

Introduction

The Celluloid Specimen: Moving Image Research into Animal Life

Looking through the index cards at the archives of the Yerkes National Primate Research Center, one will find traces of Mona, a chimpanzee who died on September 24, 1942.¹ Like many laboratory animals, Mona continued to produce scientific evidence as a specimen saved within the laboratory's collections long after her death. Her body currently exists as item cards in the lab's filing system: her cadaver, head with brain, placentas and umbilical cords from two births, uterus, fallopian tubes, and ovaries each have different entries. But alongside these anatomical remains, Mona is also present in four cards representing films that document her interactions with her children and her performance during intelligence tests. Within this filing system, and that of many other animal labs across the globe, film reels have been itemized with body parts, experimental observations, lab notes, published findings, and other ephemera, each existing alongside the other as scientific documents of animal life to be preserved and stored for future use.

How should we approach these traces of Mona in the scientific archive? What do they tell us about the history of animal research, the role of animals in society, and their representation on film? Such films certainly stand as a visual record of how science was practiced, as well as providing a testament to the lives of animals like Mona that were dramatically transformed in the name of scientific discovery and progress. To conceptualize these overlapping dynamics, I have taken to calling animal research films *celluloid specimens*. This term evokes the central dynamics that define films like those at the Yerkes National Primate Research Center. Beginning in the mid-eighteenth century, the term *specimen* was used to refer to "a part or portion of some substance or organism, etc., serving as an example of the thing in question for purposes of investigation or scientific study."² In specifying

a severed “part or portion,” the word points to the violence of Mona’s dissection, as well as the act of selection that brackets what is being studied. Specimens are defined by their role as evidence for specific scientific projects, which dictate what is saved and what is not. Like the films of Mona, specimens are items to be categorized, stored, and compared within a filing system and therefore integrated into an epistemic network. As actual corporeal portions of an animal, specimens are also signs of that animal’s life, indexes of its ontological existence at some point in the past. And finally, specimens are preservations—usually maintained via formaldehyde—and thus continue to hold meaning long after both the death of the original animals and the completion of the scientific projects that made them. Whether relying on celluloid or formaldehyde, specimens are the end result of chemical processes that transform living, breathing beings into objects of scientific study. In coupling *celluloid* with *specimen*, I mean to refer to how all of these dynamics are present not only in preserved sections of animals’ bodies but also in the scientific research films depicting animal experiments.

Celluloid specimens are artifacts from the history of scientific experiments with animals. But they are also films, part of a larger media history and context. The animal researchers studied in this book were important interlocutors with filmmakers working in educational filmmaking, ethnographic filmmaking, and sponsored filmmaking, and the methods and theories used to make their celluloid specimens were created in dialogue with these central forms of nontheatrical cinema. Additionally, celluloid specimens were often created as experiments into *what film could capture through the image of an animal*—proposing variously that films of animals could visualize pure thought, the processes of history and culture, and the influence of environment on an organism. In this capacity, creators of celluloid specimens often proposed their own theories of media and their relationship to living organisms, theories that intersected with and influenced major media studies figures such as Marshall McLuhan and Noam Chomsky. But perhaps more important, the scientists filming celluloid specimens often created new types of aesthetic and technological approaches to representing animals onscreen. These techniques exist alongside more well-known approaches from narrative and wildlife filmmaking. Studying these films therefore reintroduces a major strain of animal representation that has been largely left out of the discussion.

By focusing on the production, distribution, and reception of celluloid specimens, this book contributes to a growing body of scholarship dedicated to the scientific uses of film.³ *The Celluloid Specimen* expands this field into the animal laboratory, a thriving area of cinematic production where thousands of animal research films were created as laboratory notes, teaching aids, moving illustrations, and archival records. As such, this book also contributes to philosophical and ethical debates about the use of animals in society, as well as scholarly considerations of the aesthetics of animal representations in the moving image.⁴ As the first book to focus exclusively on the aesthetic techniques and ethical stakes

of animal representation in American laboratory filmmaking, *The Celluloid Specimen* extends conversations within critical animal studies into new, unsurveyed terrain. I will show that different analytical techniques and approaches are needed for us to understand the political significance of the onscreen animals in scientific films. It is my hope that this book will provide such conceptual tools to a broad community of scholars interested in the representation of animals on film.

Like many so-called useful films, celluloid specimens are interstitial objects that are usually thought of as passive recordings of scientific research with little to no intrinsic interest in and of themselves.⁵ Hundreds, if not thousands, of celluloid specimens have been left to languish unseen in the vaults of labs, universities, and archives. But when examined in their own right, animal laboratory films are revealed to be rich historical, political, and aesthetic texts that have played crucial roles in the history of science and cinema, as well as in broader social histories. In many research labs, the moving image has been used as an essential tool for transforming complex, often unpredictable, living things into specimens that can be studied in an orderly fashion. Animal researchers have produced novel ways of representing living animals onscreen in the pursuit of research agendas, presenting them in ways that differ significantly from other cinematic portrayals of nonhuman life, such as nature documentaries, animated features, or other forms of animal narratives. Despite the centrality of animal testing for many scientific disciplines and the abundance of films produced on this subject, film scholars have not yet written the history of this cinematic form. Yet it persists as a hidden material record of experiments with nonhuman life that reaches back to the beginning of the twentieth century.

The films of Mona at the Yerkes National Primate Research Center are good examples of the multifaceted dynamics at play in celluloid specimens. Taken at face value—especially for nonscientific audiences—these films attest to the violence and imprisonment forced on Mona, the ways in which she was restricted in her movement, and how her body was disassembled in the name of science. From this perspective, film was an extension of her violence and capture.⁶ And perhaps even beyond simple violence, they also document elements of cruelty, the ways in which Mona and other research animals were often physically or psychologically tortured by their keepers in the name of science. Moments of jarring animal suffering are nearly ubiquitous in the history of celluloid specimens, and I will necessarily return to them throughout this book.

But if these films served solely as accounts of nonhuman pain performed in the name of science, there would be very little reason to examine them. Indeed, there is a long and violent history of animal cruelty in the name of scientific discovery and innovation. But what makes such films important objects of study is their startling effectiveness as tools for shaping scientific discourse and social governance—a function that affects humans and animals alike. These films served as central components within scientific research programs whose findings influenced the

shape of major facets of twentieth-century American society.⁷ If we continue looking beyond solely the violence and cruelty contained in these cinematic images, we can focus on their content and purpose. In the case of Mona, she was filmed as part of Robert Yerkes's primatology research. Yerkes, a known eugenicist, produced images of chimpanzee maternal behavior and intelligence as part of his larger political project, where they served as pieces of evidence that were meant to justify particular policies in the scientific management of race, species, gender, and genetics. In his various leadership roles within powerful American scientific and governmental institutions—president of the American Psychological Association, chairman of the Committee on the Psychological Examination of Recruits during World War I, “Expert Eugenic Agent” for the House Committee on Immigration and Naturalization, chairman of the Committee on Inheritance of Mental Traits at the Eugenics Records Office, and chairman of the United States National Research Council's Committee for Research in Problems of Sex—Yerkes contributed to some of the most important political debates of his time. As we will see in the chapters dedicated to him, his rise to positions of power was predicated on his psychological experiments with animals like Mona, and the decisions he made in these positions were directly influenced by the theories of species that he developed while studying Mona and her kindred. Recognizing this role for Yerkes's research is to also recognize that the films of Mona are not only scientific recordings but also political texts.

Thus, to fully address the complexity of celluloid specimens, it is important to recognize that they are simultaneously important pieces of scientific findings and of political rhetoric. Yet they are not entirely defined by their status as “texts.” Looking at the Yerkes films, we also see traces of Mona herself—a primate who is estimated to have been born in 1913 in Sierra Leone and subsequently lived with Cuban socialite Madam Rosalia Abreu in her primate colony in Havana before being donated to the Yerkes lab.⁸ Mona gave birth to six children in the Yerkes laboratory—Cuba, the twins Tom and Helene, Mon, Ami, and Mu. She died from a bacterial infection at the age of twenty-nine. Celluloid specimens like those at the Yerkes National Primate Research Center contain traces of long-gone life-forms and speak to experiences of confinement and invasive testing. The analysis of animal research films can thus play a recuperative role, one that refuses to allow Mona and her kind to recede quietly into obscurity.

Finally, we might also ask what Mona's images mean for us today. How do the theories, policies, and institutions built on findings extracted from Mona's body and behavior continue to operate in the twenty-first century? In what ways does Mona's life still resonate outside the walls of the laboratory that studied her and the archive that preserves her? Understanding that celluloid specimens have at times played important roles in crafting social policy and creating institutional tools of governance and control, there are good reasons to think that animal research films will continue to be a prevalent force defining our politics going forward.

BEHAVIORIST CELLULOID SPECIMENS:
A CINEMA OF OBSERVATION AND CONTROL

This book specifically analyzes the celluloid specimens created by behaviorists working in the early to mid-twentieth century. It tells the story of how the moving image was adopted by comparative psychologists working in the 1910s, 1920s, and 1930s as a tool to record psychological states, how the medium was then shifted into a means of modeling human behavior with animal subjects during the mid-1930s and 1940s, and finally how it was stripped of its evidentiary status by later “radical behaviorists” who simply saw it as another form of visual stimuli. Each shift is presented through the analysis of a central character: Robert Yerkes stands in for the early period; Neal E. Miller exemplifies the use of film as a form of modeling; and B. F. Skinner represents the later radical behaviorists. These figures were all at the center of their respective movements in comparative psychology. Yerkes’s work represents psychology’s early attempts to establish itself as a social science with its own empirical practices; Miller was a central member of a movement based out of Yale that was responsible for reviving the behaviorist brand after its decline in the 1920s; and Skinner, one of the most renowned scientists of all time, brought his own version of behaviorism into the public discourse at an unprecedented scale. Skinner’s eventual decline in popularity during the late 1970s and 1980s—even as many of his ideas were being adopted and implemented in institutional settings like the classroom, the prison, and the asylum—signaled the eventual fate of behaviorism itself, whose concepts would continue to be practically applied even as they are rarely discussed.

I have chosen to focus on this particular field—as opposed to other forms of animal research—because of behaviorists’ aspirations for shaping policy and governance as well as their essential reliance on using nonhuman animals as research subjects. Together, these dynamics make behaviorism a perfect case study for understanding how scientific films of animals have functioned as political texts, allowing us to draw clear connections between filming an animal experiment and shaping social policies. The scientists I study here made such connections themselves. Yerkes described his primate films as evidence of the validity of his eugenicist platforms; Neal E. Miller, alongside his colleagues, created rat films in order to model human behavior in a variety of cultural and institutional settings, such as classrooms, factories, and even lynch mobs; and B. F. Skinner described film as a means of exerting behavioral control over humans and animals on a society-wide scale.

One of the most influential movements in psychology, behaviorism is largely a child of the twentieth century, emerging out of many of the same concerns over empirical observation that led to the creation of film itself.⁹ The discipline’s origin is usually attributed to a 1913 speech by the psychologist John B. Watson, which was subsequently published as the article “Psychology as the Behaviorist Views

It.”¹⁰ Watson asserts that psychology should be an experimental science based on verifiable observations. He argues that rather than attempting to describe the internal thoughts, feelings, and desires of their subjects, behaviorists should study and test how those subjects acted in different controlled settings. This approach contrasted sharply with the symbolic analyses and theoretical frameworks used by other contemporaneous forms of psychology, such as Freudian psychoanalysis or gestalt theory. Drawing from Darwin’s theory of evolution, which placed humans within a “continuity of species” that included animals, and building on the earlier work of animal experimentalists like C. Lloyd Morgan, Herbert Spencer Jennings, and William James, Watson developed his argument at a moment when the common lineage of humans and nonhumans was a well-accepted fact in scientific communities.¹¹ Within this context, his article champions animal experiments as a means of revealing “a unitary scheme of animal response, [which] recognizes no dividing line between man and brute.”¹² He reasoned that if human behavior is an extension of animal behavior, experiments with managing animals and their social interactions could lead to similar procedures for human management. This managerial component was essential for how Watson conceived of the field, writing that it was a brand of psychology for “the educator, the physician, the jurist, and the business man,” a management tool for use in each of the various arms of society.¹³

Behaviorism went through periods of rapid ascension and decline. After an initial burst of interest and controversy over Watson’s work, behaviorism did not truly take off until the 1930s. From then until the 1950s, behaviorism became extremely popular with students of psychology, largely becoming the lingua franca of the discipline. It was then largely superseded by developments in cognitive science and neuropsychology. Despite falling in and out of favor throughout the twentieth century, Watson’s approach ultimately did succeed in revolutionizing the field, eventually leading to major developments in human engineering, urban planning, and artificial intelligence, among other disciplines. Indeed, historian of psychology John Mills goes so far as to claim that behaviorism and American psychology generally have become indistinguishable, despite how the movement has fallen out of fashion.¹⁴ When looking at the practice of psychology at the turn of the twenty-first century, Mills saw traces of behaviorism everywhere, from the use of animals to test concepts, to the attempts to predict and manage behavior based on past observations, to the implementation of psychological theories in industrial and commercial spheres. In many ways, these aspects of behaviorism’s ongoing influence have heightened exponentially, as increasing computational capacity has been dedicated to the pursuit of behavioral control.

At each step of behaviorism’s development, one finds the dual presence of animals and cinema, which operated as fundamental tools for achieving the field’s far-reaching sociopolitical goals. Early behaviorists were fascinated by the medium and often drew connections between their laboratory experiments and the experience of watching a film. The latter half of Watson’s career, which was dedicated to

the study of human sexual behavior, was itself inspired by his work studying the effects of anti-VD films on soldiers during World War I.¹⁵ In one early publication, Watson presaged his own cruelty toward animals and children by equating scenes of violence in a film to the stimulating effects he observed when administering electric shocks to humans and animals in the lab. He also heartbreakingly describes how the promise of watching a film was the only way to stop an eight-year-old child from crying after receiving such a shock in his lab.¹⁶ Watson later rearticulated these themes when he created his own film, *Studies upon the Behavior of the Human Infant: Experimental Investigation of Babies* (1923). This film claims to depict how a young child, named “little Albert,” was conditioned to fear rabbits.¹⁷ Generating lasting controversy, it first shows Watson introducing a variety of animals to the infant Albert, who observes them with neutral interest.¹⁸ The film then cuts to months later, after the child has been supposedly conditioned. Albert is now terrified to touch the rabbits or even any furry rabbit-like object. This film establishes many of the characteristics that will define behaviorist films going forward: shot from a single, stable camera angle, the frame is used to delimit what portions of the laboratory setting are visible to the audience. This tight control over the parameters of the onscreen experiment is also exerted through the film’s constant cutting (the standard shot is six seconds long), which renders invisible the actual conditioning of the child. Finally, the presence of the filmmaker/scientist, who is played by Watson himself, has access to all the spaces prohibited to the viewer. Walking in and out of frame to introduce and remove the animals that frighten the child, erasing many of the traces of his own interventions through the editing of the film, Watson’s onscreen character deploys and withholds the evidentiary power of the moving image at will. Like Méliès’s magician in the theatrical trick films of early cinema, Watson’s scientist/filmmaker colluded with the form of the medium itself to display impressive feats of control and power over the children and animals onscreen. In this initial work of behaviorist filmmaking, it is already clear how much cinema has to offer the field in terms of controlling filmed subjects and eliciting them to perform for the camera lens. The film also establishes a direct link between this act of filming and enacting physical or psychological violence, a pattern that, unfortunately, continued. *Studies upon the Behavior of the Human Infant* thus creates a particular gaze—a gaze that refuses sympathy with its human and animal subjects and exerts control over these subjects as part of the act of looking—which will be repeated in many films to come.

In other ways, though, Watson’s film is an outlier in the history of behaviorist filmmaking, particularly in its use of animals as stimuli rather than as subjects of an experiment. Watson’s willingness to publicly display his damaging experiments on human children was quickly considered an ethical travesty. Later scientific films were instead made with a vast menagerie of other animals—rats, pigeons, primates, cats, dogs, monkeys, and more—in order to study, monitor, and control a sprawling set of behaviors from mating to working, giving birth to developing an



VIDEO 1. Clip from *Studies upon the Behavior of the Human Infant: Experimental Investigation of Babies* (John B. Watson, 1923).
DOI: <https://doi.org/10.1525/luminos.145.1>



addiction, learning a new skill to participating in mob violence. In each instance, different species were chosen for the behaviors they could perform, as well as their more intangible social and symbolic statuses. The three scientific filmmakers around which this book is organized—Yerkes, Miller, and Skinner—selected their different test animals based on their capacity to illustrate the scientist’s research. On the one hand, Yerkes was interested in what he called “ideation,” the processes of the intellect, and thus chose to work with high-functioning primates. Miller, on the other hand, was concerned with the ways that different cultures create their own personality types; thus, he chose rats because of their ability to stand in as a standardized form of life that could be repeatedly tested in different conditions. For his part, Skinner found that pigeons were both amenable to being conditioned in the lab and served as powerful rhetorical devices—since viewers were frequently shocked to see what these supposedly stupid birds could be trained to do.

Each section of this book therefore focuses on a specific scientist (Yerkes, Miller, Skinner) *and* a specific set of experimental animal subjects (primates, rats, pigeons). But each section also features a distinct affective relationship to power that was embodied in the research being conducted. I categorize these relationships under the headings of “sympathy,” “modeling,” and “control.” Although only the first of these groupings is recognizably emotional in its content, all three required complex arrangements of scientists, technologies, and animals that demanded

particular affective postures and responses from each. “Modeling” and “control” may sound clinically objective, yet producing such perspectives requires deep conceptual and technological interventions into the sensing bodies of both animals and scientists. As Claude Bernard—one of the founding figures of animal experimentation and vivisection—infamously wrote, the experimenter “no longer hears the cry of animals, he no longer sees the blood that flows, he sees only his idea and perceives only organisms concealing problems which he intends to solve.”¹⁹ Here, even the pursuit of an abstract idea is clearly rendered as an embodied experience of sensing organisms who adopt and reject particular affective relationships with one another.²⁰ Scientific objectivity, modeling, and control are all specific brands of emotional labor, just as much as scientific uses of sympathy.

It is my contention in this book that moving images were central in the creation of all three of these affective relationships. In each instance, film was used for its capacity to perform different scientific functions. The first section of the book is dedicated to the primatologist Robert Yerkes’s use of film as a means of creating a sympathetic rapport between scientific audiences and his animal subjects. In this section, I study Yerkes’s use of mediated sympathy in three different settings—his planning and implementation of intelligence exams during World War I, his use of film as a means of transforming scientific discourse, and the position of his films within the wider popular culture of primate cinema—each of which is the topic of its own chapter. In each site, we will see how film was used to facilitate emotional projections and sympathy across differences as a means of supposedly accessing hidden truths about the minds of others. This emotional experience was at the heart of Yerkes’s scientific work, and he often produced accounts of such experiences as the finished outcome of his research. Moreover, sympathy was essential for how Yerkes articulated his belief in eugenics, which he envisioned as an enlightened form of progress through the management of race and species. Yerkes argued that social hierarchies should be built and maintained through a sensitive deployment of understanding for how different groups of people and animals experienced the world. His sympathy therefore came with an implicit threat: to better know the other was a way to better contain and confine them. Film’s use in this process was equally troubling, modeling the subject position of the eugenicist managers who could see into the very minds and hearts of those they control.

The second section of the book is dedicated to the experimental rat films made throughout the mid-twentieth century—focusing primarily on Neal E. Miller’s *Motivation and Reward in Learning* (1948), which emerged out of a prevalent critique of Yerkes and his fellow eugenicists. Rather than picture difference as a property inherent to an organism that could be revealed through film, Miller and his colleagues proposed that difference was the end result of an ongoing relationship between organisms and their environment, a development that their films set out to capture. Here, film was considered a type of model, one that was primarily abstract in nature. In the three chapters constituting this section, we observe how

this modeling was produced through the creation of *Motivation and Reward in Learning*, in the broader genre of the lab-rat film, and in the screening of these films in classroom settings. I argue that animal modeling was a particular form of affective labor, one that involved what Donna Haraway describes as “shared suffering” from both the scientists and their lab animals. I expand this idea to show the ways in which shared suffering was not limited to the events of the lab but often extended to the sites where laboratory findings were used to govern or where films of the lab were screened. I conclude that, as a form of abstraction, onscreen animal modeling of human behavior takes on an essentially different set of registers and political stakes from Yerkes’s approach. Miller and his peers sought to explain a wide array of disparate social actors and actions with their filmed rodent models, from the racial violence of lynch mobs to the workings of class in American society, from child socialization to the effects of overpopulation in urban centers. In these instances, the trifecta of rat, film, and model became a tool for simplifying and controlling massively complex social issues through manipulations of and interactions with nonhuman animals.

The final section of the book focuses on the use of film as a means of control through the work of B. F. Skinner, who was a persistent critic of the essentialism of Yerkes and his films and of the theoretical modeling deployed by Miller and his peers. Rather than use film to represent a truth about his animal subjects or to simulate scientific principles of behavior, Skinner purposely used film and later television to exert control over viewers. Whether conditioning pigeons to guide missiles, scientists to distrust their own models, or the broader American public to embrace his research—each the topic of a chapter—Skinner consistently framed the moving image as a means of shaping the behavior of spectators, both human and nonhuman. The public fallout from his theories—especially when he proposed their use to abolish prisons and private property—led to his becoming a deeply contested figure throughout the 1960s and 1970s, a time when comparative psychology’s political stakes were hotly debated. Even as Skinner’s techniques of control were consistently integrated into prisons, classrooms, and asylums, his detractors argued that Skinner was stripping the human of all that was exceptional to it. The onscreen image of the pigeon became a potent symbol for the posthuman politics of control, one that simultaneously evoked visions of dystopia and utopian societies to come.

Portions of the lives of Skinner’s pigeons, Miller’s rats, and Yerkes’s primates remain preserved in the films that feature them. As the category of “celluloid specimens” suggests, these films are in some ways morbid objects, containing the remains of long-dead animals, yet the debate over their meaning is still very much alive, continuing to be contested, as science, culture, technology, and ecology shift around them. Ultimately, I ask not only what these films *have* meant for animals, scientists, and viewers at large but also what else it is *possible* for them to mean, either for us today or at some point in the future. Sympathy across species boundaries,

political modeling with human and nonhuman organisms, and interspecies networks of control are all part of our current field of contested politics, picked up by different actors and used for different purposes. I turn to these contemporary extensions in the book's conclusion, where I consider the status of celluloid specimens today. Arguing for a unique form of historiography based on the nonhuman listening and maneuvering practice of echolocation, I emphasize the ways in which animal research films made by midcentury behaviorists continue to resonate with ongoing issues surrounding the use of standardized tests, drone warfare, and educational media, while also considering their relationship to new moving image representations of animal experiments coming out of cognitive psychology, genomics, and zoology. In this context, films like those of Mona—hidden deep in the storage racks of the Yerkes laboratory archives—can speak volumes about many of our most pressing contemporary issues if only we care to listen to them.

BEYOND ENCOUNTER: APPROACHING ANIMAL IMAGES AS INFRASTRUCTURE

As a scholar working within the conceptual frameworks of critical animal studies and film studies, I found myself unexpectedly confounded by many of the films that I watched while researching this book. What should I take from Yerkes's simultaneous love of his primates, his claim that film could undo the boundaries between human and animal, and his deeply racist worldview? How could I make sense of abstract images of rodent behavior that were being used as explanations for the horrors of a lynching? How should I reconcile Skinner's apparent use of film to transform animals into killing machines *as well as* utopian critiques of capitalism? The theories from critical animal studies and film studies that I had on hand for analyzing such animal images were not up to the task of reckoning with these contradictions.

Ultimately, I drew from fields like nontheatrical film studies and the history of science in order to understand how these films functioned as political texts within their various institutional settings. But in doing so, I ended up developing different ways of approaching onscreen animals that largely diverge from how such discussions have evolved in film studies over the last two decades. As I demonstrate below, film scholars have focused primarily on framing animal films *as encounters*, debating whether the animals in them have agency over how they are presented onscreen and the effects that such images might have on human viewers. Yet this framework does not approach the primary political significance of films like those studied here. Therefore, instead of an analysis of film-as-encounter, I propose an infrastructural approach to animals on film, one that positions their meaning within their historical and institutional contexts. Doing so will allow me to radically destabilize the stakes of debates over animal agency and cross-species contact from how they have been treated up to this point.

The film scholar Anat Pick's *Creaturely Poetics: Animality and Vulnerability in Literature and Film* represents some of the best writing of the prevailing film-as-multispecies-encounter discourse.²¹ Pick studies the poetics of watching animals onscreen, exploring how such experiences of spectatorship can dramatically, even spiritually, transform viewers. In the first pages of the book, she defines her ontological approach in contrast to historical studies of humans and animals. Citing the philosopher Matthew Calarco's *Zoographies: The Question of the Animal from Heidegger to Derrida*, she writes: "animal studies entails more than 'a historical and genealogical analysis of the constitution of the human-animal distinction and how this distinction has functioned across a number of institutions, practices, and discourses.' It should aim for an 'alternative ontology of animal life, an ontology in which the human-animal distinction is called radically into question.'"²²

In Pick's view, historical circumstances are mere distractions from the more important work of undoing human-animal divisions. Finding common cause with André Bazin's realism and Roland Barthes's notion of the *punctum*, Pick focuses on the ontology of the cinematic image, which she argues creates an "encounter with wounding finitudes" between humans and animals.²³ In other words, she claims that viewing indexical images of other species can create a recognition of shared mortality and singularity across the human-animal divide.

Pick's approach is representative of the one adopted broadly in film studies, where transformative encounters and moments of contact with onscreen animals are prioritized over the institutional or historical contexts that define how human-animal distinctions are made. In the work done by Pick and others working with a similar approach, the central questions are how and whether animal alterity can be represented onscreen, which formal practices enforce or undo anthropocentrism and anthropomorphism, and how indexical images of animals might transform human spectators. These works focus closely on the aesthetics of individual films, asking how they might create new experiences of spectatorship "in which the human-animal distinction is called radically into question."²⁴ Cumulatively, these scholars argue that animal images are forms of encounter and engagement with their profilmic subjects—experiences that have the potential to generate new ethical, political, or philosophical formations.

Analyzing film as a form of encounter has its limits, though, especially when one is dealing with nontheatrical films like celluloid specimens. Interspecies encounters are primarily interpersonal phenomena, resting on individual experiences between humans and animals. As such, focusing exclusively on the moment of encounter erases the dispersed rationales and institutions that surround the production and distribution of animal films, factors that are especially important for understanding how nontheatrical films create meaning. Pick argues that this erasure is a necessary move in order to understand animal films' transformative potential, especially in the context of scientific research. Discussing Frederick Wiseman's *Primate*, the 1974 exposé of the Yerkes National Primate Research

Center, Pick argues that only by “muting” or “dumbing down” the scientific reasons for animal experiments can we face animals as they truly are: living, vulnerable beings like ourselves.²⁵ No longer caught up in the dense technical language of scientific research, she claims that Wiseman’s film and others like it allow us to question the fundamental ethics of our relationship with animals—a relationship that she sees as superseding and escaping rationales given for conducting the experiments in the first place.

Pick may certainly be right that animal test subjects must be removed from their scientific context to be fully seen, but there are also significant downsides to the elisions she advocates. The first of these downsides is the flattening out of all scientific reasoning as basically equivalent, with no distinction between, say, animal testing to develop new pharmaceutical drugs versus developing a vaccine. Pick argues that considering such differences lessens the impact of the onscreen traumatic cruelty that audiences witness, distracting them from the main ethical challenge of acknowledging animals as living, sentient beings who deserve recognition as such. But this position leads to a second, more serious, downside: scientific politics manifest precisely in these details that are being erased in order to more fully see the animal. How scientists intend to use the findings they produce through animal research is crucial for understanding the ways in which this research will intervene in society at large. By focusing on only the experimental scene of the laboratory, and consciously eliminating the broader discourses and applications of the research developed there, we lose touch with the differing political and historical stakes of each experiment. Only by widening our scope to include such social phenomena can we begin to truly think through the imbrications of human and nonhuman politics writ large.

The pitfalls of a constricted approach to animal studies—which exists as solely an ontological-philosophical critique of the status of animals under humanism, to the exclusion of broader sociohistorical constructs—are doubly insidious when considering the intersections of “the animal question” and other forms of oppression. Frequently, these discussions have led to the so-called dreaded comparison between animals and Black enslaved peoples, exemplified in PETA’s racist caricature of Marjorie Spiegel’s original claim in their “Are Animals the New Slaves?” ad campaign from 2005.²⁶ As Bénédicte Boisseron argues in *Afro-Dog: Blackness and the Animal Question*, even more benign versions of this comparison—in which groups of people are described as being treated “as animals” or animals are described as being treated “as slaves”—ultimately hollow out and instrumentalize the politics of both race and animals.²⁷ Without historical specificity, such comparisons reveal little about how the complex systems oppressing animals and groups of people intersect. These arguments also propagate the misleading idea that a single political spectrum exists in which speciesism and racism are simply variations of the same phenomenon. Such a worldview cannot account for, say, the loving relationship between humans and animals in many police K9 units,

where mutual, interspecies bonds are weaponized against a broad range of marginalized groups (criminal suspects, protesters, the unhoused, drug users, etc.). As the chapters in this book will demonstrate time and again, there is no smooth continuity between racism and speciesism but rather a dense network of power relations that are determined by historical and cultural contexts and that can only be fully understood within those contexts. If we wish, as I do in this book, to critically deconstruct how categories of race and species are mobilized by forces such as capitalism, colonialism, humanism, nationalism, scientism, and any number of other social constructs, our approach must be steeped in historical and genealogical detail. Ultimately, the blanket comparison of confining, killing, or mistreating animals to performing similar actions on racialized groups of humans obfuscates far more than it reveals.

This book thus proposes an alternative approach to animal images on film. Indeed, I argue that any “ontology in which the human-animal distinction is called radically into question” does not need to *move beyond* historical and genealogical analysis, as Pick claims, but rather must be *predicated on* exactly this type of analysis.²⁸ As we will see throughout this book, the terms *human* and *animal* are essentially meaningless without a historical, contextual frame. To avoid the reifying effects of such concepts, I have chosen not to use *anthropocentrism* (the centering of human over animal) or *anthropomorphism* (the transformation of animals into humanlike subjects) as key terms for my own argument except in reference to the language used by my subjects of study or the theorists who discuss them. As the historians of science Lorraine Daston and Gregg Mitman argue, terms like *anthropomorphism* are entirely plastic—as what constitutes the “Anthropos” in each historical instance can be radically different, a point that many contemporary authors working on animals and film gesture toward but do not fully incorporate into their analyses.²⁹

I also focus on how hegemonic structures of power can exist outside humanism. The exclusive analyses of multispecies encounters, and their potential to undo the pernicious effects of anthropocentrism, do not acknowledge important changes in how humans and animals are enlisted into social hierarchies. All too often the assumption seems to be that humanism continues to operate as it did during the Enlightenment, as if it was still assumed that humans are fully Cartesian subjects while animals are unfeeling automata. But, of course, much has changed since the eighteenth century, to the point that this version of humanism is diminishingly important for the organization of society, even as it remains the main target for much critical animal studies scholarship. The behaviorists studied in this book actively described themselves as opposing what they saw as Descartes’s anthropocentrism, yet this did not necessarily lead them to an egalitarian treatment of their animal subjects. Behaviorism itself was an essential participant in a broader shift throughout the twentieth century toward more dispersed notions of intelligence and agency that were no longer exclusively human in nature. Crucially,

this shift did not lead to any programmatic improvement in the lives of animals. As Haraway and, more recently, the animal studies scholar Nicole Shukin have argued, one of the strongest catalysts for a posthuman worldview has been global capitalism, which often actively encourages the blurring of boundaries between human and animal.³⁰ Yet animals are still cruelly tortured, killed, and driven to extinction at rates far exceeding any previous historical period. More than the centuries-old philosophies of Cartesian dualism, this late twentieth-century social formation remains far-and-away the largest threat to both animal and human life in our current milieu.

How do historical and genealogical approaches to understanding animal films correct for this oversight? If we are not focusing on questions of nonhuman onscreen agency or the generation of a posthuman aesthetics, what alternative approaches should we adopt? A key to answering these questions comes from the recognition that the historical construction of the human-animal divide is an essential part of what cultural studies scholar Raymond Williams calls the “structure of feeling” at any given moment.³¹ For Williams, such structures manifest in our emotions, sensations, and experiences but also are immanent to the objects in our daily life, including media like cinema. Crucially, these structures operate beyond any individual framework and are part of an ongoing, ever-changing process of *social* experience, in which broad ideological formations—such as distinctions between human and animal—are navigated over time. Media theorist Rebecca Coleman highlights the dispersed nature of such structures when she tweaks Williams’s term as “infra-structures of feeling,” arguing that we must analyze how affective textures are woven through the distribution of feelings across institutions, platforms, and media. As Coleman observes, the term “*infra-structure*” highlights the “*expanded architecture* of texts through which a structure of feeling might be produced and organized.”³² Here, films depicting animals would be considered as *infrastructural tools* through which different affective relationships to animals are distributed, propagated, or dispelled. When considered using this approach, the questions of where a film is watched, who is watching it, and for what purpose become just as important for defining the significance of the onscreen animal as the aesthetics of the film itself.

Within academic film history, this methodology is analogous to theories developed to study cinema “beyond the screen,” an approach largely spearheaded by research into nontheatrical film and media. Whether discussing educational, sponsored, military, industrial, or scientific filmmaking, this method uses the context and intended purpose of each film to understand the meaning of its images.³³ The study of nontheatrical film brings with it a set of techniques for considering film as a component or outgrowth of infrastructure, using archival records to reconstruct distribution networks, locating statements to funders that identify film’s role in procuring sponsorship, identifying the technical specifications for modifying cameras and film stocks, scouring trade journals for references to film’s

differing use in individual institutional contexts, and so on. These approaches are especially important in the history of science, which James A. Secord claims is increasingly understood as essentially “a form of communication” through which knowledge is circulated and distributed.³⁴

In this book, I therefore ask questions about cinematic images of animals that differ markedly from those asked by theorists viewing animal cinema as primarily an experience of cross-species encounter. These new questions focus on how animal images function within broader media infrastructures, how cinematic encounters with nonhuman animals—which theorists such as Pick do such an excellent job of analyzing—are subsequently connected to scientific, industrial, or political projects outside the screening itself. And they ask how different social groups and organizations have been positioned in relation to onscreen animals and what such positioning was meant to achieve. These questions complement and complicate those asked by Pick and others, placing the transformative effects of onscreen multispecies encounters within particular infrastructures of feeling that could mobilize such encounters for their own purposes. Here, definitions of *human* and *animal* are created and recreated again and again, woven into structures of feeling differently each time.

Adopting an infrastructural approach to animal images has allowed me to reconcile what at first seemed irreconcilable in celluloid specimens like those of Mona. It provides me with the tools to understand how these films simultaneously exist as remains of living individuals, results of scientific experiments, leftover pieces of political rhetoric, and artifacts of past practices that continue to resonate in the present. Within his particular historical and institutional context, Yerkes could coherently proclaim his love for his apes and hail film’s capacity to pull viewers outside of anthropocentrism, all while conducting constraining and invasive testing on his primate subjects. Yerkes’s love for Mona was not an extraneous by-product of his eugenicist beliefs but rather a central practice—one in which Mona was enlisted into a racist political project that was inscribed on her body and behavior, even as film was supposedly being used to sympathize with her and her actions. Such practices of control exist outside the edges of the frame—in the organization of the archive, in the offscreen laboratory setting, in rationales published in scientific journals, and in distribution circuits for scientific films—potent spaces of power where what it means to be an animal, as well as what it means to be a human, are defined and redefined over and over again.