Exhibiting Extinction, Recovering Memory, and Contesting Uncertain Futures in the Museum

Adam Searle

Abstract

This paper builds upon qualitative research in *El Museo del Bucardo* – The Bucardo Museum – an exhibition space in the village of Torla, high in the Spanish Pyrenees. The bucardo was declared extinct on 6 January 2000 and rose to international fame three years later when scientists in Zaragoza delivered a bucardo clone; this event is commonly portrayed around the world as 'the first de-extinction'. Taxidermic remains of the last bucardo were absent from public view for years, yet they finally returned to Torla in 2013 following years of campaigning from local activists, and *El Museo del Bucardo* was founded. I draw upon interviews and archival material to present an environmental history of the bucardo as told through the lens of the museum, one which sets out to 'recover memory' and institutionalize the bucardo's legacy. In the museum, bucardo afterlives continue to shape understandings of situated Pyrenean wildlife. I examine *El Museo del Bucardo*'s role in generating meaning in an epoch characterized by mass extinction and the spectacle of technofixes in the form of de-extinction science.

Key words: memory, extinction, de-extinction, bucardo, the Pyrenees

Introduction

During peak tourist season, the Pyrenean village of Torla is normally heaving with individuals who have come to visit one of Spain's oldest national parks, *El Parque Nacional de Ordesa y Monte Perdido*. If you arrive after dawn in summer, the first sight you will usually encounter is an orderly queue of tourists equipped for a day in the Ordesa valley, bordering a car park almost the size of the village itself. Due to Ordesa's popularity, visitors are limited and cannot enter in their own vehicles; they can, however, catch a bus from outside the national park's visitor's centre. These waits can be lengthy. Fortunately, there are things to do and see in the visitor's centre to pass the time, including a permanent exhibition on the park's foundation. Modestly signposted in the centre's main exhibition space, on a placard, is an advertisement for *El Museo del Bucardo*, or The Bucardo Museum.

I wasn't sure what to expect inside. After six months of preliminary archival work and interviews with some key figures in Aragón, the Spanish *comunidad autónoma* where a significant portion of my fieldwork was based, the museum had been mentioned many times. *El Museo del Bucardo* is housed in a small, square room, no larger than 30 m². Three of the walls are bordered by information boards and display items, with the other boasting beautiful panoramas of Torla and the Ordesa valley in the distance (figure 1). These vast windows flood the room with natural light, and even in summer, indoors, the space has a certain briskness one expects in high altitudes. As if looking through the windows, peering out to Ordesa, the taxidermic remains of the last bucardo occupy the centre of the room. Essentially, *El Museo del Bucardo* is a space dedicated to this individual – known locally as Laña, and internationally as Celia (Searle 2022a) – where her remains are monumentalized and reworked into contemporary narratives concerning extinction, de-extinction, biotic loss, and biotic recovery.



Figure 1. Views from the museum toward Torla and the Ordesa Valley.

Following centuries of overhunting and genetic bottlenecking, the bucardo (*Capra pyrenaica pyrenaica*) was declared extinct on 6 January 2000. Yet for centuries the Ordesa valley had been its last bastion of survival, the last habitat the ibex found refuge in amidst the hostile Pyrenean landscape. At the beginning of the twenty-first century, the nearby village of Torla, whose residents are closely associated with the national park, was without its emblematic animal (Puértolas Puértolas 2018). Historically the majority of the national park's guards, guides, and custodians were from Torla, and tourism to the Ordesa valley remains the lifeblood of the local economy (Lacasta Lardiés 2020). The national park, just as the museum which would be established nearly a century later, is a crucial part of local identity (cf. Paddon 2011).

Eight months before the last bucardo died, she was trapped, and her cells cryogenically preserved. These cryopreserved cells of the last individual embodied hope for a speculative future in which extinction does not last forever (Sherkow and Greely 2013; Searle 2020a). A team of scientists from France and Spain attempted to create a cloned animal from those cells, and in 2003 a baby bucardo was born via Cesarean section. After seven minutes, however, the clone died. The bucardo remains, at least for now, extinct.

Contrary to the 'sociotechnical imaginary' of de-extinction (cf. Jasanoff and Kim 2015), the inauguration of the museum on 12 April 2013 marked a symbolic return of the bucardo to 'its' habitat in different ways. Through its emphasis on locally situated ecologies, humbly located in the *pueblo* whose inhabitants to this day recall their relationships with the bucardo as a living animal, *El Museo del Bucardo* cuts against the international imagination of the ibex championed by breakthroughs in de-extinction science. As one of Europe's most sought-after trophies in the nineteenth century, bucardo are woven into the grandeur of the continent's most iconic natural history museums – for example Paris, London, and Zürich (Woutersen 2012). Further juxtaposed with spectacles of the hunter's trophy (Searle 2021), *El Museo del Bucardo* tells a different story, one which fosters sentiments of care and consideration for Pyrenean biota.

In this article, I draw upon numerous interviews with local environmental activists who spent years campaigning for the foundation of a museum specifically dedicated to the bucardo. Through exploring the histories of *El Museo del Bucardo* as a localized collective

effort of extinction storytelling in a museum context (Jørgensen 2017; Guasco 2021), I examine the significance of the vernacular ecologies of biotic loss in the Pyrenees built upon partial and situated epistemologies. This approach follows the methodological provocations outlined in Samuel J.M.M. Alberti's empirically rich collection *The Afterlives of Animals: A Museum Menagerie* (2011a), in which contributors provide specific 'animal biographies' of museum specimens (for example, Everest 2011; Paddon 2011; Patchett *et al.* 2011; Poliquin 2011), enabling researchers to 'trace the shifting meanings (scientific, cultural, emotional) of singular animals and their remains' (Alberti 2011b: 1). In addition to attending to the life of Laña as told through the museum, I follow the remains of another bucardo central to the historical emergence of the bucardo as an emblem for Pyrenean wildlife, which speaks to recent empirical work across the social sciences and humanities that study the biological, cultural, and political significances of animal remains (Bezan and McKay 2022; van Dooren 2022; Gómez López 2022; Westergaard and Jørgensen 2022).

I start the article in Torla with activists and conservationists central to this account and allow the stories they tell to narrate the museum's foundation. I then discuss the museum's content and displays, which can be divided into three thematic areas: education and public engagement, the bucardo's extinction, and the global extinction crisis. I then turn to international perspectives on the bucardo in the wake of the 2003 failed cloning attempt and consider *El Museo del Bucardo* in the epistemic context of both the global extinction crisis and technoscientific de-extinction movement. I explore the importance of museum spaces for exhibiting contested extinctions as affective spaces that make extinctions palpable events. Museum space platforms a contestation of insider/outsider and local/global perspectives and affords insight on broader concerns at the heart of the de-extinction movement relating to the biocultural significance of habitats, species, and more-than-human relations.

Recovering memory

In June 2011, a newsreader for *Televisión España*'s local news service in Aragón introduced the evening's headline story: 'Torla wants to recover the bucardo's memory'. Photographs of bucardo moved across the screen, and video footage of a captive bucardo played in sombre slow-motion. The newsreader stated:

Torla wants to recover, in a museum, the memory of one of the most representative animals of these mountains ... Torla wants to recover the memory of one of its symbols: the bucardo. This animal disappeared in 2000, and since then scientists have had sufficient time to deeply study the characteristics which made it unique. Research work is ongoing, but alongside this, the inhabitants of Torla still have recent memories of bucardo skipping through the Ordesa canyon.

What might it mean, as the newsreader proclaims, to *recover memory*? As shown by Dolly Jørgensen (2019), museums are significant in their ability to institutionalize memory beyond the personal and anecdotal. Developing the influential work of Maurice Halbwachs (1992 [1925]), Jørgensen convincingly argues that 'exhibits can incorporate private memory to develop a shared public experience' (Jørgensen 2019: 123). Recovering the bucardo's memory implies a collectivization of local histories and perspectives on an animal deeply embedded in Pyrenean life, which reflects the aspirations of scholarship in extinction studies that aims to highlight the shared experience of biotic loss across species (e.g., van Dooren 2014a; Heise 2016; Rose *et al.* 2017; Parreñas 2018; van Dooren 2019; Symons and Garlick 2020; Wrigley 2020; Wrigley in press).

To *recover memory* implies that memory was lost. That, during the eleven years between the bucardo's extinction and the news broadcast, the bucardo's memory was elsewhere. For Jørgensen (2019: 122), memory 'affects the understandings people have of their environments'. Memory loss, and memory recovery, can profoundly influence environmental politics and recalibrate 'notions of longing and belonging' (Jørgensen 2019: 123). In recovering memory, the people of Torla were seeking to 'collectively mourn' the bucardo's extinction, a means of apprehending 'ecological grief on a societal scale' (de Massol de Rebetz 2020: 877).

I ask Pablo, who led the campaign to establish El Museo del Bucardo, to recount his

experiences around the time Torla's desires to recover the bucardo's memory went public. He tells that, when he started thinking about the bucardo's extinction he knew the animal's history very well, but not about the fate of the last individual post-mortem. He recalls: 'At first, I didn't know the bucardo was stuffed [*disecada*]. And I didn't know that the stuffed bucardo was in Zaragoza'. Pablo calls the last bucardo Laña, like most people in Torla, which itself engages the politically charged semantics of extinction narratives (Searle 2022a). So, what happened to Laña for eleven years? Pablo recounted:

They knew she died at night – she was fitted with a GPS tracker, so they could know when she died. Without that she would have gone missing. In the dark of night, in Ordesa, and in winter. It was frozen, and by the time morning arrived, Laña was frozen too. They brought her down from the valley, to a four-by-four they had, waiting, ready, and off they went, all the way to Zaragoza, to a freezer. ... There she stayed, in the freezer, and she wasn't stuffed until years later.

During this time, the bucardo was taken apart and her skeletal remains examined for morphological studies. When the bucardo's clone died due to a lung malfunction in 2003 (Folch *et al.* 2009), funding streams for further cloning projects were cut. A future, short-lived project would arrive in 2014, funded by the Aragonese hunting federation (Kupferschmidt 2014). Jørgensen (2019) has shown how feelings of guilt can lead to hunters engaging in active ecological restoration efforts, which is how the cloning project was (often over-simplistically) framed. Mariana, an activist from Huesca, not far from Torla, told me that hunters were linked with the taxidermy, which had been performed at a workshop in Zaragoza renowned by the local hunting community. The taxidermist was paid, but no one ever came to collect the bucardo. In the workshop it was kept in good conditions; after all, objectifying these animals with a glimmer of permanence was the taxidermist's craft (Patchett 2016; 2017). When Mariana found out the last bucardo was away from the public eye she was outraged, recounting that 'I couldn't believe the last of its kind could be somewhere out of the way'.

Pablo couldn't let the last bucardo fade away. He tells me:

In the end I spoke with the mayor of Torla. This is a small village, with less than 300 residents, so everyone knows everyone – everyone is family. The first thing we decided was: Laña *has* to come back to Torla. And actually, the mayor told me he'd tried before. He'd asked the Government of Aragón, who are the official owners of Laña, but no one responded to him. But I told him, "you have every right to claim the stuffed bucardo, it's an extinct animal of grave importance for Torla and the national park. All you have to do is give it four walls". So, we went through the village, trying to imagine where we could build a museum specifically for the bucardo.

There are two buildings in the Ordesa valley which were lived in until the foundation of the national park in 1918: Casa Oliván and Casa Berges (Marquina Murlanch 2018). Miguel Villacampa Oliván – a descendent of the family which used to live in Ordesa – was Torla's mayor at the time. In addition to his administrative obligations, Miguel Villacampa Oliván was a founding member of the *Asociación de Amigos del Bucardo* [Friends of the Bucardo Association]. This group was founded in order to, as local resident Daniel put it, 'campaign for Laña's return to Torla'. In a 2018 interview with the *Diario de AltoAragón* newspaper to celebrate the national park's centenary, Miguel Villacampa Oliván states that 'for the people of Torla, it's as if Ordesa is ours' (Puértolas Puértolas 2018: 10). Everyone in Torla is connected to the national park in some way, and by default, they are connected to the bucardo. Daniel adds that 'the *Asociación de Amigos del Bucardo* was completely necessary in order to bring the last bucardo back to Torla. ... It allowed the village to come together, which allowed the museum to happen'.

As a united force, the central government in Zaragoza couldn't say no to Torla; in comparison to previous efforts, the claim wasn't linked to the ephemerality of party politics. There were a few options for *where* the museum should go: the town hall and tourist information centre were both considered. But Pablo relayed that 'the best space was somewhere in the visitor's centre'. The park's administrative offices are in the city of Huesca, 100 kilometres south

of the Pyrenees. Pablo adds that 'it's always been an issue with the park that its management was centralized, so, when they built the visitor's centre, they set aside a small room for an office'. The space was equipped with electricity sockets along the floor and walls so that it would be suitable for computers. Yet neither the computers, nor the workers, came to the site, and it was left empty. For Pablo, it was ideal: 'it was an unused space going to waste, there's people who take care of it, and many people visit the building; in there, Laña would be able to reach more people'. On 12 April 2014, *El Museo del Bucardo* opened its doors to the public, with Laña as its crowning piece (figure 2).



Figure 2. Laña in El Museo del Bucardo.

Jørgensen (2019) has noted that the failures or successes of ecological restoration projects can often hinge on public atmospheres of longing – and the discursive framing of conservation as a 'people's project'. Similarly, the arrival of Laña in Torla was heralded as a great success for Torla; Daniel told me that people from all walks of life were there to 'welcome the bucardo back home'. Between 2003 and 2013, the bucardo was being reimagined as a protagonist in the global de-extinction movement. Local memories of the animal were being lost to outsider, technoscientific perspectives. For the people of Torla, the foundation of *El Museo del Bucardo* served as an institutionalization of collective memory – memories of 'their' animal. Daniel added that 'from Torla's point of view, we were the ones who cared for the bucardo for more than a century. This animal cannot be anywhere else. Because it's *our* history'.

Laña offers an alternative vision of bucardo seen elsewhere in Europe, such as the large-horned and thickset male taxidermic specimens found in the National History Museum of London, or the *Muséum National d'Histoire Naturelle* in Paris. Bucardo in these grand European natural history museums bias the properties which hunters found most attractive: elder males with large horns (Woutersen 2012). This reflects broader gender biases in natural history, not linked only to the tastes of past trophy hunters (Haraway 1984; Searle 2021), but also to contemporary display preferences in museum space which tend to favour displays of male animals and portray females as coy (Machin 2008; Mendenhall *et al.* 2020). Laña, in contrast to the norm in exhibitions of the bucardo's extinction, embodies a different vision of the bucardo – one away from the spectacle of the hunter's gaze, a profoundly *local* vision.

Materially present, Laña acts as a monument to past Pyrenean ecologies. 'The monument's action is not memory, but fabulation', write Deleuze and Guattari (1994: 168; see also Despret 2017), which procures a range of affective responses from visitors to the museum. Being there, it provokes not only 're-collections' from those who knew the living animal in the landscape, but also 're-compositions' as future ecologies are speculated upon and fabulated (Despret 2021b). Fabulation is a key word here, prominent in the ecological philosophies of Donna Haraway and Isabelle Stengers, used to describe speculative storytelling that encourages alternative thought. In this light, the museum space thus indicates a transition, and recovering memory, importantly, does not simply concern insistences of the past in the present but rather the cultivation of experimental engagements with worlds to come.

Understanding extinction

Despite the material and semiotic traces left by absent nonhumans on the world (Despret 2021a), the human ability to articulate them diminishes as memory fades from the cultural landscape. Pablo tells me that 'with the museum, people can't forget now; they are reminded by this space, this activity'. Rather than a static snapshot of what *once was*, the fauna on display in museums invite fluid, dynamic understandings of the world around us. They reflect the shifting cultural milieus in which museum objects are encountered across spatial and temporal scales (Poliquin 2012). Moreover, they pose political questions concerning the forces of extractive and colonial processes which cause mass extinction (Haraway 1984; Asma 2001; Grady 2006; Poliquin 2008; Torsen *et al.* 2013; Guasco 2021). In this section, I examine the ways in which the bucardo's extinction is told, made sense of, revisited, and re-politicized, specifically through the material contents of *El Museo del Bucardo*.

Cultivating care

Following María Puig de la Bellacasa (2012; 2017), Thom van Dooren (2014b) identifies three facets of care: ethical, affective, and practical. For these authors, 'shared ontological resonance' is a key aspect of these notions of care, which concerns attuning and relating to the lifeworlds of other beings to diversify forms of empathy. Developing Haraway's (2008; 2016) relational ontology, Puig de la Bellacasa (2017: 69, emphasis in original) contends that 'caring and relating share ontological resonance', and that '*relations of thinking and knowing require care and affect how we care*'. Cultivating more-than-human care, then, is built upon situating particular relations in their cultural, political, and ecological contexts. The way stories of the bucardo's extinction are told in *El Museo del Bucardo* map conveniently onto these three forms of cultivating care: firstly, a critique of hunting and exploitation on ethical grounds; secondly, an affective characterization of the last few bucardo as described by wildlife photographer Bernard Clos; and lastly, a practical outline of conservation efforts and failures.

Standing in front of Laña, I ask Daniel what the museum meant to him, personally. He pauses, gazing at the stuffed bucardo, and explains 'now people can learn about the bucardo, and by knowing its story, we can understand conservation's failure'. Behind Laña's mount is the story of her extinction, beginning with written accounts of hunters from the early nineteenth century. Long passages are quoted from the famed British hunters who contributed to the bucardo's status as a natural spectacle (Searle 2021), including Victor Brooke (1894) and Edward North Buxton (1892). After detailing these literary encounters with the bucardo, the display turns to a generalized discussion of hunting:

Humans started hunting in order to eat. Bucardo were hunted in order to take advantage of their meat, their horns, their skin, and their blood. It was thought that the blood of wild goats had medicinal purposes. This changed in the nineteenth century. Local hunters started to hunt bucardo in exchange for money; they sold them to zoologists who wanted these animals in their collections. Later, trophy hunters arrived in Ordesa. ... In 1906 the last bucardo was hunted in Ordesa. These days the uncontrolled hunting which brought the bucardo to its limit has come to an end. ... The Ordesa valley is now a national park where the hunting of any animal is prohibited, where visitors enjoy wildlife and nature photography.

Two central themes emerge from this contextualization of the bucardo's story: firstly, it highlights the long histories of human exploitation of bucardo; and secondly, the identification of a historical emergence of care concerning the bucardo and human relationships with it. In fact, the vast majority of information panels in the museum are explicitly dedicated to extinction and the ecological consequences of unrestricted hunting. Pablo tells me that 'we know without a doubt that the bucardo's extinction was caused by hunting. How can we learn from this, and avoid it happening again? By giving the details'.

As care for bucardo emerged, an ethical reframing took place in the early twentieth century which invited novel reflections on the material consequences of overhunting. The prohibition of bucardo hunting in 1913, and creation of the national park in 1918, might suggest a criticism of previous relations between humans and bucardo as unsustainable and exploitative. By the early twentieth century, Buxton and his contemporaries were appalled by the reckless 'bloodthirstiness' of a new generation of hunters – those outside the upper echelons of society – and were ironically concerned about the implications of overhunting all over the world (Buxton 1902; Adams 2003; Prendergast and Adams 2003). Similar sentiments were echoed in Aragón at the turn of the twentieth century, whereby early forms of bucardo care consisted of 'avoiding its hunting' for the most part (Pascual García 1982). Ecologists Ricardo García-González and Juan Herrero (1999) reflect the critiques in the museum by writing that this ban came too late. Pablo's proposition that we must learn from the failures of hunting management is given new meaning in the museum context: the taxon's absence is made palpably present through the juxtaposing of these stories and the last bucardo herself.



Figure 3. Bucardo in Ordesa photographed by Bernard Clos in 1981, reproduced courtesy of Parc National des Pyrénées [© B. Clos – Parc National des Pyrénées].

Alongside the information given on hunting, there are descriptive testimonies written by the late Bernard Clos, the best-known photographer to capture glimpses of the remnant bucardo population in the early 1980s. In order to curate affective and interpersonal relationships with the extinct animal, the museum allows the 'testimonies of Bernard Clos' to provide thick description alongside a selection of his photographs (see Baker 2014 on this methodology). The lively accounts of encounter offer snapshots of the bucardo's many lives and deaths,

acting as what Thom van Dooren and Deborah Bird Rose refer to as 'grounded acts of care, of witnessing and careful storytelling' (van Dooren and Rose 2016: 79), which 'may give rise to proximity and ethical entanglement, care and concern' (van Dooren and Rose 2016: 89). Photographs of animals, moreover, offer insight into the more-than-human entanglements that punctuate landscapes and environments (cf. Turnbull 2020) and enable forms of 'intimacy without proximity' that tend to define human relations with elusive species (Metcalf 2008). Clos was a wildlife photographer famous in Aragón for spending vast amounts of time looking for bucardo in Ordesa, and whose photographs have become a contemporary go-to reference point (figure 3).

The information board explains Clos' life work and posthumously thanks him for the generous donation of his personal archive to the French national park authorities. It then presents what van Dooren and Rose (2016) would call a 'lively ethography', an account written by Clos himself at the methodological interface of ethnography and ethology:

After many years of searching, I ended up seeing my first bucardo, and by good luck it was a beautiful male. ... Thanks to patience, and with the help of persevering and faithful friends, at last we managed in 1978 – after errors and failures – to spot and photograph the marvellous and incredibly rare ibex with its huge horns. With time more encounters came, they were never similar, always exhilarating, also more prolonged observations, moments of a rare emotion.

In addition to encouraging publics to imagine the bucardo's encounter with awe, Clos' thick description outlines the bucardo's behaviour, inviting introspection:

Unlike its siblings in the Alps or in Spain, the bucardo trusts the forest, in fact it never strays from it, in order to stay cloaked in the outdoors, in a safe refuge in case of man's interruption; its lifelong enemy, in fact, it's only enemy.

In the French mountaineering journal *Pyrénées*, Clos wrote of the bucardo's look as a 'disapproving look: "why have you come to disturb my tranquillity?" (Clos 1985: 138). Clos' photos are found scattered throughout Torla: on the walls of bars, on the phone directory, in hotel lobbies. There is something enticing about the glimpses they offer into bucardo worlds, usually in the form of a fleeting encounter. Jean-Paul Crampe, an ecologist in the French *Parc National des Pyrénées*, describes in a recent memoir a famous photo of Clos' rendezvous with a bucardo as 'an apparition'. For Crampe, the photo stimulated in him a stark realization, and 'the deafening manifestation of an absence: without hunting, bucardo would exist in numbers throughout the Pyrenees' (Crampe 2020: 84). This is what these photographs do. They haunt us, making palpable an absence in the cultural landscape, and invite speculation into what could have been (Roberts 2013). But to consider absence is to consider absences-to-come, and to seek political action in the present (Searle 2020b).

On the opposite wall, directly facing Laña, is a brief yet informative display detailing the conservation efforts of the twentieth century, and a final panel outlining Laña's death including a shocking image of her crushed under the fir tree (figure 4).

The final form of care is practical, outlining the conservation interventions of the late twentieth century. 'It is important to understand failures in conservation,' Pablo tells me, 'but in reality, the failure was simply that any plan to recover the bucardo started far too late'. He tells me this whilst pointing to the population estimates on the wall: 1900 - 8-9 individuals; 1960 - 16-17; 1980 - 30; 1990 - 6; 1993 - 3. Conservationists used a range of techniques to attempt to stimulate any form of reproduction, as one of the information boards makes clear, 'the objective was the genome's survival'. A brief biography is given of 'Laña, the last bucardo,' alongside images of her in life and death. There is no mention of bucardo cloning in this discussion, no de-extinction, no false hope. The omission of the cloning's story from the museum extinction narrative stands in stark contrast to the globalizing narratives of de-extinction found in the media and international discourse, in which the efforts of some scientists have come to define how the animal is culturally recognized for many.

In the shadow of Laña's remains, looking out towards the Ordesa valley, visitors at *El Museo del Bucardo* are encouraged to forge caring relations with the extinct animal. It is a narrative space and therefore platforms partial and contingent histories (Newell *et al.* 2016;

Bell 2017; Þórsson 2020; Guasco 2021), yet these histories invite critique on the exploitative practices which led to the bucardo's extinction. Care is cultivated in the museum space through its platforming of shared ontological resonances; extinction is made palpable through the questions posed to visitors on ethical, affective, and practical registers.



Figure 4. Board detailing Laña's life and death, including a photo of her death.

As aforementioned, the bucardo's status as a distinctly *local* animal is paramount to the museum space. Pablo was adamant that *El Museo del Bucardo*, despite its name, speaks to much more than the bucardo's extinction: 'not only the extinction, or even extinctions in general, but also about endemism [*endemismos*] – of which there are many in the Pyrenees'. The bucardo's was interwoven in the imagined Pyrenean cultural landscape, and as such emerged as emblematic for geographically situated visions of wildlife. In the next section, I examine how this is communicated in *El Museo del Bucardo*.

Situated emblem

Pablo felt that the bucardo's endemism would encourage visitors to relate to other, less charismatic (cf. Lorimer 2007), nonhuman organisms across the Pyrenees. 'Endemic', from the French *endémique*, originated in the natural sciences as the binary opposite to 'exotic'. I take issue with this definition of endemism, as it enforces an unhelpful dynamism contingent on the production of an external 'ecological Other' (Ray 2013) and acknowledge that such language, commonplace in the vernacular of ecological science (perhaps obliviously), is deeply embedded in a native/alien divide which has been deconstructed and critiqued by others (Coates 2006; van Dooren 2011; Barua 2022). I prefer to frame this matter in terms of *situatedness*, emphasizing the geographic scale of multispecies relations.

Contrary to colonial menageries established between the fifteenth and twentieth centuries (Kislingjr 2010; Bewell 2014; MacKenzie 2017), *El Museo del Bucardo* offers different visions of wildlife: a locally curated museum for a locally narrated extinction. In this section, I explore the emergence of the bucardo as an emblem for more-than-human relations in the Pyrenees, paying specific attention to what Hannah Paddon (2011) calls the 'mascotism' of biological objects in museum space by focussing on 'the Casa Oliván bucardo' (Figure 5). Famed French photographer, mountaineer, and pioneering 'Pyreneist' Lucien Briet visited

Ordesa in 1909 and 1911, before publishing the widely acclaimed *Bellezas del Alto Aragón* [Beauties of High Aragón] shortly after (1913). The book contains two photographs of a stuffed bucardo, immortalizing the bucardo as inseparable from the landscape of Ordesa. Bucardo were so rare, and so difficult to encounter, that this specimen came to speak for broader sentiments towards Pyrenean wildlife. Although this bucardo most likely had a name at the turn of the twentieth century, it has simply earned the contemporary moniker as 'the Casa Oliván bucardo', as it was kept in Casa Oliván, a house in Ordesa which was still lived-in by the time tourism arrived in the valley (Marquina Murlanch 2018).

The specimen is prevalent in many photographs from Ordesa in the early twentieth century (Figure 6), both before and after the foundation of the national park in 1918. In all these photographs, the bucardo is an emblematic mascot for Ordesa – understood by Paddon (2011: 141) as 'specimens of biology on display which have an elevated meaning'. For visitors, this elevated meaning was a story to be told; that they had achieved a fabled encounter with Ordesa's mysterious, quasi-mythological animal. At the beginning of the twentieth century the bucardo's existence was disputed (Woutersen 2012; Crampe 2020), and the taxidermic specimen was proof of its existence.



Figure 5. The Casa Oliván bucardo, photographed in the Ordesa valley by Ricardo Compairé Escartín sometime between 1913 and 1921. Reproduced courtesy of Fototeca de la Diputación Provincial de Huesca and Parque Nacional de Ordesa y Monte Perdido.

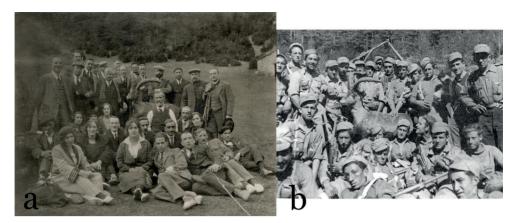


Figure 6. Different groups of visitors to Ordesa with the Casa Oliván bucardo through time. **A**) *Visitors posing with the bucardo in the early twentieth century, photographed by Vincente Campo Palacio, exact date unknown. Reproduced courtesy of* Fototeca de la Diputación Provincial de Huesca. **B**) *Soldiers with the same bucardo, photographer and date unknown. Reproduced courtesy of* Fototeca de la Diputación Provincial de Huesca.

In the compelling natural history *El Bucardo de los Pirineos* [The Pyrenean Bucardo], Kees Woutersen describes the Casa Oliván bucardo as 'famous in its time. It was seen by all those who visited the valley' (Woutersen 2012: 172). However, when the book was published, the Casa Oliván bucardo's location was unknown. As Woutersen (2012: 172) notes:

Nobody knows for sure where the bucardo went. Maybe they took it to Barcelona, or removed its horns... The reality is it has disappeared. Disappearing is something that can happen with all of the bucardo's legacy. Everything can be lost by a small misfortune, or because it loses value over time... In private collections, and in private institutions, one may never know what will happen as time passes.

Yet this changed in 2016, when Pablo received a phone call. He told me that 'someone called Torla's town hall saying: "I'm the heir of Casa Oliván, and I've got some bucardo horns I want to donate to the museum". A huge surprise for us, because nobody knew where it had gone'. Unfortunately, most of the specimen had deteriorated and all that remained were the bucardo's horns, which had been reworked onto a wall mount. Pablo felt that the acquisition of these horns for *El Museo del Bucardo* added a historical richness to the space, one which elucidated 'naturalcultural' histories of Ordesa (cf. Haraway 2008). 'This is *the* famous bucardo, from all the photographs', he told me, elaborating:

In their day, everyone had touched these horns in Ordesa. Imagine! Lucien Briet had touched them, so had soldiers throughout the [Spanish Civil] War [1936-1939], the first tourists in Ordesa, and hunters too. These horns tell a history of the national park... that's why it's important for them to be in the museum.

Paddon (2011: 145) notes that 'not only can encounters with mascots reawaken distant memories and trigger personal associations, audiences may also encounter these museum objects on another level'. In *El Museo del Bucardo*, these horns signal a long-standing cultural fascination with the bucardo, which, at its very core, exhibits centuries of admiration. They evoke a certain nostalgia, of times past, and of ecologies absent – and, perhaps, a yearning of ecologies to come (Jørgensen 2019).

An 'object biography' (Paddon 2011) of these horns highlights other interests about them as an artefact; Pablo felt that their disappearance and unknown story made them even more valuable, and embellished them with an air of speculation apt for an animal so widely recognized for its absence. A visitor I spoke to in *El Museo del Bucardo* quipped that the Mona Lisa is valued more for its turbulent history as a museum artefact – its theft and

re-emergence – than a material piece. What matters just as much, it seems, are the stories told about such objects, and the social worlds in which they forge new meanings. Alongside the horns, a story of their disappearance is given, alongside a note of public thanks given to Juana María Hernández for their eventual donation to the Torla-Ordesa municipality (Figure 7).



Figure 7. The Casa Oliván bucardo's horns on display alongside photos from Lucien Briet's Bellezas del Alto Aragón (1913) and a note on the artefact's disappearance.

Daniel drew parallels between the Casa Oliván bucardo and Laña, noting that they both function emblematically for Ordesa – and the national park – across distinct temporalities, attitudes towards nonhuman life and conservation, and knowledges of extinction and its futures. Standing in *El Museo del Bucardo* and observing people move through the space, they are inevitably drawn to Laña as the highlight of the museum. Although the Casa Oliván bucardo historically granted visibility to Ordesa's biota and framed the bucardo as an emblem for the valley, Laña is a very different emblem; contrastingly, Laña speaks to extinction, and invites reflection on what it means to *lose* more-than-human relations so deeply embedded in the landscape.

Extinction emblem

How does this situated extinction narrative speak to broader concerns regarding species loss? In this final empirical section, I deal with this question, reflecting on what insights these narratives offer on broader, politically charged, and pressing matters. Stepping into *El Museo del Bucardo*, on the left, there are two dioramas of animals you might not expect in a museum dedicated to a single taxon emblematic of Pyrenean wildlife (Figure 8): a thylacine, whose range was limited to Tasmania, New Guinea, and mainland Australia, of which the last individual died in captivity in 1936; and a dodo, found only in Mauritius, which was last recorded alive in 1662. I asked Pablo what these models added to the museum experience, to which he reminded me that 'although not related to Ordesa, they are symbols of extinction in other places'.

Pablo added that *El Museo del Bucardo* has been expanded twice: firstly, through the acquisition of these models; and secondly, through the acquisition of the Casa Oliván bucardo. I asked which was more important, to which he told me they were 'incomparable'

as they both 'add important dimensions to the bucardo's story'. Both the dodo and thylacine are iconic, charismatic symbols of extinction (Quammen 1997; Heise 2010; 2016; Barnett and Lorenzen 2018; Guasco 2021). Although framing the sixth mass extinction through the loss of charismatic fauna may obscure the unknown, or lesser known, species lost (Bastian 2020; McCorristine and Adams 2020), these animals 'are cultural and commercial icons and therefore familiar, and may appeal to the public as conservation flagships' (Kyne and Adams 2017: 471). Flagship species often bridge gaps between disparate governance networks or cultural frames (Jepson and Barua 2015). Kyne and Adams (2017: 475) suggest that the conservation value of 'extinct flagship' species works by 'bridging the fate of the extinct species to the required action to avert the loss of currently threatened species'.



Figure 8. Model thylacine and dodo in El Museo del Bucardo.

In the specific context of a museum focussed on a local emblem, the inclusion of extinction flagships from elsewhere reminds visitors what is at stake of being lost in the extinction crisis, all around the world. It is a reminder that every species is locally significant, and their extinction not only signals biotic loss, but the loss of multispecies communities and ways of knowing the world (van Dooren 2019). As Pablo said, 'these other examples show the bucardo in a broader context'. He elaborated that by exhibiting the bucardo's extinction, 'we can learn from this loss to prevent others happening'. This echoes Woutersen's writings on the bucardo, whose latest book *El Camino de los Bucardos* [The Bucardo's Way] ends with the following provocation: 'If you like nature, and you care about its conservation, look after Laña's memory and remember the last bucardo' (Woutersen 2019: 129).

El Museo del Bucardo provides a material space in which this memory is institutionalized, and Laña continues to shape the ways in which Ordesa is understood. Laid out on a table is a series of drawings from local primary school children which were donated to the museum in 2013. Looking at them, Daniel told me that 'these children weren't born when Laña was alive, but they all know Laña because she's here now'. These drawings highlight the 'lost futures' central to the extinction crisis. In the epistemic context of de-extinction science, and the sites in which its visions of biotechnological natures are projected, *El Museo del Bucardo* offers a radically different vision of extinction and local more-than-human relations. As the future

unfolds, and extinction's meaning is changed through Promethean visions of technological intervention (Minteer 2018; Novak 2018; Searle 2020a), how might this shape the different ways in which the bucardo is understood?

Coda: Uncertain histories and futures

Sofía, an environmentalist from Zaragoza, told me that there were other interest groups present at the museum's inauguration, members of the Aragón government, and those involved in the cloning project. 'They have their interests', Pablo later told me, 'and they were involved in the museum's opening to promote the cloning'. Although *El Museo de Bucardo* was founded initially by local people with aspirations to recover the bucardo's memory, others were involved with different objectives. 'After all', Pablo recounted, 'Laña is the property of the Aragonese government, who were involved too in the cloning'. Mariana was of the opinion that cloning was a means of 'putting Aragón on the map'. Such framings relate to the popular media telling of the bucardo's cloning story, which often gets swept up in hype, in which the scientific narrative is lost (Adams 2017). For example, a headline in *El Diario* reads "Jurassic Park" imagined it, Aragón did it'.

Modesto Sobrino Lobón was the minister for agriculture and the environment in the Aragón government between 2012 and 2015. He spoke at the museum's inauguration on the bucardo's uncertain futures, described in the local newspaper *El Diario de Alto Aragón* as a move 'looking for financial sources at the international level' (Casanovas 2013: 8). For Sobrino Lobón, the museum was an opportunity to recuperate memory *and* futures:

We will try to recover not only the bucardo's history, but also the future of this species; that it returns again to life. It is a complex and ambitious project, but we can count on the cells of the last individual to try and achieve it (Casanovas 2013: 8).

It is clear that, for a certain subgroup of human actors, the bucardo's futures are found in the speculative dreams of de-extinction (Searle, 2022b). For these people, *El Museo del Bucardo* serves as a site in which attention and interest can be generated; this also speaks to issues of biotic loss and recovery, albeit in a very different ontological and ethical frame. For Pablo and other members of the *Asociación de Amigos del Bucardo*, who were largely opposed to cloning, recovery focussed on memory, and the cultivation of care for local wildlife. Pablo told me that 'the Aragón government, who politicize the bucardo, don't recognize histories aside from the cloning. Of course, cloning is a part of its story, but it's a small part. Tiny'. *El Museo del Bucardo* is, for him, a place to allow members of the public to move beyond the spectacle of de-extinction, moving beyond what Ronald Sandler calls de-extinction's 'technological wizardry'. It is quite telling that Laña's biography, as told in the museum, makes no recourse to the cloning attempt.

If scientists were able to successfully clone bucardo and introduce them to the Pyrenees – a near impossible feat given that there is only genetic material available from one individual, which does not constitute a population (García-González and Margalida 2014) – *El Museo del Bucardo* would take on very different meanings. It would speak to a lost bucardo that will never return, bucardo *from* the Pyrenees rather than bucardo *put there*, bucardo cared for and witnessed in completely different ways. Daniel put it succinctly: 'people around the world think of the bucardo, and they think of cloning. But in the museum, people can learn its real story, which is a story of the Pyrenees'. There, in a Perspex case, peering out towards the Ordesa valley, Laña will remain to tell that story. Around her a range of narratives about biotic loss and recovery will continue to compete. The museum embraces the bucardo as an emblematic local lifeform, but also as an emblem of what it means to lose diverse multispecies forms of life. Received: 16 March 2021

Finally accepted: 20 January 2022

Acknowledgments

I am incredibly grateful to research participants in Torla, Huesca, Zaragoza, and other parts of Aragón for their patience, insight, and above all their kindness throughout periods of fieldwork. Thank you to Jonathon Turnbull and Bill Adams for their close engagement with this text, and to the attendees of the British Animal Studies 2021 conference on 'Loss' for their input when I presented an earlier version of this paper. It is a privilege to be part of this special issue coordinated by Dolly Jørgensen and Libby Robbin with scholars I have drawn extensive inspiration from in my work, and I deeply appreciate the editorial insight of Dolly, Libby, the editors of Museum and Society, and Peter Lester. The manuscript was greatly improved by comments and suggestions from anonymous reviewers.

Notes

- ^{1.} All of these research participants have been assigned pseudonyms in order to preserve anonymity. All of the empirical work conducted in this article was in Spanish and translated into English by me. I am not from Aragón, and thus all my writing reflects partialities and what Radhika Govindrajan (2018) calls the 'incomplete and inadequate' translations of ethnographic research.
- ^{2.} The programme, Torla quiere recuperar la memoria del bucardo, is available online as part of TVE's on demand service: <u>http://www.rtve.es/play/videos/noticias-aragon/noticiasaagon-06-06-11/1121850/</u>
- ^{3.} In Spanish, 'history' and 'story' blend into one another [historia]. I use them interchangeably in my translations depending on context, yet it should be noted that in common vernacular there is less distinction between both modes of making sense of the past through storying and narrative. On a compelling case for 'storying' in historical research, see Lorimer (2003).
- ^{4.} Jenny Liou, 'Am I An Invasive Species?', High Country News 2020. <u>https://www.hcn.org/issues/52.8/north-race-and-racism-am-i-an-invasive-species</u>, accessed 23 February 2022
- ^{5.} Óscar Senar Canalís, "Jurassic Park" lo imaginó, Aragón lo hizo: "Salvar al bucardo", el relato de la primera "desextinción" real de la historia', El Diario 2020. <u>https://www.eldiario.es/aragon/sociedad/jurassic-park-aragon-bucardo-desextincion-clonacion_1_1139901.</u> <u>html</u>, accessed 23 February 2022.
- ⁶ Ronald Sandler, 'The Ethics of Reviving Long Extinct Species', YouTube 2014. <u>https://www.youtube.com/watch?v=54JA9wpOoCE</u>, accessed 23 February 2022.

References

Adams, W.M. (2003) Against Extinction: The Story of Conservation, London: Earthscan.

(2017) Geographies of Conservation I: De-extinction and Precision Conservation, *Progress in Human Geography*, 41 (4) 534-45.

Alberti, S.J.M.M. (2011a) *The Afterlives of Animals: A Museum Menagerie*, London: University of Virginia Press.

(2011b) 'Introduction: The Dead Ark', in Samuel J.M.M. Alberti (ed) *The Afterlives of Animals: A Museum Menagerie*, 1-16, London: University of Virginia Press.

Asma, S. (2001) Stuffed Animals and Pickled Heads: The Culture and Evolution of Natural History Museums, Oxford: Oxford University Press.

- Baker, S. (2014) 'Dead, Dead, Dead, Dead', in Garry Marvin and Susan McHugh (eds) *The Routledge Handbook of Human-Animal Studies*, 290-304, London: Routledge.
- Barnett, R. and Lorenzen, E. (2018) 'Thylacine Tales', *Nature Ecology & Evolution*, 2 (1) 7-8.
- Barua, M. (2022) 'Feral Ecologies: The Making of Postcolonial Nature in London', *Journal* of the Royal Anthropological Institute. <u>https://doi.org/10.1111/1467-9655.13653</u>.
- Bastian, M. (2020) 'Whale Calls, Suspended Ground, And Extinctions Never Known', Environmental Humanities, 12 (2) 454-74.
- Bell, J.A. (2017) 'A Bundle of Relations: Collections, Collecting, and Communities', *Annual Review of Anthropology*, 46 (1) 241-59.
- Bewell, A. (2014) *Natures in Translation: Romanticism and Colonial Natural History*, Washington DC: John Hopkins University Press.
- Bezan, S. and McKay, R. (2022) 'Animal Remains: An Introduction', in Sarah Bezan and Robert McKay (eds) *Animal Remains*, 1-11, New York: Routledge.
- Briet, L. (1913) Bellezas del Alto Aragón, Huesca: Diputación de Huesca.
- Brooke, V. (1894) Sir Victor Brooke: Sportsman and Naturalist, London: John Murray.
- Buxton, E.N. (1892) Short Stalks, London: Edward Stanford.

(1902) Two African Trips, London: Edward Stanford.

- Casanovas, I. (2013) 'El Museo del Bucardo Recuerda a Este Extinto Habitante de Torla', *El Diario de Alto Aragón*, 28 April, 8-9.
- Clos, B. (1985) Bouquetin des Pyrénées par un Montagnard et Photographie, *Pyrénées*, 142 (2) 132-8.
- Coates, P. (2006) Strangers on the Land: American Perceptions of Immigrant and Invasive Species, Berkeley: University of California Press.
- Crampe, J.P. (2020) *Le Bouquetin aux Pyrénées: Odyssée d'un Espèce Retrouvée*, Pau: MonHélios.
- de Massol de Rebetz, C. (2020) 'Remembrance Day for Lost Species: Remembering and Mourning Extinction in the Anthropocene', *Memory Studies*, 13 (5) 875-88.
- Deleuze, G. and Guattari, F. (1994) *What Is Philosophy?* Translated by Hugh Tomlinson and Graham Burchell. New York: Columbia University Press.
- Despret, V. (2017) 'It Is an Entire World That Has Disappeared', in Deborah Bird Rose, Thom van Dooren, and Matthew Chrulew (eds) *Extinction Studies: Stories of Time, Death, and Generations*, 217-22, New York: Columbia University Press.

(2021a) Autobiographie d'un Poulpe: Et Autres Récits d'Antipation, Arles: Actes Sud.

(2021b) Monologue in Diana Toucedo (director) *Camille & Ulysse*, 46 mins. Produced by CCCB, Barcelona, and Centre Pompidou, Paris.

Everest, S. (2011) '"Under the Skin": The Biography of a Manchester Mandrill', in Samuel J.M.M. Alberti (ed) *The Afterlives of Animals: A Museum Menagerie*, 75-91, London: University of Virginia Press.

- Folch, J., Cocero, M.J., Chesné, P., Alabart, J.L., Domínguez, V., Cognié, Y., Roche, A., Fernández-Árias, A., Martí, J.I., Sánchez, P., Echegoyen, E., Beckers, J., Bonastre A.S. and Vignon, X. (2009) 'First Birth of an Animal from an Extinct Subspecies (*Capra pyrenaica pyrenaica*) by Cloning', *Theriogenology*, 71 1026-34.
- García-González, R. and Herrero, J (1999) 'El bucardo de los Pirineos: Historia de una extinción', *Galemys*, 11 (1) 17-26.
- García-González, R. and Margalida, A (2014) 'The Arguments Against Cloning the Pyrenean Wild Goat, *Conservation Biology*, 28 (6) 1445-6.
- Gómez López, A.M. (2022) 'Photographing Dead Animals: Taphonomy as Embedded Media', in Sarah Bezan and Robert McKay (eds) *Animal Remains*, 15-32, New York: Routledge.
- Govindrajan, R. (2018) Animal Intimacies: Interspecies Relatedness in India's Central Himalayas, Chicago: The University of Chicago Press.
- Grady, W. (2006) *Bringing Back the Dodo: Lessons in Natural and Unnatural History*, Toronto: McClelland and Stewart.
- Guasco, A. (2021) "As Dead as a Dodo": Extinction Narratives and Multispecies Justice in the Museum', *Environment and Planning E: Nature and Space*, 4 (3) 1055-76.

Halbwachs, M. (1992 [1925]) On Collective Memory, Chicago: University of Chicago Press.

Haraway, D.J. (1984) 'Teddy Bear Patriarchy: Taxidermy in the Garden of Eden, New York City, 1908-1936', *Social Text*, 11 20-64.

(2008) When Species Meet, Minneapolis: University of Minnesota Press.

(2016) Manifestly Haraway, Minneapolis: University of Minnesota Press.

Heise, U.K. (2010) 'Lost Dogs, Last Birds, and Listed Species: Cultures of Extinction', *Configurations*, 18 49-72.

(2016) *Imagining Extinction: The Cultural Meanings of Endangered Species*, Chicago: University of Chicago Press.

- Jasanoff, S. and Kim, S.H. (2015) *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power*, Chicago: The University of Chicago Press.
- Jepson, P. and Barua, M. (2015) 'A Theory of Flagship Species Action', *Conservation and Society*, 13 (1) 95-104.
- Jørgensen, D. (2017) 'Presence of Absence, Absence of Presence, and Extinction Narratives', in Lesley Head, Katarina Saltzman, Gunhild Setten and Marie Stenseke (eds) *Nature, Temporality and Environmental Management: Scandinavian and Australian Perspectives on Peoples and Landscapes*, 45-58, Oxford: Routledge.

(2019) *Recovering Lost Species in the Modern Age: Histories of Longing and Belonging*, Cambridge: The MIT Press.

- Kislingjr, V.N. (2010) 'Colonial Menageries and the Exchange of Exotic Faunas', *Archives* of Natural History, 25 (3) 303-20.
- Kupferschmidt, K. (2014) 'Can Cloning Revive Spain's Extinct Mountain Goat?', *Science*, 344 137-8.

- Kyne, P.M. and Adams, V.M. (2017) 'Extinct Flagships: Linking Extinct and Threatened Species', *Oryx*, 51 (3) 471-6.
- Lacasta Lardiés, J.M. (2020) *De Ramaders a Treballadors Del Turisme: Una Mirada Etnogràfica als Canvis En Un Poble del Pirineu*, Barcelona: Universitat de Barcelona.
- Lorimer, H. (2003) 'Telling Small Stories: Spaces of Knowledge and the Practice of Geography', *Transactions of the Institute of British Geographers*, 28 197-217.
- Lorimer, J. (2007) 'Nonhuman Charisma', *Environment and Planning D: Society and Space*, 25 (5) 911-32.
- Machin, R. (2008) 'Gender Representation in the Natural History Galleries at the Manchester Museum', *Museum and Society*, 6 (1) 54-67.
- MacKenzie, J.M. (2017) *Museums and Empire: Natural History, Human Cultures, and Colonial Identities*, Manchester: Manchester University Press.
- Marquina Murlanch, L. (2018) *Las Casas de Ordesa: El Parque Vivido*, Huesca: Instituto de Estudios Altoaragoneses.
- McCorristine, S. and Adams, W.M. (2020) 'Ghost Species: Spectral Geographies of Biodiversity Conservation', *Cultural Geographies*, 27 (1) 101-15.
- Mendenhall, C.D., Hayes, V.G., Margolis, J.R., and Dorfman, E. (2020) 'Diversifying Displays of Biological Sex and Sexual Behaviour in a Natural History Museum', *Museum International*, 72 (1-2) 152-61.
- Metcalf, J. (2008) 'Intimacy Without Proximity: Encountering Grizzlies as a Companion Species', *Environmental Philosophy*, 5 99-128.
- Minteer, B. (2018) The Fall of the Wild: Extinction, De-Extinction, and the Ethics of Conservation, New York: Columbia University Press.
- Newell, J., Robin, L. and Wehner, K. (2016) *Curating the Future: Museums, Communities, and Climate Change*, London: Routledge.
- Novak, B.J. (2018) 'De-extinction', Genes, 9 (11) 548.
- Paddon, H. (2011) 'Biological Objects and "Mascotism": The Life and Times of Alfred the Gorilla', in Samuel J.M.M. Alberti (ed) *The Afterlives of Animals: A Museum Menagerie*, 134-50, London: University of Virginia Press.
- Parreñas, J.S. (2018) *Decolonizing Extinction: The Work of Care in Orangutan Rehabilitation*, Durham: Duke University Press.
- Pascual García, R. (1982) 'La caza prohibida: El bucardo de los Pirineos', *Trofeo*, 141 22-6.
- Patchett, M. (2016) 'The Taxidermist's Apprentice: Stitching Together the Past and Present of a Craft Practice', *Cultural Geographies*, 23 (3) 401-19.

(2017) 'Taxidermy Workshops: Differently Figuring the Working of Bodies and Bodies at Work in the Past', *Transactions of the Institute of British Geographers*, 42 390-404.

Patchett, M., Foster, K., and Lorimer, H. (2011) 'The Biogeographies of a Hollow-Eyed Harrier', in Samuel J.M.M. Alberti (ed) *The Afterlives of Animals: A Museum Menagerie*, 110-33, London: University of Virginia Press. Poliquin, R. (2008) 'The Matter and Meaning of Museum Taxidermy', *Museum and Society*, 6 (2) 123-34.

(2011) 'Balto the Dog', in Samuel J.M.M. Alberti (ed) *The Afterlives of Animals: A Museum Menagerie*, 92-109, London: University of Virginia Press.

(2012) *The Breathless Zoo: Taxidermy and the Cultures of Longing*, Philadelphia: The Pennsylvania University Press.

- Prendergast, D.K. and Adams, W.M. (2003) 'Colonial Wildlife Conservation and the Origins of the Society for the Preservation of the Wild Fauna of the Empire (1903–1914)', *Oryx*, 37 (2) 251-60.
- Puértolas Puértolas, E. (2018) 'La Huella de Quienes Habitan Ordesa', *Diario del AltoAragón*, 15 September, 10-11.
- Puig de la Bellacasa, M. (2012) "Nothing Comes Without Its World": Thinking With Care', *The Sociological Review*, 60 (2) 197-216.

(2017) *Matters of Care: Speculative Ethics in More-than-human Worlds*, Minneapolis: University of Minnesota Press.

- Quammen, D. (1997) *The Song of the Dodo: Island Biogeography in an Age of Extinctions*, London: Pimlico.
- Ray, S.J. (2013) *The Ecological Other: Environmental Exclusion in American Culture*, Tucson: The University of Arizona Press.
- Roberts, E. (2013) 'Geography and the Visual Image: A Hauntological Approach', *Progress in Human Geography*, 37 (3) 386-402.
- Rose, D.B., van Dooren, T. and Chrulew, M. (2017) *Extinction Studies: Stories of Time, Death, and Generations*, New York: Columbia University Press.
- Searle, A. (2020a) 'Anabiosis and the Liminal Geographies of De/extinction', *Environmental Humanities*, 12 (1) 321-45.

(2020b) 'Absence', Environmental Humanities, 12 (1) 167-72.

(2021) 'Hunting Ghosts: On Spectacles of Spectrality and the Trophy Animal', *Cultural Geographies*, 28 (3) 513-30.

(2022a) 'A Tale of Two Bucardo: Laña, Celia, and the Contested Meanings of Animal Remains', in Sarah Bezan and Robert McKay (eds) *Animal Remains*, 87-100, New York: Routledge.

(2022b) 'Spectral Ecologies: De/extinction in the Pyrenees', *Transactions of the Institute of British Geographers* 47 (1) 167-83.

- Sherkow, J.S. and Greely, H.T. (2013) 'What If Extinction is Not Forever?', *Science*, 340 (6128) 32-3.
- Symons, K. and Garlick, B. (2020) 'Tracing Geographies of Extinction', *Environmental Humanities*, 12 (1) 288-95.
- Torsen, L.E., Rader, K.A., and Dodd, A. (2013) *Animals on Display: The Creaturely in Museums, Zoos, and Natural History*, Philadelphia: Penn State University Press.
- Turnbull, J. (2020) 'Checkpoint Dogs: Photovoicing Canine Companionship in the Chernobyl Exclusion Zone', *Anthropology Today*, 36 21-4.

van Dooren, T. (2011) 'Invasive Species in Penguin Worlds: An Ethical Taxonomy of Killing for Conservation', *Conservation and Society*, 9 (4) 286-98.

(2014a) *Flight Ways: Life and Loss at the Edge of Extinction*, New York: Columbia University Press.

(2014b) 'Care', Environmental Humanities, 5 (1) 291-94.

(2019) *The Wake of Crows: Living and Dying in Shared Worlds*, New York: Columbia University Press.

(2022) 'Snail Trails: A Foray into Disappearing Worlds, Written in Slime', in Sarah Bezan and Robert McKay (eds) *Animal Remains*, 53-67, New York: Routledge.

- van Dooren, T. and Rose, D.B. (2016) 'Lively Ethography: Storying Animist Worlds', Environmental Humanities, 8 (1) 77-94.
- Westergaard, G. and Jørgensen, D. (2022) 'Making Specimens Sacred: Putting the Bodies of Solitario Jorge and Cu Rùa on Display', in Sarah Bezan and Robert McKay (eds) *Animal Remains*, 68-86, New York: Routledge.

Woutersen, K. (2012) El Bucardo de los Pirineos, Huesca: bucardo.es.

(2019) *El Camino de los Bucardos: Rutas y Vivencias en Torla-Ordesa*, Huesca: Scribo

Wrigley, C. (2020) 'Nine Lives Down: Love, Loss, and Longing in Scottish Wildcat Conservation', *Environmental Humanities*, 12 (1) 346-69.

(in press) A Discontinuous Earth, Minneapolis: University of Minnesota Press.

Þórsson, B. (2020) 'Walking Through the Anthropocene: Encountering Materialisations of the Geological Epoch in an Exhibition Space', *Nordic Museology*, 28 (1) 103-19.

Author

Adam Searle

ORCID iD: https://orcid.org/0000-0002-5319-895X asearle@uliege.be

Bât. B31 Spiral Quartier Agora Place des Orateurs 3 bte 8 4000 Liège Belgique

Biographical statement

Adam Searle is a cultural and environmental geographer at the Université de Liège, in Belgium, whose research broadly examines the relationships between humans, nonhumans, and technologies. Conceptually, his research explores the changing meanings of extinction, life, and nature in the context of biotechnological development.