UNIVERSITY OF BIRMINGHAM

University of Birmingham
Research at Birmingham

Human-animal connections

Clark, Janine Natalya

[Link to publication on Research at Birmingham portal](#)

Human-animal connections: expanding and cross-worlding relational approaches to resilience

Janine Natalya Clark

Published online: 21 Dec 2023.

Submit your article to this journal ⊙

Article views: 68

View related articles ⊙

View Crossmark data ⊙

Human-animal connections: expanding and cross-worlding relational approaches to resilience

Janine Natalya Clark

Birmingham Law School, University of Birmingham, Edgbaston, Birmingham, UK

ABSTRACT

Relationships are a major theme within resilience research. Little attention, however, has been given to human-animal relationships – except in the narrow and anthropocentric sense of how they support human wellbeing and help to reduce human trauma. This interdisciplinary article takes a completely different approach. Its core aim is to demonstrate that human-animal relationships are significant for how we think about resilience – and about relationality itself. Ultimately, it underscores the importance of analysing resilience and relationships within multispecies and posthumanist frameworks that respect and reflect crucial connectivities, entanglements and mutualities between human and more-than-human worlds (cross-worlding). The article uses two original case studies to develop its core arguments. The first focuses on the ongoing war in Ukraine and human relationships with companion animals. The second centres on the work of the *Mama Tembos* in northern Kenya and human relations with wild animals (elephants).

Introduction

> We are in the midst of webbed existences, multiple beings in relationship. (Haraway 2008, 72)

In her passionately written book *Elephants on the Edge*, the ecologist and psychologist G.A. Bradshaw begins with a story about a childhood visit to an animal park when she was eight or nine years old. There were three chimpanzees in a cage, she recalls, and one of them was repeatedly made to perform for the park visitors; his keeper would invite someone to come and stand in front of the chimpanzee and would then ask: 'Mirror, mirror on the wall, who is the fairest of them all?' In response, the chimpanzee would wave his arms and grin, as if imitating the visitor in front of him. The watching crowd would giggle in amusement. When Bradshaw herself was invited to stand in front of the ape, by which time most of the crowd had moved on to look at other animals, he refused to perform, much to his keeper's frustration. As Bradshaw turned to walk away, she felt a hand on her arm. In her words:

> It was the chimpanzee. I turned to see him looking at me, and he made, as much as I could tell, a beautiful smile, his eyes soft. It lasted only a moment because the keeper started yelling and the chimpanzee's hand quickly withdrew. But in the split second that our gazes held, we had shared an understanding ... Despite the bars separating us, I felt closer to him than to any of my own species pressed alongside. (Bradshaw 2009, xiv)

This powerful and evocative story about cross-species connections provides an important introduction and starting point for the present work, which takes such connections as its central focus. More specifically, this interdisciplinary article examines the relevance of human-animal connections for resilience, broadly defined here as 'a *dynamic process encompassing positive adaptation within the context of significant adversity*' (Luthar, Cicchetti, and Becker 2000, 543; emphasis in the original). There exists a wealth of scholarship exploring resilience, and emphasis is frequently placed – in various ways – on the importance of relationships (Hartling 2008; Jordan 2023; Quinn et al. 2021). This accent on relationality, however, seldom extends to human-animal relationships; and when these relationships are discussed, the focus is typically on the benefits to *human* wellbeing (see, e.g. McDonald et al. 2022; Walsh 2009).

This article, in contrast, offers something different and novel. Eschewing an anthropocentric approach that prioritises human needs, it emphasises the significance of human-animal relationships for how we think about resilience – and about relationality itself. In so doing, it draws on two case studies. The first case study is about human-animal relationships and the war in Ukraine. Although war is one of the major adversities discussed and explored within resilience scholarship (see, e.g. Betancourt and Khan 2008; Kimhi et al. 2012), little attention is given to how its myriad effects powerfully reverberate across human and more-than-

CONTACT Janine Natalya Clark j.n.clark@bham.ac.uk

human worlds. It is important, therefore, to include in this research a war-related case study, and the relative newness and contemporaneity of the war in Ukraine make it a particularly appropriate and original choice. The second case study centres on the *Mama Tembos* in northern Kenya and their work with elephants. This case study is also highly original; very little has been written about the *Mama Tembos*, especially in relation to resilience (rather than human-wildlife conflict). These two case studies are purposely very different from each other, but they highlight some common themes. Weaving these themes together, the article ultimately demonstrates the importance of analysing resilience and relationships within posthumanist frameworks that respect and reflect crucial connectivities, entanglements and mutualities between human and more-than-human worlds (cross-worlding). Fundamentally, resilience has a 'multispecies future' (Haraway 2008, 27).

The article indirectly builds on two particular strands of existing resilience scholarship. First, there is growing research examining some of the cultural dimensions and aspects of resilience (see, e.g. Eggerman and Panter-Brick 2010; Ungar 2013). Such work is an important part of pluralising how we think about resilience, and this article makes its own contribution in this regard. Its emphasis on relationality is quintessentially a 'pluriversal relationality' that accentuates the need for resilience thinking to embrace 'different cosmologies, each with different understandings of the relationship among all living beings including humans and the cosmos' (Trownsell, Behera, and Shani 2022, 787).

Second, there exists an expansive body of resilience scholarship focused on inter-connected social-ecological systems (SESs). As Forbes et al. (2009, 22041) note, 'SESs emphasize the concept of humans in nature, that the delineation between social and ecological systems is artificial and arbitrary, and require integrated approaches to analysis.' While the concept of SESs provides an important framework for thinking more holistically about the impacts of shocks and stressors, and adaptational responses to them, research on these systems has thus far given little attention to human-animal relationships per se. In focusing on these relationships, this article draws out some of the deeper connectivities between human and more-than-human worlds that are largely overlooked within analyses of SESs.

The article's first section centres on extant resilience scholarship. Rather than give a general overview of this literature, which is vast and highly diverse, it centres the discussion around three key thematic areas that are central to this research – namely, relationships, human-animal relationships and SESs. This is important foundational work on which the rest of the article builds – and through which its significance and originality are made clear.

The second section looks more deeply at human-animal relationships and resilience by focusing on the two aforementioned case studies of the war in Ukraine and the *Mama Tembos* initiative in Kenya. Building on the case study analyses, the final section reflects on the article's wider significance. First, it makes clear that this research challenges – in novel ways – claims that resilience has become a form of neoliberal governmentality (see, e.g. Joseph 2013). In particular, it demonstrates the reductionism of such claims, which narrowly emphasise individualism and thereby overlook the relational and cross-world complexities of resilience. Second, and highlighting the fact that resilience is linked to health, it points to some important synergies and crossovers between this article's arguments about resilience and recent discussions about reframing the concept of 'One Health' as 'More-than-One Health' (see, e.g. Braverman 2022). Third, and relatedly, it underscores the relevance of posthumanism (Braidotti 2013) – which resilience researchers have thus far largely overlooked – as a framework for developing resilience scholarship in new multispecies directions.

The importance of relationships in resilience research

Xue, Wang, and Yang (2018, 487) have identified three stages of resilience research – an 'initial stage (1985–1994), developing stage (1995–2004), and prosperous stage (2005–2014).' This 'prosperous stage' has extended well beyond 2014, as evidenced by the continuing growth of resilience research. Scholars from disciplines as varied as human geography, ecology, archaeology and neuroscience have written about resilience. On one hand, this has led to criticisms, inter alia, that the concept of resilience has become 'increasingly vague and woolly' (Olsson et al. 2015, 6). Certainly, many different definitions of resilience exist (Southwick et al. 2014), and Baggio, Brown, and Hellebrandt's (2015) citation network analysis indicates that 'there are limited attempts at standardization across fields.' On the other hand, it is the diversity and richness of extant literature that contribute to making the concept of resilience so fascinating.

Notwithstanding the proliferation of articles and books about resilience during the last three decades, Ungar (2018) points out that 'very few publications offer conceptual bridges between research on resilience across systems.' Part of the originality of this article is that its approach to resilience offers 'conceptual bridges' across human and more-than-human worlds. Its accent on relationships is not itself unique, however. The purpose of this first section, therefore, is to situate the article within – and differentiate it from – a larger corpus of

resilience scholarship by focusing specifically on the crucial theme of relationships.

The growth of relational approaches

The importance of relationships is a salient narrative in resilience research. Quinn et al. (2021, 577–578), for example, examine resilience as 'an emergent property of community interactions and social relationships'; Afifi, Merrill, and Davis (2016, 664) maintain that resilience 'is primarily a process of calibration in relationships'; and Hartling (2008, 53) highlights 'specific ways to strengthen resilience through relationships.' This strong accent on relationships should be seen, at least in part, in the context of a larger shift that has occurred within resilience scholarship.

Some of the early work on resilience, grounded in the disciplines of psychiatry and psychology, focused overwhelmingly on character and personality traits to explain why some children were able to thrive and 'do well' despite adversity. These children, as Rutter (2023, 122) points out, were frequently described as 'invulnerable.' The larger point is that some of the first studies of resilience 'glorified rugged individualism – that Horatio Alger ability to "pick oneself up by one's own bootstraps" and succeed solely through one's own efforts' (Wright, Masten, and Narayan 2013, 16). As this field of research grew and diversified, however, the narrative changed and became more complex.

Increasingly, resilience is no longer conceptualised primarily as an individual trait (Gopal and Nunlall 2017, 64). Rather, it is framed as a process that involves multiple systems working together (Ungar 2018). As Masten (2021, 2) argues, 'Resilience is dynamic, always in flux, because the systems, processes and contexts involved are constantly changing through many interactions.' In other words, individuals – whether children and adolescents or adults – do not manifest resilience in isolation. They do so through their relationships and transactions with their social ecologies (environments) and with the myriad systems that constitute these social ecologies – including families, communities and institutions (see, e.g. Marie, Hannigan, and Jones 2018; Theron 2016; Ungar 2011).

Resilience scholars frequently stress the importance of relationships with reference to concepts such as social capital, social networks and (protective) resources. Tippens' (2020, 43) research, for example, focuses on urban Congolese refugees in Kenya, exploring the intricacies of their social networks and how they 'utilize relationships to access resilience-promoting resources.' Gopal and Nunlall's research centres on a small group of women temporarily residing in a shelter in Durban, South Africa, all of whom had experienced violence and abusive relationships. The study spotlights critical 'resilience-enabling resources within women's social ecologies' (Gopal and Nunlall 2017, 67), including the availability of community support.

The framing of resilience as a 'co-construction' (Twum-Antwi et al. 2020, 277) between individuals and their social ecologies is significant. Above all, it challenges the idea – particularly associated with critiques of resilience as a neoliberal project (see, e.g. Tierney 2015) – that the responsibility to 'be resilient' and to adapt to adversity and uncertainty falls on individuals (Ungar 2011, 6). However, relationships are often narrowly conceptualised. The focus is overwhelmingly on relationships and resources that aid *human animals* in dealing with and adapting to shocks and stressors. Comparatively little attention is given to the more-than-human worlds with which human well-being is intrinsically entangled – or to 'multiple forms of relation, human and not human' (Tsing 2022, 16). This anthropocentrism also extends to studies of resilience that look directly at human-animal relationships.

Human-animal relationships, trauma and resilience

There are many studies exploring the benefits of human-animal relationships, often with a particular focus on children and young people who have suffered adversity and major challenges (see, e.g. Mueller and Schmid Callina 2014; Yorke 2010). Evans and Gray (2012, 603) point out that many children's stories – such as Winnie the Pooh and Black Beauty – 'are based on the premise that there is some inextricable link between children and their nonhuman counterparts.' Moreover, it has been shown that animals can help children to disclose or speak about experiences of trauma (see, e.g. Walsh 2009, 495).

Research has also examined, more broadly, some of the ways that animals facilitate recovery from trauma in adults (Gorman and Cacciatore 2023; Tedeschi and Jenkins 2019; Yorke, Adams, and Coady 2008). McLaughlin and Hamilton's (2019) research in Australia, as one illustration, found that service dogs can be very positive for war veterans with post-traumatic stress disorder (PTSD), helping to reduce their levels of anxiety and depression, improve their sleep and give them a sense of routine and purpose. Additionally, scholars have discussed at length some of the important roles that animals can play in disaster contexts (Thompson 2013; Trigg et al. 2016). For instance, Zottarelli's (2010, 112) research on human-animal relationships in the context of Hurricane Katrina in 2005 revealed that residents of New Orleans who lost companion animals displayed much higher levels of psychopathology – including

acute stress and symptoms of PTSD – than those who did not experience such loss. The author thus makes clear that 'there are significant human health and safety consequences of pet loss' (Zottarelli 2010, 120).

Many such studies, however, are deeply anthropocentric (Gorman 2019, 314). Critically missing from research on animal-assisted therapy (AAT) and animal-assisted activity (AAA), for example, is a comprehensive discussion of the effects that such programmes might have on the 'animal "volunteers" themselves' (Hatch 2007, 38). Highlighting this, O'Haire et al. (2019, 34) point out that 'Interventions that place an animal at the center of a family working through conflict, and/or encourage an individual to share their traumatic experiences with the animal present, may pose a stressful experience for participating animals.' A cognate concern is that studies of human-animal relationships with a pronounced human-centred bias overlook, or at least fail to sufficiently acknowledge, the individuality of non-human animals, their stories and distinctive biographies (Gorman and Cacciatore 2023, 171; Wright et al. 2009, 516) – including past experiences of psychological and emotional trauma (Bradshaw 2009, xix; Gillespie 2018, 5). In short, discussions about human-animal relationships – and the benefits of these relationships – frequently foreground *human* health, wellbeing and needs, thereby de-centring and marginalising the interests of non-human animals (Zamir 2006, 184–185). At a minimum, it is essential to acknowledge that there is 'inevitable multi-species entanglement' (Kamenshchikova et al. 2021, 314) in the very notion of health. Significant in this regard are the concepts of 'One Health' and especially 'More-than-One Health' (see, e.g. Cole 2021; Wolf 2015), which the final section examines.

Some studies of human-animal relations specifically invoke the concept of resilience (see, e.g. Mueller and Schmid Callina 2014; Tedeschi and Jenkins 2019, 7; Walsh 2009, 482). Centred on a community sample of pet owners ($n = 392$) and non-owners ($n = 146$) in Australia, Hill, Winefield, and Bennett's research has found that simply having a pet does not necessarily result in higher levels of resilience. The authors make clear in this regard that the nature of the human-animal relationship crucially matters – and that a very strong or very weak human-animal bond (HAB) may actually be linked to 'a reduced capacity to build resilience and work through adversity' (Hill, Winefield, and Bennett 2020, 736). They also demonstrate that while the HAB does not have a moderating effect on an individual's perceived level of social support, it may 'act as a substitute for certain elements of human social support, such as emotional and social supports, that contribute to increased levels of resilience' (Hill, Winefield, and Bennett 2020, 736).

Burton, Qeadan, and Burge's research focused on 10 US war veterans with PTSD who, in addition to receiving standard ongoing PTSD therapy, had six weeks of equine-assisted psychotherapy (EAP). Comparing these veterans with a control group of 10 war veterans receiving only standard ongoing PTSD therapy, they hypothesised that the 10 veterans on the EAP programme would demonstrate reduced PTSD symptoms, increased psychological resilience and changes in salivary cortisol (a stress hormone). Although, ultimately, the data did not prove this hypothesis, the authors maintain that 'This study supports equine therapy as a potentially efficacious alternative for veterans suffering with PTSD' (Burton, Qeadan, and Burge 2019, 15).

Studies such as these, while offering interesting insights into the role (or potential role) of more-than-human actors in supporting resilience, also have an anthropocentric bias. In Burton, Qeadan, and Burge's aforementioned research, for example, the focus is solely on the veterans. There is no acknowledgement of the horses' own needs or of the possible effects of EAP on them. As Matamonasa-Bennett (2015, 30), an Indigenous scholar, pertinently argues,

> In many models of equine-assisted therapy, the reactions and behaviors of the horses are attributed to the emotional states of the clients they are working with, discounting that the horses may be having their own negative or positive reactions in the therapy session.

By prioritising and centring human trauma and wellbeing, we thereby contribute to perpetuating hierarchical and binary ways of thinking (see Gillespie 2018, 7). In turn, we neglect the importance – and here there is much to learn from Indigenous cultures and cosmologies (Matamonasa-Bennett 2015, 32–33) – of forging and cultivating relationships that give human and non-human animals 'an opportunity to flourish' (Gorman and Cacciatore 2023, 174). The crucial point is that resilience develops in the context of 'relational landscapes' (Bradshaw 2010b, 414), the dynamics of which are never just one-way.

This discussion would be incomplete, therefore, without acknowledging the abundance of scholarship on SESs (social-ecological systems). The concept of SESs is highly pertinent to this research and the thematic of relationality that runs through it. As the final part of this section will now explore, however, research on SESs itself has some limitations and does not go far enough.

Relationships and social-ecological systems

The concept of SESs accentuates linkages and interdependencies between social and ecological systems, in the sense of how they affect and influence each other (Colding and Barthel 2019; Folke 2006) – although there is considerable variation in terms of

how the interactions between these systems are viewed (see, in particular, Binder et al. 2013). The idea of SESs, thus, is intrinsically holistic and relational, acknowledging the diverse components and actors within these systems. Discussions about sustainability – a prominent thematic within SESs research – are one illustration of this. Leach et al. (2018), for example, argue that 'The shift from perceiving people and nature as separate parts that occasionally interact, to seeing them as intertwined SES, across the whole planet, provides opportunities for articulating equity and sustainability within an innovative complex system framework.'

Notwithstanding the social-ecological connections that such research underscores, this does not mean that social systems and ecological systems are always assigned equal weight or importance. In their comparative study of 10 different conceptual frameworks for analysing SESs, Binder et al. (2013) identify 'six that conceptualize the ecological system from an anthropocentric perspective: the ecological system is seen as a provider of services that increase human well-being.' There are other asymmetries too. Baker et al. (2022), for example, point out that 'there has been a tendency over time to over-emphasize the influence of human agency.' As an illustration of this, there is frequent discussion about the 'management' of SESs. In this way, considerable power is accorded, conceptually and practically, to human stakeholders and their decision-making (see, e.g. Stringer et al. 2006). Not only is non-human agency thereby marginalised, but so too, by extension, are worldviews – in particular those of Indigenous peoples – that are based on 'kincentric' perspectives and ways of knowing. As Bhattacharyya and Slocombe (2017) argue, kincentric approaches that recognise non-human animals as kin with their own decision-making agency 'remain marginal to the structures, discourses, and professional practices that frame and inform mainstream conservation planning and wildlife management.'

It is also noteworthy that SESs are frequently discussed in terms of, inter alia, adaptive cycles and cross-scale effects (Chaffin and Gunderson 2016), thresholds (Walker and Meyers 2004) and tipping points (Riekhof et al. 2022). Analyses of these systems, thus, are not always easily accessible as they do not necessarily translate well across disciplinary boundaries. Colding and Barthel (2019), remarking on the fact that there is still no unifying definition of SESs, comment in this regard that 'Whereas most scholars may have a pretty good understanding of what a social-ecological system entails, the lack of a more detailed definition is a drawback when communicating it to a broader multidisciplinary audience.' Relatedly, SESs are often framed as complex adaptive systems (CAS) – meaning systems composed of multiple, dynamic and adaptive components – and as Preiser et al. (2018) highlight, 'finding one's way through the theories and concepts that constitute CAS research is often a challenging journey.'

This emphasis on complex system dynamics means that human-animal relationships per se are not a dominant theme within research on SESs. It also thus means that analyses of deeper and more intimate connections between human and more-than-human worlds remain largely missing from existing research on SESs. The core aim of this article is precisely to demonstrate the significance of these connections for thinking in more relationally balanced, multispecies and posthumanist ways about resilience. As Gibson-Graham, Hill, and Law (2016, 707) argue, 'In a diverse economy, humans, non-human species and natural elements can all be seen as actively co-producing well-being and care.'

Resilience and cross-world relationships: two illustrative case studies

Niemann's book *Birds in a Cage* centres on four British prisoners of war, interned at Warburg in Germany during World War II, who formed a birdwatching group. The process of observing, sketching and making notes about different birds, and discussing them with each other, was a key part of how the men dealt with their experiences in the camp. As the author notes, 'Through natural history, and especially birds, they regained self-respect and a passion for living' (Niemann 2013, 1). The men's situation inexorably limited their interactions with the birds they observed, whose freedom contrasted starkly with their own confinement. According to one of the prisoners, John Buxton, part of the joy of watching the birds 'was that they inhabited another world than I' (in Niemann 2013, 58). Outside the 'cage' of the camp, however, the men's relationships with birds changed, becoming less about human needs and more about giving something back. One of them, Peter Conder, assumed the role of director of the Royal Society for the Protection of Birds (RSPB). Another, George Waterson, became the director of the RSPB in Scotland and one of the founders of the Scottish Wildlife Trust. Ultimately, thus, the men's stories – although they are not discussed in this way – reflect important dynamics and reciprocities between human and more-than-human worlds, and the interconnectedness of resilience processes across these worlds.

The aim of this section is to further explore and unpick this interconnectedness using two case studies. While many studies of human-animal relationships involve so-called companion animals (including dogs, cats and horses), this article adopts a broader approach aimed at capturing more of the diversity of these relationships. The first case study looks at human relations with companion animals in the context of the ongoing war in Ukraine, while the second is about human relations with wild animals (elephants) in

northern Kenya. Most of us will have far fewer opportunities to interact with and forge relationships with elephants or other wild animals than to spend time with and form connections with companion animals. We are, however, in a relationship with everything around us (Tàbara 2023; Yunkaporta 2019, 169). What follows, thus, is less about the 'accessibility' of the relationships discussed and more about their relevance for enriching how we think about and position resilience.

Human-animal relationships and the war in Ukraine

On 24 February 2022, Russian forces illegally invaded the sovereign state of Ukraine. Since then, at least 10,000 civilians have been killed (United Nations 2023) and large parts of the country have been destroyed. One aspect of the war in Ukraine that stands out is the large number of images and stories involving human and non-human animals. A Ukrainian family huddled in a tent in Poland with their two dogs (Packham 2022). A cat, wide-eyed and frightened, on a camp bed with its sleeping owners at Kraków train station (Bičanski 2022). The young couple who fled their home in Irpin with 19 dogs (Boffey 2022).

Millions of people escaped the fighting during the early months of the war and many Ukrainians crossed borders with their animals. This was possible because various host countries modified and relaxed their entrance regulations (for example, by changing rules on quarantine) – a policy that Sandvik (2023, 293) has termed 'pet exceptionalism.' According to her, 'The humanitarian rationale was that, for distressed refugees – overwhelmingly women and children arriving without partners, sons or fathers – bringing companion animals would lessen trauma and enhance wellbeing.' It was a policy, in other words, that had an anthropocentric bias; companion animals mattered to the extent that they could be of utility and benefit to humans seeking safety. Research by Miliutina et al., however, tells a more complex story about the psycho-emotional effects of having an animal. Based on interviews with 115 families – all of which had at least one animal – between February and April 2022, the authors found, inter alia, that:

> 15% of adults experienced an improvement in their emotional state (residents who remained in Kyiv), 23% had a sense of shame (associated with inconvenience, that animals cause to other people), 42% have a feeling of anxiety (associated with concern for the life and health of an animal), 20% have a feeling of guilt in relation to abandoned and (or) dead animals. (Miliutina et al. 2023, 505)

Animals are now being used in Ukraine to help people deal with stress and traumatic experiences. The United Nations Children's Fund (UNICEF 2023) has organised canine-assisted therapy classes for children in the city of Kharkiv; and the organisation Four Paws International has trained a former stray dog from the city of Lviv, named Busia, to provide emotional support to injured Ukrainian soldiers. According to a psychologist at the organisation, 'In our AAI [animal assisted intervention] programme, Busia was specially trained to respond to human reactions and very clearly identifies people who are tense, stressed or traumatised' (Four Paws International 2022). Some Ukrainian soldiers have also received therapy sessions with horses (hippotherapy) (Al Jazeera 2023). These programmes are important, but they are anthropocentric in their focus and underpinning *raison d'être*. The animals involved necessarily have their own pasts and histories, and it is therefore essential not to prioritise the benefits of the programmes to the humans involved without also considering and being sensitive to the impact on the animals themselves. In other words, we cannot overlook what these programmes are 'doing for, or to, the animals' (Hatch 2007, 38).

The larger point is that war and armed conflict reach into, affect and extend across human and more-than-human worlds. Reflecting and illuminating this is a very rich body of scholarship exploring more-than-human dimensions of warfare, including the various roles that animals play in war, the harms they suffer and the significance of human-animal relations (see, e.g. Cudworth and Hobden 2015; Forsyth 2017; Leep 2018; Pinto-García 2022). This scholarship has given little attention to resilience – although it does look at some of the many ways that animals can offer (especially emotional) support to humans during war (see, e.g. Pearson 2019; Webb et al. 2020). However, an extension of Forsyth's (2016, 798) argument that 'War breeds experiences of hybridity' is that war contributes to hybridising (and thereby collectivising) resilience, by breeding shared experiences of adversity and fostering relations of care and support between human and more-than-human actors.

Illustrative of this are some of the heart-warming stories from the war in Ukraine of people and animals comforting and looking after each other. Zina Richkova, for example, is a 71-year-old woman living in the village of Oleksandro-Shultyne in Donetsk, part of Ukraine's Donbas region. Russian shelling destroyed the barn where she used to keep her animals and she now lives with her three hens and rooster in her kitchen. The care that she extends to her animals is crucial to their health and wellbeing, particularly as the village is situated in an area close to where intense fighting continues. At the same time, however, her animals also support her and her own wellbeing. 'With them around', she explains, 'I have somebody to speak with.' Further expanding on this, she adds that 'When I hear in the morning the rooster singing, it means I am alive' (in Varenikova 2023). Her use of the

word 'alive' particularly stands out as highlighting synergies of human and more-than-human rhythms. As Gordon (2022, 213) argues, rooster crows are 'energetic expressions of embodied relationality.'

Angela is a 75-year-old woman who lived through and survived the brutal Russian siege of Mariupol during the early months of the war in Ukraine. During the siege, she lived in the basement of her apartment block with 34 of her neighbours. They have since left the building and only Angela remains there. As her top-floor apartment has no windows and is uninhabitable, she continues to live in the basement, doing her best to make it homely. She also now cares for many stray cats and dogs left behind. A photograph (see Walker et al. 2023) shows Angela huddled among blankets and plastic bags, dressed in a red coat and black hat; 'The thermometer by the bed shows 4C' (Walker et el. 2023). In her arms, she cradles a brown and white cat, holding it close to her chest. It is an incredibly moving picture of two sentient beings brought together through shared adversity and trauma, comforting and needing each other because they have no one else. It is also, thus, another illustration that 'we are infinitely entangled in very alive webs of relations, connections, and reciprocity' (Abbott 2021, 1068). These webs are central to understanding resilience as a process with fundamental cross-world dynamics.

There are also many stories – as well as photographs (see, e.g. Radio Free Europe/Radio Liberty 2023) – of Ukrainian soldiers on the front line taking in and looking after stray and abandoned animals. Oksana Yerema, a Ukrainian woman living in the city of Bashtanka in the municipality of Mykolaiv, has told the story of how a stray dog in her neighbourhood gave birth to 10 puppies and brought them to her. No one felt able to look after the puppies and Yerema's own home was destroyed. She therefore decided to give a couple of the puppies to Ukrainian soldiers. When asked why, she explained: 'The soldiers need support as never before and the puppies need genuine love. And I feel that these need each other now, in these hard times' (in The Telegraph 2022). A journalist from The Telegraph newspaper subsequently took two of the puppies to a military base outside Bashtanka. Welcoming the new arrivals, the commander of the artillery brigade opined: 'There is a misconception in war that everyone should be angry and ready to fight all of the time. But we try to remain humans and the puppies remind us that, in the end, it's love that wins' (in The Telegraph 2022).

Firsov (2022), a Ukrainian soldier, describes how a formerly stray dog, now named Yur, has become part of his unit. Reflecting on the animal, he maintains that 'when I look into his eyes, it's like looking at a wise old man who deeply understands everything going on around him' (Firsov 2022). It could be argued that Firsov is anthropomorphising Yur, but this is too simplistic. In her research about a bear, named Wojtek, who became 'a mascot, pet and officially enlisted soldier of the Polish Army' during World War II, Forsyth (2017, 496) refers to 'moments of correspondence between bear and human.' What Firsov's words illustrate, similarly, are 'moments of correspondence' between human and dog, in turn evoking deeper connections and reciprocities between human and more-than-human worlds as a crucial shared resource for dealing with shocks and stressors. Turnbull's research in Ukraine, although not focused on war, is also highly pertinent in this regard. Exploring the relationships between the more than 500 dogs living in the Chernobyl Exclusion Zone (created in 1986) and the guards who patrol the Zone, he maintains that they are helping each other to cope with 'life in a toxic landscape' (Turnbull 2020, 24).

Human-elephant relationships in northern Kenya and the work of the Mama Tembos

In 2011, the organisation Save the Elephants reported on the death of a female elephant in Kenya named Resilience. Both a mother and a grandmother, Resilience was around 40 years old and one of the dominant females in her herd. Her life was cut short due to a failed poaching attempt; she died from multiple gunshot wounds (Soltis 2011).

Kuriyan's (2002, 954) research in northern Kenya has revealed that when Samburu people come across elephant carcasses or remains, they lay green branches onto the grave as a mark of honour and respect. Such gestures point to deep affinities across human and more-than-human worlds. Indeed, a Samburu legend recounts how elephants once lived together with the Samburu in their homes and worked with Samburu women. As Kuriyan (2002, 953) explains, 'The elders, women, and youth asserted that the legend represents the closeness and familiarity that exists between the Samburu and elephants.'

This closeness and familiarity, however, have been increasingly challenged. Climate change, habitat loss or fragmentation and agricultural expansion are some of the key factors fuelling human-wildlife conflict, including conflicts between people and elephants. Drought and late rainfall, for example, substantially contribute to elephant crop-raids (BBC 2023). To cite the Sheldrick Wildlife Trust (2016) in Kenya, 'Not only are elephants frequently killed by mobs of angry people, but cornered elephants sometimes trample people, which only escalates the problem.' Common methods of trying to reduce human-elephant conflict include the use of electric fences and beehive fences (King et al. 2017). In Samburu in northern Kenya, the organisation Save the Elephants has adopted a different approach.

The *Mama Tembos* initiative involves a group of nine Samburu and Turkana women working together to protect wildlife corridors used by elephants (as well as other animals). Using GPS devices, the women patrol the local area, taking note of which corridors are most frequently used and looking for evidence of traps and illegal settlements that encroach on the corridors and their functioning. This is extremely important work, evidenced by the fact that various studies 'have found that a contributing factor of human – wildlife conflict has been the settlement of human populations into wildlife migratory corridors . . . or rather, the movement of people into previously unsettled areas as wildlife recolonize parts of their range' (Bond 2015, 312). *Mama Tembos* is a valuable conservation initiative and one that challenges the frequent exclusion of women as 'knowledgeable agents in community wildlife projects' (Goldman et al. 2021, 818). It is also, in several ways, about resilience.

First, many of the women have had to cope with substantial stressors in their lives, such as losing their husbands in tribal battles and bringing up their children alone. Their activities as *Mama Tembos* have not only provided them with a much-needed additional source of income but have also re-energised them, giving them a greater sense of their own self-worth. In the words of one of the women, Ann, 'We couldn't believe there was someone in the world who wanted to work with women. In this part of the world it's men first, so we were shocked when we heard that Save the Elephants wanted to work with us. We feel empowered by the opportunity. We are now teachers and ambassadors of our communities' (in Save the Elephants 2018). The women's work as *Mama Tembos*, in other words, can help them – financially and emotionally – to deal with life's adversities.

Second, the *Mama Tembos* programme, in contrast to some of the other previously mentioned approaches to managing human-elephant conflict, is not about protecting certain spaces from elephants. Rather, it is about protecting spaces widely used by these majestic pachyderms from human interference and development. This is highly meaningful as regards resilience in the sense that the free movement of elephants is crucial to their role as a keystone species within ecosystems. Elephants contribute to the health and resilience of plants, trees and other animals, for example, through long-distance seed dispersal (Campos-Arceiz and Blake 2011). When elephants are given the space and freedom to fulfil their ecological functions, moreover, this can positively influence how local people perceive them. According to Kuriyan's (2002, 953) research, 'The Samburu expressed that elephants benefit those who live among them, since they create paths to water, dig dams, and break branches that people can use for firewood.'

Third, and of particular significance for the purposes of this article, the *Mama Tembos* initiative is an approach to conservation that taps into deeper cross-species connections, consistent with the fact that 'Humans and elephants have shared a long history, living side by side in relative equanimity' (Bradshaw 2009, 55). The name of the initiative is itself telling in this regard; *Mama Tembos* translates as 'Elephant Mothers.' Through the women's valuable work, they are extending care to elephants – and educating others in their community to do the same. Mpayon, the leader of the *Mama Tembos*, is a singer who uses music to teach people about elephants and their importance. One of the songs, *L'Tome Nkaina* (Elephant Hands), has the words: 'Samburu let's all unite and hold the elephant's hand. Let's give our elephants paths to the river or ways through to the water holes . . . Let's take care of our nature like we do our domestic animals' (Save the Elephants 2020). Ann, one of the other 'mothers', has talked about the positive impact that the *Mama Tembos*' work is starting to have on elephant behaviour towards humans. As she reflects, 'We have discovered that the elephant is a friendly animal ... In the past, they wouldn't pass near homes because every time they passed they would be killed, but nowadays they pass near homes without any human interference' (in Welle 2020).

It was noted in the previous section that existing studies of human-animal relationships often focus on the benefits to human wellbeing and resilience. Similarly, more general research on resilience frequently explores the relationships between individuals and their wider social ecologies in the sense of the protective resources and support that the latter provide (see, e.g. Betancourt and Khan 2008, 318; Theron and Malindi 2010, 719). In contrast, what the *Mama Tembos* are doing is helping to repair and restore damaged relationships – including understanding and respect – between human and more-than-human worlds; and this work benefits the wellbeing of both, including in the sense of how they manage and absorb shocks and stressors. Ultimately, therefore, this case study, like the previous one, illustrates and supports Gorman's (2019, 321) argument that 'there are important opportunities to think more critically about how to practise interspecies relationships and practices in ways that are less parasitic, and instead framed more by attempts at producing opportunities for mutualistic flourishing.'

Looking at the bigger picture

A common criticism of resilience is that it has become fundamentally entangled with neoliberalism. According to Joseph (2013, 40), for example, resilience 'has been plucked from the ecology literature and used in a fairly instrumental way to justify particular forms of

governance which emphasise responsible conduct.' Mulhall (2016, 31), similarly, frames the concepts of resilience and wellbeing as 'a symbiotic neoliberal technology of self-responsibilization' that serves a wider austerity agenda; and Bowles (2022, 271) maintains that 'The resilient individual is a neoliberal individual … obligated to adapt to a harsh environment of failures and threats.' Such arguments – which are discordant with wider resilience scholarship and the growth of social-ecological and multi-systemic approaches discussed in the first section – are problematic for several reasons. Scholars have pointed, inter alia, to their narrowness (Bourbeau 2018), neglect of everyday expressions of resilience – including resilience as resistance (Ryan 2015) – and failure to address 'very Western-centred assumptions of what constitute threats and vulnerabilities and to which systems and communities' (Wandji 2019, 291).

Adding to such arguments, this article strongly counters reductionist framings of resilience as a form of neoliberal governmentality. Its accent on relationality and wider cross-world connections – explored through the case studies of Ukraine and the *Mama Tembos* in Kenya – directly challenges 'the individualising tendencies of the hegemonic neoliberal-resilience assemblage' (Herman 2016, 34). In particular, it highlights the Western-centrism and hubris of neoliberal arguments that disregard or give scant attention to relational ontologies and worldviews. Todd (2014, 232), for example, an Indigenous Métis scholar, refers to 'the embeddedness of humans and animals in shared social, cultural, political, and economic relationships'; and Busacca (2017, 314) underlines that 'many non-Western – especially hunter-gatherer – societies are characterized by peer-to-peer, relational attitudes toward both human and non-human beings.' The larger point is that when we acknowledge the reality of 'relational entanglement' (Chandler 2022, 160), approaches to resilience that strongly accentuate individualism make little sense.

What this article has also made clear, however, is that existing relational approaches within resilience scholarship themselves do not go far enough. Even though there is a prominent relational thematic within resilience research, as the first section discussed, relationships are often conceptualised in terms of protective resources/factors, feedback loops, SESs and so on. There is much to be gained from approaching relationality as a pluriversal concept reflective of different 'ontological and cosmological registers' (Trownsell, Behera, and Shani 2022, 800). As one example, resilience research has explored the importance of family relationships in helping to cushion some of the impact of shocks and stressors. Thinking about family relationships in a more pluriversal way would broaden the notion of family to include, inter alia, what Bird Rose (2011, 3) calls 'cross-species kinship.' In different ways,

the case studies analysed in the previous section themselves illustrate such kinship, showing how it is based on cross-world solidarities and the intertwining of human and more-than-human wellbeing.

This idea of entangled wellbeing is mirrored in the concept of 'One Health' (OH), a term first adopted two decades ago in the context of the resurgent threat of diseases (zoonoses) involving animal to human transmission. Embraced by the World Health Organization (WHO), which recently called on world leaders to 'increase political commitment and action to invest in the "One Health" approach' (WHO 2023), OH emphasises the interconnections between human, animal and environmental health. However, some scholars have taken issue with the concept. A common criticism is that although OH ostensibly offers a relational framework for thinking about health, at its core it remains largely anthropocentric. Van Patter, Linares-Roake, and Breen (2023), for example, argue that 'One Health is generally concerned with animal and environmental health not as ends in themselves, but as means to human health.' Similarly, in their research on antimicrobial resistance – an issue that is often discussed through a OH lens – Cañada, Sariola, and Butche (2022) underline that diagnosis, caring and treatment practices are 'being conducted in a way that prioritises the safety of humanity while subjugating the health of non-humans and the environment to that safety.'

A related set of criticisms are that OH primarily conceptualises health as the absence of disease (Van Patter, Linares-Roake, and Breen 2023), which is problematic for at least two reasons. First, it means that borders figure prominently in discussions about OH. As Hinchliffe (2015, 31) argues, 'barriers to transmission and contamination become the main technology through which health is delivered.' This concern with borders, in turn, reveals that OH is very much built on binary and hierarchical thinking that accentuates human/non-human boundaries (Davis and Sharp 2020). Second, the practical implementation of a narrowly framed OH aimed at disease control – which reflects larger power dynamics and has colonialist undertones – disregards Indigenous ways of knowing and being (Braverman 2022, 7). In particular, it neglects the fact that 'Many indigenous peoples have lived over centuries with a sense of integration reflected in sustainable and respectful environmental practices' (Baquero, Benavidez Fernández, and Acero Aguilar 2021; see also Davis and Sharp 2020).

There are growing calls, therefore, for a revised or expanded concept of OH that shifts the focus from zoonotic transmissions and how to control them to a reframed understanding of health and wellbeing as a 'multi-species endeavour' (Rock 2017, 321) reflective of human and more-than-human agency. Particularly pertinent in this regard are Braverman's (2022, 2) arguments for a 'More-than-One Health' that overturns the

anthropocentrism of OH and respects 'other ways of knowing the world.' That this article has made similar arguments of its own draws attention to important synergies between the concepts of resilience, OH and More-than-One Health that remain largely unexplored within extant scholarship. It is also highly significant – as a reflection of these deeper synergies – that proposals for an extended approach to OH frequently invoke posthumanism. Davis and Sharp (2020), for example, highlight 'a need to push the boundaries of OH, consider it as assemblage and incorporate posthumanist perspectives.' Braverman (2022, 11), for her part, maintains that posthumanism can help us to 'expand the conceptual spaces of One Health.'

Posthumanism, to be clear, is not a single school of thought. It is 'multiple' (Crellin and Harris 2021, 469) and, like resilience, it has been defined in a variety of ways (see, e.g. Braidotti 2013, 37–28; Haraway, in Gane 2006, 140; Wolfe 2010, xv). Most conceptualisations of posthumanism, however, are not anti-humanist. Rather, they underscore the limitations of humanism (Fox and Alldred 2020, 126) and they reject 'onto-epistemologies that render humans as categorically separate from the worlds they co-inhabit with proliferating forms of life' (Margulies and Bersaglio 2018, 104). Ultimately, this article's analyses point to the significance of posthumanism – which to date remains largely overlooked within resilience research – as a conceptual framework that both builds on and goes beyond SESs.

The posthumanist concept of assemblage is especially relevant. Crellin and Harris (2021, 473) maintain that human beings are one of many components that make up our world, and … they cannot be understood apart from the wider relational assemblages, and the specific historical processes, of which they are part.' Applying this idea to resilience not only challenges us to re-think the idea of the 'individual' – which further reinforces the problematic association of resilience with neoliberalism discussed at the start of this section. It also accentuates crucial collective dimensions of resilience as a process of 'lively interactive relationality' (Bird Rose 2017, 502) between multiple agencies. Fundamentally, posthumanism and the concept of assemblage are important for exploring and unpacking cross-species relationalities and the interplay between human and more-than-human worlds in the co-construction of resilience, health and wellbeing.

Conclusion

In fields of research that have traditionally overlooked animals – including International Relations, security studies and human geography – there is now an increasing emphasis on more-than-human worlds and the need for multispecies approaches and analyses (see, e.g. Cudworth and Hobden 2023; Gibbs

2020; Mitchell 2014). These developments provide the wider context for this article, which has examined human-animal relationships vis-à-vis resilience. It is not the first to do this. The particular approach that it takes, however, makes it distinctive from many existing studies. It has not focused solely on how these relationships can support human resilience and wellbeing. Using two original case studies, it has demonstrated the significance of human-animal bonds for how we think about resilience and the concept of relationality. Argent and Vaught (2022, 5) assert that 'We human investigators lean heavily on the brave, puny little hyphen between "human" and "animal", so small in comparison to the words it joins together.' Embedded within this 'puny little hyphen' are deep connections between humans and animals, reflective of larger synergies and mutualities between human and more-than-human words that remain substantially overlooked in resilience scholarship.

There is, as this article has acknowledged, a substantial corpus of literature on SESs. The systemic focus of this literature, however, means that it does not capture and address some of the deep and intimate cross-world relationalities – which are central to many Indigenous cosmologies – that this research has explored and emphasised. It is also striking that scholarship on SESs has engaged very little with posthumanism, even though these systems can themselves be viewed as assemblages (Lejano 2017). This article has used its analysis of human-animal relations to propose that posthumanism offers an important conceptual framework for (further) pluralising resilience research and promoting collective ways of thinking about resilience as a complex assemblage involving human and more-than-human agencies.

This, moreover, is a bigger argument that goes beyond resilience and how we think about it. Ultimately, it points to the need for a paradigm shift from a 'Western view of dominance' that positions non-human animals 'as inferior or allows for their exploitation' (Matamonasa-Bennett 2015, 24). The importance of this shift reflects the high stakes involved. This article began with Bradshaw's account of a childhood encounter with a chimpanzee in an animal park. It ends with her exhortation that 'we are compelled to find other models of living among animal kin that will not perpetuate the social and ecological holocausts destroying the planet today' (Bradshaw 2010a, 28).

Disclosure statement

No potential conflict of interest was reported by the author.

Notes on contributor

Janine Natalya Clark is Professor of Transitional Justice and International Criminal Law at the University of Birmingham, UK. Her research interests include resilience, social-ecological

systems, posthumanism/new materialism and transitional justice. She has published four research monographs and one co-edited book. Her interdisciplinary work has also appeared in a wide range of peer-reviewed journals, including the *British Journal of Sociology*, *Cultural Sociology*, the *International Journal of Transitional Justice* and *Qualitative Research*. She recently completed a five-year research project funded by the European Research Council.

ORCID

Janine Natalya Clark ⓘ http://orcid.org/0000-0002-4060-4082

References

Abbott, S. 2021. "Approaching Nonhuman Ontologies: Trees, Communication and Qualitative Inquiry." *Qualitative Inquiry* 27 (8–9): 1059–1071. https://doi.org/10.1177/1077800421994954.

Afifi, T. D., A. F. Merrill, and S. Davis. 2016. "The Theory of Resilience and Relational Load." *Personal Relationships* 23 (4): 663–683. https://doi.org/10.1111/pere.12159.

Al Jazeera. 2023. "Photos: Ukraine Soldiers Ride Out War Stress with Hippotherapy." Accessed December 5, 2023. https://www.aljazeera.com/gallery/2023/3/22/photos-ukraine-soldiers-ride-out-war-stress-with-horse-therapy.

Argent, G., and J. Vaught. 2022. "Introduction: Humans and Horses in the Relational Arena." In *The Relational Horse: How Frameworks of Communication, Care, Politics and Power Reveal and Conceal Equine Selves*, edited by G. Argent and J. Vaught, 1–18. Leiden: Koninklijke.

Baggio, J. A., K. Brown, and D. Hellebrandt. 2015. "Boundary Object or Bridging Concept? A Citation Network Analysis of Resilience". *Ecology and Society* 20(2): article 2. https://doi.org/10.5751/ES-07484-200202.

Baker, S., M. W. Bruford, S. MacBride-Stewart, A. Essam, P. Nicol, and A. Sanderson Bellamy. 2022. "COVID-19: Understanding Novel Pathogens in Coupled Social–Ecological Systems." *Sustainability* 14 (18): 11649. https://doi.org/10.3390/su141811649.

Baquero, O. S., M. N. Benavidez Fernández, and M. Acero Aguilar. 2021. "From Modern Planetary Health to Decolonial Promotion of One Health Peripheries." *Frontiers in Public Health* 9:9. https://doi.org/10.3389/fpubh.2021.637897.

BBC. 2023. "Kenyan Farmer: 'I'm Afraid that Elephants Will Kill Me'". Accessed August 18, 2023. https://www.bbc.co.uk/news/world-africa-65531738 .

Betancourt, T. S., and K. T. Khan. 2008. "The Mental Health of Children Affected by Armed Conflict: Protective Processes and Pathways to Resilience." *International Review of Psychiatry* 20 (3): 317–328. https://doi.org/10.1080/09540260802090363.

Bhattacharyya, J., and S. Slocombe. 2017. "Animal Agency: Wildlife Management from a Kincentric Perspective." *Ecosphere* 8 (10): e01978. https://doi.org/10.1002/ecs2.1978.

Bičanski, M. 2022. "Pets of War: Ukrainians Take Comfort from Their Animals as They Flee the Conflict – In Pictures." Accessed June 5, 2023. https://www.theguardian.com/global-development/gallery/2022/mar/15/pets-of-war-ukrainians-take-comfort-from-their-animals-as-they-flee-the-conflict-in-pictures.

Binder, C. R., J. Hinkel, P. W. G. Bots, and C. Pahlwostl. 2013. "Comparison of Frameworks for Analysing Social-Ecological Systems." *Ecology and Society* 18 (4): article 26. https://doi.org/10.5751/ES-05551-180426.

Bird Rose, D. 2011. *Wild Dog Dreaming: Love and Extinction*. Charlottesville, VA: University of Virginia Press.

Bird Rose, D. 2017. "Connectivity Thinking, Animism and the Pursuit of Liveliness." *Educational Theory* 67 (4): 491–508. https://doi.org/10.1111/edth.12260.

Boffey, D. 2022. "'We Had Too Much to Do to Be Scared': The Couple Who Fled Irpin with 19 Dogs." Accessed October 16, 2023. https://www.theguardian.com/world/2022/may/23/we-had-too-much-to-do-to-be-scared-the-couple-who-fled-irpin-with-19-dogs.

Bond, J. 2015. "Making Sense of Human–Elephant Conflict in Laikipia County, Kenya." *Society & Natural Resources* 28 (3): 312–327. https://doi.org/10.1080/08941920.2014.948238.

Bourbeau, P. 2018. "A Genealogy of Resilience." *International Political Sociology* 12 (1): 19–35. https://doi.org/10.1093/ips/olx026.

Bowles, B. O. L. 2022. "Resilience, Infrastructure and the Anti-Social Contract in Neoliberal Britain." *Critique of Anthropology* 42 (3): 270–285. https://doi.org/10.1177/0308275X221120171.

Bradshaw, G. A. 2009. *Elephants on the Edge: What Animals Teach Us About Humanity*. New Haven, CT: Yale University Press.

Bradshaw, G. A. 2010a. "An Ape Among Many: Animal Co-Authorship and Trans-Species Epistemic Authority." *Configurations* 18 (1–2): 15–30. https://doi.org/10.1353/con.2010.0003.

Bradshaw, G. A. 2010b. "You See Me, but Do You Hear Me? The Science and Sensibility of Trans-Species Dialogue." *Feminism & Psychology* 20 (3): 407–419. https://doi.org/10.1177/0959353510368285.

Braidotti, R. 2013. *The Posthuman*. Cambridge: Polity Press.

Braverman, I. 2022. "Introduction: More-Than-One Health, More-Than-One Governance." In *More-Than-One Health: Humans, Animals and the Environment Post-COVID*, edited by I. Braverman, 1–23. Abingdon: Routledge.

Burton, L. E., F. Qeadan, and M. R. Burge. 2019. "Efficacy of Equine-Assisted Psychotherapy in Veterans with Posttraumatic Stress Disorder." *Journal of Integrative Medicine* 17 (1): 14–19. https://doi.org/10.1016/j.joim.2018.11.001.

Busacca, G. 2017. "Places of Encounter: Relational Ontologies, Animal Depiction and Ritual Performance at Göbekli Tepe." *Cambridge Archaeological Journal* 27 (2): 313–330. https://doi.org/10.1017/S095977431600072X.

Campos-Arceiz, A., and S. Blake. 2011. "Megagardeners of the Forest – The Role of Elephants in Seed Dispersal." *Acta Oecologia* 37 (6): 542–553. https://doi.org/10.1016/j.actao.2011.01.014.

Cañada, J. E., S. Sariola, and A. Butcher. 2022. "In Critique of Anthropocentrism: A More-Than-Human Ethical Framework for Antimicrobial Resistance." *Medical Humanity* 48 (4): e16. https://doi.org/10.1136/medhum-2021-012309.

Chaffin, B. C., and L. H. Gunderson. 2016. "Emergence, Institutionalization and Renewal: Rhythms of Adaptive Governance in Complex Social-Ecological Systems." *Journal of Environmental Management* 165:81–87. https://doi.org/10.1016/j.jenvman.2015.09.003.

Chandler, D. 2022. "Decolonising Resilience: Reading Glissant's Poetics of Relation in Central Eurasia." *Cambridge Review of International Affairs* 35 (2): 158–175. https://doi.org/10.1080/09557571.2021.1944984.

Colding, J., and S. Barthel. 2019. "Exploring the Social-Ecological Systems Discourse 20 Years Later". *Ecology and Society* 24(1). article 2. https://doi.org/10.5751/ES-10598-240102.

Cole, L. 2021. "Aliens, Plagues, One Health, and the Medical Posthumanities." *Configurations* 29 (4): 453–467. https://doi.org/10.1353/con.2021.0032.

Crellin, R. J., and O. J. T. Harris. 2021. "What Difference Does Posthumanism Make?" *Cambridge Archaeological Review* 31 (3): 469–467. https://doi.org/10.1017/S0959774321000159.

Cudworth, E., and S. Hobden. 2015. "The Posthuman Way of War." *Security Dialogue* 46 (6): 513–529. https://doi.org/10.1177/0967010615596499.

Cudworth, E., and S. Hobden. 2023. "Animalising International Relations." *International Relations* 37 (3): 398–422. https://doi.org/10.1177/00471178231192345.

Davis, A., and J. Sharp. 2020. "Rethinking One Health: Emergent Human, Animal and Environmental Assemblages." *Social Science and Medicine* 258:113093. https://doi.org/10.1016/j.socscimed.2020.113093.

Eggerman, M., and C. Panter-Brick. 2010. "Suffering, Hope, and Entrapment: Resilience and Cultural Values in Afghanistan." *Social Science & Medicine* 71 (1): 71–83. https://doi.org/10.1016/j.socscimed.2010.03.023.

Evans, N., and C. Gray. 2012. "The Practice and Ethics of Animal-Assisted Therapy with Children and Young People: Is It Enough That We Don't Eat Our Co-Workers?" *The British Journal of Social Work* 42 (4): 600–617. https://doi.org/10.1093/bjsw/bcr091.

Firsov, Y. 2022. "Opinion: I've Seen the Unannounced Casualties of the Ukraine war." Accessed September 28, 2023. https://www.washingtonpost.com/opinions/2022/11/24/ukraine-war-casualties-abandoned-pets/ .

Folke, C. 2006. "Resilience: The Emergence of a Perspective for Social–Ecological Systems Analyses." *Global Environmental Change* 16 (3): 253–267. https://doi.org/10.1016/j.gloenvcha.2006.04.002.

Forbes, B. C., F. Stammler, T. Kumpula, and E. Kaarlejärvi. 2009. "High Resilience in the Yamal-Nenets Social–Ecological System, West Siberian Arctic, Russia." *PNAS* 106 (52): 22041–22048. https://doi.org/10.1073/pnas.0908286106.

Forsyth, I. 2016. "More-Than-Human Warfare." *Social & Cultural Geography* 17 (6): 798–802. https://doi.org/10.1080/14649365.2016.1147060.

Forsyth, I. 2017. "A Bear's Biography: Hybrid Warfare and the More-Than-Human Battlespace." *Environment and Planning D: Society and Space* 35 (3): 495–512. https://doi.org/10.1177/0263775816664098.

Four Paws International. 2022. "Former Stray Dog Busia Assists Therapy for Recovering Soldiers in Ukraine." Accessed October 11, 2023. https://www.four-paws.org/our-stories/press-releases/june-2022/former-stray-dog-busia-assists-therapy-for-recovering-soldiers-in-ukraine.

Fox, N. J., and P. Alldred. 2020. "Sustainability, Feminist Posthumanism and the Unusual Capacities of (Post) Humans." *Environmental Sociology* 6 (2): 121–131. https://doi.org/10.1080/23251042.2019.1704480.

Gane, N. 2006. "When We Have Never Been Human, What is to Be Done? Interview with Donna Haraway." *Theory, Culture & Society* 23 (7–8): 135–158. https://doi.org/10.1177/0263276406069228.

Gibbs, L. M. 2020. "Animal Geographies I: Hearing the Cry and Extending Beyond." *Progress in Human Geography* 44 (4): 769–777. https://doi.org/10.1177/0309132519863483.

Gibson-Graham, J. K., A. Hill, and L. Law. 2016. "Re-Embedding Economies in Ecologies: Resilience Building in More Than Human Communities." *Building Research & Information* 44 (7): 703–716. https://doi.org/10.1080/09613218.2016.1213059.

Gillespie, K. 2018. *The Cow with Ear Tag #1389*. Chicago, IL: University of Chicago Press.

Goldman, M. J., S. M. Jagadeesh, T. Meng'oru Ngimojino, and L. M. Gowda. 2021. "Women's Stories and Knowledge of Wildlife and Conservation Practice in Northern Tanzania and South India." *Oryx* 55 (6): 818–826. https://doi.org/10.1017/S0030605321000363.

Gopal, N., and R. Nunlall. 2017. "Interrogating the Resilience of Women Affected by Violence." *Agenda* 31 (2): 63–73. https://doi.org/10.1080/10130950.2017.1379759.

Gordon, J. G. 2022. "A Fowl Politics of Urban Dwelling. Or, Ybor City's Republic of Noise." *Journal of Urban Affairs* 44 (2): 194–220. https://doi.org/10.1080/07352166.2020.1758120.

Gorman, R. 2019. "What's in It for the Animals? Symbiotically Considering 'Therapeutic' Human-Animal Relations within Spaces and Practices of Care Farming." *Medical Humanities* 45 (3): 313–325. https://doi.org/10.1136/medhum-2018-011627.

Gorman, R., and J. Cacciatore. 2023. "Exploring the Effects of the Human–Animal Relationship on Care-Farms in the Context of Trauma Histories." *Anthrozoös* 36 (2): 163–177. https://doi.org/10.1080/08927936.2022.2084995.

Haraway, D. J. 2008. *When Species Meet*. Minneapolis, MN: University of Minnesota Press.

Hartling, L. M. 2008. "Strengthening Resilience in a Risky World: It's All About Relationships." *Women & Therapy* 32 (2–4): 51–70. https://doi.org/10.1080/02703140802145870.

Hatch, A. 2007. "The View from All Fours: A Look at an Animal-Assisted Activity Program from the Animals' Perspective." *Anthrozoös* 20 (1): 37–50. https://doi.org/10.2752/089279307780216632.

Herman, A. 2016. ""More-Than-Human" Resilience(s)? Enhancing Community in Finnish Forest Farms." *Geoforum* 69:34–43. https://doi.org/10.1016/j.geoforum.2015.12.005.

Hill, L., H. Winefield, and P. Bennett. 2020. "Are Stronger Bonds Better? Examining the Relationship Between the Human–Animal Bond and Human Social Support, and Its Impact on Resilience." *Australian Psychologist* 55 (6): 729–738. https://doi.org/10.1111/ap.12466.

Hinchliffe, S. 2015. "More Than One World, More Than One Health: Reconfiguring Interspecies Health." *Social Science and Medicine* 129:28–35. https://doi.org/10.1016/j.socscimed.2014.07.007.

Jordan, J. V. 2023. "Relational Resilience in Girls." In *Handbook of Resilience in Children*, edited by S. Goldstein and R. B. Brooks, 71–84. Cham: Springer.

Joseph, J. 2013. "Resilience as Embedded Neoliberalism: A Governmentality Approach." *Resilience* 1 (1): 38–52. https://doi.org/10.1080/21693293.2013.765741.

Kamenshchikova, A., P. F. G. Wolffs, C. J. P. A. Hoebe, and K. Horstman. 2021. "Anthropocentric Framings of One Health: An Analysis of International Antimicrobial Resistance Policy Documents." *Critical Public Health* 31 (3): 306–315. https://doi.org/10.1080/09581596.2019.1684442.

Kimhi, S., S. Hatman, M. Goroshit, Y. Eshel, and L. Zysberg. 2012. "Elderly People Coping with the Aftermath of War: Resilience versus Vulnerability." *The American Journal of Geriatric Psychiatry* 20 (5): 391–401. https://doi.org/10.1097/JGP.0b013e31821106b3.

King, L. E., F. Lala, H. Nzumu, E. Mwambingu, and I. Douglas-Hamilton. 2017. "Beehive Fences as a Multidimensional Conflict-Mitigation Tool for Farmers Coexisting with Elephants." *Conservation Biology* 31 (4): 743–752. https://doi.org/10.1111/cobi.12898.

Kuriyan, R. 2002. "Linking Local Perceptions of Elephants and Conservation: Samburu Pastoralists in Northern Kenya." *Society & Natural Resources* 15 (10): 949–957. https://doi.org/10.1080/08941920290107675.

Leach, M., B. Reyers, X. Bai, E. S. Brondizio, C. Cook, S. Díaz, G. Espindola, M. Scobie, M. Stafford-Smith, and S. M. Subramanian. 2018. "Equity and Sustainability in the Anthropocene: A Social–Ecological Systems Perspective on Their Intertwined Futures." *Global Sustainability* 1:e13. https://doi.org/10.1017/sus.2018.12.

Leep, M. 2018. "Stray Dogs, Post-Humanism and Cosmopolitan Belongingness: Interspecies Hospitality in Times of War." *Millennium: Journal of International Studies* 47 (1): 45–66. https://doi.org/10.1177/0305829818778365.

Lejano, R. P. 2017. "Assemblage and Relationality in Social-Ecological Systems." *Dialogues in Human Geography* 7 (2): 197–202. https://doi.org/10.1177/2043820617720093 .

Luthar, S. S., D. Cicchetti, and B. Becker. 2000. "The Construct of Resilience: A Critical Evaluation and Guidelines for Future Work." *Child Development* 71 (3): 543–562. https://doi.org/10.1111/1467-8624.00164.

Margulies, J. D., and B. Bersaglio. 2018. "Furthering Post-Human Political Ecologies." *Geoforum* 94:103–106. https://doi.org/10.1016/j.geoforum.2018.03.017.

Marie, M., B. Hannigan, and A. Jones. 2018. "Social Ecology of Resilience and Sumud of Palestinians." *Health: An Interdisciplinary Journal for the Social Study of Health, Illness and Medicine* 22 (1): 20–35. https://doi.org/10.1177/1363459316677624.

Masten, A. S. 2021. "Resilience of Children in Disasters: A Multisystem Perspective." *International Journal of Psychology* 56 (1): 1–11. https://doi.org/10.1002/ijop.12737.

Matamonasa-Bennett, A. 2015. "Putting the Horse Before Descartes: Native American Paradigms and Ethics in Equine-Assisted Therapies." *Business & Professional Ethics Journal* 34 (1): 23–43. https://doi.org/10.5840/bpej201562624.

McDonald, S. E., J. L. Murphy, C. A. Tomlinson, M. Matijczak, J. W. Applebaum, T. L. Wike, and S. K. Kattari. 2022. "Relations Between Sexual and Gender Minority Stress, Personal Hardiness, and Psychological Stress in Emerging Adulthood: Examining Indirect Effects via Human-Animal Interaction." *Youth and Society* 54 (2): 240–261. https://doi.org/10.1177/0044118X21990044.

McLaughlin, K., and A. L. Hamilton. 2019. "Exploring the Influence of Service Dogs on Participation in Daily Occupations by Veterans with PTSD: A Pilot Study." *Australian Occupational Therapy Journal* 66 (5): 648–655. https://doi.org/10.1111/1440-1630.12606.

Miliutina, K., T. Andrey, V. Zelenin, T. Andrushchenko, and L. Karamushka. 2023. "The Role of Pets in Preserving the Emotional and Spiritual Wellbeing of Ukrainian Residents during Russian Hostilities." *Journal of Religion and Health* 62 (1): 500–509. https://doi.org/10.1007/s10943-022-01669-4.

Mitchell, A. 2014. "Only Human? A Worldly Approach to Security." *Security Dialogue* 45 (1): 5–21. https://doi.org/10.1177/0967010613515015.

Mueller, M. K., and K. Schmid Callina. 2014. "Human–Animal Interaction as a Context for Thriving and Coping in Military-Connected Youth: The Role of Pets During Deployment." *Applied Developmental Science* 18 (4): 214–223. https://doi.org/10.1080/10888691.2014.955612.

Mulhall, A. 2016. "Mind Yourself: Well-Being and Resilience as Governmentality in Contemporary Ireland." *The Irish Review* 53:29–44. http://www.jstor.org/stable/44473958.

Niemann, D. 2013. *Birds in a Cage.* London: Short Books.

O'Haire, M. E., P. Tedeschi, M. A. Jenkins, S. R. Braden, and K. E. Rodriguez. 2019. "The Impact of Human-Animal Interaction in Trauma Recovery." In *Transforming Trauma: Resilience and Healing Through Our Connections with Animals*, edited by P. Tedeschi and M. A. Jenkins, 15–54. West Lafayette, IN: Purdue University.

Olsson, L., A. Jerneck, H. Thoren, J. Persson, and D. O'Byrne. 2015. "Why Resilience is Unappealing to Social Science: Theoretical and Empirical Investigations of the Scientific Use of Resilience." *Science Advances* 1 (4): e1400217. https://doi.org/10.1126/sciadv.1400217.

Packham, A. 2022. "Ukraine-Russia Crisis: "I Left My Husband Behind at the Border. My Heart is Broken"." Accessed June 9, 2023. https://www.theguardian.com/world/2022/mar/08/ukraine-russia-crisis-border.

Pearson, C. 2019. ""Four-Legged *Poilus*": French Army Dogs, Emotional Practices and the Creation of Militarized Human-Dog Bonds, 1871–1918." *Journal of Social History* 52 (3): 731–760. https://doi.org/10.1093/jsh/shx090.

Pinto-García, L. 2022. "Military Dogs and Their Soldier Companions: The More-Than-Human Biopolitics of Leishmaniasis in Conflict-Torn Colombia." *Medical Anthropology Quarterly* 36 (2): 237–255. https://doi.org/10.1111/maq.12694.

Preiser, R., R. Biggs, A. De Vos, and C. Folke. 2018. "Social-Ecological Systems as Complex Adaptive Systems: Organizing Principles for Advancing Research Methods and Approaches." *Ecology and Society* 23 (4): article 46. https://doi.org/10.5751/ES-10558-230446.

Quinn, T., W. N. Adger, C. Butler, and K. Walker-Springett. 2021. "Community Resilience and Well-Being: An Exploration of Relationality and Belonging After Disasters." *Annals of the American Association of Geographers* 111 (2): 577–590. https://doi.org/10.1080/24694452.2020.1782167.

Radio Free Europe/Radio Liberty. 2023. "Dogs of War: Ukrainian Soldiers Seek Comfort in Their Canine Companions on the Front Line." Accessed October 5, 2023. https://www.rferl.org/a/dogs-of-war-ukraine-servicemen-front-line/32379978.html.

Riekhof, M. C., L. C. Kluger, R. Salvatteci, L. Siebert, and R. Voss. 2022. "To Tip or Not to Tip: The Window of Tipping Point Analysis for Social-Ecological Systems." *Natural Resource Modeling* 35 (4): e12357. https://doi.org/10.1111/nrm.12357.

Rock, M. J. 2017. "Who or What is 'the Public' in Critical Public Health? Reflections on Posthumanism and Anthropological Engagements with One Health." *Critical Public Health* 27 (3): 314–324. https://doi.org/10.1080/09581596.2017.1288287.

Rutter, M. 2023. "Resilience: Some Conceptual Considerations." In *Social Work: A Reader*, edited by V. E. Cree and T. McCulloch, 122–127. 2nd ed. Abingdon: Routledge.

Ryan, C. 2015. "Everyday Resilience as Resistance: Palestinian Women Practicing *Sumud*." *International Political Sociology* 9 (4): 299–315. https://doi.org/10.1111/ips.12099.

Sandvik, K. B. 2023. "The Ukrainian Refugee Crisis: Unpacking the Politics of Pet Exceptionalism." *International Migration* 61 (4): 292–304. https://doi.org/10.1111/imig.13100.

Save the Elephants. 2018. "How the Mama Tembos are Changing Hearts and Minds in Northern Kenya." Accessed July 22, 2023. https://www.savetheelephants.org/news/how-the-mama-tembos-are-changing-hearts-and-minds-in-northern-kenya/.

Save the Elephants. 2020. "Mpayon and Lemarti for Save the Elephants L'Tome Nkaina (Elephant Hands) – Official

Video." Accessed July 15, 2023. https://www.youtube.com/watch?v=FiGVdtdQ1sw.

Sheldrick Wildlife Trust. 2016. "A Crop Raiding Elephant is a Hated Elephant." Accessed August 15, 2023. https://www.sheldrickwildlifetrust.org/news/wilderness/a-crop-raiding-elephant-is-a-hated-elephant.

Soltis, J. 2011. "The Death of Resilience." Accessed October 15, 2023. https://www.savetheelephants.org/news/the-death-of-resilience/ .

Southwick, S. M., G. A. Bonanno, A. S. Masten, C. Panter-Brick, and R. Yehuda. 2014. "Resilience Definitions, Theory, and Challenges: Interdisciplinary Perspectives." *European Journal of Psychotraumatology* 5 (1): 25338. https://doi.org/10.3402/ejpt.v5.25338.

Stringer, L. C., A. J. Dougill, E. Fraser, K. Hubacek, C. Prell, and M. S. Reed. 2006. "Unpacking 'Participation' in the Adaptive Management of Social–Ecological Systems: A Critical Review." *Ecology and Society* 11 (2): article 39. https://doi.org/10.5751/ES-01896-110239.

Tàbara, J. D. 2023. "Regenerative Sustainability. A Relational Model of Possibilities for the Emergence of Positive Tipping Points." *Environmental Sociology* 9 (4): 366–385. https://doi.org/10.1080/23251042.2023.2239538.

Tedeschi, P., and M. A. Jenkins. 2019. *Transforming Trauma: Resilience and Healing Through Our Connections with Animals*. West Lafayette, IN: Purdue University.

The Telegraph. 2022. "Ukraine Dispatch: Abandoned Puppies Give Frontline Soldiers a Morale Boost." Accessed October 1, 2023. https://www.youtube.com/watch?v=XBeIDq8QVjs.

Theron, L. C. 2016. "The Everyday Ways that School Ecologies Facilitate Resilience: Implications for School Psychologists." *School Psychology International* 37 (2): 87–103. https://doi.org/10.1177/0143034315615937.

Theron, L. C., and M. J. Malindi. 2010. "Resilient Street Youth: A Qualitative South African Study." *Journal of Youth Studies* 13 (6): 717–736. https://doi.org/10.1080/13676261003801796.

Thompson, K. 2013. "Save Me, Save My Dog: Increasing Natural Disaster Preparedness and Survival by Addressing Human–Animal Relationships." *Australian Journal of Communication* 40 (1): 123–136.

Tierney, K. 2015. "Resilience and the Neoliberal Project: Discourses, Critiques, Practices—and Katrina." *American Behavioral Scientist* 59 (10): 1327–1342. https://doi.org/10.1177/0002764215591187.

Tippens, J. A. 2020. "Urban Congolese Refugees' Social Capital and Community Resilience During a Period of Political Violence in Kenya: A Qualitative Study." *Journal of Immigrant & Refugee Studies* 18 (1): 42–59. https://doi.org/10.1080/15562948.2019.1569744.

Todd, Z. 2014. "Fish Pluralities: Human-Animal Relations and Sites of Engagement in Paulatuuq, Arctic Canada." *Études/inuit/studies* 38 (1/2): 217–238. https://doi.org/10.7202/1028861ar.

Trigg, J., K. Thompson, B. Smith, and P. Bennett. 2016. "An Animal Just Like Me: The Importance of Preserving the Identities of Companion-Animal Owners in Disaster Contexts." *Social and Personality Psychology Compass* 10 (1): 26–40. https://doi.org/10.1111/spc3.12233.

Trownsell, T., N. C. Behera, and G. Shani. 2022. "Introduction to the Special Issue: Pluriversal Relationality." *Review of International Studies* 48 (5): 787–800. https://doi.org/10.1017/S0260210522000389.

Tsing, A. L. 2022. "The Sociality of Birds: Reflections on Ontological Edge Effects." In *Kin: Thinking with Deborah Bird Rose*, edited by T. van Dooren and M. Chrulew, 15–32. Durham, NC: Duke University Press.

Turnbull, J. 2020. "Checkpoint Dogs: Photovoicing Canine Companionship in the Chernobyl Exclusion Zone." *Anthropology Today* 36 (6): 21–24. https://doi.org/10.1111/1467-8322.12620.

Twum-Antwi, A., P. Jefferies, L. Theron, M. Schnurr, and M. Ungar. 2020. "Young People's Perceptions of Identities in a Rural Oil and Gas Town Experiencing Boom-Bust Economic Cycles." *Journal of Applied Youth Studies* 3 (4–5): 275–292. https://doi.org/10.1007/s43151-020-00020-6.

Ungar, M. 2011. "The Social Ecology of Resilience: Addressing Contextual and Cultural Ambiguity of a Nascent Construct." *American Journal of Orthopsychiatry* 81 (1): 1–17. https://doi.org/10.1111/j.1939-0025.2010.01067.x.

Ungar, M. 2013. "Resilience, Trauma, Context and Culture." *Trauma, Violence & Abuse* 14 (3): 255–266. https://doi.org/10.1177/1524838013487805.

Ungar, M. 2018. "Systemic Resilience: Principles and Processes for a Science of Change in Contexts of Adversity." *Ecology and Society* 23 (4): article 34. https://doi.org/10.5751/ES-10385-230434.

UNICEF. 2023. "Dogs Help Children in Ukraine to Cope with Stress." Accessed October 22, 2023. https://www.unicef.org/ukraine/en/stories/dogs-help-children-to-cope-with-stress.

United Nations. 2023. "Ukraine: Civilian Casualties Mount as War Enters Second Winter." Accessed December 5, 2023. https://news.un.org/en/story/2023/11/1143852.

Van Patter, L. E., J. Linares-Roake, and A. V. Breen. 2023. "What Does One Health Want? Feminist, Posthuman, and Anti-Colonial Possibilities." *One Health Outlook* 5 (4). https://doi.org/10.1186/s42522-022-00076-9.

Varenikova, M. 2023. "Ukraine Diary: In Front-Line Villages, Animals are Hard to Leave Behind." Accessed October 3, 2023. https://www.nytimes.com/2023/04/25/world/europe/ukraine-diary-in-front-line-villages-animals-are-hard-to-leave-behind.html.

Walker, S., I. Koshiw, P. Sauer, M. Risberg, L. Cookman, and L. Harding. 2023. "Mariupol: The Ruin of a City." Accessed May 31, 2023. https://www.theguardian.com/world/ng-interactive/2023/feb/23/mariupol-the-ruin-of-a-city.

Walker, B., and J. A. Meyers. 2004. "Thresholds in Ecological and Social–Ecological Systems: A Developing Database." *Ecology and Society* 9 (2): article 3. https://doi.org/10.5751/ES-00664-090203.

Walsh, F. 2009. "Human-Animal Bonds II: The Role of Pets in Family Systems and Family Therapy." *Family Process* 48 (4): 481–499. https://doi.org/10.1111/j.1545-5300.2009.01297.x.

Wandji, D. 2019. "Rethinking the Time and Space of Resilience Beyond the West: An Example of the Post-Colonial Border." *Resilience* 7 (3): 288–303. https://doi.org/10.1080/21693293.2019.1601861.

Webb, T., C. Pearson, P. Summerfield, and M. Riley. 2020. "More-Than-Human Emotional Communities: British Soldiers and Mules in Second World War Burma." *Cultural and Social History* 17 (2): 245–262. https://doi.org/10.1080/14780038.2020.1744879.

Welle, D. 2020. "Kenya: Mama Tembo's Elephant Helpers." Accessed July 15, 2023. https://www.dw.com/en/kenya-mama-tembos-elephant-helpers/video-52653361.

WHO. 2023. "WHO Urges Investing in "One Health" Actions for Better Health of the People and the Planet." Accessed October 3, 2023. https://www.who.int/news/item/03-11-2023-who-urges-investing-in–one-health–actions-for-better-health-of-the-people-and-the-planet.

Wolf, M. 2015. "Is There Really Such a Thing as "One Health"? Thinking About a More Than Human World from the

Perspective of Cultural Anthropology." *Social Science & Medicine* 129:5–11. https://doi.org/10.1016/j.socscimed.2014.06.018.

Wolfe, C. 2010. *What is Posthumanism?* Minneapolis, MN: University of Minnesota Press.

Wright, M. O., A. S. Masten, and A. J. Narayan. 2013. "Resilience Processes in Development: Four Waves of Research on Positive Adaptation in the Context of Adversity." In *Handbook of Resilience in Children*, edited by S. Goldstein and R. Brookes, 15–37. Boston, MA: Springer.

Wright, S., S. Suchet-Pearson, K. Lloyd, L. L. Burarrwanga, and D. Burarrwanga. 2009. "'That Means the Fish are Fat': Sharing Experiences of Animals through Indigenous-Owned Tourism." *Current Issues in Tourism* 12 (5–6): 505–527. https://doi.org/10.1080/13683500903042907.

Xue, X., L. Wang, and R. J. Yang. 2018. "Exploring the Science of Resilience: Critical Review and Bibliometric Analysis." *Natural Hazards* 90 (1): 477–510. https://doi.org/10.1007/s11069-017-3040-y.

Yorke, J. 2010. "The Significance of Human–Animal Relationships as Modulators of Trauma Effects in Children: A Developmental Neurobiological Perspective." *Early Child Development and Care* 180 (5): 559–570. https://doi.org/10.1080/03004430802181189.

Yorke, J., C. Adams, and N. Coady. 2008. "Therapeutic Value of Equine-Human Bonding in Recovery from Trauma." *Anthrozoös* 21 (1): 17–30. https://doi.org/10.2752/089279308X274038.

Yunkaporta, T. 2019. *Sand Talk: How Indigenous Thinking Can Save the World*. Melbourne: The Text Publishing Company.

Zamir, T. 2006. "The Moral Basis of Animal-Assisted Therapy." *Society & Animals* 14 (2): 179–199. https://doi.org/10.1163/156853006776778770.

Zottarelli, L. K. 2010. "Broken Bond: An Exploration of Human Factors Associated with Companion Animal Loss during Hurricane Katrina." *Sociological Forum* 25 (1): 110–122. https://doi.org/10.1111/j.1573-7861.2009.01159.x.