

Fostering Communication and Collaboration Through Regenerative Design Games.

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ABSTRACT

This paper explores how regenerative design games might foster the communication and collaboration skills needed to scaffold transitions to just and sustainable futures. It explores three design games, each co-designed with different people, for different intents and purposes but each with the shared aim to build people's capacity for regeneration, open communication, and effective collaboration. Framed by critical pragmatism and performed through co-design, the paper discusses the role of games in explorations of uncertain futures and highlights the important role played by care practices in co-design processes.

KEYWORDS *design for transitions, design games, communication, collaboration, micro-solidarity*

INTRODUCTION

Transitioning toward futures that are socially just and ecologically sustainable will likely involve complex design engagements that are global, intercultural, and cross-sectoral, that can cross over disciplinary boundaries and integrate transdisciplinarity (Boehnert 2018; Ceschin and Gaziulusoy 2016; Irwin, Tonkinwise and Kossoff 2015). This demands very different skills of experienced and emerging designers, both of whom will benefit from learning new ways of working and thinking about design (Irwin et al. 2015). The expansion of disciplinary skills to better integrate eco-literacy and cultural understandings from the social sciences can develop designers as transdisciplinary practitioners capable of contributing to societal transitions. However, deeper communication and collaboration within multi-disciplinary teams will also be required to meet the complexity in these transitions, with a particular sensitivity to the ways transitions are shaped by their cultural context. As paraphrased by Escobar (2001), "culture sits in places" (2001, 147) so if we are to understand how to catalyse transitions, we must understand the cultural influences of the contexts in which they situate. Designers' capacity to engage with plural perspectives and work across such dynamically shifting contexts will affect their contributions to these teams, and more broadly, to transitions (N. Bateson 2016; Escobar 2018; Fry 2020).

Designers' participation in transitions and/or the teams catalysing them are complex design engagements that have what Nora Bateson (2016) describes as a 'trans-contextual' nature, in that they occur across multiple contexts in complex ways. Bateson argues for a stronger push to shift thinking from transdisciplinary to trans-contextual, to better reflect life, which is made up of contexts, not disciplines. Trans-contextuality affects how and where seeing happens, by whom and in what context and appears to be key in designers' capacity to approach complex problems. Designers' effective contribution also requires advanced practice of so-called 'soft skills' such as communication and collaboration. This paper argues that the challenges posed by collaboration and communication suggest these skills are less 'soft' and better articulated as 'smart skills' that are unfortunately often underdeveloped. 'Smart skills' such as communication and collaboration enable action and scaffold challenging work environments. Without developing 'smart skills', contributions to design for transitions will likely remain challenged.

Design for transitions is an emerging area of practice and research that requires an expanded skillset beyond that which is typically learned through a tertiary design education or 'on the job' training. It is inherently collaborative and calls for greater literacy in the intersection between racial, social and climate justice, alongside an increased sensitivity to group dynamics and power relations. This paper argues that practising design for transitions might also demand 'Batesonian practices', a set of practices developed intergenerationally through the Bateson family's work in living systems. These include (but are not limited to) 'trans-contextual' seeing (recognising the way meaning can shift and multiply across contexts) and 'symmathesy' (a discursive process of mutual, social learning) to support collaboration and communication (G. Bateson 1979; N. Bateson 2016). Furthermore, the paper argues for the development of effective group communication skills through practices such as Micro-solidarity (Bartlett 2019) to scaffold the development of the skills needed for successful collaboration.

To support these arguments, this paper presents three regenerative design games that were co-designed to foster communication and collaboration. It seeks to respond to the question: how might we build our capacity—as designers and humans—to participate in societal transitions towards racial, social and climate justice? To do this, the paper explores how incorporating 'Batesonian' practices and Micro-solidarity into the co-design process can build designers' capacity to design for transitions, how participation in

gameplay can build players' capacity to participate in societal transitions, and how both can foster regenerative cultures.

BACKGROUND

Co-design

Co-design has its roots in the Scandinavian practice of participatory design where participants are partners in generative design processes, however the term co-design also describes a more extractive process of seeking feedback from selected end-users of a product or service (Bjögvinsson, Ehn, and Hillgren 2012; E. B.-N. Sanders and Stappers 2008). Co-design (with generative intent) has been described by Sanders and Stappers (2012) as a tool, technique, method, and mindset, and has commonly centred the co-design workshop as the time and space for participation. Co-design can be differentiated from participatory design by its engagement of broader stakeholders in addition to beneficiaries (commonly called 'end-users'). Co-design's increased inclusion of people can lead to more complex design engagements that have historically played out through the same-time-same-space co-design workshop, but the ways in which participation occurs is shifting in response to COVID and social distancing requirements. The author recently contributed to the development of 'low-contact co-design' (Davis et al. 2021) which responded to the limitations placed on the spatiotemporal aspects of co-design workshops during the pandemic. In low-contact co-design the focus shifts from designing processes that maximise input from participants to instead recentre participants' needs, and design processes that maximise inclusive participation that extends beyond workshops. Low-contact co-design proposes the need for blended assemblages of different tools and techniques and in doing so, offers improvements for inclusivity through generative processes that amplify participation. The design games presented in this paper have been co-designed with generative intent using the low-contact co-design approach (Davis et al. 2021).

Design games

Design games have a long history in co-design, where card sets, role play and other games are often used as part of participatory design processes (L. Sanders and Stappers 2012). Gamification as a strategy has also been used in design, health, education and learning management (Bergen, Solberg, Sæthre, and Divitini 2018; De Jans, Van Geit, Cauberghe, Hudders, and De Veirman 2017; Jessen, Mirkovic, and Ruland 2018; Pirinen 2016) and though it can be used commercially as an 'engagement hack', here gamification is

better understood as a tool for enhancing regeneration through interaction and involvement.

Gamification is argued by McGonigal (2011) as a strategy for the development of 'future making' skills that are transferable from gaming environments into the real world, where skills acquired through gameplay can be applied to real-world problems. This is evident in the numerous games designed by McGonigal, including *World Without oil*, *EVOKE*, and *SuperStruct*, each of which immerses players in games that develop their complex problem-solving abilities and prompt players' personal transformation in the process (McGonigal 2011). Though simpler in format and intent, the design games presented in this paper also seek to build players' and designers' capacity for engaging with complexity and to build the 'smart skills' needed to do so.

Complexity and the need for 'smart skills'

In co-design engagements, projects can often be described as complex due to the uncertainty that is tied to the process's emergent outcomes and/or due to the volume of people involved in the process. Complex projects are described by Remington and Pollack (2007) as having structural complexity (for example: number of elements, interdependency) or uncertainty (for example: goals, methods) both of which are often seen in co-design projects, particularly those focused on transitions. Success in collaborative projects can be tied to how a project is managed through 'soft skills' such as communication, teamwork, and conflict management, rather than 'hard skills' such as technical tool proficiency, or the use of methods and techniques (Azim et al. 2010). As argued by Azim et al. (2010) "it is people who deliver successful projects, not methods and tools" (2010, 392) however the 'soft skills' demanded of those people must not be underestimated. Despite the clear value delivered by 'soft skills' in complex projects, such skills can remain undervalued and/or underdeveloped. Perhaps this discussion of 'soft' and 'hard' can draw inspiration from power discourse, which shares use of these terms. Where hard power compels and coerces through "tangible power resources" (Gallarotti 2011, 28), soft power cultivates and endears more indirectly "through a variety of policies, qualities and actions" (Gallarotti 2011, 28), revealing a striking similarity to differentials between the tangible nature of 'hard skills' and the less tangible (often tacit) nature of 'soft skills'.

Though this paper argues for an increased focus on the development of 'soft skills', it does not do so to the detriment or exclusion of designers' 'hard skills'; rather it argues that there is a need for both types of skills to be highly

attuned and blended. Nye (2009) also describes the “need for smart strategies that combine the tools of both hard and soft power” (2009, 160) which come together as ‘smart power’. ‘Smart’ is a term that provides a useful descriptor of the blend of skills demanded of designers in complex design engagements. As such, this paper proposes that designers need ‘smart skills’ that blend the ‘soft’ and ‘hard’ to tackle the complexity in co-design and other such complex design engagements. Developing these skills through communicative practices such as microsolidarity could be key here.

Microsolidarity

Microsolidarity (Bartlett 2018) uses communication and care practices to build communities with flattened hierarchies. It was first practised by the *Enspiral* community in New Zealand and has since spread internationally (Bartlett 2018). Microsolidarity encourages vulnerability from practitioners to build strong bonds of mutual trust, a process which has clear benefits in collaborative engagements, where trust is a crucial aspect of co-working. Although Microsolidarity is relatively new and positioned largely outside of academia, its roots are evident in Kropotkin’s (1902/2006) work exploring mutual aid and the role of cooperation, and even further back in the relational principles that underpin Indigenous communities and collective (non-Western) cultures.

Microsolidarity also provides a set of practices through which people can care for one another while working together, and applied this way, recognises that care in working relationships happens whether formalised or not but will typically fall on women as a form of gendered labour (Serrano-Pascual, Artiaga-Leiras, and Crespo 2019). To counter issues of unpaid gendered labour, the labour and practices associated with care can instead be consciously distributed throughout a team through practices of Microsolidarity. Whilst care practices vary from group to group, they typically start with a check-in process that permits everyone to ‘land’ and be their whole selves in the space by sharing what is most alive to them upon arrival. Sessions typically finish with a check-out that holds space for reflection on the key takeaways from the group’s time together. Generative discussion and facilitation techniques from *Liberating Structures* (Lipmanowicz and McCandless 2013) are commonly used within Micro-solidarity as prompts for discussions such as, “what I need from you is...” or “what pattern is revealed in our stories?...” These practices position Micro-solidarity as a playground for developing heightened communication and collaboration skills, both of which are crucial for deep engagement in ‘Batesonian’ social learning practices such as transcontextual seeing and ‘symmathesy’.

The author has practised Micro-solidarity with multiple groups of up to six people per group (typically called 'crews' or 'pods') since 2020 and reflection on the embodied experience of this practice has informed its use in their research, practice, and teaching.

Trans-contextual seeing

The 'Batesonian' term, 'trans-contextual' is rooted in complex systems and describes "the ways in which multiple contexts come together to form complex systems." (N. Bateson, 2018). Originally termed by Gregory Bateson, it has been advanced more recently by Nora Bateson (2016) who describes complex problems because of their trans-contextual nature—that is, that complexity builds when the dynamically shifting nature of a problem combines with its residence in multiple interdependent contexts. Trans-contextual seeing is a practice that invites practitioners to sit with this complexity and learn to hold the trans-contextual pluralities within it. When practising trans-contextual seeing, the complexity a practitioner can 'hold' and work with increases over time, building their capacity to 'see' systems as interdependent relationships and to engage in plural ways with complex problems. We can explore this through a circular economy lens because waste has a trans-contextual nature and understanding this plurality demands more than material and technical understandings. Circular economy transitions also rely on trans-contextual understandings that are informed by plural, place-based understandings of the cultural meanings of consumption and waste. For example, in the Global North, meanings such as convenience and efficiency are culturally tied to the making of waste through rapid use and disposal cycles. However, in the Global South waste can simultaneously mean survival (for a waste picker) and pollution (for the environment) without any overlap to convenience or efficiency. Waste in the political context is different to an economic context. What it means legally is different to what it means within a family. The meaning of waste shifts dynamically without shedding the meaning assigned in other contexts—it is all these things, all at once; it is transcontextual. Seeing the trans-contextual nature of waste (and consumption) points to a need for circular economies (plural) rather than a circular economy (singular). But without practising trans-contextual seeing, designers' capacity to design for such complex plurality is limited, and designers become more likely to reinforce rather than mitigate the complex problems they approach. Building these skills is a social process that can be enhanced through the mutual learning that comes through 'symmathesy'.

Symmathesy

'Symmathesy' is a process of mutual learning that is tied to the trans-contextual and to learning through interaction (Bateson, 2016). Sensemaking

in 'symmathesy' is social, situated in living contexts and invites curiosity. This generative and relational conversational technique invites interaction across multiple perspectives, allowing participants to challenge biases and assumptions by increasing the visibility of plural perspectives. In doing so, different ways of knowing emerge, and sensemaking is shared by the group. The process moves slowly, allowing co-learning to emerge through gentle social interactions, mutual sharing and plural perspectives. The 'symmathesy' space is held carefully so that all who wish to speak feel safe enough to do so and is a crucial practice in generative processes that seek to encourage co-creation. Its generative nature cultivates a space for cultural regeneration.

Regenerative cultures

In its simplest definition the act of regeneration means 'to create again' and in the context of this research, regenerative cultures are a desirable cultural outcome of participation. Deeper understandings of regeneration might also be built through explorations of its tensions; as a restorative feedback loop that is capable of being exploited, capitalised, and colonised in some contexts and held, nurtured and shared in others. The author has witnessed through their work in an Australian peri-urban community how regenerative agriculture practices are improving soil health whilst also recolonising unceded Aboriginal land. Similar tensions are seen in a rewilding context in the UK, which though regenerative on face value, is also pre-loaded with colonial understandings of 'wilderness' and 'wildness' that erase the long histories of Indigenous relations with land (Plumwood 2002; Ward 2019). Lee (2005) describes how the rooting of Kaupapa Māori theory and the pūrākāu method for Māori narratives in academic settings in Aotearoa is nurturing the regeneration of Māori cultural pedagogies, though not fully seeded, this gives a glimpse at possible regenerative futures.

The language and concepts of regeneration have been taken up in many design contexts, few have more ramifications than the built environment, which impacts (and often destroys) a living system through the realisation of a built system. Cole, Oliver, and Robinson (2013) describe how "a regenerative approach [requires] the development of strategies to deal with uncertainty, particularly those emerging from the fact that the human systems in the building are endowed with volition and intentionality" (2013, 239). This recognises the roles of people and place in regeneration and the ways both add uncertainty that can lead to unintended consequences in design outcomes.

A sensitivity to these tensions and the binds they present has informed the co-design of the games presented here. This has facilitated the players'

participation in mutual learning processes that developed and broadened their own perspectives through embodied regenerative experiences. Empathy building across human and more-than-human perspectives was a key aspect of this aim for cultural regeneration. Each game seeks to renew and restore through acts of care and participation rather than colonise and conquer through competitive forces.

METHODOLOGY AND METHODS

Methodology

This research and the practice it reports on, is framed by critical pragmatism (Forester, 2013), which is a deliberative, critical, participatory, action oriented perspective. Critical pragmatism is attentive to the invitation to participate and the possible futures that participation affords. In this research, Critical Pragmatism steered the thinking that was employed in the co-design processes, with a particular focus on where inequalities and power differentials lay, who each game could invite participation from, and what the consequences of this participation might be. Informing this view were plural, decolonial, political perspectives from Escobar (2018), Fry (2020), Esteva (1987), Plumwood (2002), and Yunkaporta (2019).

Methods

This paper uses the case research approach from Yin (2009) to present three games that were co-designed using low-contact co-design methods (Davis et al. 2021) and rapid prototyping with the aim to build players' communicative capacity and to encourage collaboration through gameplay. Reflective practice (Schön 1983) and the author's reflective doodling method (Wallace 2020) have informed an iterative process of critical embodied reflection throughout the co-design processes and beyond. These critical reflective processes were undertaken granularly within each co-design team and by the author on the processes.

Co-design processes

The three games presented in this paper were each developed with different co-design teams as part of the author's professional practice. Each co-design team varied in size and formed organically through discussions within the author's existing collaborative network. Prototypes were tested with 15-30 participants who were 'softly recruited' by inviting participation from each teams' social/professional networks. Upon launch, each game was played with publics. Each project engaged deeply with test groups throughout the co-design process and with publics after gameplay, and open invitations for

post-game reflection and generative discussion provided the teams with feedback during testing and public gameplay. These conversations informed the reflective and iterative co-design approach taken for these games and provided insights on the regenerative impact of participation in play. Each co-design process was also scaffolded by the practice of microsolidarity (Bartlett 2018), which provided mutual aid through care and support in small group settings.

Though the games presented here were not originally conceived as part of a unified research project, the learnings from each project did inform how the next project was undertaken and there was a logic to reflecting on them collectively. Each project's potential value to design research initially emerged through a process of critical reflection on the collective processes and outcomes of these games which was originally presented at the 2021 Safe Harbours conference. Further engagement with this reflective process informs this paper which expands on the original.

Reflective Practice

Reflection is a critical design skill within iterative design processes such as prototyping and collaborative processes such as co-design. In both prototyping and co-design, the act of reflecting both 'in-action' and 'on-action' (Schön 1983) informs future processes to be undertaken. In the game design processes presented here, critical reflection also benefited from embodied reflection (Escobar 2018; Kinsella 2007) by allowing each team to conduct sensemaking for how the experience of gameplay felt (for themselves and for new players). Kinsella (2007) describes how reflection "arises through the bodily, lived experience of the practitioner and is revealed in action" (2007, 396). This embodiment is described by Escobar (2018, 54) as a kind of movement or dance between action and reflection that is also an experience which can be drawn upon. In this sense, the practitioner's own memory of games and the potential they must evoke feelings as well as their experience of embodied reflection upon this memory can also inform the design process. Furthermore, in the context of co-design processes, embodied reflection can be used to engage with the collaborative experience, allowing teams to reflect on their relational time together, what worked, what posed challenges, and what would be done differently in the next iteration.

Embodied reflection was complemented by reflective doodling (Wallace 2020) which provided a means for documenting the act of reflection and stimulating new ways of moving forwards (or sideways) in the design process. Reflective doodling comprises two types—thinking while drawing and

drawing to think—and three kinds—doodling to understand, doodling to explore, and doodling to communicate (Wallace 2020). As a physical recursive practice, reflective doodling is also a practice of embodied reflection. Its use of drawing as a mindful practice allows for a kind of ‘relaxing into ideas’ which enables a flow state, and it also uses creative processes to encourage critical thinking. It is a critical reflective practice that has informed the reflective process undertaken in the processes and outcomes of the three games presented here as well as the writing of this paper.

Adopting this layered reflective process in the co-design of these games allowed for iteration in both the game prototypes and the teams’ working dynamics. It also provided an enabling structure for practising effective communication, which was in turn, scaffolded by the care practices embedded in microsolidarity.

FINDINGS: REGENERATIVE DESIGN GAMES

These findings reflect on the regenerative and restorative act of the co-design process and gameplay in three design games, *Better than Before*, *Food Futures* and *More-than-human*. The games were co-designed purposefully to enable, practice and nurture communication and collaboration skills, and to build people’s capacity for, acceptance of, and participation in societal transitions.

Better than Before

Co-design team: two designers, one activist, one conservation CEO, one process facilitator

Context: local (South Australia)

Project duration: eight weeks

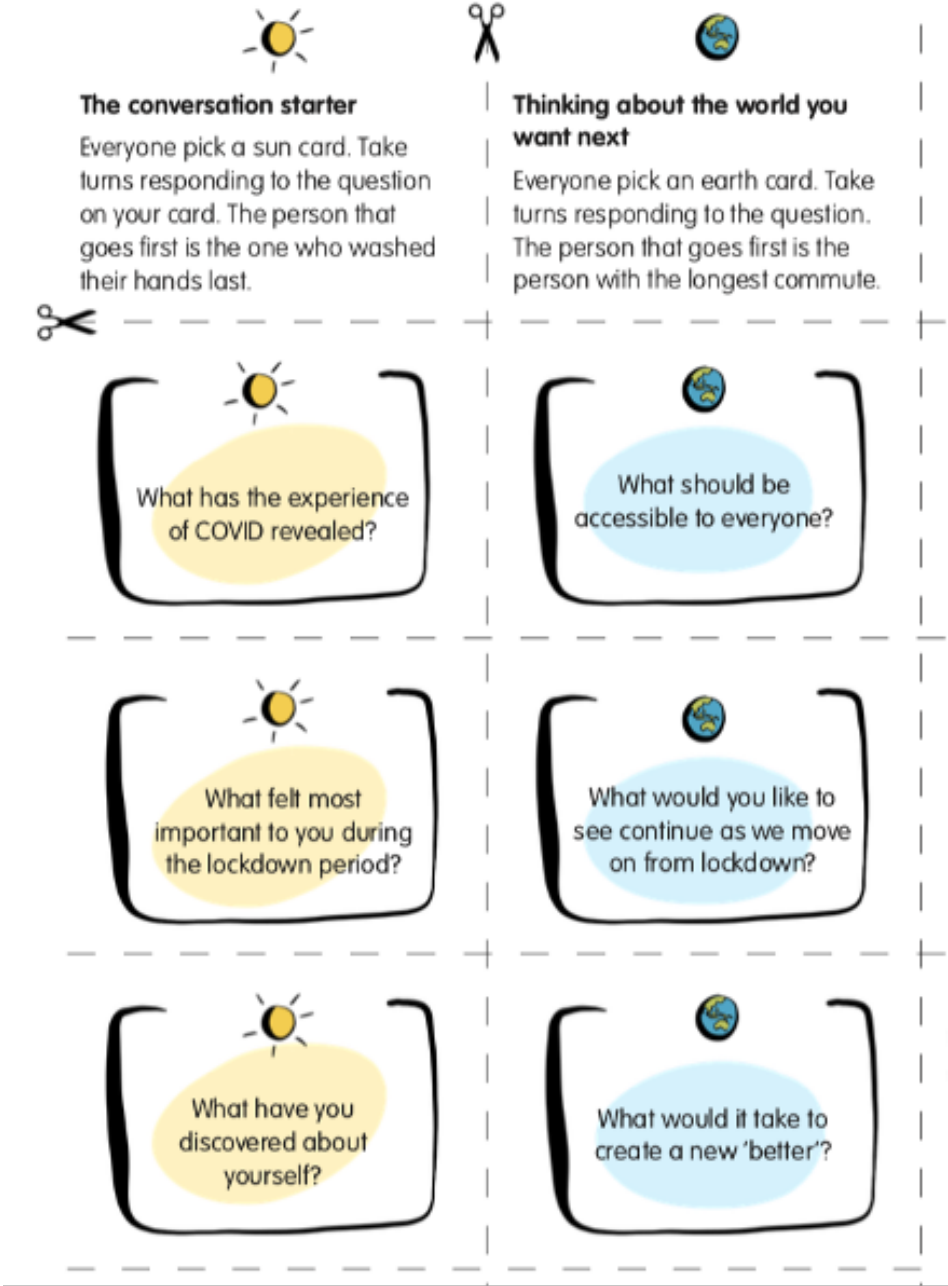
In the conversational card game, *Better than Before*, a simple set of cards was used to structure challenging conversations about post-pandemic futures within households. The game’s educational objectives and heavy subject matter perhaps make ‘serious game’ (Peng, Lee, and Heeter 2010) a better description for it. Serious games are inherently educational, making them more explicit in their learning outcomes and methods for engagement of players (De Jans et al. 2017). De Jans et al. (2017) present serious mini-games as a “more time-efficient and budget-friendly alternative to more complex serious games,” such as those discussed by McGonigal (2011), where the focus is on gameplay that develops players’ complex problem-solving skills. Although *Better than Before* was not specifically designed as an

educational game, the scope and scale of its objectives and its simplicity position it as a serious mini game.

Better than Before was co-designed in lockdown, for lockdown, by the author, *Climate Space* (a team of climate action facilitators, activists and designers which the author is a catalyst member of), and the Chief Executive of the South Australian peak body for conservation. It was originally designed for a South Australian context, but the co-design team also discussed how it might scale up to include additional audiences. The team of five worked together for an eight-week period broken into fortnightly design sprints, allowing the game to be tested multiple times prior to its public launch. The game consisted of three rounds of questions, designed to help people to probe their experience of the pandemic to uncover what was now visible, what felt possible and what remained challenging for them. The overarching aim was to hold space for atypical conversations within households or family units and opens challenging conversations through a safe process that allowed people to navigate their fears while exploring their hopes. The card set was designed as a self-facilitated tool that presented carefully crafted questions to help guide people through challenging but safe conversations (see Figure 1).

The game was inspired by the *Climate Space* team's facilitation of a smaller online process of generative discussion and reflection which engaged twenty participants from government, business sectors and the community in discussions about what the experience of the pandemic was revealing to them. Many of the questions posed within the game were prototyped for discussion at this event, however the process of co-designing the card game as a smaller team allowed for a deeper critical reflective process, with particular attention paid to the language being used and its impact on the psychological safety of players. The lack of a facilitator to create and hold the space during gameplay meant that the game needed to be self-contained, the questions needed to be clear, and the players needed to feel safe. The early prototypes were tested in our own homes with family and friends, initially with one of the co-design team facilitating the conversation, and later without this support in place. The co-design team's experiments with gameplay highlighted the crucial role played by the phrasing of the questions and how important 'warming up' the space is when inviting deep communication. *Better than Before* also revealed the importance of deep listening and holding space for challenging conversations amidst crisis.

Figure 1: Better Than Before Downloadable Cards



Better than Before was more than a generative discussion tool, it was also a proposition for participatory democracy that invited players to ‘do something’ after their conversation. The final round of questioning asked players to discuss what kind of world they would like to see next, with a focus on access, continuing to build community and the idea of creating something ‘better’. The early prototypes generated a lot of ideas and as the prototype developed, so too did an online tool to facilitate sharing and voting on the kinds of action people proposed, with the intention to feed the most popular

ideas through to local parliament. Ideas such as universal basic income and electric vehicle transitions were popular, as was the idea to “celebrate people looking after one another and their community”. The leading idea, “for governments to take brave and extensive action to enforce some changes needed to reduce climate change”, was upvoted by 86% of participants suggesting a strong and urgent desire for climate action in the political sphere. This was reflected in Australia’s recent federal election seeing a large swing of votes in favour of the party with stronger policies focused on climate action.

Beyond the aim to encourage open conversations about difficult circumstances, the game also aimed to tie hope to action by encouraging the publics’ critical reflection and active participation in the crafting of possible futures. Without what Joanna Macy (2012) calls, ‘active hope’ we can become stuck in states of hopelessness where nothing happens, or in a state of hopefulness where we passively wait for something to happen. Interconnecting hope and action can contribute to wellbeing through acts of welldoing, where the action itself is where one can place their hope. I would argue that enacting this as a politic embeds cultural regeneration in the act of participation. In this sense, *Better than Before* extended democratic participation beyond electoral voting to provide spaces where more voices might be heard, where people could feel hopeful through their propositions for action. Despite the small scale of this project, it reveals the important role that developed communication skills play in transitions and how participatory and collaborative experiences can provide the space for practising these skills.

Food Futures

Co-design team: *three designers, one farmer, one retailer*

Context: *hyper-local (Fleurieu Peninsula, South Australia)*

Project duration: *six months (as part of a three-year project)*

Food Futures is a role play card game designed to engage members of a peri-urban community and explore vulnerabilities in their local food system. It was co-designed in the author’s living lab by designers, researchers, and community members as part of a larger complex design engagement. The game was designed to be played using a physical card set and was also reimagined as a digital game using Google Slides as a simple, lightweight, accessible tool. The decision to use role playing was informed by prior research conducted within the community which identified that different community members had a limited understanding of others’ experiences. Consumers’ understanding of food production was obscured by the structures within the food system, and there were misconceptions

surrounding the roles and responsibilities of local food producers. Notions of 'shop local' were described as buying from a supermarket chain in their region rather than a farmers' market which sold locally produced food. Role playing therefore offered a unique separation from the self that could build empathy for the experiences of others by 'playing them' socially and reimagining the world through their eyes.

In *Food Futures*, players start by selecting a character at random and through the gameplay acquire different skills and roles which they can harness in their response to an unfolding crisis in their community (see Figure 2). The crisis scenarios in the card set describe a disrupted food chain resulting from bushfires, climate migration into the community and a viral outbreak, and each crisis escalates multiple times to become more complex, with the intent to build players capacity to tackle the complexity as it develops.

Figure 2. Prototype card set for *Food Futures*.



In different iterations of the game the co-design team explored how players might respond with or without leadership/directives. Of interest here was the way some players began working together more closely in the absence of leadership directives, while for others, the lack of direction became a barrier to imagining possibilities for action. Whether this finding correlates to a larger collective experience or is specific to the participants within the test groups requires further investigation and for now remains a point of interest.

This finding did however inform an iteration of the cards to include more specific leadership roles and possible actions in the crisis scenario cards. The card set remains in a perpetual prototype state as continued gameplay informs new iterations and possibilities for new applications. The combination of empathy through role play and adaptation through crisis response aimed to build the adaptive capacity of players. When reflecting on the 'retrospectives' it became clear that the game provided something different to each player.

For community members ready to collaborate it provided a playground for practice; their imaginative and participatory responses became open invitations for fellow players to collaborate, thereby creating an exponentially collaborative experience. Players typically bounced off one another which had a dual effect. In one test group, the players were old friends who often collaborated; however, their decision making was challenged and the resulting game play was tense, with one player reporting back, "we laughed at times but I'm not really sure that we had fun. We got there in the end, but we bickered a lot along the way". In another group, early collaboration between two players led to the group imagining a cooperative future where most players had shed their starting roles in favour of new roles that they felt were a better fit for the new community they had co-created. Both cases revealed the important role that developed communication and collaboration skills play and how this can enable or disable the potential for cooperative futures.

For those unable to 'see' the food system the game provided a way in. One participant noted that "I didn't really know what the food system was but when my group discussed the food shortages during the pandemic I got it, I could see it". Another commented on a banana shortage, stating that, "I knew there was a problem related to storm damaged crops, but I just paid more for bananas, so it didn't really affect me that much. I could afford it." This suggests that seeing a system can challenge those with privilege, who rarely or barely experience structural inequities. Capacity building in systems seeing could help provide those in more privileged positions with insights into plural experiences, this in turn could inform strategies to mitigate structural inequities. Such mitigation strategies are particularly relevant within the food system which requires urgent restructuring in order to increase equitable access to healthy food and eliminate food waste.

For the co-design team, designing the game built the team's capacity in trans-contextual seeing, by prompting deeper consideration of 'who else?',

'what else?', 'where else?' and 'how else?', fostering critical engagement with more plural perspectives. The persona cards were inspired by (though not entirely based on) real people from the community and a deliberate attempt was made to represent the community's marginalised voices. One participant commented on how refreshing it was to see this level of diversity, while another described how challenged they felt by role playing someone so different from themselves. This was noticeable in their body language during gameplay, and during generative discussions after gameplay, they described their discomfort as stemming from frustration at their inability to fully imagine the experience of a person of colour who had recently immigrated. Such challenges are an important aspect of capacity building, where growth can stem from discomfort. However, it is also important to acknowledge that discomfort levels should also be managed to ensure the psychological safety of players.

At the end of each game, players are invited to add their personas, roles and skills to blank cards that are included in the deck. When circulating within a community (in this case, as part of a self-facilitated workshop-in-a-box) this generative card set can become highly representational of the community itself, thereby making it a valuable tool for future processes. This could also mean that for those in community leadership roles, the card set has the potential to gamify crisis modelling processes by providing a bespoke tool for modelling responses with their community in mind.

More-than-human

Co-design team: *one designer, one sustainability strategist*

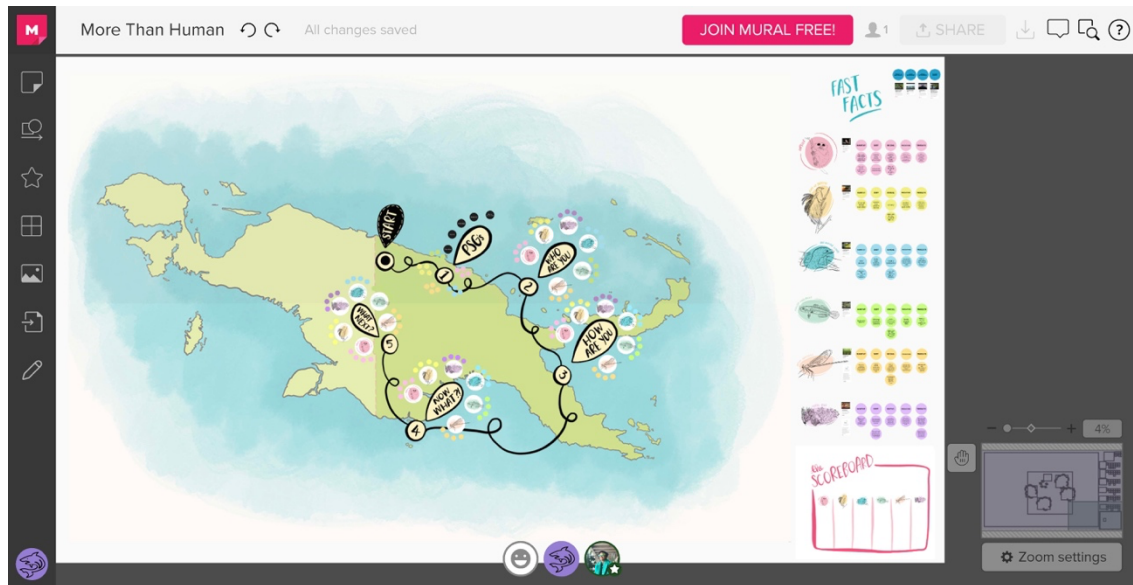
Context: *global (online)*

Project duration: *three months*

More-than-human is an online game that explores the climate crisis through the perspectives of the flora and fauna from Papua New Guinea, one of the most biodiverse regions in the world (see Figure 3). The game is a collaboration between the author and a design strategist based in the Philippines and is being iteratively designed in response to generative conversations that are hosted post-gameplay, making the players of each game integral contributors to its design. The idea to co-design the game emerged from their shared practice of micro-solidarity as a form of 'microsolidarity-in-action', where creative collaboration is an outcome of their care practices rather than care practices being a scaffold for their work. *More-than-human* responds to the need for regenerative cultures and encourages communication and collaboration through gameplay. The game's narrative centres a more-than-human experience of the escalating climate crisis and is

informed by experiences from the Global South, where the impacts of this crisis are already being felt.

Figure 3. *More-than-human gameboard.*



More-than-human was carefully designed to take people through a safe but confronting experience of the climate crisis whilst using the techniques of micro-solidarity to scaffold the players' experiences. The game uses Zoom and Mural to provide an immersive online experience. A fully illustrated Mural board acts as a collaborative gameboard where storytelling, art, education, music, generative ideation and critical conversation come together to support gameplay that explores the climate crisis through the lens of each more-than-human character. The characters are played in pairs, less as a role-playing or 'acting' exercise and more as a cognitive, 'role-taking' process, which communicates a temporary imagining of a scenario from another's perspective rather than acting out the behaviours or mannerisms of another (Peng et al., 2010).

The communication and collaboration needed for gameplay is pre-primed through relational processes that are then interspersed throughout the game. The player pairs are introduced at the start of the game and given space to get to know each other before gameplay begins. Relational techniques from micro-solidarity enable players to accelerate their relationship and enable better gameplay, these included a check-in/out process, conversations with a specific prompt (for example, 'what are you noticing?') and larger conversations where 'symmathesy' offered mutual learning to the group at-large. Intimate discussions both as a pair and as a group of players mixed up the collaboration by inviting players to work together in different ways

throughout the game, sometimes responding to the game's provocations as a pair, and at other times mapping a response within larger groups. The early introduction of partner work and group work was designed to enable greater collaboration at later stages of the game. In one game this enabled the coral reef's collaboration with the insects and fish while the birds of paradise attempted to use their beauty to influence the humans on behalf of the more-than-human world. In another game, the tarsiers and monitor lizards declared a brief truce to their usual predator-prey relationship to fight against human tourists who were encroaching on their forest searching for food. Whilst such collaborations might not exist in the real more-than-human realm, these playful moments relieve pressure and inject fun into an otherwise heavy scenario. As the game unfolds, dangerous weather conditions resulting from the escalating climate crisis create continual twists and turns, and adaptive responses are demanded of the characters.

The game is intimate (with a minimum of six and a maximum of twelve players) and confronting, and participant feedback indicates a generative and powerful experience of empathy and plural perspectives can emerge from gameplay. One participant described it as "a really powerful experience of empathy and perspective—brought home quite clearly the role of home—every living being has a place on this planet". This stretching of empathy was noted by several participants who expressed an appreciation for the challenge presented by thinking from more-than-human perspectives. It was also noted that this challenge at times felt impossible, "how could I know what the coral reef would do?" and one participant suggested that this could be addressed by gameplay including more exploration of the feelings that were emerging in players at earlier intervals rather than saving this for 'symmathesy' at the end. During the generative discussions at the end of gameplay, players described their emotional journey, with one participant sharing how "I went through a whole range of emotions, none of them too strong, but all noticeable. There was a moment of huge frustration, and I went into denial at some point; I thought there would be a happy ending—we'll survive this—but no, that's real life." *More-than-human* intentionally reaches crisis point and then unapologetically escalates it. Though the game invites participants to sit with their discomfort, it also scaffolds the experience through open conversations and a hint of fun.

DISCUSSION

The social nature of the regenerative games discussed here is highly valuable as they can create engaging participant experiences whilst also offering benefits through the social processes of co-design. These games revealed how gamification can also be used with different kinds of intimate intentionality—to unlock communication, to invite collaboration and to foster regenerative cultures.

Contexts

Each game was transcontextual and situated in multiple contexts physically (as locales and problem spaces) and conceptually (as contexts where life plays out, for example, family, health, culture, art, law, politics and so on). *Better than Before* hosted local but trans-contextual conversations that spanned contexts such as family, politics, culture, work, law, economy, technology and more. *Food Futures* was physically hyper-local but conceptually spanned culture, health, economy, ecology, history, identity and more. *More-than-human* invited global participants the chance to explore the climate crisis in a specific locale and conceptually spanned ecology, culture, family, politics, science and more. Each round of gameplay in each game offers new and different trans-contextual perspectives, many of which are shared through 'symmathesy'. Whether each game remains in one physical context or is reimagined for new physical contexts, what emerges in the conceptual contexts will likely remain fluid and plural.

Readiness to play

Participants arrived at each game at different stages of 'readiness' and post-game feedback revealed that some experienced a more profound shift than others. This was evident in comments describing newly acknowledged privilege in *Food Futures* and hard truths in the climate crisis in *more-than-human*, but also in the naivety of some suggestions for 'what next?' in *Better than Before*. These games do not intend to 'call out' a lack of readiness, but rather aim to develop and build people's capacity. Participation both reveals and nurtures without passing judgement; instead, the intention of each game is to provide space for whatever is revealed to be explored and shared with others.

Communication and collaboration in the co-design process

Each co-design process presented in this paper was unique and relational, but each one also centred the relationships and nurtured them through structures for work and care; team members benefited in multiple ways from this approach. The relational processes each team engaged with appeared to

enhance both the communication between team members as well as the team's capacity for collaboration. Beginning each process by setting the purpose, rhythm, aims, and the team members' roles and responsibilities, created accountability agreements within the teams. Working iteratively meant that over time, teams also experienced a smoothing of their flow, felt as a kind of 'coming together' of people and processes. Social processes for checking in/out of co-working sessions allowed people to feel whole in the work they did whilst providing space for mutual support. Ending each cycle/game with a 'retrospective' held space for reflection with the design team and players of early prototypes.

The openness of these communication processes allowed teams to work at their best, to accommodate and care for one another even when feeling at their worst, and to use co-design to enhance gameplay and improve the end-outcomes. At a meta level, though mostly tacit, this also allowed teams to practise some of the same communication and collaboration techniques that the games were attempting to nurture.

Microsolidarity and the role of care in collaboration

One of the key reflections on each game was on the significant role played by microsolidarity in the co-design process. Formalising care practices through Microsolidarity recognised that each team member was performing labour in a pandemic that created unprecedented working conditions that demanded deeper care and support. Each team was also co-designing a game that touched upon serious, complex and systemic problems that pose an existential threat. The nature of this work comes with a significant cognitive load; microsolidarity practices provided each team with the time and space needed to 'unload'. Each team found solace through their practice of microsolidarity and although what emerged through its practices was unique to each team, it was consistent in providing care and mutual aid. Although design sprints were used as a response to the time-critical nature of each project, it was micro-solidarity that facilitated this pace rather than the design sprint structure. Microsolidarity's 'care pods' (small discussion groups of four to six people) created a harmonious rhythm for care activities alongside the rhythm for work activities. Care pods fostered rapid development of high-trust relationships which in turn enabled more effective communication and collaboration. The use of these communication and collaboration practices in the co-design process is particularly interesting when considered in relation to Conway's Law, which describes how the communication structure of an organisation is reflected in the end outcome of that organisation's work (Kim, 2016). In light of this, it might be argued that microsolidarity has been

imprinted in each of these games and through these trace elements, also provides players with micro-experiences of micro-solidarity.

Participant care through design: using familiar formats to explore unfamiliar territory

Games that tackle crises such as the COVID pandemic and the climate crisis have a particular responsibility to players' psychological safety. How players are held and supported through the gameplay must be carefully considered by designers of such games. The discomfort of confronting crises, of taking them seriously while 'playing', likely positions most of these games as 'serious games', where the nature of the content and its aim to cultivate the cultural conditions for social change adds a gravitas to the gameplay (De Jans et al., 2017; Peng et al., 2010). To smooth any discomfort, the familiar and nostalgic formats of card games and board games were used in *Better than Before* and *Food Futures*, for their provision of a familiar foundation on which to explore an unfamiliar crisis. Despite this intentional inclusion of the familiar, it is more likely the care provided by a game's host that aids players' ability to sit in discomfort and explore crises. In some respects, this is curating more than a 'safe space' where players feel 'held' in the process, it is also creating a 'brave space', where a player might require courage as their actions shift them outside of their comfort zone. This was most evident in *More-than-human*, which uses less conventional elements of gameplay and relies on behaviour modelling by the hosts who play the tarsiers, the tiny-primate narrators, and holders of the safe-brave space in which the game is played.

The role of 'Batesonian' practices in transitions

The relevance of trans-contextual seeing (Bateson, G. 1979; Bateson, N. 2016) is evident in each of these games which are place-based and would require recontextualization to adapt them for different cultural contexts. A designer's capacity to recognise the trans-contextual is key if they are to design for transitions, as each transition relies on deeply contextualised, plural approaches to complex problems, which span multiple contexts and therefore emerge in plural ways. Co-designing games such as those presented here could provide entry points for designers to begin developing the necessary skills required to design for transitions and playing them provides benefits too.

Participating in 'symmathesy', (Bateson 2016) where mutual, social learning comes through generative discussion, is also key for designer's understanding of plural perspectives. Constructing meaning that is informed by the unique experiences and expressions of real people is a crucial shift away from design's historic reliance on designer empathy. Though empathy

is often a well-developed competency in designers, an over-reliance on an individual's empathy to inform making can lead to biases and unchallenged assumptions that in turn result in designed outcomes with unintended consequences (Bennett and Rosner, 2019). As Bennett and Rosner (2019) argue, when designing for disability, a reliance on empathy alone is problematic, and this also applies in transitions. Stepping out of a vacuum to learn from and with others through 'symmathesy' is crucial in the co-creation of transition pathways that are open and accessible to everyone participating in them.

Curating spaces and priming participation

Curating the space in which communication and collaboration occurs is key to each of the games presented here and was typically done in multiple ways, but initially through the design of each game. The visual language in each of these games offers a friendly invitation to play, by inviting people in with playful illustrations, line styles and colours that are paired with more formal elements that indicate to players, 'this is serious, but we can still have fun'. 'Warming up' the space (even online) is communicative, done in these games through the inclusion of space for relational practices and the sharing of music and stories.

Participation is primed through check-in processes that invite 'relationshiping'; this enables collaboration by encouraging being whole and present to what is unfolding. Gathering online is becoming more familiar, and as this familiarity grows, we can recognise where layers of communication have been stripped and where new ones are emerging. What can be read (neurotypically speaking) in the space during an in-person encounter is dramatically altered in online environments. While for some the shift to online gatherings has equalised participation, for others it has become significantly more challenging. Understanding and responding to this communicative challenge is a continuing aspect of this work.

Power and play

In his discussions on power dynamics, Dowding (1996) uses game theory to describe how people will often cooperate within a game until this presents a disadvantage by hindering their potential to win. Although winning appears to be an inherent aspect of most games, notions of winning in regenerative design games can be altered to instead emphasise collaboration as a 'benefit for all' rather than playing to 'win for one'. This principle can be seen in board games such as *Pandemic*, where players cooperate to win the game. *More-than-human* plays with this idea by integrating an alternative judgement of

winning into the gameplay. To finish the game, players participate in a round of voting to determine which character gave the best responses, thereby choosing a winner collaboratively through social agreement processes. The 'winner' is announced as the new Secretary General of the UN, revealing that the power assigned to 'winning' comes with responsibility. Reflecting on post-game feedback from one player who noted the power dynamics between these characters in nature, is a reminder that power is ever-present in every system, and especially so in times of crisis. The inclusion of predators and prey and notions of home in *more-than-human* plays with this idea and invites players to engage with the tensions it brings.

CONCLUSION

This paper has presented three regenerative design games that were co-designed in response to multiple crises, set against the backdrop of climate crisis. Each game helps to enable regeneration, communication, and collaboration in participants, and of note was how the co-design process of each game also enabled regenerative cultures within the co-design teams. The important roles played by co-design and particularly micro-solidarity are key here, as both appear to bring benefits to the design team and the game's players. A game's format and its hosts are also key to how space is held and how it becomes occupied through communicative and collaborative engagement. The importance of curating that space, priming participation with 'relationshiping' processes, and being attentive to power in design and in gameplay are all key takeaways. Space curation sets a tone for what can or cannot be said in a space. This process is crucial in creating safe and inclusive spaces but is also key in curating brave spaces, where courage might be required to participate. The conversational aspects of each of these games benefit from the curation of safe-brave spaces that invite participants into a container from which generative activity emerges. 'Priming' participation with relational activities warms up this space; it allows people some much needed time and space to build a relationship that enables their collaboration. Entering a collaborative space as a 'stranger' is daunting for most people, but for anyone with introvert tendencies this can pose a significant barrier to participation. Providing relational opportunities that start small and are scaffolded by conversational prompts appears to create a sense of ease, making the relationships more scalable over the course of the game. Remaining attentive to power is also key, as power dynamics play out differently in every group depending on who is present and what emerges in the process. Creating processes that flatten hierarchies and hold space for marginalised voices is one aspect of this, however the potential for unexpected tensions/conflict to arise is ever present. Those holding the

space need more than awareness of this potential, they also need tangible skills (including smart skills) in facilitating processes that can surface and navigate tension in ways that are safe for all participants. However, they also need to understand when it is not appropriate for them to do so and be ready to step out for someone more appropriate (either in terms of skills or cultural safety) to step in.

Reflection reveals the important role each of these games play through the practice of trans-contextual seeing, through effective communication and collaboration, and by fostering regenerative cultures. As these games continue to be played new prototypes are emerging, particularly for *more-than-human*, where upcoming prototypes include an urban edition with characters such as street cats, pigeons and cockroaches, and an edition designed more specifically for intergenerational gameplay. As this work continues, it aims to expand upon this initial exploration of the use of design games for regeneration, communication, and collaboration and to observe the role they play in design for transitions. Of particular interest to future research in this area is the relation between design and ecopsychology, where the dynamic interplay between gamer/game, social/ecological, and process/play can be examined more intentionally and in greater depth than this paper permits.

Author Biography

Dr Niki Wallace is a London-based designer, writer and educator and founder of a living lab that catalyses transitions in communities through co-research and co-creation. The lab's work complements Niki's academic research in design for transitions, circular economies, and co-design. Niki is the Course Leader of MA Global Collaborative Design Practice at UAL, where students learn how to engage with global challenges and design for transitions.

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