An Investigation Into The Value Of Design In Nature-Based Solutions For Health And Wellbeing In A Post-COVID World

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INTRODUCTION

The COVID-19 pandemic has precipitated a widespread deterioration of health and wellbeing. 1.41 million people in the UK were in contact with mental health services at the end of March 2021 and some places have seen referrals more than double compared to pre-COVID levels.[1] The connection between obesity and COVID-19 has also been recognised during this pandemic, not just as an emerging risk factor for the disease but also as a long-term public health emergency.[2] This imperative has instigated a greater focus on health and wellbeing, nationally and by local authorities. The search for non-clinical interventions to address COVID-19 related public health issues has become a top priority for many governments. The turn to non-clinical approaches for health and wellbeing is a major shift in public health thinking.[3]

Within the specific context of pandemic induced lockdowns, local green spaces took on new significance in many people's lives. There is ample evidence of wellbeing pathways from nature, and growing interest in supporting non-clinical interventions, such as community gardening and food-growing projects, for mental wellbeing and public health. Such activities have been clinically recognised as valid options to increase exercise, improve mental health and reduce obesity.[4] As a result, Nature-based Solutions (NbS) were rediscovered and widely promoted. NbS are "actions to protect, sustainably manage, and restore natural and modified ecosystems that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits".[5] In 2020, Public Health England highlighted the importance of local green (and blue) spaces as critical assets for maintaining and supporting health and wellbeing in local communities.[6]

Acting upon these challenges, and to innovate NbS for health and wellbeing, calls for collaboration across disciplines that goes beyond public health research to include disciplines such as environmental science, landscape architecture, and the social sciences. It also calls for collaboration beyond academic disciplines to include various stakeholders in the system, such as communities, local governments, and businesses.

THE STATE OF THE ART

Nature-based Solutions (NbS)

A growing body of epidemiological and other evidence indicates that greater exposure to, or contact with, natural environments contributes to better health and wellbeing.[7] In particular, connectedness with nature is associated with a sense of gratitude and self-worth that can help people recover from stress and mental illness, and build a sense of place and community and foster feelings of belonging.[8]

There is an increasing interest in NbS research and practice permeated by the notion of Transdisciplinarity:[9] the science of "complex problems" par excellence. The sustainability sciences have been particularly receptive to relevant methods of "co-production" of scientifically grounded and, at the same time, transformative knowledge.[10] Innovating NbS for health and wellbeing particularly is a case that goes beyond this subject to engage wider knowledge in other disciplines, and in communities and third sector organisations.

Transdisciplinarity

Transdisciplinarity is viewed as a practice of bringing together knowledge from the physical and social sciences and from practitioners, users and the broader community, to confront increasingly complex problems.[11] It is positioned as essential to understanding problems and finding solutions for global challenges by enabling a holistic view, integrating diverse knowledge and transcending disciplinary approaches.[12] There is consensus that transdisciplinary approaches involve moving beyond and integrating individual disciplines, thereby enabling development and application of new research strategies and knowledge.[13]

The importance of transdisciplinarity has been discussed from different perspectives. For example, in social–ecological analyses of human–environment systems environmental studies emphasise a transdisciplinary action research orientation in which diverse knowledge cultures or epistemologies (e.g. academic-disciplinary, professional-practitioner, lay citizen perspectives) are brought together for purposes of better understanding and ultimately improving the resilience and sustainability of people–environment systems.[14] In health, it is recognised that rapid urbanisation, widening inequalities, climate change and the rising burden of chronic disease are all complex societal problems that affect health, but will not be solved by health researchers or practitioners working alone. Transdisciplinary approaches are seen as valuable to address today's complex health problems and widening inequalities.[15]

A growing body of literature residing at the intersection of research methodology and health, sustainability and NbS studies, promotes transdisciplinarity. However, the practice of implementing the transdisciplinary approach in multidisciplinary and multi-stakeholder projects is still to be further explored and its value to be evidenced.

Design

In the contemporary context, designers often find themselves called into projects to tackle major challenges, such as healthcare and wellbeing, sustainability, and digital transformation. These challenges are complex and interdependent, requiring collaborative innovation between different disciplines, between experts and users, and between researchers and practitioners. Dorst sees that the value of design in this kind of transdisciplinarity lies in its ability to deeply consider innovation-between-fields, leading to the adoption of principles and practices that are completely new to the problem situation.[16] Design, therefore, holds great potential to foster a collaborative culture and practice.

Traditionally, design is associated with making visual artefacts and industrial production. Landscape architecture, as the design field seemingly most closely linked to NbS, tends to focus on physical rather than programmatic changes to a given site. Whilst traditionally landscape architecture takes account of a wide, complex and inter-related set of factors - including social issues - in arriving at a solution, the disciplinary focus lies with shaping the materials of landscape rather than less tangible social interactions and structures. Notwithstanding, design has shifted from the legacy in producing tangible objects towards tackling social, environmental, cultural, and business challenges. This transition has long been recognised in Krippendorff's "The semantic turn: A new foundation for design", where it

was suggested that design had shifted gears from a preoccupation with the appearance and surfaces of tangible products to designing material and social artefacts that have a chance to make sense to their users, aid larger communities, and support a society that is reconstructing itself in unprecedented ways and at record speed.[17] Many designers have pushed the boundaries of design into new territories e.g. service, system, strategy, policy, business model, and sustainability. These have become the frontiers of design that have expanded the meaning and practice of design to be an integral part of transdisciplinary innovation.

There is ample design literature rationalising and justifying the transdisciplinary nature of design, which is underpinned by the reality that design has no special subject matter of its own apart from what a designer conceives it to be, whilst the design problems are "indeterminate" and "wicked".[18] Designers use a "designerly way of knowledge" to generate understanding of the design problem.[19] This "designerly" paradigm of knowledge generation is guided through design process logic supported by phases of scientific research and inquiry.[20] In this process, Dorst considers that the design process provides designers with a thoughtful way to re-interpret and rethink existing problem situations, and to identify practices from various fields and disciplines that could be built on.[21] From this deep rethinking, designers can access the broadest possible collection of principles, methods, and actions, while considering how these principles, methods, and actions may assist the designers. This type of deeply considered innovation-between-fields leads to the adoption of principles and practices that are completely new to the problem situation.

METHODS

In this context, Nature's Way, an AHRC (Art and Humanities Research Council) funded research project, was initiated to explore how design can be used in the collaborative search for solutions for a more nature-based approach to health, wellbeing and social care. It aims to co-create the ways of accessing and sharing otherwise disconnected or not-readily-available knowledge, resources, and best practice of innovating nature-based activities. The ultimate goal is to empower communities, organisations, and individuals to innovate, develop projects that involve engagement with nature to deliver health benefits following COVID-19. One of the project foci is Walsall (a pilot site for this project), one of the top 20% most deprived areas in England, with five years lower healthy life expectancy compared with the national average and the average for the West Midlands as a whole.[22]

The central methodology of this project is Research through Design (RtD).[23] It represents an open-ended, transdisciplinary search for new, creative and actionable solutions for complex challenges. This stage of work aims to (i) build a holistic understanding of the local social contexts and systems around NbS in Walsall; and (ii) reframe the challenges and identify opportunities for innovation.

The design team has worked closely together with researchers in service design, landscape architecture and social science. The team has conducted intensive research and has engaged a wider range of local Voluntary, Community & Social Enterprise (VCSE) organisations (including seven community gardens and allotments, two pocket gardens, four public parks, three nature-based activity schemes), social housing groups, the NHS clinical commissioning team and the Healthy Spaces team within Walsall Council. The design team has also delivered over 10 co-creation workshops with researchers, practitioners and experts including those in green care and health, land management, and policy to review and define findings from the user research.

The designers have used a mix of design research tools including system mapping, user journey mapping, interviews, observations and workshops. At the end of this phase, a large volume of data has been collected that generated in-depth insights into the system and the experience of individuals

operating in the space of NbS. Through the interactive workshops, the project is able to reframe the challenges and to identify opportunities for design interventions.

Based on data from analysing designers' weekly reflective journals (over a period of six months), documents produced by the designers (e.g. meeting notes, visual presentations through the digital platform, Miro, and blogs), this paper builds a case study that critically analyses the role and potential of design in transdisciplinary research projects of this kind.

FINDINGS AND DISCUSSION

Design and Collaboration

In the context of NbS, the learning from the project suggests that innovating NbS for health and wellbeing is a challenge that requires a transdisciplinary approach, which engages different parts of the system and beyond in a collaborative fashion. Our findings indicate that it is challenging for the existing system to respond to these needs. The project finds that the current health and social care system is a complex of entrenched practices patched with new interventions, such as social prescribing. Likewise, the approach to commissioning and managing urban green spaces varies widely within and between different local authorities.

In Walsall, three social prescribing pathways have been developed respectively by primary care, Walsall Housing Group (whg), and the Healthy Spaces Team at Walsall Council. The pathways have differing foci and have developed their own networks of VCSEs and ways of working. This creates a challenge for VCSEs in navigating through the system. The systemic challenge is not owned by one single party or driven by one single issue, but by a complex mix of environmental and social factors which play out in a local area or place. In particular, we have found that communication and coordination between NbS providers and the other organisations that make up the system is lacking. There needs to be a co-operative mechanism that works across all the organisations involved to support better collaboration. A holistic approach is needed to navigate this complexity and to interpret the specific structure and needs of communities within the area and beyond.

As part of the project, the team has gone through an iterative process of mapping the systems to identify and engage key stakeholders. By working collaboratively with people who live and work locally, the project has visualised the system from a local perspective, taking an asset-based approach that highlights the strengths, capacity and knowledge of all involved (see Figure 1). In doing so, different perspectives and voices have been revealed. Through engagement in developing the system maps, people have joined open dialogues that enable more diverse insights to be generated and the voices of different stakeholders to be heard. Through co-creation workshops, these different viewpoints have been shared, enabling people to see things from different perspectives, creating empathy with each other. The core of the practice is to generate empathy between stakeholders, acknowledging that they are experts in their own lived experience. This creates a solid foundation for breaking siloed ways of working, fostering a more collaborative culture and practice.
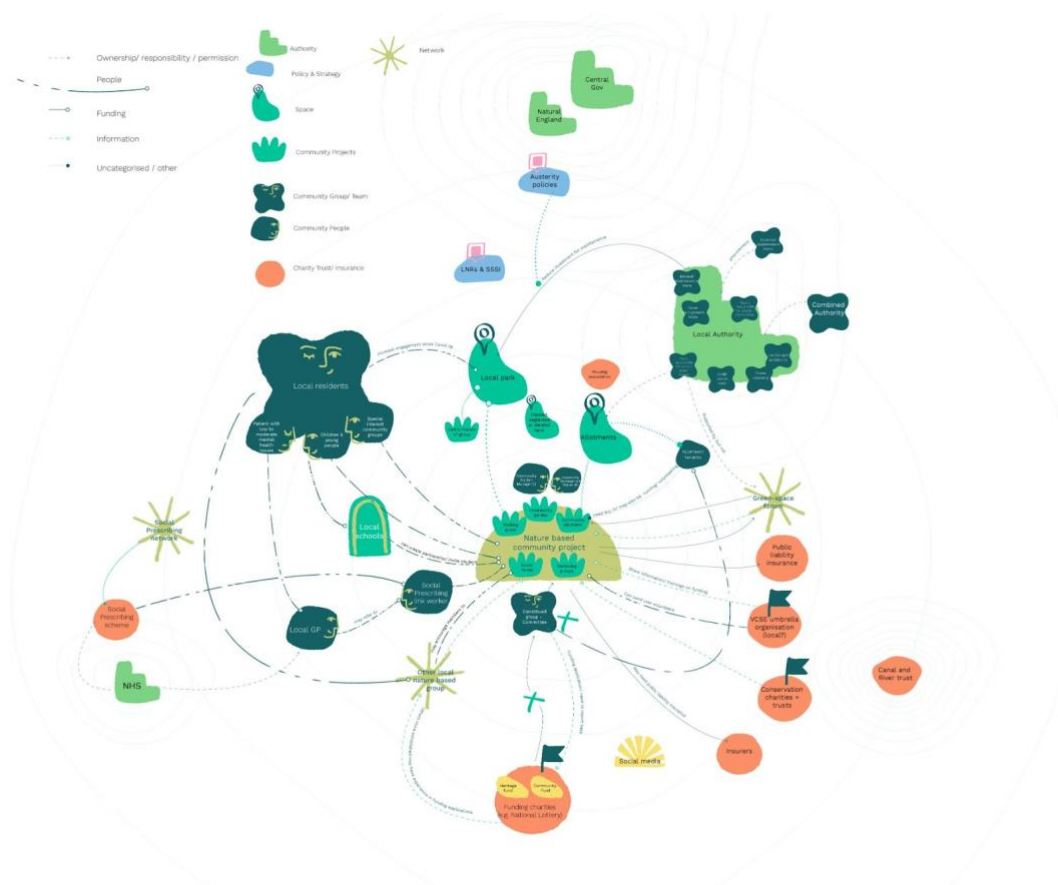
Figure 1. An Example of Visual Presentation of Local NbS System Map.

Design and Place-Based Thinking

The learning from the project also suggests the importance of a genuinely bottom-up and place-based approach to considering the totality of local assets, including the realities of the physical locality and local lived experience. Place-based thinking has a long intellectual history, and its importance has been widely recognised in regional development and public health practice.[24] In NbS, the richness of local knowledge held by grassroots organisations is usually under-valued, and could be used far more effectively to connect people with their local natural environments. These local VCSEs are instrumental in delivering the benefits of NbS, but they are not effectively integrated in the wider health care system. At the same time, they require support throughout the whole process of funding, initiating, developing and sustaining NbS, and this is often lacking.

In Nature's Way, user journey mapping has been used as a way to engage NbS providers in open dialogues to understand their experience, needs and strengths (see Figure 2). The human-centred ethos of design is conceptually mirrored in the place-based thinking. Based on the insights generated from the mapping exercises, the team then engaged these individuals and knowledge experts in workshops to co-create possible ways to support VCSEs. As such, the most important issues and opportunities in the communities are identified, which enables focusing the efforts collaboratively and initiating changes from bottom-up. The visual representation of individual experience (user journey maps) brings together locally-embedded knowledge and expert knowledge for meaningful collaboration.
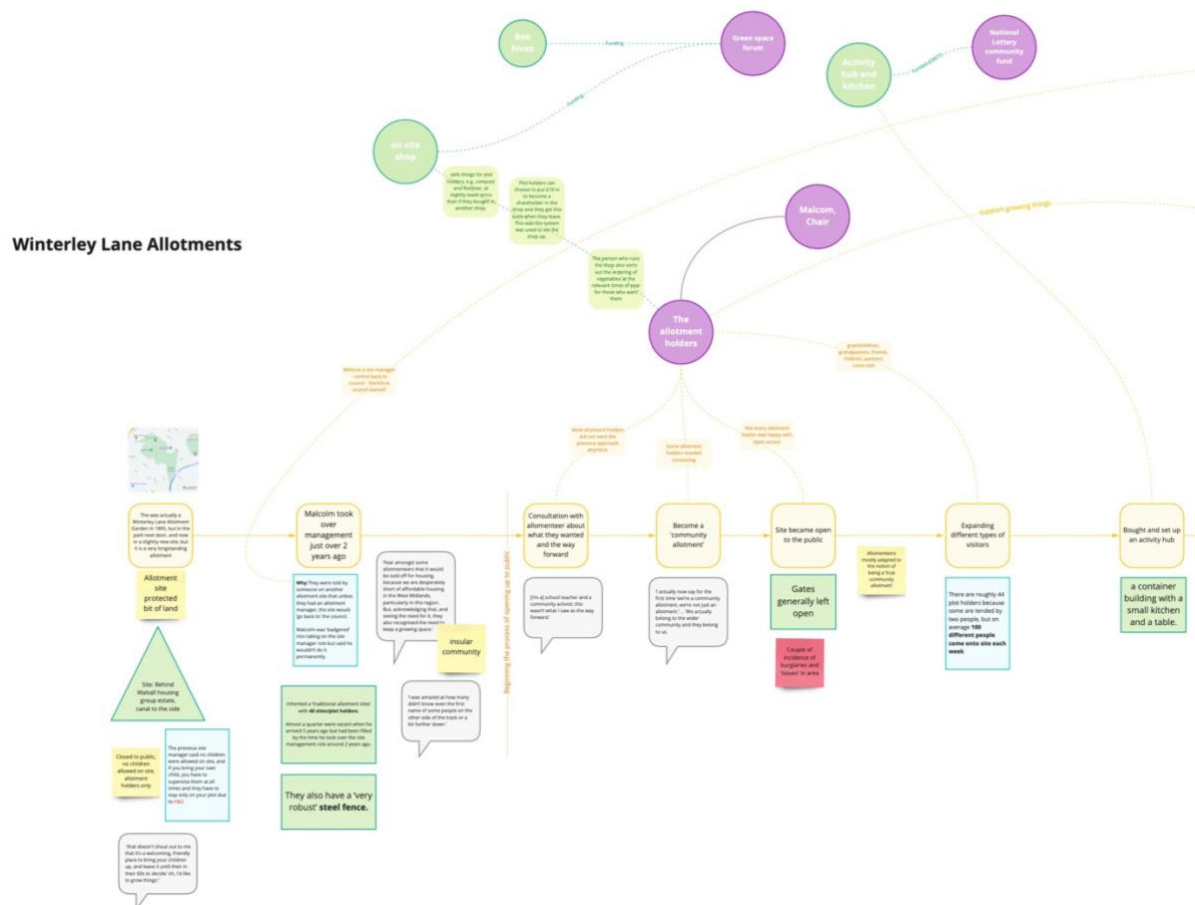
Figure 2: An Example of a Section from a User Journey Map

Design's strengths

Numerous design strengths are being foregrounded through the research process. Firstly, design entails both divergent and convergent thinking, steered in an iterative manner by evolving evidence, rather than rigidly sticking to ideas formed at the project's commencement. Designers are more like facilitators, providing space and tools for people to share their experiences, and taking the "passenger seat" rather than dictating anything. The design team values genuine co-creation to realise the human-centred ethos of design, and true partnership requires flexibility. Designers are well-placed to cope with uncertainty; the outcome from any project is not guaranteed until its conclusion. Designers are primed to be flexible and responsive, and to work in an iterative and user-centric way, with the project's parameters shifting as the users' needs and wishes crystalise through methods of co-creation.

Design is also well-suited to communicate large, systemic ideas, or complex information, in accessible and engaging ways. The discipline is adept at breaking down problems to find their root causes, including through seeing things from alternative viewpoints - at reframing problems to better understand their nature, and how and where to intervene. This can be productively linked to empathy through understanding and conveying someone else's experiences. Designers can be seen as translators: understanding complexity and knowledge provided by communities and translating this into visions to enable action.

CONCLUSION

The learning from Nature's Way has confirmed the value and validity of the design approach in generating new and transformative knowledge, facilitating collaboration in a multidisciplinary and multi-stakeholder project, and fostering an innovation culture and practice from the bottom up, greatly needed from the perspectives of public health research,[25] Nature-based Solutions research,[26] and social innovation and community development.[27]

The paper considers the transdisciplinarity of design practice, and the value this brings. It sees design as a way to facilitate transdisciplinary innovation of NbS. The project explores the opportunities design can create in the space of community-led NbS for health and wellbeing.

- Design practice enables collaboration that empowers communities and stimulates the formation of long-term relationships. In the project, the most valuable outcomes are not the 'solutions' aimed for, but the process which is based on strong commitment, openness, a humble attitude, and willingness to take risks. This way of working opens up opportunities for genuine collaboration.

- Design practice creates the possibility for transmitting rich narratives and impactful stories of personal experience complementary to evidence-based reporting. The voices of the VCSEs organisations we work with are rarely heard. The design tools create an effective way to foreground their voices through a range of design outputs, e.g., visual representations of their experience.

- Design practice offers support to visualise complex systems and existing assets or activities as a baseline to identify opportunities for new NbS. This allows the start of a systemic approach towards better understanding of the complexity of the system in which NbS are involved.

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