appreciation for the learning opportunities that had been afforded to them through their relationships with the garden during the pandemic. Continuing to work in the garden during the autumn and winter months seemed to have afforded some of the participants with a sense of positivity and a way of connecting with the future during a very uncertain time.

### 3.9.2 References to previous research

At the time of writing, a number of survey-based studies provide helpful insights into how people's perceptions of and interactions with green spaces have changed during the Covid-19 pandemic (Jellard & Bell, 2021). However, there are only a few relevant qualitative social science research that can be compared with this study (Darcy, Taylor, Mackay, Ellis, & Gidlow, 2022; Giebel et al., 2022; Marsh et al., 2021).

The findings of this research support others that have found people to be more supportive of nature-friendly garden design since the beginning of the pandemic (Lehberger et al., 2021; Lopez, Kennedy, Field, & Mcphearson, 2021; Theodorou et al., 2021). The findings are also consistent with those of Corley et al., (2021) in Scotland, who found that spending more time in a home garden was associated with higher subjective wellbeing during Covid-19 pandemic. However, in contrast to prior studies, Corley and colleagues examined data from elderly people (mean age  $84 \pm 0.5$  years) and found that neither gardening nor resting in the garden were connected with health outcomes (Corley et al., 2021). The findings revealed that spending time in the garden allowed people to interact with their neighbours while maintaining social distance, generating a feeling of community and social cohesion (Corley et al., 2021; Veen, Bock, Van den Berg, Visser, & Wiskerke, 2016).

This study highlights an increased sense of nature connection which was also found in a study by Marsh et al., (2021). Our findings suggest that the pandemic provided an opportunity to connect with nature and experience the healing power of nature; this was also reported by Doughty et al. (2022) in the Netherlands, who found that semi-lockdown

conditions led to more connections with nature as well as more intense emotional and sensory experiences.

In the domestic garden sphere, the findings can also be compared with pre-pandemic studies have found that garden owners consider cultural services, which include the promotion of wellbeing, to be some of the most important ecosystem services provided by gardens (Calvet-Mir, Gómez-Baggethun, & Reyes-García, 2012). However, the research did not look at whether gardens were seen to be more restorative than other private spaces (Cervinka et al., 2016). The findings are in accordance with secondary data from the Monitor of Engagement with the Natural Environment (MENE) survey, a representative survey of the English population (de Bell et al., 2020). de Bell et al. (2020) note that direct use of gardens may play a major role in deriving benefits from them, with their research finding that gardening, sitting and relaxing in the garden are all associated with wellbeing. Findings from the study suggest that the difference in wellbeing between non-garden users and those who do sit in or tend a garden is as pronounced as that found between people living in the poorest parts of the UK and those in the wealthiest (de Bell et al., 2020).

### 3.9.3 Study limitations

According to philosopher and geographer Berque (2013), 'Landscape Thinking', which requires an immediate and intimate sensitivity to environment, helps to overcome the potential reduction of landscape to 'false' representations of itself through 'Landscape Theory'. For this study, participants were invited to share photographs of the gardens about which they were interviewed in an attempt to overcome the possible reduction of landscape associated with the researcher not being able to visit the gardens, and the further limitations this might have entailed with regard to developing a better understanding of specific features of the landscape that offered meaning and affordances. However, very few of the participants chose to share visual data, so they were not included, and the research instead relied upon the

descriptions the participants gave – as experts of their own lived experiences - of the gardens about which they were talking. Another limitation is that this study did not evaluate the sociodemographic background of the participants or the physical characteristics of their gardens (Cerde, Guenat, Egerer, & Fischer, 2022). People's involvement with gardens during the pandemic may differ depending on their socioeconomic status (Cerde et al., 2022).

It is important to acknowledge some of the limitations of the interview method. Interviewing as a method relies upon the ability of people to express themselves, to listen and understand and to remember (Mason, 2018). Steps were taken to overcome these limitations, such as reframing questions where appropriate, avoiding the use of jargon and including a briefing on the research topic in the invitation to participate. Interview methods are not a direct reflection of understanding 'already existing' outside of the interview interaction, as though the process is simply one of excavating facts (Mason, 2018). In this respect, researchers and participants are co-generating knowledge somewhat retrospectively, which carries an inherent and unavoidable bias.

#### **4. Conclusions**

The Covid-19 pandemic has offered some people with access to a garden or private outdoor space opportunities to engage with these spaces differently (Theodorou et al., 2021). It has also influenced the level of agency that some people have over their relationship with a garden, namely in terms of access, and thus their ability to perceive affordances in the garden. The privacy provided by different features of the gardens and outdoor spaces in the study appears to have offered participants a sense of safety, which may have enhanced their ability to perceive affordances and thus contribute to the creation of a landscape with their own actions.

This study demonstrated that gardens have afforded people with a sense of control and a sense of purpose during a time of great uncertainty and upheaval. The sense of control and freedom to express themselves in the garden described by some participants suggests that relationships



with gardens have been a source of agency and self-esteem during the crisis. Gardens have provided people with a means of maintaining connections with other people, themselves, nature, and their locality during a time of isolation and collective stress. The pandemic as a form of crisis has triggered the rearrangement of human-environmental assemblages through causing design, social and organisational interventions, and changes. Therefore, a larger scale approach is recommended to generate results that would be representative. Results from earlier research shed light on the importance of social, physical, and emotional affordances of the environment (Hadavi et al., 2015). However, they did not discuss the space's design features, therefore our work serves as a theoretical link between affordances, ecological psychology, and landscape theory.

Further research could seek to locate people who were not able to access gardens during the pandemic and try to develop an understanding of why this was, the types of affordances and experiences forgone in doing so and work with participants to try to understand what sort of design interventions might improve access. It may also be worth exploring whether having access to a garden during the pandemic has allowed people to maintain or develop their environmental identities and whether we might now be more responsive to the concept of biophilia or designing more intuitively with co-benefits to ourselves and nature.

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