

INSIGHTS

BOOKS *et al.*

FILM

Science at Sundance 2022

Conceived of as a hybrid event during a period of pandemic optimism, the 2022 Sundance Film Festival pivoted at the last minute from partially in-person to fully online—a move that likely caused chaos behind the scenes but didn't faze our panel of virtual festival-goers. From a vivid documentary on the late volcanologists Maurice and Katia Krafft, featuring stunningly restored volcanic footage captured by the pair, to a melancholic meditation on the roles that social robots may soon play in our lives and families, this year's program featured a number of films with strong science, engineering, and technology themes. Read on to see what our reviewers thought of six of this year's offerings. —Valerie Thompson

To The End

Reviewed by Sarah Roth¹

To The End, directed by Rachel Lears, traces the latest push to pass historic climate legislation in the United States amid record-breaking natural disasters, a global pandemic, and a racial justice reckoning. It follows a trailblazing

group of young climate activists as they work to advance both climate and social policy.

The story picks up where Lears's 2018 film, *Knock Down the House*, left off, documenting the buzz surrounding the policy document known as the Green New Deal, which put forward a blueprint for reaching net-zero carbon emissions by 2030 while fueling job growth and investment in disadvantaged

communities. In the words of congresswoman Alexandria Ocasio-Cortez: "The climate and environment piece is what we need to do, the justice and equality piece is how we do it."

The film weaves together the stories of three young women of color—Varshini Prakash of the youth-led "Sunrise movement," Alexandra Rojas of the progressive political action committee Justice Democrats, and Rhiana Gunn-Wright, policy director of the think tank New Consensus and coauthor of the Green New Deal—documenting their efforts to challenge a political system that favors the status quo along with their private moments of doubt and frustration. We witness these young activists and their collaborators soberly describing the stakes of the climate emergency, campaigning to elect progressive legislators, confronting elected officials, and even participating in a harrowing near-fatal hunger strike.

The film concludes at the end of 2021, when hopes run high for major climate legislation in the form of the Build Back Better bill. In congressional hearings and political debates, opponents argue that the bill is too costly. But graphic scenes throughout the film force viewers to confront the enormous costs associated with not addressing climate change. As the fate of this legislation re-



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mains uncertain, the activists' expressions of anxiety and hope make clear that much work remains to be done.

Some of the film's most compelling moments emerge against the backdrop of archival footage documenting the rise of the New Deal out of the economic devastation of the Great Depression and the US mobilization to defeat fascism during World War II. Such scenes remind us that the social contract between Americans and their government has been rewritten before and can be again.

The views expressed herein are the author's own and do not necessarily reflect the opinions of the Environmental Law Institute.

To the End, Rachel Lears, director, Jubilee Films, 2022, 103 minutes.

All That Breathes

Reviewed by Amit Chandra²

In a working-class neighborhood of New Delhi's Muslim quarter, two brothers work tirelessly to rescue and rehabilitate local birds of prey. Winner of Sundance's World Cinema Grand Jury Prize: Documentary, *All That Breathes* paints an engrossing portrait

of the siblings and the city's wildlife as they endure environmental and political turmoil.

Toxic air, poor visibility, and collisions with buildings and electrical wires make bird injuries a common occurrence in New Delhi. Brothers Nadeem Shehzad and Mohammad Saud began their journey into wildlife conservation in 2003, when they brought an injured black kite (*Milvus migrans*) to a local bird hospital, only to discover that the facility was unable to treat it. (The hospital, operated by vegetarian adherents of the Jain faith, refused to treat meat-eating animals.) The brothers returned home and cared for the bird themselves, building a makeshift infirmary in a basement that doubles as a factory for their soap dispenser business. They have since treated more than 20,000 birds.

Director Shaunak Sen captures the remarkable intimacy that exists between the two brothers as their informal search and rescue service becomes the primary focus of their lives. The pair invest the bulk of their assets into this activity, which they clearly see as crucial to their own survival. Meanwhile, long takes show viewers how the megacity in which the brothers' story is unfolding teems with life—a turtle crawls across plastic garbage, a snail crosses a busy street, a majestic

bird glides effortlessly across the sky. These moments bring serenity and a wide lens to the drama surrounding the film's human and animal subjects.

The wildlife and the brothers alike serve as witnesses to the toxic accumulation of pollution in the city's air, water, soil, and even local politics. "Delhi is a gaping wound and we're a Band-aid on it," laments Shehzad. And yet they persevere.

As political tensions rise and riots erupt in the city around them, the brothers press on with their mission, propelled by new grant funding secured after their efforts are featured in the *New York Times*. The pair's delicate equilibrium is tested when Shehzad is invited to study animal rescue in the United States, an opportunity Saud initially resists but embraces by the end of the film.

The film's message is timely against the accelerating effects of pollution and climate change. Our fate is intertwined with the planet's biodiversity, insist the brothers. Quoting their deceased mother, they maintain that "we should not differentiate between all that breathes."

All That Breathes, Shaunak Sen, director, Rise Films, 2022, 91 minutes.

After Yang

Reviewed by **Lindsey Brown**³

Winner of the 2022 Alfred P. Sloan Feature Film Prize, *After Yang*, directed by Kogonada, is based on a short story with a very simple premise: the family robot, Yang, has unexpectedly broken. In the film, patriarch Jake (Colin Farrell)—a pensive tea purveyor—undertakes the task of getting Yang (Justin H. Min) fixed while his wife, Kyra (Jodie Turner-Smith)—the family breadwinner—is busy with work. Meanwhile, the couple's daughter, Mika (Malea Emma Tjandrawidjaja), for whom Yang was originally acquired, misses her best friend. Purchased refurbished when Mika, now in elementary school, was an infant, Yang is a “technosapien,” designed to serve as a tool for linking Chinese children adopted into Western families with their cultural heritage.

After a certified repair shop declines to fix Yang, Jake secures the services of an unauthorized repairman, who suspects that the android has been equipped with spyware. Jake then takes Yang to the Museum of Technology, where curator Cleo (Sarita Choudhury) accesses a file filled with thousands of brief video clips captured by Yang throughout his time with the family. The robot's “memories” include his initial interactions with baby Mika, snippets from his life as her caretaker, and seemingly mundane moments such as taking a family photo—perspectives that sometimes contrast with the family's memories of Yang.

As Jake views the videos and reflects on his relationship with Yang, he notices the recurring appearance of a mysterious young woman. A deeper investigation reveals that

Yang's interior life was far richer than Jake had imagined.

In the film's not-too-distant future, there have been many technological advances in the aftermath of an unspecified climate disaster: self-driving cars seem to be the norm, one can watch videos via eyeglasses, and human clones and biological robots are not uncommon. Far from a flashy, futuristic dystopia, however, *After Yang* is lush and quiet. Advanced technologies—some of which raise questions about the very nature of humanity—are all but invisible in the film, seamlessly woven into everyday life.

After Yang's distinctive perspective on the human experience prompts reflections on loss and grief and invites viewers to consider their connections to technology. It also asks unexpected questions: What are memories, if not simply a record of time? How are our identities formed and shaped? Are there patterns to the rules of attraction? Such queries, we learn, often have complex answers.

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After Yang, Kogonada, director, A24, 2021, 96 minutes.

The Territory

Reviewed by **Gabrielle Kardon**⁴

In *The Territory*, directed by Alex Pritz, the Amazon is under siege. Motorcycles roar through the underbrush, chainsaws and fires demolish large swaths of trees, and the threat of violence is ever present. At the center of this conflict are 7000 square miles of rainforest, home of the Indigenous Uru-

eu-wau-wau people and the illegal settlers and non-native farmers intent on seizing this land. The film, coproduced with the Uru-eu-wau-wau, is a riveting vérité-style documentary with unparalleled footage of the tinderbox that has been set aflame in Brazil.

Since they were first contacted in 1981, the Uru-eu-wau-wau have dwindled to less than 200 people. To survive, they must safeguard the rainforest that is not only their home but also the source of traditional foods and medicinal plants. Although the Uru-eu-wau-wau have been granted sovereignty over the disputed region, illegal deforestation and land theft have gradually chipped away at their territory. The film follows 19-year-old Bitaté as he is elected by the Uru-eu-wau-wau elders to lead them through the current conflict. Environmental activist Neidinha Bandeira plays an essential role as well, publicly admonishing intrusions into the protected area. Together, they brave violent threats and use drones and cameras to document incursions and deforestation.

The film also follows a group of farmers organized as the Association of the Rio Bonito, who see themselves as pioneers. In their view, building their own farms is their only means to escape poverty. The association, which has since disbanded, endeavored to establish guidelines to stake legal claims on the areas they clear. However, others—emboldened by the aggressive anti-environmental and anti-Indigenous rhetoric of President Jair Bolsonaro—operate clandestinely. Startling footage shows settler “Martin” setting fire to the forest, for example, an act he views as a way to “liberate” the land.

When the COVID pandemic begins, the Uru-eu-wau-wau retreat deeper into the forest. With recording equipment provided by Pritz, Bitaté and the Uru-eu-wau-wau start their own media team and take over filming, documenting confrontations with invaders and discovery of illegal settlements. Their footage provides a singular view of the conflict that they have begun to use to rally public support for the protection of Indigenous lands.

The Territory, which received an Audience Award and a Special Jury Award at Sundance, is a tightly edited documentary that explores the intimate relationship between people and land and captures the perspectives of each of a heated conflict's protagonists. It is also a testament to the power that film can have on environmental action and the protection of Indigenous peoples.

The Territory, Alex Pritz, director, DocuMist, 2022, 86 minutes.



Before he malfunctions, android Yang (right) serves as a cultural link for adoptee Mika (left) in *After Yang*.



Striking footage brings Katia and Maurice Krafft's passion for volcanoes to life in *Fire of Love*.

Fire of Love

Reviewed by **Gabrielle Kardon**⁴

Two foil-clad figures dance incongruously in front of plumes of fiery lava in a scene that epitomizes the striking footage at the heart of the new documentary *Fire of Love*. Directed by Sara Dosa, the film showcases newly available archival recordings of volcanic eruptions captured by the late volcanologists Katia and Maurice Krafft, giving viewers a glimpse into their lives and their mutual love of volcanoes—a passion that would ultimately kill them.

Katia and Maurice came of age during the 1960s—an era that saw antiwar protests and shifting paradigms in the field of geology, the latter heralded by the discovery of plate tectonics and continental drift. In an interview that appears in the film, Maurice highlights how the cultural context of the moment influenced the pair's trajectory, explaining: “Katia and I got into volcanology because we were disappointed in humanity.”

The Kraffts, who both grew up in the Alsace region of France, each cited childhood fascinations with volcanoes as early inspirations for their eventual careers. The pair met at the University of Strasbourg, began exploring volcanoes together in Iceland in 1968, were married in 1970, and soon were traveling the world to visit erupting volcanoes. At each location, they went dangerously close to collect samples and take spellbinding films and photos. Like their contemporary, Jacques Cousteau, the Kraffts cultivated an intrepid public image in which they cast themselves as “wandering volcanologists.” The pair fortified their mythic personas with risky stunts and bold declarations (“I want to get closer, right into the belly of the volcano. It will kill me one day, but that does not bother me at all.”).

Fire of Love fully embraces this myth.

Influenced by French New Wave cinema, the film's narrator, Miranda July, expounds on the existential themes raised by the Kraffts' love and dangerous obsession.

In 1991, Maurice and Katia died together, engulfed by a pyroclastic flow while documenting the eruption of Japan's Unzen volcano. It is clear from the film that their legacy includes extraordinary footage of a myriad of volcanic eruptions that highlighted the dangers of living near a volcano. But did the pair's dangerous volcano-chasing lead to meaningful scientific contributions? Disappointingly, this fascinating question is left largely unexplored.

Fire of Love, Sara Dosa, director, Submarine, 2022, 93 minutes.

Downfall: The Case Against Boeing

Reviewed by **Lindsey Brown**³

The Boeing Company has long been regarded as one of the premier aircraft manufacturers in the world. But when Lion Air Flight 610 and Ethiopian Airlines Flight 302—both flown on Boeing's newest aircraft, the 737 MAX—crashed within 5 months of one another in 2018 and 2019, killing 346 people, the company's culture of safety and quality was called into question. *Downfall*, directed by Rory Kennedy, investigates what caused these tragedies, arguing that Boeing minimized its own responsibility and that it leveraged a campaign of plausible deniability, misinformation, and deception to deflect blame for the crashes.

The film's interviews with pilots, former employees, flight safety experts, legislators, and journalists paint a portrait of a company where safety is no longer paramount. Many of the film's subjects point to the 1997 merger

with aerospace manufacturing corporation McDonnell Douglas as a time when corporate culture shifted from an emphasis on quality and care to messaging that profit should be prioritized above other considerations.

The film documents how, after losing market share to competitors, Boeing produced the 737 MAX, promising airlines that pilots would not require additional flight simulator training to operate the new aircraft. In the aftermath of the October 2018 Lion Air crash, a new feature known as the Maneuver Characteristics Augmentation System (MCAS) was implicated. Boeing initially blamed operator error and promised to implement MCAS training; however, data collected in the wake of the Ethiopian Airlines crash pointed to a critical malfunction of the system.

Moved to action by their losses, family members of the crash victims traveled from all over the world to Washington, DC, to pressure the US government to uncover the truth. In one riveting scene, CEO Dennis Muilenburg answers questions from Congress as family members carrying posters with photos of their loved ones look on silently.

Court documents would later reveal that Boeing had deceived the US Federal Aviation Administration by omitting crucial information about MCAS from official communications with the agency, and the company agreed to pay more than \$2.5 billion under a deferred prosecution agreement. *Downfall's* timeline clearly articulates the lead-up to, and fallout from, the 737 MAX crashes—two tragedies that emphasize the importance of prioritizing quality and safety in high-stakes settings.

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Downfall: The Case Against Boeing,

Rory Kennedy, director, Netflix, 2022, 89 minutes.

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