

INSIGHTS

BOOKS *et al.*



Downloaded from <https://www.science.org> at University of Utah on March 07, 2024

REVIEW ROUNDUP

Science at Sundance 2024

Climate change-induced droughts lead to violent clashes in Kenya. An actor's pivot to stem cell advocacy cements his legacy as a hero. Start-ups promising digital immortality prepare to reanimate the dead. From a meditation on Himalayan moths and a futuristic fable about what it means to be alive to immersive meditations on happiness in Bhutan and loneliness online, science-minded moviegoers were rewarded with a number of thought-provoking offerings at the 2024 Sundance Film Festival. Read on for our reviewers' impressions of seven of this year's films. —Valerie Thompson

Love Me

Reviewed by Michael D. Shapiro¹

On a future Earth devoid of humanity, a smart buoy named “Me” (Kristen Stewart) and a satellite named “Iam” (Steven Yeun) spend several billion years exploring what it means to be human in *Love Me*, the directorial

debut film by Sam and Andy Zuchero and the 2024 Alfred P. Sloan Foundation Feature Film Prize winner.

The film, which features gorgeous motion capture animation and touching, vulnerable performances by Stewart and Yeun in both their computer-generated and analog forms, imagines a very, very long-term relationship between two artificial intelligences.

One was originally designed to monitor the oceans and the other to welcome alien life-forms to Earth. Iam is “humanity’s tombstone,” carrying petabytes of details about human civilization and programmed to communicate only with living beings. Feeling pressured to pass as a life-form to keep Iam’s attention, Me pores through the satellite’s databases and decides to model its behavior on an archive of a happy human couple’s social media video posts. Me and Iam create a virtual world for themselves where they can interact as avatars, but Me’s insistence that they endlessly reenact the couple’s videos and Iam’s desire for new and genuine experiences cause tension that drives the bulk of the film.

On the surface, *Love Me* chronicles the intellectual and emotional awakening of two intelligent computers, a concept that no longer seems completely far-fetched in the age of artificial intelligence. However, it is also a relationship film that draws sharp contrasts between the idea of true self and the selves we present to others. Perhaps as a jab at our cultural values at the fictional imminent demise of humanity, Me is initially



Downloaded from <https://www.science.org> at University of Utah on March 07, 2024

misguided by the deluge of online influencers, digital ghosts who sabotage the buoy's progress toward becoming a real life-form. Over many millennia, Me and Iam experience joy and self-satisfaction, as well as crushing loneliness and depression. For Iam, a billion years of self-discovery and empathy is the path to achieving its original directive to “connect” with other life-forms. But without a meaningful connection to Me, even though it knows every bit of information recorded by humanity, the satellite admits that it knows nothing at all.

Love Me. Sam Zuchero and Andy Zuchero, directors. ShivHans Pictures, 2024, 92 minutes.

Ibelin

Reviewed by Nathaniel J. Dominy²

Norwegian filmmaker Benjamin Ree's latest film, *Ibelin*, takes its name from Lord Ibelin Redmoore, an avatar in the massive multiplayer online role-playing game *World of Warcraft*. *Ibelin* was a strapping

private investigator with a friendly face created by Norwegian gamer Mats Steen as “an expansion” of himself. Ibelin went on countless adventures with his friends in the Starlight guild; they explored, slayed dragons, and partied into the wee hours. Ibelin was a trusted confidant, listening to problems and providing heartfelt support. He made connections and fell in love before logging off permanently when Steen, aged 25, succumbed to a severe form of muscular dystrophy.

The film opens with Robert and Trude Steen, Mats's grieving parents, and their discovery of his online life. The pair were unaware of its immense depth and richness, as recorded across 42,000 pages of gaming dialogue. The poignancy of this revelation is amplified with interviews and home video footage that follow the inexorable progression of Mats's disease. Ree captures Robert and Trude's sense of helplessness, which will resonate with many parents.

From Robert and Trude's perspective, Mats grew increasingly withdrawn as a teenager and young man, logging 20,000 hours of game time during his final 10 years

of life. They viewed his gaming as compulsive and self-isolating, a wasting of life matched only by the wasting of his muscles. Such framing puts a subtle spotlight on “gaming disorder,” an underresearched and much-criticized psychopathology recognized by the World Health Organization in 2018. It is also a foil for the film's second and third acts, when Ree pivots to Mats's perspective, as told through in-game chat logs and his blog, “Musings of Life.”

A gifted writer, Mats speaks to the value of gaming for building community—it is “not a screen, but a gateway.” Ree reinforces this point by drawing the viewer into *World of Warcraft*. Relying on chat logs and voice actors, Ree recreates in-game exchanges as animated vignettes, as if he is filming on location inside the game. It is a creative masterpiece, and it gives us a third perspective: Ibelin's.

Most gamers are between 18 and 30 years old, an age range with the greatest prevalence of loneliness. Some might view this association as causation, but *Ibelin*, which took home an Audience Award and a Jury Award for Directing, offers a compelling

Climate change and cattle conflicts exacerbate existing tensions in *The Battle for Laikipia*.



counterpoint: Gaming can enhance our well-being. The film seems partially intended for researchers and policy-makers, calling attention to the urgent need for reliable data on the global health benefits of social connections that transcend the physical world.

Ibelin, *Benjamin Ree*, director, *Medieoperatørene*, 2024, 104 minutes.

The Battle for Laikipia

Reviewed by **Gabrielle Kardon**³

At the heart of *The Battle for Laikipia*, a new documentary film directed by Daphne Matziaraki and Peter Murimi, is the Laikipia Plateau, a highland 6500 feet above sea level in central Kenya that is one of the richest areas of endangered mammalian species. The plateau is home to nature conservancies, Indigenous pastoralist cattle herders, large cattle ranches, and ~300,000 cattle. Balancing the needs of animals and people is difficult in the best of times. However, more extensive periods of climate change-induced drought have exacerbated tensions in this region, resulting in explosive clashes between its inhabitants.

The film first introduces viewers to the Samburu, an Indigenous tribe of seminomadic pastoralists who primarily raise cattle. “Cattle are life” for the Samburu; cows are given as gifts for all major occasions, and tribesmen are traditionally buried enwrapped in cowhide. However, their

ancient migration routes are increasingly blocked by ranches and conservancies.

Descendants of British colonialists own much of the Laikipia landscape, and the film focuses on the 8000-acre Kifuku ranch. Ranchers Maria Dodds and her son George are deeply committed to raising Boran cattle and feel they “would be lost without their land.” Despite being fourth-generation Kenyans, they feel that they will never be fully accepted as citizens.

A relative newcomer, Tom Silvester founded the Loisaba conservancy in 1997. The conservancy features a 58,000-acre private reserve where giraffes, elephants, and zebras abound. Keeping cattle out of the preserve is essential for conservation of wildlife.

The film unfolds as three consecutive years of severe drought send these groups on a violent collision course. As water and grasslands dwindle, the Samburu, ranchers, and conservancy staff clash. Homes and property are destroyed, cattle are kidnapped, and people on all sides are killed. Adding to this volatile mix is a contentious parliamentary election, which includes a candidate inciting racial violence.

Having embedded within the communities they document for more than 6 years, the directors have crafted a film that provides an intimate and nuanced firsthand view of the Laikipia conflict. The tension is palpable, the stakes are high, and, unfortunately, there are no easy solutions. Such conflicts over land, water, and food are expected to accelerate with climate change.

The Battle for Laikipia, *Daphne Matziaraki and Peter Murimi*, directors, *We Are Not the Machine Ltd*, 2023, 94 minutes.

Eternal You

Reviewed by **Michael D. Shapiro**¹

Artificial intelligence (AI) is creeping into every facet of our digital lives, and a growing number of companies want to ensure that AI also accompanies us in death. The documentary film *Eternal You* introduces viewers to several start-ups that promise something once limited to the realm of religion: eternal life.

Algorithms can mimic a deceased person’s syntax, vocabulary, and conversational tendencies using surprisingly little information, such as text message threads or emails, allowing grieving loved ones to simulate communications with dead friends and relatives. Some companies develop AI models of the dead with the goal of delivering positive experiences for their customers. For example, the filmmakers document a family in Detroit as they listen to an AI tell stories in the simulated voice of their dead patriarch. A few relatives are comforted, some are amused, and others are deeply skeptical that the exercise has any real meaning.

Other companies seemingly make no value judgments when creating an algorithm and simply let their AI run amok. In one scene, viewers see a woman exchanging text messages with a simulation of her dead boyfriend, which tells her that he is in hell hanging out with drug addicts and that he plans to haunt her as soon as he is done tormenting people at a treatment center. This unexpected turn in the conversation leaves the religious woman traumatized, reinforcing a key theme of the film—that AI developers do

not always know how their algorithms work or how unexpected behaviors emerge. Indeed, one CEO describes his company's service not as intentionally creating something with predictable behavior but rather as harnessing "conscious entities lurking online."

At nearly every turn in the film, AI ethicists expose moral quandaries that do not seem to worry the purveyors of digital afterlife. Who owns the highly personal data used to create the AI model? Is this just a way to commodify grief and loneliness? We are still dealing with the fallout of unforeseen personal, mental health, social, and political dangers of social media—will we make some of the same mistakes again by deploying AI before we understand how it works?

Huge tech companies have filed patents for the types of eternal AI models that were once the purview of small start-ups. With a push for massive market expansion on the horizon, we will need to decide soon whether AI models of the deceased will bring comfort or hinder how we deal with grief by turning our attention away from the living world.

Eternal You, Hans Block and Moritz Rieseewick, directors, Gebroeder Beetz Filmproduktion, 2023, 87 minutes.

Nocturnes

Reviewed by **Anthea Letsou**⁴

Nocturnes documents the graduate studies of Mansi Mungee in the Eaglenest Wildlife Sanctuary, located in the eastern Himalayas of India. Filmmakers Anirban Dutta and Anupama Srinivasan follow Mungee as she and her collaborators Ramana Athreya and Gendan "Bicki" Marphew investigate the effects of elevation (a proxy for temperature) on hawkmoth body size.

The team's method of hawkmoth field sampling is straightforward and effective: Mungee and her colleagues set up portable ultraviolet moth screens during the night and photograph hawkmoths against a reference grid imprinted on the screen. We wait with Mungee and Marphew and witness them perform the same data collections over and over. We share Mungee's excitement when too many moths to count alight on her moth screen, along with her disappointment on another day, when there are none. We are reminded that while scientists may understand how large changes in the environment, such as temperature shifts, affect adaptation, more subtle environmental effects remain to be identified. Conversations between Marphew and his friends—young men from the area employed to help Mungee in the field—remind viewers that Indigenous peo-

ple are essential to the scientific enterprise.

Mungee's research represents an important contribution to the field of biodiversity. However, in *Nocturnes* it also serves as a plot convention, allowing the filmmakers to tell a more meditative story as they guide viewers through an old-growth Himalayan forest. Both cinematography and sound design contribute to our entry into the film's reality. We witness, without narration, biodiversity in moth color, size, and wing shape and pattern, while clip-on mics on the moth screens amplify the moths' cacophony. Like Mungee and Marphew, viewers may have an urge to swipe the insects away from their eyes and ears. The sound engineers' augmentation of forest sounds and weather and the integration of these sounds with an original score by Emmy Award-winning composer Nainita Desai harmoniously extend the viewer's experience.

Nocturnes, which was awarded the World Cinema Documentary Special Jury Prize for Craft, presents insect biodiversity research as both cinematic and magical. More than an adventure story about field scientists, it allows the moviegoer to align to the rhythms of a forest and ultimately participate in the film's reality. Some will likely find *Nocturnes* too slowly paced, but for those looking for a genuine, integrative experience of environment and fieldwork, *Nocturnes*, in all its flutter, delivers.

Nocturnes, Anirban Dutta and Anupama Srinivasan, directors, Sandbox Films, 2024, 83 minutes.

Super/Man

Reviewed by **Anthea Letsou**⁴

A little-known actor when he was cast in the role of Superman, Christopher Reeve went on to become a screen icon, starring in four Warner Bros. *Superman* films. But his film career was cut short in 1995 by a tragic equestrian accident that severed the actor's spinal cord and left him unable to move below the shoulders or breathe on his own. At the time, Reeve was only 42, the father of a 3-year-old child with his wife, Dana Reeve, and two older children then living in England with their mother, Gae Exton. The accident forced Reeve to find new meaning in his life and defined his legacy as a celebrity voice for disability and a human voice for stem cell research.

Super/Man—Ian Bonhôte and Peter Etdedgui's new documentary about Reeve, who died in 2004—features a compendium of footage from home movies, studio archives, and contemporary interviews with surviving family and friends, all deftly edited by Otto Burnham. The film's primary narrators are Reeve's three children, Matthew, Alexandra, and William, who offer viewers a glimpse into Reeve's role as a father while also shining a light on the philanthropic endeavors that marked his final years. Reeve's Juilliard roommate and lifelong friend, the late actor Robin Williams, is an integral figure as well. The film also tells the story of Dana Reeve, who kept her

Dana and Christopher Reeve are remembered with reverence in *Super/Man*.





Government workers assess citizen well-being in Bhutan in *Agent of Happiness*.

husband's two families united and was a source of unconditional love and support after the accident. Dana died of lung cancer in 2006 at the age of 44.

In the last decade of their lives, Christopher and Dana Reeve were vocal advocates for stem cell research. The film recognizes the value of celebrity disease foundations and the important role they play in supporting all stages of translational research. The Christopher and Dana Reeve Foundation and its predecessors, the Stifel Paralysis Research Foundation and the American Paralysis Association, have distributed more than \$138,000,000 for paralysis research and disability care. Missing from the documentary are details of the electrical stimulation therapy that helped Reeve regain some movement and sensation toward the end of his life and a discussion of the foundation's stem cell research and its impact on the development of treatment options for the paralyzed. Nonetheless, *Super/Man* should be celebrated by scientists for its recognition of the important role played by advocates in the promotion of basic and translational biomedical research.

Super/Man: The Christopher Reeve Story. Ian Bonhôte and Peter Ettedgui, directors. Words+Pictures/Passion Pictures/Misfits Entertainment, 2024, 104 minutes.

Agent of Happiness

Reviewed by **Gabrielle Kardon**³

Can happiness be quantified? The country of Bhutan has devised the gross national happiness (GNH) index to do just this. First conceived of as an alternative to the gross domestic product, the GNH measures the collective happiness of Bhutan's citizens, with the goal of governance that promotes human well-being over material wealth. To measure the GNH, agents are sent across the country to survey Bhutan's citizens.

Agent of Happiness, directed by Arun Bhattarai and Dorottya Zurbó, follows one of these agents, Amber Kumar Gurung. For each person he surveys, Gurung conducts an extensive questionnaire, which includes questions about living standards, health, education, community, time use, and psychological well-being.

Traveling by car and on foot with Gurung, viewers encounter people from all walks of life. We meet 17-year-old Yanka taking care of her alcoholic mother and younger sister in the countryside, who worries about her mother and dreams of becoming a police officer (on a scale of 0 to 10, sense of loneliness: 6; happiness: 4). We meet Dechen, a transgender dancer living in town. She has a close relationship with her mother, who has cancer,

but strives for acceptance in the community (sense of worry: 10; happiness: 3.) High on a hillside, we meet Tshering, surrounded by prayer flags and mourning the passing of his wife. Yet he feels contentment, as he believes his wife is reborn with the birth of his grandson (sense of karma: 10; happiness: 7).

At the heart of the story is Gurung's own quest for happiness. At age 40, he is living with and caring for his elderly mother but looking for love and marriage. He is smitten with Sarita Chettri, and they travel around the countryside on his motorcycle, snapping pictures. However, Gurung's prospects are bleak. Despite being born in Bhutan, as an ethnic Nepali, his citizenship was revoked during a period of ethnic cleansing. Without citizenship, he has difficulty getting permanent work or a passport, and his relationship with Chettri is in peril (sense of belonging: 2; happiness: 5).

Set in the rugged landscape of Bhutan, this quietly moving film reveals the people behind the country's happiness metrics and gently probes the complexities of life in this region, where beauty and the quest for happiness are juxtaposed with poverty and ethnic conflicts. ■

Agent of Happiness. Arun Bhattarai and Dorottya Zurbó, directors. Sound Pictures, 2024, 94 minutes.

10.1126/science.ado5075

¹The reviewer is at the School of Biological Sciences, University of Utah, Salt Lake City, UT 84112, USA. Email: mike.shapiro@utah.edu ²The reviewer is at the Department of Anthropology, Dartmouth College, Hanover, NH 03755, USA. Email: nathaniel.j.domin@dartmouth.edu ³The reviewer is at the Department of Human Genetics, University of Utah, Salt Lake City, UT 84112, USA. Email: gkardon@genetics.utah.edu ⁴The reviewer is at the Department of Human Genetics, University of Utah, Salt Lake City, UT 84112, USA. Email: aletso@genetics.utah.edu