



**Please cite the Published Version**

Germaine, Chloe  and Wake, Paul  (2024) Imagining the future: game hacking and climate action. In: Ecogames: Playful Perspectives on the Climate Crisis. Green Media . Amsterdam University Press, pp. 483-504. ISBN 9789048557219 (ebook); 9789463721196 (hardback)

**DOI:** <https://doi.org/10.2307/jj.10819591.26>

**Publisher:** Amsterdam University Press

**Version:** Published Version

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**Additional Information:** This is an open access book chapter which appears in Ecogames: Playful Perspectives on the Climate Crisis, published by Amsterdam University Press

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Chapter Title: Imagining the Future: Game Hacking and Youth Climate Action

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Book Title: Ecogames

Book Subtitle: Playful Perspectives on the Climate Crisis

Book Editor(s): Laura op de Beke, Joost Raessens, Stefan Werning, Gerald Farca

Published by: Amsterdam University Press. (2024)

Stable URL: <https://www.jstor.org/stable/jj.10819591.26>

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## 23. Imagining the Future: Game Hacking and Youth Climate Action

*Chloé Germaine and Paul Wake*

### Abstract

This chapter explains the methodology and research design of a participatory project that investigates how board games can support young people's understanding of, and action on, the climate crisis. The project contends that the climate crisis is both a social problem and an imaginative challenge, especially for young people whose futures are most affected by it. This project moves beyond the consideration of board games as a tool for climate education and investigates them as a means for young people (aged 16–19) to explore and communicate their ideas about climate change through processes of playing, hacking, breaking, and remaking games.

**Keywords:** activism, board games, citizenship, dark play, environmental education, participatory methods

Board games are big business. Heralded as enjoying a “renaissance” (Booth 2015, 1), the board game industry and consumer market has grown year over year for over a decade (Brown and MacCallum-Stewart 2020, 1–2). This popularity suggests that board games have a cultural, civic, and educational role to play in confronting and negotiating the problem of the contemporary climate and ecological crises. As Alenda Y. Chang notes, games have “significant environmental affordances,” not least because they provide less didactic and moralizing ways “to encourage people to consider environmental problems and their solutions” (2019, 11, 15). In this chapter we turn attention from video games to board games, recognizing distinct potential in the affordances of analog media.

Roberta Kwok (2019) and Kristoffer Fjællingsdal and Christian Klöckner (2020) argue that board games can be used as tools for communicating facts

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Op de Beke, L., J. Raessens, S. Werning, and G. Farca (eds.), *EcoGames: Playful Perspectives on the Climate Crisis*. Amsterdam: Amsterdam University Press, 2024

DOI 10.5117/9789463721196\_CH23

of climate change and engaging players in discussions about personal and social responsibility. While recognizing the value of board games within the context of climate change education, we suggest that conceptualizing the role of games via a process that seeks to address a perceived knowledge deficit limits our understanding of games, play, and players. Rather than assessing or deploying games as tools for science communication, or aiming for audience engagement through play, we take up Nicole Seymour's suggestion that instead of judging culture and art for their functionality, "a less strictly instrumentalist approach" (2018, 7) might allow for the imagining of different capacities and alternative modes of engagement.

Responding to Christopher Groves' suggestion that the concept of sustainability remains "within the limitations of modernist ways of thinking, in which the future is imagined solely in terms of the continuation of present projects, which are then projected into the future in a way that colonizes future possibilities" (2019, 915), we consider how games might facilitate the imagining of different futures than the one toward which we appear to be headed if urgent action on the climate is not taken. The methodology we propose emerges from a research project that investigates this dimension of games and play (*Play and the Environment: Games Imagining the Future*) funded by Game in Lab and the Libellud Foundation. The project contends that the climate crisis is both a social problem and an imaginative challenge and with this in mind, considers board games as both a tool for climate education and as a means for young people to explore and communicate their ideas about climate change, social transformation, and possible futures.

## **Climate action, games, and hacking**

### **Playful youth action and civic participation**

The members of the 16–19 age group have been instrumental in the international Fridays for Future climate strike movement, which represents a watershed moment in environmentalism because of the grassroots radical action being taken by young people on a global scale since 2018 (Pickard, Bowman, and Arya 2020). Nonetheless, despite the amplification of their voices through this movement, young people continue to be marginalized from political power and their action framed within discussions about the perceived disruption to their education (Bowman and Germaine 2022, 76–77). The climate change protest movement tells us that, rather than needing education, young people require support from adult allies

in communicating what kind of world they would like to build. Crucially, for our project, we acknowledge that the action taken by young people not only aims at raising awareness of the science of climate change and calls for global governments to heed a set of policy demands, it is also an invitation for us to take part in an imaginative conversation about what the future could look like. This conversation is not only about tackling rising levels of greenhouse gases, but also about transforming societies and tackling injustice: it is a creative intervention. Following this understanding of young people's climate action, we suggest games as an apt mode through which to support the movement. Here we build on the work of game studies scholar Mary Flanagan, who writes of the potential for games to "function as means for creative expression, as instruments for conceptual thinking, or as tools to help examine or work through social issues" (2009, 1). Taking this forward, we replace Flanagan's "or" with an "and," making more explicit the link between creative expression and conceptual thinking through a "hacking" methodology that affords new possibilities in terms of both the exploration of and expression of possible climate futures.

The project employs youth participatory action research (YPAR) methods (Cammarota and Fine 2008), positioning young people as coresearchers rather than as the subjects of the research project. Melissa DeJonckheere, Lisa M. Vaughn, and Demaree Bruck describe YPAR as a methodology that "empowers adolescents to be active collaborators in the research process, encourages capacity building, and supports youth in advocating against social injustices" (2016). The application of a YPAR methodology thus ensures that play does not become a top-down pedagogical exercise in which young people learn something from games, or in which we assess the educational value of games in engaging a perceived passive audience. Rather, the project enacts an exchange of knowledge between games, game designers, academics, and young people. YPAR methods are developed in the project through a mode of play which we describe as "hacking," a mode of engagement that disrupts the expected rules, behaviors, and outcomes typically involved in board games. The methodology of hacking, described in more detail throughout this chapter, is therefore aligned with the aims of YPAR in which young people "resist the normalisation of systematic oppression by undertaking their own engaged praxis—critical and collective inquiry, reflection and action focused on 'reading' and speaking back to the reality of the world, their world" (Cammarota and Fine 2008, 9). We also suggest, following these descriptions of YPAR, that the methods of play employed in this project will support young people in their efforts to advocate youth-centered concerns about, and solutions to, the systemic and social justice

issues that are imbricated in the climate crisis. We suggest the hacking of games as a mode of critical reading, and of speaking out. Through the hacking of games, young people will, we suggest, “begin to re-vision and denaturalize the realities of their social worlds and then undertake forms of collective challenge based on the knowledge garnered through their critical inquiries” (Cammarota and Fine 2008, 10).

The development of hacking as a means of using games in the context of climate activism draws on existing work on the potential for play and games in civic action and protest movements, while also acknowledging the limits and problems in such utopian descriptions of the power of play. The potential of play to “ignite creative activism” (Chess 2020, 67) has been borne out in the climate strike movement in acts of “playful” citizenship (Glas et al. 2019, 13) that incorporate aspects of performance, parody, and satire (Bowman and Germaine 2021, 19). For René Glas et al.,

play offers a new set of terms to recast today’s practices around citizenship in more dynamic and processual terms: as experimental, as rehearsal, as continual competition, as joking and mischievous, as engaging and participatory, as a type of metacommunication, and so on. (2019, 16)

As Benjamin Bowman and Chloé Germaine (2022) suggest, young people’s protest challenges a hegemonic notion of civic education that aims at developing consent, cohesion, and loyalty.

Our work draws on these existing assessments of the transformative and empowering potential of play in tackling social problems and engaging in political protest, and acknowledges the playful practices already being developed by young people in the context of their action on the climate crisis. A striking example of the latter is cited by Bowman and Germaine in their discussion of a young person role-playing as “Death” at a climate march in Manchester in 2019. The young person spoke in character about a “post-life economy” and the “grim reaping lobby group” through their plastic mask, employing the language of parody. This act of role-play emphasizes the playful nature of the climate protests and draws “attention to the destruction wrought by the current system and, so, the need for radical break with that system” (Bowman and Germaine 2021, 19). Following the lead of young climate activists, the methodology of the project seeks to harness the capacities for such creative engagement with climate change, supporting the playful citizenship of young people with the aid of games, which have formal properties that might support the critical and creative interventions, and systemic thinking, that climate change demands. However, we also

complicate the idea that play in and of itself is empowering or disruptive, acknowledging the way that games all too often capitulate to or even abet dominant systems, rules, and modes of consumption that, in the case of climate change, are part of the problem. Role-playing as *Death*, the young activist discussed here provides a poignant provocation as to the need to disrupt such dominant systems. Hence, in this chapter, we advocate the methodology of hacking as a more effective mode of working with games in this context.

### **System change not climate change: Games as rule-based systems**

Young climate strikers call for “system change” not “climate change,” acknowledging that the solution to the crisis will not come from within existing socioeconomic and environmentalist paradigms. We contend that games offer a way to explore the significant system changes young people are seeking in ways foreclosed by other forms of representational media. In part our rationale for this claim comes not from the sense of playfulness as a form of activism but from the nature of games themselves, which simulate systems and ask players to perform actions within those systems, adhering to rules and constraints. While the voluntary acceptance of regulation may seem to be at odds with the call of climate activists, the way that games (and analog games, in particular) render systems apparent provides a unique opportunity for both the critical enquiries mobilized by YPAR and the disruptions and transformations sought by climate activists.

As Chris Crawford explains, a game “is a closed formal system that subjectively represents a subset of reality,” a definition that combines “explicit rules” (the formal system) with the creation of a “model world” (1982). This combination of representation and rules (or, better still, representation through rules) makes possible a doubled vision by which players see both representation and rules simultaneously. This doubled vision allows for the mapping of connections between fictions and systems, and, so, for critical inquiries as to the nature of present systems and possible futures. As Ian Bogost has argued, “videogames are an expressive medium. They represent how real and imagined systems work. They invite players to interact with those systems and form judgements about them” (2007, vii).

Given this focus on systems and processes, it is important to recognize that rules are abstractions, and are necessarily simplifications of complex realities. As Willard McCarty puts it, “a model is by nature a simplified and therefore fictional or idealized representation, often taking a rough and ready form: hence the term ‘tinker toy’ model from physics, accurately suggesting

play, relative crudity, and heuristic purpose” (quoted in Sabin 2012, 5). The distillation of realities (be they historical or hypothetical) is crucial to the use of game design as a research method. Recognizing, and embracing, this limitation, designers must work to identify not only the subset of reality that they wish to model, but also realize the assumptions with which they approach that reality in order to express it in the language of game mechanics. In line with this thinking, we suggest that games allow us to create model worlds while making manifest the underpinning logic of those worlds. Gameplay, hacking, and creation, we argue, are forms of systems thinking.

While much existing work on games as systems pertains to video games, we see board games as offering particularly productive ways in which to explore system change as their analog mechanics are easily accessible, moddable, and hackable in ways that video games are not. In board games it is the players that “run” the game, and who subsequently need to be able to understand the interactions of rules and component parts. The system, now on display, is open to being changed, or hacked, by players who want to “tinker.” This proposed exploitation of the formal properties of board games in this way further echoes the methods and aims of YPAR, which aims to show young people that “conditions of injustice are produced, not natural,” or, that the systems in which young people participate are “ultimately challengeable and thus changeable” (Cammarota and Fine 2008, 10). As we have suggested, mounting such a challenge might not emerge through play alone, which often sees players capitulate to rules, but through the more disruptive process of hacking.

### **Mayhem and mangling: Theorizing hacking**

Play is often caught up in the systems of consumption and conformity such that play in and of itself might not be enough to empower citizens. Indeed, the acceptance of rules is often figured as central to definitions of the playing of games. Bernard Suits, for example, tells us that

to play a game is to engage in activity directed towards bringing about a specific state of affairs, using only means permitted by rules, where the rules prohibit more efficient in favour of less efficient means, and where such rules are accepted just because they make possible such activity. (2014, 36)

This description of the rules of play in terms of inefficiency is one of the things that most clearly demarcates the game space itself. For Suits it is this



concession to an inefficient system that makes the play activity possible, and the game identifiable as a game (distinct from the activities of real life). Suits' account of games proves helpful in understanding the ways in which approaching games as systems might afford insight into the contemporary climate crisis. The constraints (necessary inefficiencies) that Suits identifies as central to the game systems with which players engage, imply the possibility of alternative actions that might be taken. This need for regulation, made manifest by games' rulebooks, coupled with the notion of designed inefficiency (and its voluntary acceptance) draws attention to the ways in which many real-world systems that contribute to climate change are (in direct contrast) touted as inevitable and natural because they are simply the most effective or efficient: the idea of the market in capitalist economics, for example. However, as anthropologist David Graeber argues, many aspects of capitalist economics are manifestly inefficient, although pointing this out often meets with denial (2019, 15–16). Graeber's suggestion that thinking outside the current political and economic system is notoriously difficult to the point of disavowal is echoed in Mark Fisher's notion of capitalist realism which conditions "not only the production of culture but also the regulation of work and education, and act[s] as a kind of invisible barrier constraining thought and action" (Fisher 2009, 16). Of course, games and play are themselves implicated in capitalist realism, and in its economic systems that contribute to climate change. As Glas et al. recognize, there is a question as to the extent to which play has empowered citizens and "where the limits of our participatory powers lie" (Glas et al. 2019, 17; see also Fortunati 2015). Other assessments of gameplay concur that play itself might not induce the critical, disruptive, nor transformative engagements more utopian assessments suggest. Braxton Soderman (2021), for example, argues that "flow," the dominant way of conceiving of the psychological state induced by playing games, suggests the very opposite, that play might be, in fact, a very passive activity, one that is implicated in the inefficient yet dominant systems that contribute to climate change.

Understood as a mental state in which the player is fully immersed and involved in the game, a state of complete absorption during which one might not even note the passing of time (Csíkszentmihályi 1975), the flow state is at odds with the kinds of critical positioning that might inform transformative civic action. Indeed, as Soderman suggests, flow

privileges individualism over social collectives, growth and accumulation over equilibrium and sustainability, self-determination over the idea that external forces shape human consciousness, and action over

critical examination.... Flowing subjects are not simply game players experiencing the psychological state of flow; they are being positioned as media consumers in a way that promotes flow's ideologies. (2021, 5–6)

In other words, if games as consumable products evoke flow, they run the risk of promoting passivity and capitulation to the status quo. In the context of climate change, the way in which flow promotes individualistic play is disadvantageous, since system change requires collective and collaborative efforts, and not individual action. In response to these challenges to the disruptive potential of games—but not entirely abandoning the optimistic sense of the playful, which Miguel Sicart describes as an *attitude* in contradistinction to the *activity* of play (2014, 22)—we propose hacking rather than playing games as a means for disrupting the logic of consumption and conformity that characterize games as a media that serve hegemonic power structures and the vested interests of capital that drive climate change. We suggest that hacking games is a much-needed disruption of such passivity, and a way of engaging with games that shifts agency from the dominant system that the game models or promotes, returning players to the point at which the rules and system of the game might be (re)opened to negotiation.

When we talk about hacking, we do so with a positive understanding of the term as a means for rethinking and (re)creating the parameters of production and play. Hacking also draws out a fundamental affordance of games versus other forms of media. Games are not simply consumable products even though they are often presented in this way. As Anna Anthropy argues, in their exhortation for players to disrupt the consumer logic of the games industry, “the rules themselves aren’t the game, the interaction is” (2012, 44). Understood as props that both facilitate and participate in individual game performances, games hold the promise of anarchic forms of play that question the relation between games (as product) and players (as consumers). We contend that hacking games, and not playing them according to the rules, is key to the kinds of radical, critical, and socially transformative engagement imagined by play scholars. As McKenzie Wark puts it in *A Hacker Manifesto*, “whatever code we hack, be it programming language, poetic language, math or music, curves, or colorings, we are the abstracters of new worlds” (2004, 2).

However, as we develop our concept of hacking, we introduce a note of caution into this idea of making something new from the old. The promotion of modding, jamming, and making in the indie game scene, for example, is just as apt to feed back into capitalist modes of innovation and consumption as disrupt them (see Soderman 2021, 176–181). While the creation of new

game “products” through cocreative practices remains one potentially viable outcome of the cocreative processes we propose, our notion of hacking also toys with putatively less positive ideas of mangling and mutilation to disrupt the ways in which dominant systems tend to channel protest and dissonance back into the mainstream. Hacking might, then, mangle and mutilate games in several ways allowing for the exploration of dark and disruptive affects in play and, as an iterative process, need not result in new game products, but in outcomes more ambiguous and unsettling. We see value in the sometimes crass and crude nature of hacking, and in the awkwardness of the unfinished and unplayable. Again, in our refusal to make new game products for use in environmental education, we link hacking to challenges mounted elsewhere in popular culture to dominant modes of environmentalism, which expose the ways in which moralistic and didactic approaches have not been effective in bringing about system change (Seymour 2018).

As Seymour suggests, mainstream environmentalism and corporate greenwashing alike make affective appeals to “healthy” citizenship in sanctimonious and didactic ways and are divorced from the issues that directly impact communities (2018, 15, 17). She also advocates environmental texts that present problems and make things messy, rather than those that aim at “neatly resolving problems” (2018, 28). There are no simple answers to the climate crisis, of course, and fantasies of technological solutions touted by those with an interest in maintaining the economic status quo, for example, or moralistic messages that focus on individual action, distract from collective efforts to bring about social and political change. Following Seymour’s call to pay attention to cultural products that explore irony, irreverence, and other bad emotions related to climate change, and to texts that refuse neat solutions, we suggest that hacking might even be perverse as well as playful, closer to what some scholars have identified as “dark play,” a mode of play that exploits tension between order and chaos, evokes subversive or otherwise deviant themes, and deceives players such that the boundary between play and not play becomes porous (Schechner 2002; Sicart 2014, 19; Linderoth and Mortensen 2015, 5; Germaine 2020, 363). Dark play complements Seymour’s project to promote and understand bad environmentalist texts, which often also rely on evoking uncertainty, hesitation, and awkwardness. Hacking as dark play might thus puncture both the flow of play and the dominant affective dimensions of environmentalist rhetoric. Linderoth and Mortensen suggest that dark play recasts playfulness as a state of mind filled with tension, a claim that might set it against a flow state, stating “the player is suspended between forces rather

than in a protected space, pulled in different directions rather than resting in a bubble” (2015, 5–6). Conceived in terms of dark play, hacking aims at the mangling of rules, systems, and mechanics, as well as disrupting the aesthetic and psychological dimension of games and, as such, resists being co-opted back into the normative, capitalist modes of play, production, and consumption. Such dark play in the face of climate change complements what Timothy Morton (2016, 142) calls “dark ecology,” the urgent need to cultivate modes of ecological awareness that makes strange and uncanny human relationships with the environment and reveals the melancholic wounds that mark human coexistence with more-than-human beings.

## How to hack games for system change

### A practical methodology

In order to draw out the dark, disruptive, and estranging possibilities of “wrongly playing” games, alongside the critical inquiry, the reading and speaking back to the world that is enabled by YPAR, we suggest a process of hacking that has four stages: 1) Identifying games, 2) playing without and by the rules, 3) hacking (playing with the rules), and 4) reading the rules.

#### 1) *Identifying games*

In our project’s first phase, following the recruitment, we will support participants in selecting a range of games through a combination of online research (consulting, for example, the website BoardGameGeek.com and Tabletop Simulator) and through an in-person visits to a game store. This stage of the process is intended to bring participants’ attention to games with clear connections to environmental concerns (games that might be seen as trading to an extent on the climate-crisis industry) and those that, on the surface at least, are not ostensibly “about” the environment. While there are an increasing number of games with explicit environmental themes, we recognize that games are as apt as any other cultural product or media to be shaped by what Patricia Yaeger identifies as the “energy unconscious” (2011, 306) and this awareness (or lack of awareness) makes games which may not explicitly address the climate crisis or representations of nature equally important. Examples of the former type include popular games such as Hjalmar Hach’s *Photosynthesis* (Hjalmar Hach 2017), in which players take on the role of trees and Elizabeth Hargrave’s *Wingspan* (Elizabeth Hargrave 2019), in which players compete to attract birds to their

wildlife preserves, along with explicitly educational games such as *Tipping Point* (Ryan Smith 2021) and *Carbon City Zero* (Sam Illingworth and Paul Wake 2020), which engage players with thinking about sustainability and responsibility for the accumulation of emissions at the scale of the city community. Examples of the latter include the popular property-trading game *Monopoly* (Charles Darrow and Elizabeth J. Magie 1935) and *Tokyo Highway* (Naotaka Shimamoto and Yoshiaki Tomioka 2016), in which the consumption of energy is implicit in the expanding of built infrastructure that shape the games' lusory goals while being absent from the constitutive and operational rules. The inclusion of this second class of game, in which the environment remains outside the scope of gameplay, is as important as the inclusion of those that take environmental concerns as their theme.

#### 2) *Playing without and by the rules*

The second stage of the project first invites participants to *play with* the game (rather than play the game). In the first instance, games will be played without reference to the rules, an act intended to foster an understanding of the different affordances of the game's component parts: its boards, tokens, cards, images. What, we invite participants to ask, kinds of play do they suggest? In our experience players are remarkably adept at intuiting gameplay from well-designed components, but also equally adept at creating remarkably divergent games from those imagined by game designers and publishers. Following this first encounter with the game, the rules will be introduced, and the game played "properly."

#### 3) *Hacking (playing with the rules)*

In the third stage of the project, participants will hack their chosen games, making something new out of the materials presented. As game designer and educator Matteo Menapace put it in an early workshop on which we collaborated, "There is no wrong way to hack a game," and we have no clear expectation of what might emerge from this phase. Hackers might add or remove elements, rename elements, alter the player count, change the rules, change the game's goals, or replace standard (card, wood, and plastic) components with the bodies of the players themselves, turning to touch, sound, and smell.

#### 4) *Reading the rules*

In this final stage of the process, we anticipate that reflection on the rules of the specific game, and on rules more generally, will emerge. Reflecting on the process of hacking, on the design notes, photographs, sketches,

abandoned designs, and rejected or remodeled components is the point at which we anticipate that both specific readings of individual games and for a methodology with wider application will emerge. As might be expected, there are already several potential frameworks for the assessing of games and the stories and logics that they encode (see, for example, Hunicke, LeBlanc, and Zubek 2004; Sicart 2008; Mert and Van der Hel 2016; Backe 2017; Ryan, Dixon, and MacCallum-Stewart 2020; Germaine 2022), but we decline to apply these in our hacking sessions. Our aim is that frameworks will emerge from our participants' interests and ideas, and that we will join our participants in thinking through these ideas, combining the insights from the groups with which we work.

### Hacking at the orchard

To conclude this section, we offer an example of the final two phases of the process ("Hacking" and "Reading the rules"), taking the popular children's game *Orchard* (Anneliese Farkaschovsky 1986) as our text. The work that follows is necessarily speculative and we fully expect to be surprised by the directions in which our participants (better seen as coresearchers) travel.

*Orchard* is a collaborative game aimed at players aged between three and six. As its name suggests, it is a game about fruit picking: "The four fruit-trees are full of fruit. The apples, pears, cherries and plums are ripe and have to be picked quickly, because the crafty raven is eager to pinch some tidbits" (*Orchard* 1986, 2). In keeping with the target audience, gameplay is straightforward. Each turn players roll a six-sided die on which there are four colored circles (each of which corresponds to one of the four fruits on the board), a raven, and a basket. If players roll a circle, they take a fruit of the same color from the board and place it into their baskets. The basket allows for players to select two fruits of any color. Should players roll the raven, they place one of nine raven tiles on the board and should all nine be placed, completing the picture of the raven, the game ends and the players lose.<sup>1</sup> In what follows we present our own hacked version of *Orchard*: "Dead Ravens" and "Pollinators."

#### *Hack#1: "Dead Ravens"*

A near instant hack. *Change sides*. The players take the side of the raven, which must feed itself before all the fruit is gone, otherwise it starves to

1 While requiring little strategic thinking, *Orchard* provides young children with an opportunity to learn turn-taking, counting, and color recognition in order to develop their fine motor skills and to practice, in a noncompetitive space, winning and losing.



Figure 23.1: "Dead Ravens" by Johan Nohr.

death and the players lose. The only rule change necessary is to shift the win condition which becomes: *If the raven jigsaw is complete before all of the fruit has been picked, the players win.* All that is required to achieve this hack is a change of perspective. To this end, we commissioned Johan Nohr, whose work was known to us from the ennie-winning apocalyptic fantasy role-playing game *Mörk Borg* (Pelle Nilson 2020), to create new artwork, replacing the colorful raven on the game board with an altogether darker image (see Figure 23.1). The choice of artist was deliberate, allowing us to draw on the aesthetics of a game that describes itself as "a doom metal album of a game. A spiked flail to the face" (2020, back cover). Players now, faced with an image of death and decay must work to resurrect the raven, placing Walter Matheis' colorful tiles over Nohr's graphic image and restoring the gentle pastoral space of the original game.

This hack suggests dark play, transforming a sweet children's game, characterized by pastoral images and cartoonish depictions of nature, into

something that prompts ambiguity and awkwardness. In this, the “Dead Ravens” hack recalls Seymour’s “bad environmentalism,” an affective modality which seeks to give voice to unclear and unexpected difficult feelings prompted by climate change, eschewing the “dominant preference for environmentalism to be straight, white, clean and neat,” and questioning a foundational assumption that “aesthetically pleasing” aspects of nonhuman animals are the strongest basis for apportioning value (2018, 72, 38, 35). In so doing, Nohr’s “Dead Ravens” also evokes the aesthetics and epistemological provocations of “dark ecology,” which, as Morton argues urges humans to “think the truth of death” (2016, 201–202) and confront our relationships with more-than-human beings, and to take responsibility for them.

### *Hack#2: “Pollinators”*

Our second hack of *Orchard* sets out to remove the conflict between the human harvester and nonhuman raven, instead emphasizing the fruit grower’s reliance on the nonhuman (specifically pollinators) and the threat to that relationship through other human action (such as the destruction of the pollinators’ habitats).

This hack is achieved by replacing the nine raven tiles with new two-sided tiles with images of key pollinators and beneficial predators on one side and an image of a house on the other (see Figure 23.2). The image of the raven on the die is replaced with an image of a house. The process of setting



Figure 23.2: Replacement *Orchard* tiles, front and back. Images © Anthony Pickering 2022.



up the game remains the same with the exception that the jigsaw is now placed on the table, pollinator side up. Gameplay is largely unchanged, but in this version, instead of revealing a raven, players turn over pollinators, revealing the image of a house whenever they roll the house icon. The game ends when players collect all the fruit (they win) or when all the pollinators have been replaced with houses (they lose). This hack is a 'reskinning' of the game, replacing visual and narrative elements while leaving the underlying game system intact. While the game system changes little, the story told has shifted quite dramatically.

### *Reading Orchard*

Through these hacks we have 'rewritten' *Orchard*. During the project's fourth stage we reflect on the process of hacking and rewriting, returning to materials collated during the time we worked with the game, considering the new narrative and systemic possibilities that have emerged.

As we developed this methodology, the process of hacking *Orchard* resulted in a design diary of a sort, a collection of ephemera written, sketched, doodled, photographed, WhatsApped and tweeted during and after multiple play sessions, in academic presentations, in playful PhD supervisions, in applications to funders, and in commission documents and emails to artists. Discussing this collection of materials, the methods underpinning our hacking process begin to emerge.

Unsurprisingly, as academics trained in literary analysis, our approach was to ask, "What kind of story is the game telling?" Drawing on this we focus on plot (What happens? and How is it organized?), character (Who are the protagonists and antagonists—or, more properly, who are the agents in the world and what form does agency take?), and the story world (What does the presentation of the game tell us?). As game scholars, we focus on the interplay of these stories, which we find in the form of both embedded and emergent narratives, with the game's rules (How do you win?) and its aesthetics, and we worry about terms such as ludonarrative dissonance (Does the story align with the gameplay?) and wonder, briefly, if such a term implies ludonarrative consonance (What kind of system has been modeled?). Both hacks begin with a concern with the game's protagonists. One group of protagonists comprise the humans collecting fruit, since the baskets suggest a human form while the absence of in-game avatars (for example, meeples or pawns) proffers a connection of the player's body with that of the in-game harvesters. The key antagonist is the "crafty" raven, Theo. These characters are set against a backdrop formed by the trees in the orchard, and their flat representation contrasts sharply with

the game's 3D fruit and baskets, suggesting that they do not exert agency in the game world.

Our "Dead Ravens" hack, in which players swap sides, emerges from a concern with the underlying desires, or needs, of the two sides. The harvesters must collect *all* of the fruit to win, while the raven must eat *some* of the fruit. There is, then, a direct conflict between the desire of the harvesters (collect all fruit) and the raven (have some fruit). Sharing is not an option for the human players: it is all or nothing. As this hack makes clear, *Orchard* is a zero-sum game, and our assumption, cutting against the child-friendly pastoral aesthetic, is that victory for the human player entails the raven's demise.

Our "Pollinators" hack is also a zero-sum game, and one that retains the human/nonhuman conflict of the original. Here, though, the hack adds detail to the simulation, recognizing (albeit to a limited extent) the role played by the nonhuman in fruit production. Here, the development of human habitation replaces the raven as a threat to the life of the orchard. This second hack, then, draws attention to the ways in which the game functions as a simulation. As a simulation, the game models the notion that the longer fruit is left on trees the more likely it is to be eaten by birds: harvesting is a race against time. No attention is given to the specific ecologies of orchards. For example, the likelihood of four different species of tree all bearing fruit simultaneously is not part of the game, nor is there any reference to threats to orchards, nor the importance of suitable cultivars to ensure pollination. The human society that is modeled is one of cooperation and shared labor. Significantly, the system embedded in the game's rules models a conflict between humans (who seek to maximize their harvest) and the nonhuman world which threatens this aim. This threat to fruit production (or to human desire) is figured as a carrion bird (one associated with death and destruction) and the victory of the nonhuman over the human is tied to chance. This hack's simulation, albeit more detailed than the original, remains simplistic and here the blunt nature of the hack provides a source of further insight and future work in thinking through the shift of emphasis and the many details that have been set aside in the name of playability.

### **Conclusion: The hack is done—Or is it?**

Though these simple hacks of *Orchard* are perhaps described as reskins as opposed to a thorough system change, we introduced new agents into the

field of action and, in so doing, asked questions about human interactions in woodland ecosystems. A more anarchic system hack might produce different kinds of interactions and collaborations between the different actors in the game and, so, tell a different story while also imagining different systems that might govern human–nature interactions.

The first thing to recognize about hacking a game is that whatever emerges will also tell stories and reflect particular ideas. The process should not be seen as one of correcting incorrect narratives (though it might do that) as much as it is about recognizing the ways in which narratives work, critiquing the basis of the simulations we live with and play with, and in recognizing the potential to change narratives into new directions and, so, to disrupt systems. The stories encoded in the new game invite critique and revision and with this, perhaps in the form of playtesting, the hacking cycle begins afresh.

Accordingly, the “Dead Ravens” hack, which might be seen as the most straightforward of the two presented here, sees players take the side of nature, prompting reflection on the notion of sides, winners, and competition. Simple though it may be, the merging of a game for three to six year olds with a game that declares itself “really not suitable for those under sixteen years of age” (Pelle Nilson 2020, back cover) raises important questions about appropriateness in the communication of possible climate futures. Given the high levels of climate anxiety experienced by young people (Hickman et al. 2021), what is the role of shock and deliberately dark play in climate action? Such disruptive, dark play as our “Dead Ravens” hack promotes an uneasy kind of ecological awareness, one that seeks to confront the shock and trauma of climate change and mass extinction, challenging the self-imposed severing of humans from nonhumans, opening up the “uncanny discovery” (Morton 2018, 26) of our ecological embeddedness.

The second hack—“Pollinators”—in which the encroachment of the built environment into territory previously occupied by pollinators (and the implied displacement of these “indigenous” pollinators) considers ecological embeddedness, but via more normative environmental aesthetics. Nonetheless, even this hack sets the human against nonhuman in competition for resources and habitat. Here though, in place of the stark image of a dead raven, the artwork—for which the commission required attractive semi-rural dwellings—gestures towards another potential narrative in which the taking of sides (human/nonhuman) is perhaps less clear. How might the notion of sides be removed? How might the severing of the human from the nonhuman be undone? Already the thinking behind a third hack, more radical than the first two, is underway.

The aim of hacking is not to make a new game that is more effective at communicating facts about climate change, or human–nature relationships, then, nor one that might better prompt individual players to reassess their attitude or behavior in relation to climate change, since this affords games a didactic and moralistic role in relation to a perceived passive player. Rather, the aim of hacking is, as is the case with a YPAR methodology more broadly, to promote continued critical enquiry and an ongoing, uneasy disruption of dominant ideas of gameplay that cannot be co-opted back into the logic of production and consumption that governs the systems responsible for the climate crisis. In their making evident of game mechanics and the (often inefficient) systems such mechanics simplify and represent, in their openness to player tinkering and transformation, and in the collaborative and social nature of gameplay, board games are particularly generative for hacking in the context of tackling climate change. Moreover, the critical inquiry enabled by hacking seeks to disrupt play as a passive and individualistic activity, and invites the disruption of dark play, its attendant tensions, and the ways in which it makes play uncomfortable, messy, and ambiguous.

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