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– ARTICLE –

IMMIGRANTS, SCIENTISTS, AND BUTTERFLIES:
DEPICTING CULTURAL AND BIOLOGICAL DIVERSITY IN CONSERVATION PHOTOGRAPHY OF THE U.S.-MEXICO BORDERLANDS, 2007–2019

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ABSTRACT

This article examines the work of conservation photographer Krista Schlyer, who, between 2009 and 2019, documented the impact of the U.S.-Mexico border wall on people, wildlife, and the land. While scholars in the environmental humanities have previously studied literary and artistic representations of the U.S.-Mexico borderlands, this is one of the first analyses of how conservation photography portrays biodiversity in the borderlands. I examine three of Schlyer's works – Continental Divide (2012), a collection of photography; Embattled Borderlands (2016), a digital story map; and Ay Mariposa (2019), a documentary film – in the historical context of the controversy over the environmental consequences of border wall construction. As a whole, Schlyer's work depicts the border wall as a threat to both biological and cultural diversity. In her later works, she disrupts the human-animal and nature-culture binaries through visual rhetoric and narrative structures that weave together the stories of humans and wildlife impacted by the border wall. These representations of the borderlands employ ecological narratives that both disrupt binary logics, and illuminate connections across species and nations.

Keywords: border studies, conservation photography, ecofeminism, extinction studies, animal studies

INTRODUCTION

Between 2009 and 2012, conservation photographer Krista Schlyer documented the impacts of the U.S.-Mexico border wall on people, wildlife, and the land, culminating in the publication of *Continental Divide: Wildlife, People and the Border Wall* (2012), a book of her nature writing and photography. This article analyses the development of Schlyer's approach to photographing the

biological and cultural diversity of the borderlands in relation to the political controversy about the environmental consequences of U.S.-Mexico border wall construction. Large scale construction of the border wall and associated environmental degradation began in 2006 and escalated in 2016, following the election of Donald Trump.

Here, I argue that Schlyer's work depicts the interconnectedness of biological and cultural diversity, and makes visible some of the common political and environmental threats faced by both human and nonhuman borderlands inhabitants. In *Continental Divide,* she curated a collection of her photographs of people and wildlife at the border fence to show how border wall construction harms humans and other species. Produced after the 2016 election of Donald Trump, Schlyer's story map, *Embattled Borderlands* (2016), and her short film, *Think Like a Scientist* (2016), typifies her politically engaged approach to conservation photography, in which she advocates for civic engagement and scientific research in order to bring about social and environmental justice. Schlyer created *Embattled Borderlands* and *Think Like a Scientist* in the context of an emerging coalition of environmental and social justice organisations that opposed Trump's expansion of the border wall. Finally, as her first project to deal explicitly with gender, her 2019 film *Ay Mariposa* depicts the resilience of a Mexican-American woman as she immigrates to the U.S., alongside the efforts of women conservationists at the National Butterfly Wildlife Center in the Rio Grande Valley in Texas. The film uses the migration of the monarch butterfly from Mexico to Canada as a metaphor for the movement of human migrants across the U.S.-Mexico border. *Ay Mariposa* disrupts nature-culture and human-animal binaries by weaving together the stories of butterflies, migrants, and conservationists into a larger narrative about migration across national borders.

Building on the work of environmental historians who analyse wildlife photography and film in relation to their historical contexts (Brower 2011; Chris 2006; Dunaway 2005; Mitman 2009), this article employs historical and literary methodologies to trace how the development of Schlyer's work reflects and influences histories of biodiversity conservation in the borderlands. In order to further contextualise Schlyer's work, I conducted a semi-structured, in-depth, two-hour interview with her about her borderlands project and the evolution of her career as a conservation photographer in relation to the history of environmentalism in the borderlands. Inspired by historian Finis Dunaway (2015), I approach photographs as 'rhetorical agents' that not only illustrate environmental politics but also actively help viewers imagine and actualise environmentalism. My methodology draws from ecocritical analyses of envi-

ronmental consciousness in borderlands literature and visual art that advocates for people and the environment (Holmes 2016; Oniversos 2013; Ybarra 2015). Additionally, I use feminist approaches to consider how wildlife photography and film encode and reinforce historically contingent understandings of human gender, race, and nation (Chris 2006; Haraway 1990).

While cultural studies scholars have previously examined the politics of environmental justice embedded in literature and art (Wald *et al.* 2019), this article is one of the first scholarly analyses of conservation photography of the U.S.-Mexico borderlands. This intervention matters because of photography's role in constructing cultural imaginaries of nature and in building the environmental movement. Wildlife photography became a popular genre at the beginning of the twentieth century when photography developed into a mass medium (Brower 2011). As historian Matthew Brower (2011) argues, photography not only constructs cultural ideas of wildlife but also structures our understandings of human-animal relations, historically emphasising the separation of humans and nature. Conservation photography later emerged as a genre when twentieth century environmentalists used nature photography as a strategy to 'bring aesthetics and emotions into politics' (Dunaway 2005, 5). As Dunaway (2005) argues, the environmental movement 'has relied on images more than any other American reform movement' to bring people closer to the nonhuman world and inspire concern for its protection (xvi). While early environmentalists promoted photographs that upheld an ideal of American wilderness that removed humans from landscapes (Cronon 1996), in the latter half of the twentieth century – following the publication of Rachel Carson's *Silent Spring* (1962) – environmental organisations increasingly endorsed environmental aesthetics that depicted the connection between people and nature. At its best, Schyler's photography offers an expansive view of environmentalism that challenges the viewer to see issues of race, gender, and nation as inextricable from biodiversity conservation.

The U.S.-Mexico borderlands is one of the most biodiverse regions in North America and houses many endangered species. As the place where the temperate and tropical zones meet in North America, the region has a unique ecology. The species that inhabit this ecological community do not coexist in any other environments. In the U.S., the borderlands are primarily federally protected lands, which feature such national monuments as the Organ Pipe Cactus National Monument, which the National Park Service manages; national wildlife refuges, such as the Santa Ana National Wildlife Refuge, which the U.S. Fish and Wildlife Service manages; and Indigenous territories, such as land that the Tohono O'Odham Nation holds. These regions border the Mexican national

park El Pinacate y Gran Desierto de Altar Biosphere Reserve. The Secretariat of Environment and Natural Resources of Mexico (SEMARNAT), which oversees conservation of ecosystems and natural resources, manages this park.

Conservation in the U.S.-Mexico borderlands became increasingly politicised after then-candidate Donald Trump promised to build a 'big, beautiful wall' along all 2,000 miles of the border (Nixon and Qiu 2018). Subsequently, increased border militarisation by the U.S. government degraded local habitats through border wall construction and border patrol vehicle off-roading, preventing the migration of species through the construction of impervious border barriers and diverting illegal immigration through previously undamaged environments (Peters *et al.* 2018). In recent years, biologists have determined that the border wall, once completed, would harm 93 endangered and threatened species, including jaguars, ocelots, Sonoran pronghorn, Quino checkerspot butterflies, and Mexican gray wolves (Greenwald *et al.* 2017). Additionally, it would prevent species from migrating to more suitable environments as a result of climate change; this is of concern as researchers project the borderlands to be one of the areas most affected by environmental change (Peters *et al.* 2018). The conservation organisation Center for Biological Diversity has described the border wall as 'an unmitigated disaster for both people and wildlife' (Greenwald *et al.* 2017, 6).

CONTINENTAL DIVIDE: DOCUMENTING THE PEOPLE AND ANIMALS HARMED BY THE U.S.-MEXICO BORDER WALL, 2007–2012

Initially trained as a journalist, Schlyer began her work as a photographer by photo editing at an environmental nonprofit organisation, Defenders of Wildlife. In 2007, she visited Chihuahua (Mexico) and Hidalgo County (New Mexico), where she took aerial photos for a story about a binational herd of bison in the grasslands (Schlyer, n.d.) When she talked with local landowners, she learned that the bison herd's main water and food sources were on opposite sides of the international border. This experience sparked her interest in the environmental impacts of the U.S. border wall.

She learned that border wall construction in this region was the result of the 2006 Secure Fence Act, which dictated the reinforcement of existing border fencing and the construction of 850 miles of additional border fencing. A year before the enactment of that law, the 2005 REAL ID Act allowed the Department of Homeland Security to waive over 40 environmental and human rights laws, including the Endangered Species Act, Clean Water Act, Clean Air Act, and Native American Religious Freedom Act, in order to expedite the building of

border barriers. Congress approved construction without any public hearings as part of President Bush's War on Terror (Peters and Clark 2018).

Seeking to make these injustices more visible to wider audiences, Schlyer organised for twelve nature photographers to visit the border in 2009 for a three-and-half-week 'Rapid Assessment Visual Expedition,' modeled after the scientific method of conducting a rapid biodiversity inventory. In her account, this was a 'visual expedition to places where regular reporters do not go and where the stories that matter to our planet are being told' (Schlyer 2012, ix). Sponsored by Defenders of Wildlife, the Sierra Club, and the International League of Conservation Photographers, the project resulted in a traveling thirty-piece photography exhibit featuring thirteen photographers that showcased how the border wall harms diverse borderlands flora, fauna, and cultures. The exhibit debuted at the Rayburn House Office Building in the House of Representatives in Washington, D.C., and, in 2009–2010, traveled to Los Angeles, New York, and other locations.

In 2012, Schlyer published *Continental Divide: Wildlife, People, and the Border Wall*, a collection of her journalistic nature writing and conservation photography of the borderlands between 2009 and 2012. The book, which won the 2013 National Outdoor Book Award, integrates reports on the geology, biology, history, and politics of the region with photos of landscapes, human communities, and wildlife in the borderlands. Peppered with scientific research, personal narratives, and photography, the book involves both scientific and artistic modes of knowledge production. Each of the first three chapters describes biodiversity in a major environmental region in the borderlands (desert, grasslands, and Rio Grande Valley), and details the primary human-driven threats to biodiversity conservation in those regions. Subsequent chapters document cultural diversity in the borderlands and the human cost of U.S. border policy, especially for the many human migrants who die attempting to cross the border. It is worth noting that, although Schlyer sometimes includes the personal experiences of people in the borderlands, their narratives are not the primary focus of the book. Additionally, their stories are generally paraphrased rather than articulated in their own words, which may amplify racialised power dynamics between Schlyer and local people. In her conclusion, she calls upon readers to consider the enormous impact of that policy on Indigenous peoples, immigrants, local people, ecosystems, and wildlife.

Each chapter of *Continental Divide* features portraits of wildlife interspersed throughout the text as illustrations of Schlyer's writing about the natural history of the borderlands. The portraits are close-ups, often at an animal's eye

level, which emphasises the subjectivity of the animals. The photographs often feature the animal staring directly into the camera's lens, either with the animal's head facing the camera, characteristic of the frontal placement of the eyes on predatory animals, or with the animal's head cocked to one side, characteristic of the peripheral placement of the eyes of a prey species. The portraits are stylistically similar across taxa, including photographs of species considered less charismatic, such as spiders and rattlesnakes. As argued by literary scholar Ursula Heise (2016), cultural representations of biodiversity often appeal to the encyclopedia of life, or a catalogue of all known species created by natural historians, as a means of underscoring the importance of preserving Earth's biodiversity. To bring emotion and aesthetics into environmentalism, Schlyer uses camera angles that highlight the subjectivity of individual animals, a strategy often used by the genre of conservation photography (Dunaway 2005).

Schlyer's most popular photographs capture moments in which the border fence directly limits the movements of animals. Several of these photographs show small animals at the base of the border wall. One photograph depicts the back of a small white rabbit who is facing a section of the border wall that is under construction. The small, soft, round body of the bunny serves as an aesthetic foil to the harsh, linear, heavy appearance of the border wall. Another photograph captures a flock of red-winged blackbirds whose flight course is interrupted by the border wall. The black bodies of the birds blend into the background border wall such that the bright red patches of their wings look like blood splattered against the wall, reminding the viewer of the violence experienced by animals and humans unable to cross the border due to physical barriers. These photographs portray the border wall as an 'unnatural' artifice affecting wildlife and the environment; they do not overturn the dualisms of human-animal and nature-culture, but, instead, demonstrate the consequences of the divide.

An additional photograph (Image 1) depicts two javelina – small hoofed animals – facing away from the border wall. Walking in the shadow of the wall, the javelina appear as dark outlines. Both javelinas have a downcast posture, with rounded backs and heads tilted toward the floor, that is suggestive of sadness and defeat. The composition of the photograph – the small animals dwarfed by the immensity of the wall – contrasts nature and culture, and portrays the wall as an artificial imposition on local ecologies. The caption reads, 'After traveling the US-Mexico border wall for 100 yards, looking for a place to cross, these javelina turned away' (Schlyer 2012, 149). In a 2014 book talk, Schlyer noted that she observed the javelina repeatedly approaching the wall, attempting to cross, and then walking along its length. According to Schlyer,

Image 1. Javelina, from *Continental Divide*

because these animals navigate primarily by smell, they were likely sniffing for family members on the other side of the wall. As Schlyer describes the animals' behavior, the javelina turned away after about a dozen attempts and likely were permanently separated from their family. Her description of the photograph evokes the injustice of splitting up human families, which is often employed by those who support immigration reform (Lucaites *et al.* 2012). Here, Schlyer evokes cross-species recognition, which blurs the human-animal boundary by suggesting common experiences between humans and animals separated from their families by the border wall.

Schlyer's photographs of humans at the border wall likewise exhibit themes of exclusion and division. One of her popular photographs (Image 2) depicts a smiling Mexican man playing guitar through the bars of the border fence at Friendship Park in San Diego, a beach on the Pacific Ocean where people have historically gathered to meet friends and family across the border. The placement of the bars in the foreground of the photograph, so that the viewer cannot see where the fence begins or ends, creates the appearance that the men could be imprisoned in a jail cell. If the bars were removed, the photograph might evoke an uplifting and enchanting scene. The friendliness of the featured Mexican man contrasts with the harshness of the border fence's bars. Depicting the border fence as a prison likely references U.S. immigration rhetoric that portrays Mexicans in the borderlands as 'illegal' or 'criminal' (DeChaine

Image 2. Mexican man with guitar at Friendship Park in San Diego, from *Continental Divide*

2012). While many photographs evoking environmental injustice employ visual politics that portray their subjects solely as victims, this portrait photograph registers the agency as well as the vulnerability of borderlands inhabitants (Gabrielson 2019).

In a book talk, Schlyer (2014) said that viewers often respond to her photography by admitting that they did not know about the beauty of the borderlands or the vast diversity of animals that live there. As Schlyer describes her work, she seeks to raise awareness that humans 'are not alone on the land and that everything we do to alter the world has ripples of implications … on a vast community of other creatures' (*Orion Magazine* 2019). Visual studies scholars have likewise documented how the media's visual representations of the U.S.-Mexico border portray it as lifeless and desolate, which obscures the dynamic and diverse communities in the borderlands (Dorsey and Diaz-Barriga 2010). Schlyer's book seeks to counter media narratives that describe the borderlands as defined by the tragedies of drug wars, poverty, forced migration, and environmental degradation. Instead, Schlyer's conservation photography showcases the rich vibrancy of borderlands inhabitants that thrive despite histories of violence and oppression:

> I have fallen as Alice into a wonderland where everything and everyone seems to exist against all reason, where beauty and life spring out of a brown hard crust of ground; where rivers live in trees during the day and their beds at night; where implausible forms of life can exist in suspended animation for a century until fickle desert rains find them; and where bighorn sheep carry maps of desert water in their brains. It is also a place where people are told they are illegal on land they have occupied for millennia; where languages blend at the edges of cultures like watercolors on wet paper; where south and north meet, mingle and merge; where drought, flood, disaster, death and violence, but also stillness, perfection, and beauty paint the existence of everyone, from the smallest of creatures in an ephemeral pool to the very mountains themselves. (Schlyer 2012, 6)

As she writes in this passage, this set of contradictory forces – 'drought, flood, disaster, death and violence' on the one hand and 'stillness, perfection and beauty' on the other – define the aesthetic of the borderlands. Schlyer positions herself as an artist in the borderlands, submersed in its vertiginous whirling of beauty and tragedy, life and death, oppression and defiance, disaster and perfection, and drought and fertility. The resolution of these forces lies in an aesthetics grounded in the mixing, merging, and mingling of cultures, languages, and ecologies that transcend the human-animal and nature-culture binaries. Border studies has detailed the extent to which borderlands narratives embedded in art, theory, and literature map ambivalence concerning national borders (Sechimanski and Wolfe 2017). Relatedly, Schlyer's characterisation of the borderlands' ecologies resonates with scholarly writing in border studies that describes the borderlands as a region of conflicts, contradictions, and paradoxes that are both geopolitical and conceptual (Alvarez 1995).

According to borderlands scholars, the U.S.-Mexico borderlands may be an especially generative space for crafting visual and narrative representations that reveal the inextricability of biological and cultural diversity. As feminist scholar Christina Holmes (2016) writes, literary representations of the borderlands employ ecological narratives that reject binary logics in favor of an ethos that features connections among communities, landscapes, and ancestors. Holmes's (2016) concept of 'ecological borderlands' encapsulates how the U.S.-Mexico borderlands is a site of ecological activity and subject formation marked by transnational flows of people, animals, and plants and overlapping economic, political, and cultural structures. Schlyer's artistic rendition of borderlands environments exceeds the narratively overdetermined construction of the U.S.-Mexico borderlands as a militarised wasteland, and overflows with

new narratives about the tenacity, inventiveness, and mutual interdependence of borderlands communities.

As a whole, *Continental Divide* borrows some of the conventions of the 'discursive regime of wildlife photography' characterised by the separation of human from animal and nature from culture even as the book also gestures toward depictions of the inextricability of ecology and culture that she elaborates in her subsequent creative projects (Brower 2011, xvii). Some of her photographs and nature writing clearly disrupt nature-culture and human-animal binaries by portraying the borderlands environment in terms of rich entanglements of cultural and biological diversity. At the same time, other photographs contain tension between the blurring of human-animal binaries, and reinforce them by portraying the border wall as violently imposed by humans on local ecological communities.

EMBATTLED BORDERLANDS: OPPOSING TRUMP'S BORDER WALL WITH SCIENCE AND POLITICAL ACTION, 2012–2017

Schlyer began collaborating with conservation biologists in the borderlands while working on *Continental Divide*. One of her photographs (Image 3) depicts

Image 3. Conservationist at the Fish & Wildlife Service at the border wall, from *Continental Divide*

Nancy Brown, who works with the Lower Rio Grande Valley Wildlife Refuge in southern Texas, walking along a muddy dirt path with her gaze cast downward and her hand next to a newly built section of the border wall made from thirty-six-foot-high grey concrete. She is a staff member of the U.S. Fish and Wildlife Service (USFWS), the government agency that protects biodiversity in the U.S. As Schlyer explains, by the 1990s, housing development and the oil and agriculture industries had destroyed 96 per cent of the native landscape in the Rio Grande valley, resulting in threatened or actual extinction of many species. Brown and other members of the USFWS work to build habitat corridors for vulnerable species. In the photograph, Brown's downcast gaze conveys sadness, and her outstretched arm with her hand on the wall suggests that she seeks to push away the border wall. In the context of this collection of border wall photography, the photograph depicts the scientist as part of the social and ecological community that she seeks to protect. This is suggestive of what Haraway (1990) describes as the redemptive aspect of women scientists, especially white women, who signify the possibility of a bridge between nature and society in the context of environmental degradation.

In 2016 and 2017, in response to heightened political tensions over border militarisation, Schlyer worked with scientists on several initiatives to bring her borderlands photography to a broader audience. In a short film titled *Think Like a Scientist: Boundaries* (2016), Schlyer collaborated with ecologist Jon Beckmann, who studies the impact of human-made barriers on wildlife. Beckmann's research was part of the wave of scientific research on the impact of the border wall on local biodiversity that began in the early 2000s (Peters *et al.* 2018). This short film marks the culmination of Schlyer's work with scientists, and exemplifies her strategy of collaborating with conservation biologists to educate wider audiences about biodiversity conservation (Schlyer, personal interview, 2021). The film was part of a series exploring a wide range of scientific topics in relation to the human stories produced by Day's Edge Productions and the Howard Hughes Medical Institute for *Nautilus Magazine*. The film was featured in the Wild and Scenic Film Festival organised by the South Yuba River Citizens League, a grassroots association that works to protect the South Yuba River watershed in California, and sponsored by Earthjustice, an environmental law nonprofit.

In the film, Beckmann describes the experience of being a scientist in the borderlands in terms of identification with the animals he studies. In his words: 'In order to think like a scientist and be a good scientist, we need to put ourselves in the place of the animals. By that I mean that we really need to go out there and think like the animal would on the landscape.' (5:22) In order to depict

the processes of scientific and artistic production in the borderlands, the film includes footage of Beckmann watching animals through his binoculars, and of Schlyer photographing animals with her camera. In doing so, the film differs from the genre of wildlife photography and film that generally hides the technologies used to produce images of nature (Mitman 2009). Depicting the making of scientific research shifts some of the epistemic authority of knowledge about animal behavior from scientists to nonscientists, including film-makers and audiences (Gouyon 2015). Through representing the process of scientific knowledge production in terms of scientists' identifying with and speaking for the animals they study, the film portrays the impact of the border wall on local communities in ways that unsettle the human-animal binary.

Following the election of Donald Trump and his proposal to expand the border wall along the entire length of the border, Schlyer used photography to create a digital story map entitled *Embattled Borderlands* (2016). This story map guides the viewer along the length of the U.S.-Mexico border from the Pacific Ocean to the Gulf of Mexico, the same route that she took photographers on her 2009 expedition (Schyler, personal interview, 2021). As shared by Schlyer in a personal interview conducted by the author in 2021, the project began after Schlyer met people from ArcGIS, a GIS mapping software company, at the International League of Conservation Photographers annual meeting. The project was made possible by Schlyer's participation in a broad coalition of organisations involved in advocacy for immigrants' rights and biodiversity conservation that had participated in over ten years of biweekly calls together. Environmental organisations, such as the Sierra Club, Center for Biological Diversity, Wildlands Network, and Audubon Society, supported the creation and distribution of the project. Scientists at Texas A&M and the University of Arizona provided GIS mapping data from their ongoing projects on the impact of the border wall on the degradation of borderlands habitats.

The story map uses geographic representations of the border to showcase the spatial manifestation of habitat fragmentation by the border wall. The development of *Embattled Borderlands* marks Schlyer's entry into multimedia photojournalism that tells stories using new digital media: it incorporates embedded videos, photography, audio recordings of animal sounds, footage from wildlife camera traps, research from conservation biology, and nature writing. As described by Schlyer in her personal interview with the author in 2021, while *Continental Divide* was intended for a general audience, *Embattled Borderlands* was created to help nonprofits communicate the issues surrounding the border to their members, and for journalists to access reliable information about the border. The book seeks to communicate the richness of the

borderlands' cultures and ecologies; the story map hopes to convey a 'crisper picture of the geography and history' so that people can better understand the context surrounding Trump's proposed wall. Through integrating representations across multiple spatial scales, such as photographs of wildlife and habitats, and topographical maps, *Embattled Borderlands* tells an accessible narrative about how the border wall fragments habitat in a way that would not be possible through the medium of conventional wildlife photography. In comparison with the book, the story map also seeks 'to convey the peril' posed by Trump's border wall, as its title reflects.

Embattled Borderlands also engages with social justice issues in the borderlands. For example, Schlyer collaborated with Humane Borders, a human rights organisation that provides water to migrants to prevent dehydration and death, and identifies human remains to provide closure to families with missing loved ones. The organisation creates 'migrant death maps' that enable us to visualise the distribution and magnitude of deaths of those crossing the border to raise awareness about this human rights issue. *Embattled Borderlands* includes a time-lapse of red dots appearing on the map of the Sonoran Desert to represent the thousands of deaths that Humane Borders has reported, followed by the personal story of a thirteen-year-old girl who died trying to cross the border. *Embattled Borderlands* also documents the displacement of one of the groups of Indigenous peoples living in the borderlands, the Tohono O'odham, from their traditional land on the Organ Pipe Cactus National Monument in Arizona. The story map concludes by encouraging political action to oppose border wall funding and return environmental protections.

Embattled Borderlands was published in the context of a growing coalition of social justice and environmental organisations – including the Sierra Club, Center for Biological Diversity, Wildlands Network, Sky Island Alliance, and Defenders of Wildlife – that worked together to oppose the border wall in the 2010s despite historical tensions between the environmental movement and social justice organisations in the borderlands. Much of these tensions are rooted in colonial land theft and the displacement of Indigenous peoples with twentieth century movements for environmental preservation and the creation of national parks (Spence 2000). More recently, as historian Mary Mendoza (2018) notes, environmentalists who oppose border wall construction for its impact on endangered animals and plants often ignore the human suffering and death as the result of border militarisation, which reifies the separation of nature from culture and human from animal (Mendoza 2018). Moreover, as Mendoza (2018) argues, environmentalists' arguments for controlling borderlands environments have 'consistently worked to the detriment of human migrants,

hardened racial divisions, and reinforced social hierarchies' (119). Biodiversity conservation and borderlands militarisation have sometimes reinforced one another, for example, through the captive breeding of the endangered Sonoran pronghorn and military operations at Cabreza Prieta National Park in Arizona (Meierotto 2014). Some environmentalists have also blamed migrant foot traffic and trash for environmental degradation in the borderlands, using language that has reinforced racialised tropes of invasion and contamination (Meierotto 2012; Sandberg and Kaserman 2007).

Trump's presidential campaign and election galvanised the environmental movement to partner with social justice organisations in the borderlands. For example, publications from environmental nonprofits, such as Defender of Wildlife, shifted the blame for environmental destruction from human migrants to Border Patrol and U.S. immigration policies (Greenwald *et al.* 2017). The Sierra Club's borderlands initiative, which advocates comprehensive immigration reform alongside biodiversity conservation, organied a coalition of 559 community groups, including civil rights, Indigenous, LGBTQ, environmental and religious organisations, and border communities, who crafted a collective statement opposing the border wall construction (Our Coalition 2020). As Schlyer noted in her 2021 interview with the author, Trump 'unearthed a lot of things that maybe people had avoided dealing with before,' but that needed to be addressed before environmentalists and immigration organisations could work together, such as whiteness in environmental organisations. According to Schlyer, some of the tension between environmental and immigrant rights groups lessened after Trump's election because his policies negatively affected so many borderlands stakeholders.

In an examination of the politics surrounding Trump's border wall construction, geographer Melissa Wright (2019) argues that the wall prompted recognition of the ecological and cultural interconnectedness needed for the survival of border communities. She describes 'border thinking' as a 'commitment to fostering the social and biological diversity fundamental to the thriving of life throughout the borderlands and its varied ecosystems' that emerged among the coalition of environmental organisations that had previously focused exclusively on biodiversity conservation (513). *Embattled Borderlands* employs visual rhetoric that weaves the stories of both wildlife and humans in the borderlands into a larger narrative about how the border wall threatens the interconnectedness of culture and ecology. As the story map guides the viewer from one geographical region to the next along the border, Schlyer employs visual storytelling that unsettles the nature-culture and human-animal binaries through depict-

ing wildlife, ecosystems, and local cultures as shaped by a common historical, environmental, and political context, and imperiled by the urgent threat of Trump's border wall expansion.

AY MARIPOSA: GENDER AND REIMAGINING THE FUTURE OF THE BORDERLANDS, 2017–2019

Schlyer began work on her documentary film *Ay Mariposa* (2019) in 2017 in collaboration with an all-women production team, including American photographer Morgan Heim and American filmmaker Jenny Nichols. The film depicts the migration of monarch butterflies from Mexico to Canada alongside the stories of two Mexican-American women activists, a migrant rights activist and a conservationist, who are fighting for environmental and social justice in the borderlands. In reflecting on the title of the film, which translates to 'Oh, butterfly,' Schlyer says the title is a 'lament' for environmental destruction, a 'statement of apprehension' regarding the prospective completion of the border wall, and 'an expression of sadness for what we are doing to ourselves' (Heimbuch 2018). In alignment with Schlyer's focus on community engagement and political action, the film was publicised through environmental film festivals; grassroots screenings in partnership with the United Farm Workers of America, a labor union; and a series of events on Capitol Hill in Washington, D.C., to reach policymakers.

The idea for the film arose after Schlyer attended two protests against the border wall in August 2017 at the La Lomita Chapel and Santa Ana Wildlife Refuge in south Texas (Schlyer, n.d.). These protests were in response to Trump's plan to build the border wall through wildlife refuges that had previously been reserved for biodiversity conservation (Nixon and Qiu 2020). At one of the protests, Schlyer met an elderly Mexican-American immigrant and activist, Zulema Hernandez, and they spoke about Hernandez's immigration to the U.S. and her personal connection to nature and monarch butterflies. Reflecting her sharpened focus on issues of social justice in the borderlands following the 2016 election cycle, Schlyer felt compelled to bring Hernandez's story to a broader audience. As she explained during an interview with *She Explores*, a feminist podcast about nature and the outdoors, while her initial career interest was in biodiversity conservation, she became increasingly aware of the 'human tragedy' at the border, which made social justice a larger focus in her work (Schlyer, n.d.). Outrage at Trump's misogyny also fueled Schlyer's desire to make a film that features women's perspectives on the border wall (Schlyer, personal interview, 2021).

In preparation for the film, Schlyer recorded a series of in-depth interviews with Hernandez. The film's cast included Hernandez's family members, who acted as Hernandez at younger ages. *Ay Mariposa* begins with Hernandez's childhood in Mexico and the pain of being separated from her mother, who had to migrate to the U.S. for work due to her family's economic struggles. Later, Hernandez found healing and empowerment through her own experiences with motherhood and her connection with her children. She migrated to the U.S. with her husband in 1971 for her children's education. In the U.S., she joined the United Farm Workers of America, and became an activist for her community of migrant workers and a vocal opponent of the border wall. The end of the film shows Hernandez at a protest against the border wall construction in the Santa Ana Wildlife Refuge. In drawing a parallel between Hernandez's personal journey and the lifecycle of the butterfly, the film features footage of butterflies, with Hernandez saying, 'I have even dreamed that I could fly.'

Much of the film was recorded at the National Butterfly Wildlife Center (the Center), a private wildlife refuge in south Texas sponsored by the nonprofit North American Butterfly Association, which has collaborated with the National Park Service and USFWS to provide crucial habitat for 340 butterfly species, many of which are endangered. *Ay Mariposa* features the Center's current director, a Mexican-American conservationist, Marianna Trevino-Wright, who oversees the work of the Center and advocates for biodiversity conservation in the borderlands. Habitat degradation and loss have already destroyed nearly 90 per cent of monarch butterflies' habitat, and much of their remaining habitat lies directly along the border (Thogmartin *et al.* 2017). The Center is located in one of the most biodiverse regions for birds – as well as butterflies – and includes a flyway for migratory birds and a habitat corridor for endangered species, such as the ocelot and jaguar (Peters and Clark 2018).

At the Center, Trevino-Wright was surprised to find workers clearing vegetation from her land on July 20, 2017. When she confronted the construction workers for not having a work permit, she got a notice from Border Patrol that they would return with military personnel, if necessary, to access the land. The Trump administration employed the legal waiver of the 2005 REAL ID Act to bypass environmental protections and expedite construction of the border wall. As described in the film, when the North American Butterfly Association filed suit in December 2017 against the government to protect the National Butterfly Wildlife Center, Trevino-Wright was harassed by right-wing groups and threatened with rape. In a film clip of her advocating for the Center to Congress, she talks about her identities as a community organiser and a mother, saying, 'They don't live in these communities. This is my life, my children, my grandchildren.'

Referencing the building of the border wall through the wildlife reserve, she continues, 'It's like watching someone die. You're so powerless … [I]t will be a rape of the land. You have an aggressor that just takes everything they want.' As noted by feminist scholars, previous women activists in the borderlands, like Cherrie Moraga, have also evoked rhetoric that compares sexual violence and environmental degradation and emphasises the commonalities between the oppression of nature and women, especially women of colour who are often dehumanised or perceived as closer to nature (Holmes 2016). Feminist scholars also describe the border as a militarised conflict or war zone in which rape is systematically used by the state to oppress racialised women (Falcon 2016).

While the film was initially intended to depict only the two women activists, the butterfly emerged as an important third character because of the women's personal connections to the insect. The film features footage of butterflies narrated by Schlyer, who poetically describes the butterfly's lifecycle, reproduction, and challenges to survival despite habitat loss. In telling the stories of Hernandez and Trevino-Wright, the film alternates between footage of the women and the butterflies, which creates a patchwork aesthetic that Schlyer describes as 'illustrating the story of people with the story of non-human species' (Schlyer 2019). For example, in a key scene, Hernandez, portrayed as a child, walks through tall grass toward a riverbank to collect water for her family, and dreams of being reunited with her mom, who migrated to the U.S. Hernandez's voice narrates: 'I've always liked nature, especially the butterflies, because I would love to be as free as they are.' (9:48) The scene changes to show a film clip of Hernandez as a child staring into the camera, which fades as a superimposed image of monarch butterflies flying across the screen comes into the camera's focus (Image 4). The narrative structure of *Ay Mariposa* mirrors the interconnectedness of humans and nature in the borderlands depicted in Schyler's previous works. Like *Embattled Borderlands,* Schlyer uses visual rhetoric to weave the experiences of humans and nonhumans into a larger narrative structure about the common threat of the border wall for borderlands inhabitants across species. In doing so, *Ay Mariposa* disrupts the human-animal and nature-culture binaries through showing the connections among the experiences of butterflies, immigrants, and conservationists in the borderlands.

Ay Mariposa departs from Schlyer's previous works in that it spotlights issues of gender and the lived experiences of women in the borderlands. As articulated by Schlyer in her 2021 interview with the author, in changing her artistic medium from photography to film, Schlyer was able to pursue character-driven narratives that portray how personal experiences are 'woven into the whole fabric of the border.' As Schlyer describes, in comparison with *Continental*

Image 4. Monarch butterflies and Zulema Hernandez depicted as a child in *Ay Mariposa*, 2019.

Divide and *Embattled Borderlands,* the film shifts from providing people with information – about the richness of the borderlands from the aspects of science, geography, and history – to a more 'philosophical approach' that asks people 'to reconsider the way they view otherness.' In articulating the broader message of the film, Schlyer hopes that *Ay Mariposa* will help shift perceptions of race and gender, and create new 'ways of thinking about difference.' The film enters into a rich cultural history of women in the borderlands using their connection with the nonhuman in order to articulate their identities, experiences, and world-views. For example, in her chapter 'Entering into the Serpent' (1987), Chicana feminist Gloria Anzaldúa describes her ability to shape-shift into a serpent as part of her cosmology that characterises human nature as intimately connected with all things, animals, forces, and the land (Schaeffer 2018). While Hernandez's articulations of her own experiences as a Mexican-American woman drove how the film depicted the parallels between her personal journey and the migration of butterflies, the film's story arc is of course still mediated by the positionality of Schlyer, who is a white woman born with U.S. citizenship.

In addition to connecting with the personal experiences of Hernandez and Trevino-Wright, the symbol of the butterfly has gendered cultural connotations that further emphasise the film's message. In the context of borderlands social movements, Chicana and Latinx feminists, such as Favianna Rodriguez, have used monarch butterfly symbolism to signify political awakening, or coming

into power and consciousness. Schlyer describes the butterfly as an artistic and political choice in *Ay Mariposa*: 'I like the idea of representing this place, that has been misrepresented as violent, through a very gentle, whimsical, lovely creature like the butterfly' (Schlyer 2019). In contrasting the 'feminine' aesthetics of the butterfly with the 'masculine' aesthetics of the border wall, the film uses the butterfly as a 'counter point for the hard, aggressive, and ugly structure' of the latter (Schlyer 2019). Schlyer also describes Zuelma as possessing 'beauty' and 'lightness' despite the 'ugliness' of the racism and xenophobia that she has experienced in her lifetime (Schyler, personal interview, 2021). Schlyer says that the butterfly symbolises the 'vulnerability of women, but also incredible strength and power' (Schyler, personal interview, 2021). Thus, the butterfly symbol draws upon cultural connotations of women as fragile, vulnerable, and gentle, even as it also supports the counternarrative of women as resilient, strong, and powerful.

As a gendered symbol of the struggle of women in the borderlands advocating for social and environmental justice, the sections of the film that feature the lifecycle of the butterfly also spotlight the role of women in the borderlands undertaking care work as mothers, conservationists, and community organisers. As Schlyer narrates in *Ay Mariposa,*

> Life takes its toll on the delicate butterfly. Radiant color fades, wings begin to fray. She can see death on the near horizon. But if she has made it to this point, fortune has shined upon her. And every mile flown, every violent wind, every near escape written on tattered wings has brought future for her children who now dance their brilliance upon the world. Death must come but the wealth of her life lives on. (48:35)

The resilience of this fragile creature and its insistence on a future of abundance for its children symbolises the strength of women in the borderlands whose care work as mothers and community organisers brings binational, interspecies, and intergenerational futures into being. As noted by feminist philosophers, practices of care across species emphasise living together in mutual supportive relationships that further each other flourishing (Donnovan 2006). In *Ay Mariposa*, human-butterfly relations inspire women to advocate for new futures for their children, community, and environment in the borderlands in ways that exceed the borders of species, generations, and nation-states.

While the film is a powerful testimony of the importance of women to the future of the borderlands, Schlyer's representations of women do not challenge

the gender binary. *Ay Mariposa* even risks reinscribing essentialist understandings of the women as more proximate to nature through both its focus on biological reproduction and its use of nature imagery to portray the experiences of women in the borderlands. The depiction of women's care work alongside imagery from the reproductive cycle of butterflies implicitly reinforces heterosexuality as normal and natural, and elides the experiences of queer people in the borderlands. This is an important missed connection for borderlands coalition building as queer artists, such as Julio Salgado in the undocuqueer movement of undocumented queer youth in the U.S., have also used the monarch butterfly as a symbol of queer identity and personal transformation.

The rhetoric of human and animal migration as 'natural' in contrast to the 'unnatural' border wall obscures the social, economic, and historical factors driving the migration of people from Mexico to the U.S., and could inadvertently bolster dominant discourses that appeal to nature to enforce social norms and hierarchies (Sturgeon 2009). In addition, comparisons between migrants and animals could potentially reinforce dehumanising rhetorics that compare racial and ethnic groups to animals as justification for their oppression (Armstrong 2002). Schlyer has predominantly advocated for the creation of more permeable borders that would allow for the movement of people and wildlife; meanwhile, decolonial feminists have turned their attention to the abolition of nation-states and the return of land to Indigenous people (Wald *et al.* 2019).

CONCLUSION

As a whole, Schlyer's work successfully makes visible how the U.S.-Mexico border wall impacts wildlife and human communities. In addition, I argue that her later works disrupt the human-animal and nature-culture binaries through visual rhetoric and narrative structures that weave together the stories of humans and wildlife harmed by the border wall. The story map, *Embattled Borderlands,* showcases the interconnectedness of biological and cultural diversity by creating a narrative from a patchwork of writings and images about the history and geography of the borderlands. Similarly, her film *Ay Mariposa* unsettles the human-animal and nature-culture binaries by showing the connections among the experiences of butterflies, immigrants, and conservationists in the borderlands. The development of Schlyer's approach to conservation photography and film in the borderlands reflects her increased focus on issues of social justice, as well as a broader historical shift that accelerated with the 2016 election of Trump in which biodiversity conservation in the borderlands became increasingly politicised alongside growing concerns about violence

towards migrant communities, family separation, and the dehumanisation of women.

As argued by Laurence Buell (2005), the environmental crisis involves a 'crisis of the imagination' that can only be addressed by finding better ways of representing nature and humanity's relation to it. Similarly, scholars in Latinx environmentalisms argue that art, activism, and culture can bring about new cultural imaginaries and thus enable new futures for people and the environment (Wald *et al.* 2019). In advocating for multispecies environmental justice, feminist scholar Donna Haraway (2016) communicates the urgency of crafting new narratives, relationships, and, ultimately, new futures grounded in historically and culturally specific assemblages of human and nonhuman communities that flourish together amidst environmental catastrophes. While there are some important limitations to Schlyer's work, her borderlands project excels at helping environmentalists understand the connections between biodiversity conservation and social justice, and could potentially inspire them to become involved with advocacy for social and environmental justice in the borderlands.

In 2020, a federal appeals court ruled that the Trump administration's construction of the border wall through the National Butterfly Wildlife Center featured in *Ay Mariposa* violated private property rights and should be immediately halted (Nowlin 2020). As of January 2021, the Trump administration had completed 400 miles of new border wall construction, which was stopped on President Biden's first day of office (Giles 2021). At the National Butterfly Wildlife Center, Trevino-Wright continues to advocate for the removal of the border wall (Helms 2021), while environmental groups argue for the reinstatement of the forty human rights and environmental protection laws that the Real ID Act waived in order to expedite border wall construction. The future of borderlands biodiversity still hangs in the balance.

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NOTES

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