Routledge
Taylor & Francis Group

Text and Performance Quarterly

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/rtpq20

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To cite this article: Rosamund Portus (2022): Performing extinction stories: exploring creative responses to bee decline, Text and Performance Quarterly, DOI: 10.1080/10462937.2022.2134583

To link to this article: https://doi.org/10.1080/10462937.2022.2134583

Published online: 17 Oct 2022.

TEXT AND PERFORMANCE QUARTERLY
https://doi.org/10.1080/10462937.2022.2134583

Performing extinction stories: exploring creative responses to bee decline

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ABSTRACT

As extinction becomes one of the most pressing crises of our time, projects that engage with nonhuman lives have emerged as a visible fixture of the creative landscape. This raises the question of what role creative explorations might play in shaping public discourse and action around extinction. In moving towards an answer to this question, this work draws on conversations with performance artists who have engaged with the topic of bee decline. This research establishes the value of performance for inspiring empathy and encouraging questioning, widening participation, and bringing learning into connection with tangible action through developing audience agency.

ARTICLE HISTORY
Received 31 May 2022
Accepted 4 October 2022

KEYWORDS
Extinction studies; performance; storytelling; intervention; bees

Introduction

The transformation and loss of places, cultures, languages, and lives has been suffered by peoples and species around the world for as long as we might remember. The history of humanity is littered with stories that speak to our capacity to hunt animals to extinction, to spread diseases which wipe out whole ways of life, and to brutally colonize spaces, languages, and cultures. Extinction, as both a historical fact and a threat which haunts the living, is therefore not a new or radical concept. Yet, it is only in relatively recent years that this word – or perhaps this concept – of extinction has shifted from being commonly associated with the disappearance of colossal lizards, to being more typically thought of in connection with anthropogenic action,[1] modernity, and, even more recently, international emergency. This shifting perception of extinction, which is interconnected with the increased vividity of ecological loss on a global scale, has heightened public awareness that mass extinction is a crisis which is happening *here* and *now* (see: Carrington; Taylor and Blackall).

As the language of extinction takes an increasingly central role in public life, notably driven by movements such as Fridays for Future[2] and Extinction Rebellion,[3] the progressively precarious nature of life on Earth has seen increased attention across the creative sector (Oak Project; Wolfson). Examples of extinction-inspired creative projects and

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communities are vast, with work such as Maya Lin's *What is Missing* archive,[4] the *Remembrance Day for Lost Species* (RDLS) events,[5] the PARDICOLOR Creative Arts Fund,[6] Bristol Museum's *Extinction Voices* exhibition,[7] or Cai Guo-Qiang's art installation *The Ninth Wave*[8] being just a selection of many diverse projects exploring themes of loss and decline.[9] This ever-growing interest in creative interrogations of extinction processes sits against the backdrop of an expanding environmental arts sector, in which environmental topics have become part of the artistic mainstream (see: Brown; Brooks) and movements towards connecting creativity, culture, and environment, such as Culture Declares Emergency,[10] have grown in strength and numbers. The words of famed environmentalist Bill McKibben, who once said climate change "hasn't registered in our gut; it isn't part of our culture. Where are the books? The poems? The plays? The goddamn operas?" have become outdated (n. pag.). Written a mere decade and a half ago, his reflections represent a cultural landscape starkly different from the one we are witnessing today. This, therefore, raises the following question: in a world which, as Heather Swan puts it, privileges scientific knowledge over other forms of knowledge, what role do creative endeavors play in shaping public knowledge and action around extinction crises?

I am not alone in asking such a question of creativity; this is a topic which is seeing meaningful attention from scholars working across a variety of disciplines and perspectives (see: O'Key; Barr; Macfarlane). In my own approach to answering this question I marry my exploration of creative impact with that of creative intent. Specifically, I ground my study of creativity and extinction in narrative interviews with the artists behind three distinct creative projects. The interviews were conducted as part of a broader thesis project, the aim of which was to examine how the decline of bees has been imagined and represented.[11] In light of this, these three projects all share a common focus, this being the current precarity of bees' lives. It was through my broader examination of responses to bee decline that my attention was initially drawn to this question of creative value; my interest in investigating this question was partly inspired by the abundance of creative works produced in response to bees' decline in recent years.[12] It is not entirely surprising that my wider research on bees led me to encounter such a rich collection of bee-inspired creative works. It is widely discussed that bees, particularly honeybees, might be considered one of the most universally revered and studied animals (Sumner, Law, and Cini; Hanson; Preston; Ransome). This is despite bees' status as insects which, as Farrier expresses, hold a particularly special place in the world of "unloved others." These are species whose morphology and ethology make them typically unfamiliar and uncharismatic to human evaluators. The unusual global value associated with bees, which only increased when fears about the disappearance of honeybee colonies gripped headlines in the late 2000s (Moore and Kosut), has served to platform the threat of their loss within public imaginings of extinction. This attention on bees stands apart in a world where, as Rose, van Dooren, and Chrulew articulate, we are witnessing profound and relentless levels of extinction. Yet, despite bees' notable visibility in language around extinction, work responding to their loss is far from irrelevant. Not only is such attention being measured comparatively, but we remain in a situation where bees, particularly wild bee populations, face significant challenges and pressures (Goulson et al.).

Another shared connection of the projects examined through this work is that each one draws on methods of performance.[13] Two of these are what we might consider traditional theatre performances, in which audience members witness performers act out a story, and one is an immersive installation experience, in which audience members become part of the performed story themselves. Through examining both the outputs of and intentions behind these three performance-led works, I illustrate how performances might, in a posthumanist vein, work to not only make room for nonhuman species in the stories they tell (Brisini and Simmons) but also develop people's capacity to mourn for the loss or decline of nonhuman species: a capacity which, as detailed by Trey Barnett, people may remain alienated from in the absence of practices which provide opportunities for such experiences. I first introduce two performances, *The Bee Project* and *Silencing the Virus*, which take a more traditionally serious approach to exploring concerns about bees' current precarity. The third performance I introduce, *Me & My Bee,* draws on tools of playfulness and comedy to explore these concerns. Through my examination of how these performances interact with the issue of bee decline, I further consider how performed stories present opportunities to both reach out to and amplify a diversity of people's voices in environmental dialogues, and help develop people's sense of agency in connection with environmental challenges. Through this study I follow in the footsteps of Polanco and argue that performance offers a chance to enliven the telling of extinction stories, thus offering an important avenue for intervening in and transforming action around urgent environmental concerns.

In positioning this work, I repeat the words of Mary Modeen and Iain Biggs by stressing that I do not seek to place my writing on the subject of creative value in an unassailable position, providing an exhaustive list of the vast entanglements between performance, creative storytelling, and extinction crises (2). Rather, the intention for this work is for it to be an appreciation of the unique role that performed stories *can* play in shaping public knowledge and action in connection with nonhuman species suffering. While the knowledge generated through this work is grounded in research produced in connection with bee-inspired performance projects, the central conclusions speak to the wider value of creative and imaginative forms of environmental storytelling for helping people to connect with, understand, and respond to extinction crises. The implications of this research, therefore, have meaning for people working in professions which extend far beyond the realms of the performing arts, to people working more broadly within creative arts, science, education, journalism, content creation, and beyond.

A study of creativity

On stage a young woman shoves her hands in her pockets, looking uncomfortable, embarrassed even. Her eyes roll to the left, an awkward smile dancing upon her lips as she attempts to look casual. The other actor on the stage wears the opposite demeanor: agitated, impassioned. "Flowers are food," she declares. "Imagine if the supermarket near yours shut down. What would you do?" Sighing, the first woman replies, "well then I'd just go to another one." Undeterred, the second woman asks again – "and what if that one shut down?" The first woman answers, "well then I'd go to one *even* further away. I don't get what you're saying."

This is a description of a scene taken from the show *The Bee Project*, the brainchild of theatre artist and performer Laura Ryder. *The Bee Project*, which Ryder produced and toured from 2018 to 2019, is a show centered around the story of two young people who, as they enter into adulthood, are in the process of negotiating their lives, identities, and friendships. Prior to my research interview with Ryder she sent me a film of the show, recorded during a live performance. As I sat down to watch it for the first time, I found myself quickly engrossed in the stories of these two fictional characters, whose vulnerabilities and struggles as young people are typically relatable. Yet, through telling the stories of these two fictional characters, the show also tells its audience of another, much larger story: this is a story about bees, and the threats that hang over them.

This other story is both directly and metaphorically told to the audience. Directly, Ryder's characters literally discuss the reasons for bees being in decline. This occurs when one of the characters finds a flagging bee in a park and, moved by the bee's obvious struggle to find any flowers, persuades her friend to help her rewild an area of their local neighborhood.[14] This scripting allows for the character on stage to communicate knowledge about the critical need to have planted habitats, which provide bees with the vital resources they need to survive and thrive (Jackson; Blaauw and Izaacs; Goulson). Allegorically, Ryder's show demonstrates the severity of the problems threatening bees through showing human characters converse about or encounter problems that are representative of the ones bees are currently facing. For instance, in the scene described above, the show encourages the audience to imagine how we would suffer if all our food began to disappear. In another scene one of the characters gets her drink spiked which, as Ryder told me, is intended to represent how bees can be drugged through inadvertently ingesting pesticides. By having her characters discuss or imitate the troubles facing bees through their own storylines Ryder's show simultaneously draws attention to the vulnerabilities we share with bees, accentuating how bees' state of fragility is interwoven with our own parallel fragility, and challenges her audience to empathize with bees. Although the degree to which humans can genuinely feel empathy with nonhuman species is debated,[15] Ryder's work can be viewed as an example of how one might use the tools of theatrical storytelling to try and induce a sense of empathy for nonhuman lives; through using the dialogue and action of the show to bring bees' struggles alive to the audience, Ryder encourages audience members to identify with the circumstances facing bees, feel compassion and a sense of injustice for bees, become sympathetic to bees' situation, and, finally, engage with a deeper understanding and comprehension of the circumstances faced by bees. These categories of experience, as articulated by Krasner, represent the four central ways through which audience empathy might be fostered through performance (258–59).

The aim of bringing alive the struggles faced by bees is also at the heart of an immersive and performance-based installation project by artist and composer Lily Hunter Green, called *Silencing the Virus*. This project was born out of an artist-in-residence opportunity with The Gurdon Institute, University of Cambridge. This residency offered Hunter Green the opportunity to work in collaboration with two molecular biologists, Dr Eyal Maori and Dr Luigi Aloia, and a computer scientist, Karun Matharu. The residency centered around Dr Eyal Maori's research into the honeybee virus known as

Israeli Acute Paralysis Virus (IAPV). IAPV causes infected honeybees to display "shivering wings, cramping, and disorientation before their paralysis, and death within a few days" (Amiri et al. 2). The virus can rapidly infect whole hives, resulting in the deaths of entire colonies. The increased demand for pollination services around the globe, which has intensified honeybee management and trading, has been linked to the increased spread of pathogens such as IAPV across honeybee populations (Geffre et al.).

To teach people about the devastating impacts of IAPV's spread, Hunter Green collaborated with computer scientist Karun Matharu to develop a piece of wearable technology which allows a virtual, metaphorical virus to travel between audience members of her immersive installation project. This works by having each audience member dress in a white suit and enter into a room together, while listening to a piece of bee-inspired musical composition through headphones attached to a phone.[16] One audience member wears what Hunter Green terms the host suit. Hunter Green describes how when this person moves near any other audience member, the music that the other audience member is listening to will start to deteriorate in quality, sounding like it is becoming infected. This is an infection that they will pass on to any other audience members they come close to. It is only through working in collaboration with one another, by staying relatively apart from each other, that the audience will be able to stop the sound of the infection, "silencing the virus." Hunter Green explained how she is essentially "infecting a room full of people with an … artificial honeycomb virus," and that the intention of this work is to tell a "story in order to get people to empathize."

To ensure that the message told through this interactive, audience-led performance, is clear and accessible, Hunter Green also fills the installation space with visual accompaniments. To create these visual accompaniments, Hunter Green embeds a number of lights into rectangular frames, which she then positions behind real honeycomb frames taken from beehives. As the virus artificially infects the music on people's phones, the lights embedded in the frame also appear to become infected. This works by having the lights, which were originally orange, turn green. This allows visitors to experience the virus spreading through a real honeycomb frame, whilst simultaneously listening to the music becoming "infected." Hunter Green described how the digital virus "spreads in the exact same way that it's spreading in a real hive […] so it's […] like it is actually taking over." Through getting her audience members to experience being both the victims and spreaders of the virus, Hunter Green seeks to engage audience members' empathy for honeybees while also drawing attention to the role that human movement and mishandling of honeybees has played in increasing the spread of the virus. Although the extent to which we can *truly* empathize is disputed, Hunter Green's work intends to generate the core tenets of feeling – namely compassion, sympathy, identification, and understanding (Krasner) – required to move audience members towards a position of empathy for the "characters" they are embodying. Indeed, Hunter Green told me how the work has incited deeply emotional responses, describing incidences in which "audience members have been […] crying, sitting, and watching it. Because […] it's quite sort of dystopian and freaky […] it's […] exposing the invisible stuff."

Silencing the Virus was originally conceived of by Hunter Green prior to the Covid-19 pandemic, at a time when the threats posed by viruses were not necessarily part of people's everyday concerns. When the installation project was first delivered it represented a dystopian like reality, but today the experience of being threatened by a

virus is likely to resonate much more personally with people's current realities. This shift in experience and resonance is one which Hunter Green ("Silencing the Virus") explicitly draws attention to, stating in a recent interview that her work not only speaks to honeybee vulnerabilities in the face of a devastating virus, but also what humans can learn from honeybee behavior as we ourselves live through a pandemic.[17]

Like Laura Ryder's show *The Bee Project*, *Silencing the Virus* questions the loss of bees by confronting one of the many threats that bees are battling. Both Ryder's and Hunter Green's creative projects achieve this by enabling the audience to witness human actors battling against metaphorical versions of the dangers facing bees, the only key difference being that in Hunter Green's case the audience are also the actors telling the story. To this end, Hunter Green's work creates an imagined space in which audience members are explicitly urged to embody the experience being faced by honeybees, witnessing their plight through their own experience of being "infected." Ryder's work, on the other hand, conveys the story of bees' decline by drawing the audience into the imaginary world of two fictional characters. In Ryder's show, the role of the audience in helping tell the story is limited to minor moments of audience interaction, such as when Ryder asks an audience member to "hold" an imaginary bee she found. However, despite their variations in execution and technique, both creative acts purposefully witness and decry the plight of bees by encouraging their audiences to engage in an act of sustained remembrance for the lives which both have been and will be lost due to human (in)action. They do this by inviting audiences to see bees beyond their role in the biosphere and develop a deeper understanding of them as living and experiencing creatures that require our empathy and care. Both works thus represent moves within performance to consider nonhuman communities not as static backdrops to cultural ongoings, but as entangled with our own social and material realities (see: Brisini).

Through their telling of meaningful stories that pay heed to lives which have been lost or harmed through anthropogenic change, the works of Laura Ryder and Lily Hunter Green are what we might call acts of "storied-mourning": acts which are premised on the understanding that the current age demands lively, considered, and creative stories of loss that pay heed to and allow us to grieve for creatures which are threatened or dying. The concept of storied-mourning, which was established against a backdrop of emerging literature speaking to the importance of telling extinction stories,[18] was proposed by Thom van Dooren who suggests that, as a specific act:

> storied-mourning does not attempt to recover and move on from a loss – to put the dead to rest – but, as Jacques Derrida has suggested, offers us the possibility of mourning as a deliberate act of *sustained* remembrance that requires us to interrogate how it is that we might "live *with* ghosts." (142, italics original)

Acts of storied-mourning, therefore, represent a form of witnessing that cannot be reduced to simply watching or knowing extinction events, but that requires the viewer to ethically engage with the truths playing out before them (Haas). Essentially, acts of storied-mourning are a novel, often pre-emptive, form of obituary: one that has become necessary for the sixth mass extinction.

Perhaps unlike more traditional obituaries, acts of storied-mourning also inherently question the processes of loss which have led to the necessity for mourning at all. Indeed, because the decline and extinction of nonhuman species is widely, if not

always, associated with unjust or irresponsible anthropogenic behavior (see: Bhattacharya; De Vos; Kolbert), these stories necessarily ask questions of these processes of death and dying. As van Dooren states:

> [storied-mourning] is the kind of mourning that asks us – that perhaps demands of us, individually and collectively – to face up to the dead and to our role in the coming into being of a world of escalating suffering, loss, and extinction. (143)

While Stanescu (568) makes the contention that all acts of mourning participate in the world as inherently political acts, acts of storied-mourning are *purposefully* political, not only contributing to understandings about who we mourn and how, but explicitly signaling the need to confront and question our role as perpetrators of extinction.

Correspondingly, through drawing attention to the responsibility we have in causing bee decline – whether it be through spreading viral infections or creating ecologically scarce environments – both Laura Ryder's and Lily Hunter Green's projects explicitly encourage their audiences to question how we are actively yet still vulnerably entangled with bees' current precarity. Both artists use performance-based tools to simultaneously bear witness to bees' story and engage with challenging questions about our entwined realities with and responsibilities towards bee species that they themselves cannot necessarily answer, but which still need to be asked if we have any hope of encouraging transformation. What is significant to recognize is that having this space to pose challenging questions without the pressure to provide strategic answers is a freedom which remains relatively distinct to creative spaces; as Brown argues, creative practitioners are in the fairly unique position of being relatively free to ask demanding questions that do not have clear or easily satisfactory answers. Ryder's and Hunter Green's projects thus speak to how creative engagements with stories of lost or threatened species are uniquely well-placed to simultaneously narrate, lament, and fundamentally question the loss and decline of nonhuman species under anthropogenic changes, engaging in the world as critically needed acts of storied-mourning.

Performed acts of storied-mourning are powerful forms of environmental communication: interrupting people's relationship to extinction crises by imparting knowledge, inspiring empathy and care, and encouraging questioning through telling lively and challenging stories of loss. Yet, the recognition of the creative arts' capacity to convey information in this multifaceted and emotionally stimulating way does not *fully* account for why extinction stories told through creative, performance-based means are meaningful modes of ecological communication. One key reason for this is that performed forms of extinction stories can also offer valuable opportunities for inclusivity and accessibility. This contention, which is echoed across wider literature on this topic (see: Opermanis et al.; Curtis), is demonstrated particularly well through the work of the show *Me & My Bee*: a show which draws on comedic methods to tell a story of loss that is simultaneously fun, poignant, educational, and, importantly, accessible.

The premise of *Me & My Bee* is that, after meeting a bee one day, two politicians – a party leader and foreign secretary – decide to start a political party to help save bees. These two politicians, who are played by actors Josie Dale-Jones and Greta Mitchell, explain to the audience how the bee they met, played by fellow actor Joe Boylan, had fallen in love with a beautiful flower, which it frequently visited. Yet, one day, the bee flew to the spot where its flower lived only to discover it had been turned into a block

of flats. The two characters played by Mitchell and Dale-Jones explain that, after hearing this bee's story, they were inspired to begin their political party for bees: a political party with the manifesto "Save the Bees, Save the World."

By narrating an imagined love story between a flower and bee, *Me & My Bee* implicitly tells the audience of the dire implications of habitat loss for bee populations. While the love story between the bee and the flower is purely symbolic, the message of the show is entirely clear: bee species are in peril, and they need help to recover. However, although this show tells of an upsetting reality, it skillfully employs creative tools to make this narrative accessible and relevant to children and adults alike. Producer and cast member Josie Dale-Jones describes how, in producing *Me & My Bee*, the cast and crew:

> wanted to take on the challenge of creating a show for families that delivers a big idea to small people. Our focus is on how to tell the story, get the message across so that [children] can engage in the subject in a positive and active way. (n. pag.)

Me & My Bee employs a number of creative tools to ensure the show speaks to audiences of all ages. One of the major ways that *Me & My Bee* achieves this is by adding humor and playfulness into the dialogue of the show. For instance, during the show the different characters on stage are constantly but light-heartedly bickering with each other, fighting for attention from the audience. Moreover, each character is amusingly flawed: the party leader is self-congratulating, the foreign secretary is charming but scatter-brained, and the bee gives the impression of being confused and naïve. During the performance I attended the dynamic between this trio of flawed characters was undoubtedly amusing to both the younger and older members of the audience, providing some light relief to the underlying message that was being communicated and helping keep, particularly younger audience members, engaged with the dialogue. *Me & My Bee* thus manages to break away from the doom-and-gloom narratives which typically shroud extinction stories and, as Ursula Heise suggests in her own analysis of humor in stories of endangered species, whose power is somewhat dampened by their predictability – "when the news is always bad, it isn't really news anymore" (53).[19] The value of environmental works which reject a typically elegiac tone is also highlighted by Seymour, who writes that these projects work to undercut the negative public perception that environmental activism requires conformity to sincere and sanctimonious behaviors, or a certain degree of knowledge. Thus, a further strength of this comical experience also lies in its message that it is possible for everyone – regardless of any limits we may perceive – to care, to question, and to challenge. In this way, *Me & My Bee* emphasizes that standing in solidarity with those who are struggling – human or nonhuman – is not only a practice that should not be associated with any degree of exclusivity or expertise, but one which can also be engaged with on varying levels and through diverse modes of communication.

The comical liveliness of the dialogue of the *Me & My Bee* show is further heightened by the bright and upbeat aesthetic of the performance. Indeed, because the characters in the show are starting a political "party" the cast don colorful party hats, dance around in flashing trainers and glittery outfits, and even play party games. Yet, through all of the comical excitement, the show keeps returning to facts and stories related to bees. For instance, during the show I attended we were told a variety of facts about wild bee species, from how many times a bee might flap its wings in one second and the processes

involved in pollination, to the reasons for bee population decline and the actions people might take to help bee species. Even more pertinently, the story told through the show is a deliberate confrontation of the struggles facing bees; while it is a purely metaphorical story, through witnessing Joe Boylan's anthropomorphized character – the endearing albeit pitiful bee – mourn for the flower it had once loved, the audience is encouraged to not only bear witness to the struggles that an anthropogenically changed world has caused bees to endure, but also develop their capacity to empathize with bees. Thus, the humorous aspects of the show pave the way for the communication of a serious and genuine message about bees' ongoing decline. As Josie Dale-Jones explained to me, by telling the story in a comical manner they hope to be "educating people in an engaging way and in a way that is slightly different … it's about having fun and having a laugh, but then realizing that there is an impact."

By adding the element of fun into the mix, *Me & My Bee* could be argued as pushing the boundaries as an act of storied-mourning: the show brings the grief of bees' story into connection with a more upbeat and comedic narrative. And yet, the show confronts and communicates the reality of bees' struggles as powerfully as any other story of bee decline I have encountered. Through adopting a humorous and fun tone *Me & My Bee* not only has the opportunity to engage a younger audience with the extinction narrative that this show examines, but is evidence of an environmental communication which, as Heise and Seymour call for, moves beyond traditional templates of elegy and tragedy by using humor to meaningfully show how we can all play a role in challenging loss and working towards achieving a more affirmative future. Thus, *Me & My Bee* is a show which not only resonates as an act of storied-mourning which, similarly to the other works studied through this article, tells a story which bears witness to loss and persuades audiences towards feelings of empathy, but is a show which demonstrates how creative tools can be used to make environmental narratives accessible to a wider audience and, in turn, help work towards greater inclusivity in environmental conversations.[20]

Another critical opportunity offered through performed forms of storied-mourning and which is particularly evident through the three examined projects, centers around their power to combine storytelling with developing people's capacity for environmental action. This directing of change can occur through the telling of imagined stories which help people discover their own ability to engage with pro-environmental actions. For example, in Hunter Green's project *Silencing the Virus* the audience members learn that it is only by staying apart from one another that they can remain uninfected. Although the power of this message resonates even more strongly in an era of social distancing requirements, the key purpose of this point is to highlight the significance of individual actions in achieving shared environmental aspirations. The installation experience seeks to instill the understanding that by working as a collective, with each of us engaging in small but significant behavior changes, transformative results can be achieved. Hunter Green stressed the importance of this sense of capacity for action to me, reflecting that "there's nothing worse than coming out of an experience feeling hopeless because you just don't feel motivated."

Laura Ryder's show, *The Bee Project*, explicitly demonstrates how one might engage with an action – in this case planting up ecologically barren areas – that will help bee species. Through the story it tells, the show makes clear that we each have the capacity to engage with actions which support local biodiversity, whether that be through literally

planting seeds ourselves or campaigning for the wilding of local environments. In a similar vein, *Me & My Bee* shows audience members how they can help bees by engaging in the simple yet powerful act of planting flowers which support insect biodiversity. Furthermore, in addition to their message about directly planting flowers, by framing the show as a political campaign party the show tacitly speaks to the broader potential of people to enact change through political avenues, whether it be through exercising their democratic rights as voters or as leaders of political change themselves.

Likely due to their shared focus on the message of sustaining biodiversity through planting flowers, both *The Bee Project* and *Me & My Bee* also provide their audience members with a direct means through which to engage with this pro-environmental act: in both instances audience members are handed packets of wildflower seeds as they exit the performance venue. *Me & My Bee* crew member Lucy Adams explained that their intention in doing so is to leave audience members with the message "that the movement for change for the bees starts in your own back garden." Producer and actor Josie Dale-Jones further elaborated on this, telling me that giving out seeds may be "a small thing, but it makes a big change." For Laura Ryder, this action is directly linked to her desire to combine the seriousness of her message with the sense that one might feel hopeful for the possibility of change and renewal. As Ryder explained to me, she feels it is "important to give audiences some kind of sense of hope. So we give them little bee friendly seeds at the end." Although the shifts needed to achieve a pro-environmental society go far beyond the everyday behaviors of individuals (see: Fahlquist), Ryder emphasized that she chose to encourage this act because she wanted to give people the chance to engage in an action that feels attainable and realistic. Indeed, Ryder went on to tell me that she has "had loads of people since sending us pictures and planting flowers … which is just really lovely, to see that people are taking steps towards that."

The need to move beyond only addressing the "issue" in the stories we tell is carefully detailed by De Meyer et al., who show how stories which demonstrate how one might act in connection with environmental challenges are critical for building people's capacity for action. De Meyer et al. break away from the notion that increasing people's scientific knowledge of an issue is an adequate or even necessary precursor to action, and instead focus on the necessity of sharing stories which demonstrate people's agency to engage with concrete environmental actions. The evidence for this need to prioritize action-focused stories lies in theories of psychology and neuroscience. These reveal, firstly, that it is our actions which predominantly shape our attitudes and willingness to engage with further pro-environmental behaviors (see: Ertz and Sarigöllü; Lauren et al.; Van der Werff et al.) and, secondly, that we often develop our capacity to act through witnessing others engage with said actions (see: Doherty and Webler). It is thus argued by De Meyer et al. that stories which demonstrate people engaging with an environmental action can inspire the audience of said story to engage with that same action themselves. This initial decision to engage with an environmental action can be the catalyst for a self-persuasive process in which the initial action triggers a sense of self-justification, which then leads to further action and, in turn, deepens a person's overall levels of environmental engagement.

What is particularly exciting to note is that, through providing audience members with the *direct* resources to pursue a pro-environmental action, both *The Bee Project*

and *Me & My Bee* demonstrate how performed stories can add yet another dimension of experience to the action-focused stories proposed by De Meyer et al. This is an experience which is made possible through the facilitation of audience members' literal engagement with a performed action. Naturally, this is an opportunity which relies on the possibility for there to be an in-person audience: a possibility which we no longer take for granted. Yet, in times when it is possible to have in-person audiences, live performance events have a distinct opportunity to support people to tangibly engage with an action or issue, thus further enhancing the possibility for developing people's sense of personal agency in connection with ecological crises. Through this interaction with physical forces of change we explicitly witness how performance can interact with and influence our biological, material, social, and cultural realities (Brisini).

Conclusion

Nobody can say for certain what the fate of bees will be. Perhaps bees will prove resilient to current ecological challenges and survive for many more millions of years, perhaps they will diminish entirely over the course of this very century. However, while it is not possible to determine the direction of bees' futures, it is possible to see how people are using creative tools to intervene in the current trajectory of bees' futures by disseminating knowledge of bees' plights and motivating public action. Indeed, by examining how performance projects can bring qualities of storied-mourning into connection with accessible storytelling and tangible action, this article has highlighted the significance of creative performances for bearing witness to bees' decline, for opening up spaces for emotional responses to loss, for asking demanding questions of our responsibility for bees' current precarity, for extending conversations around bees' lives to more diverse audiences, and for inspiring direct ecological action. Thus, despite the differences between the three creative projects examined they are all connected by one glaring similarity; each project is a hopeful intervention into the world as we know it, drawing on creative techniques of performance, play, musical composition, and more, to tell stories which interrupt people's relationship with bees and serve as a catalyst for generating meaningful change.

My observation of performance as a tool for intervention is one that is rooted in studies of bee-inspired creative acts. The limitations of this study are thus important to acknowledge: our relatively unique social relationship with bees, bees' notable physical presence in our lives, and the established dominance of bees across extinction narratives (see: Moore and Kosut) are all factors that have an influence over the precise intentions and outputs of these creative works. If performance artists were to turn their attention to more typically "unloved" species, whose presence might commonly inspire disgust or disengagement (Rose and van Dooren), it is likely they would encounter much greater challenges with regard to inspiring audience engagement.[21] Yet, despite this limitation, my proposed understanding of these creative projects as forms of intervention has important repercussions beyond this research in the realms of both environmental studies and art itself. By illustrating how these performance projects resonate as acts of storied-mourning while also making environmental narratives more accessible and supporting direct action, this work speaks to the fundamental truth that creative acts play a critical role for bringing knowledge of environmental and social crises into the public

realm, for offering spaces for both mourning and questioning, for providing an avenue for input from a diversity of voices into environmental debate, and for facilitating genuine everyday environmental change. The role of creative projects in facilitating public narrative and action around ecological issues should therefore not be undervalued. In a world that is being critically changed through experiences of loss we need to both value and encourage the use of creative storytelling as a way to narrate, experience, mourn, and, ultimately, resist ongoing extinction events.

Ethics

Full ethics approval was given from the University of York Department of Theatre, Film, Television and Interactive Media Ethics Committee to conduct this research. No ethics approval number is provided as part of this approval process. As the research does not study sensitive or illegal topics, work with vulnerable individuals, require a Criminal Record Bureau (CRB) or Disclosure and Barring Service (DBS) check, or involve deception or invasiveness, it was approved under standard ethics clearance. Informed consent was provided by all participants.

Notes

1. By referring to "anthropogenic action" as a driver of extinction, I wish to make it clear that the global human population cannot be homogenised as one group. The need to understand global environmental challenges as the result of specific communities or individuals, as well as the need to recognise how people are disproportionately impacted by acts of environmental harm, is well-advocated across environmental literature (see: Bathiany et al.; Nixon).
2. Fridays for Future is a global youth movement initiated by climate activist Greta Thunberg. The movement began in 2018, when Greta Thunberg and other young activists spent three weeks sitting in front of the Swedish parliament.
3. Extinction Rebellion is a community that leads non-violent protests against current extinction and environmental crises. Since its conception in 2018 the community has inspired a global following, and become one of the most famous environmental movements in recent years.
4. The online archive *What is Missing* was developed by Maya Lin to draw attention to experiences that are no longer possible due to environmental damage. The website allows people to locate areas on a map and write stories about the memories they formed there.
5. RDLS is an annual event which brings together people to creatively explore the stories of threatened species and communities. It is observed on the 30 November and marked through various creative events across the world.
6. PARDICOLOR is a creative arts fund started by the organisation Wildlife Asia. The fund supports artists and communities in Southeast Asia and India to create art exploring issues around habitat loss and species endangerment.
7. This exhibition, which took place in 2019, saw the veiling of extinct animals in the museum's World Wildlife gallery.
8. Cai Guo-Qiang's art installation *The Ninth Wave* was created in response to environmental crises in China, specifically an incident in which over 16,000 dead pigs were found floating in Shanghai's Huangpu River. The installation took the form of a dilapidated fishing boat that carried on board sculptures of 99 endangered species (Duggan).
9. Although the examples I provide span work across the globe, it is critical to acknowledge that there is still much work to be done towards diversifying extinction-focused movements and projects.

10. Culture Declares Emergency is a movement of individuals working across arts and culture that are visibly declaring a climate and environmental emergency.
11. These formal research interviews were conducted between 2018 and 2019, and I use the data to complement my own studies of the creative projects examined.
12. Writing from the perspective of a UK resident, one need not look far to stumble across people using their creative skills to narrate and respond to the decline of bees. From the installation of *The Hive* sculpture by Wolfgang Buttress at Kew Gardens, to novels and collections such as *The History of Bees* (Lunde), *The Bees* (Paull), *Bee Journal* (Borodale), and *The Bees* (Duffy), to the placing of bee-themed installations throughout a shopping district in London's Covent Garden (Wright), to the recent exhibit in London by art collective Food of War exploring honeybee suffering (Frankel), creative responses to bees have become a visible fixture of the UK cultural landscape. This claim is echoed across literature reflecting on creative responses to bee decline (see: Moore and Kosut; Burnside; Swan; Rigby 282).
13. While my longer thesis involved interviews with people working with a variety of creative techniques, this article concentrates its focus on exploring performance as a method for engaging with extinction crises. Accordingly, I only present data from my interviews with artists who created performance-based works.
14. Although Laura does not state what type of bee she meets, leaving this to people's imagination, in her interview she described how the majority of her project research centred around learning about honeybees.
15. For example, while Nagel famously makes the case that although we can imagine what it is like to be another species, we can never *truly* embody their conscious mental state, Gruen discusses the possibility for entangled empathies. This considers that we might enter into ethical relationships with nonhuman species not through realising our similarities, but through recognising how our worlds are co-constructed and shaped through one another.
16. Hunter Green composed this music for a previous project titled *Bee Composed*. The music overlayed a piano piece with the sounds of honeybees living in a hive which Hunter Green had created out of an old piano.
17. This focus around what we can learn from honeybee behaviour is explored in even greater depth in Hunter Green's recent project *She Heals* ("She heals"). This project, which directly builds on the work of *Silencing the Virus*, develops an interactive installation piece which mimics the hive, with the view of helping us explore what we can learn from bees about how to cope with a virus infection.
18. The *Extinction Studies: Stories of Time, Death and Generations* volume, edited by Rose, van Dooren, and Chrulew, is an example of a key text in this literary genre. This volume of work was developed in response to the conviction that this time of rapid extinction requires creative and meaningful responses which explore how extinction processes are being driven, witnessed, experienced, and challenged.
19. A book examined by Heise which uses humour and storytelling to explore extinction is *Last Chance to See* by Adams and Carwardine.
20. I would emphasise that the fight for genuine inclusivity and accessibility across many spaces and sectors – creative, environmental, and many others – is an ongoing battle.
21. How audiences respond to performances which engage with non-charismatic species presents an interesting area for further research.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This work was supported by the White Rose College of the Arts and Humanities, a Centre for Doctoral Training supported by the Arts and Humanities Research Council.

Data availability statement

Due to the nature of this research, participants of this study did not agree for the full dataset to be shared publicly so supporting data is not publicly available. However, the data is secured in line with the University of York's research data management guidelines as a closed dataset. Dataset doi:10.15124/cec599fa-67d3-4ab2-a97d-3519c9a91696.

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