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Disegno

JOURNAL OF DESIGN CULTURE

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Disegno publishes original research papers, essays, and reviews on all aspects of design cultures. We understand the notion of design culture as resolutely broad: our aim is to freely discuss the designed environment as mutually intertwined strands of sociocultural products, practices, and discourses. This attitude traverses the disciplinary boundaries between art, design and, visual culture and is therefore open to all themes related to sociocultural creativity and innovation. Our post-disciplinary endeavor welcomes intellectual contributions from all members of different design cultures. Besides providing a lively platform for debating issues of design culture, our specific aim is to consolidate and enhance the emerging field of design culture studies in the Central European academy by providing criticism of fundamental biases and misleading cultural imprinting with respect to the field of design.

All research articles published in Disegno undergo a rigorous double-blind peer review process.

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COMMUNAL RESPONSE(S): DESIGNING A SOCIALLY ENGAGED NATURE RECOVERY NETWORK

Rob Phillips

ABSTRACT

The 1940s New Bauhaus professor Moholy-Nagy was the pioneer of the concept “design for life”, promoting communal methodologies and technological alliances. He also fostered empathy and new models of citizenship. Today industrial and individual actions are the cause of dramatic environmental consequences, which require us to transition to sustainable, communal, ethical, and circular designed interventions: interventions which consider their own end of life, repair, and circularity. Authors typically interpret Moholy-Nagy’s “design for life” metaphorically in “life around us” and create design interventions which foster new behaviors and communal approaches. Distributed design approaches enable communities to have agency over environmental challenges that impact them, meeting their contextual needs. Communal Response(s) (that is when a community responds to something it affects it) presents and discusses a design-led vision, coalescing Open Design, Engaging Design, Nature and Ecological Citizenship. Communal Response(s) collectively empower societies as digitally amassing environmental data will become more commonplace. These “public interest technologies”, which accrue data/evidence, are known as Citizen Science (CS). We present projects, literature, and conceptual practice(s) to signpost scalable and communal opportunities. The article consolidates “preferable future(s)” through narratives, and is validated by leading wildlife experts. This design-led and “socially engaged” Nature Recovery Network seeks to empower dispersed communities through their alignment in a design space. The “design space” moves beyond conventional models, delivering communal design(s). The narrative proposition(s) empower local environmental and cooperative responses, with the potential to scale. The construct presents an embedded vision of socially engaged design in relation to Moholy-Nagy’s “design for life”, with legacies that impact the natural world. Its audiences are design agents, ecological parties, communities, and strategists who are committed to “communal design for transition” to sustainable practices.

#Communal Legacies, #Socially Engaged Design, #Design Ecologies, #Ecological Citizenship

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INTRODUCTION

This article occupies a unique design space, one which unites disciplines that are building toward “communal design” legacies. We will introduce contemporary subthemes and their inter-operability into design practice. The design space is inherently valuable as (over time) it will proliferate/benefit communities/the public realm through grassroots initiatives. As public access to technologies, resources and design tools becomes more available, so too will this typology of “communal design” become more popular. Communal Response(s) unite communities to respond to their contextual needs and requirements through design tools and materials. The article perceives scenarios, narratives and trajectories scoping Communal Response(s) developed out of the Bauhaus’s constructivist approach.

When the New Bauhaus was founded (1937), Industrial Design was referred to as a “new profession” (Malherek 2018, 52). László Moholy-Nagy insisted designers “should be visionary, socially conscious leaders rather than mere consultants serving industry” (Malherek 2018, 52). The New Bauhaus’s approach “develop[ed] new skills in unemployed craftsmen through the production of useful equipment and environments” (Mavigliano 1987, 34). Moholy-Nagy advocated for empathic design approaches as “technical skills could quickly be rendered obsolete. The education of designer[s] developed fundamental attitudes and emotional capacities that could be applied to new social and technological contexts” (Malherek 2018, 52). This unified a pedagogy of *design for life* and influenced entire cultures to enhance quality of life (Findeli 1990). Bauhaus approaches united art, technology, and design, in a foundational approach, which is known as *Vorkurs-style* education (Lerner 2005). Moholy-Nagy used photography, at the time the most modern technology available to their “pedagogy and artistic outputs” (Stetler 2008), because photography “is a servant of the sciences and the arts” (Botar 2004, 525). Moholy-Nagy was a constructivist and felt a “good art environment could promote good individual and communal values” (H, Moholy-Nagy, n.d.). Moholy-Nagy’s documentary *Lobsters* (1936) provides information about “the lobster” and its biological development and chronicles the adventures of a fishing crew. *Lobsters* is a technological foray into documenting the natural world (Schoula 2019). Moholy-Nagy’s photography and technologically oriented constructivism has been referred to as the “Bauhaus image” (Tóth 2013).

² Open Design provides legacies that live beyond the designer and the object. They are often repairable and or get translated into other outputs over time.

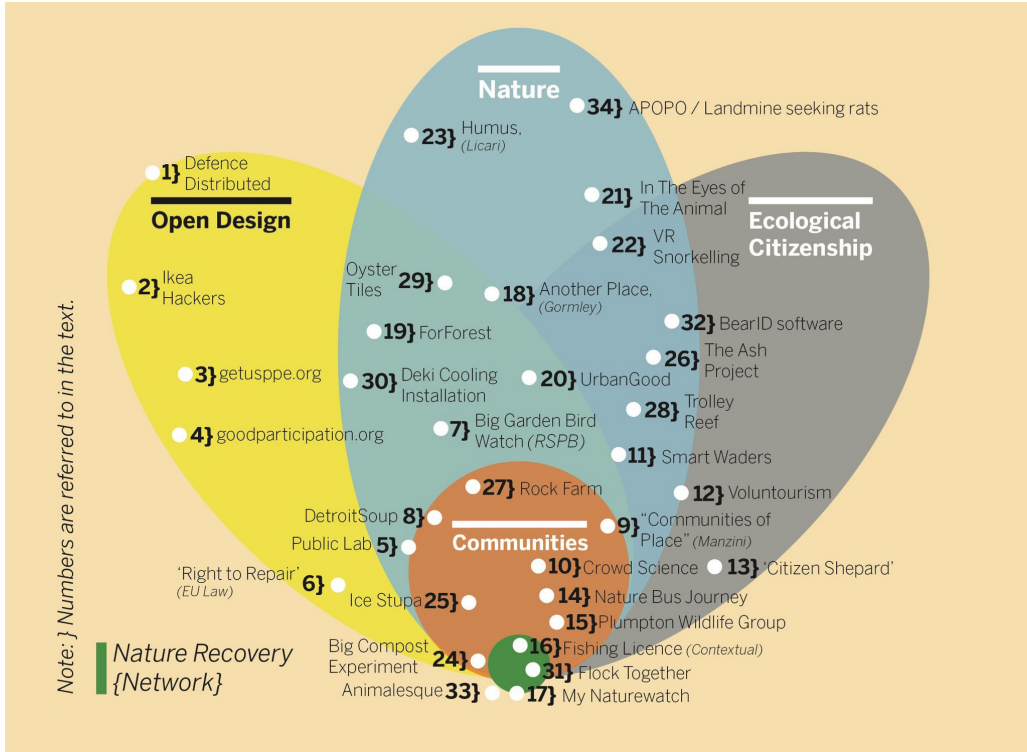
³ Throughout the text numbers in {...} brackets refer to projects presented in FIGURE 1.

We see Moholy-Nagy's "technological constructivism" as akin to modern-day "open-source" principles and means, which provide legacies² and accessible approaches. Moholy-Nagy's theories and practises are truly revolutionary. For example, the "new media of light" is comparable with modern virtual reality in its transformation of "design practices" (Iskin 2004). Recent design contemporaries (Bason et al. 2021) published a "New Bauhaus for a Green Deal", stating we have the technologies we need for "the Green Deal", however, "our core challenges are behavioral, cultural, political, and economic" (Bason et al. 2021, 2). In other words, we need to design with and for people. The process in which Moholy-Nagy explored artistic territories—which historians have called "The Future of the Past"—was radical, experimental, and truly inter-disciplinary (S. Moholy-Nagy 1961). His influence as a teacher has remained legendary, with recent "renewed enthusiasm for Moholy's near-scientific inquiries into visual perception has led to a resurgence of interest in his laboratory-like practices" (Miller 2019, 128). For example, the meticulous process of exploration, and attention to detail and new mediums (within design practice). Moholy-Nagy's approaches have also been referred to as "Artistic Adventurism" (Kostelanetz 1969) and "schooling the senses" bringing the most contemporary approaches to the Bauhaus workshops (Otto 2009). Finally, there is an imperative construct to the "new visual literature" that Moholy-Nagy brought into the work of their students and communities (Otto 2009). These collective elements were born out of ages of austerity, oppression, chaos, and turmoil. These situations are comparable to the more contemporary challenges we currently face, after the Covid-19 pandemic. The active role of his teaching in society, nature, and communities reflects the importance of Moholy-Nagy's teaching within our contemporary lives, regardless of the change in materials and/or technologies.

We interpret Moholy-Nagy's "design for life" both metaphorically as "life around us" and as the creation of design interventions to foster new sustainable behaviors. We consider "Ecological Citizenship" a future life skill, carefully mitigating human impact(s). Finally, "communal values" are also present in Open Design practice, where tools help non-expert audiences alter designs for bespoke requirements. This article unites "Engaging Design" (Phillips and Gant 2020), "Communities of Place" {g}³ (Manzini 2019), "Open Design" (Abel et al. 2011), "Ecological Citizenship" (Phillips et al. 2020) and "Nature Recovery Network" (UK Government 2020b). This article's 'design space' addresses contemporary design practice, biodiversity loss, climate change and redefines Moholy-Nagy's communal design legacy. Moholy-Nagy's documentary *Lobsters* can be seen as a version of this contemporary convergence. Lobsters provided information, culture, and artistic endeavor united around "communities" (Schouela 2019). The design space of this article (introduced in Fig. 1) shows the overlapping territories of Engaging Design, Open Design, Nature, and Ecological

Citizenship. The unifying factors are Moholy-Nagy’s communal design values, and the potential for communities to solve their own challenges. We will introduce each territory and summarize the contextual “potential” for clarity.

FIGURE 1. Design Space Convergence Map



ENGAGING DESIGN

Engaging Design (ED) showcases creative material, models and methods for transformative engagement(s). Sustainability is arguably a human construct born from the necessity to readdress our relationship to a range of issues associated with our biosphere dependency. Engaging Design “borrows from design traditions and emergent design disciplines; to engage design (verb) as a tool (for change), to design in ways that engage” (Phillips and Gant). ED is a process that recognizes its own capacity as a form of ‘material’⁴ and is a cultural language that places value on supporting interactions, especially ones that deal with the critical issues of our time. ED is used by NGO’s, design agents, communities and government organizations. It requires appropriate health caveats for the space, environment, scale and communities it operates within. The definition of “Engaging Design” (Phillips and Gant 2020), is validated by projects and evident in recent Governmental calls “for a new era of community power”, supported by extensive funding (Cabinet office 2020).

⁴ We are proposing that engagement and the act of engagement is a material like wood, metal, plastic, etc.

Engaged (Bucher 2019) highlights the importance to remember that “people are different (there will rarely be a one-size-fits-all solution), context matters (nothing happens in a vacuum) and things change users’ needs will change over time”. In *Ruined by Design*, Monteiro states “we need to measure more than profit. We need to measure impact on the people whose lives we’re affecting” (2019, 26). In the “age of engagement”, it speaks volumes that the leading consultancy company IDEO produces *goodparticipation.org* toolkit {4} (IDEO 2020). With the international proliferation of digital systems, “it’s important to consider how systems will affect citizens” (IDEO 2020). For progressive ED we must adopt wider perspectives. We need to give “engaged parties” the responsibility and authorship to transform their local environments into ones that benefit their communities, based on local needs. An ED exemplar is Detroit Soup {8} a “social crowd funding innovation that directly affects the local community” (Detroit SOUP 2020). Participants pay a door fee and attendees present local community projects. Over a meal, diners vote on favorites, with the winners awarded finance to use for their venture. ED aims to enable participants to transition beyond consequence mitigation and become proactive and engaged. We will provide a summary which considers where and how they help parties “engage beyond participation”.

COMMUNITIES

Moholy-Nagy describes designing as “a complex and intricate task. It is integration of technological, social and economic requirements, biological necessities, and the psychophysical effects of materials, shape, color, volume, and space” (Moholy-Nagy 1947, 42). We will interpret Moholy-Nagy’s values into positive legacies that influence thinking, meaning and establish principles, such as, the community and context are critical in design. In *You Are Not a Gadget*, Lanier clarifies the “important thing about a technology is how it changes people” (Lanier 2010, 4). Lanier remarks, small changes of digital designs can have profound unforeseen effects on human experiences (4). These elements have redefined communities as they have profoundly changed in the last twenty years. For example, telecommunication transforms our “communicat[ion] irrespective of distance, communities refer to places that are not necessarily physical” (Manzini 2019, 20). The author of this article views communities as parties who “live in the current technological environment, have become connected individuals, connected by social media and the internet” (Manzini 2019, 21). In *Community Technology* Hess states that without community, technology cannot function (1979). Hess famously created “project champions”, establishing networks and legacies for projects through communities. In *Get Together*, Richardson, Sotto, and Huynh highlight foundational values; “approach community-building as progressive acts of collaboration, doing more with others [at] every step” (2019, 14). They believe communities should be purposeful,

fully participatory and repeatable, i.e., functioning around a core theme and scalable (42). In “Diversifying Environmental Volunteers...” Winch et al. state that by “[m]odifying nature volunteering projects where possible to [match] interests will enable conservation organizations to [...] harness online search methods to recruit new pools of volunteers” (2020, 29). In summary, to foster and encourage community driven activities, it is imperative to align objectives and motivations, foster creation, and encourage communities to be self-sustainable.

OPEN DESIGN

Open Design (OD) empowers communities with accessible technologies. OD is a “catchall term for various on-and offline design and making activities, used to describe a design process that allows for (is open to) the participation of anybody (novice or professional) in the collaborative development of something” (Tooze et al. 2014, 538). OD builds on digital and analogue “crafts” exploiting off-the-shelf technologies so users can create technical things. The design process democratizes access to construction information in a post-industrial world, presenting opportunities for communities to sustainably respond to bespoke needs. OD also unlocks local manufacture, repair, economies, distribution, and material reclaim/reduction. OD is an outcome of two intersecting global trends: the maker movement and the digitization of the design discipline, resulting in stakeholders having agency over the items they make, repair, use and adapt. The recent EU “right to repair” bill (6) is transforming industries, as “manufacturers [will] have to provide spare parts for 10 years” (BBC 2019). In 2007 *Ikea Hackers* (2) (www.ikea-hackers.net), a modification blog for users to repurpose IKEA goods, was born. This transformed Ikea from a retailer of “finished products” into an online shop of “parts” for end-user adaption. An OD provocation is Defense Distributed (1) (defdist.org), an open-source firearm project. Their weapon caused media hysteria within days of its release, but transformed firearm law overnight, provoking authorities to look again at responsibilities and ethical best practice. OD’s “innovation” is located in the notion that creations have “social lives” online. An organization which uses OD is Public Laboratory of Technology and Science (5) (PLOTS) (Bobbio 2019). PLOTS create “balloon monitoring kits, to visually map the earth” gathering evidence b commercial mapping. OD extends technology exponentially, for example, the ways in which photographic technology has undergone changes in terms of connectivity, accessibility, quality, and convenience. These have exponentially accelerated image capture including scenarios like wild animal facial recognition (Ogden 2020) (32). In summary, Open Design practices unlock possibilities to distribute goods and material to alternate audiences, outside researchers’ comprehension. OD also demonstrates a desire by communities to adapt blueprints and become actively involved (Rotman et al. 2014).

NATURE

Citizen Science (CS) is the participation of non-scientists in data collection for scientific investigation (Irwin 1995). The recording of seasonal events has been a pastime amongst natural historians with records going back to the 1730s. CS provides an indispensable means of combining environmental research with education and wildlife recording. CS “shifts power from scientists to the public”, empowering communities to capture data on events that might impact them or their surroundings (Piesing 2020). An example of CS is that of children living in rural New Zealand who use school bus journeys to catalog deer, elk, and domestic livestock sightings {14}. The bus journey project helped people get actively involved in their environment and transformed their approach to nature (Irwin, Jensen, and Jones 2013). The RSPB’s (Royal Society for the Protection of Birds) “Big Garden Bird Watch” {7} demonstrates that public audiences are willing to participate in “Crowd Science” activities, with over 600,000 people taking part in 2014 (RSPB 2014). A UK Government Department for Environment, Food & Rural Affairs (DEFRA) paper highlights that “government and society need to account better for the value of nature, particularly the services and resources it provides” (UK Government 2011, 2). DEFRA stresses creating community partnerships, to manage environment(s) is paramount. Sprawling cities (Cox et al. 2017), funding reductions (Burke, Davis, and Diffenbaugh 2018, 549) and extended working hours (Ganster, Rosen, and Fisher 2018) have transformed our relationship with wildlife (Richardson 2020) and natural systems. We are distanced from protecting/connecting with our surroundings by an “othering” of nature (Uggla and Olausson 2012). Our traditional relationship to nature was defined by food (Uhlmann, Lin, and Ross 2018), forest, fuel (Cincinelli et al. 2019), seasonality and self-sufficiency (Kelobonye et al. 2019). Sustainable Design rarely *explicitly* undertakes design’s intent on propagating biodiversity or interrogating our consumer role as “Ecological Citizens”.

In 2001, an outbreak of foot and mouth disease ripped the United Kingdom’s agricultural industry apart. Surrounding national parks were closed, costing the public sector over “£3 billion and the private sector £5 billion+” (DEFRA 2004). The outbreak infected livestock, required flock culling, and prevented tourists from entering countryside areas. The 2001 events demonstrated a fine balance between public volume and nature dependencies. National parks encourage public engagement/activity, however “protected areas are not playgrounds”: “national parks are assets for tourism, but not tourism assets” (Buckley 2009, e1000143). Our interactions with nature can be far too vigorous, unconsidered and cause untold harm. For example, across America, national parks face a popularity crisis. The Park Service reported, visitors are “loving nature to death” increasing tourist numbers. Glen Canyon, a park manager, stated: “social media is the number one driver, people are looking for the iconic photo” (Simmonds 2018). In 2017, the national

parks saw 330.9 million visitors, the highest ever recorded. In “Yellowstone, America’s oldest national park, visitation has surged 40% since 2008, topping 4 million in 2017” (Simmonds 2018). The World Tourism Organization’s 2030 aim is “responsible tourism”, understood as “a driving force towards economic growth, inclusive development and environmental sustainability” (World Tourism Organization 2020). An ED example is Eco-tourism exploring exotic, often threatened, natural environments to support conservation efforts. The “voluntourism” challenge is “many agencies are profit driven, and work meeting the volunteers demands rather than the charities” (Jenkin 2015). To summarize, these examples of nature and public relationships highlight the contextual considerations that “communal design” approaches require. This area is delicate, interdependent, and reliant on many intertwined challenges.

ECOLOGICAL CITIZENSHIP

We argue for designing *with* nature, actively preserving and propagating, through our actions. Thus we present “Ecological Citizenship”, which transcends consumerism by impacting culture, enacting sustainable change, and empowering resilience of local communities. These challenges are large-scale, complex, and socially responsible. They demand responses from communal design, including public communities. For example, one impact on nature is increasing artificial grass sales due to “time poor” lives. In the past four years in the UK, there has been more than a “220% increase in artificial grass sales [which has] impact[ed] surrounding domestic wildlife” and biodiversity (Laville 2018). Gardens and green spaces (no matter how small) are critical to biodiversity (Barkham 2018). Garden biodiversity is plummeting, presenting a “hyper-reality, substantially divorced from surrounding natural ecosystems” (Cannon 1999, 287). In 2019, artificial grass sales “equated to “3,000 hectares (12sq miles) of garden vegetation lost over eight years”, reducing the UK’s bio-diversity (Laville 2018). Coupled with the rise in “nature deficit disorder”, this has meant less time spent in nature (Louv 2008). In “A Measure of Nature Connectedness”, Richardson et al. state that the “size and suddenness of the drop-in levels of nature connectedness from [ages] 10-15 is notable” (Richardson et al. 2019).

Communally designed “nature engagement” initiatives are increasing, for example Flock Together. Flock Together {31} is a national collective uniting people of color in the activity of birdwatching, and is empowering communities to care for their natural world. Hopefully more communal design initiatives will help new forms of Ecological Citizenship. An “Ecological Citizenship” example is “voluntourism”. Through voluntourism, The Faroe Islands sustain some conservation activities throughout the year. Even before the effects of the COVID-19 pandemic, the Faroe Islands, which was a popular nature retreat, closed to reduce impacts of tourism on wildlife {12}. We see this “social citizenship” example as inspirational but is not a universal solution.

Ecological Citizenship should be embedded within communities, urban and suburban locations and include all social classes. We summarize that enacting “Ecological Citizenship” through daily actions can inform or change our behavior(s) for example, in reducing, reusing, and considering our impact on non-human counterparts, we co-habit the world with. It is a fact that humans rely on non-human species to support the biosphere, preserving life on earth. However, organizations’ focus on GDP rather than their “ecological citizenship” ultimately influences our behavioral patterns too. It is our duty to think beyond our actions and in wider ecologies.

DESIGN SPACE ALIGNMENT(S)

The pedagogical methods and utilitarian enterprises of the Bauhaus exemplified Moholy-Nagy’s “aspiration to educate the general public in the skills of visual literacy” (Nelson 2006, 259), and this is contextually comparable to contemporary approaches of Open Design. Before his death in 1946, Moholy-Nagy travelled to the Museum of Modern Art (MoMA) in New York for a conference on industrial design as a “New Profession”. Moholy-Nagy explained to industrialists that “their ‘insidious paternalism’ was choking the ‘creative independence’ of the artists and designers who worked for them” (Malherek 2018, 52). We think there is a direct link with the technologies and approaches to the natural world. i.e., industries which need to become aware of their ecological citizenship. Within the “state of the art” context, we require means to creatively capture and protect the natural world. Such approaches are re-enforced in Moholy-Nagy’s “Production—Reproduction”: “to understand correctly the mode of human expression and shaping in art, we have to examine the means [they] apply in creative activities” (Moholy-Nagy [1922] 1985, 30). In other words, using appropriate materials and technologies to explore creative activities.

David Attenborough published his *Witness Statement* and call to action. He states that our “future on the planet, the only place as far as we know where life exists, is at stake” (Attenborough 2020, 221). Our relationship with the natural world was transformed by the 2020 pandemic as previously “landscapes are valued, (functionally) for providing air, water, soil for agriculture, land for development and living” (MacGregor 2020). The pandemic led to independent communal responses such as social spaces fabricating PPE (Getusppe org 2020) {3}, the public manufacturing medical scrubs (NHS 2020), and community societies supporting local foodbanks (Perryman 2020). Inn Stirling and Bowman (2020) the barriers to responsive Open Design within a pandemic and developments which require oversight are outlined. We must think more holistically about the wider ecological stakes. Our “natural capital (basis of all life), human capital (skills and aptitudes), social capital (institutions and communities); built capital (everything from cities to manufactured goods), and financial capital

(transferring resources between capitals)” (MacGregor 2020). The British Government is championing a *Nature Recovery Network* (NRN), uniting a broad “network of cross-sectoral organizations work[ing] together to carry out action for nature” (UK Government 2020b). The network would restore protected sites to a favorable condition so nature can thrive, create or restore a wildlife-rich habitat outside of protected sites, recover threatened and iconic animal and plant species by providing more, diverse, and better-connected habitats, and achieve a range of environmental, economic and social benefits. We must “learn to respect and appreciate the diversity and pace of nature and its species so we might better co-habit with the natural world” (Arup 2020, 19). A recent UN *United in Science* report stated that “the COVID-19 pandemic has disrupted lives worldwide. However, the heating of our planet and climate disruption has continued” (UN 2020). The culmination of these territories provides the public with tools, practices and methods giving communities agency to document, engage and act for positive change.

DESIGN SPACE EXAMPLES

The design space enables advancements in communal design that benefit Ecological Citizenship. Conceptual examples include “smart waders” {11}, where individuals who are fishing wear waders with embedded technology (Amos 2015). Fresh water fishing in the United Kingdom requires a rod licence which contributes money towards the maintenance of waterways. Licenses give anglers rights to fish for different species, durations, with annual costs of up to £72 UK (approximately US \$119). The fishing license {16} could be a technological device which provides reciprocal information on location, water quality, weight, and species when fish are caught, thus benefiting anglers and government parties. Projects that present “communal design” within this design space (fig. 1) are deforestation (For Forest Forever 2020) {19}, location based sculpture (Gormley 1998) {18}, mapping green spaces (Urban Good CIC 2018) {20}, VR animal perspectives (Iteota 2020) {21}, VR Snorkelling (Wiegand Waterrides GMBH 2020) {22}, Natural Insight (Licari 2012) {23}, Big Compost Experiment (Plastic Waste Innovation Hub 2020) {24}, water innovations (IceStupa 2020) {25}, DIY content creating technologies (Phillips et al. 2020) {17}, public art installations (The ASH Project 2020) {26}, community led responses (guerrilla gardening.org 2020) {27} (Pearce 2018) {28}, repurposing (something andson.com 2020) {28}, material recovery for building (Robin 2019) {29}, natural responses to electrical products (Ant Studio 2019) {30}, Animaesque approaches (Animaesque 2019) {33} and Landmine detecting rats (APOPO 2020) {34}.

The author of this article perceives the “design space” as building toward a *Nature Recovery Network* which supports “humanity, nature, and technology, insist[ing] on rights of humanity and nature co-exist[ing] in a healthy, diverse and sustainable condition” (McDonaugh

1992, 83). A current project within the design space is the My Nature-Watch project {17} (fig. 2). The NatureWatch (NW) camera is a wildlife camera which uses computer vision to take pictures when it sees movement. Active participants have frequently made NW cameras for their colleagues, parents or children, after their own interactions with the project. The NW project fosters “active community engagement”, within countless publications and interviews of participants that changed their behaviors. Participants changed the camera deployment surroundings, introducing ponds, landscaping, rewilding, and propagating new flora and more. The NW project’s main outputs were in the transformations featured within the participants and not solely the design of camera unit.

FIGURE 2. *The My Naturewatch project, foregrounding the ‘design space’; photographic credit James McCauley Photography.*



The My Naturewatch Camera construction and adaptation.

Camera Deployment, Environment and landscaping.

Final Pictures, produced more connected nature interactions.

METHODOLOGY

In the 1920s and 1930s, Moholy-Nagy created experiments like *Light Prop* “as stepping stones toward a future he imagined to be imminent”, i.e., provoking preferable futures through design (Tsai et al. 2017, 314). Moholy-Nagy explored what is referred to by modern design contemporaries as “Research Through Design” and “Design Through Making”. These processes are practice-based communal design which foster exploration and serve as narratives which can be built on.

Here we adopt a “research through design” approach, established by Frayling (1994). It is distinguished by “a creative approach in which, both designing, making and researching are integrated” (Bunnell 2000). Coupled with this is Design Futuring, that is the building of plausible scenarios based on evidence and expert speculation. Design Futuring creates scenarios and catalyses a range of responses which require contextualization as “our utopia, is always someone else’s dystopia” (Smith 2020). We developed a framework and “design futures” approach of narrative creation, unpicking situations with leading experts. Design-led approaches open up conceptual space(s), enabling collaborative and inclusive approaches.

The preferable futures were informed by previous work, case studies, a literature review, expert leadership from The Wildlife Trusts, and experience through the My Naturewatch project (fig. 2). The article draws on previous inter-disciplinary design research in ambassadors (Phillips et al. 2020), active engagement (Phillips and Gant 2020), the importance of “making/assembling” (Phillips 2018), lessons from My Naturewatch and serendipity (Gaver et al. 2019, 302), advocating and enabling training (Phillips et al. 2019), free interpretation (Tooze et al. 2014, 541), and elements of making/ownership, commonly accessible (Phillips 2014). The methodology was also supported by multi stakeholder forums (Larson and Sarmiento Barletti 2020), participatory innovation (Buur and Larsen 2020), and design reviews (influenced by “co-design as a method”) with The Wildlife Trusts board members (Mateus-Berr, Trimmel, and Dezső 2020). The narratives respond to “communal responses” benefiting ecological challenges through “preferable” future scenarios. These build on Moholy-Nagy’s New Bauhaus principles. Moholy-Nagy also believed in the values of design for social change, a critical rhetoric in the process of designing for public audiences. A contemporary New Bauhaus example, which is integrated into communities, is The Vertical University (VU). The VU “deepens place-based skills in sustainable technology, craft, and medicinal plants, and seeks to conserve and activate local knowledge while also creating sustainable livelihood opportunities. It does this through establishing ‘learning grounds,’ which are micro-conservation hubs, ‘classrooms’ throughout the landscape” (The Vertical University 2021).

Design speculations and proposals create a space and series of narratives that foster new and futures approaches. While speculative designs “imply a lifeworld surrounding a speculative artefact”, we foresee more tangible applications of design speculations (Wong et al. 2020). In “Designing Future Experiences”, “experiential scenarios create real contexts so that alternative futures can be understood and deliberated on” by audiences (García and Gaziulusoy 2021). The speculations were informed by leading stakeholder reviews, with an iterative design process to comprehend the tensions between creating engagements and avoiding negative impacts.

The following future narratives, draw from parallel references focusing on a “preferable, communal nature engagement future”. We created inspiring narratives, which support strategies towards realising a *Nature Recovery Network* and building narratives on *Moholy-Nagy’s* legacies of technological advancement and communal design. The framework seeks to create a distributed approach embedding “Ecological Citizenship” within communities and providing them with autonomy whilst contributing to a larger, global initiative. The work builds on “preferable futures” integrating opportunities for further development (Hancock et al. 1994). The design approach also builds on the following values to embed communal design responses.

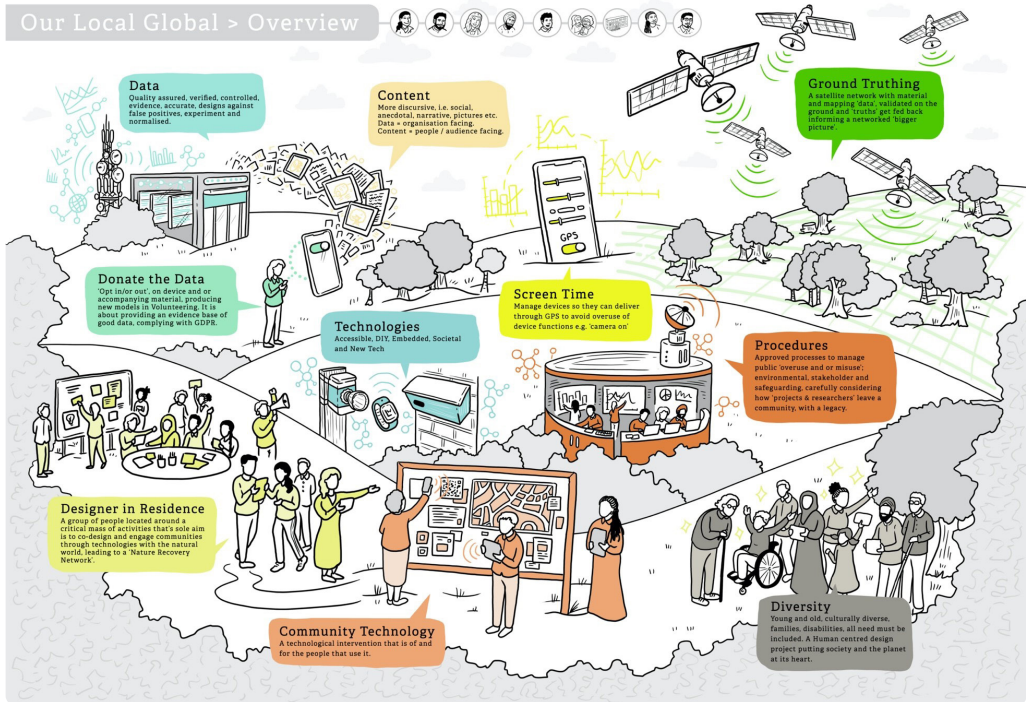


FIGURE 3. Network with multi-level engagements.

Designer in Residence: A group of people located around a critical mass of pre-organized and serendipitous activities. Their sole aim is to co-design and engage communities through technologies with the natural world, leading to a “Nature Recovery Network”.

Differentiating data & content: Data / quality assured, verified, evidence, accurate, designs against false positives, experiment and normalized. Data = organization facing.

Content / more discursive, social, anecdotal, narrative, pictures, etc. Content = people/audience facing.

Donate the Data: The concept that participants can “opt in/or out”, by using your device and or accompanying material, producing new models in volunteering.

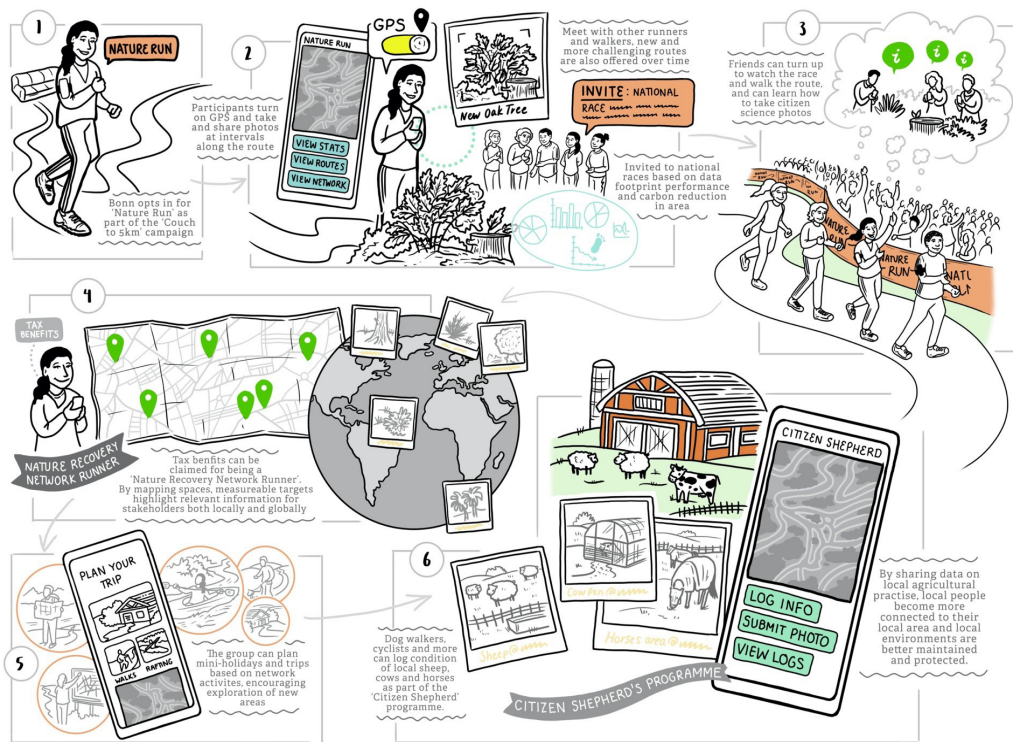
Ground Truthing: A satellite network with material and mapping “data”, validated on the ground and “truths” get fed back informing a networked “bigger picture”.

Diversity: Young and old, culturally diverse, families, disabilities, all need must be included. A Human centred design project putting society and the planet at its heart.

Procedures: Approved processes managing public “overuse and or misuse”; environmental, stakeholder and safeguarding, considering how “researchers” leave a legacy in a community. The final areas that inform the methodology were the extensive literature reviews, distilled and framed in the introduction.

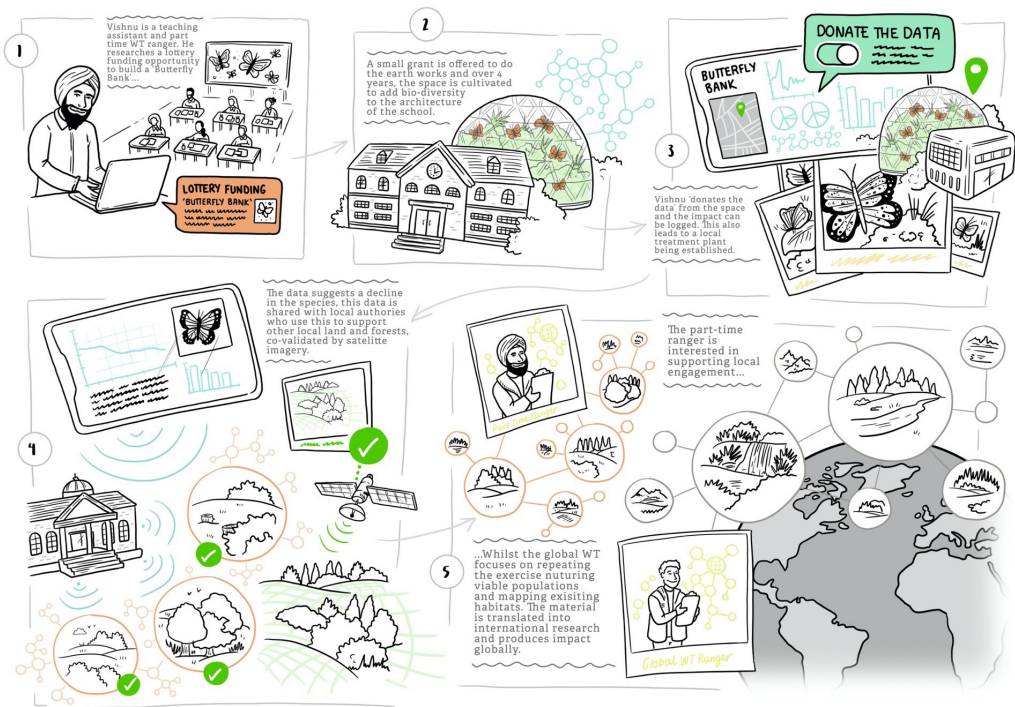
Narrative 1) Bonn (fig. 4): Participating in the “couch to 5km” campaign opting for a “Nature Run” creating an alternate route where they take photos (at specific intervals) (Rodenburg 2020). This more challenging route (overtime) involves meeting with other runners & walkers. Bonn is invited to a national race based on their “content” performance over a year (due to the captured data footprint). Their friends turn up to watch the race and also walk the route, learning how to take community science photos. Bonn realizes they can claim tax benefits as a ‘Nature Recovery Network Runner’ visiting sites of interest all over the country (UK Government 2020a). Measurable targets of mapping spaces highlight information relevant to countless stakeholders locally and globally. Bonn plans Airbnb mini-holidays and trips for work to explore locations, based on network activities. Bonn’s activities align with “Citizen Shepard’s” program where walkers log local sheep conditions, linking networks positively, connecting people to local environments (Blencowe 2013).

FIGURE 4. Narrative 1) Alignment with Sporting organizations.



Narrative 2) Vishnu (fig. 5): A teaching assistant and part-time ranger. He researches lottery funding to create a “Butterfly Bank” to transform the landscape architecture of local schools. A small grant finances the earth works (Danahar 2010). Over four years the space is cultivated and re-invigorates the local biodiversity. Vishnu “Donates the Data” so impact(s) can be logged (Singtel Optus 2020). Locally, a new “treatment plant” is established. Based on four years of records, Vishnu sees a species decline, and the “monitoring technology” messages the local authorities directly, advocating for the land and local surrounding forest, and this is co-validated by satellite imagery (Public Lab 2020). The part-time ‘ranger’ is interested in local engagement, the Wildlife Trust is interested in repeating the exercises to nurture viable populations and map existing habitats.

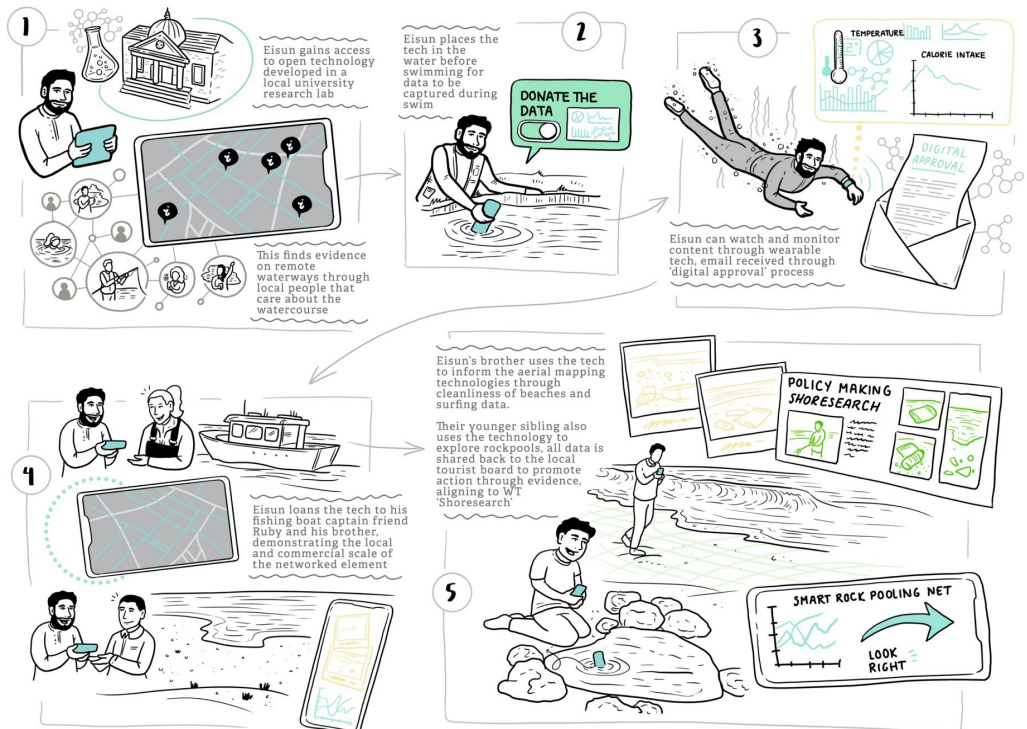
FIGURE 5. Narrative 2) Community led “part-time” ranger’s scheme, building educational links.



Narrative 3) Eisun (fig. 6): accesses some “Open Technology” being made in a local university research lab. It has been designed specifically to work to find evidence on remote waterways (under its own power), through anglers, wild swimming enthusiasts and locals that care about their watercourse (Amos 2015). It is also open to anyone if they visit those spaces. Eisun places the tech in the water before swim-

ming, decides to “Donate the Data” and then is live captured during the swim. Eisen is able to watch their “content” personal temperature on the wearable device, as an athlete in training they can then monitor calorific intake. Eisen is emailed as their data goes through a “digital approval” process. Eisen’s brother takes the tech on their family holiday, just to see if the beaches are as clean as they think. This informs the beach selection for surfing and validates aerial mapping technologies. With their younger child they explore rock pools (with the tech as a “Smart Rock Pooling Net”) in a completely different way as the quality of sea water informs them and guides them to places where they can see more active species. The “Data” is used in policy making and by the local tourist board promoting action through evidence, aligning to the WT “Shore search” (Wildlife Trusts 2020).

FIGURE 6. Narrative 3) Open spaces, collaborating with tourist boards.



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Narrative 4) Choi (fig. 7): lives in a communal tower block, urban area. He is often interested in what is immediately surrounding him. They hear about “swifts” in his school and talks to his local WT officer from a school assembly. They opt to be a “Ranger in Training”: a scheme that is run locally and unites people of all backgrounds once a year at the WT AGM, where they can hear about projects. This gives Choi access

to follow a local ranger, providing work experience for college. In his communal tower block the WT place some Swift boxes that are custom made to monitor “growth, health”, and access (Just Giving 2020). Choi chooses to “Donate the Data” and check-in on the boxes. They also share the bird box “content” with his local hospital. In turn this is then broadcast nationally on hospital TV, changing as more spaces become equipped, network forming “buddies” with elements feeding into approved social media channels. The ranger in Training scheme addresses “cohesion and coherence across boarders”, sharing best practice, local conditions, and informing decision making of their peers who are involved in government policy.

FIGURE 7. Narrative
4) Urban and suburban communities supporting.

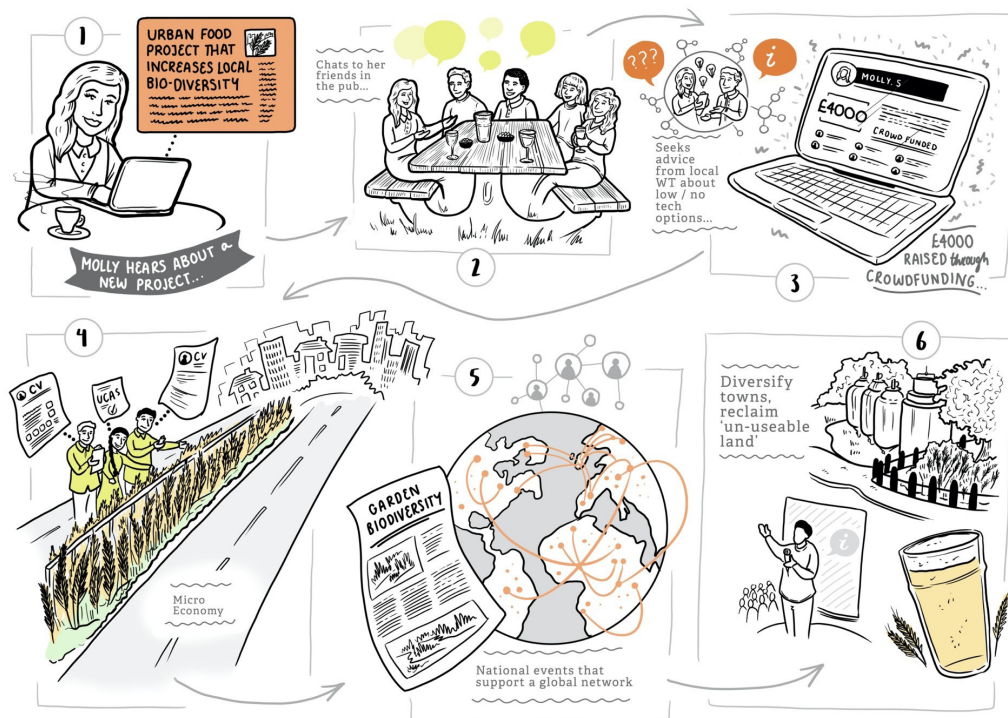


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Narrative 5) Molly (fig. 8): Hears about an urban food project that increases local biodiversity as it is plummeting in our gardens (Barkham 2018). Molly chats to her friends in the pub and seeks advice from her local WT about low/no-tech action he could take. Molly is a film and media student and helps raise £4,000 through a crowd funding campaign. This is enough to grow barley in the central reservations throughout her town, supporting a “Micro Economy” of young people without Saturday jobs (Press 2020). This counts as work experience for

their UCAS statements, CVs and job applications creating a socially informed economy. The nuanced impact is that locals re-review how they are using their gardens, through a national event increasing “garden bio-diversity”, supporting a global network (Barkham 2018). The harvest not only helps diversify the traditional look, feel, and aesthetic of the town, but the product was also brewed into ale for a community open mic session. Impacts are: local food producers get the public to witness the role of our eco-system, its complexities, and re-claim “unusable land”.

FIGURE 8. Narrative 5) Rethinking; agriculture, biodiversity and diverse spaces coalesce.

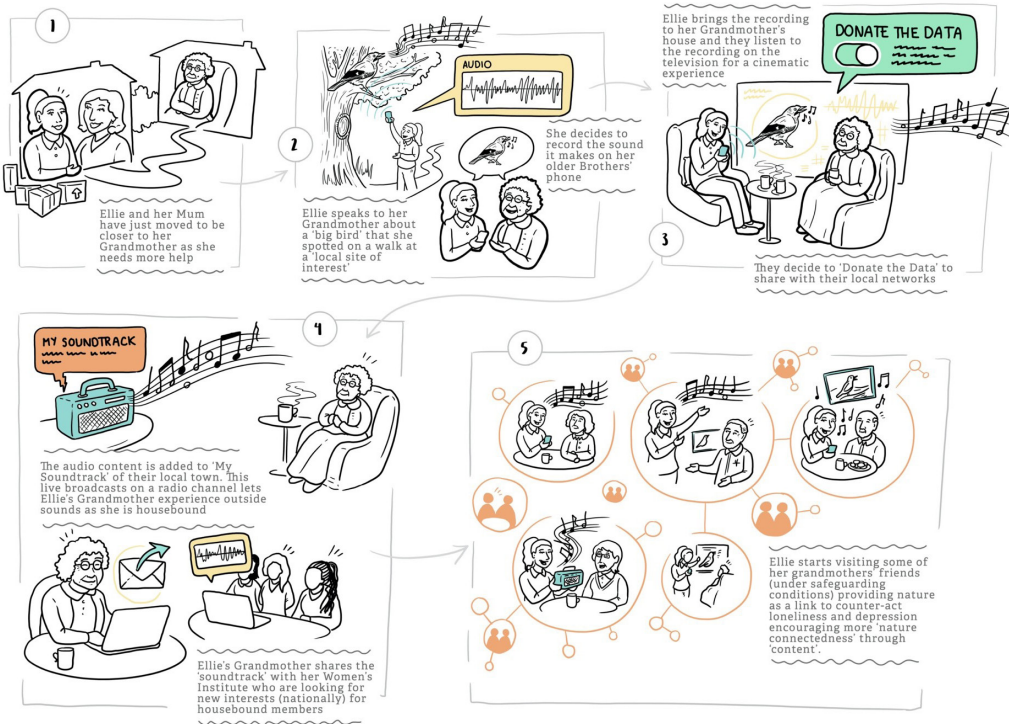


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Narrative 6) Ellie (8) & Elanor (88) (fig. 9): Ellie and her mum have just moved to be near her grandmother as she needs more help. Ellie goes for walks on weekends and spots a “big bird” at a “local site of interest”. Ellie talks about it to her grandmother and records the sound it makes on her older brothers’ phone. Ellie takes the recording to her grandmother’s house, and they decide to listen to the recording on the television as a cinematic experience. They decide to “Donate the Data” transferring the “audio content” into “My Soundtrack” of their local town. This live broadcast “radio channel” lets Ellie’s grandmother hear sounds she cannot otherwise hear. Ellie starts visiting some of her

FIGURE 9. Narrative 6)
Building inter-generational relationships.

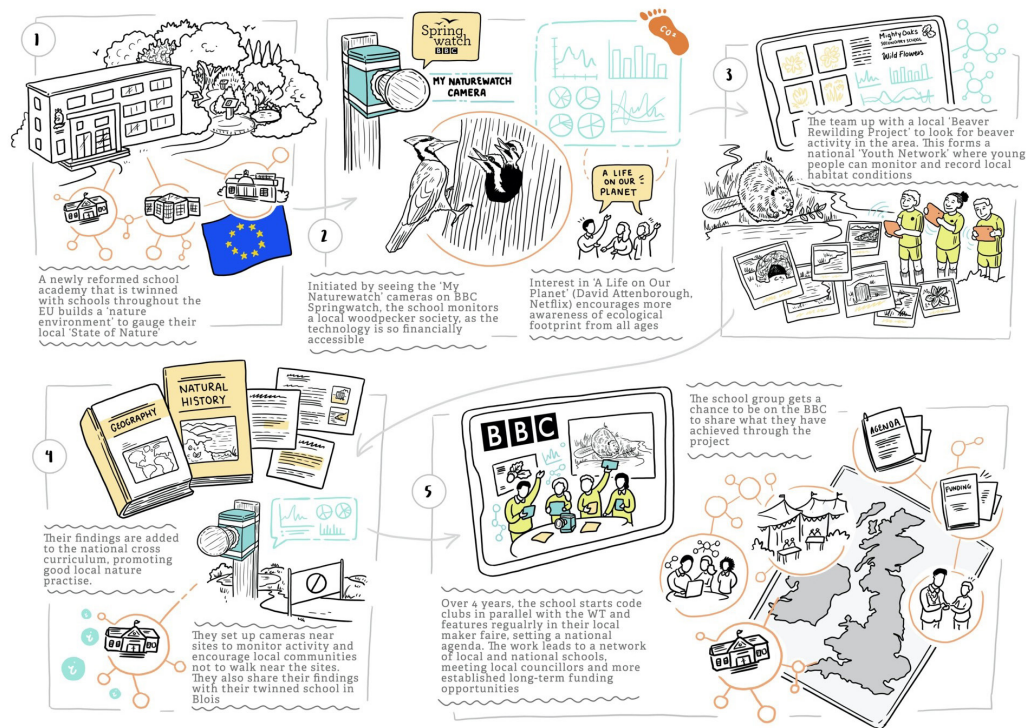
grandmother's friends (under safeguarding conditions) providing nature as a link, counter-acting loneliness and depression encouraging more "nature connectedness" through "content".



Narrative 7) Small Oaks School (fig. 10): The school is a newly reformed academy twinned with schools throughout the EU. The school built a "nature environment" gauging their "state of nature". Initiated by hearing about the My Naturewatch cameras on BBC SpringWatch. They become more aware of their ecological footprint as all ages are talking about "A Life on Our Planet" (David Attenborough, Netflix). They team up with a local "Beaver Rewilding project" to look for beaver signs over time and measure their impact. This forms part of a national "Youth Network" where national schools are looking for habitats that are appropriate for rewilding and introducing species (Holland Park Ecology). As part of this, the schools 'football, hockey and rugby teams' take an iPad with them to away games and try to stop at "wildlife laybys" to take a few pics on the way home from a "big match", cataloging roadside wildflowers as it is part of a project that Mighty Oaks (secondary) School is working on. This instigates material from cross curricular

(geography/natural history GCSE) and promotes good practice (Horton 2020). In this way, the school helps local beavers by encouraging local communities not to walk near the site where they set up observation trail cameras. They also share findings with their twinned EU school, sharing insights on the BBC. The process enables cohesion and coherence “across borders”. Over four years, the school starts code clubs in parallel with the WT, leading to meeting local councilor(s) and more established long-term funding opportunities.

FIGURE 10. Narrative 7) Primary school network.

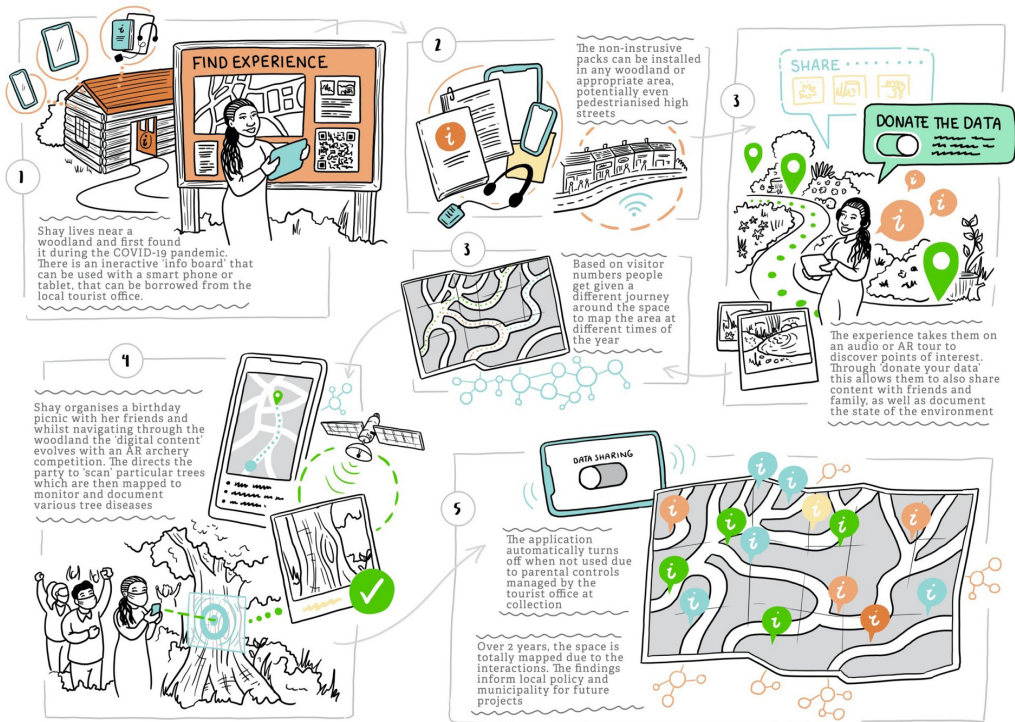


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Narrative 8) Shay (fig. 11): Shay lives near a woodland, first found during the COVID-19 pandemic. They see an “info board” (common to sites) about the “Find Experience”, in this case, Robin Hood (Gilbert 2018). Shay collects a smart phone, tablet, or a borrowed device from the tourist office. This proposal would comprise of a non-intrusive technology package installed in any woodland or appropriate area, potentially even (pedestrianized highstreets). The experience takes you on an (audio or AR) tour in which you find new assets and points of interest that you can share with your friends or family. The technological process asks you if you would like to “donate your data”, this means that as you are using the camera application it documents the state of the “environ-

ment”. Based on visitor numbers the technological process, gives people a different journey around the forest (or space) to map the area at different intervals of the year. Shay brings their friends to have a birthday picnic and whilst navigating through the woodland, the “digital content” evolves into an AR archery competition. This directs the “party” to scan particular trees. While they have fun, the “data” cloud receives a mapping of a forest for Dutch Elm and Ash Die Back diseases (chartered foresters org 2014). The application automatically turns off when not used due to parental controls as that was managed by the tourist office at collection. The work gathered and mapped informs local policy and building construction over time. This enables the local municipality to reschedule their planning decisions based on new species establishment.

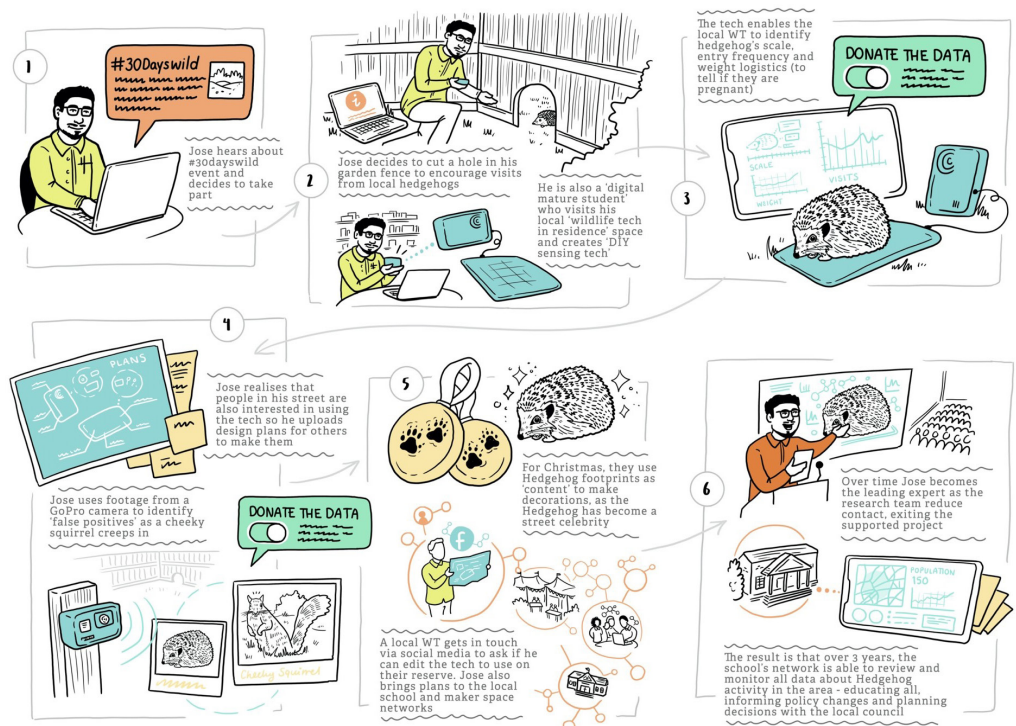
FIGURE 11. Narrative 8) AR experience.



Narrative 9) Jose (fig. 12): lives in a suburban environment, they hear about #30dayswild and decides to “cut a hole in their fence” to encourage hedgehogs. He is also a “digital mature student” who visits his local “wildlife tech in residence” space and makes a “DIY Sensing Tech” (Ravindran 2020). The tech enabled the local WT to identify the hedgehog’s scale, entry frequency and when they are pregnant (from weight increase over time). Jose then realizes that their street is interested so they upload tech plans for others to make them, thereby sharing designs. Jose “Donates the Data”, including “go pro” camera footage, and checks for ‘false positives’ as a cheeky squirrel creeps in. For Christ-

mas, they use Hedgehog footprints as “content” to make Christmas tree decorations... as the Hedgehog has become a street celebrity. The local WT gets in touch via social media and ask if he can edit the “pad” to measure weight so they can use it on their reserve. Jose imparts the knowledge and brings the local trust to the Small Oaks School, where he used to go. The school share the plans with their teaching, parental and maker space networks, demonstrating the potential to scale anywhere, whilst building on existing habitat monitoring. Over time, Jose becomes the leading expert as the research team reduce contact. The result is that, for over three years, the school’s network is able to see hedgehog growth within the area. The information educates all, informs policy and changes planning decisions for the local council.

FIGURE 12. Narrative 9) Suburban environment.



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CONCLUSION

As a practice, embedding “Ecological Citizenship” (in our lives) can unite local actions for wider global gain. This in turn can unite people in “community technology”, as proven through the My Naturewatch project. These practices can operate on differing scales and means, and should not be limited to those with “spare time”, i.e., should not be inaccessible to the “time poor”. Moholy-Nagy’s work brought about a “new visual culture” which transformed values and informed “communal design”. These EC approaches, embody a new visual culture in the way

we look and act within the world. The narratives communicated within the article are contextually based. The following concluded points refer to those situations, through the lens of communal design and should not applied as a blanket approach to “fit” every circumstance.

We break down “signposting themes” to make the concepts repeatable and scalable from the field review and future provocation. 1) *Project Reciprocity*: the notion of linking interests, activities and mutual stakeholder interests. This enables multiple stakeholders to mutually benefit from activities. 2) *Citizenship*: being able to witness the bigger holistic picture, unified with our local space/place. For example, these can be within the acts that we do for our neighbors, outside of legal constructs. They are the process of improving the lives of those around you. 3) *Non-colonialist & collaborative*: listening and connecting, avoiding working top down. We believe that the best communal design approaches should not only belong to the most privileged and or “time rich”. Communal design practice requires 4) *routes and methods for exit*: establishing legacies, delivering within means and plan for careful and sustainable departure(s). I.e., carefully considering how these interventions are sustained, continued and or embedded within communities. Communal design should be *Impactful*: fostering measurable change and or evidence that can be validated. This is not just a problem-solving approach, for example a “happy society” is critical, and we should not just seek the most beneficial for individuals.

The proposals for communal design should be 5) *Embedded in Relationship(s)*: built into communities with project champions and or ambassadors. The intended audience of this “working typology” should be *Accessible and Appropriate*; to the intended audience(s) remaining inclusive and progressive, moving the collective forwards and not apart. The largest constraint of this type of work is the concept of responsibility. How open and or accessible should this approach of communal design be? We believe that a democratic 6) *Responsible ‘Expert’ Oversight* is required. That expertise could potentially witness/predicting inter-related issues (through experience and tacit knowledge). In the cases throughout the literature (infection control, tourist scale, hidden consequences) oversight of the entire events help foresee and respond to challenges. One large challenge is the *Motivational alignment(s)*, which benefit all parties to avoid exploitation. Motivation is interlinked with *Transparency & Trust*, built over time and transforms how both communal design leads and participants are valued. Finally, there is the potential for 6) *Local to Global strategies*: leveraging opportunities for local input informing a global trajectory. For example, activities that everyone can do on a local level that then informs a global perspective or venture.

We do not possess a crystal ball to the future. However, we do vote for the preferable future where these territories are actively engaged, developed, embraced through the lens of understanding, assurance, and responsibility. Not everyone will “make” or embrace the ability to

do so, nor should they be made to. Amateurs have proven their worth and have scientifically “identified new species if they are given the right tools” (BBC 2020). During times of great crisis, we need to look or help build local knowledge, “indigenous knowledge” and not just ‘plug in technology” (Boland 2020). As our world progresses, we need to build with communal design approaches and foster *Communal Responses* towards our ecologically designed future. Future generations will question our ‘Ecological Citizenship’ and responses to preserve our world in common times. Let’s hope we are akin to László Moholy-Nagy’s approach, with positive affirmation on contextual issues.

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