CAPTURING LIFE: ZOOLOGICAL GARDENS AND THE EMERGENCE OF CINEMA

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ABSTRACT

WILLIAM NOLAN: Capturing Life: Zoological Gardens and the Emergence of Cinema
(Under the direction of Eric Downing and John McGowan)

Zoological Gardens contributed the representation of animal life unfolding in time to the study of the natural world in the nineteenth century. The emergence of cinema made a remarkably similar contribution to human representation; much of the Lumiere and Edison catalogs of early cinema, often called actualités, featured seemingly unstaged durations of human and animal life. Carefully framed, both the zoo and the cinema privileged the any-instant-whatever even as they attempted to corral it into archivable human signification. Moreover, just as the desire to see animals better guides the arrival of zoological gardens in the west, so too is the animal deeply involved in the arrival of the cinematic apparatus. Focusing on nineteenth century zoos, their evolution and cultural contexts, protocinematic technologies, and finally the appearance of the cinematic apparatus, *Capturing Life* centers its comparison of zoos and cinema on their involvement of animals and their offer to reinvigorate human representation with animal life.

For Red Peter

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Introduction

The second shot hit me below the hip. It was serious. It's the reason that today I still limp a little. Recently I read in an article by one of the ten thousand gossipers who vent their opinions about me in the newspapers that my ape nature is not yet entirely repressed. The proof is that when visitors come I take pleasure in pulling off my trousers to show the entry wound caused by this shot. That fellow should have each finger of his writing hand shot off one by one. So far as I am concerned, I may pull my trousers down in front of anyone I like. People will not find there anything other than well cared for fur and the scar from—let us select here a precise word for a precise purpose, something that will not be misunderstood—the scar from a frivolous [*frevelhaften*] shot. Everything is perfectly open; there is nothing to hide. When it comes to a question of the truth, every great mind discards the most subtle refinements of manners. However, if that writer were to pull down his trousers when he gets a visitor, that would certainly produce a different sight, and I'll take it as a sign of reason that he does not do that. But then he should not bother me with his delicate sensibilities.

– Franz Kafka, "Report to an Academy"

In our culture, man has always been thought of as the articulation and conjunction of a body and a soul, of a living thing and a *logos,* of a natural (or animal) element and a supernatural or social or divine element. We must learn instead to think of man as what results from the incongruity of these two elements, and investigate not the metaphysical mystery of conjunction, but rather the practical and political mystery of separation. What is man, if he is always the place – and, at the same time, the result – of ceaseless divisions and caesurae?

– Giorgio Agamben, *The Open*

The dissertation to follow is, in the simplest terms, an investigation of the role of animals in the emergence of cinema. The argument of this dissertation – that the practices of looking at animals, specifically in zoos, condition the emergence of cinema – takes as its centerpiece a set of studies of animal motion by Eadweard Muybridge and Etienne Jules Marey, which can scarcely be said to be either more zoological or cinematographic. Looking to the spectacular history of animals in the nineteenth century as well as the spectacular emergence of cinema after the studies of Muybridge and Marey, I will argue

that (a) practices of looking at animals, (b) the need to reincorporate them into a nineteenth century culture that has largely effected their exclusion, as well as (c) the hope such practices offer to a mounting collective concern that western culture, specifically through its representative practices, has become increasingly disconnected from a natural world, all importantly inform the specific emergence of the zoological garden, the proto-cinematic technologies developed by Muybridge and Marey, as well as the emergence of cinema proper. At once, we will ask two questions: what is motion photography doing in the study of animal movement and what have animals to do with the invention of cinema? Looking beyond the strict technological history of proto-cinematic and cinematic apparatuses to the cultural forces to which they respond, such questions then beg an analysis of the history of the practice of looking at animals, particularly in zoos, and the regimes of vision they enact. From such a history, a set of complex relations to animals in the nineteenth century takes shape to produce an image of a culture reworking both its relations to animals and the natural world as it finds itself increasingly modernized, mechanized and industrial. Zoos and cinema become the sites for both mourning the loss of animals and recuperating that loss in ways that not only reconnect humans with animals but also reinvigorate human practices of representation and display. Finally, cinema becomes not only a site of contact with animals, but also a melancholic space of humanity's loss of its own animality.

A number of foci emerge from this course of investigation, to which this project will continually return as it moves through roughly a century of looking at animals zoologically, photographically and cinematically. The practices of looking at animals must at the outset be situated within the visual culture of the nineteenth century, marked

as it was by the invention of photography and cinema, as well as the attendant cultural practices and institutions. These include, of course, the zoological garden, but also the rise of the museum, especially the natural history museum, world fairs, circuses, panoramas, and the culture of exhibition more generally. Alongside these, and deeply involved in many of them, is the rise of science in the nineteenth century, which became both a profession, and in many ways, an industry in that century. Though science in the nineteenth century cannot be reduced to the regimes of vision it produced, the tendency of science to privilege the observable as truthful is a way of looking that extended well outside the halls of scientific research. Nevertheless, just as scientific perspectives pervaded cultural forms of entertainment, no doubt the culture of exhibition's affinity for the spectacular rippled throughout nineteenth century science – indeed, the zoo is a prime example of such reciprocal influence. This project proceeds from the assumption that these practices, cultural and scientific, respond to and generate new regimes of vision. Though these regimes can be characterized, read in the structures, architectures and technologies of display, it is also important to note that while they affect discursive regimes and are affected by them, they are not reducible to them. This irreducibility of discursive and visual regimes is not merely a cautionary note at the beginning of an investigation of observational practices of the nineteenth century; it is the dynamic of those regimes themselves. As we will see throughout this project, there are attempts to take hold of images (and animals) as one takes hold of discourse – that is, to constitute a sense of agency in their circulation and accumulation – and there are also attempts to inject discourse with the power of images in hopes of appropriating the perceived connection to the world they represent.

Even as regimes of vision interpenetrate, they do not coalesce into one monolithic way of seeing. Rather, they produce competing claims about the values of observing animal life. The most prominent of these is the tension between scientific/educational values and artistic/entertaining approaches to the representation of animal life. Each of these approaches raises concerns about their capacity for (re)connecting us to the natural world. The tensions between these two approaches structure the nature of zoological and cinematic displays; indeed, this tension can be read in the architecture and technology. Just as the scientific/educational perspective offers knowledge and thereby a potentially deeper understanding of animals, the critical distance that the scientific eye interposes between observer and observed threatens to strip too much away from our relations with the animal world. Similarly, the display of animals for entertainment purposes appears to allow a much more flexible reconstitution of relations to the animal world, and can thereby deepen our relations to animals by allowing for emotional and psychological responses. But the history of zoos reveals that it is very easy for the entertainment driven displays of animals to orient themselves toward that which grabs hold of a paying public's attention for only a few moments, and can produce its own, often fatal, distancing effect. What results in the actual practice of displaying animals is some combination of the two perspectives into what we might call *scientific entertainment*. In Victorian England, such leisure time activities were referred to as "rational recreation," and they became extremely popular with the invention of leisure time. Concerns about the values in framing the display of animal life also generate questions of ethical treatment of animals both in scientific/educational arenas and the forum of public entertainment. As much as zoos and the cinematic representation of animals necessitate

ethical concerns because of the specific conditions they create, they also mark an anxiety about the distance from animals these practices introduce and sustain. As relations to animals are stripped down, channeled by the scopic regimes these instruments of observation enact, they trigger our concern of what goes on beyond the boundaries of the frames of those scopes. As these displays conceal their means of production (not only hunting, maltreatment, beating, death, but also the act of isolation and decontextualization itself), ethical concerns mark the absence of a set of relations specifically excised or concealed by these displays of animals. They mark the violence endemic to the decontextualization that such displays necessarily enact.

Mounting ethical concerns about the treatment of animals are only one manifestation of the anxiety of the deepening divide between western culture and the natural world. Both the zoological garden and cinema confront and attempt to resolve concerns about the ability of these representational practices to connect us to the real and/or natural world. As such, this project undertakes to consider and compare how the brute reality of zoological display and the indexical power of photography, perched on the edge of semiosis, are positioned as connecting us to a world that the slipperiness of language and painting had let slip away. Both the zoological park and cinema appear to ground human practices of representation in the world as much by the nature of what they present as by the nature of the apparatuses they deploy. The zoo and the cinema offer to recapture and recuperate an increasingly distant natural world and, in so doing, they respond to and reveal an emerging crisis in representation. This crisis is marked by the mechanisms and architectures with which these practices hope to collect, contain, organize and display the living as well as in the desire to participate in a mode of

representation not subject to the slipperiness of signification. Film and photography appear to counteract this slipperiness because their mode of representation depends on the light reflected by the *imaged* object. This type of sign was described by Charles Sanders Peirce as the index – "a representamen which fulfills the function of a representamen by virtue of a character which it could not have if its object did not exist."[1] The connection between representation and the world is physical, the image insists on what *must have been*; though it can be deeply manipulated, the film image always bears some trace of the object it has captured. To remove that connection between image and object is to step outside of photographic representation.

Though the zoo is not precisely indexical, the zoo animal is at once powerfully real and, in its decontextualized performance of its species and its colony of origin, reduced to a harmless trace. Like the photograph and the cinematic actualité, the zoo insists on what *must have been*: an Africa, a hunter, and a lion. Insofar as these representational practices offer a way of signifying that is at once non-arbitrary and yet available to the human subject, they appear to offer redemption to a system of signification in crisis. They offer hope that things might again have meaning in and of themselves – a return to adamic language, the *call of the object*. While this project will avoid questions as to the actual nature of animal language or communication, it does take language and communication as fundamental to the history of the human/animal divide. As these practices of displaying life evade the slipperiness of human language they appear to approximate a form of communication more grounded in the world and though more mechanical in the cases of photography and cinema, more animal as well. As such,

[1] Charles Sanders Peirce, *Pragmatism as a Principle and Method of Right Thinking: the 1903 Harvard Lectures on Pragmatism* (Albany: State University of New York Press, 1997), 170.

the following chapters continually ask how the living presence of the zoo and the indexicality of photography and film emerge as modes of representation that might communicate in a nonhuman or animal way. We must ask: to what extent is indexicality a register of animality? This raises a number of further questions unique to the analyses of the zoo and cinema. For example, considering their investments in the display of real life, what does it mean, in the zoo and the cinema, to represent animals (and humans) in an animal, that is, indexical way? As much as these representational practices hold open the possibilities of contact with an increasingly distant natural world – for they hold open spaces for animals in the proliferating metropolitan landscapes – they also hold open the possibilities for humans to recuperate and refashion their own increasingly distant animality. Animality remains by necessity a cloudy term because it is lost, because its recuperation is always somewhat flawed, and because animality, and animals themselves always confound the order we attempt to place upon them.

As powerful as the brute reality of the zoo and the indexicality of cinema are, the fact of their apparent connectedness to the world is only part of their representational force. Of course, these displays of life move, but even as that contributes to their popularity, it is important to note that the zoo and cinema stand out in their capacities for not only representing time, but also insofar as they create the possibility of archiving duration. Neither the representation of movement or indexical images is new to the emergence of such displays. While optical toys such as the zoetrope, phenakistoscope, praxinoscope and flip books, along with the zoo and cinema, become enormously popular in the nineteenth century, the representation of movement with magic lanterns and the camera obscura dates back hundreds of years. Further, the camera obscura represents

indexical, moving images and for that matter, so do shadows. Rather, the zoo and cinema radically expand the possibilities for transporting and archiving durations of life unfolding in time and space. They capture life, but just as importantly, they are mechanisms and architectures that do the work of *lying in wait* for the animal, once undertaken by the field naturalist, and in so doing harness the unfolding and representation of time in an unprecedented manner.

Finally, this dissertation is an investigation of the transformation of our relations to animals over the course of almost a century. This project imagines a western culture that had undergone organizations of culture and knowledge in and through the exclusion of animals and thereby reached a point where that radical exclusion had become untenable, leaving that culture feeling ungrounded and unnatural. The west responds by trying to find, create, and protect spaces within culture into which the animal can be reintroduced, repositioned and reconnected to a humanity suffering from a sense of becoming disconnected to a natural world. Such a response has no doubt also always been a part of the ongoing exclusion of the animal. As such, this project will ask after the ways in which that exclusion has been enacted as a means of continually reasserting dominion over the animal world by looking to the ways in which the reincorporation of animals has forced them into spaces that barely allow for, and sometimes exclude, their very life. It will, however, also look to the various animal agencies that have necessarily played a role in this reformation of human/animal relations, both in the formation of zoological habitats and photographic and cinematic display.

While this project is largely historical in the arc of its progression, it is organized around the idea that the practices of looking at animals (and humans) in zoos and cinema

undergo a continual adjustment of scope throughout the period covered here. I begin with the "first zoo," the London Zoo, because it is in many ways the first monument both to the exclusion and recuperation of animals in the west. This chapter situates the zoo's emergence as a scopic adjustment to earlier modes of looking at animals both scientifically in the study of natural history and for entertainment purposes. What follows is a chapter on the proliferation and reorganization of the places for the display of animals, focusing primarily on Carl Hagenbeck, the figure largely responsible for designing displays that contextualized animals in habitats that approximated their natural environs. The project then turns the invention of proto-cinematic technologies, with a chapter on the studies of animal locomotion by Muybridge and Marey. The final chapter is a discussion of the appearance of animals and animality in early cinema.

Chapter one, "Examining Animated Nature" investigates the appearance of zoology in the nineteenth century, framing that emergence with two events. The first is the formation of the Zoological Society of London in 1826 and their founding decision to begin the construction of a series of habitats in the northeast corner of Regent's Park to house the society's collection of specimens from around the globe. The second moment is the Society's decision roughly a quarter century later, in 1852, to hire a photographer to produce an archive of images of the collection. Though widely considered the first zoo, and thereby an important starting point for this project, I take the London Zoo not as a point of origin but rather as a point from which to both genealogize the collection and display of animal life and to look forward to the various institutions it impacted throughout the nineteenth century. The London Zoo was perhaps the first zoo only because it was the first to call itself a zoological garden. Aside from that we might also

say that it was the first collection of animals, collected and organized by a scientific society primarily for the purposes of studying animal behavior. But even that breaks down under closer examination to reveal that the London Zoo never coalesced into a unified project and that the history of looking at animals before it was just as filled with the tensions between science and entertainment that persisted right through the apparent emergence of the first zoo. What the London Zoo offers, then, is a clear articulation of the purposes of creating a zoological garden in the documents surrounding the formation of the society. An analysis of these documents reveals a discourse on the values behind the display of animal life, which has persisted throughout the Society's history and the history of zoological gardens more generally. It is the inchoate discursive counterpart to the regimes of vision the zoo is beginning to enact. This analysis continues in a discussion of the various guides to the gardens put out by the society and other organizations as the zoo became primarily a place of public entertainment. I take these guides in their most literal sense: instructions for looking at animals. Also important to this chapter are the decisions, made almost simultaneously, to open the zoo fully to the public and to begin "starring" animals of particular interest to that public. These choices by the Society catapulted the zoo into its status as a nineteenth century center of public entertainment. Finally, the chapter concludes by looking both to the other public spectacles in Regent's park in those early years of the society and to the decision by the society to employ a photographer to produce a photographic archive of the animals in the zoo, an important first intersection of the regimes of vision enacted by the zoological and photographic representation.

In order to characterize the proliferation and evolution of zoological display, the second chapter, "Reordering, Exploring, and Contact with the New Animal World" looks to Carl Hagenbeck, the most prominent figure in the trade of animals and the design of zoological display in the latter half of the nineteenth century and early part of the twentieth. No less importantly, he was famous as well for innovating the enormously popular, if unsettling, people shows, which brought colonized people to Europe and displayed them in habitats, foregrounding their "natural," "uncultured" way of life. This chapter posits a double movement in the reincorporation of animals into western culture which we might just as well understand as an enfolding. The first movement is the reintroduction of animals through the creation of "animal" spaces within a human order that has organized itself in, and in part because of, the very absence of animals. The second movement is an exploration of those spaces as a means of recuperating a lost connection to nature. Carl Hagenbeck's work characterizes such a double movement insofar as he sought to build a paradise in the walls of western culture to which we could then return and live innocently with animals. The chapter is organized around this theme, looking first to Hagenbeck's innovative reorganization of the space of animal display, then to the exploration of those spaces by humans in his problematic anthropological shows of colonized peoples, and finally to the physical, emotional, and psychological contact with animals he himself describes having in his autobiography. Perhaps more prominently than anywhere else in the history of the display of animal life, the tension between the entertainment and scientific values become a structuring element in the way animals are presented to the public. Carl Hagenbeck's exhibition designs along with his autobiography are of particular interest in this regard because of their explicit devotion to

authenticity, the primary issue in those competing regimes of vision. This chapter consequently takes up Nigel Rothfels' text on Hagenbeck, *Savages and Beasts*, for its interrogation of the claim of authenticity, which runs throughout Hagenbeck's works. I take up that text both to investigate the claims of authenticity of the display of animal life and to move beyond them to ask after the debate over authenticity more broadly. In considering Hagenbeck's works, Rothfels' analysis of such, and basic questions about the collection and display of animal and human life, I aim to critique the collapse of notions of authenticity with notions of the natural and the animal, a critique that will prove crucial to the investigation of the photographic and cinematic displays of life in the chapters that follow.

The third chapter, "A Natural History of Cinema," brings this project to its lynchpin, with its focus on the works of Muybridge and Marey. I take their photographic studies of animal locomotion to be just as crucial to the history of the study of animal behavior as they are to the history of photography and cinema. While this chapter remains focused on series photography and thus on forms of representation that participate in the rapid accumulation of images, these images do not move. They are however, all the more invested in the investigation of the representability of movement and time precisely because they do not move. The studies of Muybridge and Marey, bent on capturing images as rapidly as their respective mechanisms will allow, do so in order to pull any and all information from the flow of movement and time for the purposes of determining its nature even though the reconstitution of movement from their images was for both innovators an afterthought. Their respective studies reveal a nearly obsessive archaeology of space and duration; even as they recognize that movement and time

unfold between the images of instants that they produce, they always returning there in order to extract another instant, another position, as if such an accumulation of images might solve once and for all Zeno's famous paradox of the arrow in flight. As such, I take up Bergson's text, *Creative Evolution*, for its concern with the representability of duration and more specifically, its concept of the cinematographic mechanism of our thought. This text, I will argue, is concerned not only with the way our representational practices have resoundingly failed to deal with movement and duration, but also that this is more importantly a failure to understand life itself. Thinking through these studies in light of Bergson's concerns about the representability of duration, movement and life itself, I argue that it is not at all coincidental that these two figures, easily the two most influential proto-cinematic tinkerers, focused their studies on animal movement.

Throughout the third and fourth chapter, "The Moving Animal Image," which investigates the earliest years of cinema, I will argue that the revelation of animality and the emergent cinematic apparatus enter into a sort symbiotic relationship. As the photographic and proto-cinematic devices attune themselves to the movement and behavior of animals, they uncover that which had previously been the secret of the animal's life. In so doing the technology undergoes an evolution as a mechanism of representation to emerge as an image making tool the likes of which had never been seen before. While many of Muybridge and Marey's studies also took humans as their subjects, the animal images accentuate the representational force of the photographic devices employed. The most famous example, the centerpiece of chapter three, is the series of photographs of Occident, the horse Muybridge was hired to photograph in order to determine whether or not all four feet left the ground during the animal's fast trot.

Such a study, like all of the studies of animal motion, sets the photographic apparatus in opposition to language, precisely because it communicates that which animals otherwise cannot and which human language can. The third and fourth chapters together consider the extent to which stepping into the cinematic space, which has in many ways been carved out and fashioned by animals, operates for humans as a means of recuperating a lost animality. This chapter focuses on the very first moving images, the surge of production from both Edison and the Lumiere Brothers, as well as some of the initial turning toward cinema as vehicle for narrative. It looks not only to the remarkable presence of animals within the frame, but also to the way in which early cinematic apparatuses allow humans to perform their own animality, without stage direction, without language, and sometimes without clothes. The last two chapters together set out to address the question of how directly the human/animal distinction maps onto binaries such as language/image, and considers to what extent indexicality, with its physical connection to the material world, approximates a register of animality. To the extent that western culture invests in indexical representation as a means of reconnecting with nature and animals, of reinvigorating human representation with animal life, and of recuperating a sense of its own lost animality, it has also to ask whether or not the media that offer such redemptions also distance humanity from the very life they appear to bring close.

The project concludes with a coda that looks forward to the role of animals and animality in the continued emergence of technologies of visual representation. It does so by looking to such things as Animal Planet, the cable station dedicated to all things animal, the BBC miniseries *Planet Earth,* and the continued collaboration of naturalists and filmmakers, not only for the entertainment and education of the public but also for

the continued revelation of animal and human behavior. The same question however seems to hang with us even today: do these regimes, strategies and technologies of visual representation bring the human and animal world into communion, or do they deepen and buttress the divide as old as civilization itself?

Examining Animated Nature: The Gardens of the Zoological Society of London, 1826 – 1852

> Scholars will commonly tell you, George, that Ζῶον signifies expressly an 'animal' or 'an animal being;' but this is only the ignorance of scholars. Sometimes, too, they very seriously ill use their misinterpretation of the word. Ζῶον signifies any being whatever; and we must give both substantive and adjective, before we can make out, either *animal being*, or even *living being*, such as we usually understand it in this phrase. It is true, that Ζώη signifies 'life;' but 'life' is *existence* and everything *exists*.
>
> – from *A Zoological Keepsake, 1830*

> …almost certainly the first photograph ever taken of a living tiger. Note the label in the lower left hand corner (Fig. 1.1).
>
> John Edwards, in *London Zoo from Old Photographs, 1852-1914*

The London Zoo never resolved into one thing. From its very conception, it was

always at the intersection of varied interests. The Gardens were at once the staking of a claim by a fledgling British zoology, a financial investment by wealthy farmers hoping to develop acclimatization techniques so as to benefit from the empire's expanding territories, a place of entertainment, and a palpable measure of the Empire's reach. Though never directed by a singular vision, the zoo in its early years was guided by the interests of a select few. Though in general, career zoologists were at the helm, serving as the Society's officers and making up much of the council, they were responsible to their benefactors, the "country gentlemen," and their interests of importing and breeding animals from around the world that might be of particular use in Great Britain. They were also responsible to the aristocracy who donated many of the garden's animals, in particular, the king who donated much of the early collection, not to mention the land in Regent's Park. Before long they became responsible to the zoogoing public as admission fees came to make up the vast majority of the society's annual budget. The admission of the general public brought in a whole new set of expectations for the zoo; notions of victorian leisure time, an emerging sense of nationalism added to imperialistic attitudes, and a more sustained demand that the zoo simultaneously educate and entertain. What results is not only a clustered intersection of interests and forces, but a multiplicity of ways of seeing as well. Reflections on the role of vision are nevertheless somewhat rare in the zoo's early years. As such, one of the goals of this chapter is to tease out the implicit commands made on the visual sense by the zoo and its surrounding documents and practices.[2]

[2] The invention of photography is virtually contemporaneous with the opening of the gardens. Humphrey Davy is the inventor of photograms and has been credited as co-founder along with Raffles of the zoo in London. Illustrations were a crucial tool of zoology before photography became a viable record keeping tool. William Swainson, one of the biggest proponents of the society and of studying animals in captivity,

And yet there are still other agents in the emergence of the young zoo, still other ways of seeing. Following Narisara Murray's lead, set forth in her dissertation, *Lives at the Zoo: Charismatic Animals in the Social Worlds of Zoological Gardens of London, 1850-1897*, this chapter will take seriously the suggestion that "the lives of animals provide a view of the enterprise as a whole – not a bird's eye view from above, but the specimen's eye view, from the middle of things…."[3] Animals made enormous, though often overlooked demands on the nature of the gardens. And further, zookeepers and the council found that there was little in the way of an established methodology for keeping animals collected from all around the world on a cold, wet island in the North Atlantic. Despite the utter domination of putting an animal in a confined space, many animals were surprisingly uncompromising in their ways of being. Mishaps of course pepper these early years, but it is worth noting that the case was rarely one of neglect, but far more often of hubris. For example, it was only in the 40s that zookeepers realized that warm-blooded animals would adjust to the temperature change and so didn't necessarily need to be kept in hothouses, a health issue in and of themselves.

This chapter presents a history of the early London Zoo. I begin by providing an image of the zoo in 1850. Though 1850 is special in a number of ways, it is chosen primarily because it is by that point that the zoo had set itself on the moderately clear path that it would maintain throughout the century. It had become by then a public

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was most well known for his illustrated zoological works. The man credited with saving the zoo in the late forties, David William Mitchell, was himself a zoological illustrator, who used the power of images to turn specific animals into "stars" of the zoo, thus deeply reinvigorating the zoo's popularity at that time. What's more, it is Mitchell who would hire the Count de Montizon in 1852 as the zoo's photographer. Not only did such a decision begin the process of adding a photographic catalog to a living one – an extension and replacement of the animal archive – in many cases the production of that photographic record was the first time several species were photographed at all.

[3] Narisara Murray, "Lives at the Zoo: Charismatic Animals in the Social Worlds of the Zoological Gardens of London, 1850-1897" (Ph.D. diss., Indiana Univeristy, 2004), 6.

institution through and through. The practice of going to the zoo was, by 1850, common to Londoners, one knew what to do, what to look at, and how to look, at the zoo. Perhaps more interestingly, a zoo animal had become a category of animal being, not domesticated, not a pet, and no longer fully wild either. The chapter then hopes by way of historical analysis to genealogize that moment, looking briefly at the history of animal collection prior to the modern zoo as well the example of the Jardin Des Plantes, which would serve as both model and competition for the new park. I then trace out the significant transformations that occured in both the gardens and the Society to accentuate how very different the zoo is in 1850 after only a little over two decades of displaying animal life. I then conclude by looking slightly forward from 1850, with special consideration of how the institution quite consciously engaged the culture of spectacle and display more broadly. Specifically this will involve an analysis of the zoo's place in the culture of the Great Exhibition in 1851 and the decision to hire a zoo photographer in 1852. Though this chapter hopes to set itself alongside the number of histories of the early years of the London Zoo,[4] my purpose here, in light of the larger project, is to allow

[4] It is perhaps indicative of the field to state at the outset that the two most exhaustive academic works on the London Zoo are recent dissertations. The first is Sofia Åkerberg's 2001 *Knowledge and Pleasure at Regent's Park: The Gardens of the Zoological Society of London during the Nineteenth Century,* a straightforward and detailed history of the Gardens. Narisara Murray's 2004 *Lives of the Zoo: Charismatic Animals in the Social Worlds of the Zoological Gardens of London, 1850-1897* gives a detailed history and insightful analysis of the discourses and dynamics through which animals were made into personalities throughout the Victorian era. Shorter, but important scholarly work on the London Zoo has been done by Adrian Desmond and Harriet Ritvo. In "The Making of Institutional Zoology in London 1822-1836" Desmond makes use of what at the time was an almost untapped resource in looking at the early years of the zoological society; namely, the minutes of the general meetings and the meetings of the council. Doing so, he offers a previously untold story of the formation of zoology in Britain in the nineteenth century. Ritvo's text, "Exotic Captive" a chapter from her book, *The Animal Estate, The English and Other Creatures in the Victorian Era,* sets the zoo within the building and legitimation of the British Empire. John Bastin's article is another piece of important work that contributed a clear vision of the actual formation of the Zoological Society, focusing specifically on the prospectus of the Society and some surrounding extant documents Other popular, though important works, include *The Zoo, The Story of the London Zoo* by J. Barrington-Johnson. Early though at times faulty histories of the Zoo include P. Chalmers Mitchell's 1929 *Centenary History of the Zoological Society of London* and Henry Scherren's 1905 history of the society, *The Zoological Society of London*.

an understanding, however blurry, of the role and nature of vision at the zoo to emerge.

An Image of 1850

This is what the Gardens of the Zoological Society of London looked like in 1850 (Fig. 1.2). According to Peter Guillery, in his book, *Buildings of the London Zoo,* in 1850 the Gardens, located in the northeast corner of Regent's Park, would extend to almost its current size at 36 acres, nearly six-fold its size when it opened in 1828.[5] Though Regent's Park now falls well within the center of London, in the early half of the nineteenth century it was on the far side of the park, which was itself on the outskirts or edge of the town. The Garden underwent significant development in 1850, mainly on lands in the southern portion of the garden acquired but largely undeveloped during the struggling years from 1836-1847. 1850 witnessed the addition of the house for the hippopotamus which arrived that year, additions to both the New Aviary, built in 1949, and the small quadruped house as well as modifications to the Terrace Dens which housed the Collection of Carnivora. It is worth noting, as does the Annual Report of the Council for that year, that much of the construction work done in the menagerie in 1850 was focused on maximizing the possible number of spectators at any one habitat. No doubt in response to the increased attendance, the report notes that the "council have constructed a tank in the open air, 33 feet square and of suitable depth, commanded by platforms, from which they calculate that about 1000 Persons will be able to see the Hippopotamus at the same time."[6] From the same report in reference to the Collection of Carnivora: "The bank which formerly existed there has consequently been converted into two raised walks of 6 and 8 feet in width respectively, with easy approaches and an exit at the western end. It is

[5] Peter Guillery, *Buildings of the London Zoo*. (London : Royal Commission on the Historical Monuments of England, 1993), 27.

[6] "Report of the Council for 1850." (London: Library of the Zoological Society of London, 1850), 11.

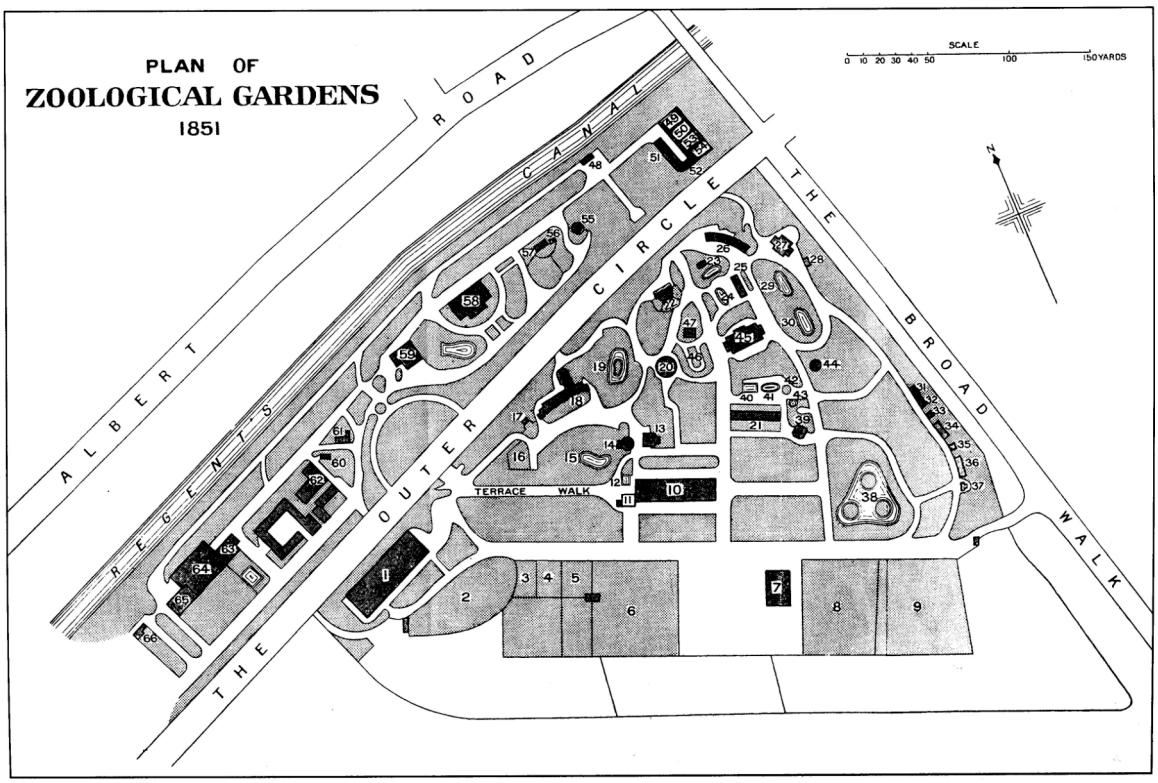

Fig. 1.2. Though the above plan is obviously dated for 1851 (no extant copy exists for 1850), having been released for the 1851 season, this is the earliest plan that would account for all of the changes made to zoo that year. The above image does not, in all likelihood, depict the changes made during 1851 and so, as an index, points more accurately at the year 1850.

calculated that this improvement will admit of nearly 3000 persons standing in front of the Terrace Dens at one time."[7] In both cases, raised platforms allow more people a more commanding view of the spectacle. Though the zoo had attracted large crowds at times even before the admission of the general public in 1847, we see here for the first time a conscious effort on the part of the council to sculpt the zoo into what it was rapidly becoming anyway, an institution of mass spectatorship.

The report for 1850 lists the species which bred in the menagerie during that year, including 11 species of mammals and 18 species of birds. In the "List of Species Exhibited for the First Time" that year, 51 different types of animals are listed. The report goes on to note that since 1847, the year in which the gardens were opened to the general public, the collection of animals has doubled, displaying over 249 animals for the first time.[8] Among the new arrivals that year were four female lions, a pair of Tasmanian wolves, three young grizzly bears, a polar bear, several new born Herring Gulls, and a male and female warthog.[9] It is further worth noting that plans were made this year for the thorough drainage of the whole of Regent's Park. The effects of this would be manifold; the quality of the environment would improve for the animals – indeed it was suspected that this would improve an often troublesome mortality rate – but it would also make the zoo more fitting entertainment for the discriminating Victorian public, that is, it would stink less.

[7] Report of the Council for 1850, 12.

[8] Though one presumes that "first time" means for the first time in the London Zoo, there is little doubt that many of those, if not all, are being put on display for the western public to view for the first time as well.

[9] David William Mitchell, *A Popular Guide to the Gardens of the Zoological Society of London* (London: Zoological Society of London, 1853), 6, 9, 11, 13, 14, 16.

According the Annual Report of the Council, in 1850, the number of fellows, fellows elect and annual subscribers of the Zoological Society of London totaled 1642. There were more elections to and fewer resignations from the society than any of the previous ten years. Most important however to the life of the zoo was the dramatic increase in admissions to the gardens. Though the number of visitors had been on an upswing ever since the official opening of the zoo to the public in 1847 and the addition of reduced admission days in 1848, the number of visitors to the zoo in 1850 more than doubled those of 1849 (168,895) with 360,402, far more visitors than the garden had ever seen in a single year. Though receipts from the early thirties still exceeded the take at the gates in 1850,[10] the sum in that year also nearly doubled the previous year, accounting for the vast majority of the society's new financial success (sale of publications from the society's journals *Transactions* and *Proceedings*, donations, memberships, and admissions to the museum had also contributed to the Society's financial success in that period). Beginning in 1850 the London Times would regularly offer their readers reports from the monthly general meetings of the Society. These reports focused primarily on three things: they listed the names of newly elected fellows; they listed new animals donated to or bought for the collection; and they gave brief statistical analyses of the attendance rates focused on demonstrating the increasing popularity of the gardens:

> The report of the Council stated that the number of fellows elected since the 1st of January exceeded the whole number of elections in 1849 by 11; that the number of visitors to the gardens during the month of July exceeded the corresponding period of 1949 by 34,484, and that the total

[10] The decision by D.W. Mitchell to open the gates to the public on April 1, 1847 also brought the need to lower admission prices, such that the public be not only technically allowed to visit but financially allowed as well.

> number of visitors since the 1st of January exceeded the number admitted in the whole 12 months of 1849 by 59,810.[11]

According to Sofia Åkerberg, the Zoo had by this point become much more specifically oriented to a public that centered upon children. She points out that 6500 schoolchildren visited the zoo that year (easily the most the gardens had ever seen in a year). While this may have been a significant increase, and perhaps the zoo was indeed a place children went, it is important to also note that 6500 schoolchildren made up less that two percent of the Gardens visitors that year based on the Report of the Council from that year.

The main features of the zoo in 1850 were a mixture of old and new attractions and buildings. The bear pit (Fig. 1.3), a constant favorite since the early years of the zoo was at the very end of the terrace walk and adjacent to the Terrace Dens which housed the Collection of Carnivora. As the illustration depicts (Fig. 1.4), a pole extended up out of the pit; buns sold to patrons for a penny tempted the bears to climb the pole – a solution to the general inactivity of captive bears. Such a habitat design is characteristic of the fledgling years of zoological display; interactive, little regard for the comfort of the animal and even less for simulating anything like natural habitat or behavior. The path from the main entrance to the bear pit then up and around the Terrace Dens was the most fashionable walk in 1850, the social center of the Gardens, suggesting that one went to the zoo not only to see, but also to be seen.

While the crowds certainly gathered around the bottom of the Terrace Dens in order to see the animals, a key feature of the building's design was that there were steps on either end of the dens which allowed visitors to walk over the most ferocious animals in the Garden (not to mention the world) at the same time as taking in a commanding

[11] "Zoological Society Of London, Monthly Meetings" *The London Times*, 02 August 1850 (Page 6 col e)

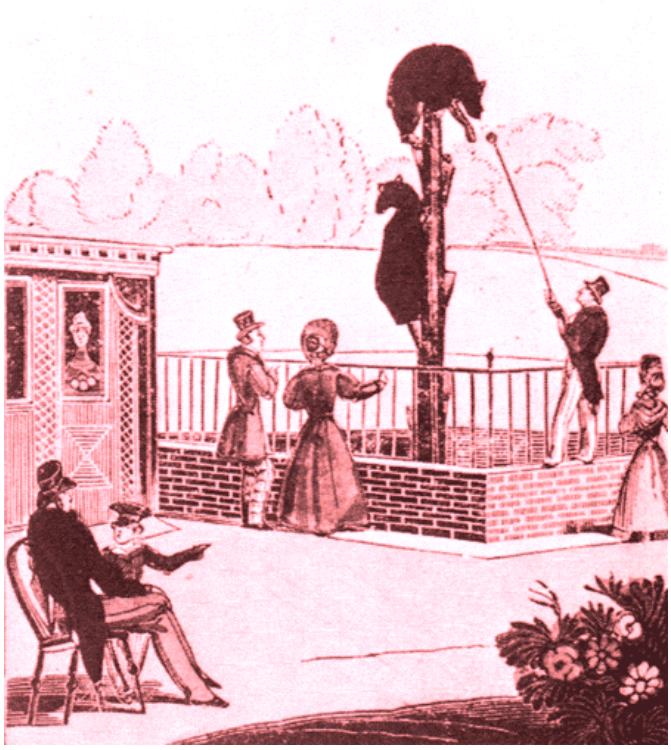

Fig 1.3. The Bear Pit, from a guide published in 1830, probably by Decimus Burton.

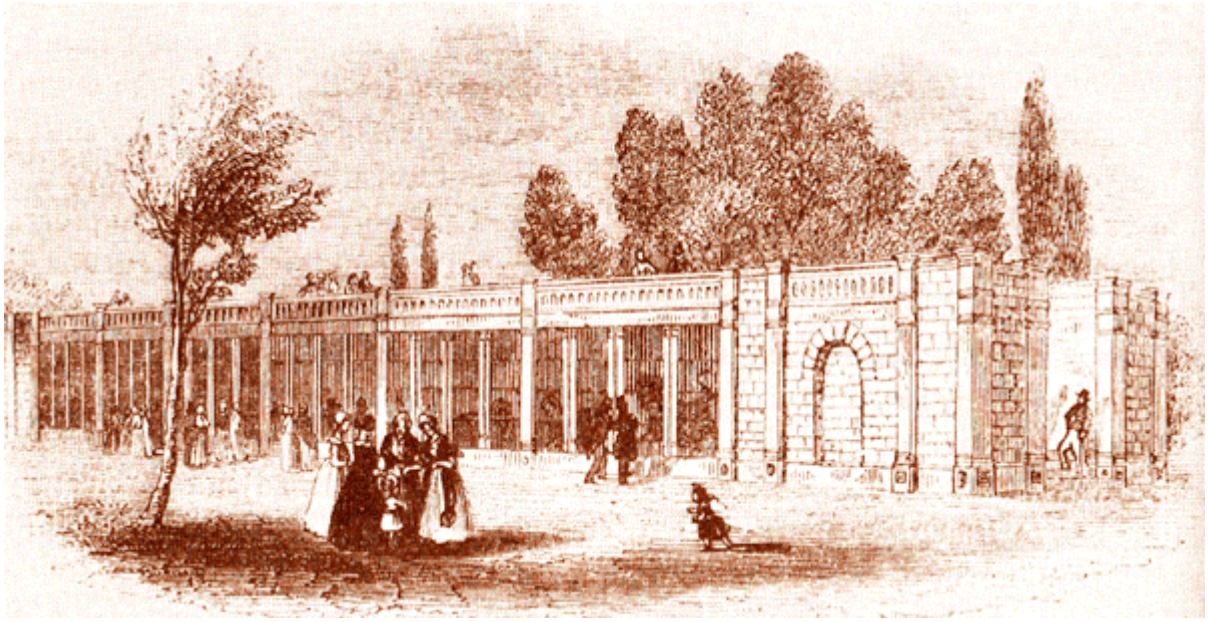

Fig. 1.4. The Terrace Dens.

view of the empire's metropolis. The Terrace Dens was home to lions, tigers and bears as well as other dangerous members of the cat family such as jaguars and cheetahs. While many of the animals in the Terrace Dens belonged to the feline family, the inclusion of bears and the exclusion of carnivorous animals not dangerous to humans from this habitat suggests that the principle of organization was focused as much on thrilling the public as any zoological principle.[12] That thrill however, given the power it exercised over dangerous animals and the view of the city it offered, along with the bear pit, seems to have been an early constitution of vision as power in the London Zoo.

The Clock Tower/Camel House, which is reportedly the first habitat building in the zoo (and which still exists though it's mainly reconstructed) still stood as one of the center pieces of the gardens as well. The Giraffe house, which also still exists, (though again repaired many times over) would have been another prominent feature of the zoo. Immediately upon entering the north entrance, the guides of that era directed the patron to the Reptile House, built in 1849. According to Guillery, this habitat is one of the first examples of zoo designers taking care not only to display the animal but also to recreate as much as possible the natural habitat of the animal.[13] As the rarity and novelty of the specimen fed greatly into the popularity of and fascination with the animal, the first tree kangaroo (1848) and sloth (1845) would also have been highlights of a day at the zoo. Though the zoo had not yet acquired an African elephant, it did have a collection of

[12] Nonetheless, the security of this particular habitat, for it must have been the most secure in the garden, suggests a much more practical concern.

[13] Guillery, *Buildings of the London Zoo,* 9.

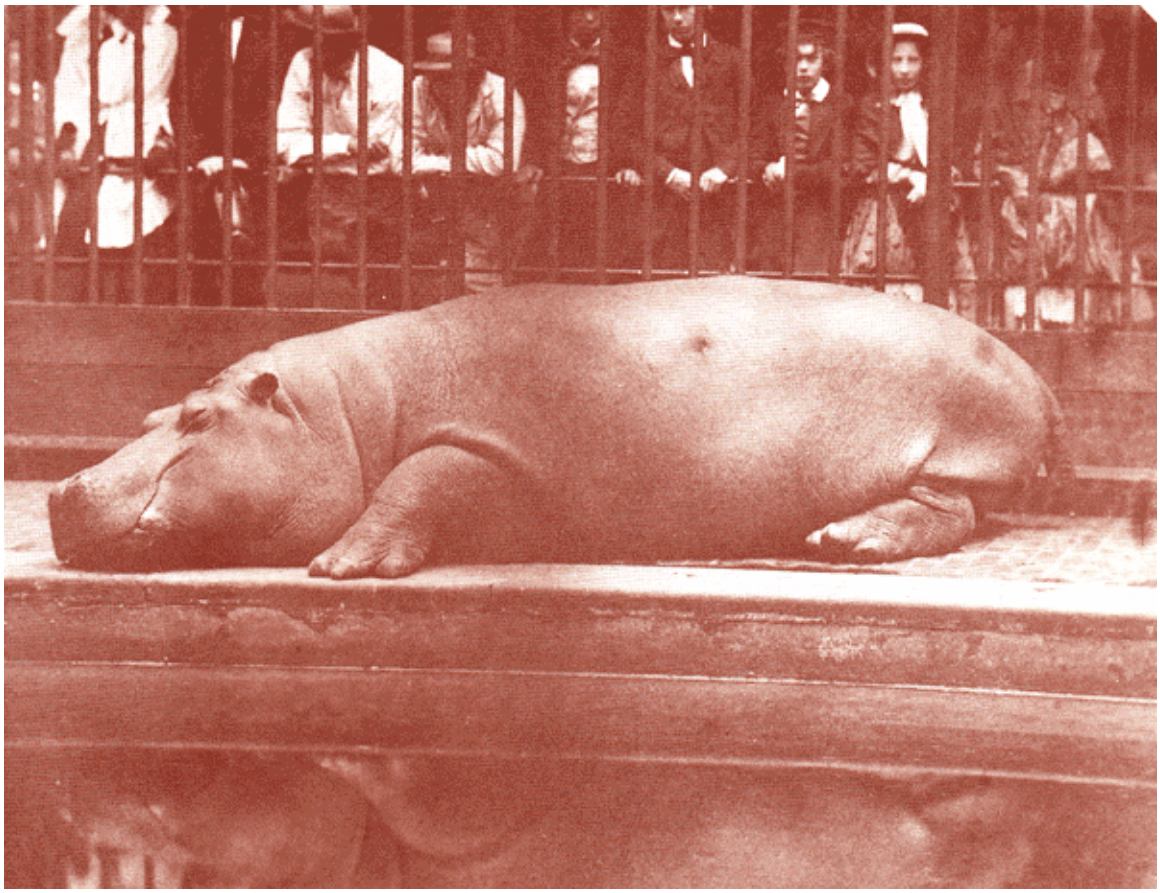

Fig. 1.5. Obaysch, pictured above in one of the very first photographs taken at the zoo, by Count de Montizon, in 1852

Asian elephants, which could be ridden for short trips around the portion of the zoo just north of the Outer Circle.[14]

Far and away the most popular animal of 1850 however was Obaysch (Fig. 1.5), the hippopotamus. On July 19th, 1850, in an unprecedented second trip that year,

> Her Majesty the Queen, accompanied by three of the Royal children, honoured the Zoological Society by visiting their garden in the Regent's Park yesterday morning. Her Majesty's attention was principally directed to the hippopotamus, whose interest with the public of all classes continues unabated. Before leaving the Garden her Majesty also witnessed the singular feats performed by the Arab boy with his serpents, a species of cobra, not dissimilar in habits to the cobra di capella of India.[15]

J. Barrington-Johnson in his book, *The Zoo; the Story of the London Zoo* reports that this trip was the first of only five visits by the Queen. This is incorrect according to the *London Times* which reports visits on both April 9th and July 18th of that year, not to mention a visit on June 12, 1849 and one on April 15, 1835. Nonetheless, the point that the arrival of Obaysch was more or less the purpose of her visit should not be lost. Indeed having already come that same season, there would have been little else new to see. The donation of a Great Land Tortoise - an animal who would vie for Obaysch's star status -

[14] Elephant rides were a feature throughout the nineteenth century and well into the twentieth.

[15] "Visit Of The Queen And Royal Family To Zoological Society Of London," *London Times*, July 19, 1850 (Page 5 col f).

by the Queen just a week later is a further indication of her growing interest in the Gardens and her support of Mitchell's efforts at "starring" certain animals.[16]

Sometime shortly after the arrival of Obaysch, Richard and Caroline Owen found themselves unable to obtain the usual privileged access for themselves and friends. Caroline writes in her diary:

> There was an immense crowd of visitors to the Gardens. R. and I got through the crowd to the giraffe paddock, in the hope of getting some friends in the house, but soon found it was out of the question. There was a dense mass of people waiting their turn to get inside the house, and the whole road leading to that part of the Gardens was full of a continuous stream for people. Mr. Mitchell [the society's secretary] said that there were more than 6000 last Saturday, and that there were about 10,000 today.[17]

Beyond the sheer number of visitors reported here as visiting the hippo habitat that week in May, we ought to note the language used by Owen, who it is further worth noting was one of the most privileged visitors to the zoo both before and after the admission of the general public. Her husband, Richard Owen, a morphologist, was at that time the preeminent researcher in the society, such that access to specimens and work space was

[16] "Daily Occurrences at the Garden" (London: Library of the Zoological Society of London. 1850), July 25th. This photo, taken in 1852 by Count de Montizon, the photographer hired by Mitchell, is the first photograph ever taken of a hippopotamus.

[17] Richard Owen, *The Life of Richard Owen,* 2 vols. (1894; reprint, Farnborough, Great Britain, Gregg International Publishers, 1970) 1:358. Quoted in Åkerberg, Sofia. "Knowledge and Pleasure in Regent's Park: The Gardens of the Zoological Society of London during the Nineteenth Century."

granted to him with extreme deference.[18] There is little doubt then that as much as anyone, save Victoria herself, Richard and Caroline Owen strolled the gardens with as much license and access as they would their own backyard. It is telling then, that for Caroline, this newly emerged public is "immense," the people are a "dense mass" and a "continuous stream." At the same moment as Owen celebrates the popularity of the zoo, an impression of them and this newly public space as impenetrable, unmanageable, and unceasing emerges. We see here in microcosm the relocation of the operations of power, characteristic of the nineteenth century: from the aristocracy to the professional elite to the quaking, unmanageable masses.

While the king may have been the center of the royal menageries that preceded the institutionalization of animal collections – nameless animals arranged to symbolize a king's status - we see a virtual reversal of that in 1850 with Obaysch – the nameless, shapeless public clamors to feast their eyes on a single, deeply characterized and personified hippopotamus. The photograph oddly enough confirms this reversal; the animal sits asleep, happy (smiling?) against the backdrop of an apparently caged audience. Hired in 1847, David William Mitchell is credited with saving the zoo from imminent demise. A zoological artist,[19] Mitchell illustrated a number of zoological texts; consequently, there is little in the way of his own writing. However, it seems clear that he is responsible both for the admission of the general public and for the strategy of "starring" particular animals, the two changes in policy that turned the society around. By

[18] For a discussion of the politics and power struggles in the early years Zoological Society, especially Richard Owen's rise to power within such, see Adrian Desmond, "The Making of Institutional Zoology in London, 1825-1836," *History of Science* 23.60 (1985): 153-185.

[19] It is worth emphasizing that the person who turned the zoo around, making it the forerunner of the proliferation of zoos throughout Europe and the world in the nineteenth century, was an artist who's primary work was making images of animals.

1850 D.W. Mitchell would have been on the verge of being a household name in London, but there is no doubt Obaysch was perhaps *the* household name in London that summer. In Punch's annual almanac that year, Obaysch and the Sea Turtle who was being positioned for new "star animal" in the upcoming season were featured centrally in the cartoon in the inside cover, parodically 'capturing' the social scene that year (insert image). Many times that year, the satirical magazine ridiculed Londoners for being so enamored with an animal that either sat motionless or submerged himself in his pool (Find and insert quote from punch). Nevertheless, both the London Illustrated Weekly (which had regular illustrated installments of what could be seen at the zoo) and the London Times committed a great deal of print to tell the tale not only of Obaysch's capture, transfer and installment to the gardens, but of his sustained popularity as well.

Obaysch was a commissioned capture. By 1849, it was clear that the London Zoo, despite almost slipping into dissolution just a few years prior, had become widely accepted as the greatest institution of its kind – thus outshining the Jardin des Plantes in Paris. Having returned from the brink, and adopted Mitchell's program of generating star status for certain animals, the society set itself to making its first star an animal that had not trod on European soil since the Roman Empire – an ever-present reference in the Society's positioning of itself within the history of animal collection and display. In article in the London Times from June 6, 1850, none other than Richard Owen profiles Obaysch in the form of a letter to the editor of *The Annals of Natural History.* With what he describes as "notes" that might serve as either replacement or enticement for "our zoological friends in the country who have not yet had the opportunity of inspecting this

great rarity,"[20] the article highlights in this order: his transport from Egypt, his capture and resultant injury and scar, a loosely biological description of his visible features, and his behavior and diet. Generally the popular biological descriptions, which were often published in both the *London Times* and the *Illustrated London Weekly* wind together tales of the hunt, description of the habitat, profiling the native attendant, but most importantly they serve as both substitutions and guides for seeing the animal. The report on Obaysch is variously a zoological study, an adventure story, and an entertainment review. Characteristic of zoological journalism of this period - intermingling of the tale of the hunt with biological description - it is heavily focused on visual description, particularly through its attention to the animal's bodily surface.

> The young animal was captured at the beginning of August, 1849, on the island of Fobaysch, in the White Nile, about 2000 miles above Cairo; it was supposed to have been recently brought forth, being not much bigger than a new-born calf, but much stouter and lower. The attention of the hunters was attracted to the thick bushes on the river's bank, in which the young animal was concealed, by the attempt of its mortally wounded mother to return to the spot. When discovered, the calf made a rush to the river, and had nearly escaped, owing to the slipperiness of its naked lubricious skin and was only secured by one of the men striking the boat-hook into its flank; it was then lifted by one of the men into the boat. The cicatrix of the wound is still visible on the middle of its left side; the attendant informed me that the scar was much nearer the haunch when the

[20] Richard Owen. *The London Times,* June 6, 1850.

> animal first arrived at Cairo; its relative position has changed with the growth of the body.[21]

Rather than describe the effect of the wound on the hippo, the threat to its life, as we might expect from a biological description of this scene, the account remains at the surface, describing instead the migration of the mark across Obaysch's body over time. We might ask if this is characteristic of the description of zoo animals at that time or biological analysis more broadly. As the article goes on, piece by piece the animals biological functions are traced out, organized not by the nature of the animals body but by a visual chronicling of the animal, such that one could imagine from the description what the animal looked like without seeing it, or if having already seen the animal understand the visual spectacle itself more deeply. What results is a biological description of the animal's bodily surface.

> The hind limb is buried in the skin of the flank nearly to the prominence of the heel. Thick flakes of cuticle are in the process of detachment from the sole. There is a well defined white patch behind each foot, but I looked in vain for any indications of the glandular orifice which exists in the same part of the rhinoceros. The naked hide covering the broad back and sides is of a dark India rubber colour, impressed by numerous fine wrinkles crossing each other but disposed almost transversely. When I first saw the beast it had just left its bath, and a minute drop of a glistening secretion was exuding from each of the conspicuous muco-sebaceous pores which are dispersed over the integument, and intervals from eight lines to an inch. This gave the hide as it glistened in the sunshine, a very peculiar

[21] Ibid.

> aspect…the whole surface became painted over with it every time he quitted his bath.[22]

It is important to note that though this description is biological through and through – it goes on to describe practically the entire surface of the hippo – it is strictly speaking not a biological description of the animal, but a biological description of what is to be seen.

It is also worth noting that this article is not only characteristic of the zoological journalism of the period but a number of its features are to be found throughout descriptions of the zoo, such as guides both official and otherwise, popular accounts, and zoological reports from the society itself. Beginning with Obaysch, we see not only a foregrounding of animals as personalities of the zoo but much more attention to the capture of animals, the various dignitaries and aristocrats in charge of such expeditions, and the native trainers and attendants who accompany the animals. In 1850, the connection of these animals to foreign lands (Obaysch is after all named for the island on which he was caught), to the heroic expeditions executed by those in service of the empire (commanders, lieutenants often named), and to the foreign peoples brought into that service (Obaysch is reported to have been quite "attached" to his attendant) is highlighted at the same time as these animals are positioned at the center of the zoogoing public's attention. Indeed, these narratives of foreign peoples, places and adventures are brought into the world of zoology through what it presented as an historicization, an enhancement and an ornamentation of a living animal. Even its personality is garment to an otherwise, slow moving, indifferent and sleepy hippopotamus.

[22] Ibid.

Before Paris

Though Paris' Jardin Des Plantes may have been "the only serious model for Sir Thomas Stamford Raffles when he envisioned the Gardens,"[23] the collection of animals for display is in all likelihood as old as civilization itself. Though perhaps a reductive account, Michael H. Robinson, director of the National Zoological Park, writes in his foreword to *New Worlds, New Animals; From Menagerie to Zoological Park in the Nineteenth Century* that "after a very long period of hunting and gathering, we sapient primates started making collections of living things and altering them for our benefit. This was the origin of civilization, which was made possible by the domestication of plants and animals."[24] And though the collection of animals has always been related to survival (food, clothing, shelter and labor), it has always also served other purposes which fall under not the utilization of animals, but the displaying of them. In fact, according to Robinson, the earliest collection of displayed animals, which he dates at roughly 2500 BCE in Saqqara, Egypt, contained several thousand specimens and was probably only somewhat "utilitarian." The collection contained 1134 gazelles, 1305 oryxes and 1244 other antelopes. Robinson also dates the collection of Thutmose III which included monkeys and leopards at 1500 BCE, the 1500 acre Chinese "garden of intelligence" at 1000 BCE, Solomon's collection, which included apes and peacocks at 974 BCE and Ptolemy's collection in Alexandria at 280 BCE, which was primarily for

[23] Sofia Åkerberg, "Knowledge and Pleasure in Regent's Park The Gardens of the Zoological Society of London during the Nineteenth Century" (Ph.D. diss., Umeå University, 2001), 24.

[24] Michael H, Robinson, Foreword to *New Worlds, New Animals: From Menagerie to Zoological Park in the Nineteenth Century,* edited by Hoage, R. J. and William A. Deiss (Baltimore: Johns Hopkins UP, 1996), vii.

scientific study and is still the world's largest menagerie to date.[25] Bob Mullan and Garry Marvin, in their book, *Zoo Culture: the Book about Watching People Watch Animals,* also offer an account of zoological gardens' extensive prehistory. They point out that while certain "animals associated with particular cults were kept close to temples in [ancient] Greece" that city-states rarely had the wealth to support such collections. The Romans, however, known for their taste for animal shows had extensive collections. Octavio Augustus had a collection of 3500 animals, which included 420 tigers, 260 lions, 1 rhinoceros, 1 hippopotamus, 36 crocodiles, Bears, Elephants, Eagles, a snake 25 yards long and 600 other African animals. Menageries were referred to as vivaria, one of the most notable of which was 70 yards wide, 440 yards long and formed a portion of the city wall.[26]

While it is perhaps strictly a mistake to set the display of animals outside the category of utility – its unlikely that the modern distinction between religious purposes and purposes of utility held up in the ancient and even early modern mind – setting off the collections of animals whose primary purpose was to be seen does offer us a way of understanding the prehistory of the modern zoological garden. The purposes of collections of animals from antiquity through the royal menageries of the nineteenth century were, however, often heterogeneous and shifting. Montezuma's collection, "discovered" by Cortes in 1519, which first and foremost signified his status as king, also served religious purposes in supplying animals for sacrificial rites. According to Mullan and Marvin "Egyptians kept certain wild animals, which were important for their place in

[25] Vernon N. Kisling, "Ancient Collections and Menageries," in *Zoo and Aquarium History* (Boca Raton: CRC Press, 2001), 1-47.

[26] Bob Mullan and Garry Marvin. *Zoo Culture.* (Chicago: University of Illinois Press, 1999), 92-95.

the religious life, in court yards or even in the sacred buildings themselves" and these collections were often open to public viewing.[27]

The most widely shared historical distinction in the collection and display of animals is the shift from Royal Menageries to modern zoological gardens. Modern zoos are characterized as scientifically principled, almost always governed by a zoological or other scientific society and cite the production of knowledge as their primary reason for being.[28] The other reason common to zoological gardens is the edification, but also entertainment of the public, which is variably mutually beneficial and antithetical to the scientific principles of animal collection. Entertaining displays deepen a fascination with an animal as well as the knowledge one learns of that animal. Yet as entertainment becomes the draw, a financial dependency develops, in which education is likely to drop out. Royal menageries, on the other hand, are seen primarily as symbols of status and power. They indicated not only the aristocracy's place within a kingdom, but the status of that kingdom in the world – animals from various parts of the world were suggestive of an expansive *domain* in every sense of the word. The arrangement of such collections often confirms this characterization. Habitats, often small and unhealthy for the animals were arranged for a king's pleasure as he or his guests strolled about the grounds. Many collections were arranged such that one would just happen upon these exotic animals among other exotic plants and artifacts from foreign lands. Louis the XIV's collection at Versailles was arranged panoptically, such that the king could walk out to a specific point

[27] Ibid., 90.

[28] And of course, by being a modern public institution, scientific societies did articulate reasons for being. They sought royal charters, backing from wealthy donors, and thereby had to reflect on and articulate what it was they were doing and why. Menageries of the nobility, but also animal collections before modern zoos in general did not have the need to explain the reasons behind them. They served a purpose and that purpose was their reason for being.

on his terrace and survey all of the animals simultaneously.[29] Though the difference in these two types of animal collections helps us to mark a major shift in not only the practice of animal display but in the culture of collection and display more broadly, these characterizations of aristocratic and public institutions cast a perhaps too easy distinction on practices that never fully resolved into anything so singularly purposed or all that distinct from one another. Even the vocabulary of this distinction – "menagerie vs zoological garden" is a difference forced back onto a transition that was never so clear; the London Zoo, which wasn't even called a zoo until as late as the late 1850s, was referred to as a menagerie throughout the nineteenth century not only by the public but the zoo officials themselves. And the council steadfastly resisted the label of "zoo" throughout the 19th century, even though that word refers first and foremost to the gardens in London.

Even though the royal menageries seem to have been more for the purposes symbolizing the command of a throne or a position within the aristocracy, the vast majority of them throughout history seem also to have been put to the uses of collecting knowledge on animal behavior and deepening scientific knowledge of the animal world and as noted above, were often open to the public as well, thus satisfying the two main criteria of what it means to be a modern zoo. In his recent book, *Savages and Beasts: The Birth of the Modern Zoo,* Nigel Rothfels complicates the attempts to cast strict divisions on the transitions that animal collections underwent in the nineteenth century. He questions the notion that nineteenth century zoos "fundamentally differ from earlier collections of animals because they emphasize science…and are no longer places of

[29] It is worth noting that this collection was later transferred to Paris and served as the bulk of the early collection of the Jardin des Plantes after the revolution. What's more, the arrangement of this collection inspired Bentham's panopticon prison.

simple curiosity or the expression of some sort of cultural or personal power."[30] He goes on to point out that "substantial scientific work found a place in many animal collections before the Jardin des Plantes and the Zoological Gardens of London" citing specifically the collections of "Eugene of Savoy, the Holy Roman Emperor Rudolf II, and William of Orange."[31] Resisting the descriptions of these collections as "unscientific" or "unsystematic," Rothfels suggests that this division rests more heavily upon the fact that "animals in earlier collections were not organized around a systematics that we see today as somehow more logical or more enlightened."[32] What then does seem to firm up this distinction is at least somewhat more circumstantial; modern zoos are not only places of scientific research and open to the public but they are also administered and guided by public, though certainly exclusive, scientific societies. The personal, spiritual and status granting values are ostensibly removed with the addition of scientific societies. And while that can scarcely mean that such non-objective values were actually eschewed – in fact, it seems more clearly to have meant that those other motivations for animal collections were covered over rather than eliminated – it does seem to have brought about a discourse about why one does look at animals; a thinking and an articulation of what a collection of animals should do and be.

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[30] Nigel Rothfels. *Savages and Beasts: The Birth of the Modern Zoo* (Baltimore: The Johns Hopkins University Press, 2002), 38.

[31] Ibid. Rothfels considers at length the Belvedere Menagerie of Eugene of Savoy at length, specifically with an eye to his dedication to collecting knowledge over and above the explicit display of wealth, power and control. See *Savages and Beasts,* 25-31. Of course, Ptolemy's collection, mentioned above, suggests the long presence of the value of knowledge in the collection of animals.

[32] Ibid., 20.

The Menagerie at Paris

Since the *Jardin des Plantes* was the only legitimate model the Society could turn to, some of the discourse surrounding the formation of the *Jardin des Plantes* is crucial to understanding not only zoos in Europe but the London Zoo specifically. Paris's *Jardin des Plantes* opened adjacent to the *Muséum national d'Histoire naturelle* in 1793. Though it seems that the animals were of greater interest to the scientific institution as specimens for dissection once they had perished in the inexperienced hands of the keepers of the *Jardin des Plantes*, it is nevertheless in Paris that a collection of animals is guided by a scientific society for the first time. Cultural and intellectual competition seems to have been at a high point throughout the discussion and formation of the Zoological Society in London. Though not named explicitly, the French collection is the clear referent in an early draft of the Society's prospectus; "the student of Natural History, or the philosopher who wishes to examine animated nature, has no other resource but that of visiting and profiting by the magnificent institutions of a neighboring and rival country."[33] Adrian Desmond, in his article on the formation of zoology in England in the early nineteenth century highlights competition with the French as one of the dominant motivational forces driving the zoological society. Even as the British exceeded the French in colonial expansion for some time the British found themselves unable to rival the French in intellectual and cultural influence across the west. Indeed, not only the development of zoology (in contrast to the French comparative anatomy) but the building of the zoo as well was highly motivated by the notion of trumping the French. The degree to which this would allow colonial dominance to feed the intellectual

[33] John Bastin, "The First Prospectus of the Zoological Society of London: New Light on the Society's Origins," *Journal of the Society for the Bibliography of Natural History* 5 (1970): 381.

dominance as expressed through a collection of animals from throughout an empire on which the sun did not sit should not go unnoted.

More specifically though, the reason for looking to Paris is because it is there that the discussion begins, in thinking about reasons for establishing and maintaining a scientifically principled animal collection, about the limits of comparative anatomy and the need to see animal life unfold. According to Bernardin de Saint Pierre and Frederic Cuvier, the zoological garden was essential to the understanding of animals precisely because it provided a solution to the problem that the dead specimen was far too narrow a context for understanding the animal and the world itself far too large. In his article "Ethology, Natural History, the Life Sciences, and the Problem of Space," Richard Burkhardt investigates the history of the study of animal behavior, its related sciences and their claims to the necessity and formation of special places for conducting research. Burkhardt suggests that in the nineteenth century the discourse takes on new complexity. Whereas from the eighteenth century on there were tensions "between field naturalists or 'naturalist voyagers' on the one hand and 'cabinet' museum naturalists on the other," this "authority contest was complicated further in the nineteenth century when zoos, aquaria and marine laboratories emerged as new settings for new practices."[34] As such, the study of animals in captivity found it necessary to buttress itself against two more established modes of animal science. Bernardin de Saint Pierre emerges in the late eighteenth century as Paris' most prominent advocate of the study of animal behavior with animals in captivity, positioning himself against the comparative anatomists and natural historians at the museum in Paris. While most naturalists at the *Muséum national d'Histoire naturelle*

[34] Richard W. Burkhardt. "Ethology, Natural History, the Life Sciences and the Problem of Space," *Journal of the History of Biology* 32 (1999): 490.

wanted to see the animals from the *Jardin du Roi at Versaille* dissected and preserved, he seized upon the opportunity to develop the menagerie in Paris. Not surprisingly, he drew attention to the limitations of studying dead specimens. Saint Pierre contested that comparative anatomy was deeply limited by its focus on dead animals and that it failed to attend to what distinguished the animal from other object of study in the natural world. For Saint Pierre "

> The life which had been the creature's priniciple feature was missing… knowledge of an animal's comparative anatomy was not in itself sufficient for understanding the animal … the study of comparative anatomy of animals was not nearly as important as "the study of their tastes, their instincts, and their passions." It was this latter kind of study he claimed that had made the writings of Buffon so interesting "not just to scientists, but to everyone."[35]

According to Saint Pierre, "cabinet" natural history was insufficient because the natural world that it sought to reconstitute in human knowledge was necessarily static, inert, and dead. It was a mode of science in which the *events* and unfolding of the natural world had no place.

After the establishment of the menagerie at the *Jardin des Plantes*, Frederic Cuvier, menagerie director from 1808-1838, found himself more embattled on the other side of the debate and "went so far as to suggest that menagerie studies would ultimately render field studies unnecessary"[36] According to Burkhardt,

[35] Ibid., 491.

[36] Ibid., 493.

> [T]he menagerie could be for the zoologist, Cuvier argued, what the chemist's laboratory was for the chemist. It was a place where one could see not only what does happen in nature, but what could take place in nature….the reason contemporary ideas of animal intelligence were so inadequate, he maintained, was because they were based on isolated facts involving free-living animals, and systematic experimentation with free-living animals was simply not possible.[37]

Cuvier's position argues that the menagerie animal is not only sufficient but better precisely because it brings the scientific events of the natural world fully within the control and scope of science. Zoological gardens thus offered the hope that the precision and proximity of the museum work in natural history could be joined with the authenticity of field studies in its ability to reveal the dynamics of animal behavior. As such, the initial discussion of the scientific reasoning behind the formation of zoological gardens involves what I understand as a scientifically useful but broadly appreciable *citation* of the unfolding of the natural world. More than expanding and broadening human knowledge of the world, zoological gardens brought the unfolding of life within the walls of scientific institutions, literally and figuratively offering western science a healthy dose of *life*. Of course, the notion that this gesture toward contextualizing the animal within its "actual" life seems woefully overconfident in terms of what sort of knowledge it could offer us in terms of an animal's real life in the natural world, we see at the very outset of scientifically principled collections of animals, the move toward contextualization, a citation, collection and display of the animal world, a trend that would characterize zoos throughout their modern history.

[37] Ibid., 492.

Empire and Zoology

The question of the connection of the early zoo to the ascendancy of the British Empire oscillates between obvious and too easy. An empire is perhaps the single best tool for building and maintaining an expansive zoological collection of living animals. What's more, a zoological garden is at least among the most effective institutions for displaying a nation's ability to rule the world. Perhaps even more than marbles and other artifacts that must for many have remained what they were, abstractions, the zoo appeared to collapse such distances and presented the empire's capital with the very life of its dominion. It also allowed imperial rule to feed intellectual dominance. To see the zoo only within the terms of its instrumentality to the British Empire though is perhaps to reenact one of the strategies of a colonialist attitude we might hope to interrogate, namely erasing details of a unique and peculiar institution for the purposes of fitting into the bigger picture. And so the empire is everywhere and nowhere in the zoo; the spirit of the British Empire (indeed the trajectory of the increase in popularity of the zoo maps neatly onto the rate of colonial expansion throughout the nineteenth century) courses through nearly every aspect of the zoo, and yet, it would be a mistake to say that the imperial vision is the one that guided the garden's growth above all others. Even in the face of the totalizing force of the empire on which the sun never set, we insist on a constellation of forces.

With her chapter "Exotic Captive," from her book, *The Animal Estate: The English and other Creatures in the Victorian Age,* Harriet Ritvo contributes a vital piece to the fairly limited amount of recent work done on the London Zoo. She argues that the zoo operates predominantly as a symbol or emblem of empire and domination. She positions the collection and display of animals during the nineteenth century as an

important tool in the building, expansion and legitimation of the British Empire. And certainly it was; whether it was for purposes of acclimatization or zoology, the wealth of any collection of exotic animals carried with it the idea of an ever expanding British domain. For the "country gentlemen," significant financial supporters of the fledgling society, the fruits of colonial expansion were quite openly just that; acclimatization and domestication of exotic animals promised more profitable livestock and a greater variety of game to be hunted in the English countryside. For them, the society was another money making venture, tied closely to reaping the benefits of the natural resources of colonized places. For zoologists, the connection to imperialism is perhaps less explicit. By holding up the goal of knowledge itself, scientific study for its own sake, the motivations of the zoological society appear only to make use of Imperialism rather than drive it with the values generally attributed to colonialist attitudes; namely, profit, power, dominion. We must not of course so easily dismiss the apparently passive act of collecting and displaying artifacts and animals from around the world; the collection of knowledge is a legitimating discourse for the balder values of wealth and power. As zoology rode on the back of empire it sought to universalize categories of classification, executing what is in many ways a far more insidious colonization of knowledge and culture. What's more, residing somewhere between autonomous independent beings and organic products of specific locations, animals were available as both blanks slates to which wildly imaginative meanings could be attached and tangible connections to even pieces of the colonies from which they came.

That Sir Thomas Stamford Raffles is both the founder of the society and perhaps *the* model of a nineteenth century British colonialist is a connection that cannot be

overlooked. Raffles set himself upon the task of forming the society and opening the gardens as his first goal after returning from his colonial service in Asia. Appointed lieutenant governor of Java in 1811 and governor of Sumatra shortly thereafter, Raffles is credited with founding the British colony of Singapore through the purchase of land for the British East India Company. In Java, Raffles sought funding for the naturalist, Thomas Horsfield, who was later to be appointed founding Assistant Secretary of the Zoological Society. After having visited the Jardin Des Plantes in 1817, while on leave from his service in Java, he is said to have spoken with friend Joseph Banks, president of the Royal Society with plans of a "zoological collection which should interest and amuse the public"[38] He spent the next several years, working with Thomas Horsfield collecting animals, both living and preserved, that might form the basis of a zoological collection. Unfortunately, his ship set fire shortly after departure and it took him another year gathering what would serve as a replacement collection.[39]

> Raffles activities as a naturalist echoed his concerns as a colonial administrator; he made discoveries, imposed order, and carried off whatever seemed particularly valuable or interesting. The maintenance and study of captive wild animals, simultaneous emblems of human mastery over the natural world and of English dominion over remote territories, offered an especially vivid rhetorical means of reenacting and extending the work of the empire and Raffles intended to continue his

[38] P. Chalmers Mitchell, *Centenary History of the Zoological Society of London* (London: Zoological Society of London, 1929), 1.

[39] J. Barrington-Johnson, *The Zoo, The Story of the London Zoo* (London: Robert Hale, 2005), 15.

> colonial pursuits in this figurative form after returning to the center of English power and enterprise.[40]

Though like any collection of objects from around the world, the zoo simply must have operated as a symbol of power and worldwide rule, there are a few challenges that ought to be raised here. First, it is perhaps more fruitful to understand the zoo, not as a symbol or emblem of domination, but first and foremost as *an act* of domination, of mastery and control. Symbols and emblems operate in specific ways that don't necessarily allow for understanding the various ways in which the zoological gardens operated, what it meant not only to its founders but to the various sections of British society that constituted its shifting patronage. Secondly, Ritvo is perhaps quick to attribute mastery and domination to Raffles' intentions regarding the zoo. While one might be able to find the language or rhetoric that belies these values, Ritvo doesn't actually offer any specific analysis of such. Moreover, she neglects to attribute to Raffles and the Zoological Society more broadly, the reasons that they articulate as what they thought they were doing or at least, what they said they were doing. Time and time again, Raffles' personal position was one of developing the state of Zoology in England. Though he refers to the vast resources of the Empire and even of exhibitions of such to the metropolis, his rhetoric is focused on making use of these resources for scientific pursuits over and above the creation of the spectacle and display we would more likely associate with imperial symbolization.

> It has long been a matter of deep regret to the cultivators of Natural History that we possess no great scientific establishment either for teaching or elucidating Zoology; and no public menageries or collections of living animals where their nature, properties and habits may be studied.

[40] Harriet Ritvo, *The Animal Estate.* (Cambridge: Harvard University Press, 1987), 205.

> In almost every other part of Europe, except in the metropolis of the British Empire, something of this kind exists.[41]

The national competitiveness we see here no doubt existed and similar language peppers all of the early documents surrounding both the Society and Garden's establishment. What close attention to these documents reveals however is not an overwhelming concern for celebrating the nation or the empire but rather a tension over the purpose(s) of the gardens; whether they were to serve science in developing Zoology in and of and for itself, or whether they were to serve the "country gentlemen" and the aristocracy that supported the Zoological Society by focusing that science on domestication and acclimatization. The formation of zoology itself in Britain during this period is the context of numerous debates, many of which reveal an underlying and pervasive concern over how to best demonstrate and promote colonial expansion, but they also reveal issues that don't fit all that neatly into an image of the society and its gardens that sees the zoo as first and foremost a symbol and emblem of imperial domination.

[41] Quoted in Bastin, "The First Prospectus," 380.

The Formation of a Society

Though the establishment of zoological gardens followed very closely upon the institutionalization of zoology in Britain, zoology began to be organized by public societies some six years before the Gardens opened its gates. A subgroup of the Linnaean Society, the Zoological Club was formed in 1822. In his article, "The Making of Institutional Zoology in London 1822-1836," Adrian Desmond provides an exhaustive reading of the extant documents surrounding both the Zoological Club of 1822-1829 and the formation of the Zoological Society of London in 1826. Though not a direct descendent of the Zoological Club of the Linnaean Society, as has been argued in the past, most of the Society's leadership were plucked from the Club which would close just a few years later in 1829. John Bastin has pointed out that "a number of influential members of the Club including Joseph Sabine, its Chairman, Nicholas Aylward Vigors, its Secretary and Dr. Thomas Horsfield, a committee member, took an active part in the early deliberations of the Zoological Society and were appointed, respectively, its Treasurer, Secretary, and Assistant-Secretary." He further notes that "with two exceptions, all members of the original committee of the Zoological Club were subscribers to the Zoological Society."[42] And yet the two organizations coexisted for almost three years, fully half of the Club's entire lifespan. Desmond points out that under the Linnaean Society the Zoological Club struggled from its inception for greater autonomy from the parent organization, in great part due to the Linnaean Society's overwhelming emphasis on botanical studies, but also as reaction against "Linnaean systematics [and] the Society's autocratic and outmoded restrictions on methodology." From Desmond's article it seems clear that formation of the Zoological Society as

[42] Bastin, "The First Prospectus," 369.

separate in name but constituted by significant majority by members of the Club is indicative of its resistance in that struggle against the Linnaean leadership. Considering that the subordinate Club was more prolific in the production and delivery of papers as well as greater in both frequency and attendance of meetings, the Linnaean's society's resistance to granting greater autonomy and the development of a zoological society outside of the Linnaean society's zoological Club reads as an account of institutional pride. That the Club and the Society coexisted for almost three years and that the Club was never allowed to turn directly into the Society suggests that the struggle for autonomy to which British zoologists were committed was a central factor in the formation of both the Society and the Zoo.

Though Desmond is insistent upon the complexities of the various reasons for the Society's, and more broadly British zoology's formation, he lists a number of factors; generally, the promotion of a "mix of career interests, aristocratic goals, and imperial concerns" but more specifically the "Benthamite belief in the liberalizing force of science; aristocratic interest in game management; Britain's expanding colonial empire; and not least the utility of zoology to a nation jealous of French leadership in intellectual pursuits."[43] He characterizes the debates that went on not only in the struggle with the Linnaean Society but also within Zoological Society itself as fueled by agitation from "radical-scientific forces" and reformers who "projected nature as a materialistic self-developing system, an emergent (non-ordained) hierarchy sustained and power-driven from below, and this became their metaphoric legitimation of democratic-political

[43] Desmond, "Making of Institutional Zoology,"154.

control."[44] While radical and reformist interests may have ultimately been quieted in the Society, the intellectual shake-up effected by the formation of the Club and continued in the Society contributed significantly to setting the stage for the reorganization of science that would lead up to Darwin's[45] revolutionary work.

The many drafts of the Prospectus of the Zoological Society of London confirm Desmond's thesis of multiple, varied, and at times cross purposes at play in the formation of the society. John Bastin, with his 1970 article on the Prospectus of the Zoological Society clarifies a long time misconception about the dates of the early documents surrounding the society's establishment as well as those most centrally involved. Because of the misdating of one of the extant copies of the prospectus as being written in 1825, which refers to an earlier draft written a year beforehand, it was often speculated that Raffles could not have been as centrally involved in the plans to establish the society and zoological gardens as he had not yet returned from India. Since that draft of the prospectus is more properly dated in 1826, especially the reference therein to an earlier draft, the first draft of the prospectus was written in 1825 and more importantly, it seems that Raffles must have been the principle author of the text. While this is obviously important to the biographical/historical work on Raffles, Bastin's findings are more important to London Zoo history in that they allow us to better trace Raffles consistent goals of establishing what is first and foremost an institution for developing the scientific study of zoology in the "empire's metropolis" in the nineteenth century.

[44] Ibid., 242.

[45] Who, it is worth noting attended early meetings of the society, but was put off by their quarrelsome spirit, see Desmond, p. 231.

Bastin perhaps overreaches in his characterization of the drafts of the prospectus as being so thoroughly Rafflesian. Had he had the benefit of Adrian Desmond's article, written in 1985, he might have focused more specifically on the tensions present in the texts that existed not only between Davy and Raffles, but also between two major camps within the Zoological society. Specifically, the two main purposes that dominate the early documents and correspondences are the development of Zoology and the utility of domestication and acclimatization. These goals, which though they may have some overlap are not at all the same, are at times variously conflated and at odds with one another. While Desmond articulates a number of factors at play in the formation of the Zoological Society in his article, somewhat surprisingly, he doesn't specifically trace the tensions between the two clearly stated reasons for the formation of the society in its prospectus, a tension that seems to have put Raffles and Davy at odds, but rather focuses the tension evident in the minutes of the meetings after the establishment of the gardens, which was itself a year after Raffles death.[46]

> Rome at the period of her greatest splendour, brought savage monsters from every quarter of the world then known, to be shown in her amphitheatres, to destroy or be destroyed as spectacles of wonder to her citizens. It would well become Britain to offer another, and a very different series of exhibitions to the population of her metropolis; namely, animals brought from every part of the globe to be applied to either some

[46] See Desmond, "The Making of Institutional Zoology," 233-235.

> useful purpose, or as objects of scientific research, not of vulgar admiration.[47]

The above often quoted passage from the prospectus for the formation of the Zoological Society certainly smacks of nationalist and imperial pride. The contrast with that other great empire, the celebration of the metropolis and the suggestion of Britain's capacity to pluck animals from "every part of the globe" all ought to be seen as rhetorical strategies on the part of the document's authors to position the proposed institution as confirming and celebrating British preeminence in the world.

Nevertheless, this sort of rhetoric is far from dominating the document, which is much more focused on the not yet fully determined balance and mutual beneficence of developing Zoology and acclimatization/domestication. In a letter to his cousin, Rev. Thomas Raffles, on March 9th 1825,[48] Raffles characterizes his role in planning the society in relation to Davy's; "Davy and myself are the projectors; and while he looks more to the practical and immediate utility to the country gentlemen, my attention is more directed to the scientific department."[49] A few months later, clearly after the writing of the first draft of the prospectus, Raffles again writes to his cousin that "at this very time I am a little at issue with Sir Humphrey Davy, as to the share to which science is to have in the project."[50] A comparison of the two drafts of the prospectus reveals that these tensions were not simply a product of the difficulties of co-authorship. The first draft, Bastin suspects, was written by Raffles and Davy together, each representing the two

[47] Quoted in Bastin, "The First Prospectus," 381-382.

[48] It is worth noting, as does Bastin, that the first draft may very well have just been written some days prior to this letter. Bastin dates it March 1st, 1825.

[49] Quoted in Bastin. "The First Prospectus," 370.

[50] Ibid, 371.

values in competition in the society's formation. For the second draft however, Raffles, Sabine and Vigors (all clearly more interested in advancing Zoology) were appointed to revise the draft with the proviso that "it is not deemed advisable in the first instance that they should extend beyond the introduction and domestication of new Breeds of Animals"[51] As such the revisions are telling. While an early summary of the prospectus and the first draft clearly list "the introduction" and "domestication" of "new breeds" first and primary in importance, the final draft includes a preamble, which begins "For the advancement of Zoological Science." These important tunings on the part of Raffles, Sabine and Vigors run throughout the document but perhaps most significantly find their way into the section quoted above in the midst of the documents most powerful rhetoric. Where the final draft above reads "brought from every part of the globe to be applied to either some useful purpose, or as objects of scientific research" the first draft read "to be applied to some useful purpose *as* objects of scientific research"[52] Throughout all of the early discussion about the formation of the Society and Gardens, support seems to have come with the hitch not only that the Society be of some economic benefit to the "country gentlemen" and the aristocracy, but that it recast zoology – and by extension science – as a useful tool. Wary of this, the committed zoologist members of the fledgling society resisted this conflation at every turn. The fate of the farm as a satellite to the zoo, established specifically for the purposes of domestication and acclimatization offers a revealing arc of this debate; as the farm became a financial drain on the Society and the income from admission helped the Garden and thereby the Society to prosper, the farm

[51] From the Minutes of the Committee of the Zoological Society, quoted in Bastin, "The First Prospectus," 373.

[52] Quoted in Bastin, "The First Prospectus," 382 [emphasis added].

was closed down just a few years after its opening, while the museum, which is the source of the vast majority of the Society's scientific work anyway, survived until 1850(55) when it was turned over to the Royal Society and formed the base collection of the Natural History Museum.

London: The Society and the Opening of the Gardens

Though the zoo officially opened in late April of 1828, it was apparently open to fellows only in 1827[53] - still, the Society did not receive its royal charter until 1829. Below is the earliest extant plan for the Gardens (Fig. 1.6). The fact that what opened the following year looked only somewhat like this image is perhaps telling of the zoo history to come in the next 20 years – plans for the garden were but only one of the determining factors in the shape and character that the zoo would take on. No one vision would ever dominate the zoo; rather, the zoo would display just as varied collection of values as it did animals. For example, the land between the regent's canal and the public drive was only acquired a few years later and while birds were bountiful in the early years of the zoo, they did not pervade the gardens in quite the way this map suggests (note the three separate aviaries as well as paddocks for birds). What is conveyed in this discrepancy? Comparing this to the plan for 1829 (Fig. 1.7), we find a park that, at most is only one third the size and while aviaries are present, even numerous (9 of 36 enclosures in 1829 house birds),[54] they are not nearly as prevalent as the designers of the1827 plan might have hoped for or expected. What is more, interactive, entertaining and fairly unscientific displays such as bear pit and the monkey pole seem to have been the attractions of the day. Though there are certainly specific hypotheses to be offered about the discrepancies

[53] Barrington-Johnson, *The Zoo,* 28.

[54] Ornithology was perhaps the dominate branch of zoology in Britain at this time. Zoologists and zoological illustrators seem to have given the lion share of their attention to the depiction and description of exotic birds. William Swainson's *Zoological illustrations, or Original figures and descriptions of new, rare, or interesting animals* published between 1820 and 1823 offers a set of hundreds of illustrations split equally between birds and snails. Bennett's *Gardens and Menagerie of the Zoological Society Delineated* divides its two volume set equally between birds and quadrupeds, a division that hardly could have corresponded directly to the proportion of what was displayed at the Gardens, and even less directly to what people actually went to see. A number of things could explain this – on the one hand the sheer number of different species of bird must have positioned ornithology as the richest area of zoology, alongside conchology. On a somewhat more practical level, birds were small (for the most part) and traveled well, so could more easily be collected from around the world.

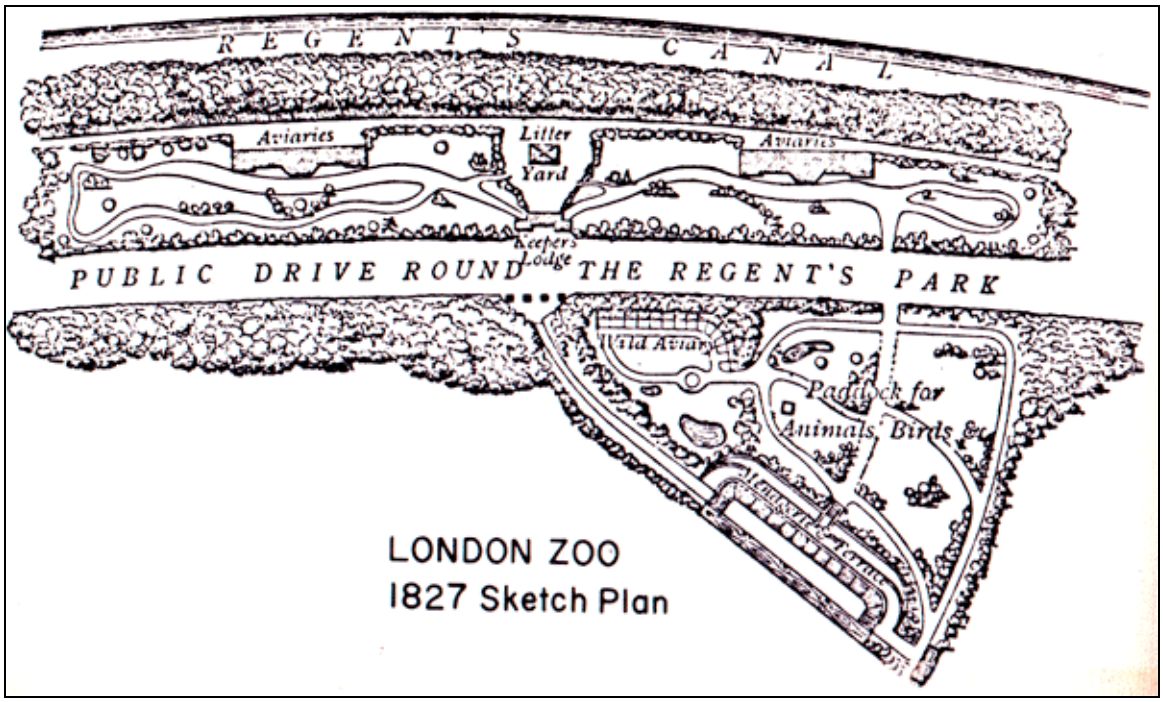

Fig 1.6. Sketch Plan of the Gardens in 1827.

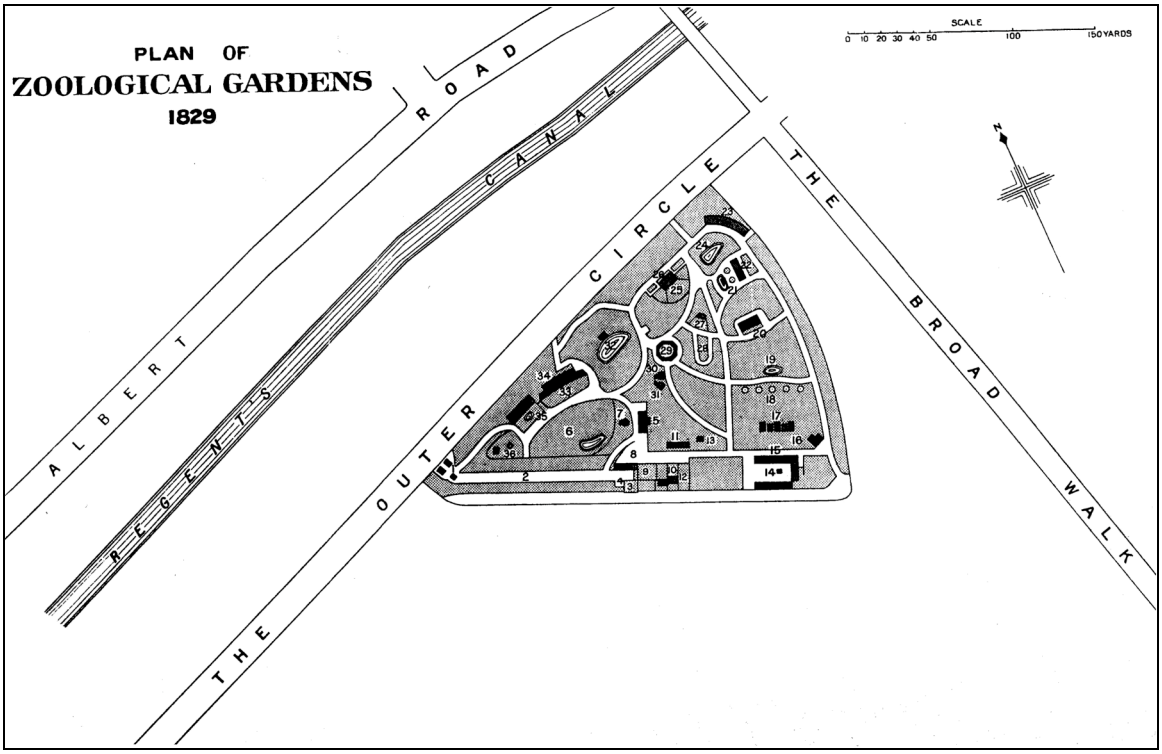

Fig 1.7. A map of the Gardens in 1829.

between the early plan and the maps and reasons as to why the founders couldn't settle on a single goal for the gardens, we can more generally state what Narisara Murray has argued in her dissertation *Charismatic Animals*, that even the very early Gardens reflect a "variety of needs and interests: scientific, aristocratic, nationalistic, imperial and popular."[55] To this list we might add, the interest, needs and habits of the animals themselves.

By the time the Zoological Society received its Royal Charter in 1829, they had amassed a sizeable collection and a number of habitats had been built. According to the report of 1829, the collection included 69 different species among 152 mammals and 125 species among 475 birds.[56] The structures of the Gardens included not only the bear pit and monkey poles which were quite popular, but also a monkey house, a stable for zebras, a kangaroo shed, the Llama Hut, the Cage for the Macaws, the large and small bird aviaries, and the large quadruped dens among others. The grounds had by this point been thoroughly landscaped, including at least five ponds. Similar in style to the bear pit described above, the monkey poles were characteristic of the sort of interactive exhibits that characterized the appeal of the early zoo, a style that would become less popular throughout the century because of injury, and unthinkable in the next century because of the treatment of the animal. Monkeys were tethered to a pole with a small housing at the top of it. This arrangement allowed the monkeys to move up and down the pole to interact with the visitors as they pleased. The exhibit was a high point of a visit to the menagerie and led to a good bit of shenanigans on the part of the monkeys, including a

[55] Murray, "Lives at the Zoo," 11.

[56] "Report of the Council for 1829" (London: Library of the Zoological Society of London, 1829), 18.

fair amount of biting. The Bear Pit was also a place of injury and interest, and was even included in *The Public Buildings of Westminster Described,*

> Within a large bricked area, dug many feet below the surface of the ground, and well protected by high railings, some Bears may be seen. Their character may be somewhat studied by exciting their jealousy and ferocity, which the bystanders abundantly do, by giving them cakes at the end of a long pole, and whoever witnesses their savage grin of anger would not wish to approach to take a nearer view.[57]

Indeed, in 1830 Josiah Graver seems to have been the first serious injury in the zoo, by a "large arctic bear." Additionally a Mr. Cocksedge was bitten by a bear and offered compensation of £5 for his pain and suffering.[58]

Decimus Burton was hired by the Society in 1827 at the age of 27 but had been in contact with the society on the planning of the Gardens as early as June of 1826, by which point he had already established himself as an architect through his work with John Nash and the execution of some of his designs in other parts of Regent's Park, including the Colosseum, The Holme, and much of the Park's layout.[59] He would go on to design large parts of Kew Gardens of the Royal Botanitical Society, including the iconic Palm House as well as the Wellington Arch at Hyde Park. He completed his initial plans for the garden in the same year that he was hired and the layout plus many of his buildings had

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[57] Quoted in Peter Jackson, George Scharf's London: Sketches and Watercolours of a Changing City, 1820-50 (London: John Murray, 1987), 29.

[58] Åkerberg, "Knowledge and Pleasure," 78.

[59] On Burton, see Barrington-Johnson, *The Zoo* 19-20, Åkerberg, "Knowledge and Pleasure," 75-76, Guillery, *Buildings of the London Zoo,* 2-5, and J.W. Toovey, "150 Years of Building at London Zoo," in *The Zoological Society of London:1826-1976 and Beyond*, edited by Lord Zuckerman. Proceedings of a Symposium of The Zoological Society of London, 40 (London: Academic Press, 1976), 180.

been completed by the following year. The center piece was the Llama house, which would later become the Camel House. In 1829, a clock tower was added for what was then the exorbitant price of £100 (the whole of the Gardens was in 1826 hoped to be executed for £1000). In June of 1830, Burton was "formally appointed Architect to the Society on an annual retainer of £150, rather than on a percentage fee as before"[60] Though it has been repaired and rebuilt so many times that little if any of the original building remains, this structure is often described as the only surviving building from the original layout. To that might be added the Raven's cage, which now empty, sits on the Fellow's lawn. The camel house was designed, like much of Burton's early designs for the society, to be a mix of "gothick and classical" styles. Åkerberg suggests that these buildings "can be compared with the rural architecture of the eighteenth century…[and] had by the nineteenth century become very popular with the middle class."[61] It is worth noting that beginning with Burton, and continuing throughout the zoo's history, the Society eschewed the colonialist practice of designing its buildings and habitats in the almost parodic style of the exotic architectures of colonized places. Rather, the London Zoo's architecture seems to have been much more oriented toward nostalgia of the homeland, as is suggested by Burton's works. The layout of the park, which consisted of meandering paths over knolls and around ponds invited the visitor to enjoy not only the sights of the animals but the place itself – this recapitulated, though in miniature form, the layout of Regent's park as a whole. While avoiding a more colonialist design might have opened up the possibility of animal centered architecture, Burton seems to have been unable to incorporate the specific needs of the variety of animals the Gardens hoped

[60] Toovey, "150 Years of Building," 180.

[61] Åkerberg, "Knowledge and Pleasure," 99.

to display. Though the plan for 1829 doesn't extend north of the public drive, a number of images from 1829 and 1830 indicate the east tunnel that Burton had excavated, apparently in 1829 and the plan included with the 1830 *List of Animals* depicts the middle gardens as thoroughly landscaped but only seven habitats are listed for that section. Additionally, Burton designed a Carnivora Terrace sometime after his appointment that would never be built according to his precise plans, but he did add the still existing three island pond in 1832 as well as the Giraffe House in 1837. He retained his post as Architect of the Society until 1841.

With its Royal Charter, the Society was granted an additional 6 acre plot north of the outer circle and south of the Regents canal in 1829. In 1831, the original 5 acre plot south of the public drive was doubled in size and another acre was added to the middle gardens and 3 more acres were granted to the Society on the north side of the canal, which put the total area at the Society's disposal at 20 acres. The southern portion of the gardens expanded again in 1834, reaching to almost its full size at 30 acres, a several fold increase in just 6 years. To accommodate both the physical and popular growth of the gardens, a horse drawn omnibus from Westminster was instituted in 1831. However, according to Barrington-Johnson, this along with the zoo's growing popularity created severe congestion problems, requiring police assistance and "by 1835 the council had decided that an enclosure be provided 'for accommodation of servants in waiting on the visitors,'"[62] By the following year, traffic had become such a problem in the Outer circle drive that no one was allowed to park within 100 feet of the entrance. 1831 would also

[62] Barrington-Johnson, 23-24.

witness the donation of the collection in the Tower Menagerie by King George IV.[63] Jack, the first Indian Elephant also became a member of the collection in 1831, with the addition of the elephant paddock.[64]

[63] Keeling, 55.

[64] Jackson, 107, See the image of Jack below, in George Scharf's lithograph.

The Shifting Public: How to See the Zoo

The documents published in the early years of the gardens took on a variety of forms, demonstrating among other things that there was no genre of a guide to a zoological garden to follow. The various publications put out by the society didn't coalesce into the regular annual *A Popular Guide to the Gardens of the Zoological Society of London* until 1858, though there was an edition in 1853. Several early documents, *Gardens and Menagerie of the Zoological Society Delineated(1830)*,[65] *A Zoological Keepsake(1830)*,[66] *A Guide to the Gardens of the Zoological Society (1829)*[67] and *A List of the Animals in the Garden of the Zoological Society, with Notices Respecting them and a Plan of the Garden, with References to the Buildings, Enclosures and Places in which the Animals Are Kept(1929)*[68] constitute the first concerted attempt on the part of the society to condition the experience of gardens. Whether before, during, after, or instead of a visit, these documents sought to enhance, deepen or even embellish the reception of the zoo. What is more, taken together, they appear to be a concerted attempt on the part of the council to account for the gardens from every angle. The "guides" convey both an attempt to meet head on the variety of ways the public were likely to see the new gardens –still, it is worth noting, a very new sort of place – and an attempt to ward off associations with other less serious practices of looking at animals in

[65] Edward Turner Bennett, *Gardens and Menagerie of the Zoological Society Delineated* (London: T. Tegg, 1830).

[66] Samuel Bentley, *The Zoological Keepsake* (London: Marsh and Miller, 1830).

[67] Thomas Allen, *A Guide to the Zoological Gardens and Museum; With a Brief Account of the Rise and Progress of the Zoological Society* (London: Cowie and Strnge, 1829).

[68] *A List of the Animals in the Garden of the Zoological Society, with Notices Respecting them and a Plan of the Garden, with References to the Buildings, Enclosures and Places in which the Animals Are Kept* (London: printed by R. Taylor, 1829).

the early nineteenth century, namely the commercial menageries such as the Exeter Change collection and Wombwell's traveling animal show. The zoological gardens, though certainly designed to entertain, was at least in its image of itself, a serious institution. Even the least ostensibly serious of the publications, *A Zoological Keepsake* targeted at least in part at children and oriented "exclusively to amuse" takes the form of a history and explanation of the Gardens through the narrative of Mrs. Ashton, her three children and their instructive uncle on a morning walk through the Gardens. On the other hand the more "rigorous" of the publications, *The Gardens…Delineated,* and the Guide to the Gardens both address themselves to the popularity and amusement of the Gardens, articulating that reception as a guiding consideration in the drafting of the texts in each of their prefaces. As such, these publications, designed to harness and focus the purposes and understanding of the zoo, reveal the persistence of a multiplicity of values, interests and ways of looking at the gardens. More importantly, they allow us to see precisely how the Society sought to position the Gardens within the culture of collection and display in early nineteenth century London.

Sofia Åkerberg dedicates a chapter "Dispelling the Idle Fables and Tales: Guidebooks and the Public at the Zoological Gardens, 1828-1907" in her book, *Knowledge and Pleasure in Regent's Park*. True to the title, she looks at the guidebooks not only for the detailed understanding of the Gardens they provide but also to consider the ways in which the Gardens were situated in nineteenth century British culture, by the Society itself and others. She does however seem to draw an all too faithful distinction between guides put out by the Society and the "unofficial" guides, which appeared in various forms, sometimes not even baring the word "guide" at all. For the most part this

position is well taken; especially in the earlier years, the ranking members of the Society and the authors of these texts seem quite genuinely concerned with providing the public with "a practical acquaintance with living animals in order to eradicate vulgar prejudices which have in too many instances usurped the place of truth, and to substitute just ideas drawn from actual observation, instead of false deductions from distorted facts, or wild speculations built upon erroneous foundations."[69] Only a cursory examination of the unofficial guides and the popular zoology of the time is necessary to confirm Bennett's point, however, by his own admission the "unintelligible" language of science is inappropriate for instructing the public. While his intention might be to "diffuse as widely as possible" an interest in natural history, by allowing himself such a discursive shift, he creates an opening for something other than strict zoological truth, namely the cultural imaginary that he criticizes in popular zoology. While Åkerberg has a point, relying too heavily on the distinction between official and unofficial guides forecloses too quickly on the potential in reading the official guides for the ways in which they construe the Gardens according not only to truth but to the values of the society, zoology's role in colonialist discourse, the goals of enlightening and civilizing the British Public.

Harriet Ritvo's discussion of what the zoo meant to its early public is particularly revealing in her analysis of some of the documents surrounding its earlier reception. Her analysis of its reception by the zoo going public demonstrates that the zoo was very much a place of spectacles of power, both of human over animal and empire over the world. Ritvo points out the way in which the gardens contrasted "intensely cultivated" horticultural displays, which "emphasized the artificiality of the setting," with the dangerous and exotic animals from the British territories. What is more, she points out

[69] Bennett, *Gardens Delineated, 1830*, vi. Quoted in Åkerberg, "Knowledge and Pleasure," 144.

that the prevailing form of zoo guidebooks was one in which the gardens were organized into a linear experience with a prescribed route through the zoo. She writes: "Thus in their physical design [but also in their narration of that design – W.N.] zoos reenacted and celebrated imposition of human structure on the threatening chaos of nature."[70] Further, that the guidebooks recapitulate and *shepherd* the public toward this imposition is also a celebration of the imposition of science and correct education on the threatening chaos of a growing and more self aware public. Thus any investigation of the guides ought to remember first and foremost that such texts attempt not only to give an account of their subject, but they also position the spectator. The construal of the zoo experience as "inveterately linear" and emblematic of British world domination extends not only to the earliest of zoo guides but to journalistic and literary description of the zoo as well.

According to the dates on the extant materials, the first official publication of the zoological society intended for patrons of the gardens, released in March of 1829, was the *Guide to the Gardens of the Zoological Society.*[71] The guide, described in its preface as "succinct" articulates its goal as a "faithful account of the animals contained in the Collection, as they were arranged at the time of publication."[72] The guide included a plan of the gardens with numbers, to which the descriptions of the animals referred, indicating the placement of the animal's habitat in the zoo. Aside from the map, which indicated pathways, the general layout of the exhibits, and even some of the landscaping of the gardens, the guide did not include any drawings of animals or their habitats. It seems that

[70] Ritvo, *Animal Estate,* 218.

[71] The *List of Animals* is dated in June of 1829, but listed as a second publication. I have been unable to find or determine the precise publication date of the first publication. Though it seems unlikely the List would precede the guide, their similarities suggest that they may have been released simultaneously, one offering a basic reference and the other a more sustained, entertaining and instructional description of the animal.

[72] Allen, *Guide to the Gardens, 1829*, 1.

in this way, this first guide is unique; all subsequent guides, to varying degrees, not only included but also featured drawings and engravings of the displayed animals. The only other exception to this is the annually published *List of Animals*, which also included a map but no images. This text however seems designed only to give the most basic information of each animal in the gardens and is more of a catalog than a guide. The following is a typical entry;

> THE EUROPEAN BROWN BEAR. (A Male.)
> Ursus Arctos, *Linn.* L'Ours, *Buff.* L'Ours brun d'Europe, *Cuv.* L'Ours brun, *Desm.*
> Native of the northern and mountainous parts of Europe and Asia. Feeds chiefly on vegetable diet. –Brought from Russia, and presented by the Marquess of Hertford.[73]

The multiple classification and naming systems employed in zoology and natural history at the time made it, if not necessary, at least proper to provide several depending on the author and expected audience. The Linnaean was of course the most common, though Cuvier and Buffon were regularly included as well, while Desmarest was less often appended. The fact that three of these classification systems were French and the other the namesake of the society they fought to get out from under confirms Desmond's suggestion that British Zoology emerged in larger part through setting itself over and against other institutions and traditions. Though reference (and reverence) to the donors would continue well into the late nineteenth century when referring to specimens, that so little was included in these descriptions and yet the donor's name concluded every entry in this list suggests something of the Society's carefulness to be demonstrably appreciative of its benefactors.

[73] *List of Animals*, 32.

The Guide to the Gardens on the other hand counted as its secondary goal "to make their subject in some degree popular by a brief reference to the habits and localities of some of the more interesting of these animals, as well as to afford some instruction by an occasional notice of their scientific qualities."[74] As such, in the earliest of interactions of the society with its public, we find the two-pronged approach that, while taking many different forms, would dominate the strategy of modern animal collections throughout its history; the zoo entertains and educates, but more than that it is entertaining because it instructs. Though these two modes of appeal would come to be deeply intertwined and cross-pollinating, at this early point it is perhaps best to understand this as an effort to appeal to the broadest range of tastes and interests in order to fully establish the gardens as an institution worthy of Londoners' sustained interest. Nevertheless, the combination of these two goals of entertainment and instruction, amusement and science, what Åkerberg and others have described as "rational recreation,"[75] is an early instance of what would come to make the zoo, at times later in the century, the most fashionable place to spend an afternoon in London. While the *List of Animals* does direct visitors through the exhibits in a specific order, pointing out landmarks to keep them following with the list, the guide accentuates particular points of interest; namely, "the Terrace (2) which, from its elevated situation, commands a view of nearly the whole of the Gardens"[76] In beginning the tour with an experience of the Gardens themselves, with a walk that doesn't even pass by any animals at this point, the guide embeds the educational, scientific descriptions within a leisurely stroll. Further the experience of the zoo is not

[74] Allen, *Guide to the Gardens*, *1829,* 1.

[75] See Åkerberg, "Knowledge and Pleasure," 107-110.

[76] Allen, *Guide to the Gardens*, 1829, 2.

only prescribed in the order of its unfolding but also narrated with instruction which conditions the very act of looking at the animals.

Whether it is by beginning the experience with a "commanding view" of the whole (a position which also offered one of the best views to be had in London of London) or by giving specific "zoological" information of the animals, the society from the outset sought to instruct visitors on how to see the animals. The distinctions however between entertainment, anecdote, educational and scientific description seem only to hold up in the listing of the scientific names of the animals. The description of *Ursus Arctos* offers the geographic range of the animals, a brief history of its interaction with Europeans ("It formerly inhabited Great Britain …Gordon was allowed by the King of Scotland to carry three Bears' heads on his banner for slaying one of these fierce beasts"), some notes on its diet (somehow, despite having one in captivity, zoologists believed that grizzly bears were primarily vegetarian) and a description of the wide variety of uses to which Kamchatkans have put the animal:

> The skin serves them for a bed; and the also provide from the same material their coverlets, bonnets, gloves, -collars for their dogs, and soles for their ice shoes. They cut grass with the shoulder blades, and protect their faces with a mask made from the intestines (which last the Cossacks are said to extend over their windows instead of glass) and flesh and fat are the chief dainties of the country.[77]

Zoology's intersection with Anthropology is ominously forecasted here; though only the bear is on display, the association of this animal with an "exotic" people (despite the fact

[77] Allen, *Guide to the Gardens, 1829*, 3. It is further worth noting that the citation above is itself footnoted in the guide as 'Hist Kamtschakta. Fr. III. 390.'

that the same entry also notes that the species thrives in every continent but Africa) is an early moment in the history of animal display that would come to include people exhibits later in the century. Though the description in part esteems the Kamchatkans for their resourcefulness – utility, a deeply Victorian value – the guide very quickly begins to participate fully in an orientalist attitude toward exotic, "less civilized" people. The description cites Thomas Pennant's *Artic Zoology;* "'The Kamtschatkans,' says Pennant, speaking of the *Brown Bear,* 'never read Pope, but observe his advice:- "Learn from the beasts the physic of the field."'" Coupled with the note that the Brown Bear has been eradicated from Great Britain (except now in its scientific window on to the natural world), the characterization of Kamchatkans as fascinating, resourceful, less advanced, but deeply natural in a way that Britain's greatest intellectual minds have privileged access to expresses a view of the world particularly conducive to taking it over in the name of civilization. Pope's privileged window on the natural world is echoed as the zoo's grants itself a physical though remote connection to the still-natural world of Kamchatka. The distance collapsed between these remote places by the Gardens and the attendant guide is thus physical, historical and intellectual all at once.

According to its preface, *The Gardens…Delineated* gives a detailed zoological description of every species in the Gardens. It is divided into two volumes, one for birds and one for quadrupeds and many of the entries include illustrations of the animals. Two characteristics of these images stand out: the vast majority of the pictured specimens are moving, engaged in some action or another and in most of the images at least one of the animals is facing the viewer. On the one hand the illustrations, specifically their depiction of action, seem as though they might hope to compensate for what are usually listless,

sleepy, captive animals. On the other hand, the images themselves seem to celebrate what a zoological garden makes possible for the first time, careful observation of animals in time. That the animals often face the viewer suggests something eerily romantic about the animals; their faces are not blunt, empty gazes but animated and expressive. Some of them appear even to smile, but most significantly the eyes of virtually every animal depicted in the quadruped volume are alive either with fear, contemplation or focused interest. The eyes of the animals are accentuated either by virtue of being enlarged by the artist, starkly outlined or carefully detailed in their drawing. One can only speculate as to why the animals are drawn this way but the effect is at least partially clear; the animals are actively looking, looking back at the viewer. It seems likely that an effect of this would be the expectation that going to the Gardens wouldn't be a passive mono-directional observation (like, say, a natural history museum) but an active exchange of glances.

Though the entry for Ursus Arctos in The Gardens Delineated reveals many of the pre-Darwinian misconceptions of the animal kingdom – here that "we are enabled to connect with the Cats by the interventions of a series of modifications forming an almost unbroken chain"[78] – it nevertheless stands out as the most deeply invested in the unembellished zoology of the day. While it discusses the various claims about classifications made by such zoologists and natural historians as Linnaeus, Buffon, the Cuvier brothers, as well as the discoveries of Raffles and Horsfield, the animal itself, or rather, the species, is the central object of description. The descriptions in this text thus are not so invested in the positioning of British as privileged in the world. Though

[78] Bennett, *Gardens Delineated*, 99. It is also worth noting that though this maybe have been a bit of an overstep in the closeness of continuity between bears and felines, it is also proto-Darwinian in imagining the continuity within the animal kingdom.

associating Raffles with Cuvier cannot be separated from the intellectual competition between French and British intelligentsia (and that competition cannot be fully separated from the competition of colonial expansion), it is set within and does not flagrantly abuse the emerging discipline of zoology. Rather, the entry is much more focused on physical and behavioral description; here the motivation to instruct, for lack of a better word, is more genuine.

A Zoological Keepsake is the most peculiar and many-headed of these four early accompanying texts, and to be clear, not a guide in even a liberal sense of the word. While it contains descriptions of animals as well as images of the animals in habitats and a bird's eye view that might double as a plan (Fig. 1.8), it also contains several sections of "original" poetry and is written the narrative form of a conversation between the Ashton Children, their mother and uncle, his friend the Admiral and others. While zoology and the Gardens remain a touchstone throughout the text, its topics range widely from the benefits of the morning air for the circulation of the blood, to a speech on the poor instruction of the lower classes, to lessons in etymology and the quality of the English language and a problematic servility to the French,[79] to patriotism to the divine plan evident in nature. The conversation thus meanders, not unlike the prescribed stroll through the gardens, across an expansive array of topics that position the Gardens as pertinent or at least suggestive of virtually anything to which a young Londoner might need to be exposed for proper cultivation. The manner in which the text seems to wander according to the whims of the conversation without ever becoming uninstructive or merely entertaining reflects a hope for what the gardens were or at least would become; a

[79] Indeed, Mr. Dartmouth and Mrs. Ashton suggest almost as warning to the children that none of the practices of spoken English are so "literally indefensible" "…than those in which we servilely and ignorantly take up something that is French!"

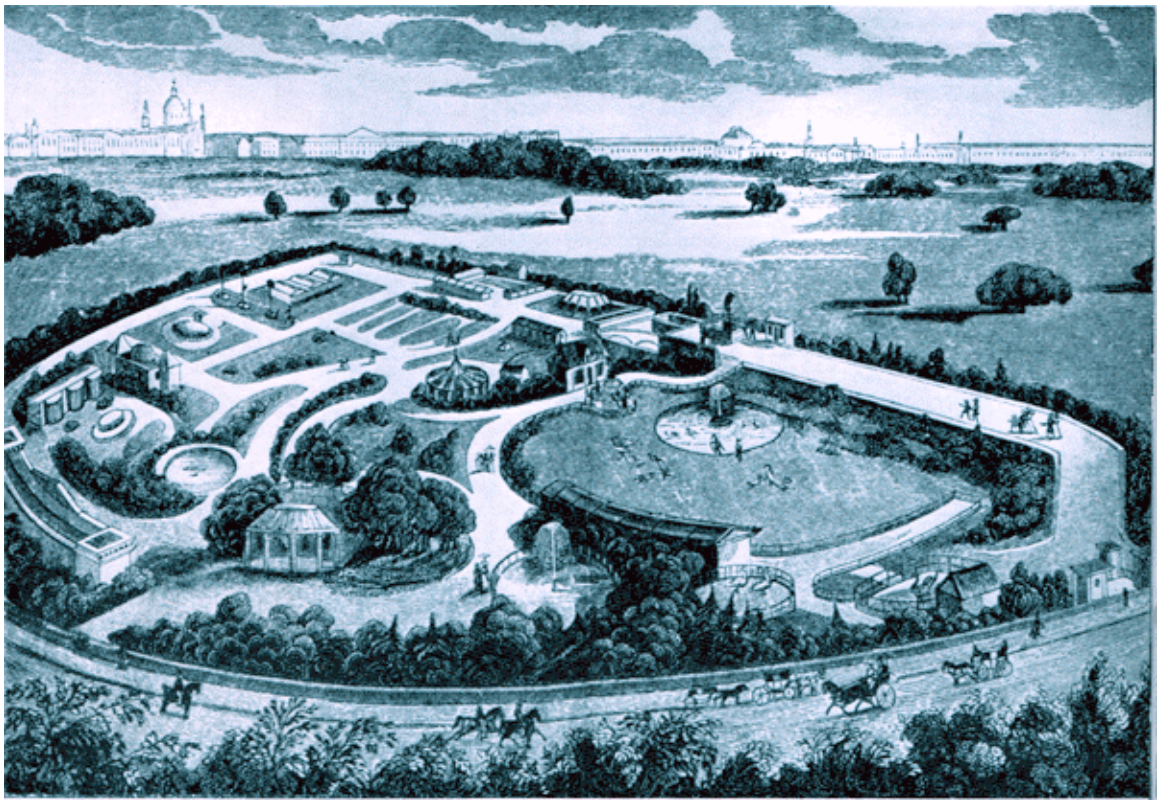

Fig. 1.8. An image from *A Zoological Keepsake,* offering its readers a bird's eye view.

place where one can follow one's fancy and acquire instruction, civility and enlightenment nonetheless. By associating caprice with intellectual, moral, cultural and spiritual elevation, the author positions the Gardens as a place that confirms British dominance in the world. In its preface the Keepsake conceptually intertwines the Gardens' purposes of scientific education and entertainment more deeply than any of the other three early publications:

> It is not however, the reasoning faculties alone that are concerned in the Science which this little work is intended gradually to elucidate for the benefit of the young; the heart has a very decided share in the satisfaction with which we contemplate the differing instincts, and the happy recklessness of beings second to ourselves…[80]

The addressed audience (though we ought to be suspicious of this, at least in regards of who actually read it) must be at least primarily responsible for the differences in form from the other texts. Targeting the British youth seems to have required more explanation of what the Gardens were for as well as a narrative (the walk and conversation) that solved the problem of the repetitiveness of the guides proper. The authorship of *A Zoological Keepsake* is not clear though it was published for, and so apparently contracted by the Zoological Society. Still, the form as well as references to an editor from the society suggests that though sanctioned by the society, the idea did not emanate from the council. The intended audience of the text however provides us with explicit formulations of how the Gardens were intended to cultivate, enlighten, and celebrate the civility of London's youth. While the form and content of the text suggests that the author(s) and the society may have had a broader audience in mind, the expressed

[80] Bentley, *A Zoological Keepsake*, iv.

goals of cultivating the youth into proper British subjects in any case reveals what a proper british subject should be and how one should conceive of and experience the Zoological Gardens. The first and most striking of these formulations occurs in the closing of the preface.

> It [the Gardens] is one, which by developing the link that binds Man to creatures of less intelligence and inferior prerogative, will raise him to a consciousness of dignified superiority, -- but must, as certainly, induced in him the most profound humility and veneration for it will exhibit him as next to the *Angels*, and yet only just elevated above the *Brute*; and under every examination, as occupying a station at an incalculable distance from that Being to whom a life of unequivocal purity can alone ensure his approximation.[81]

Here is the regulation of the human animal boundary at its barest in the history of zoological gardens. On the surface and in the society's prospectus, the gardens sought to exercise dominion over animals. Whether by organizing them for the purposes of deepening human knowledge or putting them to "some useful purpose," such as domestication for wealthy farmers, the articulation of what the gardens did, was always in terms of what it did to the animals for humans. Humans were ostensibly subject to the gardens only insofar as they were "amused" "educated" and better "civilized." That this text will continue on to distinguish in no uncertain terms the French from the British, the wealthy and educated from the poor and uncivilized confirms that in fact, a reversal is underway with this text. Man is welcomed into the gardens as superior, and yet, things are immediately reversed; he is "exhibited," just above the Brute and, under scrutiny

[81] Ibid., v.

from every direction, under "every examination," incalculably flawed. The animal on display here, that blank slate of significance seems to allow an understanding of the human as anything but divine. The displayed animal seems to open up being so much that its own position as open to interpretation based on its relative position within an arrangement of exhibits seems to consume man himself; there he is next to the animal, looking down on them, and then just above them, below the angel, and then right down there in the slop with them, infinitely far from God. Animals, Angels and God, conceptually slippery terms are rock solid here and Man himself becomes the as yet to be determined, subjected to this grand hierarchy of being. In this earliest of documents explaining how one ought to see (in) the Gardens, it becomes clear that the bars are only the most visible of the regulatory strategies at work; within the Gardens, education amusement and civilization are thus part and parcel of the means by which humans are positioned within hierarchies of being and power.

The *Keepsake* portrayed the gardens as a place where beliefs, values and understandings were to be blown wide open and recast, reordered according to a way of understanding the world that was reflected in the gardens and their purchase on the culture of London in those years. Targeted at children, or anyone in need of education and proper civil instruction, such as the poor or foreign, the *Keepsake* openly repositions those in need of enlightenment alongside the wild beasts of the world. In a single etymological turn, everything is animal:

> "Scholars will commonly tell you, George, that Ζώου signifies expressly an 'animal' or 'an animal being;' but this is only the ignorance of scholars. Sometimes, too, they very seriously ill use their misinterpretation of the

> word. Ζώου signifies any being whatever; and we must give both substantive and adjective, before we can make out, either *animal being*, or even *living being*, such as we usually understand it in this phrase. It is true, that Ζώη signifies 'life;' but 'life' is *existence* and everything *exists*."[82]

In this moment of instruction, George is no longer what he thought he was and once again dumb matter, like an animal that cannot speak for himself, but more important he cannot speak of himself. Animal, the proper object of the gardens, has become any living being, which has become life itself, which has become being itself and finally everything, is arguably the proper object of the Gardens. Though this passage seems to come from suggest an everything goes approach to the organization of life, it is important to note that passage is a lesson to George. And so rather than anything goes, we see something that looks much more like a double bind, wherein once again, it is the human caught in the middle and not the caged animal.

Henry and Emma's Visit to the Zoological Gardens in the Regent's Park (with an Account of What They Saw There; Interspersed with a Description of the Peculiar Manners and Habits of the Various Animals Contained Therein), written by John Bishop in 1832 is another attempt to guide London's children through the Gardens. Less explicitly concerned with proper moral instruction of the youth, the guide (it refers to itself as such in its preface) seems rather to be an attempt at a text that school children might actually enjoy. Though the guide nevertheless seeks to cultivate a fascination with not only the Gardens but with natural history more generally, the style of its narrative accentuates the moments of discovery a curious child might hope to find at the Gardens.

[82] Bentley, *A Zoological Keepsake*, 14.

> Some many pleasing scenes now appeared before the sight of the young party, that they hardly knew which way to direct their attention; till on looking toward an enclosure, within which was a paved pit with a high pole upright in the middle of it, they saw several brown and black bears: and were for a moment alarmed at seeing two of them climb up the pole as readily as a cat would run up a tree.[83]

The earliest publication that might serve as a "guide" to the gardens happens to have not been published by the Society; rather, authorship is attributed to a member of the University of Dublin. *A Stroll in the Gardens* begins by walking us through Regent's park, suggesting that "the most pleasing route to the Gardens, is through the Park Gate East" allowing one to pass by the Diorama and the Colosseum, the park's two other structures designed to offer its visitors edifying spectacles as well as the several Terraces: Cambridge, Chester, and Cumberland. By mapping the route in this way, the guide positions the Gardens as a seamless part of the park – the walk begins well outside of the Garden and stops by other things in the park – and yet an elevated place within it. The *Stroll,* like the other guides, leads the spectator along the Terrace Walk, effectively extending Regent's Park into the Gardens and leads the spectator to the Bear Pit. The style images included in the guide are decidedly different from that of the *Gardens Delineated.* While the animals are included in each of the images (save for the first drawing of just the Garden's gates), they are in every case framed by their habitat or enclosure. In fact, so much attention seems to have been given to the enclosures that the animals are reduced almost to outlines. While this is probably at least in part due to the

[83] James Bishop, *Henry and Emma's Visit to the Zoological Gardens*, illustrated by George Pickering (London: Dean and Mundy, 1832), 8

artist's ability (the drawings just aren't very good, and buildings are easier to draw than animals) it nevertheless conveys the sense that the experience of the Gardens is as much or more of the human designs and arrangements than of the animals.

The style of the description of the Bear Pit is decidedly different from the three other guides that treat it as an entry. Though the bears are described in terms of where they are found and what they eat, the passage dedicated to them displays little of the nature of zoological descriptions of the time, namely their place within at least one of the classification systems and a history of zoological knowledge, as well as a more thorough analysis of the physical characteristics of the animal. After a brief discussion of location and diet, the passage goes on to state:

> The Bear is an uncouth and solitary animal… retiring in winter into holes and caves where they remain in a state of torpor till returning spring clothes the earth with verdure…. They are bold and powerful. When attacked, they rise on their hind legs and hug their victims with such force as to stifle them…. The have a shuffling awkward gait, but are very dexterous in climbing. Their fur is very valuable, a fine Bear skin being considered as a most important article in the wardrobes of the higher and wealthier classes of Petersburgh and Moscow.[84]

In addition to the ways in which this passage focuses more on the personality of the animal, we ought to note that the description seems to draw heavily from just what the author saw at the Gardens and is, at that, somewhat sensationalized. First, the description of the gait and climbing ability seems to be as much a product of the exhibit itself as any

[84] *A Stroll in the Gardens of the London Zoological Society: Describing the Various Animals in That Interesting Collection. Embellished with Twenty-seven Plates* (London: E. Wallis, 1828), 6.

natural description. Second, As with all of the dangerous animals listed in the *Stroll,* the author describes what it would be like to be attacked by this sort of animal. Of the Lion, he notes "he will carry off a man in his mouth at a gallop, as easily as a dog does a rabbit." Coupled with the hugging bear, this passage suggests that our guide is not only sensationalizing the animals, but just plain making stuff up, or at the very least, working with what is, at best, a questionable account. We ought also to note the mention of the potential profit that might be yielded from the animal, a value that would have still been in line with the Society's early goal of acclimatization and domestication.

Another very early guide, *A Picturesque Guide through the Regent's Park* situates the Gardens as one of the many enlightening and pleasurable experiences of the Regent's Park. While the main body of this text guides a park goer to the various features of the park, including the many terraces, villas and bridges, an appendix includes detailed descriptions of the Diorama, the Colosseum and the Zoological Gardens. The grouping of these three features of Regent's Park into an appendix with extended descriptions of each situates the Gardens among architecture designed for spectacular display of visual entertainment. More than just the architecture that housed such display, we ought to more properly conceive of the Diorama and the Colosseum as instruments or apparatuses of visual observation. The extended description of the Gardens is "interspersed with characteristic anecdotes." Similar to *A Zoological Keepsake* in its attempt to approach the topic from a variety of angles, the Picturesque Guide is however one of the more thorough and comprehensive pieces of early writing about the Gardens and the Society. It begins with what is obviously a carefully research history of the Gardens. It offers, like *A Zoological Keepsake*, a bird's eye view, and gives several of the animals their own

descriptive entry. Many of the entries conclude with an account of the visitor's experience of the animal in the park.

> In our visits, we were much interested with their tricks, especially with the vexation betrayed by one of them at the top of the pole, when he saw his companion below seize a cake, which the former had previously eyed with great gout. …Then the snorting and snarling of the old bear below, when the young one attempted to obtain a cake thrown to him; and above all the small share which our black friend *Toby* enjoyed, probably from his docility over-much, -like good natured men who are master by those of rougher natures. We could have staid here a whole hour, watching their antics, and likening them to the little trickery of bipeds.[85]

Though this guide doesn't seem to aim at the proper zoological instruction that Bennett discusses in the preface to the *Gardens Delineated,* neither does it "usurp the place of truth" or rely on wild speculation. Though it shares many of the characteristics of *A Zoological Keepsake*, it is not nearly so speculative or laden with cultural prejudices. It facts are well researched, it gives a contextualizing history that honors the French rather than competing with them, and though it may narrativize the zoo visit, thus positioning the visitor in advance, it does so rather simply and matter-of-factly.

Published in 1836 in the Quarterly Review "The Zoological Gardens –Regent's Park" offers a telling early public conception of the zoo. It is worth noting that this "guide" comes at the early peak of the Garden's popularity. Following 1836, the Society would witness a steady decline in attendance, precipitating near financial crisis, until a significant reorganization of goals in 1847. The triumphant tone thus owes as much to the

[85] *A Picturesque Guide through the Regent's Park* (London: John Limbird, 1829), 44-45.

success of the Society as spread of the Empire. Organized as a narrative of a walk through the Gardens, the author repeatedly invites the viewer to look upon various animals and horticultural displays, beginning with a view of London - "as we walk along the terrace commanding one of the finest Suburban views to be anywhere seen, let us pause for a moment…." As the article continues, the narrative is heavily seasoned with the instruction to look upon this or that animal. The linearity of the narrative constructs the linearity of the zoo experience. The essential experience of the zoo, the unfolding of animal life, is recapitulated in the construal of the zoo experience through narrativizing techniques, which highlight the unfolding of a human, but more specifically a British, imperial experience. Furthermore, through the prescription of the experience, the unfolding of time itself is homogenized. Clearly referencing the same rhetorical move of the prospectus of the society, the description contrasts the ancient animal displays and spectacles of the Roman Empire with the enlightened British Gardens.

> …his memory may carry him back to another great nation – masters of the world – who exhibited hundreds of the rarest animals…but for what a different purpose! …in applying the arts to the comforts and innocent enjoyments of life, in advancing science, and in spreading information among the people …what a contrast is there between the peaceful repose of these Gardens and the [spectacles of ancient Rome].[86]

While the implicit emphasis on the scientific value is present here and throughout the article, further reading nevertheless confirms Ritvo's thesis about the symbolic display of control.

[86] "The Zoological Gardens –Regent's Park" *The Quarterly Review,* 56.112 (1836): 310.

> But we must bend our steps to the eagle-house, and we confess we never pass it by without a pang. Eagles, laemmergyers, condors, creatures of the element, born to soar over the Alps and Andes, in helpless, hopeless imprisonment. Observe the upward glance of that golden eagle – aye, look upon the glorious orb – it shines wooingly: how impossible it is to annihilate hope! – he spreads his ample wings, springs towards the fountain of light, strikes the netting, and flaps heavily down:– 'Lasciate ogni speranza, voi ch'entrate'[87]

While this early stop on the narrative tour sets out at first to entreat the reader to pathetic admiration of the great captive bird, it nevertheless comes full circle to invite our celebration of the zoo architecture to dominate the animal. What's more, this shift in pathetic appeal is executed in stride with fixing the bird to other, foreign, notably harsh environments. In the same moment that the zoo – and by extension, the British – dominates the animal, it conquers some of the world's most formidable mountain ranges all in the comfort of metropolitan London.

[87] Ibid., 315-316.

Opening to the Public

The early 1840s were not merely financially difficult for the Society, in fact it appears they were on the brink of bankruptcy. Since 1836 which had been the Society's most popular year with over a quarter of a million visitors, attendance had been on a steady decline. By all accounts the reasons for this waning of the Gardens' popularity are not fully clear. On the one hand, the Society was stretched too thin by maintaining not only the menagerie but also the farm, the museum and the library as well. According to Åkerberg, the Committee of Auditor's seems to be responsible for recommending that the Society consolidate its resources and focus primarily on the menagerie, noting that:

> if active and energetic measures are taken for affording greater facilities to the Public of participating in that enjoyment, and for keeping constantly before the eyes of the Public, not only in London but throughout the Kindom, the collection of Quadrupeds, Birds and Reptiles […] the Society will rapidly recover its ground and be again restored to its former gratifying and prosperous position…[88]

In 1847 Mitchell, the new secretary makes the decision to open the Gardens to the public without exclusivity. What is more, in the following year, he institutes a reduced admission day, once a week, such that the Gardens were, at that point, accessible to virtually anyone who could get themselves to the gate. The effect on attendance is dramatic: from 1847 to 1851 attendance would increase nearly 8 fold, with 1.4 million attendees in those 4 years. No doubt fueled by the Great Exhibition at the Crystal Palace just over in Hyde Park, 1851 would be the most popular year the Gardens had ever seen

[88] "Report of the Council for 1847" (London, Library of the Zoological Society of London, 1847), 25-26, quoted in Åkerberg, "Knowledge and Pleasure," 116.

and attendance rates would not exceed that year again until 1862. 1851 is thus somewhat anomalous, however; excluding that year, attendance rates do jump from around 100,000 during the early through mid 40s to consistently above 300,000 from 1850 on.

By all accounts opening to the public in 1847 and establishing reduced price admission days on Mondays for six pence in 1848 saved the Zoological Gardens from a near certain doom. Coupled with the strategy of "starring" certain animals that would appeal to the public, such a move looks like a reorientation to a broader selection of Londoners. Though it most certainly was, (indeed, looking at the full span of the history of the zoo, this decision effectively handed the gardens over to an undefined public in a way that would prove irreversible), it seems that the decision did not reflect a breaking down of class barriers, of which the Society hoped to be a leader. It seems rather to have been more strictly a financial decision, one that was at least in part lamented by members of the Society. The preservation of days on which only the members of Society and their guests would be admitted is in a sense a maintenance of the class barriers that such a move might be perceived as breaking down. Before 1847, ads for the sale of fellow-endorsed or forged guest passes could be found in the London Times and were on sale in many of the nearby public houses, such that aside from the somewhat prohibitive cost, virtually anyone could visit the Gardens at any time.[89] Regardless of the reason, the Gardens of the Zoological Society became a public institution through and through in the late 1840s. Even if it wasn't necessarily for the benefit of that public, it was a financial decision that secured the inevitable turning over of the gardens to the public all the more. As revenues skyrocketed in the subsequent years, the Society quickly found themselves dependent on that public's interest.

[89] *The London Times,* July 6, 1838, 6 col f.

Animal Images

There are two ways to look at the Zoological Gardens in relation to image making. The first and most obvious is to examine the various surviving images made of the Gardens and the animals that lived there. As shown above in the projected plan of 1827, images were being made of the zoo since before it existed. Primarily these images were to be found in the Guides published by the Society and others as well as journalistic publications which were increasingly including illustrations. Aside from that were a number of artists either freelance or hired by the Society who made drawings, paintings, water colors and lithographs of the Gardens. The most notable of these artists was George Scharf, who began making illustrations on his own and was later contracted by the Society to produce a set of views of the Gardens. In contrast to Scharf's drawings which captured a decidedly public and fashionable experience of the Garden's, several zoological artists regarded the menagerie as an invaluable resource for producing zoological illustrations. These included William Swainson, whose attention to detail in the depiction of birds and snails is proto-Audubon in quality, and David William Mitchell, the zoological sketch artist turned secretary of the Gardens, credited with saving the Society through his cultivation of the zoo's and its animals' public image. Beyond the simple fact of images made of the Gardens because of its popularity and place within London culture during this period, the zoo operates as an image making instrument itself. Such a notion comes into sharper relief when the gardens are set in the context of the two other spectacles built in Regent's park in the 1820. The Colosseum and the Diorama were both structures designed to create specific visual experiences. However, a close analysis of the earliest photographs of animals in the London zoo reveals a certain parity between

the camera and the zoo, a parity that will become stronger and stronger as the century progresses.

According to Peter Jackson, in his book, *Georges Scharf's London,* Scharf "had been doing scientific drawings for the Zoological Society" for years by 1836, though his text doesn't reproduce any of those drawings. Nevertheless, his lithographs convey a familiarity with the early Gardens (Fig. 1.9), a sense of its highlights and main attractions. Though never given a full position as official artist of the Society, his artistic works were much appreciated by the Society. A collection of his works, such as the one picture below, were presented to the Society in 1835 and included in the first volume of the *Transactions of the Society* that same year. A review of the pictures appeared in the *Morning Advertiser*:

> It is impossible for anyone to look at these views for a moment, without recognizing in them the hand of the master. The are not only faithful copies from nature, of the subjects they represent, but they are beautiful specimens of art, executed with skill, and displaying a purity of taste but rarely to be met with.[90]

Despite its conceptual contradictions, the quote captures what appear to be the aesthetic principles of the image: to be real and beautiful. Such a dual purpose seems all the more fitting for an institution which as this point (1835) is already beginning to struggle with its own cross purposes – on the one hand science and utility and on the other science and entertainment. It is the latter of these however that Scharf (or his review) captures best since the tensions between science and entertainment at least overlaps if not fully maps

[90] *Morning Advertiser*, December 23, 1835, quoted in Jackson, 106

Fig. 1.9. A Lithograph of the Gardens by George Sharf

onto the tensions between reality and beauty. Simply enough, "the hand of the master" is precisely what one should not see in "faithful copies from nature."

A number of other facts about the early zoo are important to note in placing the Gardens within a regime of visual and, more specifically, photographic representation emerging in the early nineteenth century. With an exposure time of eight hours, Niepce produced what is often referred to as the first successful photograph in 1827, the year in which the Gardens were constructed. In collaboration with Thomas Wedgewood, Humphrey Davy, co-founder of the Zoological Society, invented what is often called the photogram. Their invention might have gotten them credit among the inventors of photography had they been able to find a way to fix the images they produced.

Though the Colosseum featured a number of attractions, many of which used painted backdrops and mirrors to radically transform a visitors sense of space, the clear highlight of a visit was the Panorama of the view from the top of St Paul's (Fig. 1.10). In preparation for his project within the dome of the Colosseum, Thomas Hornor spent months atop a scaffolding system he had had built well above the cupola and steeple of St. Paul's cathedral, considered then to offer the best view of London of any of the City's buildings. In his book, *The Shows of London,* Richard Altick describes Hornor's labor:

> Assisted by powerful telescopes and some sort of apparatus he had invented "by which the most distant and intricate scenery may be delineated with mathematical accuracy," Hornor slowly sketched his way around the complete circle. …So great was his passion for accuracy that after he had sketched a certain tiny segment of the view from aloft, he

> went foot by foot to every street, every building, every open space to verify and amplify his drawings.[91]

His methods though reveal – as much as a recreation of the experience of being atop St. Paul's cathedral – a fascination with recreating in reality what could only be accomplished through visual apparatuses. The telescope, his invention and his method of going to each actual place he hoped to depict in the panorama, as well as his practice of going up very early in the morning in order to get good light and avoid the smog that would cover London soon after the city awoke and lit their stoves all betray a principle of visual representation that is not only not fully realistic, but one that features a view in superior distinction to the actual. This seems to be primarily accomplished through providing a telescopic magnifying effect. This principle is again displayed in Hornor's attempt to contend with the problems of "the unrealistic nearness of the horizon at eye-level and the concomitant dimunition of foreground." Altick writes;

> At eye level from the top of St. Paul's, the viewer saw only the distant horizon; the foreground – the area of the city nearest the cathedral – was much lower and, in reality, less distinct than suited the panoramist, bent on reproducing ever detail of architecture. Hornor solved this problem by deliberately exaggerating the foreground, bringing it, in effect, closer to the spectator than the original actually was. [92]

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[91] Richard Altick, *The Shows of London* (Cambridge: The Belknap Press of Harvard University Press, 1978), 141-142.

[92] Altick, *The Shows of London,* 142. It is worth noting that Hornor in effect accomplishes the panoramist's corollary to the cinematic editor's "cheat," a method of continuity editing to change the sense of space in a scene by moving things closer together with out disrupting the realistic effect.

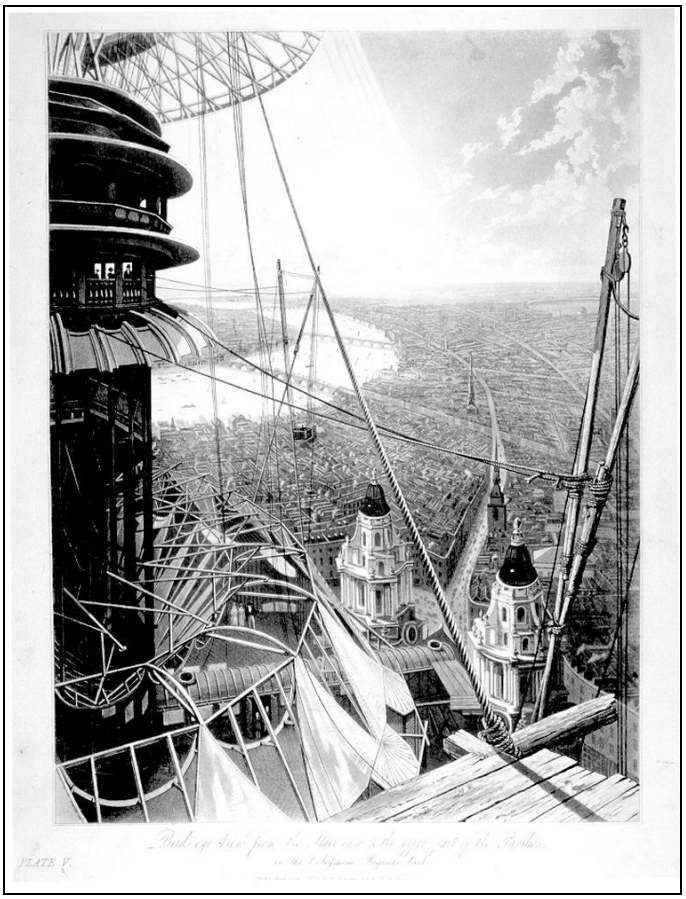

Fig. 1.10. Thomas Hornor's Panorama of London, the main attraction of the Colosseum in Regent's Park.

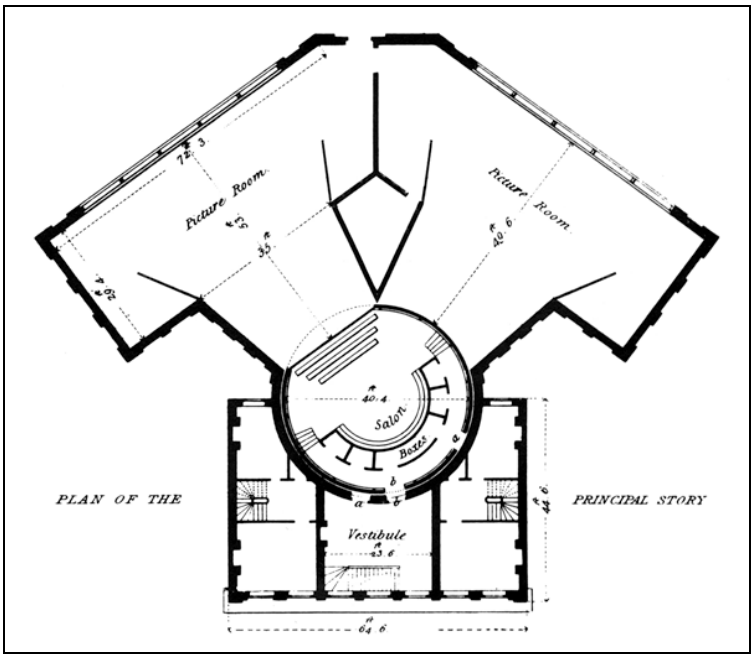

Fig. 1.11. Floor Plan of the Diorama in Regent's Park.

That Hornor solves the problem he created in bringing the world too close by bringing the close world even closer confirms a principle of representation that is telescopic. He seems to want to achieve for the entirety of visible space what the telescope accomplishes for a very small selection of the world – distance is collapsed, everything is brought close much like the zoo. Implicit in this design is not only a fascination with being able to see the world better, to see the world further away, more clearly; there is also a fascination with visual apparatuses themselves, of which the Colosseum is a sort. By providing a view of London not available to the naked eye, the Colosseum becomes an instrument of vision. The experience of it as such is embellished not only by the fact it brought the distant world closer and in sharper relief, but by virtue of the fact that the patron could enter this structure and move around with in it in order to deepen the aesthetic experience and to aestheticize the observational experience. Specators could move around the observation area to focus on whatever part of London one was interested in, not unlike the various raised viewing areas in the zoo. The staircase up the center of the observation structure in the center of the dome was designed such that one's perspective on the city below changed more rapidly than the actual height climbed, thus preserving the sense of height without all the climbing. And, perhaps more importantly, if one didn't want to climb at all, the observation tower was equipped with London's first elevator or "ascending room."

The notion of a building operating as an instrument of observation is more clearly understood in the example of the Diorama next door to the Colosseum (Fig 1.11). As depicted in the image on the left, spectators sat in the salon at the center of the building. The salon rotated to reveal different scenes displayed on the back wall of each of the

picture rooms; each subsequent scene was prepared for viewing while the salon was oriented toward the other. Invented by Louis Daguerre, the Diorama stands as a revealing midpoint in the career of the man who would transition from theatrical set design to one of the innovators in the emergence of photography. Already in 1823, the shutter mechanism of a camera, the concept of exposure and projection are all forecasted here. The spectators themselves are treated as crucial ingredients in the formation of the images displayed; in this case as light itself. The image above shows two doorways that align only at specific positions in the rotation of the salon and for some reason that doesn't appear to be one of necessity, each position of the salon corresponds to the use of a different exit point into the vestibule. In any case, the spectator, here much less free to aestheticize the experience with his or her own movements in and around the spectacle, is nevertheless, *incorporated* into the architecture of observation.

With the hiring of Count de Montizon in 1852, photography had an official role at the zoo almost before it was technologically feasible. What kept animals from taking part in the first decade of photography was the problem of exposure times. In 1839, a plate would have to be exposed to the light reflected off a stationary object for several minutes, which required patience and a clear understanding that movement of the object was unacceptable. This fact immediately relegated any number of things from the category of what could be properly photographed – significantly, only the most inactive animals were worthy of having a camera pointed at them. Because of the innovation of wet collodion plates in 1851 by Frederick Archer, exposure times were reduced to only a few seconds.

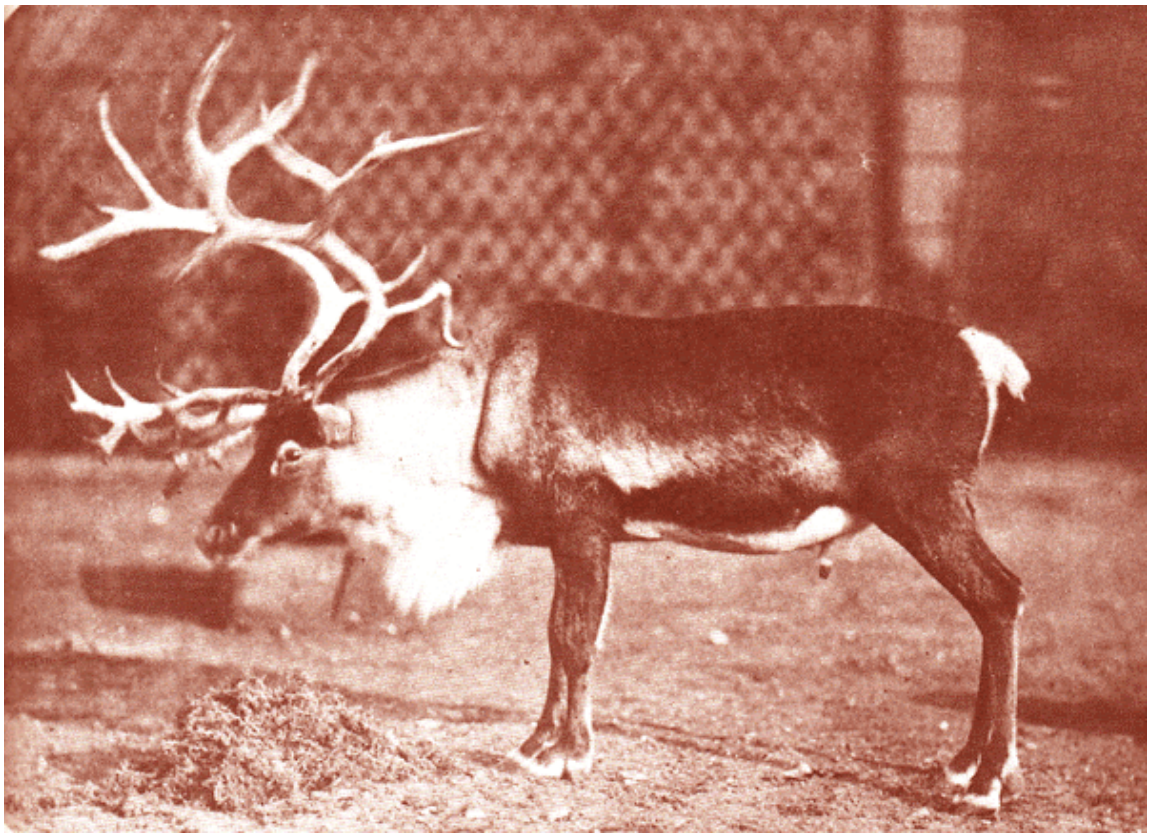

Fig. 1.12. Reindeer photographed by Montizon in 1852.

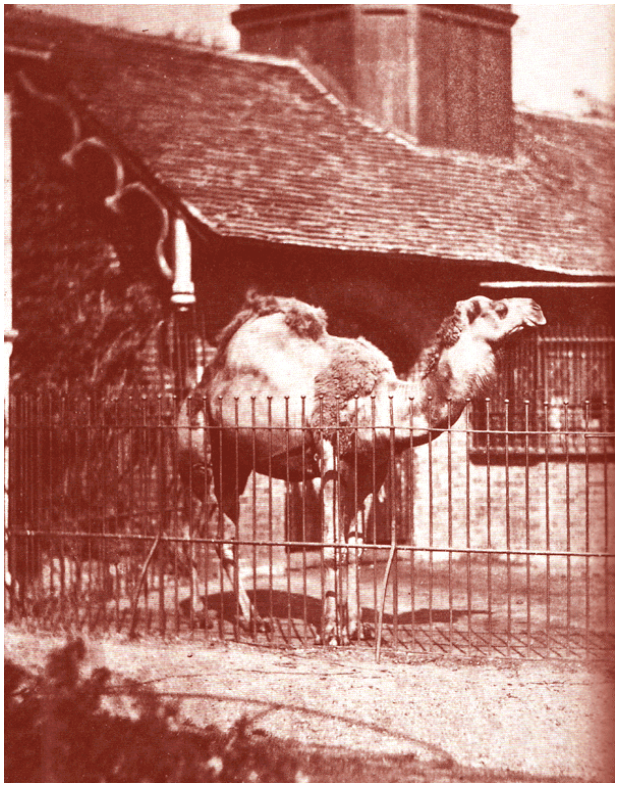

Fig. 1.13. Arabian Camel photographed by Montizon in 1852.

Though still limited in that the subject had to be still, the emergence of wet collodion process of photography is literally the emergence of animal photography.[93] By hiring Montizon in 1852, London Zoo became a forerunner in animal photography; it is there that many species of animal are photographed for the first time. However, the limitation is evident in what is not shown. Though there are photographs of giraffes, Obaysch (see Fig. 5), a reindeer (Fig. 1.12), a arabian camels (Fig. 1.13), the thylacine, an eland, a lynx, a tiger (Fig. 1), and a cheetah, there are no monkeys. None of the more frenetic animals are featured in Montizon's early work at the Gardens. This is in no doubt because exposure times still required some degree of sitting still. On the one hand Montizon must have strategically chosen animals that were more likely to spend good amounts of time just sitting there, lying in wait like the field naturalist; on the other hand, he had to have been lucky.

What we end up with is a fairly uncanny collection of images in which the animal is either asleep or, much more interestingly, looking right back at the camera as if it is the center of its attention. With carnivores, this is an image of a cat staring face front in the direction of the camera (see first page of this chapter, find picture of lynx), with the herbivores, we are presented with full side views, with one open eye oriented directly at the camera (see reindeer below). In both cases the photographic apparatus is always already involved in the image it provided. These are not simply pictures of animals but of animals looking at cameras. In all likelihood, it is a noise the apparatus itself has made that has caught the attention of the animal for the requisite few seconds. As such, we

[93] John Edwards does point out that a jaguar was photographed with his trainer in the United States in 1847, noting that this is likely the first instance of a photograph of a wild animal, though a trained animal is hardly the same thing as a wild animal. John Edwards, *London Zoo from Old Photographs 1852-1914,* (London (26 Rhondda Grove, E3 5AP): J. Edwards, 1996).

imagine on the part of the animal a dull wariness of the mechanism, at once braced by and disinterested in it. Their attention to the photographic apparatus, their enacting of that apparatus, extends to the structure of the zoo itself. These photographs reveal not only photographicity but the nature and structure of the zoo as implicated in and enabling the apparatus before the animal. How British is that "Arabian" Camel? The reindeer's bracing stillness that might hope to blend in with the background immediately cover itself over with the zoo itself, hoping to hide itself in the instrument of observation at which its wariness is directed. The tiger looks stuffed and the Hippo is smiling? These photographs are real; a live animal sat before them and reflected light toward the instrument – in fact, the hippo isn't smiling, nor the tiger stuffed or the camel the least bit British. The poor reindeer is just scared, but in photographs of the early zoo, everything *specific* to the animal – its peculiarities, quirky behavior, odd looks – is reduced to a quality of this combination of instruments of observation: the camera and the zoo. While John Edward's point about first photographs of wild animals in the London Zoo is an invaluable historical point, it is somewhat conceptually flawed. Nothing wild about the animal is captured in such a photograph; its wildness has been replaced by the apparatuses in front of and surrounding it. If there is any animal there at all, its wariness is justified by the erasure of animals by the very instruments employed in hopes of seeing them.

Reordering, Exploring, and Contact with the New Animal World

The emergence of zoology as a science, in contrast to the subsequent proliferation of zoos across the west, is relatively problem-based and goal-oriented. As mentioned in the last chapter, zoology responded to a *scopic* problem: the natural history cabinet, with the preserved, dead animal, was too narrow, and the animal in an unbound nature, too wide. It responded with an instrument for looking. Though debates abounded in the early study of zoology as it came into formation in the early nineteenth century (and we would be mistaken to characterize zoology as monolithic and rigidly defined), the degree to which zoologists shared similar concerns and shared certain goals suggests that there is something to be gained from thinking of zoology as a purposeful instrument, as an apparatus that does a certain work, the work of understanding by examining the animal world. The conversation that surrounded zoology was organized, coherent, and so to a measurable extent, it acted with a certain unity of practice in order to understand the animal world – all across the world. With the innovation of zoological parks, that world was, in a sense, brought close but in another important sense, that device now turned itself, if not back on, at least in the direction of the west. It took then, only a slight adjustment, a shift in angles, for that looking device to effect an inward turn. At the moment when zoological parks had demonstrated that they had the capacity to look at virtually any animal on the surface of the planet and could show those animals to anyone in the west who cared to see them, the zoological apparatus shifted its scope and became

anthropological. As such, as soon as the cultural machinery of zoology instantiated an actual instrument, the zoological park, the unity of its purpose dissolved. A cacophony of voices began to speak in and through the zoo.

If the emergence of zoological display in the early nineteenth century can be characterized by the displacing of the competition between science and aristocracy with the competition between education and entertainment – a displacement that maps well onto the emergence of the zoo as a thoroughly public institution rather than an elite aristocratic one – then the latter half of the century is marked by an aestheticization of that competition. This aestheticization takes the form of mutual appropriation of competing values to produce something, indeed many things, that don't coalesce into a unity of vision; scientific values in zoological design nevertheless produce entertaining displays in order to promote, and in many cases, fund loftier ideals of pursuing rational truth, and in return entertainment values legitimate themselves by framing thoroughly entertaining displays with notions of enlightenment and edification. This shift in competitions is however consistent in the counter-positioning of austerity, discipline and order on the one hand and fancy, play and taste on the other. This mixture of values is paralleled, perhaps mirrored, in another distinct characteristic of the later nineteenth century zoos. The characteristics of the later nineteenth century zoos reveal a peculiar multidirectional movement: despite the establishment of the zoo as an institution that reiterates, if not extends, the separation between humans and animals, in the later nineteenth century we witness an aestheticization of that boundary as quite permeable, that is, permeability as an aestheticization of the boundary effect.

Two movements emerge:

1. Animals are brought back into a human order that has organized itself in, and in part because of, their very absence. Though the reincorporation of animals into human order is a prominent characteristic of even the earliest days of animal display in Paris and London, the later nineteenth century witnesses a subjecting of animals to human strategies of arrangement, representation and display that far and away exceeds simply bringing animals back into contact with humans. Zoo animals are trained to behave in certain ways – not simply differently than their regular behavior but as humans. Habitats witness ornate construction designs that commingle animality, exotic, other worlds and the "order" of western society. The inclusion of animals in spectacles of collection and display operated aesthetically as means of giving life to the artifice of human construction, representation. Indeed the reinclusion of the animal promised to reintroduce life itself – threatened by mechanization, industrialization, the city, secularization, the Taylorist rend(er)ing of the body – back into human creation.

2. Humans travel to, are placed in and explore the spaces – burrows, habitats, both conceptual and real – that this human ordering and categorizing of the world has marked out as animal. The question at the outset and that will stay with us throughout is whether they are escape routes or entrenchments. Is there any contact with the non-human or is this simply a fetishizing of the human dominion over animals? And in either case, to what extent do such practices destabilize the spatio-temporal organizations and implicit claims about humanity and animality that such displays hope to enact? Though the first movement described above takes on a number of forms and could not be fully separated out from the movement we are concerned with here, this other movement is complicated by its nature of having multiple reasons which at least in some cases appear to be at cross

purposes. Because of its obvious investments in the display of life, in colonialism and nationalism, in issues of representation itself, as the zoo becomes more and more popular, there is no controlling or determining in advance how people will engage with it. This other movement, of humans into an animal domain, is at times a line of escape and at times an insidious inscription, a regulation of the body through its anxiously crafted display. To become animal is a line of escape but also a demoralizing dehumanizing process. We might, at times, see both things happening at once. Nevertheless, also characteristic of the display of animal life is the inclusion of humans in places of collection and display already marked as specifically animal. The most obvious example of this is the people shows, (volkerschauen) innovated by Carl Hagenbeck, but it also includes the phenomena of interacting with, of touching and being touched by, animals in zoos. The later nineteenth century zoological experience increasingly included both spectators engaging with tamed zoo animals and animal keepers relationships with animals becoming part of what one saw and did at the zoo.

What emerges as a central concern in this period is the issue of authenticity. Such a notion is place at the fulcrum of debates about science and entertainment as legitimate values in zoological and anthropological display and is a particular concern of Hagenbeck in all of his pursuits in the culture of exhibition. Debates about all of the framing devices, whether they be scientific, entertainment, or some "ideal" mix of the two, all inevitably return to the question of how or whether that which they frame is more or less natural, authentic, or real. This chapter will take up this issue at length, on the one hand to interrogate claims of authenticity, and on the other to wonder whether the value of authenticity itself is suspect. Further, insofar as animals appear to have some privilege

claim to authenticity, this chapter will also consider the role, as well as the exclusion of animals from the production of history. As ever these questions are worked through by attention to the regimes of looking that proliferate in both displays of animals, and in this chapter, the exhibition of human life.

Hagenbeck

In the introduction to his book on Carl Hagenbeck, *Savages and Beasts*, Nigel Rothfels raises a question that bears on the historiography of not only zoos but of the keeping, presenting and representing of animals more broadly. He raises the question by pointing out that animal histories, the most common of which occur in Natural History Museums, often elide the histories of animals' lives, their capture and incorporation into the human production of history; so, to be clear, a concealment of the means of that first movement, of animals reincorporated back into a human order. Rothfels asks, "why is it that… we can never see where the bullet entered the beast?"[94] Such a question immediately raises several more: what is proper to animal histories considering that history is not proper to animals? To what extent are animals proper to history at all? Or rather, are there any animals at all in human history? If animal histories are human encounters with animals, why, in light of this particular example, is the animal's encounter with humans (the bullet) concealed? On the one hand, it is a matter of asking why a certain animality is excluded from history. On the other, there is a question of whether or not history itself is even capable of presenting the animal at all.

Animal histories have been, historically speaking, narratives that conceal their means of production. We might also wonder if the incorporation of animals into human history doesn't always entail a mortification of animals through the insertion of human machinery/language, bullets, scars etched into flesh. In a certain sense, we can point to zoos as offering of examples that counter such production of animal history. In the mid-nineteenth century animals in zoos became personalities. Incorporating the real lives of animals into human history brings something animal, and thereby unpredictable, messy,

[94] Rothfels, *Savages and Beasts*, 7.

or simply un-human into what is otherwise a uniquely human production. Narratives of the capture of animals, even injuries they sustained in their capture were not only included but featured alongside the animal itself. The story in the London times focusing on the migration along his body of the scar on Obayasch's side from where he was gaffed during his capture, suggested that zoos presented something quite different in the incorporation of animals into human history. The inclusion of animal life, rather than stuffed, or otherwise preserved animal death denotes a change. The rise in the cultural value of animal collections suggested that not only the lives of animals, but their very being in time was also important to History. Still, as Rothfels points out with example of the liger's (name for the animal that results from breeding a lion and a tiger, bred by Hagenbeck, Fig. 2.1) erasure from one zoo's history, zoos are nevertheless always covering their tracks. As such they confirm this notion of writing animal history all the more. In including actual animal histories – of their production (the mating of lion and tiger) and their capture and display – zoos find themselves in the somewhat unique position of having to erase not only those animal histories but also the history of their own production. We might ask why, along with Rothfels, the liger, stuffed and displayed after its death for many years, no longer fits within the image that zoos want to project of themselves. Is it just that things such as breeding the liger, bear pits and monkey poles are distasteful to us now or is there something more off-putting in that such displays of display allow us to see how we see animals? Removed from their cultural and historical contexts, the bear pit reveals something that characterizes how we once looked at animals, but also something that undergirds our fascination with looking at animals even still. If the bear pit reveals something of the uncanny in how we looked at animals then,

Fig. 2.1. Ligers, bred by Carl Hagenbeck.

Fig. 2.2. The early Hagenbeck Animal Trading Company, based in the Hagenbeck family's yard.

don't we have also to suspect that our exhibits now contain something uncanny that we ourselves cannot see? And even though there is no universal timeless animal, doesn't the animal's more or less consistent ambivalence toward us, its disregard of the representational strategies employed in its presentation, their utter lack of wonder at the architectures with which we confine them, also convey, if not what exactly, that there is something quite strange about the way we look at animals, even now, even in our ethical, contextualizing and animal centered displays?

The historical study of zoos is thus always a practice in estrangement. Zoos seem to have a fairly difficult time not only shaking their own histories but shaking history more generally. Many of the nineteenth century zoos in Europe remain an odd mix of attempts to update themselves and to position themselves as monuments to their own historical status. Very early in my research of the history of zoological gardens, I learned that people were kept in zoos throughout the nineteenth century and into the twentieth, for many nations, including the US, well after the abolition of slavery. If such attitudes persisted for so long, mustn't we assume that no matter the revolution that zoo keeping has undergone since the opening of Hagenbeck's Tierpark, that something of the attitudes on which the modern collection and display of animals is founded must still be in there somewhere? And if we are to give the ideologies one witnesses in the zoo their staying power and pervasiveness, ought we not also ask where else do these attitudes reside?

Rothfels' *Savages and Beasts: the Birth of the Modern Zoo* accomplishes two things. He traces the roots of the modern zoo – the zoo we now know, the zoo without bars and animals living in varying degrees of apparent but limited freedom – to the innovations and career of Carl Hagenbeck. In doing this he also manages to give the most

exhaustive and thoughtful history of Hagenbeck to date. His history covers in detail: the history of zoos prior to the "revolution" Hagenbeck would set in motion and the opposition of modern zoos to "princely menageries"; the beginnings of the Hagenbeck animal trade out of Carl Sr.'s fishmonger business and the display of a few inadvertently caught seals; the addition of animal hunting to animal trading in order to increase profits and the piggybacking on colonial trade routes; the emergence of people shows in response to declining animal trade (but of course something else as well), their enormous popularity and their relationship to anthropology of that period; Hagenbeck's reorganization of animal display, with its claims to authenticity, its roots in the people shows, and its place within the already conflicted discourse on what the value(s) of animal display should be.

Kafka's ape, Red Peter, from "A Report to an Academy" and Rilke's panther are touchstones throughout. Such works which problematize not only the experience of the zoo, but also the relation of humans to animals more broadly lead Rothfels' to a more sharply critical view of Hagenbeck than any of his biographers have thus far taken. He calls into question Hagenbeck's articulated values and goals of a love of animals, a will to conservation, a respect of culture and understanding in the people shows, and the respect for life the supposed gentle hunter employed in the capture of animals. He sets against these values an entrepreneurial mindset, an astute recognition and understanding of the will to be entertained mounting in the latter half of the nineteenth century and an attitude toward other cultures that is fully in line with the colonialist mindset of his day.

Ultimately though, Rothfels analysis is focused more on correcting a vision of Hagenbeck and setting him on a pivotal point in zoo history than undertaking an analysis

of the cultural moment to which Hagenbeck's innovations were a response and what cultural emergences they catalyzed. How are Hagenbeck's practices a response to the Darwinian revolution and the rise of science, industrialization and the radical exclusion of animals from the metropolis, and the growth of the culture of collection, display and public spectacle as what Europe is doing in the late nineteenth century with their ever-increasing leisure time? Rothfels critiques every one of Hagenbeck's claims to authenticity and even competing claims of authenticity but doesn't then turn to ask what the animal's role in claims to authenticity is or how the very presence of the animal in the nineteenth century both reinforces but can also undermine the notion of authenticity itself.

Though questioning each competing claim to authenticity might gesture in the direction of laying authenticity itself to waste, leaving it uninterrogated allows the sense that Hagenbeck might have actually captured and displayed animals properly to persist in Rothfels' text; indeed he says as much. Such a sense then suggests that there is not already something amiss in the will to collect animals from all around the world and put them on display. More importantly, it foregoes an analysis of Hagenbeck's finger on the pulse of what the west was thinking about and looking for in terms of looking at animals from all around the world. Beyond critiquing Hagenbeck's claims to authenticity as well as those of the zoological gardens that largely dismissed him, mightn't we ask after the mounting value of authenticity for the west in such entertaining displays. What is the animal's place in such claims? Do they support or undermine these claims? If our analysis of Hagenbeck's displays and their claims to authenticity seeks not to undermine those claims but to show what about it was so attractive to the western public, it becomes

possible to reveal some of the power and the resonance that these peculiar displays had with a nineteenth century public that inaugurated the popular culture of educational/ entertaining public display of life.

My discussion of Hagenbeck will focus on three aspects of his work. Two of these have been covered elsewhere, most importantly in Rothfel's book. These aspects of his work include his innovation of the people shows and his reorganization of animal displays with their trajectory toward immersion displays with their attention to contextualization. Of the latter his panoramas which edited the natural world, an increasingly fragmented one, back into what was displayed as a cohesive, peaceful whole will occupy a central focus. The third less frequently addressed part of his work, with which I hope to deepen questions about his relationship to animals, is his actual encounter with animals. Here, in light of his claims of revolutionizing the field of animal training we'll focus on the preponderance of animal contact in his autobiography. Somewhat out of choronology, my discussion will proceed toward the animal encounter, that is, from the (re)organization of the space of animal display, to the exploration and display of people in those spaces, to the narratives of animal contact. The central questions of the larger project will be invoked throughout. What do animals have to do with authenticity, what do they both have to do with vision, and how does this respond to an industrialized and western world of signification that feels itself further and further removed from the natural world and the animals that roam within it? What about the nature of the display authenticates but also destabilizes its claim to a peaceful, prelapsarian world? How does the creation and demarcation of places as animal operate for the people who step into those places? What does it mean in the modern era to

encounter, literally to touch and be touched by animals, to be grabbed by a tiger, pinned against a wall between the tusks of an elephant, affectionately rubbed up against by a lion, or called after by monkeys in such places? Is this an escape at all or a reterritorialization of the impulse before it even reaches escape velocity? Is there any real contact with the animal world here, or is it a mere reenactment within the very structures that excluded animality in the first place?

Rothfels begins his chapter on Hagenbeck's capture of animals from around the world by taking up Kafka's "A Report to an Academy." His use of this story operates primarily as a means to frame his concern with the question of animal histories and the history of their capture. For Rothfels, Red Peter's inability or unwillingness – to at least some extent we must read his forgetfulness as strong willed – to report on what it is like to be an ape conveniently focuses the narrative on his capture by Firma Hagenbeck and process of becoming human, being subjected to human order as coterminous events. His story begins with his capture and ends with his report, a completion of the process of becoming human, an entrance into the production of history. What is striking about Rothfels' use of the Kafka story is that he nowhere takes up the basic problem with which it is concerned: that history, the academy and the authority with which it speaks, purports to render that to which it actually has no access. Red Peter's report marks off at the outset what it cannot do, what the academy and history cannot do, precisely what is requested of him: describe what it's like to be an ape. Instead, he can only mirror back a process of becoming human; his first move is to close off any access this academy might have to animal history. So while the story allows Rothfels to look at one particularly interesting representation of Hagenbeck's business, his use of that story exemplifies an inability to

experience animals as much as any zoo. The mention of Hagenbeck as the firm carrying Red Peter seems to single out Hagenbeck as the one who executes the foreclosure on this lost realm of animality. Ultimately it is the concept of an authentic animal nature that Kafka is concerned with, but more specifically with not only Hagenbeck's (he is but a pawn in this game) but also the academy's inability to *authenticate* such a nature.

Rothfels concludes this same chapter with a discussion of the willingness with which Red Peter displays his scars, both the one on his face, by which he gets his name, and the one below the hip.

> The second bullet hit me below the hip. It was a serious wound and the cause of my limping a little even today. Not long ago I read in an article by one of the ten thousand windbags who gab about me in the papers, saying my ape nature is not yet suppressed; the proof being that, when visitors come, I'm fond of taking off my trousers to show where the bullet hit me.[95]

Again, such a scene operates powerfully for Rothfels who is concerned with natural history's exclusion of precisely those facts of animal incorporation into the human order – the missing bullet hole. Yet again, Rothfels overlooks the way in which this passage interrogates the notion of authenticity; it problematizes the way animality is bound to that concept and foregrounds the strategies of display through the destabilization of nakedness. And surely Kafka is privileging an honesty in Red Peter – his willingness to drop his trousers – that is replaced by an inclination to conceal in natural history its very means of production, but the power of that passage is precisely that it manages to

[95] Franz Kafka, "A Report to An Academy," *Metamorphosis and Other Stories* translated by Stanley Appelbaum (New York: Dover, 1996), 82.

privilege honesty as it destabilizes authenticity. In fact, if we have any access to Red Peter's time as an ape it might be here, but only as a trace of what is, if not totally lost, definitely not accessible. For Rothfels', it is his willingness to display his scar and his exhibition more generally "that makes sense of his capture." Rothfels reads in this passage a bringing home to bear of exhibitionary practices, if you want display, then you also get display of the unsavory nature of animal behavior as well as the ugly side of the production of display. A connection is forged here between animal and display, between nakedness and authenticity and an unbridgeable relation between the two. To what extent is Red Peter's willingness to show the scar left by a wanton shot, an unwillingness or even an inability to "wear clothes," broadly conceived. By undoing his belt, Red Peter puts the bullet hole, the machinic incorporation of animals, the mortification of the body, a fall into language, and entry into history, on display. Tied to that is a marker of what at the moment of insertion (of the bullet, that culmination of industry, that tool of colonization) is forever abandoned, the bare life of an animal body untouched by human organization; as such the loss of animality is displayed as well, under erasure. The unease of this practice, for which he is reproached is not however brought to the surface by any of this; rather, the discomfort comes arises of the act's relation to nakedness. Now that he has language, history, and of course, clothes, undoing his belt threatens to reveal something in a way that Peter could not accomplish were he still the naked ape in the jungle. At first glance, we might suspect that this reproof is just an issue of poor form, a manner that he had not learned, a mark of the failure of his education, which might then also be a vestige of his animal nature. What is far more unsettling is the revelation of the scar is no revelation at all. What is revealed is only his incorporation into human order –

more clothes, history's etching over what it hopes to but cannot capture. As he undoes his belt and reveals the scar he reveals the impossibility of nakedness not only for him but for our own inscribed bodies. And oddly enough, this makes us feel quite naked or rather that our clothes – and all that collapses into that, history, language – are but mere threads strung over an abyss. It is the discomfort of watching an ape play idly with its genitals, animals fucking, or shitting, with no regard, even apprehension of our discomfort. As such, since all of these things are the constituent parts of animal display, display itself is foregrounded and estranged in the revelation of his scar.

Reordering

> "The large park constitutes a community resembling in many ways a community of human beings"
>
> -Carl Hagenbeck on his park at Stellingen

There are three parts to Hagenbeck's innovative reorganization of animal display: the barless habitat, the panorama which gathered numerous species, carefully separated, into what appeared to be a single harmonious display, and the park at Stellingen, the place where all Hagenbeck's display and entertainment strategies coalesced into an opus magnum. The fundamental piece in Hagenbeck's innovation of animal display is his removal of the barred cage. The reasons for this, both expressly articulated and evident in his architecture and presentation, are shifting. They range from a belief that fresh air and wide open spaces are the most effective tools in maintaining animal health and happiness, to a more zoological perspective that animals ought to be contextualized in order to be better understood, to an astute sense of what would entertain his patrons and more generally, was profitable. Though entertainment and the aesthetics of display hardly seem conducive to animal health and scientific understanding, it is by virtue of the fact that Hagenbeck's innovations claim to exhibit such varied principles of organization that they persist in zoological display today and offer us insight into the nature of late nineteenth century cultures of display.

Nevertheless, in a chapter from his autobiography, *Von Tieren und Menschen*, titled "acclimatization and breeding" Hagenbeck attempts to collapse the principles of animal health and verisimilitude;

> As I have already observed, the fundamental law of acclimatization is to provide as large spaces as possible for the animals to roam about in. In

> Stellingen, moreover, I always try to supply an environment, which resembles as far as possible the natural environment of the animals. I endeavor to consider the psychic as well as the physical condition of the animal, so that they should forget, if it be possible, that they are prisoners at all.[96]

One wonders what Hagenbeck must mean by "resembles." What is more, the questions of health and acclimatization, which precede this paragraph ultimately transition away from the principle of healthy fresh air toward issues of resemblance and consequently, the aesthetics of display and the production of a realistic effect. The suggestion that the primary means of not only psychic but also physical health is a specifically visual likeness – already forecasted in the beginning of the paragraph cited above – is fully accomplished by that same paragraph's closing lines;

> A rock is provided, in as exact an imitation as possible of an iceberg, so that the polar bears may think that they are still in the Arctic regions; and there are great ponds with numerous shelter corners in which seals, penguins, and water birds may feel that they are in their own home.[97]

The effort to make a habitat like an animal's natural habitat is, on the surface, quite logical; animals thrive in an environmental milieu for a reason, reproducing the important aspects of that environment would quite naturally allow that same animal to thrive. Further, this value can't ultimately reduce to aesthetic concerns because, in fact, zoological gardens struggle throughout the nineteenth century and into the twentieth to

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[96] Carl Hagenbeck, *Of Beasts and Men,* edited and translated by H.S.R. Elliot and A.G. Thacker. (London, 1909), 211.

[97] Ibid.

keep animals alive and healthy. It is not enough to suggest, as Rothfels does, that health and scientific reproduction of natural habitats take a necessarily back seat to aesthetics and entertainment. Still, reproduction, no matter the expressed principles, is always a selective process; simple reproduction of something so complex as an animal's natural habitat is not a real possibility in the latter half of the nineteenth century, if ever. Hagenbeck recognizes this, and beyond the value of "like nature," he chooses certain principles of organization and values in that selection, such as fresh air and space, but such principles are not enough to fill out a design plan. Where choices are left to make, reproduction of habitat becomes resemblance and questions of aesthetics, primarily visual ones, fill in the gaps. Being like a natural habitat becomes looking like what might be a natural habitat while keeping animals alive and happy and patrons entertained.

Returning though for a moment to the rocks fashioned, "in as exact an imitation as possible of an iceberg" we ought to note how not only does habitat design collapse health and aesthetics, but also that Hagenbeck assumes – and I take this to be a typical assumption – that in constructing fake icebergs, the criteria that will work the best with the polar bear is an appeal to the animals' sense of sight. Why should Hagenbeck neglect the criteria of texture, heat, or the fact that water, which a polar bear might drink, pools on ice but not on rocks that have been painted white? Though it might suffice to say that the nineteenth century witnesses the rise of visual culture thereby instilling in Hagenbeck an unconscious reliance upon and privileging of the sense of sight in both humans and animals, a more specific answer is available to us. It is only through recourse to vision that Hagenbeck can collapse the nineteenth century's fascination with visual entertainment, the scientific concern with the scope observation, and animal well being.

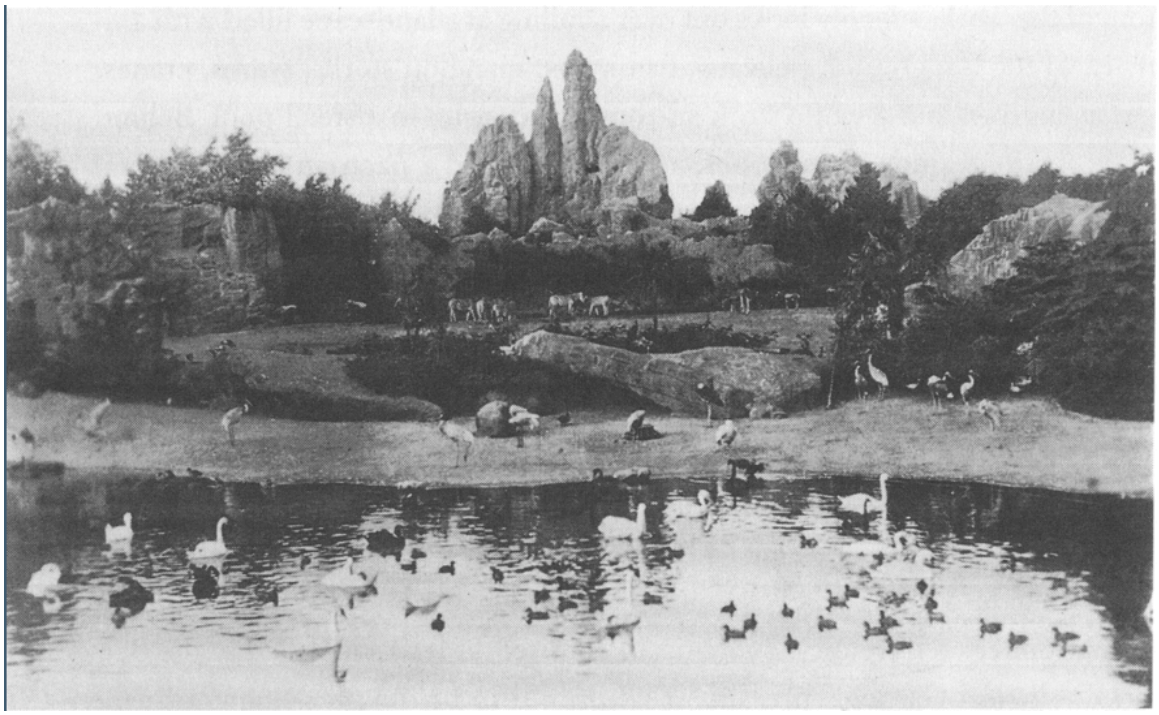

Fig. 2.3. Hagenbeck Animal Park, Main Panorama.

Fig. 2.4. Main Entrance to Hagenbeck Animal Park.

However necessary it might have been for Hagenbeck's own thinking about his work, a question nevertheless remains open: by what understanding of animals does he feel comfortable extending the privilege of the visual to them? As this is a central question of this dissertation, we will for the moment, leave it open.

In reflecting on the revolutionary innovation with which he was credited and lauded throughout his career as an exhibitioner of animals, he claims to have directed all of his attention in constructing his displays to the removal of anything that might distract from the patron's experience of seeing a wild animal as it would appear in its natural habitat. In various contexts he claims this as a benefit for both animal and spectator: animals who thought they were in an environment like their natural one would suffer less of the stress of captivity and animals who behaved as they would in their natural habitat – if in fact they believed the mock up – were a more genuine experience of wild animals for the spectators. Right along side such arguments was the argument that bars and other such architecture necessarily drew attention away from the animal and to the structure of the display itself. Hagenbeck thus claimed to efface the means of presentation in order to feature the animal itself – after all, the zoo's reason for being.[98] Each of the arguments, however, has some amount of difficulty holding water. If the similarity to natural habitats was sufficiently "off" to the extent that no matter what you do, polar bears just aren't going to think summer in Germany is "like" the artic regions from which they come, then the whole similarity effect, for animals and patrons alike, derails. Moreover, his articulated principles of featuring the animal above all ought to be evaluated along side the extent to which his displays must have featured themselves. The entrance to his

[98] "I wished to exhibit them not as captives, confined within narrow spaces, and looked at between bars, but as free to wander from place to place within as large limits as possible, and with no bars to obstruct the view and serve as a reminder of captivity." Hagenbeck, *Beasts and Men,* 40.

Tierpark (Fig. 2.4) is clearly a structural effort to aggrandize what lay within. Hence the bars, a structural framing device, are replaced with another aesthetic framing device. Building a mountain in the middle of his park might have had some effect on the mountain goats that traipsed over it, but its radical transformation of the landscape of Stellingen surely must not only have impressed the park's visitors, but in the end also probably drew attention away from the animals that lived on it.

This is one of the fundamental difficulties it seems that Rothfels has in his efforts to assess and evaluate Hagenbeck's work. And indeed, it is hard to manage: what are we to make of this looming figure in zoological display who articulates a desire to efface the means, more specifically the artifice, of the presentation of animals, but who inevitably features his architecture and their designs so prominently that the animals themselves must at times take second stage, and moreover enfolds these questions of aesthetics into questions of freedom? "The liberty which is accorded to the animals …is not only apparent but real."[99] Early in his chapter entitled "Paradise," in which he addresses the specific aesthetics and innovations in Hagenbeck's innovative displays, Rothfels takes up this question of freedom – aspired to in resemblance by Hagenbeck and interrogated by Kafka and Rilke – and ends up identifying two important levels on which Red Peter is commenting on the popular western practice of looking at animals in cages and how that might bear on the question of freedom. One point is his suggestion that animals in zoos are, in a sense, imprisoned innocents and so zoos thus evoke a pathos.[100] Responding, in

[99] Ibid., 40.

[100] Just prior to an analysis of Red Peter's discussion of freedom, Rothfels deploys Rilke's Der Panther as a meditation on the physical imprisonment that zoos practice. Rothfels' reading, though not entirely uncommon, remains at the level of the pathetic appeal that Rilke makes about the sadness of caged animals. He foregoes, however, an analysis of the motifs of not only photography, but of poetry as well, thereby

large part, to that very problem, Hagenbeck's innovative enclosures, which erase as much as possible the indicators of captivity, nevertheless run up against the second, trickier question of freedom that Red Peter addresses.

> Creating what became known as barless enclosures – a way of isolating animals from one another and the public through the use of landscape elements such as moats and rock outcroppings – Hagenbeck set a standard for exhibiting animals which can be seen today in the most modern exhibits in contemporary zoological gardens and aquariums. Hagenbeck's response to the issue of captivity, however, was – to bring back Red Peter's second level of critique – necessarily circumscribed by the illusory quality of the "freedom" that the animals in Hagenbeck's paradise enjoyed.[101]

Here, Rothfels is most attuned to the complexities of "A Report to an Academy" and the insights they offer into the nature of Hagenbeck's exhibits. He goes on to say that it is precisely the legacy that Hagenbeck leaves – solving the superficial problem of captivity and leaving the deeper problem unaddressed, covered over – which leads him to suggest the limits of what we can expect from zoos in the twenty-first century given that they rely so heavily on this model. His pointing out of the vestige of this nineteenth century innovation in the most modern and ethical of zoological exhibits is one of the more powerful claims of the work. Nevertheless, he reads into Kafka a more direct engagement with zoos than is there, and thereby does not deliver on the possibilities of reading Kafka

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missing out on Rilke's commentary on framing, the aesthetics of vision and the non-physical means of confinement that zoos enact.

[101] Rothfels, *Savages and Beasts*, 147.

alongside Hagenbeck's work to make greater claims about both. He cites the following passage from Kafka:

> I fear that perhaps you do not quite understand what I mean by "way out." I use the expression in its fullest and most popular sense. I deliberately do not use the word "freedom." I do not mean the spacious feeling of freedom on all sides. As an ape, I knew that, and I have met men who yearn for it. But for my part I desired such freedom neither then nor now. In passing: may I say that all too often men are betrayed by the word freedom. And as freedom is counted among the most sublime feelings, so the corresponding disillusionment can also be sublime.[102]

Though this citation is expressly delivered in questioning the "freedom" that Hagenbeck aspires to, the citation itself is Rothfels' strongest interrogation of freedom or what even the most careful, ethical design of animal display could expect to accomplish. But is Peter's "way out" of the cage into nonfreedom the same as Hagenbeck's way out? Peter's way out is a becoming, a navigation of the betweenness of human and animal and a refusal to fully be either. And he privileges this over "freedom," for which he hasn't, nor ever had, any desire. As this citation doesn't lead to a more specific analysis of any zoo whatever, or a consideration of whether Hagenbeck is pointing to a "way out," leads us to echo a fear that perhaps Rothfels does not quite understand what Kafka means by "way out." Instead he adds that;

> Red Peter's point is that what humans call "freedom" – the movement, according to his example of trapeze artists floating through the air – is not the freedom he knew as an ape. That is only a highly constrained illusion

[102] Ibid., 147.

> of freedom. In human society, he argues, there can be no true freedom, no true "spacious feeling" but only brief, cramped imitations or performances of it. These were the performances, of course, which were given at the people shows, and these were the performances Carl Hagenbeck's nonhuman animals were soon to give.[103]

Rothfels effectively repeats Hagenbeck's collapse of these two levels of freedom in an obfuscation of performativity and performance. What seems like freedom is only ever an illusion of it; he differs from Hagenbeck only in evaluation, for whom, seeming, specifically looking, like freedom is enough. For Rothfels, no *true* freedom is possible, no matter how apparent. If there is no hope for humanity in terms of freedom, save for performances of it, with what criteria are we left to interrogate the display of colonized peoples and animals in the west? Ultimately his privileging of authenticity – which we ought to remember, is precisely the value Hagenbeck places above all others – heard in his critique, "no *true* freedom, no *true* spacious feeling" forces him to condemn rather than tease out the complexities of Hagenbeck's practices and the permeability of the human/animal distinction they navigate. Relegating himself to questions of authenticity is precisely the move that closes off a critique of the aestheticization of captive freedom and thereby the question of whether Hagenbeck's work points at ways out, or only deeper entrenchments.

If the barless enclosure is the basic building block of the revolution in animal display executed by Hagenbeck, then his panoramas would have to be his monumental achievement. Drawn in 1898 for the arrival of Hagenbeck's traveling *zoologisches Paradies* in Berlin, an illustration portrays an ideal not only of an edenic nature but also

[103] Ibid.

of what Hagenbeck aspired to in his reorganization of animal display – at once prelapsarian and a culmination of history. The image depicts the better part of a hundred animals, at least 20 different species, all peacefully sharing what appear to be a watering hole, an African plane, a forest, and a snowy mountain range. A photograph of the actual main panorama that was constructed permanently in the park at Stellingen suggests that this image was fairly embellished relative to what the traveling show could have actually been. But more importantly, one is struck as much by the difficulties of constructing such a scene, traveling or otherwise, as by the fact that no such scene could ever occur in nature. Not only do animals generally keep a much greater distance from one another, the scene presents multiple climates within a stone's throw of one another. Polar bears and camels just don't ever catch a glimpse of one another in nature. We must assume that for the most part patrons were not fooled by such an arrangement, and so rather than a reharmonized, edenic world, such an exhibit portrayed something that must have to a certain extent foregrounded itself as a thing that brought together a fragmented world. Even as the separations were hidden, could the moderately educated patron not find him or herself beholding the accomplishment of Hagenbeck's architecture, and moreover of a world conducive to reassembly, as much as nature itself.[104]

While the role, and more importantly the challenge, of animality to the construction of instruments of observation will be a more central concern in the following chapters on photography, the proto-cinematic technologies and the emergence of cinema

[104] Though it's leaping ahead somewhat, it is worth noting that this combination of the realism effect and the almost magical recombination of the living world captures the two poles of Tom Gunning's cinema of attractions precisely. On the one hand, the Lumiere Brothers set up cameras and record minute slices of everyday life, as unstaged as possible. On the other, Georges Melies sought to recombine the world with the expressed intention of instilling wonder in his audience. Also worth noting is that Gunning dates the end of the cinema of attractions in 1907, the year Hagenbeck opened his park at Stellingen.

itself, that challenge figured prominently in virtually every innovation of zoological display. As discussed in the previous chapter, a careful eye will note that the landscape of zoological display is rife with animal agency, and the requirements of specific animal's lives. Whether a matter of heating, feeding, sewerage, dangerousness, or visibility (how to both keep and see snakes in the early nineteenth century?) it is no stretch to say that animals in the zoo were authorized to give the final stamp of approval to habitat design.

While animal movement must have figured prominently in the habitat designs of the earliest nineteenth century zoos – after all, movement and time were zoology's contribution to the study of nature – the response to questions of movement before Hagenbeck was rigid confinement. Hagenbeck's values of fresh air, open spaces and contextualization demanded a more rigorous consideration of how to both contain and display animal movement. Not only do Hagenbeck's studies for his concerns about zoological presentation parallel Muybridge's studies in photographic representation, Muybridge and Marey must have been clear references for they were, no doubt, the two most prominent names in the study of animal movement at that time.

> It is only in comparatively recent years that I have ventured to exhibit animals in this fashion. The first occasion was at the Berlin Exhibition in 1896, and later on I tried it at Leipsic and several other places, but my greatest success was at the St. Louis Exhibition in 1904. Before substituting a trench for railings, I had of course to carry out a series of experiments to discover how far the animals could jump. Any underestimation of their salutatory powers might, indeed, be attended with

> terrible consequences. I therefore investigated carefully their capacity both at the high jump and the long jump.[105]

Hagenbeck goes on to describe a series of experiments in which he selected his most athletic animals and thereby determined how deep and broad a trench would have to be, not only between humans and animals but between species of relative predation as well. Thus the division, indeed the caesurae between humans and animals, which then is replicated throughout the arrangement of species is in a sense reduction and replication of the *specific* differences of animals and humans. On the one hand this draws upon the animal's specific nature and it environmental constraints; on the other hand, similar to Taylorist rendering of the human body, it studies what separates animals from humans, reduces it, replicates and sends it out throughout the animals in the display – as such, the specific differences between animals, the natural relations between animals, are reorganized according to each individual animal's relation to the human order that contains them.

Agamben's thought on the nature of the human/animal boundary, the practical and political mystery of separation – that we enact ceaseless caesurae between humans and animals, which in return constitute humanity as an inherently divided conjunction of both humanity and animality – casts this very practical question of separating out humans and animals in an interesting light. Humanity becomes the invisible divisions that allow the natural world to appear to have order. As with Agamben's human, which is always a mixture of humanity and animality, the creation of these boundaries is necessarily collaborative, but what is the nature of the necessary collaboration of these divisions? Even as we execute the most exhaustive categorizations of animals in contrast to humans,

[105] Hagenbeck, *Beasts and Men*, 234.

we find the impossibility of such a project; the divisions themselves are mixed, many voiced, and elaborately so. To be clear the point is not to recast these practices of division and categorization as conjunction or communion – for they are divisive, even violent – but to underscore the degree to which that project fails. The project fails because even as those divisions are enacted by humans, they reflect the specificity of the animals they contain and they constitute points of contact. They fail because animals always have and always will escape from zoos. But they fail again because as close as we get to them, as much contact as we have, indeed even as we drop those divisions, we sense a failure of contact. The point here, however is to avoid seeing this as a failure of achieving authenticity, but of recognizing the unbridgeable non-chasm that spans between us.

It worth noting further that this casting of divisions, is a matter of placing inscrutable lines on earth, an etching into the ground as a means of establishing and keeping order. Further, it is worth noting that this system of lines in the earth replaces what would otherwise primarily be relations of gestures, glances and calls and that whatever stability the natural world might have is by virtue of the fact that these things are visible, audible, sensible. However, because this system of divisions was inscrutable, those relations of glances, gestures and calls resurface as the apparent order of the scene, and indeed, though perhaps unaware of the ramifications of his statement, for Hagenbeck himself the presence of human organization came to characterize the display; "The large park constitutes a community resembling in many ways a community of human beings."[106]

Hagenbeck extended his principles of organizing animal display to his Tierpark, which he opened in 1907. Rothels cites Carl Zuckmayer writing in 1940, "when a child

[106] Ibid., 236.

of the South of Germany thinks of Hamburg, he paints a picture in his mind of a small town of red-brick buildings directly on the open sea, and encircled on all other sides by a huge and magic Kingdom, Hagenbeck. Hagenbeck is not a proper name but rather, like Alaska, or the Wild West, the expression of a mysterious, unexplored land, where one yearns for adventure."[107] Hagenbeck had revolutionized the display of the natural world to such an extent that the imaginations of young children with no first hand experience conjured a place where civilization immersed itself in nature that it might behold with wonder.

> [I]n the course of a few years, wide flat plains, fit for nothing but potato fields, and uncultivated land, interspersed by a few bushes, have been converted into a magnificent park. It is true that the hills and dales of this area do not accord well with the flat expanse of Northern Germany, but they are admirably suited to the purpose for which they were created. Under the precipitous cliffs and through the green meadows run small rivulets, spanned here and there by bridges so as to give a very picturesque effect.[108]

At his park, starting with less than 5 acres but within a few years growing to more than 25, Hagenbeck built mountains and dugout streams, which entailed the movement of some 40000 cubic meters of earth.[109] The park must have been not only the greatest transformation of landscape for the display of animals in the west, but one of the greater earth moving projects in the Germany's history. Immersion in a visual display was not

[107] Quoted in Rothfels, *Savages and Beasts*, 45.

[108] Hagenbeck, *Beasts and Men*, 229.

[109] Ibid., 230.

however just what children in Germany imagined of the park, it was its single greatest principle of arrangement. As the central purpose of the panoramas was to stand in view of the greatest slice of wild nature that could be gathered into a scene that would please the eye, the park itself became a place to behold the conglomeration of all those scenes brought together.

> A certain point must be fixed in the garden from which might be seen every kind of animal moving about in apparent freedom and in an environment which bore a close resemblance to its own native haunts.[110]

A clear comparison for such an arrangement is not only the Panopticon but also that building's own referent, the menagerie at Versaille before the French Revolution in 1789. The practice of establishing a central point from which to observe the animals in a collection was exercised in at least two of the most important aristocratic pre-zoological collections of animals, the other being the Belvedere menagerie in Vienna. These collections according to Rothfels and others "emphasized the control of and power over collected objects."[111] The question is whether or not Hagenbeck, by placing a central point from which to see all of the collection, is emphasizing something of his own accomplishment, and whether that accomplishment is his power over the animals or his skills as a showman. Does a single point from which to view a vast collection of animals allow one to behold nature or one's own relation to it? To the extent that the panoramas were as much or more of a spectacle of humanity's own organization of the natural world than of nature itself, the establishment of a single point from which to take in the entirety of the park must have heightened the sense that the park was a spectacle in and of itself.

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[110] Ibid., 41.

[111] Rothfels, *Savages and Beasts*, 29.

Fig. 2.5. A postcard from Hagenbeck's traveling exhibit "Carl Hagenbeck's Zoological Paradies, Zoological Garden of the Future"

That Hagenbeck's work was devoted to reworking human relations to animals and recuperating civilization's lost connection to a natural world is suggested finally in what he hoped would follow from his own work. Addressing what he describes as a serious problem, he writes;

> …large reserves should without delay be established. If it is not done soon, it will be too late. The finest country in the world for the establishment of such reserves would be Florida; and, if any wealthy American could be persuaded to set aside even so small an area as 1,000 acres in that wonderful country, he would be performing a service, the importance of which can scarcely be exaggerated. Giraffes, zebras, all the large species of antelopes, as well as the most beautiful cranes, ostriches, emus, etc., would live peaceably together in such a park. Indeed it would almost be possible to transfer a complete portion of the African fauna to Florida if this were done.[112]

Though we might find this echoed in something like the wild animal parks of San Diego and elsewhere, the fact that he address this a "serious problem," the fact that time is of the essence, and that he suggests dedicating such a vast portion of land, all indicate that his ideal is a far greater reworking of animal and human space than a park for entertainment. Though conservation is clearly a concern, Hagenbeck's work is scarcely of a kind with animal reserves; it is rather a concerted effort to create spaces in which

[112] Hagenbeck, *Beasts and Men*, 215.

animals and humans can interact in a way, that if they ever have, they certainly do not any more in the nineteenth century.[113]

In conclusion, setting aside questions of authenticity, Hagenbeck's reordering of zoological display ought to be understood as a reorganization and a deep intensification of the boundary between humans and animals in its nineteenth century state. Even as Hagenbeck's designs conceal, they set the operation of the human/animal boundary in motion, inevitably foreground its operation, its mixture of human and animal agencies, and the nineteenth century desire for a more stable, more direct access to a natural world. As we move forward, a number of questions and concerns remain with us. To what extent, if at all does Hagenbeck's reorganization of this institution the border of humans and animals open up ways out? If nothing else, Hagenbeck marks space and enables exploration of that space as animal. Not unrelated to the possibility of a way out, is the question of whether or not there is any contact at all.

[113] It is worth noting that this is precisely the logic of the early documentarians, especially Robert Flaherty, maker of the "first" documentary, *Nanook of the North*. Deeply staged and narrativized, Flaherty's goals in making his films was to capture a way of living, one connected to nature outside of civilization that was deeply threatened by its civilization's spread, industrialization, mechanization, etc.

Exploration

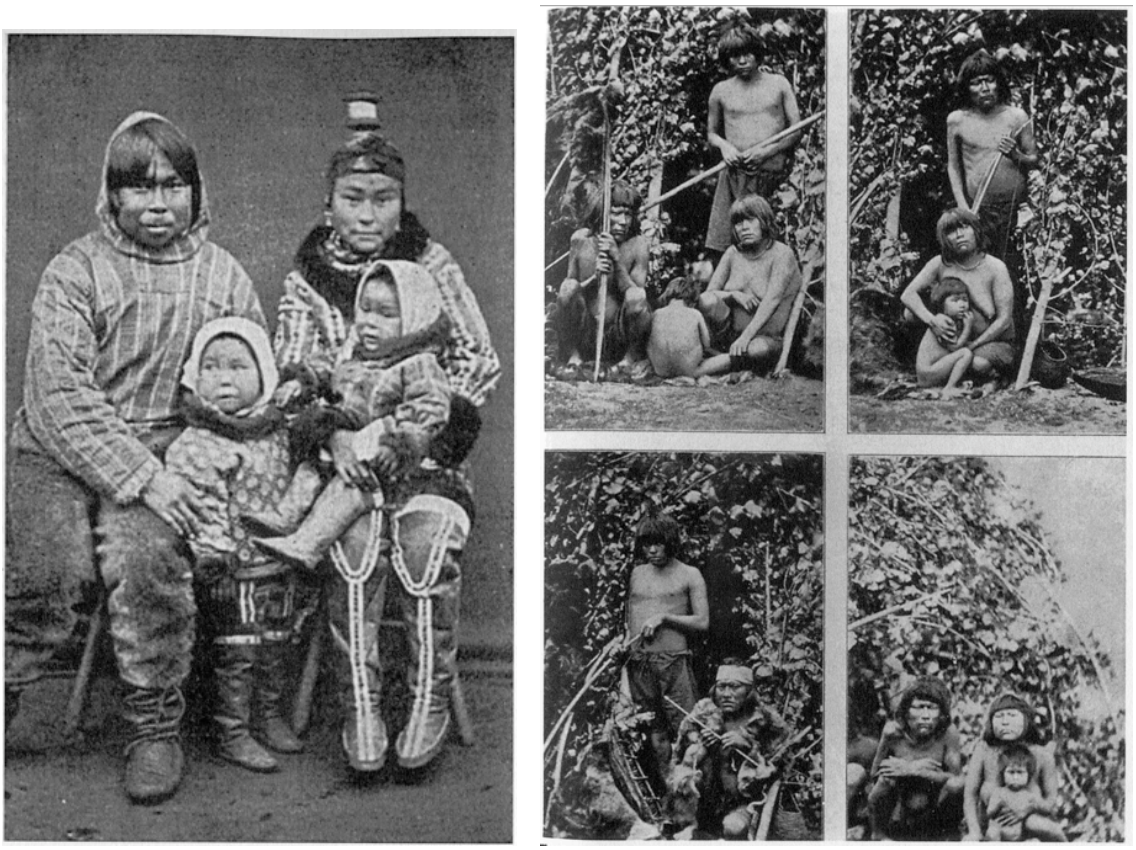
Arguably a culmination of the perversity of the culture of collection and display in the nineteenth century, Hagenbeck's people shows responded as much to a specific financial problem as to the culture of colonialist Europe. "About the middle of the seventies the supply of beasts began to exceed the demand, and the profits of my business somewhat decreased."[114] Due to not only the success of animal dealers - of whom Hagenbeck was far and away the most successful and thereby most dependent on the vitality of the market – in populating zoos of the west with animals, but also because of zoological gardens' increasing skill in animal acclimatization and breeding, Hagenbeck was driven to "initiate and develop other, though related, branches of trade."[115] The state of the animal trade in that decade both led to and, in part, necessitated sustaining the ethnographic side of his business. "Towards the end of the seventies, especially in 1879, the animal trade itself was in a exceedingly bad way, so that the anthropological side of my business became more and more important."[116] To write off Hagenbeck's decision to display human beings in the same tradition of the display of animals as a strictly financial decision, or as one that the market practically made for him, too quickly foreclose on the connections between the cultural and economic mindsets of colonialist Europe. The animal trade had throughout Hagenbeck's career up until that point depended heavily on the trade networks set up by colonial investments,[117] so those financial considerations and

[114] *Beasts and Men*, 24.

[115] Ibid.

[116] Ibid., 25.

[117] To a certain extent, Hagenbeck only had to adjust the sort of life he brought back from the colonies from animal to human. "Our next guests came from the Sudan – as was only natural, having regard to the extensive intercourse I then had with the region." Ibid., 20.



Figs. 2.6, 2.7. Left, an Inuit family. This image appeared in Carl Hagenbeck's autobiography. Right, a Fuegian family, at the Jardin d'Acclimatation in 1881.

forces are already entrenched in the colonialist mindset of that period, a mindset in which Europeans felt themselves entitled, with it seems little ethical quandary, to a commanding view of the rest of the world. In fact, the questions about the initial people shows that are most difficult to resolve attest to the inseparability of cultural and economic forces.[118] Whether the initial Laplanders were brought as hired hands to help keep the reindeer, which were first and foremost on display, or whether the reindeer were window dressing to the display of exotic people is never quite clear. In any case, Hagenbeck credits the idea to his friend Heinrich Leutemann, interestingly, an animal painter. "In 1874 I happened to be importing some reindeer, and my friend, Heinrich Leutemann, the animal painter, remarked that it would be most picturesque if I could import a family of Lapps along with them."[119]

Carl Hagenbeck was by no means the first to exhibit foreign people in Europe. In some capacity the tradition is as old as exploration or even war. What distinguished Hagenbeck's *volkershauen* (people shows) or *volkershaustellungen* (people exhibits) was their eschewal of theatrics; the people shows were supposed to be, in every way, a presentation of merely the quotidian activities and clothes proper to the exhibited people. The lack of staging, the basic or even lack of instructions to simply do what you do, are of course in service of the higher value of authenticity, which Hagenbeck identified as the strongest criterion for attracting crowds.[120] As such his shows manage to respond to a

[118] Rothfels is also careful to point out that deflation in Germany and Europe in the seventies an eighties must also have been a factor in the decline of animal trade.

[119] Hagenbeck, *Beasts and Men*, 16.

[120] Such a principle is hard to reconcile with, for one, the ornate design of Hagenbeck's animal habitat, and his penchant for showiness more generally. And what's more, the viewer could scarcely have not seen and even been drawn to the artificiality of his exhibits. To a certain extent the ideals of artificiality and authenticity must have been popular in juxtaposition because accentuate their respective exhibitionary

transition in scientific collection and display already underway in the nineteenth century from featuring the peculiar to featuring the typical – the emergence of the natural history museum from cabinets of curiosity.[121] Not unlike the zoo, Hagenbeck's people shows maintained the disciplinarity of the natural history museum by displaying the typical and quotidian but reintroduced the allure of the peculiar through display of the exotic, foreign and the spectacular through the display of animated life. A number of factors feed into the notion of authenticity in these displays. Though perhaps conducive to producing the effect of authenticity, we ought to be wary of the simple collapse of the quotidian with the authentic. Likewise, the typical ought to be understood as a tool for producing the sense that authenticity is something like an inherent characteristic. The exotic has its own claims to the authentic; by virtue of being untouched, or unadulterated by civilization exotic peoples (*"ungefaelschte Naturmenschen"*) are presented as having a connection to an authentic world that civilized Europeans have lost.[122]

A number of aspects of the people shows are of interest here: that they constitute a navigation of the space of display that had been marked out as animal over the previous 50 years; that they actually came to operate as sufficient substitutions for ethnographic study by anthropologists of the day; and that they too, though by virtue of their access to language and assimilation, undermine the authenticity with which the shows characterized themselves but also the concept of authenticity itself.[123] Perhaps most of all

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powers and, importantly, suggested a potential compatibility of the artificiality of culture and the authenticity of nature.

[121] See Tony Bennett, *Birth of the Museum* (London, New York: Routledge, 1995).

[122] The image below, depicting an Inuit family, comes directly from Hagenbeck's autobiography.

[123] Compare this with Rothfels' claim that it is when animals return the gaze that the zoo's claims to authenticity begin to unravel. Similarly for Rothfels, it is the displayed peoples' tendencies to interact with the cultures to which they have been brought, that weakens the authenticity claims of the exhibits. The

the people shows ought to be understood as an *attempt* to locate at the active border between humans and animals a point of contact. Speaking of his first show of "Laplanders" Hagenbeck writes, "A great interest was awakened every time the reindeer were milked, and a sensation very nearly developed whenever the little Laplander mother, in all her naïveté and totally undisturbed by the presence of the crowd, gave her infant her breast."[124] Rothfels prefaces his citation of this passage from Hagenbeck's memoirs by suggesting that it contains a "presumably unintentional contrast," but leaves it at that – a statement of the excitement surrounding the exhibit, suggestive of its perversity. Aside from the physical contact that Hagenbeck chooses to highlight, we ought to notice that the scene itself, first and foremost, is of a relation between humans and animals – precisely the disappearing relation to animals, the loss of which Berger laments in his essay "Why look at animals?" Indeed, a fundamental aspect of their appeal to the German crowds was that "they were so wholly unsophisticated and so totally unspoiled by civilization that they seemed like beings from another world."[125] So, here in the anxious human categorization of the animal world, contact between animals and humans is positioned and featured within the organizational structure that hopes to collect and display that lost animality, not only a recuperation of the animals lost, but a recuperation of the lost relation.

Whether there is actually some real contact with an authentic animal or natural world is a question that ultimately will remain open. Nevertheless the people in the

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question, which is one form of our question with Rothfels throughout, is whether these reversals escape the zoo. Rather than just failures in terms of the verisimilitude that they hoped to display, do these reversals and destabilizations operate on the cultures and times in which they are situated?

[124] Quoted in Rothfels, *Savages and Beasts*, 83. The image above depicts the Fuegians displayed in 1881 at the Jardin d'Acclimatation.

[125] Hagenbeck, *Beasts and Men*, 16.

people shows operate as navigators of that realm of possibility. On the one hand, these people are presented as primitive – if not by virtue of the fact that they are displayed at all, then definitely due to their connection with animals – which is to say, of the natural world. On the other hand, they are humans, thus this side of the human/animal boundary. Though the binaries of primitive/civilized and human/animal obviously do not map precisely onto one another, the former certainly draws upon the regulatory force of the latter. As such, by occupying the space opened up by the incongruence of these binaries, as well as the space of exhibition (itself created by an overlap of domains: the museum, the spectacle, science, entertainment, colonies and the nation) the Norwegians, in a manner of speaking, appear to chart a path between the human and the animal: Europeans share the category of human with them and they share the category of uncivilized or primitive with animals. Charting a path across this incongruence is replicated in the passage cited above. The milking of the reindeer and the breastfeeding of the child suggest that their communion with animals is as seamless as a mother feeding her child. The two acts are, in this display, deeply connected by virtue of the fact that they are both enacted with little or no awareness of the crowd itself. This generates a powerful realistic effect; that she doesn't care that the crowd is looking on, not only casts her as uncivilized but collapses her with the animal precisely because the reindeer is just as unconcerned with the crowd looking on. But it is perhaps an overstatement to say that either the woman or the reindeer is unconcerned or unaware. No doubt they are quite aware of being watched and likely concerned about that fact. Rather, they are somewhere between unaware and uninterested in the structures and conventions of observation, and the power that operates through them.[126] By operating outside of the strictures of European

[126] See Kafka's parable of the trainer and the tiger. "Once a tiger was bought to the celebrated animal tamer

Bourgeoisie social conventions, which are deemed artificial, contrived, the Norwegians and the Reindeer appear to occupy a realm of authenticity out of reach to Europeans.

Rothfels chapter "Fabulous Animals" on Hagenbeck's people shows argues that they ought to be understood as deeply influential on his ultimate reorganization of the ways animals are exhibited. Relying on the more secure boundary between humans and animals, immersion exhibits of animals are thereby able to pursue the "authenticity" that ultimately undermined itself by virtue of displayed peoples' ability to not only look back but talk back and appropriate European culture. Rothfels suggests that because animals have to act naturally, or rather, that even if they don't act naturally, they are more or less unable to communicate across the chasm separating humans and animals and therefore cannot pull the curtains on the theatricality behind the spectacle. Rothfels is astute in his genealogy of Hagenbeck's stronger legacy of the reorganization of the display of animals, finding at its most basic levels the vestiges of a culture that even in the abolition of slavery celebrated its domination of the world by displaying colonized peoples as barely if at all a step removed from animal status. Such a genealogy makes it hard to argue with the claim that racism is endemic to zoological display. Nevertheless his critique here pivots on the concept of authenticity, which forces him to reproach the display of people without asking what else might be going on in the Hagenbeck people shows. Rothfels' analysis would have us see a genealogy that follows from the people shows – which became more and more theatrical in order to protect the sense of

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Burson, for him to give his opinion as to the possibility of taming the animal. The small cage with the tiger in it was pushed into the training cage, which had the dimensions of a public hall' it was in a large hut-camp a long way outside the town. The attendants withdrew: Burson always wanted to be completely alone with an animal at his first encounter with it. The tiger lay quiet, having just been plentifully fed. It yawned a little, gazed wearily at its new surroundings, and immediately fell asleep." Franz Kafka, "The Tiger" in *Parables and Paradoxes* (New York: Schocken, 1958), 153.

authenticity and of "acting naturally" against the mounting self-awareness of the shows' participants – to the panoramas and immersion exhibits as well as the trained animal shows. The former substituted a "natural" environment for the quotidian activities of the displayed people and the latter allowed a greater control over the performance of the displayed subjects, which was not as easily denaturalized. What such a genealogy neglects is the movement in Hagenbeck's works toward a hope of a deeper relation with animals, at least partially for his spectators, but most certainly for himself.

> When this Cinghalese exhibition had come to an end I thought the public might, perhaps, have had enough of ethnology for the time being, and I therefore set to work to devise some new form of entertainment. The result of my meditations was a revolution in the methods of training wild beasts for the circus. For many years, indeed ever since I could remember, I had be greatly distressed at the cruel methods of teaching animals to perform, which were then in vogue. My enthusiasm for my own calling originated more, if I may say so, in a love for all living creatures more than in any mere commercial instincts.[127]

As much as we might disregard Hagenbeck's disavowal of his commercial interests or instincts, we must nevertheless contend that something figures here, if not more, then just as prominently as his value in making money as a showman. The chronological path from people shows to revolutionizing animal training to immersion exhibits has also to be understood in terms of a clear underlying value of and fascination with entering into relations with animals in a more animal way. As such, without ignoring the implicit racism and will to domination evident in the people shows, it stands to note that

[127] Hagenbeck, *Beasts and Men*, 30.

Hagenbeck himself begins to exhibit a desire to enter into the space of animal display. Further, the public was clearly not yet bored with the people shows, even as they became more and more theatrical; at the point of the quote above the 1893 Columbian Exhibition in Chicago, which had far from forgotten the excitement of the people shows, was still almost 10 years away. Given the parallel trajectory of Hagenbeck's work and its efforts to allow people to enter into more natural relations with animals (even if only perceived as such), the decision to devise new methods to train animals (which is in almost every other way a deeply different sort of animal display from zoos altogether), we ought recognize his efforts to train animals differently as a desire to enter the space of animal display in a way as yet unattempted – and also a relation more like the one shared between the Laplanders and their reindeer, the snake charmers and their snakes, the Singhalese and their cattle. Subsequent to the people shows, Hagenbeck's biography reports innumerable voyages into the spaces of animal display. Often with potentially deadly animals, his accounts are rife with a pride of relating to the animals with respect, love and kindness. As far as his autobiography is concerned, his accomplishments culminate in the creation of a space that he could walk into and be with animals (of almost any variety and degree of dangerousness) as old friends.

Contact

The most uncanny moments, which pervade Hagenbeck's autobiography, are his encounters with animals. These encounters range from what he repeatedly and proudly called friendships; to accomplishments in training animals by recognizing not only qualities specific to different species but also characteristics of individual animals; to confrontations with animals, usually ending with his creative and non-forceful evasion of attack or serious injury. Given that such stories of animal encounter must be, by their very nature, the sensational "tales of the hunt" for the animal trade business, his tone and style in recounting them nevertheless suggest that these are his proudest moments, the magical encounters of his life and work. These moments of contact are, however, comprised of two important pieces: (1) his efforts in cultivating new methods of training animals and the relationships that operate for him as something between a return to an edenic paradise and (2) a recuperation of relations with animals unmediated by civilization, and, ultimately, language. Though Hagenbeck postures himself as having a preternatural sense of animal nature, and above all, an affection and respect of the animals he comes across, training, or what we might just as well call "domestication" is a necessary precondition of these moments – moments that he would have us, and his contemporaries, understand as truly natural moments. This, the *ungefaelschte Naturmoment* is after all the fantasy that Hagenbeck is attempting to satisfy for both himself and his public; indeed, more than as any true representation of communing with animals, Hagenbeck's pursuit and apparent satisfaction of this fantasy must have operated powerfully, voyeuristically, for the public as well. Eschewing questions of authenticity, we must nevertheless recognize that these points of contact are found in spaces that are

carefully organized by Hagenbeck, not to mention the rest of western society and human culture more broadly, and that further, animals enter into it by way of a process. That process is domestication, and as much as Hagenbeck may strip the performance, its various spaces, and even the processes of training of its markers of human order, it is nevertheless riven with a fallen language and a human fantasy of communication with the outside without relinquishing that order. There is however a third piece of these encounters: domestication must also always to a certain extent and at certain moments fail – here we might think again of Red Peter and the scar below his belt. These moments emerge in Hagenbeck's biography as animal attacks – on Hagenbeck himself, one another, and at times their own bodies. As such, this section aims to demonstrate the failure of Hagenbeck's attempts to construct the space in which he might satisfy his fantasy of a natural connection to animals, but to show also that the failure of his plans also opens up the possibilities of animal encounter.

Though it is in no doubt in part due to the work of his autobiography and that of his sympathetic biographers, Hagenbeck managed to claim a great deal of attention for being an innovator in the training of animals for circuses and other spectacular performances. Indeed, as Rothfels points out, 20 years before Hagenbeck's mounting fame as an innovative animal trainer, *Haney's Art of Training Animals* in 1869 goes to great length to explain that "punishments seldom do any good" and "if the pupil is in constant fear of blows, his attention will be diverted from the lesson, he will dread making any attempt to obey for fear of failure."[128] Nevertheless, for whatever reason, with a commitment to these "new" modes of training animals combined with his savvy for the public's interest, Hagenbeck has to be credited with changing and popularizing a

[128] Quoted in Rothfels, *Savages and Beasts*, 156.

new sort of animal display. In contrast to animal shows before him, which were characterized by a daring trainer risking life in dominating wild beasts, Hagenbeck's shows exhibited a much more peaceful and humane relationship between humans and animals and between animals themselves. There is however further reason to question Hagenbeck's claims to ethical, non-violent means of training animals. Pointing to a number of animal trainers who worked under and associated themselves with Hagenbeck's "humane" methods, Rothfels takes care to point out that many of them never fully abandoned other more severe techniques. Further, he notes that the public, right around the period of Hagenbeck's new ventures in animal display, had become more and more disdainful of the cruel treatment of animals in circuses, suggesting that once again, behind Hagenbeck's loftier articulated ideals, there lurks a more or less basic desire to make money as a showman. Such an analysis, however, too quickly boils down Hagenbeck's investments in the choices he made as a businessman, and closes off further questions about what else tied his various projects together. That analysis also takes the place of positioning Hagenbeck as a figure who astutely responded to the demands the public made on popular entertainment thereby understanding his work as characteristic of late nineteenth century European culture.

Hagenbeck's reflection on his new interests itself executes a movement of animals into a human sphere;

> I had come to the conclusion that the prevalent mode of procedure was not only cruel, but also stupid and ineffectual. Brutes, after all are beings akin to ourselves. Their minds are formed on the same plan as our minds; the differences are differences of degree only, not of kind. They will repay

> cruelty with hatred, and kindness with trust. What therefore could be more foolish than the senseless manner in which every spark of intelligence was driven out of the hapless pupils? I knew full well from long and intimate association with the lower animals that their understanding develops wonderfully by close friendship with man, and I was convinced that far more could be achieved by gentleness and sympathy than was ever accomplished by tyrannical cruelty. This, however was not my only discovery. I had also found from experience that the animals of the same species differed most remarkably in character, and from this I inferred that if the talents of each animal were to be carefully developed, individual tuition during training would be absolutely essential. Here again, we have a point of similarity to ourselves.[129]

By collapsing humans and animals into a unity of kind – and to be clear, this passage brings animals into the human sphere and not the other way around – Hagenbeck first maps out a conceptual space that humans and animals can share. Further, it is through this conjunction that he can position training not as a human process operated on animals but as its own sort of communion within an order, a "plan," that we already share. This too, allows him to pay special attention to the traits of individual animals as one might human personalities. Thus, almost paradoxically, the particularities of the animals, species traits and personalities – differences – are deployed in support of his thesis of sameness of kind, differences only of degree. Further, though effective in producing a more peaceful animal show, this criterion of recognizing and working with the individual

[129] Hagenbeck, *Beasts and Men*, 31.

characters of the animals leads to a process of selection based on those characteristics most suited to training;

> To recruit beasts indiscriminately is to court failure. Each beast must be carefully selected in accordance with its aptitude for the work it is wanted to perform; otherwise the success of an entire troupe may be marred by the misbehavior of a single ill-chosen animal.[130]

Though an astute move as a showman and one who cares about safety, the selection process is thus not fully engaging with animal being as such but with a selection of it that is conducive to a specifically human sort of engagement.

Moreover, though the training process Hagenbeck espoused produced radically new types of animal shows in which collaboration of humans and animals was featured rather than the domination of dangerous beasts, it operated nevertheless by virtue of the threat of domination.

> The trainer carries a whip, but far more important is the leather pocket, attached to his belt, for it is here that he keeps the little pieces of meat, which are to reward the young carnivores for their obedience. The animals are let loose in the arena, and stare with astonishment at the imposing erection, which they see before them.[131]

The erection before them, as described by Hagenbeck is not the trainer himself but the stack of blocks readied for them; essentially an extension of the trainer, it is the human order that awaits them. Perhaps more importantly, the whip in this scene forms the other

[130] Ibid., 126.

[131] Ibid., 130.

harsh border of this human order. While the pouch of treats no doubt facilitates the scene that will ensue, the structuring elements are rigid, imposing and ultimately, threatening.

What these training methods produced however was something that had hardly been seen before. Relative to wild animal shows previous to Hagenbeck's *Zoologischer Circus*, animals cowered at the ever-present cracking whip. The most prominent animal trainer at the time of Hagenbeck's entry into the field was Isaac Van Amburgh, pictured below in the painting by Landseer (Fig. 2.9). Dressed in Roman garb, brandishing a whip, and featuring growling animals, his performances demonstrated his but also humanity's domination of dangerous animals.[132] Though another of Landseer's portraits of Amburgh features a more peaceful scene – the trainer in repose, animals now lambs quaking in the presence of the human-cum-lion –it again displays a scene like this one behind bars. While the source of this is likely in reference as much to the fact of his performance spaces as to the structures of power in the painting, the difference is striking. Hagenbeck's shows, rather, display animals in harmony with both the trainer and one another, but more importantly without bars (Fig. 2.8). Tigers riding horses, chariot's commanded by lions, led by tigers and attended by dogs suggested both the possibility of an edenic return and the gentle command of the relations of all living things by Man. Hagenbeck's prized piece in his collection of performances was his zoological pyramid, displayed at the World's Colombian Exposition in 1893, in which 10 or more carnivorous found their positions on blocks forming a monument, ostensibly to their own nature, but of course also to the accomplishments of Hagenbeck and his trainers. Hagenbeck describes one performance in which he set in peaceful arrangement two tigers, two lions, two black and two ordinary panthers, three Angora goats, two black headed Somali

[132] See Rothfels comparison of Hagenbeck with Amburgh, Rothfels, *Savages and Beasts*, 157-161.

Fig. 2.8. A postcard of Carl Hagenbeck's circus act.


Fig. 2.9. A painting of Isaac Van Amburgh's trained animal show by Edwin Henry Landseer.

sheep, an Indian dwarf zebu, a shetland pony and two poodles.[133] While the peacefulness of Hagenbeck's compared to Amburgh's displays can hardly be denied, it is important to recognize that Hagenbeck's removal of the bars (here as well as in his park at Stellingen) the holstering of the whip so as to appear unimportant to spectators but visible to the animals, and the replacement of a cracking whip with calmer language must also be understood, not as the eschewal of domination but as its concealment within a structure of gentle commands, prepared training, and a watchful eye.[134] Hagenbeck recounts a case of skepticism of his work with the humane method;

> [I] took them to look at a dozen young lions which were shortly to be sent to the Chicago Exhibition, but which had not yet completed their training. As I stroked them through the bars, one of the officers laughingly remarked that that was all very well with bars in between, but would be a very different matter if I were inside the cage. I thereupon walked into the cage, to his great surprise, and was soon surrounded by them. As they were moulting at the time I got so covered with their hairs that I very soon looked like a lion myself. Without any whip or other protection I put them through the elementary tricks which they had already learnt."[135]

As much as these performances may have been constructed in order to produce a more edenic relation to animals, it ends up concealing all of its operations that are most

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[133] Hagenbeck, *Beasts and Men*, 143-144.

[134] It is worth further noting here that the removal of bars is the concealment of an operation of power over the spectator as well. Conditioned to step in to the observer position, setting the power structures in motion, the public became wary of the reminder of its command to observe. It, too, needed the concealment of the observational structures of control, such that it could imagine itself into a relation to animals, unmediated by culture and all of its trappings.

[135] Ibid., 139. Moreover, that Hagenbeck imagines himself "becoming-lion" should not be overlooked in terms of its operation for the effect of the scene.

distinctly human; organization, control, scopic structures – and the boundaries they rely on – all but disappear.

Hagenbeck also developed what he repeatedly refers to as friendships with animals: he insists, against the impression of certain animals as savage, that "I have had many friends among lions, tigers and panthers…. Moreover their affection is very enduring, and survives long after they have found another home."[136] Laying across Hagenbeck's tomb is a sculpture of his favorite animal friend, the lion Triest[137] of whom he had this to say: "He is tame, true and faithful as a dog; indeed I often treat him as if he were a dog." "I could do anything with him, and used even to take him with me into my sitting room"[138] He goes on to describe the trust that developed between him and the animal, recounting a procedure of removing the ingrown claws that, due to captivity, had grown into the flesh of his paws. Virtually a retelling of Aesop's fable, Androcles, such an event is both remarkable, and also clearly deployed with this reference in mind. In the fable, *Adrocles*, a slave, comes upon a lion with a thorn in his paw. Realizing that the lion means no harm but rather needs his help, Androcles pulls the thorn from his paw and nurses the lion's wound. Later, both lion and slave are caught and Adrocles is sentenced to death, to be thrown to the lion that had been kept without food for several days. Instead of charging and killing Adrocles however, the lion "recognized his friend… and licks his hands like a friendly dog." As a result both are spared. That Hagenbeck had developed such a bond with this animal is certainly remarkable but his careful posturing of the scene

[136] Ibid., 98.

[137] It is worth noting that the name of this animal in all liklihood come from the port into which Hagenbeck brought the single greatest transport of animals Europe had ever seen. Whether Triest was actually brought through this port as well is unclear.

[138] Ibid., 103.

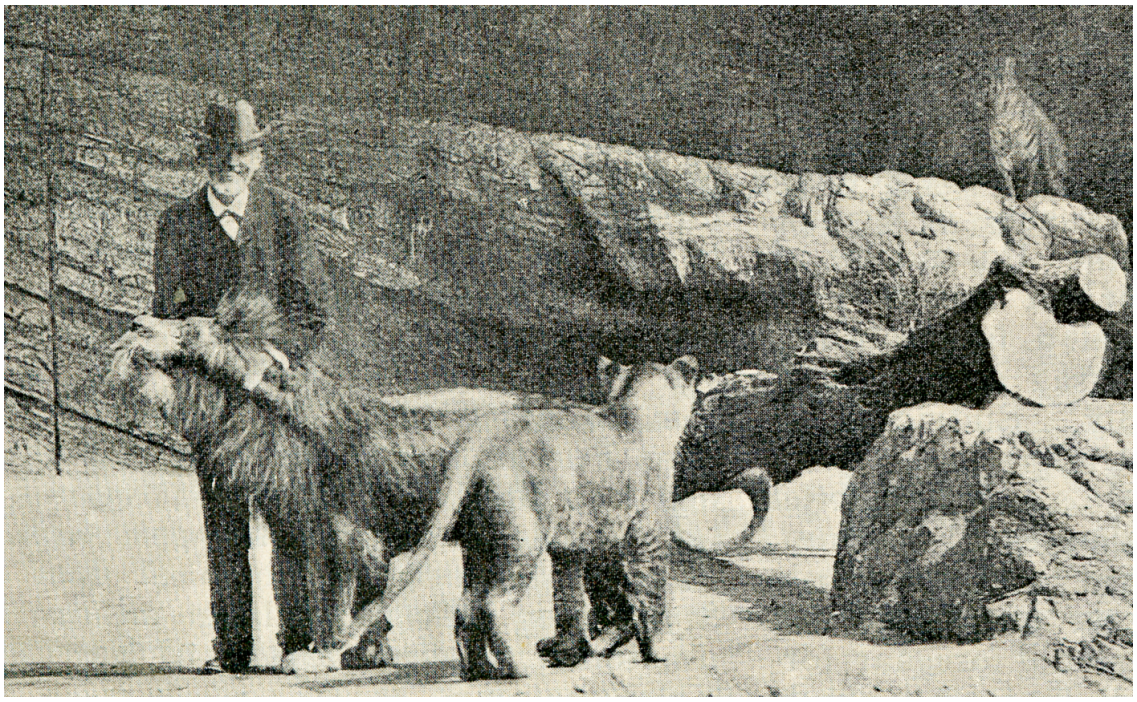

Fig. 2.10. Carl Hagenbeck with his lions at the Hagenbeck Animal Park.

of contact, as not only the living version of a fable, but as a moment of salvation bears further examination. On the one hand he positions himself as giving life to a classic story, thus reanimating human culture and on the other hand, this point of contact clearly operates for him as a means of salvation from a fallen, if not violent, civilization. Still, his posturing of this scene as a hope for salvation by virtue of setting it within language, within a story (and, that it is a furtive reference, no direct reference is made) reveals that this salvation is nonetheless a human construction itself.

Hagenbeck's work with apes also reveals the attempts to position and naturalize these relationships with animals. By 1907, when he begins keeping apes in his park in Stellingen, Hagenbeck's work with animals is clearly less directed toward the elusive connection with nature, and has become something more like creating a common ground, a middle space in which humans and animals can coexist. Next to an image of three young chimps at a dining table he writes:

> They eat after the manner of human beings with spoons and forks, and they are very clever at ladling up their soup with the spoon. It is true that if they thought no one was looking, they would quickly revert to more expeditious methods, dispensing with the spoon and using their lips instead; but a word from the keeper immediately recalls them to the manners of civilization, and the spoon is hastily seized once more.[139]

Again, we see the power of a watchful eye as a replacement for more rigid structures of control. More importantly though is the fact that these apes are being redeemed of their wild natures by virtue of being turned into polite bourgeoisie Germans. The space of

[139] Ibid., 284.

contact turns ever so slowly – because that's what it always was – into contemporary western society.

Another manifestation of the "pax humana" was Hagenbeck's experiments in crossbreeding. Historically, the goals of acclimatization and breeding within zoology were for the purposes of cultivating species of animals that would be profitable for Europeans. In Hagenbeck's experiments with it though, it seems primarily to have been a means of extending throughout the collected animal world the same peaceful relations that he sought to establish between humans and animals. Hagenbeck reports crosses between lions and tigers, pumas and panthers, polar bears and grizzlies, as well as lions and panthers. Like his trained animal shows, Hagenbeck sought to make the peace between animals of different species as seamless as possible.

> Interbreeding occurs between lions, tigers and other kinds of cats, even without the intervention of man, and it is therefore not very difficult to carry out experiments in cross-breeding.[140]

That he suggests the intervention of man is absent in such cases operates in the service of just such a conception of the seamless peace he sought to establish. Of course, a "liger" (cross between a lion and a tiger) is utterly impossible due to native territories of the animals but even if they shared a territory we ought to recognize that it is only by virtue of the zoological space that such crossbreeding occurs. And how riven with language is an "liger?" Such crosses operate as hopeful attempts to manifest something living at the border between animals, which, as stated above, is in all of these cases distinctly human. Though it obviously appears as the union of different animals, it is no less a very strange attempt to combine human order with animal being. The failure then, to produce anything

[140] Ibid., 117.

fertile is a reminder of the lost connection to animals and nature. Recounting the mating of a lion and a female panther, Hagenbeck writes that she "gave birth three times but unfortunately proved herself a monster wholly lacking in maternal feelings, for she proceeded to devour her own cubs."[141] That Hagenbeck looks to the particular nature of the animals, and moreover, judges it monstrous, must read as a strong-willed blindness to, rather, the monstrosity of what he has created, and which is distinctly human. The animal's refusal of the offspring is of course, no flaw of her maternal feelings, but a refusal of this perhaps strongest attempt to unite humans and animals. Whatever provoked the mother to kill its young, the offspring is not divided by being the union of two animals but by springing from the realm of ceaseless division – the boundary between humans and animals, extending out through the animal kingdom. It is an empty signifier – a liger – mortified animal flesh, and a reminder of a fallen language.

Hagenbeck claimed to owe his evasion of serious injury in all of his years of working with potentially dangerous animals to his respect and care of them. There is no doubt a great deal of truth to this; Hagenbeck's affection for his animals pervades his text. His excitement at recounting stories of animals remembering him after years of separation is unmistakable. However, the failures of his attempts at friendship pervade his text as well. He reports being pinned against a wall between the tusks of an elephant, the friendliness of which he had overestimated, being grabbed by a tiger, almost getting trampled by a rhinoceros, and getting mauled by a bear – escaping all of which without severe injury. He tells still other stories of his keepers' near deadly interactions with animals and those of patrons overstepping the boundaries, which he had made perhaps too invisible. By setting his own relations with animals in contrast with spectators who

[141] Ibid.

might have only a more superficial interest in being entertain, Hagenbeck appears to want to distance himself from the very fascinations with animal contact that made him so successful as a showman. Such a contrast further allows him to distance himself from the violence went into the production of his displays; not surprising then that this contrast would take the form of love and affection. These failures of domestication, too, reflect not only the failure of his recreation of an edenic paradise precisely through its dependence on language and human organization. While they also operate as the animal's resistance to domestication, to the training into the human sphere, and thereby a possible site of contact with an animality truly outside of that human order, they nevertheless highlight the dependence and failure of language as the tool of that inculcation. Hagenbeck describes an interaction with one of his animals that had not been trained by him but by one of his keepers. Upon the verbal command "Lissy, apport!" the animal would embrace the trainer with her trunk and lift him up into the air above her head to be lowered safely back onto the ground as yet again another example of the possible peace and communion between humans and animals:

> One day I found Lissy alone in her stable, the keeper being absent. There must have been a devil in me for I felt a desire to be embraced and raised on high by the cow, after the manner of her affectionate treatment of her keeper. I therefore went up to the elephant, stroked and fed her and taking hold of her trunk I called out the word of the command, "Lissy, apport!" Then followed one of the most vilely treacherous acts of which I have ever heard. Lissy began to obey the order, but I soon felt that she was bent on mischief, for the embrace of her trunk was unpleasantly vigorous, and I

> soared high into the air. But I was not deposited once more upon my feet. Instead of this, Lissy dashed me violently against the wooden barrier in front of her stall, and I went flying over into the menagerie.[142]

It should first of all be noted that what sets this scene in motion is the deployment of the signifier, "Lissy, apport." Within the context of training, and this must be what makes training possible at all, the command doesn't operate as a signifier but as one of a number of sensible gestures and sounds whereby animals and humans can collaborate and interact. Hagenbeck's hope that this training might extend - through language - to be replicated in any case with anyone who might choose to use the words is the reduction of this careful interaction, based on far more than an utterance, to a word that can operate outside of the context in which it came to operate in a particular way. Whether it is specific to language, or just a sense of human order seeking iterability and conditions that can be substituted for one another, it reveals Hagenbeck's attempt to alter the context of animal behavior. It reveals his hope of reducing the animal's relations to the conditions of its behavior to a word, not unlike his reproduction of polar conditions by painting boulders white. It is specifically his desire to be embraced, to bodily connect with the animal that reveals his hope that language, and the human order it sustains, might be the venue and the vehicle by which a lost relation to animals might be recovered. Of course it fails and the animal throws off the chain of signifiers it risks getting trapped within by Hagenbeck's attempts. Like his judgment of the mother panther, he too judges the animal to be treacherous and fails to recognize that the failure is not the animals, but is endemic to his project. Of course, he is invested in the failure of this relation as well; it too produces the possibility of genuine animal contact, a chaotic animal contact outside the

[142] Ibid., 151.

safety of human order. Further, Hagenbeck is always the hero venturing into those conditions of contact.

An over dependence on language is by no means the only evidence of such a failure. Hagenbeck describes a number of occurrences of animal suicide under his care. These are the cases of animals not merely caught in the chain of signifiers, forced to reenact an edenic peace; rather, they are strangled by it. He laments, again perplexed and locating the problem in the animals themselves, that "one of the most remarkable diseases which afflict animals in captivity takes the form of the infliction by the creatures themselves of dangerous wounds upon their own bodies."[143] Describing two separate instances of hyenas, he writes "in both cases these creatures all of a sudden broke forth into loud yells and literally fell upon themselves, tearing great pieces out of their own bodies. So quickly and so unexpectedly did this happen that there was not time to do anything to save them, and in each case the wounds inflicted were so shocking that the animals soon expired."[144] He describes similar experiences with lions and tigers as well. Probably the moment in his autobiography in which Hagenbeck is most disturbed by what went on under his care, he cannot face the possibility that such an event might have issued from the nature of captivity and the rigorous training which he thought productive of friendship.

> Although I have watched with great care, I have not succeeded in finding any cause for these horrible habits. All of the animals mentioned have been up to the moment of their seizure in thoroughly good health. They had not refused to take their food, nor betrayed any other symptom

[143] Ibid., 227.

[144] Ibid., 228.

> approaching illness. The common reason given for these attacks is that the animal is suddenly possessed with an inordinate desire for blood, but it seems to me much more probable that it was due to some disease of the brain. Whatever may be its cause, it is certainly of the greatest interest; and it much to be wished that some authoritative man of science would undertake a research into its origin.[145]

Hagenbeck's refusal to consider such behavior as a direct product of the conditions of captivity is remarkable in its expression of denial, but also in that he goes so far as to locate problem in the brain of the animal itself, that he would go so far as to locate the unnatural condition within the animal itself rather than in the conditions of display. Though we too can only speculate what makes an animal take its own life by an attack on its own flesh, such is an act is consistent the notion that the signifier – the word, the human order of collection, categorization and display, and the means of training – is a mortification of the body. Riven with language, their bodies rendered by commands, these animals must have in some sense regarded their bodies as somehow outside themselves, dominated by an order outside their domain, infected by something other than the quest for food, reproduction, comfort and harbor from fear. That Hagenbeck's spaces of display operated as both points of contact with animals as well as retrenchments of the divide between humans and animals for its spectators seems hard to deny. That humanity transformed itself vis-à-vis animals' absence and then reconnected to a nature unmediated and unsullied by civilization to become friends with animals once again, is a history of our relations to animals of which we ought to be skeptical.

[145] Ibid., 229.

Conclusion

In conclusion, we might still ask, despite his great many failures in his attempts to rebuild an edenic paradise, to enter into that carefully constructed space and therein reconnect with animals, if in the end there is any possibility of encounter with animals in a zoological context. What are we to make of the violent outbursts against Hagenbeck, his keepers and on the animals themselves. In many ways these are pretty disappointing places to look for such an encounter, given that they are, at least in part, the production of the structure of the zoo itself. Nevertheless, the failure of the order of the zoo, the failure of the zoo to contain the animal, an even the failure of the zoo to see the animal, are moments when something else emerges. Is that emergence animal? We must still, however, reject the notion of a real animal, and the question of authenticity by which Rothfels levies his critique. Though Hagenbeck's hubris in his efforts to reinstate peace between humans and animals ought to be interrogated and set alongside his talents and goals as one of the great showmen/businessmen of the nineteenth century, he was nevertheless open to the possibility, indeed, driven by mourning the loss of, and hoping to recuperate, animal encounters. Though Rothfels too is clearly committed to thinking though the nature of animal displays in order for humanity to be more open to animality, he nevertheless relies on a concept – authenticity – that closes rather than opens.

What I hope to have captured in the preceding pages, by way of focus on Hagenbeck, who I take to be figural if not representative of his times is an important piece of the way western culture positioned itself in relation to animals. There is clearly a loss being mourned, an exclusion of animals due to civilization, industrialization and finally mechanization. Out of the mourning of that loss, spaces emerge for the display of

animals. While we might too quickly see this as a reduction of animals to their representations – and it of course also is – we ought to remember that many of these spaces, by being living spaces, were there to be both stepped into and seen. The recuperation of the relegation of animals from western society could scarcely be satisfied by more representation or replacement – perhaps the very means of the exclusion of animals in the first place. Rather, these spaces offered the promise of contact, of reconnection. It is with this notion in mind, and in thinking of cinema as engendering a new space, that I will turn to the important role of animals and animality in the emergence of cinema in the following chapters.

A Natural History of Cinema

Looking at the history of zoology, ethology, and natural history, it doesn't come as much of a surprise that there was a turn toward photographic technology. Not only is the turn toward technology and mechanization part of the arc of nineteenth century western history in general, these technologies served to grow the body of knowledge that such fields hoped to produce. Photography introduced new possibilities for storing or archiving a record of space and time *and* for revealing new knowledge that the naked eye simply could not see. As such the practices and sciences of looking at animals seems to have been destined to appropriate photography, still more series and motion photography. The reason for the turn to animals in the history of the evolution of photographic and cinematic technologies is, in contrast to zoology's turn to photography and cinema, much less clear. And yet more or less independently, Eadweard Muybridge and Etienne Jules Marey, perhaps the two greatest innovators of proto-cinematic technologies, focused their work heavily on the study of animal movement.[146] Placing animals in front of experimental photographic apparatuses amplified the potential power of the new technology as an instrument that reveals. It is in this capacity that photography becomes an instrument of communication. Motion studies of human figures communicate much of that which the subject is already capable of speaking, perhaps some of which it can only

[146] It was the publication of Muybridge's first motion studies that turned Marey to photographic instruments of measure, but Marey at that point had long been studying animal movement and further had already employed indexical instruments with his graphing technique such that, in effect, the movement of life produced an indexical image of itself.

moderately well describe and perhaps even some that it is unwilling or unable to speak. Photographic motion studies of animals operate not as supplements to another form of communication, but as contact with animals through signs, images. The animal could reveal itself just by moving in front of a camera. Motion photography then seemed most powerful, most new, when it focused on animals. Even in the most scientific cases, one must always have thought, what will it do? - "it" being either animal or apparatus or some assemblage of the two. What we witness then in the collusion of zoology and photography and cinema is what I hope to show is an animality of visual representation, an affirmation of the power of the photographic image and the *call* of the object it speaks. What is more, it is precisely contact with animals, contact with the natural world that the latter nineteenth western century seemed increasingly to be going without. As such, motion photography – the mechanization of representation – seems at home with its animal beginnings, to recuperate precisely what it lets go of, and insofar as it communicates animality, it seems to reinvigorate the representative practices of the late nineteenth century. A question lingers however: to what extent do these representational technologies in their life-like vibrancy threaten to replace the world, overwhelm our senses, and make obsolete our most characteristic practice – representing the world to ourselves?

In the last two to three decades, significant work has been done in the study of early cinema that has released the historical appearance of cinema from both the rigid history of technological evolution and the history of western narrative. Such work rather has striven to resituate cinema within a broad set of cultural forces and representational strategies and practices in the west that conditioned the invention and popularity of proto-

cinematic technologies and ultimately, cinema. In seeking to consider early cinema outside of its ultimate transformation into narrative cinema, these studies have positioned it within the realm of public spectacle, popular throughout the nineteenth century. Gunning's "Cinema of Attractions"[147] was groundbreaking in opening up the categories of visual display with which early cinema might be associated. Vanessa Schwartz has subsequently genealogized the emergence of cinema by considering the extent to which certain public spectacles and institutions in late nineteenth-century Paris exhibit a cinematic experience prior to cinema's technological appearance.[148] In the same vein, Jonathan Crary has complicated the technological evolution of visual representation and display by analyzing these instruments and their popularization in terms of the cultural demands to which they respond – most important of which for him is the mounting desire to see vision.[149] Add to these works as diverse as Deleuze's cinema books, Mary Ann Doane's *Emergence of Cinematic Time,* Charles Musser's *History of the American Cinema* and Thomas Elssaesser's collection on early cinema and we see a wide ranging conception of the emergence of cinema as that which both marks and effects a deep change in the way we see and think, a change that can only be centered on cinema's technological appearance on the scene and extends long before and after 1895. As such these works collectively loosen cinema's ties to narrative and allow for thinking through various questions about cinema according to the regimes of looking they enact.

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[147] See Tom Gunning, "The Cinema of Attractions: Early Film, Its Spectator and the Avant-Garde" in *Early Film*, eds. Thomas Elsaesser and Adam Barker (London: British Film Institute, 1989).

[148] See Vanessa Schwartz, "Cinematic Spectatorship before the Apparatus: The Public Taste for Reality in *Fin-de-Siecle* Paris" in *Cinema and the Invention of Modern Life.* eds. Leo Charney and Vanessa Schwartz, (Berkeley: University of California Press, 1995), 297-317.

[149] See Jonathan Crary, *Techniques of the Observer: On Vision and Modernity in the Nineteenth Century* (Cambridge: MIT Press, 1990).

Alongside such work there is a smaller but growing body of work on the place of the animal in visual representation. Akira Mizuta Lippit's *Electric Animal,* Steve Baker's *Postmodern Animal* and *Representing the Beast* and John Berger's *About Looking* as well as some of Derrida's late work and Cary Wolfe's work all address animals' roles in the history of representation and thought. More specifically, Gregg Mitman's *Reel Nature*, Jonathan Burt's *Animals in Film*[150] and Cynthia Chris's *Watching Wildlife* all address the peculiar place of animals in cinema. While these latter texts point out the involvement of animals from cinema's earliest days, there is as yet no extended investigation as to why animals populate early motion pictures to the extent they do. That they move is both exactly right and not nearly enough of an answer. The larger argument of this dissertation

[150] In the chapter "Vision and Ethics" from his book *Animals in Film,* Jonathan Burt offers the most extensive consideration to date of the place of animals in cinema's emergence. Burt captures one of the basic perspectives this project takes on animals' roles in the emergence of cinema: "[c]apturing animals on film presented technological challenges, which in turn reinforced the novelty of film via the animal's own potential for novelty and its power to fascinate." He argues that animals' central roles in the history of cinema are paralleled by questions of ethics, which he points out are persistent questions when animals are visually represented. He writes, however, that in regard to the place of the animal, the relation of ethics to the emergence of technology is only direct or clear when the very means of filming an animal threaten to harm it. Though his argument is dedicated to reasserting the question of ethics in the representation of animals, Burt too quickly narrows his focus to ethics. He seems to overlook, as Lippit and Berger point out, that the preponderance of animals in representational practices in the nineteenth century coincides with an exclusion of animals from the human habitat and thereby constitutes a deep reorganization of our relations to animals and the natural world more broadly. Further, questions of ethics only appear as a separable concern in our relations to animals once those relations become primarily mediated. That is, with the question of how one treats a beast of burden, or just how one treats an animal with which one has an *actual* relation, the question of ethics is situated along several other axes of relation with that animal, such as productivity but also living and working with the animal on a daily basis. Once the animal is mediated, ethics appears to drop out and reemerge as a separable concern. Ethical relations then undergo precisely the same transformation that the animal itself undergoes, separated out and reconstituted in a trace image. In this regard ethics is indeed bound to and in certain ways instantiated by the making of animal images. But this tying of ethics to animal image making is too quick if it neglects, as I would argue Burt does, that more than ethics drops out of our relation to animals in the course of their relegation and subsequent mediation. Is it possible to reconstitute ethical relations without asking first after how those relations have been transformed? As much as ethics should attend to such a question, is ethics itself enough to account for and understand the transformation of our relation to animals in the industrialization of the west and the emergence of representational technologies? As such I would argue that asking what has happened to our relations with animals is inextricably an ethical question, that is, one that hopes to account for our relation to animals thereby making a substantial and living ethics possible at all. See Jonathan Burt, "Vision and Ethics" in *Animals in Film,* 85-164 (London: Reaktion Books, 2002).

– that the practices of looking at animals, specifically in zoos, condition the emergence of cinema – is at its fulcrum in this chapter, focusing on practices that can scarcely be said to be either more zoological or cinematographic. In this chapter I will argue that practices of looking at animals, the need to reincorporate them into a modern culture that has largely effected their exclusion, as well as the hope such practices offer to a mounting collective concern that western culture, specifically through its representative practices, has become increasingly disconnected from a natural world, all inform the specific emergence of the proto-cinematic technologies developed by Eadweard Muybridge and Etienne Jules Marey. At once, we will ask two questions: what is motion photography doing in the study of animal movement and what have animals to do with the invention of cinema?

The creation of the zoological space marks one of the greater transformations of human-animal relations in the nineteenth century. An avatar of cinema, the emergence of the zoological space responds to a problem of scope in the study of natural history. In the late eighteenth century, naturalists who went out into the world and observed animals in their natural habitats found themselves at odds with the cabinet scientists who studied preserved, dead specimens. On both sides of the debate, proponents argued that the other failed to observe that which was truly important in studying animals. The field naturalist argued that animals must be studied in their natural surroundings in order to be properly understood. The cabinet scientist argued that, in nature, one could scarcely get close enough to wild animals to learn anything of substance, and nothing at all of its physical anatomy. If the scope of the field scientist was too broad, then the cabinet naturalist's was too narrow. Hence, the study of animals in captivity buttressed itself against two more

established modes of animal science. In his article "Ethology, Natural History, the Life Sciences, and the Problem of Place," Richard Burkhardt investigates the historical emergence of specific spaces for scientific research and the authority those spaces grant the science carried out within them. Bernardin de Saint-Pierre, in his decision to establish a menagerie at the *Jardin des Plantes,* and Frederic Cuvier, in his role as director of the menagerie, articulated the arguments by which the zoological space insinuated itself as a middle ground in the late eighteenth/early nineteenth century debates surrounding the study of the natural world. According to Burkhardt, Saint-Pierre struggled to establish a menagerie at the *Muséum national d'Histoire naturelle* at odds with cabinet scientists who saw the menagerie more as a holding area for soon to be preserved specimens rather than a place that would enable important scientific research. He responded by emphasizing the vital importance of studying the *life* of animals and the limits of the dead specimen:

> Saint-Pierre responded by allowing that it was not enough to study dead plants in herbaria or dead animals in a natural history cabinet. What appealed most to the lover of nature, he insisted, were *living* things. "The best prepared dead animal," he wrote, "presents only a stuffed skin, a skeleton, an anatomy." The *life* which had been the creature's principle feature was missing.[151]

Following Saint-Pierre's tenure as director of the menagerie, Frederic Cuvier took over the directorship in 1808 and held it until 1838. Though Cuvier must also have found it necessary on occasion to defend the place of the menagerie within the Museum

[151] Richard W. Burkhardt, "Ethology, Natural History, the Life Sciences, and the Problem of Place," *Journal of the History of Biology* 32 (1999): 491.

complex, the *Jardin des Plantes* had established itself as a unique and important place of scientific inquiry during his time as director. It had become the clear inspiration for the creation of the London Zoological Gardens in 1828. By 1825 Cuvier "went so far as to suggest that menagerie studies would ultimately render field studies unnecessary":[152]

> [T]he menagerie could be for the zoologist, Cuvier argued, what the chemist's laboratory was for the chemist. It was a place where one could see not only what does happen in nature, but what could take place in nature….the reason contemporary ideas of animal intelligence were so inadequate, he maintained, was because they were based on isolated facts involving free-living animals, and systematic experimentation with free-living animals was simply not possible.[153]

Thus, the study of animal behavior simultaneously carved out a space in which one could observe animal life and a space of discursive legitimacy in the debates about the study of animals. It was not merely a matter of contextualizing the animal – though it certainly was that – but also a matter of limiting that context and adjusting the scope of animal observation in order to see animality to what was deemed the greatest extent possible. The zoological space galvanized these debates by focusing on questions of vision and imbricating those questions with the value of observable life. By both (re)animating and framing the scope of the study of animal behavior, the zoological space spectacularized the observation of animal life. Turning animal life into a spectacle cannot be thought of outside of the mounting obsession with vision and the proliferation of regimes of looking so characteristic of European culture in the nineteenth century.

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[152] Ibid., 493.

[153] Ibid., 492.

But just as the zoological space solves a problem of scope, the questions of time endemic to cinema begin to emerge and come into focus. Not only does the zoo carve out a space, it also appears to carve out a duration. What is more, it locates that duration between two otherwise privileged instants: the glimpse of the animal in nature and the stuffed, posed or dissected specimen. Whether we focus on these moments as the any-moment-whatevers of catching a glimpse, or the ideal moment of the preserved animal, the zoo appears to respond by looking to the interval between the two – conceptually, between the ideal and the contingent, or literally, between animal encounter and animal death. It seeks to find a duration there. In *Creative Evolution*, Henri Bergson argues that it is in our inability to represent and understand duration that we miss an essential characteristic of life, namely, that it moves, persists and changes. For him the most readily available explanatory model for how our intellect operates is the cinematograph; indeed "we simply set a cinematograph going inside us." Our intellect and our sensory-motor apparatus can only conceive of instants; we assume that movement or duration is what must have transpired between those instants. Though this might suggest something of Bergson's misgivings about cinema, it does perhaps offer us a certain perspective on the zoo. Bergson argues that there are two ways of privileging instants, one characteristic of ancient thought and the other modern. The ancient intellect, exemplified by Plato and his concept of the forms, selected images or instants, which demonstrated transcendental and timeless ideals. By contrast, the modern intellect, characterized by science (the accumulation of knowledge) and much more concerned with the nature and effects of time, privileged the any-instant-whatever as that which could be strung along an abstract time and reconstituted as movement. To what extent, then, does the zoo set open a

duration between an ideal, cabinet specimen and the modern contingent glimpse of an animal in its natural habitat? Instead of pulling another instant out the interval, it rescues a duration and just as the zoological garden carves out a space by buttressing itself against two other types of space, the zoo carves out a time apparently between the ancient and the modern.

The zoo then appears at once to repeat and potentially solve Bergson's problem with what he terms the cinematic mechanism of our thought; the zoo presents a duration rather than simply another view taken from the interval, but at the same time the zoo is arguably just another privileged instant, generating a sense of "false movement." Bergson would no doubt insist that the duration presented in the zoo, structured as it is by the isolation from context, by feeding schedules and by the zoological organization of species, is no less a false movement than the cinema. Indeed, the zoo is not a way out of the cinematic mechanism of thought for which Bergson hopes. However, thinking of the zoo in terms of its attempts to represent movement, duration and life situates the zoo and cinema, with Bergson, as working out similar conceptual concerns. More importantly, it suggests that we ought to look at the cinema and its evolution in the proto-cinematic technologies, zoologically. Thus, Bergson's way of thinking, specifically in his text *Creative Evolution*, from which the thesis of our cinematographic thought comes,[154] is thus useful in investigating the intersections of zoological and cinematic time and their quest to represent a mobile, animal life. What an analysis of Bergson's text will show, especially its discrepancy from the thesis advanced in the earlier *Matter and Memory,* is a similar concern with the representability of life. In *Creative Evolution,* this concern, like the anxieties that both the zoo and cinema threaten to distance us from the very world the

[154] Henri Bergson, *Creative Evolution,* trans. Arthur Mitchell (New York: Palgrave MacMillan, 2007).

hope to bring close, takes the form of an anxiety of thought – an anxiety that the very mechanisms of thought that could allow us to think duration, movement, life and becoming are potentially just those that might replace and erase the world. The cinematic flow of images is attractive to Bergson because it models a dynamism and a becoming but troubling because the flow becomes a flood, and because they are images, not reality. That they are images, that they are not reality, however, is mitigated, and even at times overcome, for Bergson, and for Marey, Muybridge and the culture that would embrace cinema so wholeheartedly, by the fact that photographic images are indexical, that they are grounded by their very nature, in the real, physical world that they present.

Gilles Deleuze begins his preface to the French edition of *The Movement-Image* "[t]his study is not a history of the cinema. It is a taxonomy, an attempt at the classification of images and signs."[155] In case that had not forged the connection suggested between a classification of signs images and the study of zoology and natural history, he goes on to cite Peirce's classification of signs as his generic model and compares its fullness to Linnaeus's classifications in natural history. When asked about the importance of his choice of "taxonomy," in an interview published in *Cahiers du Cinema*, Deleuze says simply enough "[w]ell, yes, in a way it's a history of cinema, but a natural history. It aims to classify types of images and the corresponding signs, *as one classifies animals.*"[156] As important as Bergson is for Deleuze's work in the Cinema books – it is after all his classification of images in *Matter and Memory* that forms the impulse for his own work – Deleuze seems to throw up his hands at the apparent

[155] Gilles Deleuze, *Cinema 1: The Movement-Image* (Minneapolis: University of Minnesota Press, 1986), xiv.

[156] Interview with Deleuze "On the Movement Image," in *Negotiations* (New York : Columbia University Press, 1995), 46 [my emphasis – W.N.].

discrepancy between *Matter and Memory* – which formulates, before cinema's appearance, the conceptual ground for the movement-image – and *Creative Evolution* – which argues that there is something inherently cinematic *and illusory* about our sensory-motor apparatus. He asks of Bergson's characterization of cinema and thereby our perception as illusory and the "absolute identity of matter-motion-image,"[157] posited in *Matter and Memory* "had he forgotten it ten years later?"[158] Deleuze asks if cinema had perhaps not by 1907, when *Creative Evolution* was first published, sufficiently revealed itself as fully mobile, even then still experimenting with panning and tracking. Such an answer might get us part of the way there but given Bergson's insight into movement and images and the cinematographic nature of our thought, he nevertheless will later characterize the discrepancy as "very odd."[159] Oddly enough, Deleuze goes on to critique modern philosophy of the imagination, implicitly directed at the Bergson of *Creative Evolution*, in a way strikingly similar to a moment in Bergson's own analysis of modern philosophy's conception of the imagination in *Creative Evolution*; "modern philosophical conceptions of thought take no account of the cinema: they either stress movement but lose sight of the image, or they stick to the image while losing sight of its movement."[160] For Deleuze then, the apparent failure is not failing to oscillate between two ways of thinking or seeing – between, as it were, two images of thought – but failing to make sense and value what happens between two positions. Early on in his chapter, "The Cinematographic Mechanism of Our Thought" Bergson evacuates the concept of nothing

[157] Deleuze, "On the Movement Image," 47.

[158] Deleuze, *The Movement-Image,* 1.

[159] Deleuze, "On the movement image," 47.

[160] Ibid.

in order to demand philosophy's attention to becoming, change, and movement. For him it is the idea of nothing that underpins the viability of the instant or static state at all, by virtue of the fact that something or being would have then had to instantaneously appear. For there to have been nothing and then something, there would have to have been two instants between which there were no intermediary positions, like Zeno's arrow, no transition, no becoming, just the state of nothing followed by the state of being. Thus, he offers a counter-meditation to Descartes *Meditations on the First Philosophy:* After attempting to "extinguish…the outer world" he writes that "[m]y imagination, it is true, can go from one to the other, I can by turns imagine a naught of external perception or a nought of internal perception, but not both at once, for the absence of one consists, at bottom, in the exclusive presence of the other."[161] He goes on to say that

> [t]he image, then, properly so called of a suppression of everything is never formed by thought. The effort by which we strive to create this image simply ends in making us swing to and fro between the vision of an outer and that of an inner reality. In this coming and going of our mind between the without and within, there is a point, at equal distance from both, in which it seems to us that we no longer perceive the one, and that we do not yet perceive the other: it is there that the Image of Nothing is formed.[162]

Bergson appears to have worked himself into a corner. His critique of what is at base a Cartesian way of thinking seems to repeat that habit about which *Creative Evolution* is above all critical – failing to see the possibilities of creative thought between two

[161] Bergson, *Creative Evolution,* 178.

[162] Ibid., 303.

positions. On the one hand, his critique powerfully unhinges the Cartesian imagination, but on the other hand, it fails to notice that the fundamental mechanism of thought at work in that imagination is creative and productive even if the product of that creation is problematic. It is here that Bergson seems to throw out the baby with the bath water. Why not point out the flaw in employing the right mechanism of thought to a problematic conclusion? Isn't it, after all, precisely the same oscillatory thinking that allows us to think becoming at all? In resisting the creation of the image of nothing, Bergson retreats from the very same mechanism that creates the movement image. Deleuze's point then that "they either stress movement but lose sight of the image, or they stick to the image while losing sight of its movement"[163] casts Bergson in a particular bind. For as much as Bergson urges us to find new ways of thinking that allow us to think becoming, employing a mechanism of thought that could also allow us to think nothing is perhaps too risky. How then are we to understand Bergson's divergent texts together?

In his article "Cinema Year Zero" Gregory Flaxman points out Deleuze's oversight, since the latter fails to recognize that just as Bergson seems to dismiss the importance of cinema for philosophy, he "*nonetheless affirms its necessity.*"[164] Flaxman nevertheless takes on the task of explaining the Bergsonian turn where Deleuze simply presents it; he locates the turn in Bergson's undoing in *Creative Evolution* of the identification of matter, motion, image, and perception. Flaxman writes that in

> *Creative Evolution*, perception and intellect are now assumed and the becoming of images must be sought. Even Bergson's exhortation that 'we

[163] Deleuze, "On the Movement Image," 47.

[164] Gregory Flaxman, "Cinema Year Zero" in *The Brain is the Screen: Deleuze and the Philosophy of Cinema* (Minneapolis: University of Minnesota Press, 2000), 98.

> must accustom ourselves to think being' – let us say, images in their becoming or duration – 'directly' is symptomatic of such a shift: whatever its aim, the exhortation discloses a perception that is already sequestered from images and that is, ostensibly, immune to aberrance.[165]

Flaxman's reading makes a great deal more sense out of the turn that Deleuze simply lets linger even as he instrumentalizes the distance between the two texts as the motivational force of his text. Indeed, even before Bergson gets to the cinematographic nature of our sensory motor apparatus in *Creative Evolution*, he goes to great lengths to problematize our practices of image taking, a turn from a position that conceives of the world as an aggregate or chaos of images that act and react in relation to one another and out of which we extract ourselves, a composition of images. As much as Flaxman locates the suspicion of a flood of images and of cinema that Bergson appears not to have had a decade earlier and which undergirds his text, he perhaps overreads the disconnect. Much of Bergson's position in *Matter and Memory* actually persists in *Creative Evolution*. In Bergson's early chapter "The Evolution of Life," he takes the eye as an example for thinking through the various perspectives on the evolution of life proliferating throughout the nineteenth century. His extended meditation on the eye and its possible emergence as a perceptive apparatus portrays it first of all as an image.

> Where it has to direct a movement, it begins by adopting it. Life proceeds by insinuation. The intermediate degrees between pigment spot and an eye are nothing to the point; however numerous the degrees, there will be the same interval between pigment spot and the eye as between the photograph and a photographic apparatus. Certainly the photograph has

[165] Ibid, 98.

> been gradually turned into a photographic apparatus; but could light alone, a physical force, ever have provoked this change and converted an impression left by it into a machine capable of using it?[166]

Here the image precedes its recording, or rather image, matter and movement emerge in concert and here too, the insinuation of life emerges as if a photographic apparatus. Still, the hesitancy in *Creative Evolution* to back away from the cinema cannot at all be written out. As such, it seems Bergson actually hopes to maintain his perspective from *Matter and Memory* without attaching his hopes to cinema proper. As much as it may be clear in Flaxman's article conceptually how Bergson turns away from the identity of matter, motion and image, it remains fairly unclear why. In *Matter and Memory* Bergson approaches a "fantastic juncture, … the possibility of a universe of images in which we ourselves move as images – that is, of a chaos of images from which we extract ourselves, yet in whose ecstatic movements we partake"[167] but faced with the possibility in cinema's actual appearance, he retreats.

Published in 1896, *Matter and Memory* was written by a Bergson who had likely not even seen cinema, and even if he had, certainly had no sense of the flood of images it was about to unleash in the decade to come. Whatever impulse Bergson may have had toward a universe of images was countered by another. Perhaps it must remain at the level of speculation that Bergson's sense of the world with cinema and the glut of images it promised was one that envisioned deep disconnect from the world that he, almost alarmed, set out to rescue in *Creative Evolution*. Indeed as much as the nature of cinema offers to capture the real world, the very realistic effect of cinema threatens to displace

[166] Bergson, *Creative Evolution*, 46.

[167] Flaxman, "Cinema Year Zero," 97-98.

the world itself. Though Bergson may advance a universe of images, cinema's flood of snapshots must have seemed too much too fast. Though we may not be able, in the end, to say exactly why Bergson retreats from the universe of images, the most persistent refrain of *Creative Evolution* is that we miss the most important and defining aspects of life, change, duration, movement. He looks not only to science and philosophy, but also to our very biology and everywhere finds the same problem. In his assessment of the cinematographic mechanism of our thought, he traces out a history of thought that has been asking the same wrong question for millennia and thereby growing increasingly distant from the world it hopes to capture. Indeed, throughout the first three chapters of *Creative Evolution*, Bergson takes on the problem of taking successive images, of looking to their intervals and taking only more static images, which is for him, illusory. It is only in the opening pages of his chapter on cinematic thought that Bergson considers the possibilities of suspending thought between two positions, neither fully grasping nor releasing either, the very place he might again find the movement image. But instead, he finds the concept of nothingness and backs away. Deleuze's first question of Bergson's disappointment with cinema is perhaps his simplest, "Firstly, is not the reproduction of the illusion in a certain sense also its correction?" Where Deleuze is perhaps comfortable with the notion that nihilism is to be rejected on other grounds, Bergson encounters the possibility that in his pursuit of that which he feels is basic to life – change, movement, becoming – he runs the risk of engaging its opposite – nothingness, stillness and death. Looking, as Bergson does, at the history of western thought, and aware as he must have been of Marey's experiments and similar opinion of cinema,[168] cinema must have seemed

[168] Marey and Bergson were both at the College de France from 1900 to 1904, during which time Bergson taught a course on time and immersed himself in the study of biology in preparation for *Creative Evolution*.

to him only a continuation of the same approach, laden with all the problems of its historical evolution. Is it perhaps useful to think of the cinema as that which seemed simultaneously to engage the world and remove us from it? Though divergent, Bergson's texts, which bookend cinema's novelty years, seem to capture precisely this ambivalence.

This ambivalence maps onto two others: science vs. art and education vs. entertainment. Whereas education appears to deepen our connection to the world, entertainment seems to trivialize that relation. Conversely, science appears to put us at a remove, while art aspires to put us in enlightened appreciation of the natural world. As illustrated in the previous two chapters, the practices of looking at animals in the nineteenth century operated with a persistent tension between the educational/scientific and the entertainment/spectacular values of such displays. The London Zoo struggled to make its scientifically principled displays appeal to the public whose taste would ultimately guide its development and Carl Hagenbeck struggled to have his innovations and display counted amongst exhibitionary practices of the nineteenth century considered to have scientific and educational merit. Indeed this very question frames zoo history perhaps more than any other. Zoo historians have located the defining criteria of what a zoo is across the boundary between princely menageries and the scientifically principled zoological gardens of the nineteenth century. While closer analysis of these institutions or collections quickly breaks down that strict binary, the tension nevertheless remains a question in not only the organization but also in the reception of the display of animals. Even now, do we have an entire cable channel dedicated to watching animals because we

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"Both belonged to a small group organized by the Psychological Institute of Paris to study psychic phenomena" and "the manifestations of yet undefined forces" through "strictly scientific research." See Marta Braun, *Picturing Time: The Work of Etienne Jules Marey, 1830-1904* (Chicago: University of Chicago Press, 1992), 279.

want to learn or to be entertained? Though this tension pervaded many of the exhibitionary practices of the nineteenth century, perhaps nowhere was this tension so closely tied to the innovations of exhibitionary practices as those of zoological display and the emergence of cinema. Is there some powerful relation between this binary of values – science vs. art, education vs. entertainment, seriousness vs. play – and the display of animals? The exhibition of life itself? If the ambivalence of Bergson's texts does connect to the tension between these divergent values of the display of life, then it seems the tension arises in response to a concern over what registers the human-animal relations and our connection to the natural world are to be constituted as animals leave the human habitat and machines and technology take on greater and greater roles in our lives.

The tension between scientific value and the value of entertainment offers us a good frame with which to investigate the emergence of proto-cinematic technologies. Cinematic representation was a technological goal of the late nineteenth century. Though many of its pieces emerged out of other technological evolutions, Dickson, Edison, the Lumieres and even Marey's assistant Demeny were focused on producing a workable apparatus for motion photography. However, it seems that the two most important of those proto-cinematic tinkerers, Muybridge and Marey, both at times called the godfathers of cinema and in any case the innovators of most of the technological innovations required by motion photography, had no such goal in mind. And it is in these two figures that the tension so characteristic of the practices of looking at animals in the nineteenth century – between science and spectacle – can be found. Despite his scientific motivations and his contributions to the study of animal behavior Muybridge will emerge

in the coming pages as much more of a showman, and Marey, in many ways, as the consummate scientist of movement itself.[169]

We can begin by investigating the articulated and implicit goals of both Muybridge and Marey, think specifically the relation of their innovations to movement, time, and the nature of photographic representation and then ask: why animals? The overwhelmingly popular practice of looking at animals in zoos in the nineteenth century is importantly kept in mind here as it is these two practices, the zoo and the cinema, that are concerned with representing real life, in real time. As such they both reveal and fill out a set of values present in the nineteenth century, representing life, studying and marveling at life, recuperating the loss of animals from an increasingly industrialized, mechanized, and technological western culture, and watching as well as preserving the unfolding of time.

[169] Though both figures are often cited as the scientist innovators of much of the proto-cinematic technological evolution that led to cinema, and despite their similar pursuits of the nature of animal locomotion, they are polar opposites in terms of the tension between the scientific and entertainment values of cinematic representation. Indeed, Marta Braun, a biographer of Marey's has pointed out that there is surprisingly little scientific value of Muybridge's studie. Rather, he is better understood as an innovator of the technology and method that Marey would only later make scientifically valuable. Though this might sell Muybridge somewhat short, as we will see, Muybridge is evidently far more interested in the spectacle of his technologies than the rigorous scientific application of them. See Marta Braun, *Picturing Time,* 51-55, 228-263. By contrast, Marey's response to Muybridge's study was thoroughly scientific "we will see all imaginable animals in their true paces, it will be animated zoology," quoted in Braun, *Picturing Time,* 47.

Muybridge

Though Eadweard Muybridge is a part of any account of cinema's prehistory, the common description of him as the man who developed a sort of photography that would later become crucial to the invention of cinema proper perhaps too quickly excludes his pursuits and contributions from the history of the emergence of motion photography. Not only did he produce various mechanisms for capturing movement in rapid successive exposures, he also invented the zoopraxiscope for projecting these images, a development which, however skeletal, arguably constitutes the invention of motion pictures and in any case constitutes the initial voyages into and experimentations with a cinematic space.[170] Rather than contribute another figure to the debates over the inventor of cinema, though, I'd like to conceive of the emergence of the cinematic apparatus as a several decades long process, wherein cinema is just one concretion of a broader cultural unfolding and wherein Muybridge is not so much an inventor of cinema, but a figure deeply emblematic of a cultural/technological/spatial emergence. Emblematic despite the fact that it seems cinema was never a specific goal for him given that he never attempted to switch to a single lens apparatus. Though Muybridge has often been called the godfather of cinema, if only rarely its inventor proper, this seems to be only because he was the first to produce photographic images that could, in different technological conditions, be projected as moving images. That he cannot be snuggly fit into a strict technological drive toward cinema suggests that his experiments, Marey's and even those of Lumiere and Edison indicate a broader cultural drive of which cinema is only one particular assemblage, that

[170] It seems that the projected images were traced from the original photography, thus precluding it from actual cinematography. Nevertheless, the indexical tie obtains in this display of animal movement. See Gordon Hendrick, *Eadweard Muybridge: The Father of the Motion Picture* (New York: Grossman Publishers, 1975), 114-115.

is, not its destiny. Such a drive can be characterized as an attempt to reinvigorate our representational practices – to represent movement, time, animals, space – which offers the hope of connecting to an increasingly distant physical, natural world. As a figure emblematic of that drive, an analysis of Muybridge's photography and technological developments conditions a further claim, which will be the focus of my argument here: when humans step into the object position of a moving picture camera, they are stepping into a space already well staked out, and in many ways fashioned, by animals. Not only does the enormously popular practice of looking at animals in zoos loom large here but, in my analysis, I'll suggest that this animal space is carved out as such in three ways: (1) by the focus on animals as photographic objects, (2) by the conflation and commingling of animality with mechanicity, and (3) because of the "animal nature" of photographic representation. Indeed, I'll suggest that when humans step into this space it holds the promise of revealing and recuperating their own lost animality and connection to the natural world. Stripped of language as well as clothes and virtually every other mark of culture, the cinematic space that Muybridge's experiments bring about offers an escape from an industrializing civilization increasingly detached from the natural world and mired in slippery signification, and a return to a grounded world of movements, gestures, and looks.

There is no overlooking the presence of the animal in Muybridge's work or terminology. Muybridge described his work as "zoopraxography" – the picturing of animal motion or, more literally, the writing of animal praxis. Further, he named his invention the "zoopraxiscope" – an instrument for looking at animal motion. While the obvious reference of these names in the prehistory of cinema is the zoetrope, we mustn't

forget that contemporaneous with the emergence of photography was the proliferation of zoological parks across Europe and the United States. When photography was invented, there were only three zoos in Europe; by the emergence of the cinematographe in 1895, there were nearly a hundred throughout Europe and the United States.[171] More importantly, the clearly stated motivation for Muybridge's pursuit of series photography was the desire to see animals, specifically a horse, more clearly (Fig. 3.1) Indeed, like the emergence of the zoological space, Muybridge's invention is conceived of as an apparatus that allowed humans to see animals in a way that preexisting technologies and strategies of looking did not. As the story goes, because Leland Stanford's horse, Occident, was such a fast trotter, human vision was insufficient to clearly determine the position of the animal's legs at any one moment, and more specifically to see if all four of its feet left the ground at any one point.[172] In this leap forward for visual technology – lining a track with cameras, having the horse trigger the shutters as it ran past them – photography was quite expressly conceived of and employed as a supplement to human vision to see that which was hidden from the naked human eye. The apparatus thereby takes on its own animal status, performing a biological function for which the human organ is insufficient.

What is often overlooked here is that there are two challenges, both crucial to the emergence of cinema, posed by capturing a moving animal. First, one must stop the animal, freeze its movement in a single exposure, which involves both increasing shutter speeds and manufacturing plates light-sensitive enough to record the image with such

[171] For a list of zoos and their dates throughout the world see the appendix in Vernon Kisling, *Zoo and Aquarium History*, 369-390.

[172] See Gordon Hendricks, "Occident in Motion" in *Eadweard Muybridge,* 97-129.

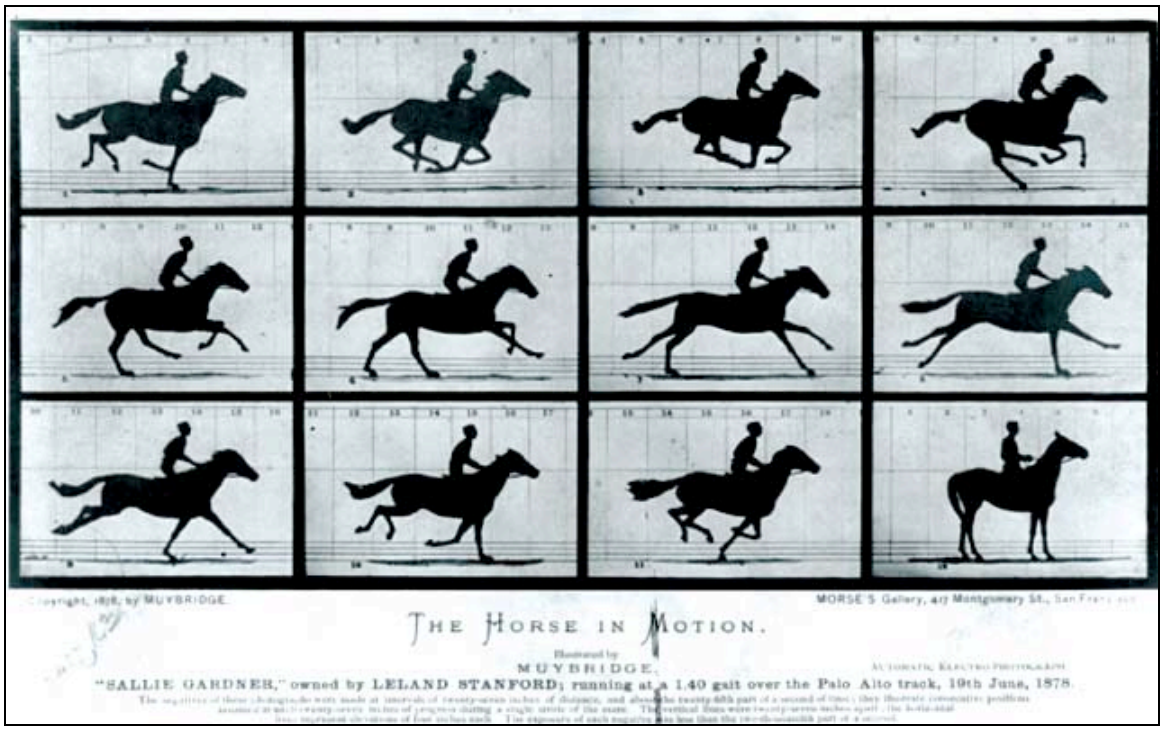

Fig. 3.1. Despite the debate over Occident, the horse that actually appeared in the first published series of images, was Sallie Gardner, shown here.

short exposure times. This is a distinctly animal challenge; it is a problem posed not only by a moving horse but by animals more generally. Prior to these technological advances, photography was somewhat limited to landscapes and portraits, precisely because everything in the frame had to remain still. Given that landscapes don't move and people can be told to sit still for the duration of an exposure, up until this point animals were literally and figuratively somewhat of a cloudy spot in the history of photography.[173] As much as Muybridge's photography might represent a certain recuperation of the animal or remedy of our blurry imaging of them and the opening up of an animal space, the animals that occupy that space are nevertheless fleeting. Though they move, they move in place; a projection of any of his motion studies of animal would show just that, an animal moving but unable to change its position. What Muybridge's space gives us then is a space of captivity and suspension, and an animal that's always in the act of leaving.

The second, better known, innovation was Muybridge's decision to line a track with cameras in order to capture successive images of the trotting horse at very short intervals. Though various methods were used to trigger the shutter –such as strings across the track tripped by the horse's legs and the sulky wheel connecting a circuit – all of the initial means employed the animal's movement itself. Thus, in a manner of speaking, the horse was taking pictures of itself. Such an act not only appears to produce its own instantaneity, it gathers its movement into the intervals between those instants, which cinema would later redeploy. As such, both of Muybridge's innovations in this case – the cinematic reorganization of time and space – are responses to animal life. Not only was

[173] See John Edwards, *London Zoo from Old Photographs*. The first photographs of several species of animals, including a tiger, a hippopotamus, and a giraffe, occur in the London Zoo after the society's decision to hire photographer, Count de Montizon in 1852. Here two spaces of animal observation overlap, wherein both apparatuses of operation perform the "holding still" for the archiving function of the other.

he able to see what had previously been the secret of the horse – indeed all four legs left the ground at once – but he also instrumentalized animal agency in order to reveal that secret and create a new form of human representation. Whatever the involvement of the animal in the evolution of photography prior to Muybridge's experiments at Palo Alto, from this point on, the animal, and more generally animality, would become inextricably bound up with motion photography. On top of that, it is at this moment that photography (still and motion) becomes an instrument that reveals the secrets of that natural world, which the naked eye cannot perceive.

Both the zoological park and the cinema appear to ground human practices of representation in the world as much by the nature of the representations they produce as by the nature of the apparatuses they employ. The zoo and the cinema appear to recapture and recuperate an increasingly distant natural, living world; in so doing they respond to and reveal an emerging crisis in representation.[174] The markers of this crisis are to be found in the mechanisms and architectures with which these practices hope to collect, contain, organize and display the living as well as in the desire to participate in a mode of

[174] It's worth noting here a piece of Muybridge's biography which perhaps doesn't determine the nature of his self-imaging, but suggests, at least, that his step in front of his cameras is an attempt to escape and counter normative modes of meaning making. Eadweard Muybridge was not born "Eadweard Muybridge." In the span of his life, he had as many as seven different names. Born Edward James Muggeridge, he changes not only his surname from Muggeridge to Muggridge to Muybridge but his first name from Edward to Eadweard. When he travels to Central America he begins referring to himself, apparently without explanation, as Eduardo Santiago Muybridge. At times he refers to himself as EJM jr, even though his father's name was John and upon taking up photography as a profession, signs his photographs as Helios, the Greek sun god, who, it is worth noting, at times stands in for Apollo. Rather than read this as a concerted effort to fashion himself into a public figure of note – though surely it was – we might read it more literally. Muybridge's repeated self naming amplifies the arbitrariness of language in contrast to an adamic naming, wherein the animal is the word and the word is the animal, and yet suggests a longing for just that, a name that captures him. While Muybridge no doubt delighted in refashioning himself, his continual search for a name not only destabilizes human language by foregrounding its arbitrary nature, but it also suggests an unflappable desire to rebind the signifier and the signified. Thus, as Muybridge invents a supplement to human vision, steps into a position that he himself marked as animal, and escapes the arbitrariness of signification by imaging his animal body, we might think of this as fully in line with his search for a name for himself. See Hendricks, *Eadweard Muybridge,* for a full account of his name changes.

representation not subject to the slipperiness of signification. Film and photography appear to counteract this slipperiness because the mode of representation depends on the light reflected by the *imaged* object. This type of sign was described by Charles Sanders Peirce as the index – "a representamen which fulfills the function of a representamen by virtue of a character which it could not have if its object did not exist."[175] The connection between representation and the world is physical, the image insists on what *must have been*; though it can be deeply manipulated, the film image always bears some trace of the object it has captured. To remove that connection between image and object is to step outside of photographic representation. Though perhaps the zoo is not precisely indexical, the zoo animal is at once powerfully real and, in its decontextualized performance of its species and its colony of origin, reduced to a harmless trace. Like the photograph and the actualité, the zoo insists on what must have been – an Africa, a hunter, and a lion.

Insofar as these representational practices offer a way of signifying that is at once non-arbitrary and yet available to the human subject, they appear to offer redemption to a system of signification in crisis. They offer hope that things might again have meaning in and of themselves – a return to adamic language, the *call of the object*. As the animal is involved in any return to paradise, the nature of animal language, or the imagination of such, is not separate from the issue of indexicality. In *The Electric Animal,* Akira Mizuta Lippitt has argued that animal language differs from human language in that animal communication has an almost indexical relationship to the state of the animal situated in its perceived environment. By contrast, the relation between referent and signifier in

[175] Peirce, *1903 Harvard Lectures on Pragmatism,* 170.

human language is arbitrary and conventional and thus subject to slippage. While animals can deceive, they cannot fabulate; as such their utterances, gestures and looks remain connected to the world. This understanding or imagination of the animal raises a number of questions unique to the analyses of the zoo and cinema. Namely, considering their investments in the display of real life, what does it mean, in the zoo and the cinema, to represent animals (and humans) in an animal, that is, indexical way?

The Nineteenth Century witnesses both dramatic developments in visual culture and the removal of animals from modern daily life. In his book, *About Looking,* John Berger has pointed out that "Public Zoos came into existence… at the beginning of the period which was to see the disappearance of animals from daily life."[176] Lippit expands on this point and argues that a deep correlation exists between "the disappearance of wildlife from humanity's habitat [and] the reappearance of the same in humanity's reflections on itself: in philosophy, psychoanalysis, and technological media such as the telephone, film and radio."[177] These phenomena suggest a deep-seated cultural need to recover the loss of the animal at the moment of its exclusion. More importantly, it suggests that both the zoo and cinema occupy similar positions as responses to a loss of the animal – the recuperation of such in its indexical trace. For Lippit, the culmination of this loss and work of recuperation is the electric animal, but perhaps more potently for this analysis, it is the image of the animal, the *animal-image.*

Muybridge's work externalizes and simulates the human perceptual apparatus and produces images of animal and human life unfolding in time. His work promises to reanimate human representation by giving it life through the movement it captures and

[176] John Berger, *About Looking* (New York: Vintage, 1980), 21.

[177] Lippit, *The Electric Animal,* 2-3.

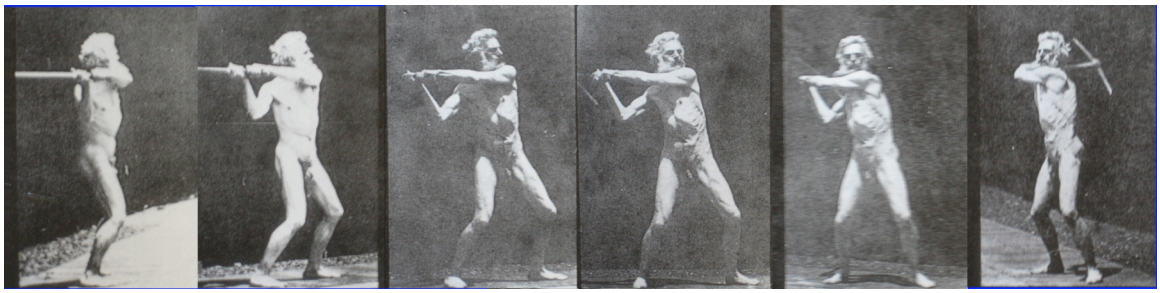

Fig. 3.2. Series of Muybridge swinging a pickaxe. Images were all taken at the same moment.

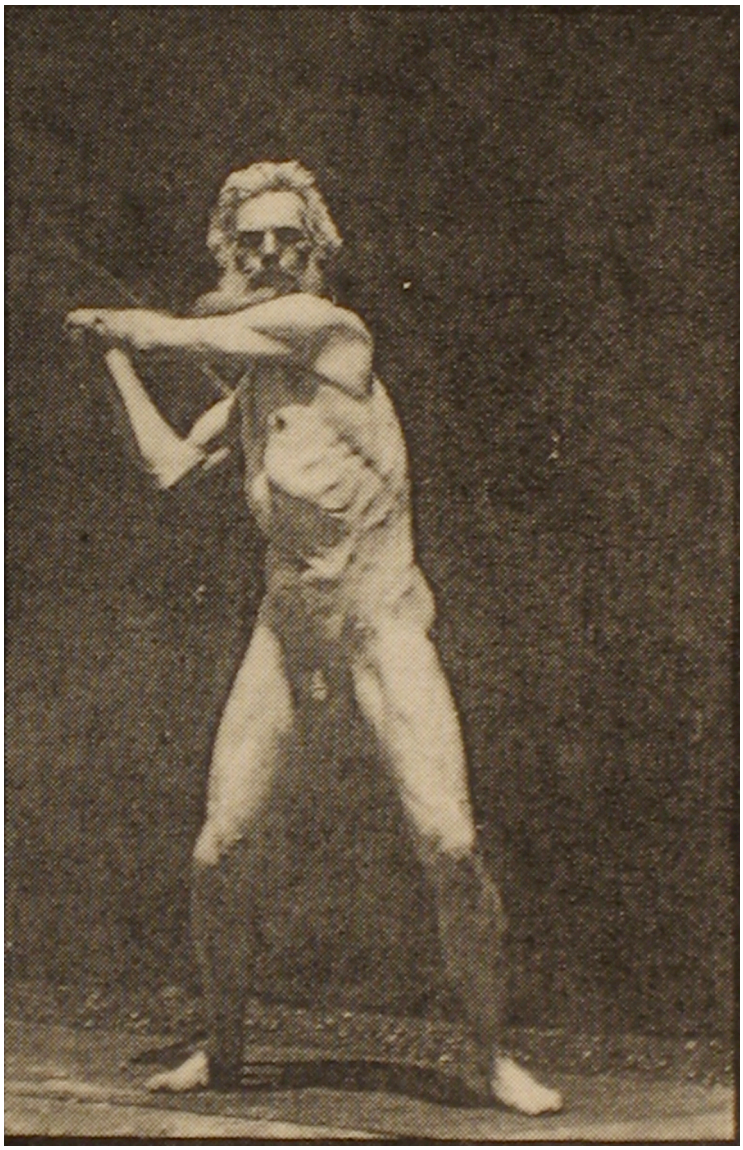

Fig. 3.3. Single image from series pictured above.

recreating it in a mechanical apparatus. Two important characteristics distinguish Muybridge's work at the University of Pennsylvania a decade later from his initial studies in animal movement. First, 16 of the 781 plates of the later study demonstrate a distinctly different approach to the issue of capturing movement in time. These 16 plates display sets of images that differ from one another not by the passage of time but by differences in camera position. Taken simultaneously, these images effectively replace the scale of time with space, thus radically destabilizing the perceptual order; as Crary has written of the earlier studies, so too, I would argue, these studies "posed plural scatterings of attention and the possibility of unforeseen perceptual synthesis outside of any disciplinary imperatives."[178] Well aware that his images could recreate motion through projection with his zoopraxiscope, Muybridge foresees the ability of the cinematic apparatus to once again supplement human vision. Projected, these images (Figs. 3.2, 3.3) simulate a cinematic arc around Muybridge himself but since the images are taken all at once, that arc does not extend in time; instead, it moves through a single moment. The unfolding of time is arrested and redeployed into space and we are presented with a deep analysis of a single instant.[179] Such a manipulation of time and space once again supplements human vision, accomplishing what the naked eye cannot and hoping to reveal what is hidden from it, namely, the instant itself. Like the horse producing its own instantaneity and gathering its movement into the intervals, Muybridge inserts a distinctly human time into the space of a hybridized animal/mechanical movement.

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[178] Jonathan Crary, *Suspensions of Perception: Attention Spectacle and Modern Culture* (Cambridge: MIT Press, 2001), 147.

[179] Think of "neo-time" which appeared to slow down time as the camera arced around Keanu Reeves's character in *The Matrix*.

Second, this new method of capturing movement is exclusively focused on human figures. Further, the balance of human figures to animals in *Animal Locomotion*, the publication of Muybridge's work at the University of Pennsylvania, is virtually the reverse of the earlier Palo Alto experiments, which focused primarily on animals. Though a number of technological factors contribute to an explanation of this shift – for instance, the ability to produce prints detailed enough to show the contours of the hairless human body – it is more important to understand this step into the object position of the motion picture camera as a double move of both technological advancement and mourning the deepening separation of humans and animals. Whether it is by virtue of Muybridge's earlier experiments, Marey's or the observational spaces created by the zoo, the space created for the observation of the unfolding of life is a space deeply marked and carved out as animal. These experiments contribute to the breaking down of human movement, the subjection of the body to Taylorist regimes of industrialization, and thus appear to strengthen modernity's grasp on human subjectivity. However by escaping referential signification, destabilizing the perceptual order, and occupying the site marked as the animal object position, these same experiments seem to open up a line of flight into the deterritorialized space of the animal.

Consider one more piece of Muybridge's biography – namely, that he was indicted for the murder of his wife's lover, tried and eventually acquitted on the grounds of temporary insanity. In fact, Muybridge never denied the chain of events: learning of the affair, getting his gun, taking the several hour train ride, and finally shooting his rival. He maintained, however, that this succession of events somehow did not determine guilt, that there were extenuating factors that ought to exonerate him. Though he never actually

gave any account of his reasoning, claiming instead a poor memory due to his disturbed state, his lawyers contended that he ought not be held responsible for his actions.[180] Tom Gunning has argued that with the inventions of still and motion photography, the body "became a transportable image fully adaptable to the systems of circulation and mobility that modernity demanded."[181] Beyond rising capitalism and industrialization, Gunning argues that this imaging and measuring of the body replaces marking it as a means of control. Specifically, it subjects the body to new regimes of determining guilt, of which the subject is often unaware and from which it is unable to hide. Gunning writes, "in both the legal process of detection and its fantasy elaborations in detective fiction, the body reemerges as something to grab hold of, and the photograph supplies one means of gaining purchase on a fugitive physicality."[182] Under such a regime of examination, "The body has become a sort of unwilled speech, an utterance whose code is in the possession of a figure of authority rather than controlled by the enunciator," [183] a criminal captured "in an act of unconscious revelation"[184] In one of the images from the experiment described above, we find Muybridge, pickaxe in hand, wearing a menacing countenance and nothing else. He has turned his camera, his revealing apparatus, back onto himself.

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[180] See Hendricks, *Eadweard Muybridge,* 63-77.

[181] Gunning "Tracing the Individual Body" in *Cinema and the Invention of Modern Life.* eds. Leo Charney and Vanessa Schwartz, (Berkeley: University of California Press, 1995), 18.

[182] Ibid., 19.

[183] Ibid., 32.

[184] Ibid., 24. The camera thus reveals not only animality but criminality as well. The implication that something is caged here should not go unnoted. Indeed, that the camera and other observational structures replaced the need to mark the body with the pervasive observation of it, is precisely the turn from monarchic structures of control to disciplinarism and the emergence of panopticism that Foucault argues for in *Discipline and Punish*. The famous panopticon designed by Jeremy Bentham allowed for the control of its inmates by structuring the very threat of observation. Bentham's stated inspiration for that design was the Royal Menagerie at Versailles, which was laid out such that one could observe all of the animals in the collection from a single vantage point.

He has stepped into a space both animal and criminal, a space that reveals what the subject either cannot or will not. This particular arrangement of space and time delves deeply into a single instant, reanimating that which the camera freezes – how could this figure before that apparatus not hope to reveal that which no human eyes could see? Does he feel guilty at not having paid for his crime and thereby seek to reveal it in other ways? A sort of obsessive confession? Or does he look to answer to something outside human judgment? The sadness of this photo – and it is sad – is its manifold mourning of the loss of so much innocence: of animality, of a fallen language, of a murder that can't be confessed, and of an apparatus that can't reveal anything more than what it already has, an apparatus that ultimately can't return humans to an edenic paradise. In any case, the scientist Zoopraxographer has subjected himself to his own instruments of observation, heralding the inward turn of both anthropology and psychoanalysis.

Marey: Archaeology of the Interval

Marey's studies of movement did not begin with photography. In 1860 he invented the sphygmograph (an ancestor of the EKG), in order to track the coursing of blood through the human body without breaking the surface of the body. After an outbreak of cholera in France in 1884, Marey produced a study of the movement of water through Paris's canals and sewer ways, offering the scientific world the first concrete relation between the flow of water and the spread of cholera. Even before Muybridge's motion studies, Marey had devised methods of graphing the nature of a horse's trot, gallop, using a complicated network of rubber tubes, tambour, and graphing instruments, which he invented. Marey was above all a student of movement itself, which he found to be the essential characteristic of life. What persist throughout his various approaches is a commitment to allowing life to produce an *indexical* image of its own movement, to capturing and revealing the *continuity* of moving life, and to representing that continuity in the unfolding of *time.* Though divergent from Bergson in the specificity of his approach, the apparatuses employed as well as their thoughts on cinema, it should be noted that their studies share an overarching value: to take hold of, to think and to represent the continuous movement of life in duration, that which they both believed to be life's most basic characteristic, and that which they each further believed our practices of representation were hitherto unable to grasp. In her book, *Picturing Time* Marta Braun writes, "Marey's chosen area of physiological investigation was movement, which he defined as the most important characteristic of life."[185] He departs from Bergson, however, in his belief that the apparatuses of science, attuned to the difficulties inherent in registering movement, could be made to reveal that movement in ways that could be

[185] Braun, *Picturing Time*, 4.

studied in depth. This divergence depended heavily on one of Marey's central beliefs in his study of human and animal life: that the body was "an animate machine whose motion was subject to the law of theoretical mechanics – laws that govern any assemblage of matter in motion. His aim was to discover these laws in physiology" [186]

As with Muybridge, animals figure prominently in Marey's studies of movement. Whereas Muybridge's timeline appears to denote a shift from animals to humans in terms of the subjects of his studies, Marey appears to have been committed throughout to studying both, but it is in his studies of animals that most of his photographic innovations emerge. Standard histories of proto-cinematic technologies position Marey as following in the footsteps of Muybridge, insofar as he adopted the photographic method, but expanding on those studies by turning his attention to birds and developing the "chronophotographic gun" (Fig. 3.4). This device, modeled on the hunting rifle, is often considered an evolutionary step in the emergence of cinema for two reasons: it simultaneously switched to a single lens apparatus and allowed the apparatus to move in time and direction with a flying bird. As such, because a bird would not fly in a predetermined path or remain within a static frame, Marey also deployed the problems posed by capturing animal movement as a motivation for a crucial development in cinema's prehistory. Such conventional histories, however, are perhaps too quick in casting Marey in a linear evolution, the destiny of which lies in the appearance of the cinematic apparatus. Not only is it worth pointing out, as mentioned above, that Muybridge and Marey can scarcely be said to have set the cinematic apparatus proper as their ultimate respective goals; but such a historical perspective also too quickly puts Marey in step behind Muybridge, and elides Marey's detailed and articulated agenda

[186] Braun, *Picturing Time*, xvii.

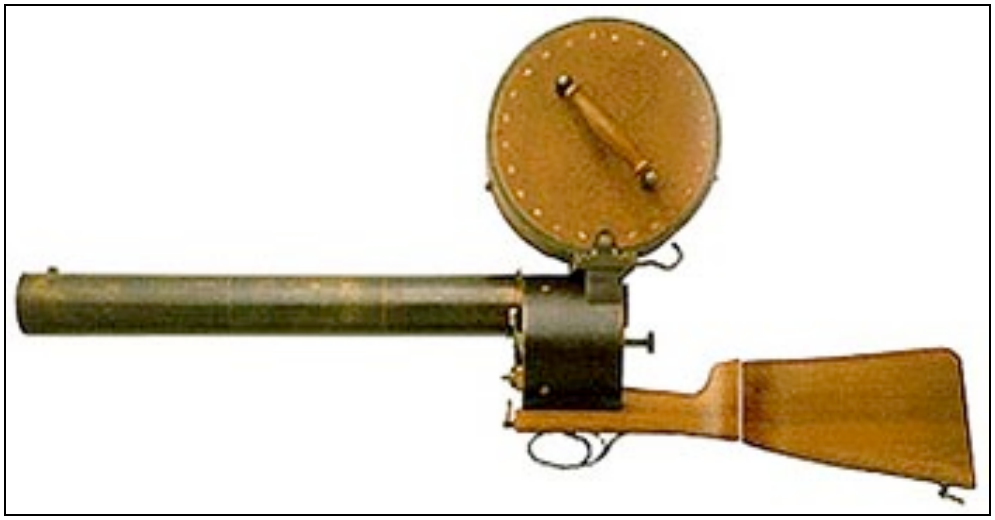

Fig. 3.4. Marey's Chronophotographic Gun.

to represent life.

Though remarkably similar to Muybridge's pursuits in the attempts to represent animal (and human) life moving in time and space, the arc of Marey's life's work is decidedly different. Given the orientation of his entire career to the study of movement and the far more thoroughly scientific approach of his studies, Marey's work ought to be considered in its own right, and rather than in a lineage with Muybridge moving toward cinema, seen as a relatively distinct emergence of the broader cultural drive to capture motion and life in the latter decades of the nineteenth century. Moreover, it seems on several points that Marey was more deeply immersed in a broad cultural and scientific wish to capture and represent the increasingly elusive movement of animal and human life, especially in the field of natural history. First of all, the most prominent feature of his work that bridges his turn from the graphic method to the photographic method is the indexical quality of both. Not merely coincidental, it is this quality of his studies by which he saw his instruments as allowing the movement of life to reveal itself. Secondly, Marey's commitments to the scientific method and the importance of producing regular results under controlled conditions demonstrate a more concerted effort to reveal that which occurred between the frames and images in their respective studies in series photography. Finally, though his studies were of notable benefit to zoology and the study of animal behavior, Muybridge's work was just as committed to the art of photography, its technological emergence, and his own recognition as a kind of a spectacular auteur. By contrast, Marey's work, on the other hand, demonstrates a commitment to that field in its very conception. In the introduction to *Movement*, Marey writes of his attempts to make his work useful to various sciences and professions.

> In a few instances such an attempt has been made, for geometricians, hydraulic engineers, naval and military men as well as artists have all had recourse to this method, and at last naturalists have interested themselves in this matter. It is more especially to this latter class that we dedicate our work, since it appeals to their particular ambition, namely that of discovering among the phenomena of life something that has hitherto escaped the most attentive observation.[187]

First, the discovery of that which has hitherto escaped attentive observation is remarkably similar to the discursive positioning of the zoo in the late eighteenth and early nineteenth centuries; it has carved open a space and duration for the observation of life. Second, though Marey might attribute some of the failures of "attentive observation" to the direction of scientific inquiry in the nineteenth century, that is, where it chooses to look, we should note the profound collapsing of the scientific eye and the human sensory apparatus. It suggests that an improvement upon vision is synonymous with an improvement in science. Finally, Marey is conceiving of the various apparatuses his studies will employ as supplements to human vision that will allow science to advance beyond what the human is alone capable of achieving. On the one hand, Marey explicitly articulates the benefit of the technological apparatus of observation for the field of natural history. On the other, he locates natural history as the field that can advance the emergence of technologies of observation, whether graphic, photographic, or cinematic.

Marey's work divides roughly into three approaches to measuring and recording movement: the graphic method, the photographic method, and the cinematographic method. The difference between the latter two is essentially the difference between

[187] Etienne-Jules Marey, *Movement* (New York: Arno Press,1972), vii.

recording multiple images on one plate and successive images on successive plates.[188] Marey began studying physiology under the direction of Martin Magron in 1854. In a well-funded laboratory and under the direction of a scholar who encouraged discussion, Marey was given the opportunity to combine his interests in the movement of living things with his particular mechanical talents. It was here that, according to Braun, "Marey saw that some light could be shed on cardiological and circulatory processes if they were considered as purely mechanical functions. He also showed that a circulatory system of rubber tubing and glass, constructed according to mechanical laws, would exactly replicate the circulatory and cardiologic functions he was studying."[189] In 1860, Marey designed his first graphing instrument, the sphygmograph (Fig. 3.5). The instrument was simple in design, consisting of "a lever with one end resting on the pulse point of the wrist and the other connected to a stylus, and a clockwork mechanism that moved a strip of smoke-blackened paper under the stylus at a uniform speed converting the pulsations into a fluid inscription."[190] Marey's sphygmograph improved upon Carl Ludwig's kymograph, the first use of graphing instruments in physiology. Ludwig's kymograph, however, relied on mercury filled tubes that had to be inserted into the artery of the subject. As such, it was invasive and therefore limited to use on animal subjects. But Marey's device could be used on humans and was therefore useful in clinical physiological work. More importantly, it reveals a commitment in Marey's scientific method that would persist throughout his work, especially in his turn to photographic

[188] It is because of this latter difference that Marey was included in the debates over the inventor of cinema, see Braun, "Inventing the Inventor," in *Picturing Time*, 349-355.

[189] Braun, *Picturing Time*, 12.

[190] Ibid., 17.

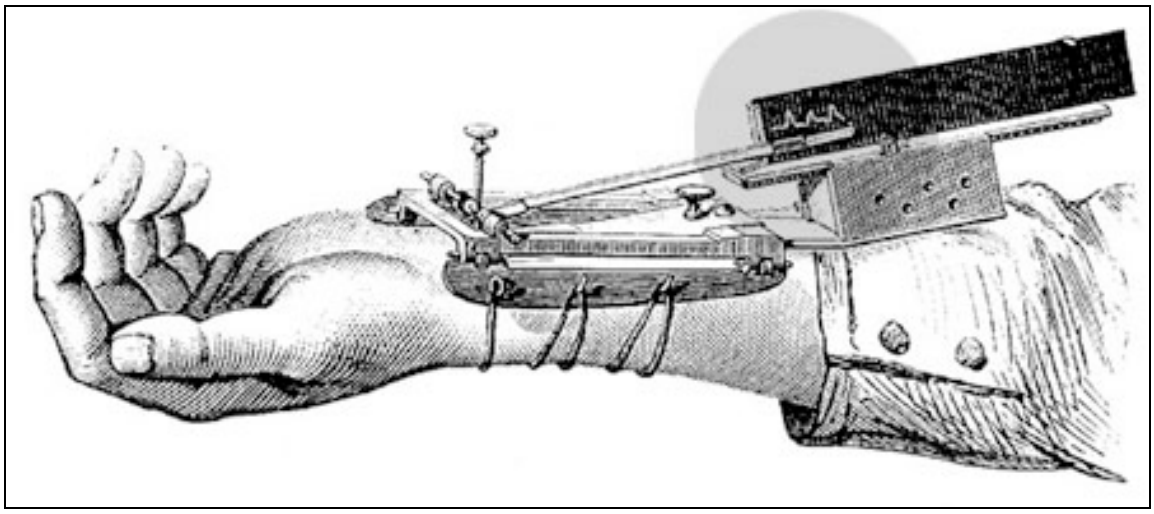

Fig. 3.5. Marey's sphygmograph.

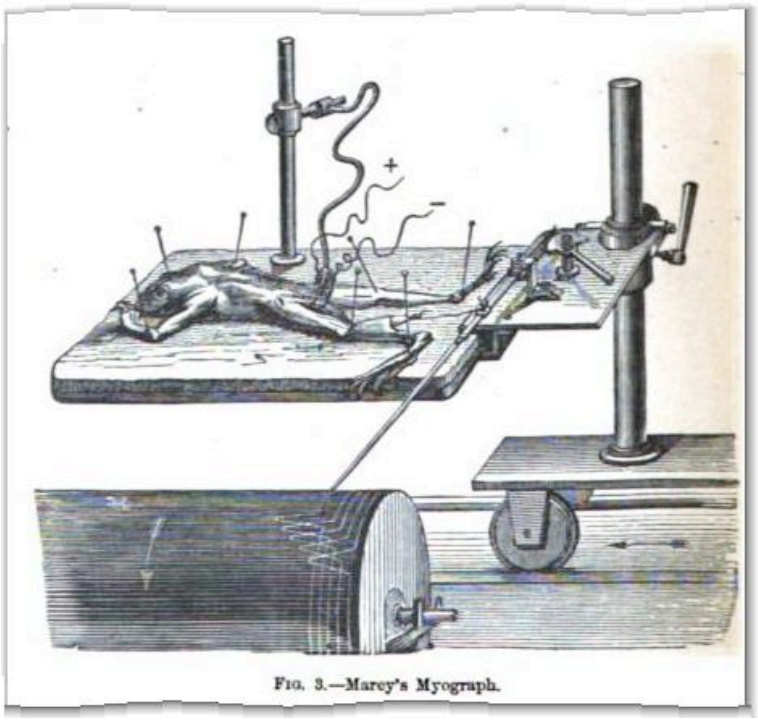

Fig. 3.6. Marey's Myograph.

methods. Marey's device was designed to avoid changing or influencing that which it hoped to measure. What mammal's heartbeat doesn't elevate when something is inserted into its arteries? Though he did a series of studies on the operations of electricity on the muscles and nervous system of the body, using the same system of rubber tubing, tambour and stylus to register those movements triggered by electronic pulse (Fig 3.6), the arc of Marey's work with the graphic method is characterized by a shift in focus from the interior operations of the body to an attempt to measure as much as possible from the surface of the body. Though such a shift is clear evidence of a concern with scientific rigor and producing results that reflect the life of the subject rather than the nature of his experimental apparatus, we ought not simply see this as a retreat. Rather, as much as Marey is moving out of the body, he is also moving toward its surface: the resulting nature of his apparatus, one that will extend to his photographic methods, is a meeting the body at its borders and thereby a commingling of animal (human) and the mechanism of measure. Given that Marey saw the living body as "an animate machine whose motion was subject to the law of theoretical mechanics,"[191] the body and mechanism should, according to his theory, form a seamless union. Such a belief in the parity of the laws that governed both machine and animal conditions enables a further belief, namely, that just as a seamless union between the two is possible so is a form of communication. Indeed, it is by this parity that life could reveal and even represent itself.

> With his graphic method, Marey had effectively found a way to make the phenomena trace themselves: his needles defied the eye that attempted to follow them, fixed on paper what occurred in a fraction of a second, and reduced complex occurrences to a simple form that could be made

[191] Braun, *Picturing Time*, xvii.

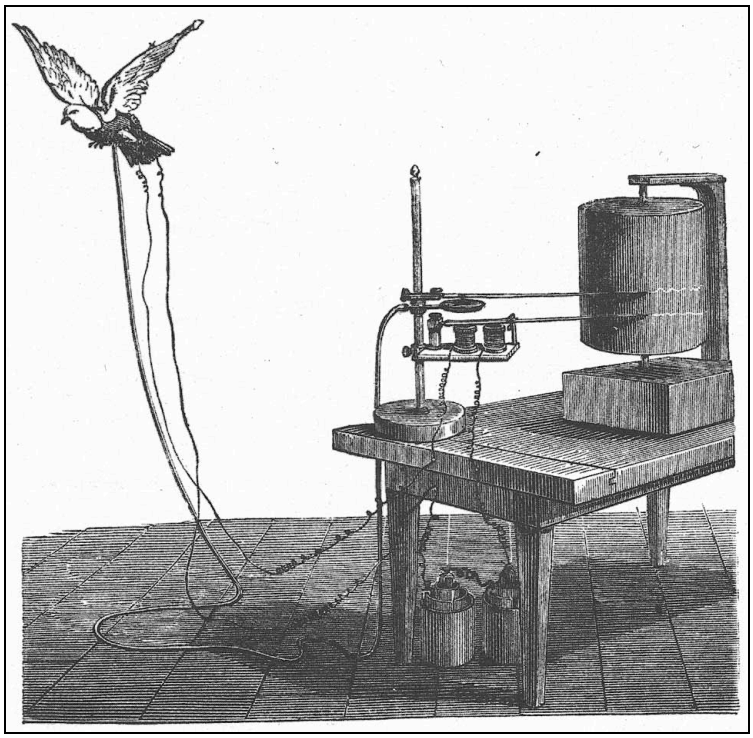

Fig. 3.7. Marey's graphic method for studying the flight of birds.

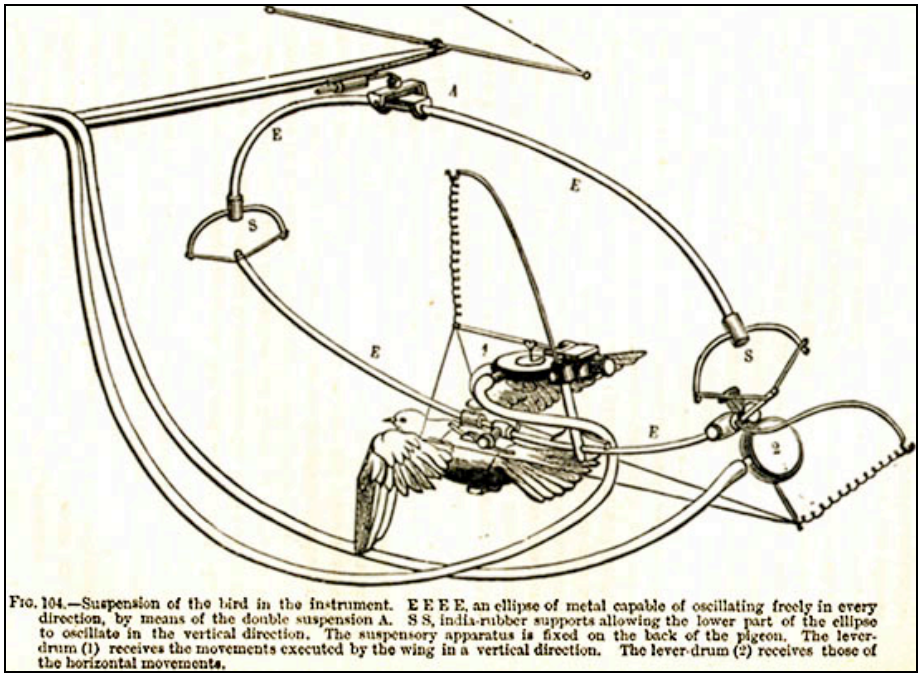

FIG. 104.—Suspension of the bird in the instrument. E E E E, an ellipse of metal capable of oscillating freely in every direction, by means of the double suspension A. S S, india-rubber supports allowing the lower part of the ellipse to oscillate in the vertical direction. The suspensory apparatus is fixed on the back of the pigeon. The lever-drum (1) receives the movements executed by the wing in a vertical direction. The lever-drum (2) receives those of the horizontal movements.

Fig. 3.8. Another version of his graphic method, image from his text, *Animal Mechanism*

> comprehensible to the trained interpreter. …Marey created and constructed instruments that would see, touch and hear for him as well as mark down what was sensed – that would simultaneously perceive and represent.[192]

In his first book, *La Machine Animal*, Marey writes, "Living beings have frequently and in every age been compared to machines, but it is only in the present day that the bearing and the justice of this comparison are fully comprehensible."[193] Though Marey was likely referring to animals and humans as the animal mechanism in order to suggest the mechanicity of living things, we might just as well choose to read him back onto his own machinery. Though he saw them more or less as different ways of performing the same measurement, in many ways Marey privileged his graphic method of capturing animal movement, whereby animal movements were literally measured and graphed by the instruments attached to the subject's body, without the loss of continuity necessary to the photographic method. What obtains in both methods, however, is a commingling of animal and machine, an apparatus which both adapts to the body, meets it at its borders, and extends out of it. For Marey, this commingling had a distinct effect; it produced a new way of seeing – not only the mechanicity of animals, but also seeing the animality of mechanisms.

Despite this supposed parity of animal and machine, the machine enabled something that the body could not do alone; most importantly it could see and record that which the eye could not. Indeed, this ideal of vision was instrumental for Marey even

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[192] Braun, *Picturing Time*, 22.

[193] Etienne Jules Marey, *Animal Mechanism: A Treatise on Terrestrial and Aerial Locomotion.* (London: Henry S. King & Co., 1874), 1.

before he turned to photographic methods, though it seems undoubtedly to have motivated that turn. In his treatise on the graphic method that he would employ for most of his early work, Marey writes that;

> Not only are these instruments sometimes destined to replace the observer, and in such circumstances to carry out their role with an incontestable superiority, but they also have their own domain where nothing can replace them. When the eye ceases to see, the ear to hear, touch to feel, or indeed when our senses give deceptive appearances, these instruments are like new senses of astonishing precision.[194]

Whether it was animal, human, mechanical, or the natural, physical world, Marey's work was always dedicated to revealing that which the eye alone could not sufficiently perceive or record. "He began in the 1850s with graph making instruments that intercepted movements invisible to the eye, such as the rhythm of the pulse…With these instruments he was able to monitor movements that were hidden within the body."[195] Moreover, though Marey's use of photographic techniques and technologies postdated and was directly influenced by Muybridge's publication of his photographic motion studies, he had long since turned toward mechanisms that indexically recorded the movements of human and animal life. In fact, one of the hallmark achievements of Marey's graphic method, undertaken prior to and independently from Muybridge's initial experiment, was the use of his recording instruments to determine the position of horses' legs in various strides. Marey initially attached India rubber balls directly to the horse's feet connected through rubber tubing to a graphic inscriptor such that while the foot was

[194] *Méthode Graphique,* 108, 1878, quoted in *Picturing Time*, 40.

[195] *Picturing Time*, xvii

in contact with the ground, the inscribing needle was in one position and while suspended off the ground, another (Figs. 3.9, 3.10). Given that inscriptions were made on paper wrapped around a cylinder rotating at a constant pace, such an arrangement allowed Marey to record not only the number and order of steps taken by each of the legs but their duration and speed as well. In contrast to photographic studies, the graphic method has one distinct advantage; the instrument gives a continuous measure of movement in time. This was a quality of the graphic method that Marey would struggle to achieve with photography and for which he maintained the photographic method was not ideal. On the other hand, the photographic method had its own distinct advantage; it had no observable impact on the motion of the animal.

As necessary as the shift from the graphic method may have appeared to Marey, there is tangible evidence of movement in that direction even before Muybridge revealed his studies with series photography. In his early text, *Animal Mechanism*, Marey engaged in a series of studies of insect and bird flight that produce images that were neither quite graphic nor photographic. What's more they reveal both his move toward instruments of observation that met the animal at its surface and even more literally that allowed the animal to inscribe its own movement. Toward the end of *Animal Mechanism*, which is above all focused on determining the nature of the various paces of horses, Marey includes a chapter on "Aerial Locomotion." In this study, he held insects, in this case, a hummingbird moth, up next to a cylinder with smoke blackened paper rotating at a fixed speed (Fig. 3.11). The tips of animals' wings brushed up against the cylinder revealing the amplitude and frequency of both the upward and downward strokes of the wing. Somewhere between the graphic inscription of the tambour and stylus method and the

Fig. 44. — Cette figure représente le cheval au trot muni des différents appareils explorateurs et le cavalier portant l'enregistreur des allures. — Sur le garrot et sur la croupe, sont des appareils explorateurs des réactions.

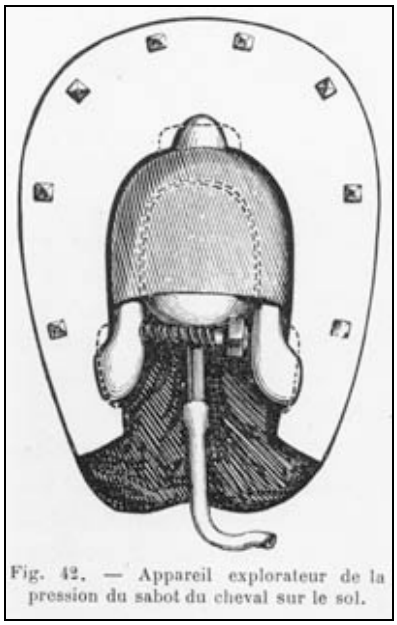


Fig. 42. — Appareil explorateur de la pression du sabot du cheval sur le sol.

Figs. 3.9, 3.10. The graphic method for studying the pace of a horse.

image producing photographic method, Marey demonstrates a desire to have life produce its own image of movement – the practical and conceptual wedding of animality and indexicality. Moreover, it is here again that we see Marey, even delicately, commingling animal and apparatus at their borders, such that the animal takes over what had previously been the function of the instrument, inscribing, even as the instrument takes over the role of perceiving. In terms of the quality of information, this version of the graphic method exhibits the distinct difference of sacrificing continuity of information that the graphic method maintained with its continuous lines charting the movement of the animal. Photography as well demands such a sacrifice.

The sacrifices involved in Marey's turn toward photographic and cinematographic instruments highlight the values that such a turn maintains and even advances. Given the indexical nature of photography, to what extent can we see the photographic method as a commingling of animal and instrument of observation, another meeting at the border of movement and the technology that perceives and records it? Of all Marey's methods, the photographic is perhaps the least intrusive and most delicate given that the only constraints placed upon the animal are those which keep it within the frame. Though this carries with it the constraints of captivity, the extraction of the animal from its natural habitat and all that that might imply in terms of behavior – and should not therefore be forgotten – the freedom of movement that the photographic method grants the subject and its movement relative to the graphic method is a substantial development in the study of animal locomotion. At first look, photography is a retreat from the body. However, photography's indexical nature maintains a physical connection to the object it represents – indeed, the movements of the animal reflect light to the light sensitive media of the

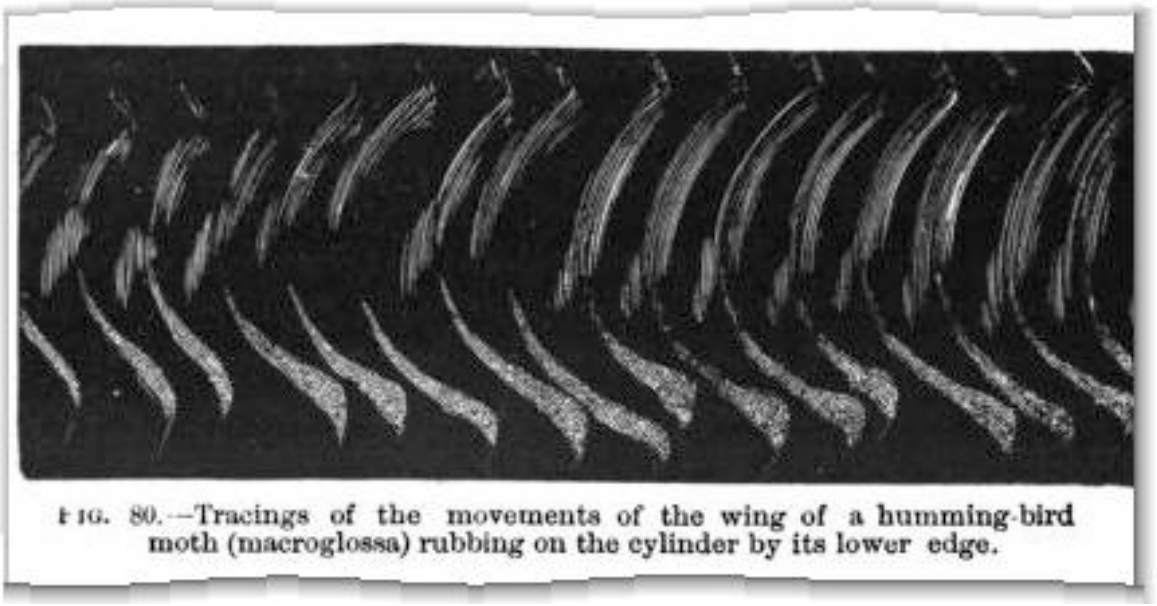


FIG. 80.—Tracings of the movements of the wing of a humming-bird moth (macroglossa) rubbing on the cylinder by its lower edge.

Fig. 3.11. Marey's study of the movement of a moth's wing.

apparatus. So even as the photographic method introduces a distance – one that should not be forgotten, especially given all that comes with the critical distance of the scientific perspective – it is not a distance that precludes the same commingling of observed animal and instrument of observation. Photographic observation is perhaps the instrument of gentle discipline *par excellence*.

For his photographic method, Marey devised a camera that could take successive images on the same plate. He decreased the exposure time to a fraction of the proper exposure for the plate in inverse proportion to the number of images of the animal he hoped to capture.[196] The distinct benefit of this method over Muybridge's is that it captures the animal's movement through the frame, whereas Muybridge's method depicted an animal in successive paces of movement but suspended in the middle of the frame. The change in position from one image to the next was therefore more traceable or mappable in Marey's case. Despite the distance that photographic methods introduce, the quality of information that they reveal nevertheless demarcates a movement to the surface of the animal body as it moves. Though photography might sacrifice the continuity of the graphic method, it is precisely in order to capture the fullness of the surface of the moving animal body that Marey added photography to his studies. The graphic method could only retrieve data from a designated point or points on the surface of the body, chosen in advance by the scientist as the important point to measure in time. As such, the move to the photographic method is not simply trading unrelated qualitative aspects, rather it is also the trading of one continuity, that of movement in time, for another, the continuity of the surface of the body. Nevertheless, Marey struggled to mitigate this trade off given the central concern of his studies to represent movement itself in time. As he

[196] The similarity of this method to that of Galton's composite photography will be discussed below.

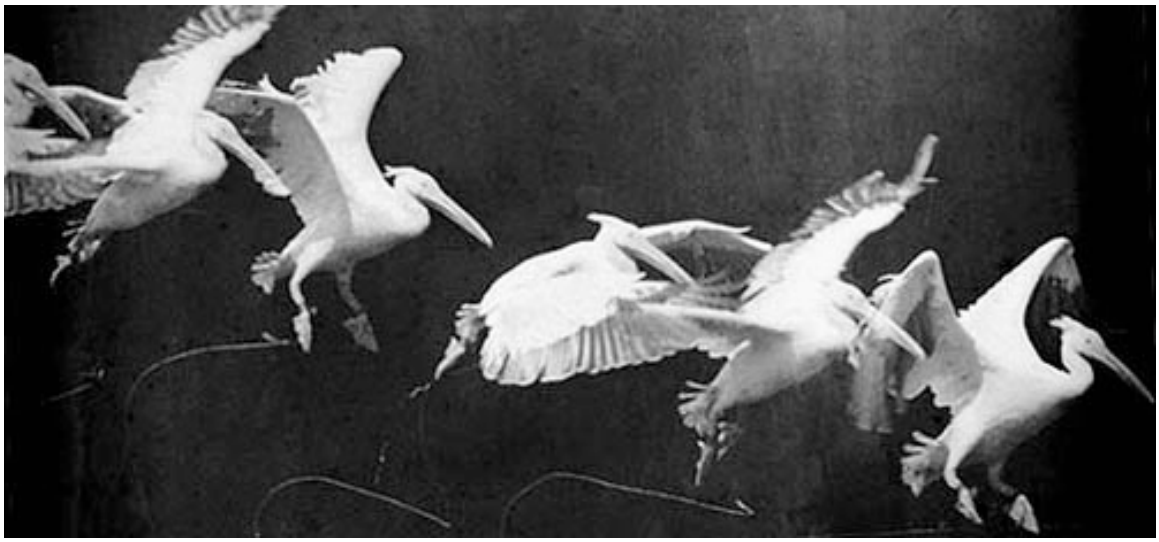
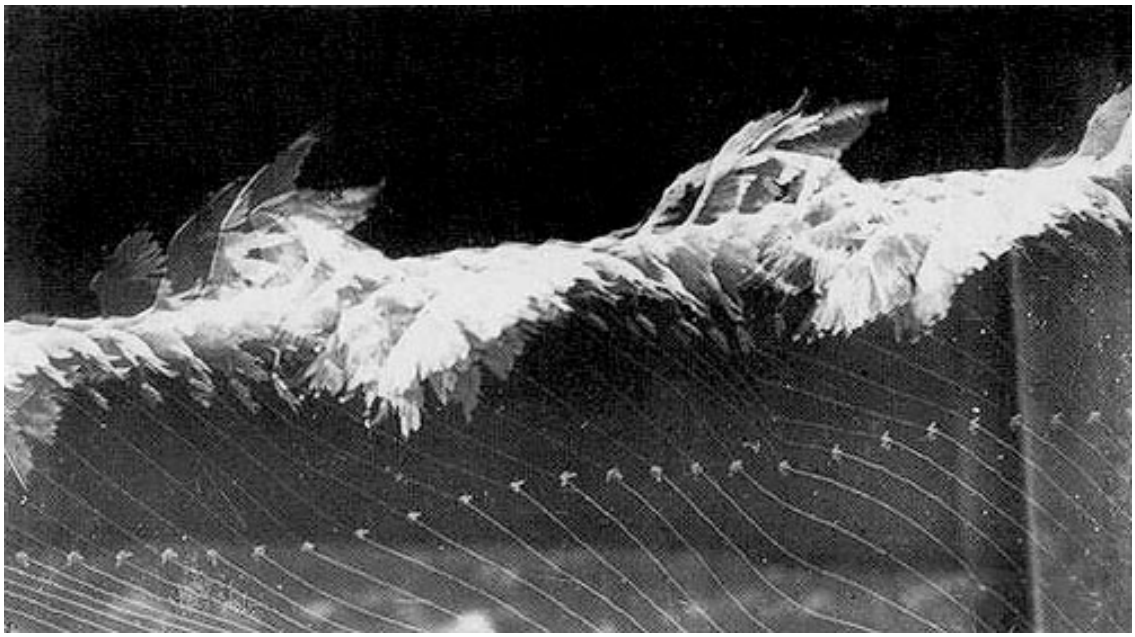
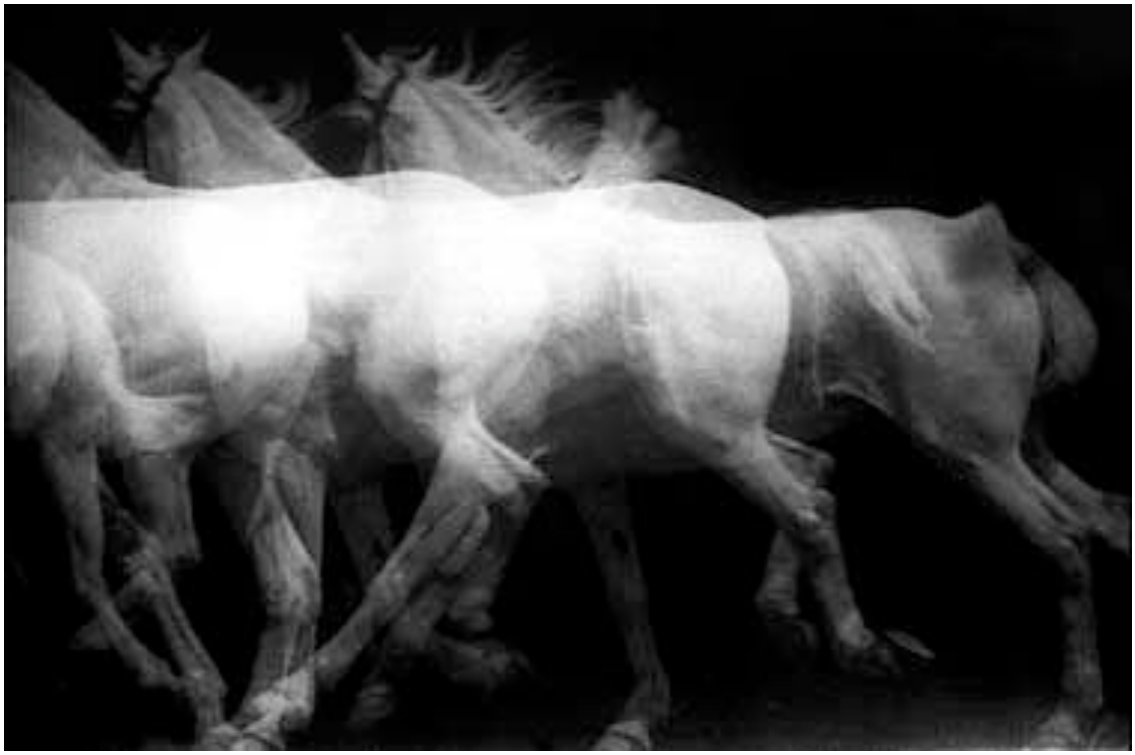


Fig. 3.12. The photographic method, employed to study the movement of a sea bird landing.

turned toward photography, his studies therefore ran into a distinct new set of problems: the continuity, legibility, and archivability of time.

Though the continuity of time and movement is relentlessly present in Marey's work, despite its inevitable problems, we ought to recognize the scientific importance of such a value. The sacrifice of continuity was perhaps above all a concern for Marey because it also meant a sacrifice of potentially important information. For the most part one could interpolate the movement from one image or position to the next, but in many cases this was not necessarily possible. For example: though Marey could determine the position of a bird's wings at increasingly small intervals, the exact point at which the wings transitioned from an upward to a downward stroke is a point that the photographic method, and by extension the cinematographic method as well, could never hope to precisely determine with any rigorous sense of legibility. Still, Marey dedicated himself to retrieving as much information as possible from the interval. As these images suggest however (Figs. 3.13, 3.14), he quickly ran into problems of legibility. In hopes of gathering specific information about the nature of movement in time, the successive images had necessarily to overlap one another, which sacrificed information about the individual positions and the surface of the body. Given that Marey was looking for such things as the moment when a bird's wing began its downward stroke and the position of a horse's leg as it broke its stride, the necessary overlapping tended toward illegibility. As indicated in the picture above, Marey initially attempted to counter this tendency by combining the graphic and photographic methods. Though this mitigated the tradeoff to a certain extent, the information gathered by the graphic method was still only from an isolated point or points on the surface of the body and affected the movement of the





Figs. 3.13, 3.14. Marey's studies of a bird and a horse. As shutter speeds increase, the legibility of overlapping images becomes an issue.

subject, and the photographic method still only from isolated points in time. While the shift from one method to the other may have meant a tradeoff in qualities of continuity, even the combination of the two fell short of the ideal.

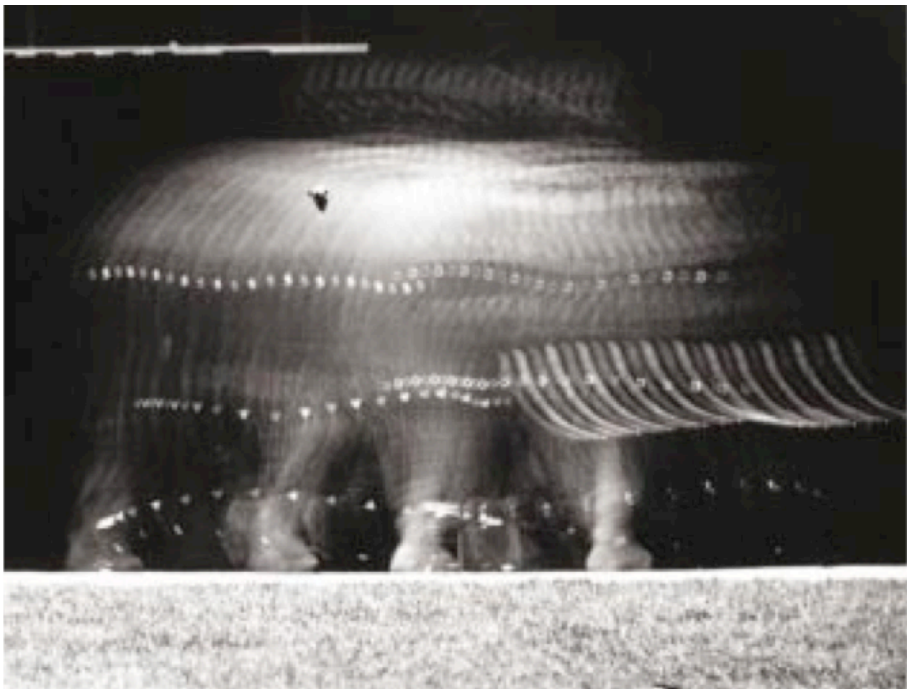
In her book *The Emergence of Cinematic Time,* Mary Ann Doane argues that the cinema arrives in response and as a contribution to a set of discourses, cultural forces, and practices concerned with the representability, legibility, and archivability of time. The indexicality of photography and the duration by cinema in their historical emergence constitute for Doane a new landscape of questions about representation and a radically new possibility in not only visual but all human representation, specifically capturing contingency. She uses the term contingency to refer to chance happenings, the unpredictable, and perhaps more importantly, that which confounds determinism. For her "[c]ontingency appears to offer a vast reservoir of freedom and freeplay…"[197] Taking Marey's work as one of her examples, she writes that his work, along with that of Freud and the emergence of cinema itself, exemplifies an investment "in a conceptual framework that foregrounded the tension between the representation of time and legibility, and did so in relation to the opposition between continuity and discontinuity."[198] Marey's further work seems to have cast aside the ineradicable compromise that photographic representation has to make in the balance between legibility and continuity. Instead, his studies seem almost singularly focused on retrieving as many images as possible from the interval that each successive image created. His response to the problems of legibility was to retreat to the graphic method, or rather to

[197] Mary Ann Doane, *The Emergence of Cinematic Time: Modernity, Contingency, The Archive* (Cambridge: Harvard University Press, 2002), 11.

[198] Ibid., 26.

make the photographic method, as much as possible, graphic, and to place his hopes of representing the continuity of movement there. He did this by affixing highly reflective material to what he deemed to be the important points to follow. As shown here (Figs. 3.15, 3.16), this allowed him to take a great number of images in rapid succession on the same plate. Since such a method sacrificed the legibility of the surface of the subject, in the case of human subjects, he dressed them all in black and in the case of animals often covered them in charcoal dust or some other material that reduced the reflective properties of the surface of their bodies. It's at this point that the works of Marey and Bergson most dramatically diverge. Bergson privileged the possibilities of revealing the fullness of the movement of life. He absolutely refused the notion that we could understand duration and movement by breaking it further and further down into successive positions or instants. Such a strategy was only an entrenchment of the way of seeing that had put the representability and understand of the flow of life further from our grasp. And so it is here, conceptually, that Bergson turns away from the cinema. Marey seems to have thought that, despite the infinity of instants between any two positions, the potential value of any one of those instants was worth the risk of the potentially endless search. The interval then was a limitless space of excavation, that it would forever reward an archeological quest for knowledge seems to have mitigated the inability of his methods to actually record time and movement itself.

In the introduction *The Emergence of Cinematic Time,* Doane writes that "[i]t is the argument of this book that the rationalization of time characterizing industrialization and the expansion of capitalism was accompanied by a structuring of contingency and temporality through emerging technologies of representation – a structuring that



Figs. 3.15, 3.16. Reflective materials applied to key points on the subject's body attempted to resolve issues of legibility.

attempted to secure their residence outside structure, to make tolerable an incessant rationalization."[199] This is precisely the incessant rationalization that Marey was willing to undertake and that Bergson would reproach. The scientific impulse to privilege the "any-instant-whatever" was an attempt to find value in the contingent, that which could be at any moment – such as the apex of the wing stroke, for instance – be rescued from the vast, potentially overwhelming field of the contingent. As such this impulse could position itself as an attempt to align itself with the same Bergsonian impulse to reveal the fullness of life, though at the same time it was just as willing, as seen in Marey's images above, to discard vast amounts of what the photographic apparatus might reveal. While both Bergson and Marey may have recognized a certain domain of life, its relentless changing and movement in time, as a field that had been overlooked and to which scientific and philosophic inquiry ought to direct its investigation, Bergson argued that a radical retooling of that investigative apparatus was necessary, whereas Marey seems to have believed that the apparatus needed only to become more precise and that the redirection of that inquiry was in itself a sufficient rethinking of how scientific inquiry ought to look. To a certain extent, Marey's work then must be separated out from the pursuit of the radically contingent, given that his work was as focused as it was on retrieving another privileged, ideal instant. The contingent for him had little value as such but was rather a great stack of hay from which the life-characterizing needle might be recuperated.

Marey's fixation on the instant is imbricated in questions of presence, the archivability of such, and indexical nature of photography and it is indexicality that structures the apparent possibilities of archiving presence. These questions cannot be

[199] Doane, *Cinematic Time*, 11.

fully thought through without also again raising the questions of the place of the animal in these studies, zoology's own impulse to make present that which is increasingly absent, and the vast archive of life and presence it undertook to build.

> The obsession with instantaneity and the instant, with the present, leads to the contradictory desire of archiving presence. For what is archivable loses its presence, becomes immediately the past. Hence, what is archived is not so much a material object as an experience – an experience of the present. And since the present is the mark of contingency in time, the problem of the archive in the nineteenth century participates in the epistemological struggles over contingency. If the afterimage disallows visual access to the present, and this failure is one of the marks of human finitude, the problem is to produce and sustain an archival technology that will compensate for, or perhaps even deny, this form of finitude by successfully representing the present. The cinema participates in this compulsion.[200]

Though Marey was never able to shake his concern that something had been left in the interval between any two images, Bergson is perhaps more instructive here.

> In vain we force the living into this or that one of our moulds. All the moulds crack. They are too narrow, above all too rigid, for what we try to put into them. Our reasoning, so sure of itself among things inert, feels ill at ease on this new ground. It would be difficult to cite a biological discovery due to pure reasoning. And most often, when experience has

[200] Ibid., 82.

> finally shown us how life goes to work to obtain a certain result, we find its way of working is just that of which we should never have thought.[201]

The instruction that Bergson offers here is essentially that the working of life and what we might hope to understand of it cannot be guessed in advance, rendering our "incessant rationalization" ill-equipped to capture it. Even for Marey's hope of capturing the moment of the apex of wing's stroke in flight, the point could be slightly higher the moment just before or after the apparent peak in his photographic series no matter how much he mines the interval. For Bergson, even this would fall short; rather, how do we, he might ask, render the duration in which the dynamic network of muscles, tendons and feathers that enable flight roll seamlessly in coordination with the perceptive apparatus, from upward to downward stroke? This is not to say that Marey's studies and possible studies with cinematic methods aren't capable of revealing such dynamic transition in time, rather that Marey is caught up in this obsession with the instant. In a sense, he is its representative *par excellence*, given that his work tends toward the ideal of making every instant at once present and archivable. Just as Muybridge's experiment with the horse may have revealed its secret of lifting all four feet off the ground at once (though it ought to be noted that, from a certain perspective, Muybridge was at least somewhat lucky – the apparatus might have given several images, only between two of which all four feet left the ground), for Marey innumerable secrets remain untold. As much as his work reveals, as much as it makes present, representable and archivable – and to be clear, expands upon Muybridge's work in all directions – Marey's work also stakes out just how much is absent, how much animal life cannot be made to body forth. Marey's work not only bears out Lippit's expansion on Berger's thesis that animals reappear in zoos and

[201] Bergson, *Creative Evolution*, xxxv-xxxvi.

representations, precisely at the moment that they are excluded from the human habitat, their absence itself, the sense that animal life lurks in the intervals is, if not quite an absence made present, demarcated by Marey's studies.

All this absence appears to have been mitigated for Marey by the indexical nature of the photographic method he employed, for it is the indexical properties of photography that seem to guarantee the presence of the animal depicted. Even as it fails to present movement itself, the series of images on one or several plates guarantee not only the presence of the animal in the position made clear by the image, but *points* as well to the movement that must have taken place from image to image. This is not simply a conceptual guarantee but also one that acts so strongly on our sensory-perceptual apparatus that, in the case of cinematic projection, we do indeed see a movement that must have been – even if, technically, the movement we see is perhaps not quite the movement that was. Doane picks up on the importance of indexicality to not only presence but for the possibilities of archiving that presence.

> …[T]he structure of the sign itself is fundamentally triadic, and if either the object or the interpretant is eliminated, the sign will no longer exist. With this move Peirce seems to be situating the index on the very threshold of semiosis; for to deprive the index of its interpretant while leaving its status as a sign unaffected is to open up the possibility of the index isolating itself from semiosis, the chain of signification sustained by the presence of a continuing line of interpretants. The index is reduced to its own singularity; it appears as a brute and opaque fact, wedded to contingency. In this way Peirce theorizes the index as potentially outside

> the domain of human subjectivity and meaning. It is pure indication, pure assurance of existence. The photographic image would, in this sense, appear to be its perfect representative. In photography for the first time, an aesthetic or spatial representation could be made by chance, by accident, without human control. And it would still be a sign of something, perched precariously on the threshold of semiosis. As the sign most clearly connected to the present and presence, perhaps it is the ideal limit of the instant that is approached by the index.[202]

Doane is concerned with the indexicality of photography not only for its guarantee of presence but also for its apparent recuperation of what she understands as the contingent as well. The potential capacity of indexical representation of operating outside semiosis, that is, in a sense outside human signification, operates for Marey and others as a triumphant recuperation of the realm of the contingent, that which lies outside rational representation, outside the order of reason, which always carries with it the potential of failing to see the radically contingent precisely because of the scopic regime that enables it. Considering Marey's investments in studying animals, and the involvement of animals in the emergence of cinema itself, we might just as well see this representation "without human control" as containing, for Marey, the possibility of a distinctly animal sort of signification. More than guaranteeing the presence of the contingent and the archivability of such, indexicality, then, might contain the possibility of recuperating the increasingly distant, absent natural world of animals, recuperating not only the presence of animals but doing so in a manner that might be distinctly animal itself. Failure or not, the emerging cinematic space contained the radical possibility of exploding the domain of

[202] Doane, *Cinematic Time*, 94.

human meaning making, of capturing and extracting regularity from the elusive domains of the contingent and the animal, and reinvigorating human representation with vibrant animal life.

Native to the contingent, whether speaking of animals or a chemistry laboratory, is the notion of the chance encounter, the notion that by setting ourselves outside the domain, or sculpted landscapes of order, we present ourselves with the possibility of seeing something wholly unexpected, something unconditioned by the extractions from context and the finely tuned scopic regimes of scientific observation and the cultures of collection, categorization and display which emerged in full force in the nineteenth century. Perhaps more than anything, photography and cinema make possible the infinite work of lying in wait. As discussed in the beginning of this chapter, the notion of the chance encounter held precious by the field naturalist operated as one of the ideals by which the zoological space was in part carved out. Once again:

> [T]he menagerie could be for the zoologist, Cuvier argued, what the chemist's laboratory was for the chemist. It was a place where one could see not only what does happen in nature, but what could take place in nature….the reason contemporary ideas of animal intelligence were so inadequate, he maintained, was because they were based on isolated facts involving free-living animals, and systematic experimentation with free-living animals was simply not possible.[203]

In promising such a possibility, Marey's studies fulfilled the promise of Cuvier in a manner that he could not have imagined. The zoological space and the emerging cinematic space reintroduced the promise of a chance encounter to the western cultural

[203] Burkhardt, "Ethology, Natural History," 492.

and scientific imagination in a way that was otherwise unparalleled in the nineteenth century. They represented unscripted unfolding of human and animal life in time. Their greatest differences, however – the questions of presence, the natures of the durations they represent – are probably also the locations of their individual failures. Just as we may marvel at the lion roaring in the zoo, Marey's birds or Muybridge's horses, the questions linger. Is this a "false movement?" Are there really any animals at the zoo, and how present is the life that proto-cinematic technologies and cinema appear to set in motion before our eyes?

Coda: The Body and the Archive

From its earliest days photography threatened to accumulate images faster than modernity was prepared to handle them. In its capacity to record a wealth of detailed information about the world, photography, especially as it got faster and sharper, appeared to contain the promise of modernity itself. In its capacity for veritable likenesses, it introduced into the world a level of circulation that western culture could scarcely comprehend. Specifically, photography offers to tack down the fugitive body by elucidating types but also by containing and regularizing, by means of typologies, the contingent as well. As early as the 1840s photography is instrumentalized in tracking criminals and prisoners, studying the pathological and reifying emerging theories of race. In its capacity to produce countless images, photography not only makes great promises to the archivability of human and animal bodies, but it also held the possibility of constituting what previously could only have been the ideal archive: endless detail, limitless in its possibility of accumulating images, and containing not only that which conformed to categories and typologies but also the fugitive, contingent and the exceptional. Therein also lies its threat. In his article, "The Body and the Archive," Allan Sekula points out that as soon as photography hits the cultural landscape it harkens

> the possibility of a technological outpacing of *already* expanding cultural institutions. In this context, photography is not the harbinger of modernity, for the world is already modernizing. Rather, photography is modernity run riot. But danger resides not only in the numerical proliferation of images. This is also a premature fantasy of the triumph of a *mass* culture, a fantasy which reverberates with political foreboding. Photography

> promises an enhanced mastery of nature, but photography also threatens conflagration and anarchy, an incendiary leveling of the existing cultural order.[204]

Sekula goes on to give a detailed history of the role of photography in tracking and typing the criminal body. The two principle figures in this latter nineteenth century phenomenon, whose works constitute the nascent system of which our photo IDs and ever more prevalent biometric tracking are a part, are Francis Galton and Alphonse Bertillon. Though Sekula will argue for a spectrum of photo-statistical tracking of criminals through recourse to the third figure of Adolphe Quetelet, Galton and Bertillon stand on distant ends of that spectrum. Bertillon sought to build archives of photos of criminals in order to track the criminals photographed. Galton, on the other hand, sought to build archives in order to identify the essential characteristic of this or that type of deviant. Given the pervasiveness of photographic identification today, the sheer number of times each day an individual is likely to be photographed or videoed, Bertillon's research seems to have taken a more realistic approach to what one could conceivably do with such an accumulation of images. In both Galton and Bertillon, however, there is an attempt to create order out of an otherwise threatening accumulation of images, threatening all the more because of its capacity to privilege the any-instant-whatever. Though we might credit Bertillon with a more functional approach to the flood of images in the late nineteenth century – less tangled in the mounting ideologies of race and criminality – Galton's experiments are much more aggressive in their attempt to find order out of that threatening flood. For Bertillon, everyone would have only one place in

[204] Allan Sekula, "The Body and the Archive," *October* 39 (1986): 4.

the archive, for him a more or less simple index, one person, one image; for Galton, the archive was a dynamic place in which one could have any number of correspondences. Out of the archive deeper meaning was to emerge. In particular, he produced what he called composites (Fig. 3.17) in attempts not only to reveal the common features among, say, criminals, consumptives, or Jews, but also to give that condition itself, that type, a face.

> Galton fabricated his composites by a process of successive registration and exposure of portraits in front of a copy camera holding a single plate. Each successive image was given a fractional exposure based on the inverse of the total number of images in the sample. That is, if a composite were to be made from a dozen originals, each would receive one-twelfth of the required total exposure. Thus, individual distinctive features, features that were unshared and idiosyncratic, faded away into the night of underexposure. What remained was the blurred, nervous configuration of those features that were held in common throughout the sample. Galton claimed that these images constituted legitimate averages, and he claimed further that one could infer larger generalities from the small sample that made up the composites. He proposed that "statistical constancy" was attained after "thirty haphazard pictures of the same class [had] been combined." [205]

How does the work of Galton (and Bertillon) compare with that of Muybridge and Marey? In their studies of animal locomotion, they confront the possibilities of the rapid accumulation of images by attempting to find what possible benefit can be had from such

[205] Sekula, "Body and the Archive," 47.

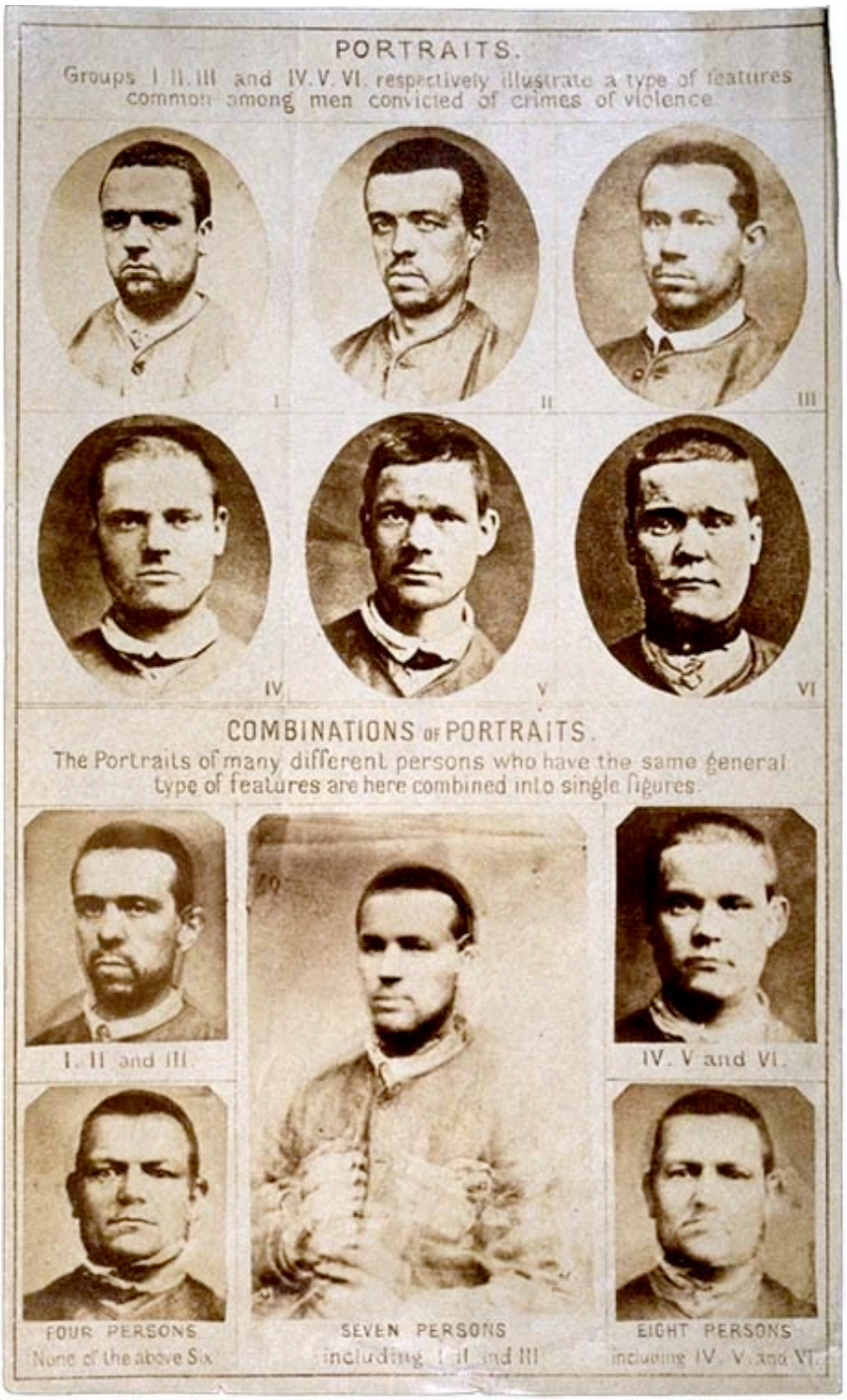


Fig. 3.17. Galton's composite photography.

a rapid circulation of reality and at the same time guard against the threat of too much information. Both were motivated by varying desires to determine what was in many ways typical or common. With the possibilities of such large collections of photographs, they sought also to make use of that which deviated from the norm, whether that was the contingent, deviant, or just such an excess that it compromised legibility. Both figures seek to conjure abstractions, or rather, to construct photographic events, apparatuses or arrangements such that the life can abstract itself. Marey's critique of Muybridge's work with multiple cameras, and multiple frames was that, from frame to frame, one has little or no sense of the change from one position to another. Marey's studies, on the other hand, begin with several exposures on one slide. While this gives a good sense of the path traveled by the subject, the overlapping of subsequent exposures in order to achieve this effect compromises legibility of details. Marey responded by cloaking his subjects in black cloth or black dust and putting highly reflective strips and points in order to reduce "superfluous" information in order to allow specific accumulations of images to stand in what then appears to be an obviously meaningful relation. Galton does much the same with his composites. That which does not enhance the correspondence between superimposed images fades away because of its minimal exposure. What's more, both systems are designed in order to capture the contingent, the deviant and the non-idealized. Ironically, both Galton and Marey's photographic studies celebrate the possibilities of the complete record that photography can offer and, in the same move, discard details in order to produce a clearer image. As discussed above, Muybridge seems to have similarly been interested in conjuring a hidden reality that lurked in the intervals or combinations of photos in series.

Perhaps the deepest correspondence between their work is that, though there is something uniquely successful in what they managed to do with photography, Galton's work, as well as that of Marey's and Muybridge's as well, are failures. Galton does manage to produce images of faces with some clarity that could not otherwise be found in reality and Marey's photographs do reveal much about how animal and human bodies move. But there is no face of recidivism, no criminality Muybridge might have hoped to reveal, nor can photography legibly display movement in quite the way Marey seems to have hoped. Though Galton produces something that looks very much like a person, his theory that something essential about this or that convention is revealed relies too heavily on the indexicality of photography as a guarantor of the real, "an aesthetic or spatial representation could be made by chance, by accident, without human control."[206] Because the photograph seems almost to straddle the boundary between index and icon, or even index and symbol, it carries with it the excitation to belief that it represents not simply more information but deeper meanings, like the icon and the symbol. And of course, photographs do mean more than their indexical significations, but whatever they do mean beyond that which is indexical doesn't carry the same guarantee that something there must have been. Galton's composite photographs do not strictly insist that there must have been or must be some transcendent deviant criminal. In fact, it is precisely by superimposing indexical elements that Galton aspires to posit that something is revealed instead of produced. Setting aside the racist and classist agendas of his project, it's not so unlikely that he might expect such juxtaposition to do precisely that: reveal that which not only the naked eye, but also the naked intellect could not see. Muybridge began his studies of animal movement in 1872 and by 1877 when Galton proposed the program

[206] Doane, *Cinematic Time*, 101.

Muybridge's study would have been well known among people working in experimental photography. More importantly photography itself would have already a wide conception as a revealing instrument of science.

The exemplary failure of Galton charts the broad path of which Marey's case is somewhat more narrow. In contrast to the Eugenicist conclusions that Galton's studies lead him to make, what photography allowed Marey to say about the way animals and humans moved is not merely an illusory production of the photographic arrangement. However, in terms of representing both movement and time itself – as things that emerged in some essential or transcendental way like Galton's faces, something basic to life which the naked eye could not see – Marey's images seem to point to something beyond that to which the photographs do indexically point, but which nevertheless carry the representative force of the images' indexical nature. The movement we attribute to these images, the movement which is the subject of every one of Marey's studies, is not in the images or the successive exposures but in the interval between them. In a manner of speaking, we are inclined to attribute that movement because it *must have been* what happened between the successive intervals, but this is an order of induction, a step above the photograph and the object it actually represents. The problem is found throughout Muybridge's studies as well; indeed, it is the same problem that Marey had with his studies – that what occurred between the images was too elusive, too difficult to determine. Galton's studies, however, suggest something of Muybridge's investments in taking numerous photos of his own murderous body in the study discussed above. He pinned his hopes to the indexical properties of photography to conjure something beyond that to which the photographs indexically point.

When set against the backdrop of Galton's (and Bertillon's) attempt to conjure subjectivity within the indexical photographic/proto-cinematic space that technically constitutes a form of representation outside of human control, Marey and Muybridge's studies of animals and humans appear as two attempts to reformulate a human subjectivity that can reveal itself in a new way. Their focus on animals and their stake in indexicality constitute two moves of a similar kind: to look outside humanity and semiosis. Whether there is anything inherently indexical about the way animals communicate or behave, as suggested by Lippit, the studies of Muybridge and Marey collapse animality and indexicality as nonhuman, a way of being in the world and representing that being in a way not subject to the slipperiness of language and other forms of human representation. Galton's focus on the criminal, deviant and what he thought to be inferior races, concretizes such a sense of collapse that the indexicality of photograph easily attune itself to that which he felt, in humans, bordered on animal. The people shows innovated by Hagenbeck, with their anthropological and colonialist attitudes linger here. The strange marriage in proto-cinematic technologies of animality with that which replaced it in the nineteenth century – mechanization – suggests both a mourning of the loss of animals and an attempt at their recuperation, but also a melancholic loss of our own animality. By stepping into the proto-cinematic spaces their studies engendered through recourse to the indexicality of photography and the focus on animals, their work suggests a hope that humans too might potentially reveal themselves in a new way, outside of their own control. While such a hope carries with it the possibility of feeling more connected to the natural world, even through perhaps the technologization of representation par excellence, of fashioning new subjectivities that

venture outside the domains of human order, such possibilities also carry with them the threat of those things marginalized by human order: criminality, racial, intellectual and physical inferiority, and insanity. It is no surprise then that photographic and cinematic representation would feature prominently in the attempts to regulate humanity along precisely these axes throughout the next half-century to come.

Still another question lingers: is there any contact with animals, the vestigial animality in ourselves through these technologies? In deleuzian terms, is there any becoming-animal fostered by photography and cinema? Is cinema a way out, does it allow us to think differently? Though the ambivalence that Bergson's two texts constitute is perhaps an ambivalence that ought cautiously be held onto, these questions must be deferred to the thorough analysis of what Deleuze will call the movement-image and its emergence in the cinematic apparatus discussed in the next chapter.

The Moving Animal Image

As we turn to the moving image the overarching thesis of this project comes into sharpest relief. In the late nineteenth century photographic representation becomes cinematic and for the first time indexical, archivable images of the world begin to move. The role of animals in that emergence is twofold. First, the presence of animals in motion photography serves to enhance the sense that cinema connects us to the natural world it represents. This means not only that, like the zoo, the cinema allows us to see living things from all around the world, but also quite simply that animals move and thereby provide cinema with natural movement to exhibit. Cinema provides a way for animals to communicate through indexical signs, which, perched on the edge of human semiosis, suggest contact with animals in an entirely new way. Indexicality becomes the register of animality. Cinema provides potential access to the otherwise secret lives of animals. The mechanization and industrialization of Europe and the United States throughout the nineteenth century and the consequent disappearance of animals from human life further heighten the stakes of this possible connection to the animal world through cinema; cinema becomes both a mourning and a recuperation of animal life. Second, cinema allows humans to reveal and recuperate their own lost animality. By stepping into the cinematic space carved out largely by animals, humans are presented with the possibility of seeing themselves as animals. Without language and often without clothes, humans are presented with the possibility of likewise indexically communicating their natural animal movement. Indexical moving images become the register in which humanity can

recuperate the animality that the human/animal boundary has foreclosed. As this instrument of observation held open the possibility of communicating that which the animal had been unable to express, so too were humans presented with the possibilities of refashioning not only identity but also humanity as well. Cinema then allowed humans a melancholic mourning of their own loss of animality and the possibility of recuperating it in the age of mechanization and industrialization. As such this chapter has two central aims: (1) to investigate the presence of animals in early cinema and to ask what role they play in both composition of the actualités of Lumiere and Edison and their effect on the audience; and (2) to consider the animality of the humans that appear in these actualités and ask to what extent can we see them as recuperating a lost animality. Together these foci elicit another question: to what extent can the cinematic image, the movement-image of early cinema, be just as well understood as the image of animality or the *animal-image?*

Workers Leaving a Factory (1895) is generally regarded as the first film. This originary status is granted in critical studies of early cinema because it is this film that was first projected on a screen for audiences of several people, a public paying admission for this new form of exhibition. The fact that the Lumiere cinematographe, which recorded the film, was capable of recording, developing and projecting moving images appears to concretize its status as the first instance of what from then on is referred to as the cinematic apparatus. This is, however (as is the lineage that Muybridge and Marey are set into) a somewhat cinema-centric view of the attempts in the latter decades of the nineteenth century to represent movement. A still cursory view of those decades might set several other important moments in constellation, out of which cinema emerges along

with an image of a broader cultural drive to investigate moving life. For example, Muybridge stopped a running horse in 1872. In 1874, Pierre-Jules-César Janssen invented a sequence camera for solar photography. In 1876, Wordsworth Donisthorpe developed a sequence camera that uses multiple plates. In 1878 Muybridge published his famous motions studies of Stanford's horse Occident. In 1878-79, Muybridge begins developed his zoopraxiscope to project tracings of his photographs in public lectures. In 1882, Marey invented his chronophotographic gun, which took successive images of flying birds on separate plates located on a spinning disc. Movement of the figures was 'reconstituted" using Emile Reynaud's praxinascope, developed in 1887. In 1888, Louis Le Prince shot two roughly two-second films on paper film strip. Though he had planned to exhibit his films later that year, he mysteriously disappeared before he could do so and there seems to be no record of successful projection, on a screen or otherwise – that is, no reconstitution of movement. Also in 1888, on February 25, Muybridge demonstrated his zoopraxinoscope in New Jersey and two days later met with Edison to discuss the possibilities of combining his device with Edison's phonograph.[207] In 1888, Marey revealed his first chronophotographic apparatus with a moving band of film, though the apparatus was imprecise and often resulted in images overlapping or too far apart. Two years later, in 1890 he improved upon this instrument by developing an apparatus that used celluloid negative film and a six-point star wheel to produce exposure rates of up to 100 frames per second.[208] In the early spring of 1891, Edison's collaborators, William Dickson and William Heise produced *Dickson Greeting*, a short, three-second film of

[207] Charles Musser, *The Emergence of Cinema: the American screen to 1907* (New York: Scribner, 1990), 62.

[208] Deac Rossell, *Living Pictures: the Origins of the Movies* (Albany: State University of New York Press, 1998), 40-41.

Dickson taking off his hat and gesturing to the camera. This film was projected (upon the eye and not on a screen) with Edison's Kinetoscope to the National Federation of Women's Clubs on May 20 of that year. On July 27, 1891, Demeny, Marey's assistant, demonstrated his phonoscope, which produced a clear representation of movement. The "moving portraits" focus on speaking faces; Demeny hoped his speaking portraits would replace the still photography family album.[209] The company that he created separately from his work with Marey was in the end a failure, though it remains unclear why this event is not more broadly regarded as a "first" instance of cinema, perhaps because it was not a projection of a celluloid filmstrip. Early in 1894, Fred Ott's sneeze is recorded and the first officially copyrighted film but still no screen projection, as it was produced primarily for advertising purposes. On February 25, 1894, Jean Aime Le Roy, reportedly projects Edison kinetoscope films on his own projection apparatus. There is doubt as to whether such a projection actually took place, but if it did, many refer to this instance as the first projection of film in the world.[210] Also in 1894, Marey records his studies of a falling cat. In May of 1895, the Lumiere Brothers record and successfully test projection of *Workers Leaving a Factory* and give their first paying public exhibition in December of that year. In 1896, Edison's company purchases the patent for a projection system and renames it the Vitascope. A variety of filming and projection devices follow quickly in the wake of the Kinetoscope, the Vitascope and the Cinematographe, namely the Mutoscope and the Biograph, developed by the American Mutoscope and Biograph Company.

[209] Deac Rossell, "Chronology of Cinema 1889-1906," *Film History* 7.2 (1995): 123.

[210] Ibid., 127.

A number of these early attempts at cinematic recording and representation bear further analysis as emblematic of the emergence of motion photography, namely Marey's transition into recording with a roll of film instead of several overlapping images on one plate, Demeny's attempt to perfect his Phonoscope, which captured images of speaking faces, and the very first cinematic recording made by the Edison Company, *Monkeyshines No 1,* a film that often falls out of prehistories such as those above. Taken together these various arrangements of not only the technological apparatus, but subject, audience, and image, form a constellation which produces an image, if not of cinema's arrival, of its inchoate emergence. Demeny recorded his images on roll film, but his projector, a modified phenakistascope, required that he cut the film strip into individual frames and place them on a spinning disk. Marey's projector used the film in strip form but as his camera struggled with the regularity of intervals, so did his projector and a solid working projector from him would not appear until 1896. Edison's early film was simply a test; not only did Edison not have a working projector, the images were recorded on a cylinder and not a strip of film. Though wildly different given their participation in the production of the movement image, these experiments with motion photography together conjure not only an emerging form of representation but also a coemergent animality in human practices of representation.

First Glimpses: Monkeyshines, Falling Cats and Talking Portraits

Taken by Edison's lab somewhere between 1889 and 1890, *Monkeyshines No 1* (Fig. 4.1), Dickson's early innovation, tends to drop out of narratives of cinema's origin given that it had no distinct claim of originality and wasn't released to the public until decades later. An early form of the kinetograph, the mechanism employed here involved a sheet of celluloid wrapped around a cylinder. Beyond a historical marker, this short film remains virtually untreated in the critical, historical study of cinema and its emergence. Perhaps this has something to due with its unclear dating, that it was undertaken as a test of the equipment, and its unknown star. It was probably shot by Dickson but the featured figure is either Sacco Albanese or John Ott, both employees of the Edison company. Little has been written of this film other than as a point of reference for the purposes of dating the technological evolution leading up to cinema. Outside of the question of whether this is the first film, it is nevertheless emblematic of cinema's emergence in a number of ways, and is perhaps perched on the transition from series photography to motion photography more than any other extant example.[211] Though the individual frames of the short film bear strong resemblance to a human figure in successively different positions, it is only in its projection that the movement becomes unmistakably the movement of a human (animal) figure. In this way, by obscuring the details of the surface of the figure's body – out of focus, flooded in light – the film's construction foregrounds its presentation of living movement; the image achieves its greatest legibility as a moving image and as it strips away all signs of culture, it leaves only moving life. While the body itself is spectral, fleeting, either emerging out of or fading into the

[211] To view a version of the film, go to http://www.youtube.com/watch?v=KuXhbO8I03g. Further, all of the films discussed in this chapter can be found at http://www.youtube.com/user/wanolan.

Fig. 4.1. Still from *Monkeyshines No. 1* (1889-1890).

darkness, the movement is unmistakably present(ed). The film thus offers a figure both emerging into view – in its movement, it emergence into a cinematic space – and a figure receding from view – obscured by the apparatus that seeks to reveal it. Perhaps coincidentally this fledgling cinematic image captures both the possibilities of connecting us to a living world at the same time as it sets that world at a deeper remove.

Its title, "monkeyshines," inflects our reading of the film through its overt references not only to animality, but race, and the implicit collapse of the two. In titling the film, which he likely never intended to exhibit, Dickson was probably using the word in its simplest definition, meaning something like a prank, antics, or a ruse. In this regard, the naming refers to the film's status as a test, being of little consequence to the firm's attempt to invent and market motion pictures. It also, no doubt points to the culture of spectacle and amusement and the vaudevillian tradition, of which cinema would inevitably become a part. And, of course, with all markers of culture and species stripped away, leaving only the movement of some primate, flooded in light, indeed, a monkey shines. In his article, "The Strange Career of Jim Crow Rice (With Apologies to Professor Woodward)," James Dormon points out that a version of the word first appears in the song and dance *Jump Jim Crow,* a caricature of an African-American performed by white comedian, Thomas Dartmouth Rice, appearing sometime around 1828-9.[212] The song name, of course, provided the name for the segregation laws in the U.S. in the late nineteenth and early twentieth century. In the original song, the word appears in the lyric, "I cut so many munky shines, I dance the galloppade; An wen I done, I res my head, On

[212] James H. Dormon, "The Strange Career of Jim Crow Rice (With Apologies to Professor Woodward)," *Journal of Social History* 3.2 (1969-1970): 109-122.

shubble, hoe or spade."[213] According to a nineteenth century historian of the New York stage, the song "attained a popularity unequalled by anything of the kind before or since"[214] and further, single-handedly precipitated the tradition of blackface and minstrel shows that would become some of the most pervasive racial stereotypes in the west throughout the latter nineteenth and early twentieth centuries. As such, the song itself simply could not have been outside of the field of references the title of the film inevitably makes.

> Popular attitudes of whites were, moreover, fully supported and articulated by the social thinkers of the period, who "proved" with full scholarly paraphernalia what everyone "knew" anyway. Negrophobia was, then, not only understandable but inevitable. Blacks were treated as inferiors because they were by common consent inferior. But until the Rice emergence the stereotype of the "typical" black was still inchoate and unformulated. The arrival of Jim Crow would do much to fill this void. He was to provide the final ingredient in the total pattern of antiblack prejudice.[215]

Jim Crow then was not simply tapping into stereotypes of blacks in the nineteenth century, it constituted the emergence of an identity; inchoate, unformulated, a figure appeared.

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[213] Dormon, "The Strange Career of Jim Crow Rice," 119. The OED dates the word's appearance also to T.D. Rice for the same song, though in 1832, in all likelihood, when the song was first written or published.

[214] Cited in Dormon, "The Strange Career of Jim Crow Rice," 112.

[215] Ibid., 117-118.

Of course, it's unlikely that Dickson and Heise were reflecting on the nature of racial stereotypes and identities throughout the nineteenth century, but the implicit references to spectacle, performance and race are unmistakable. The explicit reference to animals of course draws our attention to the history of motion photography throughout the two previous decades, most notably Muybridge and Marey's studies. Whether it is by Darwin's situation of the human species among the lineage of apes, Muybridge and Marey's fashioning of the cinematic space through studies of animal movement or the by fact that the moving image just might be of a monkey or ape given the lack of clarity of the image, a monkey, flooded in light, shines in the short film. *Monkeyshines No.1* effectively collapses animality, race and the culture of spectacle, situating blacks, or at least, referencing the situation of American blacks as an intermediary position in the conception of the boundaries between humans and animals. Perched on the border between photography and cinema, on the border between the shift in focus of such technologies on animals and humans, unclear as to precisely what species or what race is being displayed, this film conveys the troubling attitudes of race emerging in the nineteenth century. The discourse of race and the "scientific studies" of race, many of which referenced, if not directly studied, the people shows of Hagenbeck and those who followed him, served to shore up the border between animals and humans just as Darwin's theories of evolution served potentially to make those borders much more porous. That a film – in all likelihood, to Dickson's mind, the first – given its stakes in the representation of life, strips away all markers of not only race, but of species, and leaves us simply with the representation of some living, moving primate, should

reference the discourse on race and one of the most pervasive racial stereotypes of the nineteenth century, seems if not conscious, nonetheless inevitable.

Marta Braun comes right out and says that if the history of cinema was a linear evolution of technological invention, Marey would stand out as the first to "use a single camera to produce photographs on a strip of sensitized film in real time, rapidly enough to be reconstituted for more than a single viewer at once."[216] Marey's turn to what Braun calls his cinematographic method begins in 1888 with a presentation to the *Academie des Sciences* of two rolls of film, one of a pigeon flying and the other of the movement of a human hand. Though these early cinematic techniques struggled with issues of the precision of the movement of the roll of film through the camera, producing inconsistent intervals between frames, they constitute, taken together with improvements made over the next two years, an early and representative experimentation with cinematic images. Marey is perhaps passed over as the inventor of cinema in part because he saw the applications that simply reconstituted what he already saw anyway as foolish and childish. "All these applications would be simply childish if they were limited to the reproduction of phenomena which could be observed by the eye in the case of living creatures."[217] First, this meant that despite the evolutionary lineage imposed on him by the history of cinema the cinematic method was not simply an improvement upon the photographic method that would replace it. For Marey, it was rather another way of looking that allowed potentially new knowledge to be revealed. It sat alongside the photographic method as a means of studying movement. The cinematic method, insofar as it produced several still images allowed Marey to record as many images as rapidly as

[216] Braun, *Picturing Time*, 150.

[217] Marey, *Movement*, 313.

his machinery would allow without the need of overlapping or blacking out the surface of the subject's body. Though this meant that the two images were on separate frames, precluding relative comparison of the successive positions of the figures (for this the photographic method remained necessary), it allowed Marey to provide clear distinct images of almost exactly the position he chose to focus on and responded to the issue of legibility he confronted in his photographic method (Fig. 4.2).

Despite his characterization of the mere reconstitution of natural movement as childish, this is not to say that he discarded the functions of our physiology that produce the impression of movement, only that they could be used to reveal greater knowledge about the subject they presented than what the eye already saw. Most important of all for Marey was the capacity of cinematic representation to slow time down. As noted above, as early as 1890 Marey was developing cameras that could record at 100 frames per second and with shutter speeds of up to 1/25,000 of a second. Such technological advances allowed him to produce very clear images of fast moving animals (such as insects) and could reconstitute their movement at anywhere between ¼ and 1/8 the speed of their natural movement allowing significantly greater qualitative analysis of movement.[218] In particular, in 1894 the *Academie des Sciences* requested that Marey employ his cinematic method to study the nature of a falling cat, to better understand how and why cats manage to always land on their feet (Fig. 4.3).

This study, it ought to be noted, fits squarely within the history of the photographic scientific study of animal locomotion in the latter years of the nineteenth century, of which Muybridge and Marey were both a part. The apparatus once again

[218] It is worth noting that this method continues, with technological advances, to be an important method for the study of animal behavior.

Fig. 4.2. Single image from Marey's study of a cat's fall.

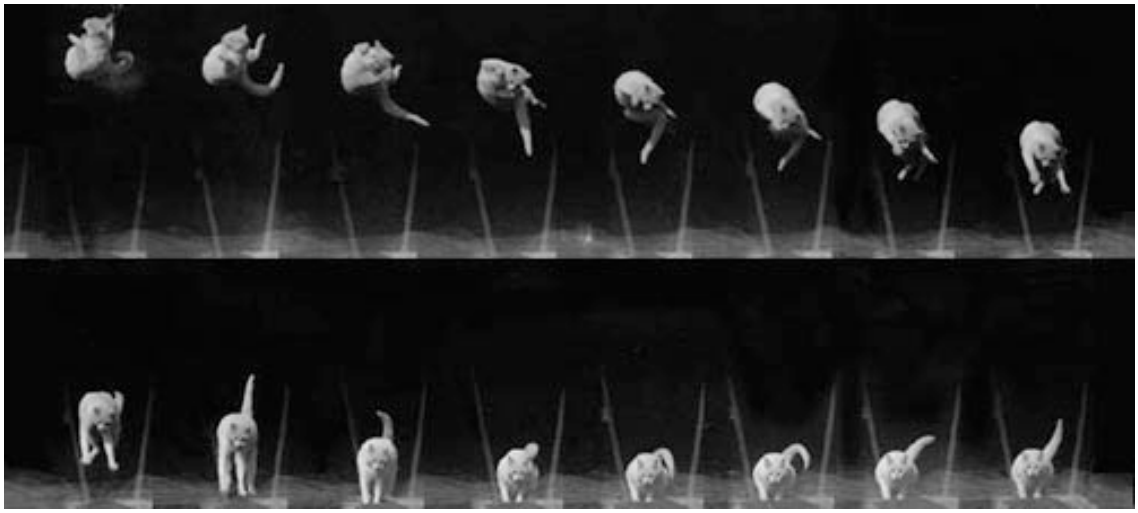

Fig. 4.3. A complete series of photographs from Marey's cinematographic method used to study a cat's fall.

adjusts itself to the nature of animal movement (shutter speeds, frame rates) and presents an image (moving or still) of what had previously been the secret of the animal. In contrast to the question of Occident's feet leaving the ground, which was a question about a potential point in time, the study of the cat's fall was designed to understand the qualities of a duration, namely, by what contortions and in what order does a cat go from being upside down to right side up in mid air? On this method, Marey writes that the stroke of a wing, which lasts 1/5 of a second "can be made to pass before the eye in one second. Under these conditions …the eye can follow it in all its phases, whereas, in a living bird, only a confused flutter of wings can be discerned."[219] He goes on to describe the possibilities of better understanding slower movement by using the technique to speed up observed movement. As much as these methods may reveal about animal movement, they also generate a profound sense of human control in harnessing the unfolding of time. Cinema's connection and control of the natural world was not merely in the indexical fidelity it maintained in its representation of it, but also in the possibilities of controlling and manipulating that natural world, including things so apparently basic to its makeup as time. Not simply another option in representing the world, the possibilities of manipulation combined with the indexical force of photographic representation to produce almost magical effects. Cinema then could be made to present things not only that the naked eye could not perceive but, in its capacities for slowing, speeding up and even reversing time, it could present realities that did not actually exist in the real world with all the indexical force allowed by photography. Indeed, though thoroughly scientific here, such manipulations of cinematic representation are important precursors to the

[219] Marey, *Movement,* 312.

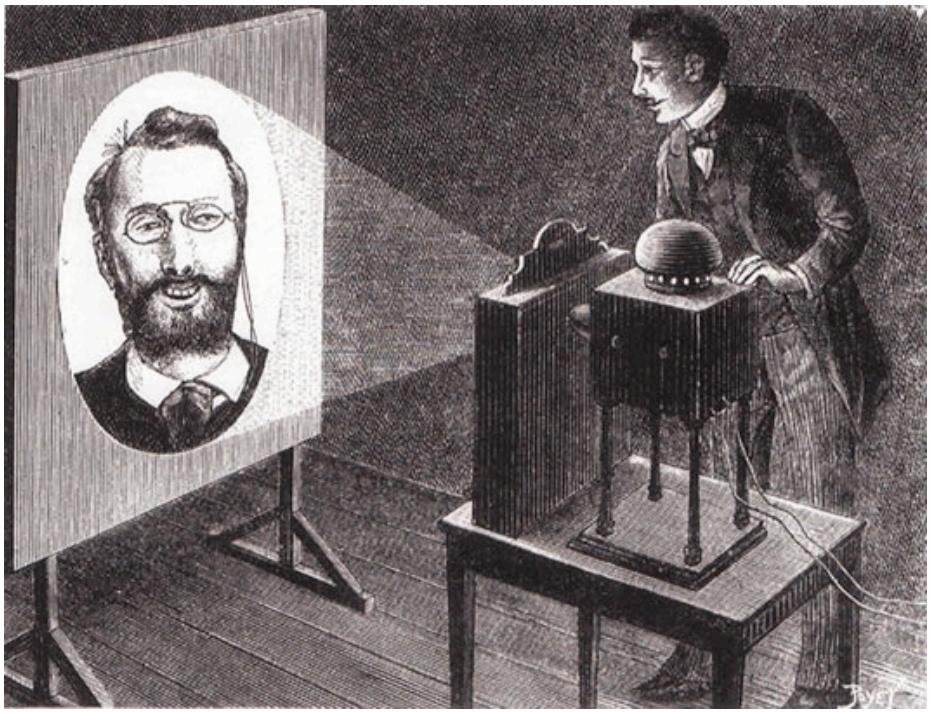

Fig. 4.4. A demonstration of Demeny's Talking Portraits.

appropriation of cinema by magicians such as Melies and the advent of the trick film in early cinema.

In 1891, Marey turned over a study of the mechanics of speech to his assistant Georges Demeny. The study was requested by the National Deaf-Mute Institute out of the belief that such a study could be useful in teaching the deaf to read lips and potentially to learn the lip movements necessary to speak.[220] While Marey eschewed both the pursuit of the "cinematic illusion" to produce what the eye already could see and the commercial applications of his scientific pursuits, Demeny saw the possibilities of commercial success of the work with Marey at the Physiological Station.[221] Nearly the same arrangement could be used to make what he would describe as "talking portraits." After exhibition alongside Marey's equipment in the scientific photography booth at the International Photography Exhibition in 1892, Demeny received several offers from carnivals to display his apparatus. Demeny quickly retooled, or perhaps more accurately, remarketed his apparatus as an entertainment device. That same year, in *La Nature*, he wrote, "The future will replace the static photograph, fixed in its frame, with the animated portrait that will be given life with the turn of a wheel. The expression of physiognomy will be preserved as the voice is preserved by the phonograph. One will be able to add the latter to the phonoscope to complete the illusion."[222]

Demeny's innovation characterizes the emergence of cinema in a number of ways. As the quote above suggests, the reception of the apparatus seems to straddle

[220] See Braun, *Picturing Time*, 176.

[221] It is in fact this difference of belief that would lead to the ultimate break between Marey and Demeny, though Demeny would fight years later to have his name considered among the candidate for the inventor of cinema. See Braun, *Picturing Time*, 182-187.

[222] Cited in Braun, *Picturing Time*, 180.

almost perfectly the divergent tendencies of science and entertainment that characterize both protocinematic technologies and early cinema itself. For Demeny's apparatus, it seems merely to depend on the audience; the same film of Demeny pronouncing "Je vous aime" fit equally well for both applications. In terms of its scientific application, the phonoscope calls attention to cinema's quality as an instrument of communication, and moreover as a supplement to communication for that which cannot in the "normal" course of language be communicated. The phonoscope enacts a doubling of semiotic communication and indexical sign making. Though unclear how this would be any great service to the education of the hearing impaired, given that it reproduced what the eye could already see, it occasioned a peculiar commingling of the biological apparatus of perception and the mechanical perceptive apparatus of cinema. As it was devised, however, to aid in the visual understanding of spoken language, it seems at once to cast semiotic expression (speaking) as indexical image making (cinema) and facial expression (animal) into semiotic lip reading (human). In both its scientific and entertainment applications, the phonoscope capitalized on the notion that the speaking face had much more to communicate than the words it spoke. Indeed, though Demeny foresaw the possibility of combining this apparatus with a synchronized phonograph, his phonoscope was designed, exhibited and marketed as a silent image of a speaking countenance. The silent speaking face suggested the power of the moving image to communicate outside of language, as a supplement to it. Finally, the phonoscope, as suggested by Demeny's quote above, promised to give life to otherwise lifeless still photographs.

Cinema of Attractions

In the historical and critical study of film, "early cinema" tends to refer to the period of film making beginning with Edison's Kinetograph films and Lumiere's Cinematographe films and ending with narrative film's ascension as the dominant genre of cinematic representation. Variously dated, this eclipse of non-narrative film by the medium's capacity for storytelling tends either to be construed as roughly 1907, when narrative films first outnumber actualités and trick films, or with the appearance of Griffith's narrative editing style in the feature length films, *Birth of a Nation* and *Intolerance,* released in 1915 and 1916 respectively, which confirm narrative's dominance. In their narrative innovations, which dramatically increased film's capacity for fleshing out diegeses, and in their enormous popularity, these films concretized cinema's role in the production of popular narrative. In very early films, on the other hand, what was presented to the viewer was in many ways unimportant in contrast to the spectacle of the apparatus itself and how it could show movement. The attraction was less what was shown and more that moving images were shown at all. Only as the novelty of the apparatus began to fade, did what was being shown seem to matter all that much for audiences, and even then, the popularity of cinema still depended largely on its capacity to show rather than tell. Early cinema was set alongside spectacular displays and the exhibition of technologies far more than any association with theater or other forms of narrative representation. Exhibitionary practices and institutions such as the zoo, panoramas, world's fairs and circuses constitute the family of sorts of display with which early cinema was associated. Often the subject, but more often the site of exhibition, Edison's company capitalized on the proliferation of amusement parks in the late

nineteenth century. In a manner of speaking, early cinema found a perfect home at the amusement park, which displayed any and everything novel and entertaining, but also celebrated the mechanization of western culture with such mechanical wonders such as roller coasters, ferris wheels, and of course, cinema.

In his seminal article, "The Cinema of Attractions: Early Cinema, the Spectator and the Avant-Garde,"[223] published in the mid eighties, Tom Gunning calls for a critical understanding of early cinema that recognizes and theorizes early cinema on its own terms, as a body of work with its own representational practices and strategies. In his short article, Gunning references the history of exhibition to which his terms refer in order to genealogize cinema's early years. However, his characterization of early cinema as exhibitionist rather than voyeurist, as direct address rather than the impersonal camera, as spectacular rather than narrative, and as visual rather than intellectual, is primarily for the purposes of rescuing early cinema from its conception in film studies as an inchoate narrative form, simply too young and immature to take on the complexities required by executing narrative, filmic fiction. Though this was certainly the case – both Charles Musser and Noel Burch have examined the experimentation with narrative in the earliest of films and developing in large part due to the creativity of Edwin Porter – it does position early cinema as either a jumble of unorganized representational practices or an empty vessel into which narrative cinema would inevitably fit. Gunning argues that the "cinema of attractions" focuses its energies on the mimetic qualities of film rather than the production of a diegesis. Rather than anticipating its appropriation by narrative fiction, early cinema developed a set of representational strategies characterized not by

[223] Gunning, "The Cinema of Attractions," 56-62.

the absence of the organizing structure of narrativity, but by the nature of the medium and the history of exhibitionary culture in the latter half of the nineteenth century.

> To summarize, the cinema of attractions directly solicits spectator attention, inciting visual curiosity, and supplying pleasure through an exciting spectacle – a unique event, whether fictional or documentary, that is of interest in itself. The attraction to be displayed may also be of a cinematic nature, such as the early close ups just described, or trick films in which a cinematic manipulation (slow motion, reverse motion, substitution, multiple exposure) provides the film's novelty. Fictional situations tend to be restricted to gags, vaudeville numbers or recreation of shocking or curious incidents (executions, current events). It is the direct address of the audience, in which the attraction is offered to the spectator by a cinema showman, that defines this approach to film making. Theatrical display dominates over narrative absorption, emphasizing the direct stimulation of shock or surprise at the expense of unfolding a story or creating a diegetic universe. The cinema of attractions expends little energy creating characters with psychological motivations or individual personality. Making use of both fictional and non-fictional attractions, its energy moves outward toward an acknowledged spectator rather than inwards toward the character-based situations essential to classical narrative.[224]

Gunning's text constitutes an initial concerted attempt to move beyond simply characterizing in order to develop an aesthetics of cinema in its early years. It sets early

[224] Ibid., 58.

cinema not as simply before narrative cinema but in many ways aesthetically opposed to it. What's more he points out that the narrative that does appear in cinema's early years is often incorporated as a means of delivering attractions as much if not more than for the purposes of fleshing out the narrative. He cites Méliès, one of the earliest experimenters with narrative in cinema,

> As for the scenario, the 'fable' or 'tale,' I consider it only at the end. I can state that the scenario constructed in this way has *no* importance, since I use it merely as a pretext for the 'stage effects,' 'the tricks' or a nicely arranged tableau.[225]

An afterthought, narrative operates as a means of stringing together views, tricks, and effects. In a sense, we could read the place of narrative in early cinema either way – as narrative taking hold of the medium or of the capacity of the medium for employing the mechanism of narrative in order to maximize its exhibitionary potential. It depends on the historical perspective and which body of work is being explained. Rather than a history of cinema organized around the principle of the apparatus – that is, a history of early cinema that must travel back through the century of cinema in order to locate its origin – Gunning's cinema of attractions attempts to cast a stronger boundary between his cinema of attractions and narrative cinema and a much more fluid boundary between it and the history of the culture of exhibition that precedes it. Simply put, he studies early cinema in order to genealogize it rather than to genealogize the narrative cinema of the last hundred years. Gunning, however, pulls back on the opposition his article casts, by suggesting that

[225] Melies "Importance du Scenario" in Georges Sadoul *Georges Melies* (Paris: Seghers, 1961), p118. Cited in Gunning, "Cinema of Attractions," 57.

narrative become dominant precisely through cinema's "synthesis of attractions and narrative."[226]

What Gunning does not address in contrasting the cinema of attractions with narrative cinema is the role and presence of animals. Animals literally abound in early cinema. While it is difficult to say precisely what portion of early cinema focuses its attention on animals, reviews of collections of Edison's films, those released by American Mutoscope and Biograph, the Lumiere collections, and lists of film titles (including those for which no extant copy exists) in the works of Charles Musser[227] allow a comfortable estimate that more than a third of early cinema either focuses directly on animals as central figures or, for any number of untold reasons, an animal appears in the frame. Given that many of the films that do still exist feature animals prominently but have no mention of them in their titles, the number of animals in films that have been lost could potentially be far greater. Further, in the case of Edison's Black Maria studio, where the vast majority of his very earliest films were shot, if an animal does appear in the frame, it is unlikely to have been coincidental, as opposed to animals just showing up in location films.[228] Regardless there is little question that in the turn to narrative film, the presence of animals in cinema significantly wanes. This is easily the case in terms of number of animals and feet of celluloid in which animals appear. Perhaps more importantly and more drastically, an animality recedes with the advent of narrative and

[226] Gunning, "Cinema of Attractions," 58.

[227] See Musser on Porter, *Emergence of Cinema*.

[228] Given that the Black Maria Studio was tightly constructed to block out light except through the hatch in the ceiling, one assumes that animals on the grounds of Edison's studio could not just wander through. This fact raises questions about the presence of many animals in those films however, such as Athlete with Wand, 1894, in which a dog is featured sleeping in the lower right hand corner of the frame, only to be disturbed by the actions of the performer. This film will be dealt with in more depth below.

the conventions which enable it. Just as Gunning produces a set of binaries in contrasting the cinema of attractions with narrative cinema and their inevitable commingling, so too, can we understand the animality of early cinema. The animality, almost completely left out of Gunning's explicit analysis of early cinema's aesthetics, is caught in a glimpse in the concluding moments of his article. Gunning points out that the cinema of attractions has in some sense, gone underground, but always been a part of narrative cinema, that is, never fully displaced by it. He cites the Spielberg-Lucas-Coppola "cinema of effects" as vestigial elements of the cinema of attractions in contemporary cinema, but writes that these "effects are *tamed* attractions."[229] The cinema of attractions, not merely in the number of frames in which animals appear, but in its growth out of the culture of exhibition, its opposition to narrative cinema and ultimate taming by it, and the representational strategies in displaying human as well as animal bodies is just as well understood as the cinema of animality.

The first several years of Edison, Dickson and Heise's film production, say 1890-1894, include roughly 75 films. Of those, 15 films indicate by their title (there are no extant copies of most of the films) that an animal is a central figure in the production. These films include: *Monkey and Another, Boxing* (1891), *Duncan and Another, Blacksmith Shop*, (1891) *Blacksmith Scene* (1893), *The Wrestling Dog*, (1894) *Trained Bears* (1894), *Rat Killing* (1894), *Fred Ott Holding a Bird* (1894), *Dogs Fighting* (1894), *The Cock Fight* (1894), *Bucking Broncho* (1894), *The Boxing Cats* (1894), *Horse Shoeing* (1894), *Skirt Dog Dance* (1894), and *Dog Summersault* (1894). These films divide roughly into categories of fighting; the work scene; and dancing, gymnastic or athletic performance. They correspond to the dominant genres of the earliest Edison films

[229] Gunning, "Cinema of Attractions," 65 [emphasis mine-W.N.].

as a whole. In particular it is worth noting that several of Annabelle's Dance films, which are numerous, are often named after animals for their mimetic properties: Annabelle's Serpentine Dance, Annabelle's Butterfly Dance. The initial boxing pictures were popular because while boxing was illegal in many locales, including New York at that time, watching a film of boxing was not. Edison capitalized on this fact, and "when the legality of the fight [Leonard Cushing Fight, 1894] under New Jersey law was questioned, Edison's role in the proceedings had to be suppressed."[230]

Since by 1888, 37 of 38 states in the United States had anti-cruelty to animal laws, including New York, Edison's biggest market, the legalities of animal fighting were elided as well because of the nature of filmmaking. No doubt, films such as *Cockfight* and subsequent versions, *Boxing Cats*[231] (Fig. 4.5) and the numerous boxing or fighting animal films that followed capitalized on precisely this fact of the nascent, unregulated medium. As the medium of cinema introduces a new distance to relations with animal, an obvious need for ethical consideration arises. As with the Leonard Cushing fight, a small number of people could be gathered in order to stage a fight between animals, eliding laws about such public displays, and allowing illegal activities to be undertaken with the knowledge of only a few organizers. At the same time, the capacity for displaying such events increased many times over given Edison's consummate skills in marketing and distribution. One could argue that the sport of boxing was rescued by its reconfiguration as a mediated event. As these films circulated, boxers could confirm their willing

[230] Charles Musser, *Before the Nickolodeon: Edwin S Porter and the Edison Manufacturing Company.* (Berkeley: University of California Press, 1998) *47-48.* See also, *Encyclopedia of Early Cinema*, "Boxing Films," p. 80.

[231] The *Leonard Cushing Fight, Cockfight, and Boxing Cats* can be viewed at http://www.youtube.com/user/wanolan.

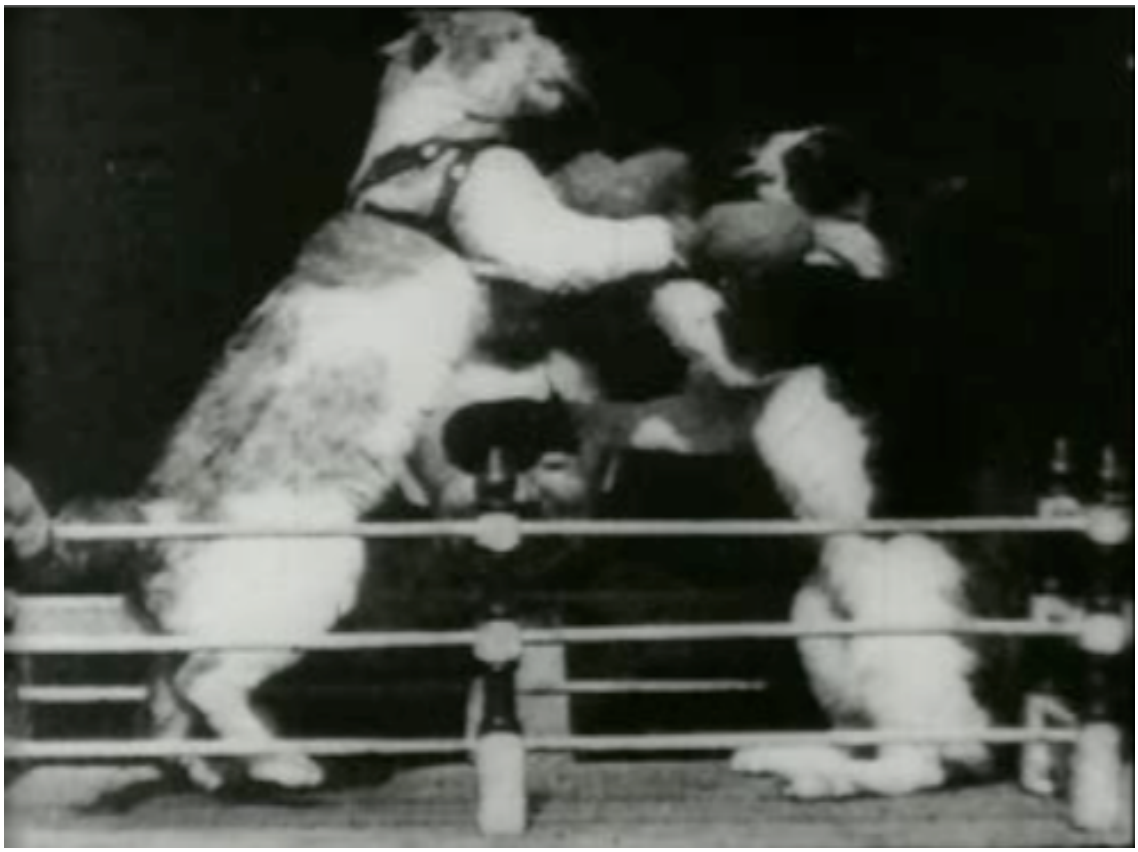

Fig. 4.5. Still from Edison's *The Boxing Cats* (1894).

participation, in a sense legitimating the violence of the spectacle as they were two of the only few people it took to stage a fight for cinematic display. Indeed, their presence in the films seems almost to accomplish this. Animals, by contrast, can offer no such confirmation, and indeed their presence in these films seems only further to raise the question even as it enables questionable treatment of animals.

Edison and Dickson: A Sneeze, An Athlete, a Dog, Sandow and Carmencita

In addition to those films, which either focus primarily on animals or indicate such in their titles, animals and animality appear in other films as well. Two of the very first films filmed on Edison's vertical feed kinetograph, perfected in the latter months of 1893, and with which Edison began his aggressive marketing of films in 1894, are *Fred Ott's Sneeze* and *Athlete with Wand*, both recorded early in 1894. *Athlete with Wand* also called *Amateur Gymnast with Wand*, was likely shot in the newly completed Black Maria studio and with the vertical feed kinetograph in order to prepare for Sandow, the body builder's visit in late March of 1894. In his book, *Living Pictures: the Origins of the Movies,* Deac Rossell describes the year of 1894 in the following manner.

> Over the next year, film production began in earnest at West Orange, with Dickson and Heise filming Edison employee Fred Ott sneezing, a Highland Dance, an organ grinder, amateur gymnasts, and a number of vaudeville and variety performers, including strongman Eugene Sandow, Professor Harry Welton's wrestling dog and boxing cats, the dancer Annabelle Whitford essaying her butterfly dance, members of Buffalo Bill's Wild West Show and scenes from the musical comedy *The Milk White Flag.*[232]

Oddly enough, the short film, *Athlete with a Wand* (Fig. 4.6)*,* captures a dog sleeping in the lower right hand corner of the frame. As the film begins, we see the gymnast standing on the left side of the frame and the dog sleeping in the corner. As the gymnast begins his routine for the camera, the dog is disturbed from sleep, awakens to see the figure swinging a pole, begins to get up, and in so doing regards the performer, pictured below.

[232] Rossell, *Living Pictures,* 88.

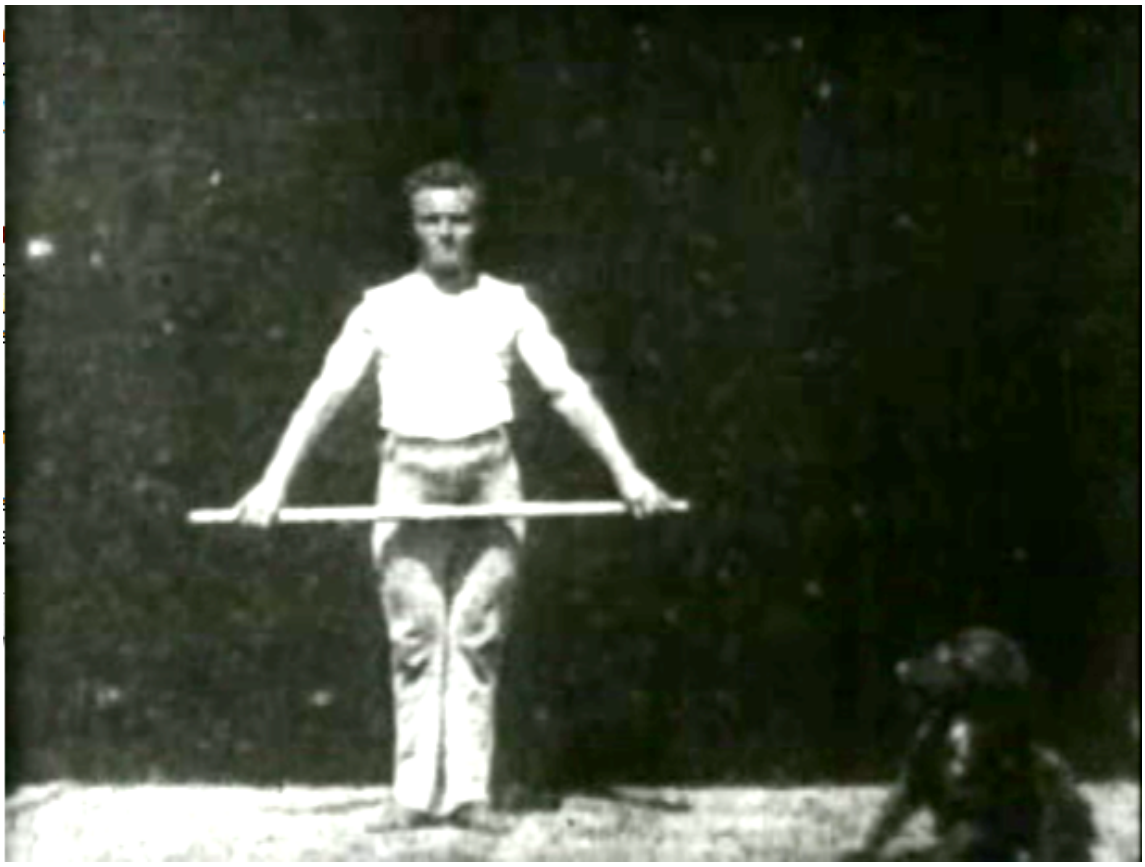

Fig. 4.6. Still from Edison's *Athlete with Wand* (1894).

The dog then rises and moves maybe a foot or two to the left and lies back down half out of the frame to continue its nap.

The framing of this film is of particular interest. First, as the film begins, the frame is set so that both figures are completely in view. This is in contrast to the Sandow film, for which it is preparation, wherein Sandow is both centered and framed in what is likely the first *"plan American"* (shot from roughly the knees up, the shot standard, particularly of men throughout classical cinema). Both of these framing decisions were to the exclusion of any would-be dog in the lower corner of the frame. More importantly, perhaps, than the exclusion of the dog from the frame in the Sandow film is the apparently intentional inclusion of the dog is this film. The initial frame of the film displays both figures slightly farther to the left than pictured above. As such the frame composition suggests, despite the title, that the focus of the film is not the man or the dog but both of them, their relative positions and dynamic interaction. Of course, we ought to recognize that Dickson and Heise were likely concerned with testing the apparatus' capacity for registering shadowy moving figures in the lower corner of the frame, in part because the previous version of the kinetoscope seems to have only recorded a circular iris of that which was in front of the camera. Still, as the film begins a story of sorts, one of appropriation and displacement unfolds.[233] It seems by all we have to go on that the dog had been sleeping there all along. It is almost as if the athlete snuck into the frame in which the dog was sleeping. The camera begins shooting and the athlete begins his routine, when the dog, disturbed, looks to the performer, for some indication of what's going on, and, no doubt, out of some anxiety over the pole he's swinging. The athlete

[233] Note, as discussed, in chapter two, the similarities between this story and Kafka's fable of the Tiger and its trainer, who steps into the cage, in order to be alone with the animal for the first time. The tiger looks up, regards the trainer and returns promptly to sleep.

gives no indication of acknowledgement of the dog to the dog or the camera, as if the dog simply isn't there, but then when the dog leaves the frame, the camera stops and reframes the dog[234] to conclude the short film.

Contained in this film is the allegory of animals' exclusion from modern society: the dog is recaptured as if it had never left with technologies of representation, subsequently subordinated and displaced from the central focus of those technologies, but all the same a refusal of its consequent departure. The framing, nature of the medium, divide between humans and animals – all cast a distinct tension or energy between the two figures in the frame. On the one hand, the performer both seems to appropriate the dog's already-having-been-there claim on the space of cinematic display and seems oddly out of place given his clear awareness of the recording apparatus, that he performs for it. Likewise, that the performer is first and foremost displaying his physical prowess, his status as a natural specimen sets him in relation to the dog, which can not help but display even as it sleeps. But while the dog is just sleeping the athlete, in performing, flexing his muscles, clearly displaces the dog as *the* specimen being represented. As they are not simply both in the frame, but specifically framed together, the dog can only contribute to this status as specimen; by similarity, there are two natural bodies in the frame and by contrast, one is moving, performing, the other dormant, barely stirred. In some sense, the dog recognizes its inconsequence, and decides to leave, or rather position itself on the edge of the frame, in a still act of continuous departure. Despite this appropriation and displacement, the cut and reframe on the dog conveys the film's dependence on the

[234] Toward the end of the Library of Congress' copy of the film, there is a break in the recording. The apparent cut and reframing could possibly have been a confusion of the sequence of frames in the libraries archives, as they were preserved as printed photographs and sequence of strips of photographs was not always clear. However, all things being equal, and given the LOC's choice to preserve the film in the manner they have, there is a cut and a reframe.

animal's presence. It is worth noting that this relation of frame to moving animal is consistent with Muybridge's experiments discussed in the last chapter. Employing several cameras stretched along the track of a moving animal, the apparatus performs (in a sense) a continuous reframing of the animal that is in every frame, leaving the frame.

Edison Kinetoscopic Record of a Sneeze, (Fig. 4.7) – often referred to as *Fred Ott's Sneeze* – was recorded on January 7th, 1894, and copyrighted just two days later making it the first copyrighted film. In the standard histories of American film, it seems the film was recorded primarily for advertisement of Edison's soon to be enormously popular form of entertainment, and even that it was not featured prominently in the early exhibitions of the Kinetoscope. It was published just as it was copyrighted, as a series of photographs.[235] As Gordon Hendricks has addressed in his book the *Edison Motion Picture Myth* and article "A New Look at an Old Sneeze,"[236] Edison had attempted to date this film as early as 1889 in order to confirm its status as both the first copyrighted film and the first appearance of motion pictures. Though that dating was obviously false, this film did confirm Edison's entry into the business of motion picture entertainment. More importantly, we might ask: why a sneeze? As this film was both the first to be copyrighted and that which heralded Edison's new invention, what is it about a sneeze that made it the selection for Edison's initial offering to the public?

Just as likely fake as real, by presenting a sneeze, the film positions itself as capturing something biological, contingent: an odd union of the any-instant-whatever and

[235] As there existed no standard for copyrighting films, all of Edison's early work was copyrighted as a series of printed photographs. It is from these prints that the Library of Congress has been able to reproduce many of Edison's early films.

[236] Gordon Hendricks, *Edison Motion Picture Myth* "A New Look at an Old Sneeze" *Film Culture* 22-23 (1961): 90-95.

Fig. 4.7. Edison Kinetoscopic Recording of a Sneeze as published for advertising purposes.

some privileged glimpse at that which might elude our gaze. In capturing a biological function the film may not address animality directly, but by failing to focus on a distinctly human movement or action, it nevertheless evokes an animality of the subject. Rather than speaking, or singing, or operating an instrument, or doing anything distinctly human, he sneezes and all mammals sneeze, as do many birds and reptiles. Further, as a would-be first film, *Fred Ott's Sneeze* is perched on the border of the transition from scientific study of movement with photography and cinema's status as a form of popular entertainment. On the one hand it produces a record of a biological function and in the tradition of the photographic motion studies captures and opens up the possibility of analysis of bodily movement, fitting fully within the tradition of Muybridge and Marey's studies attempting to capture that which the naked eye could not see. On the other, it heralds Edison's new form of entertainment to be displayed in amusement parks and other venues of popular spectacle. Its status as scientific record is ensured by what it captures – the involuntary biological function of a sneeze. However, that it captures what normally comes on quickly and lasts only a moment, the film, just by what it records, positions itself as a chance encounter.

Fred Ott's Sneeze and *Athlete with a Wand* stand as two of the first films made with the newly updated kinetograph with vertical feed and recently completed Black Maria studio. As such they set the stage for what will be Edison's first two attempts at presenting celebrities with his new apparatus: *Sandow* and *Carmencita*. To a certain extent this is an appropriation of an already existing star system from theater, and the culture of exhibition more broadly. Nonetheless, the correlation to D.W. Mitchell's decision in 1847 to begin starring certain animals, beginning with Obaysch the

hippopotamus, in order to capitalize on the scientific society's garden to become a popular money-making venture is notably similar. Though no one remotely associated with the technological drive toward cinema wasn't aware of the technology's entertainment potential, Edison's decision to popularize what had previously been an instrument of science, and at the same time to begin the association of the medium with a star system is precisely the sort of marketing insight Mitchell employed to save the zoo.[237] Further, it is not simply the appropriation of the scientific apparatus, but of the subject material as well. Though we might question the scientific value behind the studies, both Muybridge and Marey did motion studies of athletes, and Muybridge had a number of studies of dancers (though these in particular, seem already to herald the entertainment value of cinema, and of course, pornography). This, however, is not simply a case of appropriation but of reciprocal affect. While Muybridge's studies of dancers and athletes significantly predates Edison's attempt to popularize these subjects, Marey did not undertake his chronophotographic study of Sandow until 1900 (Fig. 4.8).

Edison's decision to film a dancer and an athlete owes at least some credit to Muybridge. Edison met with Muybridge in February of 1888 and at that time, Muybridge had suggested combining his zoopraxiscopic displays with Edison's phonograph. He further suggested that such a venture could be enormously popular and suggested films of actor Edwin Booth as Hamlet, and the singer Lillian Russell. Though Edison would later deny that Muybridge had ever shared the idea with him, it seems to have been a clear

[237] Note the discussion in chapter one of Mitchell's efforts to reinvigorate the novelty of the zoo by "starring" and publicizing the arrival of new animals.

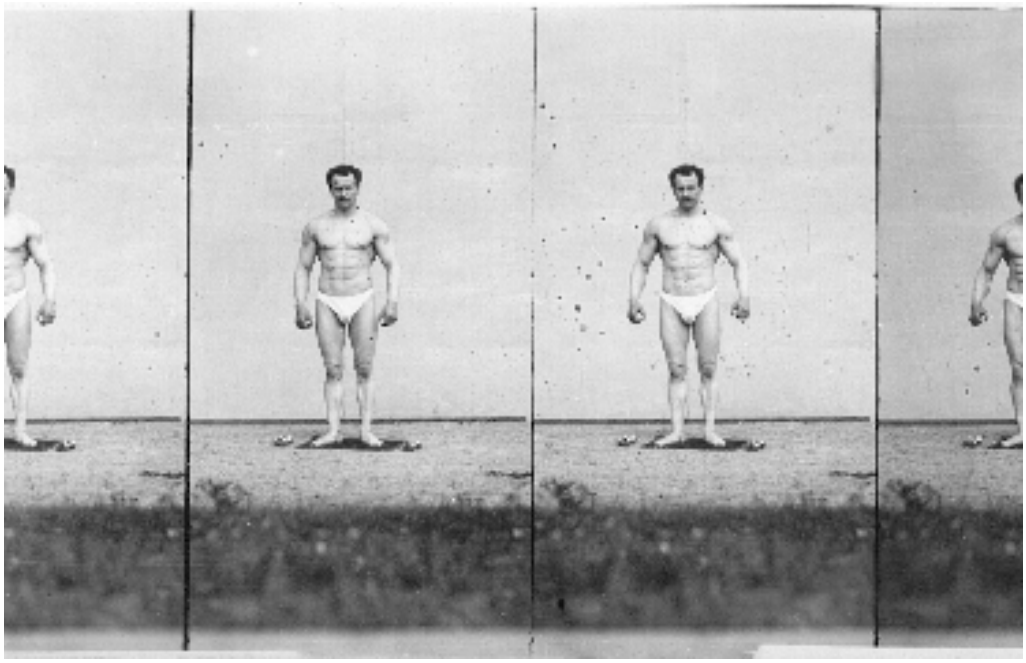

Fig. 4.8. Selection from Marey's study of Sandow using the cinematographic method.

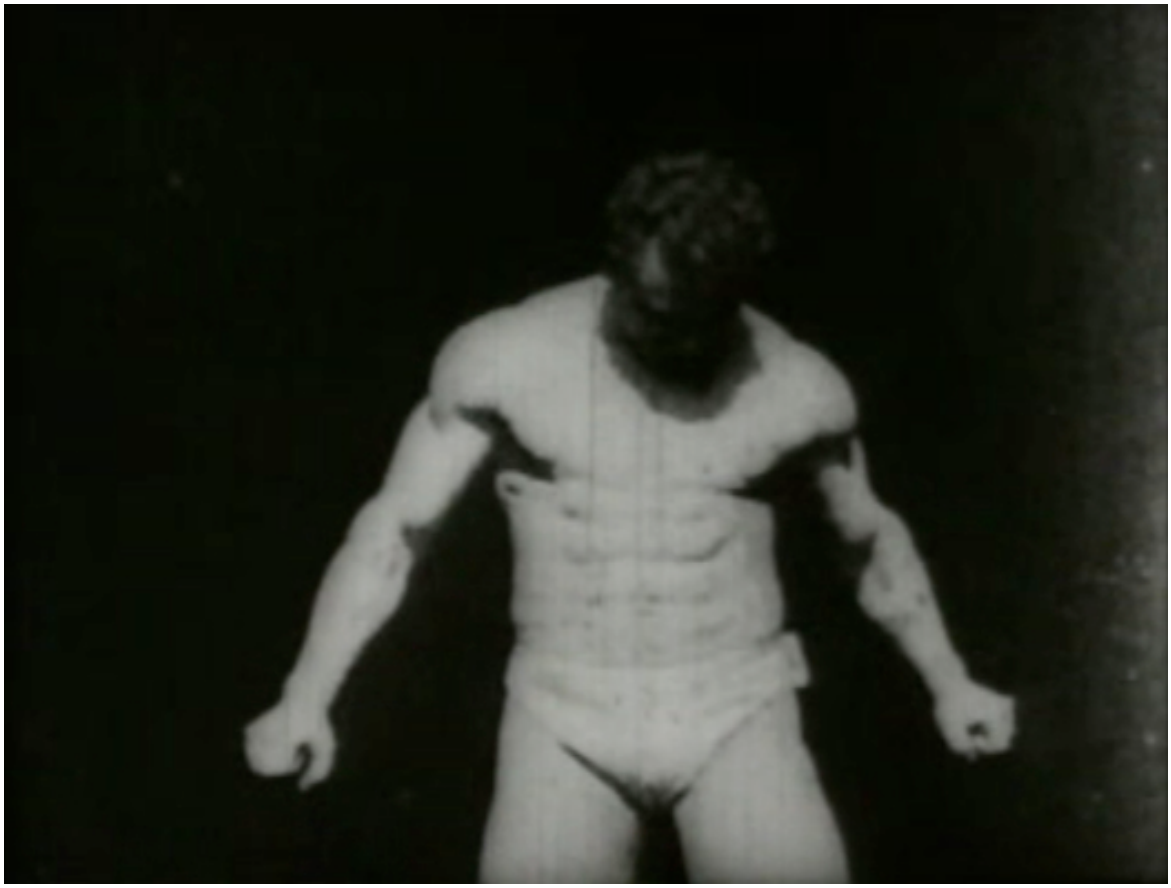

Fig. 4.9. Still from Edison's *Sandow* (1894).

inspiration for his research into motion photography.[238] Marey's choice to photograph Sandow however comes well after both Edison's films of him in 1894 and again in 1896,which at that time must have counted among the most circulated images in the world. On the one hand, this suggests that the proto-cinema of science and the cinema of popular entertainment are in a sense reciprocally constitutive in terms of subject matter as well as apparatus construction. Even beyond the strict scope of science, both proto-cinematic and cinematic technologies were unequivocally drawn to the physicality of human behavior.

It is perhaps difficult for us to conceive of the reception of such a film (Fig. 4.9). As one of the films produced just before (March 6, 1894) the execution of Edison's marketing strategy in April of that year, this would have been a featured film in virtually all the initial exhibitions in kinetoscope parlors and amusement parks through the eastern United States. One of the first films most Americans would see and likely the main attraction of most Americans' first kinetoscope experience, the impact on audiences perhaps cannot be underestimated. As the roughly 45 second film begins, Sandow is framed from slightly above the knees, hands on his head, flexing his biceps. For roughly three seconds Sandow doesn't move through space, but rather holds the pose, isolating his movement and drawing attention to the movement under the surface of his skin, bouncing his biceps, as it were. The *plan american* remains constant for the rest of the film as Sandow moves through a series of poses. Initially, the movement between poses is short and the pose is held for about three seconds. As the film progesses – Sandow moves through about 15 poses – the poses are held for just a moment and the movement

[238] See Musser, *The Emergence of Cinema,* 62-63 for a discussion of Muybridge and Edison's meeting as well as a clipping from a journalist visiting the West Orange laboratory a few months after the meeting.

between them more drawn out, expressive. In the first half of the film, he strikes only 5 of those 15 poses. In both its construction and Sandow's movements, this film in a sense bears witness to the turn from still photography to moving images. While the emphasis of the first several moments is on the held pose, even at the beginning the movement in the arms suggests that the movement that is about to unfold is going to emanate from the body itself; that by his sheer strength, Sandow will make the image move. In the latter half of the film, the number of poses doubles and the movement between them is exaggerated, demonstrating the movement of his muscles on the surface of his body. In most of the poses Sandow either bows or turns his head such that his facial features are heavily shadowed or simply turned away from the camera, which further draws attention to his naked torso. As he turns away from the camera and lifts his arms above his head, his back becomes a virtual screen of muscular movement. Finally as his body does begin to move through space, the available light sets the surface of his body in strong contrast to the dark background such that the vast majority of visible movement is on the surface of his body.[239]

Comparing this film to both *Fred Ott's Sneeze* and *Athlete with a Wand,* the strong relief with which Sandow exhibits his animality is striking. *Sandow* both performs a doubling of indexicality as seen in *Fred Ott's Sneeze* and completes the displacement of the animal seen in *Athlete with a Wand.* Further bathed in light, we might just as well see this image of a "perfect" specimen of humanity who is at once nevertheless presenting as thoroughly animal as the figure that emerges from the spectral figure of *Monkeyshines No. 1.* This visual similarity of *Sandow* to *Monkeyshines No.1* is undeniable – a brightly

[239] It is worth noting here that even as Sandow and Edison (Dickson) look to foreground movement that cinema and the exhibition of bodies cannot fully shake its recourse to the ideal instant. Sandow's routine is nevertheless an accumulation of perfect still poses designed to show his ideal body.

lit figure moving against a dark background. Both technologically and visually, *Sandow* confirms a bodying forth, an emergence of a human figure in the animal space. Though *Athlete with a Wand* suggests the necessity of the animal in the cinematic space in order to confirm the human as animal that steps into the frame, Sandow claims the place to the exclusion of the animal, cut in a sense out of the bottom of the frame. Sandow is perhaps both too marked by his humanity to share the space with an animal and animal enough on his own. A specimen of pure physicality, nothing proper to Sandow's show doesn't translate perfectly to the cinematic apparatus. As such, it is as though he fits as well in that space as any animal. On the other hand, the presence of the animal would only reenact the human animal divide. Despite the interesting relation of appropriation in *Athlete with a Wand*, the contrast of the strictly planned and executed routine of the athlete and the pure reaction, response to immediate stimuli of the dog, sets the animal and human in an ineradicable opposition. With the dog absent, Sandow becomes the only animal present, and whatever organization there might be in his posing is overshadowed by the animality of the muscle dance he provides for the camera, which requires no accommodation from him. Like any animal in front of the camera, he need simply to do what he does.

Moreover, this film exhibits a certain doubling of indexicality constituting an attempt to surpass the indexicality of the animal, which communicates its conditionality without slippage. *Sandow* then, perhaps more than any film that comes before it operates as an appropriation of a way of signifying humanity, archivable and transmittable but with out the slippage of language and writing. The relation between the surface of Sandow's body to the film itself is of course indexical, but so too is the relation of the

movement of his muscles to the movement of the surface of his body. Of course, one could say this about any moving body in front of a film camera, but the focus on his bare skin and muscle definition grants him a certain animality beyond all animals. First, he begins the film by standing practically still while making the muscles on his arms shake.[240] The movement suggests a superabundance of animality given that no other mammal is likely to ever demonstrate its body in that way unless it's having a seizure; mounting a physicality over and against semiosis and culture. More importantly, it creates the impression that the movement to be displayed is not through space but concealed in a sense in his body. Sandow's body becomes the origin of movement itself, sui generis, which of course is executed through and by the exclusion of animality and the dynamic living world from which it comes. Certainly, even as he does begin to move through the frame, our attention is drawn to the surface of his body. Second, his hairless body accentuates the movement of his muscles. In this way, human skin becomes the more perfect screen of biological function, perfectly suited to the cinematic screen. The cinema becomes not only an apparatus suited to the screening of animality, but of a human interiority as well. Sandow is thus not simply a perfect human, not simply an animal but the human-animal-cinematic apparatus par excellence, literally quaking with movement. The overcompensation, with which this film is riven, however, to some extent demarcates the failure of such a becoming. While the framing of cinema might serve to decontextualize Sandow from the cultural landscape of the time, and to some extent, recontextualize him among Muybridge and Marey's animal's and human specimens, such an extraction is perhaps nullified by the context of exhibition. Like the zoo, in the latter

[240] It is worth noting here that the word "muscle" is etymologically derived from the word for mouse. Muscle, being the diminutive of mus, means little mouse.

Fig. 4.10. Still from Edison's *Carmencita* (1894).

half of the nineteenth century, the overwrought and culturally laden frame of exhibition, especially in the amusement part, may be set itself in contrast to the naturalness of the exhibition, but it nevertheless betrays its production as such.

Another film featured among the first exhibitions of Edison's kinetograph films was *Carmencita* (Fig. 4.10) , filmed within a week or so of Sandow's visit to the West Orange studio. Like Sandow, Carmencita was a performer of notable fame in the years preceding the appearance of the kinetoscope. In 1892, a reporter for the New York Times, described her as possessing an "untaught abandon rarer than grace"[241] As such this film sits alongside *Sandow* and confirms Edison's strategy of capitalizing on the star status of his subjects as mutually beneficial for the featured star, who would see greater circulation because of their filmed performance and for the popularity of the kinetoscope, which appropriated the fame of the figure presented. Further, his choice to exhibit a dancer's performance also confirms his strategy of focusing on the movement of a human specimen. Her physical skill as well as her status as a sex symbol all draw the viewer's attention to her bodily performance. In contrast to *Sandow*, the roughly 20 second film is endless movement without pause. Already dancing in the opening frames, her dance accelerates into multiple spins, and continues to move even as the film ends. Though the selection of Carmencita as a star of the stage positions her as a sort of ideal specimen of both physical prowess and sexual allure – the film of course also reduces her to this even as it frames her as an ideal – her status as such precludes her from assuming a still position also precludes her from fully accessing the position of the ideal. She is bound to an image of pure movement, which is evident in the film. Her dance is so frenetic that her likeness can scarcely be made out. In contrast to Sandow, who in a sense dominates the

[241] "Amusements" *The New York Times*, Jan 26, 1892, page 4.

absent animal by claiming those still ideal poses, by quaking with movement even as he stands still, she is disallowed from dominating or fully displacing the animal and has rather to become the displayed animal.

In addition to capitalizing on the star status of Carmencita and Sandow, these two films' reception also initiated another mainstay of cinema: movies and sexuality. A predominantly male-oriented pastime, the early kinetoscope productions were made "of men, by men, and principally for men."[242] Perhaps unwittingly both Sandow and Carmencita complicated this somewhat. Though clearly produced for male entertainment, that Carmencita became the first woman on the kinetoscope screen in a sense opened the doors to women in the realm of cinematic entertainment. As Charles Musser has pointed out, the dance films in particular became the first films to be hand colored, for him, a clear appeal to female audiences. Though we might see this attempt to appeal to women viewers as an attempt to mitigate the film's status as erotic entertainment, it nevertheless paved the way for women as a targeted film audience. Though Sandow and Boxing pictures were clearly made for male entertainment as well, it seems likely that women engaged in a certain amount of visual pleasure as well. Charles Musser writes that "the kinetoscope gave women a more enticing opportunity: to glimpse the half-hidden male-oriented world of cock fights and risqué women from which they were ordinarily excluded."[243] Further, though it seems no record of evidence of female appreciation exists, Sandow is clearly sexualized in his performance, not to mention the voyeuristic structure of exhibition that the peep hole kinetoscope instantiates.

[242] Musser, *Before the Nickelodeon*, 40.

[243] Ibid., 44.

Lumiere: A Community of Animals

On March 22, 1895, Auguste and Louis Lumiere demonstrated their cinematographe at the Society for the Encouragement of National Industry in Paris. Later that year, on December 28, they exhibited 10 films for a paying audience at the Grand Café in Paris. Following its premiere in the United States in July of the following year, the Lumiere cinematographe became the most popular cinematic attraction for roughly six months.[244] The films that were projected at the first public event in Paris were, in order: *La Sortie de l'Usine Lumière à Lyon, La Voltige, La Pêche aux poissons rouges, Le Débarquement du Congrès de Photographie à Lyon, Les Forgerons, Le Jardinier (l'Arroseur arrosé), Le Repas (de bébé), Le Saut à la couverture, La Place des Cordeliers à Lyon,* and *La Mer (Baignade en mer).*[245] In contrast to Edison's first productions these films are decidedly more low-key. They display very little of the showmanship with which Edison sought to sensationalize his new apparatus. While the Lumieres ended up divesting of the cinematographe before the turn of the century because they estimated that the novelty of a device that would simply represent what the naked eye could see would wear off, it is precisely that sense of the quotidian that their early films sought to capture. This is not however to say that the films didn't engage in any sort of artifice. Indeed perhaps owing to Edison's physical comedies and gag films, a number of these first Lumiere films foreground their staginess. Taken as a roughly indicative sample, four of these first films prominently feature animals. Though in at least one case these animals are displayed with a sense of their exhibitionary status in late nineteenth century culture, the positions of animals in these films seems more to the point of naturalizing the

[244] Musser, *Emergence of Cinema*, 135-137.

[245] Rossell, "Chronology of Cinema," 140.

representation. Animals, because they are a part of nineteenth century life, appear in the frame – little effort seems to have been made in the Lumiere catalog to exclude animals from the frame, even in staged performances. The presence of the animal, however, allowed to roam free in the frame has the effect of a sort of leveling of the human/animal distinction. Everyone in the frame becomes just another animal, bouncing around in the frame, responding to the setting and other bodies in the frame. Another important difference between the Edison productions and the Lumiere apparatus, perhaps the difference by which the Lumieres are credited with the invention of cinema, is that their cinematographe also served as a projector which not only put these moving images on a screen where many viewers could watch at once, it made those images as large if not larger than life. Such an innovation, though perhaps not technologically such a great leap, granted cinema a fullness of life that cinematic representation had never seen before.

The very first film displayed, *La Sortie de l'Usine Lumière à Lyon* (Workers Leaving the Lumiere Factory in Lyon)[246] was a simple roughly 45 second film of Lumiere factory workers streaming out of the factory gate. According to Bertrand Tavernier, in his narration of *The Lumiere Brothers' First Films*, several versions of this film were made and many still exist. Likely filmed over the course of the late spring, summer and early fall of 1895, we see not only the style of dress change to fit the season, but also a sense of presentation for the camera begins to emerge. In what is presumed to be the earliest version of the film, the workers are clearly dressed for factory work, though their middle class clothes suggest either that the Lumiere employees were well paid or had some foreknowledge of the event or both. As the versions progress the

[246] A video of the first film along with the other nine films shown at the Grand Café, late in 1895, can be seen at the Lumiere Institute's website (http://www.institut-lumiere.org/francais/films/1seance/accueil.html)

clothes of the workers become more formal, more clearly chosen for cinematic presentation. For example, the number of women wearing hats in the latter films significantly increases from the first film. In what is presumed by Tavernier and the Lumiere Institute to be the latest version of this film before December 28, the clothes of the workers are the most formal, most men dressed in black.[247] What further suggests a developing awareness of the camera is that as the versions appear, fewer and fewer people look directly at the camera, likely at the request of the Lumieres in order to preserve a sense of realism. While Gunning's characterizes his cinema of attractions with the exhibitionist impulse often manifested in blatant camera awareness and direct address, there is nevertheless an attempt from the very beginning to organize the presentation in order to produce something truer to life. Avoiding the gaze of the camera here though is not for the creation of a hermetic narrative diegesis but for the preservation, however imperfect, of the real world. The Lumieres made several versions of *Baby's Tea Time, Workers Leaving the Factory,* and *The Sprinkler Sprinkled*; while this was likely also in order to improve on photographic quality and to develop the aesthetics of framing and depth the Lumieres would become known for, it also belies an attempt to produce a better and better sense of realism. Such staging and plotting suggests even as the cinema of attractions did have its own aesthetic development outside of narrative, it was in many ways always also pointed in that direction. We begin to see with the Lumiere films a relation of animals to narrativity, a relation of both opposition and confirmation. Animals appear to take on a double function in the production of a sense of reality in these early films, a reality that can be both captured and fashioned. Not quite an

[247] Again, a number of things could explain this: the fall fashion included more black clothes in france at that time or the Lumieres might very well have requested that employees wear black in order to produce greater contrast with the black and white film stock they used.

appropriation of animality and displacement of the animal itself like Edison's films, the presence of animals conveys a deep sense of daily life – the animals are just there – but also confirm the realism of the staging of the filmed event.

There are two dogs and a small team of horses in most of the versions of *Workers Leaving the Factory* (Fig. 4.11)*;* in one version there is only one dog, and another, no horses. In the frame from one version shown above, the second dog appears in the center of the frame after the bulk of the workers have exited the gate.[248] The dog stops, looks around, sees the horses approaching the gate to conclude the film and departs to the left of the frame. The inclusion of at least one dog in each version of this film suggests a number of things worthy of consideration. Most obviously it suggests that dogs were simply regularly present in the factory, not unlike the dog that appears in Edison's *Athlete with a Wand* – dogs just hung around the factory. That a dog exits the factory in each version, however, also suggests that the dogs' inclusion was planned. In multiple versions a dog exits the door on the left of the frame while a cyclist exits the main gate. Upon meeting up outside the dog immediately playfully jumps up alongside the cyclist and they leave the frame together. The dog appears thus to comply with the staging of the scene by the Lumieres, that is, to play along and to mitigate the staginess, given that the dog to a certain extent is simply going to do what it does reacting and interacting with the unfolding of the event far more than following any direction given by the Lumieres. The presence of animals of course naturalizes the scene in a sense mitigating anxieties of mechanization and industrialization. Despite the dehumanizing effects of industrialization and factories popping up all over Europe in the latter half of the nineteenth century, the

[248] This version can be seen at http://www.youtube.com/watch?v=SWyy4fxYPXg, the first of a collection of three versions of the film.

Fig. 4.11. Still from Lumiere's *Workers Leaving the Factory* (1895).

presence of animals in such an environment served to ameliorate the deleterious effects of factory work. The dog's playful interaction with the bicycle, an 1885 invention that contributed heavily to the displacement of animals with machinery, operated along these lines as well. This served the Lumieres well, who often capitalized on their invention to undertake its own promotion; the Lumiere product and the factory that produces it are all happy affairs. The dogs' effect on the film is similar; the animals dynamic interaction with the even, both watching over and participating in the event of the exit from the factory, suggest that it is an event to be watched and that the participation in that event is a natural, animal, and human event, as opposed to unnatural, mechanized and industrial.

The film from which the frame pictured above comes captures the role of animality in these films best of all. Though the dog's reentry into the frame from the right toward the end of the film (it had appeared in the frame earlier both exiting and then greeting the people leaving the factory) was very possibly provoked by someone off-screen, the dog nevertheless appears to stop of its own will, and look around just as virtually all of the walking workers have exited the gate. He stands in the center of the frame as if awaiting more people to exit the gate, but sees the horses pulling a carriage and instead reacts to that, quickly clearing out of their way. The dog, who enters the frame at multiple points as if to check on, be part of, and in a sense shepherd the people out of the factory continually reasserts a human/animal interaction, but concludes the film in his regard and reaction to the horses with an animal/animal interaction. Though the dog is clearly more wary of greeting and ushering out the horses, the interaction has a leveling effect on the relation bodies in the film. Whatever the staging and attire the Lumieres instructed, the interactions between people and people, people and animals and

animals and animals, appear of a kind: without language, but rather constituted by gestures, looks and the sharing of a cinematic space. The same scene with no animals would in all likelihood appear formal, regimented and far more staged.[249] As it is, the people and the animals in the scene become a herd. This is decidedly a different configuration of the Edison films, which predominantly featured only one person, or multiple people in a clearly staged performance. The Lumieres, who often featured large groups "acting naturally," here organized a constellation of bodies which becomes a herd and is confirmed as such both by the dog and the nature of indexical cinematic representation – powerfully present, living and moving in time, communicating through gestures and looks without language.

The Lumiere catalog exhibits a number of motifs that are repeated time and time again in their films. These include babies and small children, animals, gags, processions, work scenes, military scenes, leisure scenes and trains. Alongside featuring animals and people in their daily lives, the Lumieres focused heavily on babies and young children, often interacting with animals. The interaction of young children or babies with animals has a particular naturalizing effect given that the child appears to bridge the divide with its clear potential for becoming cultured, entering into semiotics, and for being as yet uncultured and natural, unable to communicate except through gesture, facial expression and looking. Both child and animal appear to the viewer as unaware and unconcerned with the human/animal distinction clearly in play and at work in any such display. The third film in the Lumiere exhibition on December 28th at the Grand Café, *La Pêche aux poissons rouges* (Fishing for Goldfish), features a child held by a man partly off-screen

[249] By contrast, consider the fourth film to be exhibited at the Grand Café in December of that year, Le Débarquement du Congrès de Photographie à Lyon (the arrival of the photographic congress to Lyon).

while the baby fishes around in a fishbowl with its hand. The baby appears to look directly at the camera, is then hoisted more directly over the fish bowl as if prompted to take an interest in it, and then complies by sticking its hand in the large clear glass bowl. A fairly uneventful film – the fish seem to safely evade the baby's hand – the film nevertheless exhibits a staged interaction between a baby and an animal and a doubling of regimes of observation – the cinematic apparatus and the fishbowl. While the film foregrounds its staging – the man holding and directing the child's attention toward the fish – its central focus is on an interaction between a human and animal that can't be planned out in advance given that neither the baby or the fish can be given linguistic instructions. The film thus appears to frame with its staging a natural interaction between two living, moving animals, not unlike boxing cats, or for that matter a zoological habitat. Another film in the Lumiere collection, *La Petite Fille et son Chat* (Child and her Cat, Fig. 4.12), features an interaction between a cat and a young child notably similar to this film. Framed in a medium shot, the child sits in her chair and feeds the cat sitting on the tray of her chair. After feeding the cat a few pieces of food from the container in her hand, pictured below, the child struggles to retrieve another one and the cat loses interest and leaves the chair. The child then holds another piece of food in the air, at which point the cat appears to be tossed from off-screen back on the tray of the chair and is once again immediately interested in what the child has to offer.

Just as in *Workers Leaving the Factory*, in *La Pêche aux poissons rouges*, we witness a constellation of interactions that place the human and the animal along a spectrum in which the human animal boundary is stripped of the linguistic functions by which it is reified and entrenched. The double of regimes of observation is compounded

Fig. 4.12. Still from Lumiere's *La Petite Fille et son Chat* (1900).

by the fishbowl appearing in the center of the frame. Along with the zoo and the aquarium, the fishbowl is largely a latter nineteenth century phenomenon, the popularity of which began to spread rapidly after the demonstration of aquaria at the Great Exhibition in London in 1851. The goldfish probably did not reach the United States until around 1850.[250] Like the zoo, the aquarium or fishbowl is a structure specifically designed for the observation of animals in a natural, untamed, and undomesticated setting even as it is set in the Lumiere upper middleclass, bourgeois home. Just as the man's staging frames the natural interaction, so too does the cinematic apparatus, frames our attention to witness a "natural" interaction. As powerful as both the fishbowl and cinematic apparatus are in terms of displaying life the doubling of these apparatuses reveals the anxiety that the capacity of each to reveal life is not fully sufficient on their own, that life is perhaps not quite present in these displays. Both the fishbowl and the cinematographe point to rather than signify that which they present: this fish, this child, this interaction outside of language, outside of the dialectic of hierarchy between humans and animals. Even as it steps outside of the usual articulation of the division between humans and animals, it constitutes a different chain of being through staging; the man positions the baby who, almost menacingly grabs at the fish. Just as the indexicality of the apparatus of display appears to present just what is there, the staging of the scene nevertheless conveys an attempt to maintain the divide between human and animal, or at least a hierarchy in which the cultured, western, male is dominant. While cinema thus continues to reenact this division, it nevertheless forces in this case the Lumieres to relegate the execution of the human animal boundary to the staging and framing of the

[250] Bernard Brunner, *The Ocean at Home* (New York: Princeton Architectural Press, 2003), 24.

display – the man holding the baby, prompting it toward the fish, the cat tossed back into the frame – as the medium abstinently remains at the level of simply pointing to what is.

Charles Urban

Charles Urban became a phonograph salesman in the early 1890s and through that work came into contact with Thomas Edison. By 1895 he was managing a phonograph and kinetoscope parlor in Detroit. By 1898 he had moved operations to London and shortly thereafter formed the Charles Urban Trading Company, for which Walter Isaacs developed the Bioscope camera.[251] In addition to being a production company, the Urban Trading Company quickly became the largest distributor of films in the United Kingdom and western Europe. In February of 1905, Charles Urban released a catalog of Bioscope films, including a section entitled "Natural History: Animal, Bird, Reptile and Insect Life." The introduction to the section of the catalog of films reads: "We are much indebted to the Zoological Society for their kindness in placing at our disposal every facility for photographing the various Specimens of their wonderful Collection at the Society's Gardens, Regent's Park, London."[252] The series of zoological films, which was the first series featured in the extensive catalog of hundreds of films, consisted of nearly a hundred films taken at the Zoological Gardens and Aquarium of the Zoological Society of London. The catalog reads remarkably like the guides of the early nineteenth century discussed in chapter one; images, in this case photographs with circular and elliptical irises suggesting the cinematic device, give the reader some sense of what he or she might see. Often omitting the scientific information about the species, its country of origin, and biological descriptions, the descriptions recount the events of the film. While the earlier guides tended to manufacture a story about what might be seen, an event that had or might have unfolded involving this animal, this guide positioned itself as actually

[251] Note that this is not the Bioscope (*Bioskop*) camera invented by Max Skladanowsky in 1895.

[252] Reproduced in Stephen Herbert, *A History of Early Film, Volume 1* (New York, Routledge, 2002), 92.

having captured those exciting stories, as if by laying in wait, an encounter that might otherwise have been left to chance. The collection of zoological films thus appears to extend the function of the zoo, maintaining the sense of the context of the animals' actual, natural behavior while clamping down on and isolating that privileged yet chance encounter.

Most of the films focus on feeding or defecation, such as *The Boa Constrictor and the Rat* or *Swans at their Toilet*, or at play, such as the *The Storks' Tug of War* or *The Toads' Frolic*. This presentation of particular activities was no doubt in order to capture animals' movement as opposed to the sleeping that takes up most of captive animals' days. However it also suggests an attempt to capture the special moment, that for which the naturalist might lay in wait for hours or days on end. The description of the film, *The Hedgehog* conveys this attempt and concern with privileged durations.

> This is a very difficult subject to obtain, as the hedgehog spends the hours of daylight asleep, only quitting his nest with the approach of night. The hedgehog is seen curled up in a ball, he then stretches himself, and after preliminary ramble settles down to a hearty meal.[253]

The implication that the zoo captures something special – that is, as a space carved out between the natural history cabinet and the wild animal out in the world glimpsed by the field naturalist –is augmented by the addition of a camera for its capacity to not simply capture an interesting duration within that space, but also to excise time. It manages to cut out all the lying in wait that even the zoo can't fully elide. The doubling of regimes and mechanisms of observation displayed in the Lumiere film discussed above reaches its most distinct form in these films. The photographs of Montizon at the London Zoo in

[253] Reproduced in Herbert, *History of Early Film, Volume 1*, 97.

1851 also here find a more precise doubling of observational structures. As discussed in chapter one, the London Zoo hired Montizon in 1851 to produce a photographic archive of the animals in its collection. Though that doubling of images revealed a great deal about both the emerging photographic regime of representation and that of the zoo, it nevertheless coupled the framing of the duration of animal life in the zoo with the production of instants with photography. Urban's zoo films on the other hand frame the duration of the zoo with the duration of cinema. Just as this appears a more perfect union of representational practices – indeed just as the zoo held the animal still for Montizon's camera, it contains the whole of the hedgehog's life so that the precise duration of interest can be extracted from it for more exciting and more informative exhibitions of animal life. Such a doubling both belies the inability of these strategies of representation to present life and allows the failures endemic to each to shift between the two and be concealed in that doubling. The cinematic apparatus highlights the ability of the zoo to present animal life because that presentation translates to the cinema and confirms and extends its representation of life in time, and the zoo confirms cinema's framing mechanism by accomplishing that framing in advance of a film's production.

The production of the zoo films was a part of a general approach by Urban who believed that cinema had been overrun by the entertainment industry, even though he was the largest distributor of films, most of which were strictly for entertainment purposes in the United Kingdom and much of Europe during that period. He believed rather that cinema possessed a unique capacity for science and education. In his pamphlet, *The Cinematograph in Science, Education and Matters of State,* published in 1907, he argued that film ought "to be released from the grip of the entertainers and to take up its natural

role as a medium of instruction and illumination"[254] In what is generally considered the sunset of early cinema, Urban argues for a reconception of cinematic technology as something much closer to its origins in the studies of Muybridge and Marey, an instrument of knowledge and education. The collection of films that succeeds the "Natural History" collection is a body of work that the catalog refers to as "The Unseen World" and which was recorded with the use of his company's Urban-Duncan Micro-Bioscope. Like Muybridge and Marey's studies of animal motion, this collection sought to reveal that which the naked eye could not see. Coupled with a microscope, the cinematic apparatus not only undertook to display the movement of the microscopic world, it created, like the zoo, the possibility of archiving the life of the unseen. As such once again the cinematic apparatus is positioned as powerful instrument of science and education. The binary of science/education vs. art/entertainment continues even at this late date in early cinema to structure the conceptual landscape of what cinema can and should do. As with the zoo in the mid-nineteenth century and D.W. Mitchell's decision to begin starring animals and open the gates to the public thus capitalizing on the zoo in its capacity to entertain, as with the tension between Muybridge and Marey in terms of seeking to discover or be discovered, the question of what the purposes of collecting, representing and displaying the natural and animal world consistently appears to raise questions of ethics about our relations to the natural world. As discussed in the previous chapter, both the scientific and entertainment purposes for representing animals present possibilities for distancing culture from the natural world even as it appears to bring it closer. The life that we appear to share with animals casts this potential distancing effect

[254] Charles Urban, *The Cinematograph in Science, Education and Matters of State,* excerpted at http://www.charlesurban.com/manifesto.htm.

of the mediation of both cinema and zoological garden in sharp relief. While Jonathan Burt cites Charles Urban as an important figure taking up the moral and ethical issues that confront specifically the relation we have with animals as we represent and display them, one cannot help but notice that this doubling of regimes of vision presents us also with an image of animals dramatically receding even as they seem so realistically close.[255] Just as indexicality may be the register of animality, the proliferation of regimes of representation between us and animals has also to be seen as a further relegation of animals from our lives and that that distancing effect is perhaps dangerously concealed in the powerful realism of indexicality, photography and zoological display. The zoo films of Urban once again capture the central question of this project: do these technologies of vision bring the natural world closer or entrench and proliferate the unbridgeable divide between humans and animals? To that question we might add another: do they capture time, or excise it?

[255] See Burt, *Animals in Film,* 122-126.

Electrocuting an Elephant, the elision of time, the animal and narrative diegesis

One of the most famous of Edison's films is *Electrocuting an Elephant*, filmed at Coney Island in 1903, released that same year. Topsy was a domesticated elephant in the circus at Coney Island, but in the few years preceding her execution, had become increasingly violent and unstable and had killed three of her trainers. Though there is speculation that this had as much to do with their treatment of her as with her demeanor (one trainer that was killed had apparently attempted to feed her a lit cigarette), the circus had nevertheless determined that she was too dangerous to keep. Thomas Edison not only filmed the electrocution, but he also contributed the electrocution apparatus itself as his company in large part pioneered the harnessing of electricity. To ensure the death of the elephant, she was fed carrots laced with 460 grams of potassium cyanide and shocked with 6600 volts of alternating current, while some 1500 people watched the execution.[256] The film begins with Topsy being led from the background to the foreground of the frame, where the device and harness await her. The camera pans slightly to keep the elephant in the center of the frame, where the elephant comes into a long shot, showing her whole body, centered and diagonally facing the camera looking off-screen to the left. There is then a cut, which appears to serve to omit the time necessary to affix the electrocuting apparatus. A sign for Luna Park appears in the distant background in the upper right hand corner of the frame. The elephant, tied down, with two of her feet strapped to wooden sandals then braces as the electricity is sent through her body, smoke billows from the surface of her body and feet, and she collapses to the left. A number of people appear in the scene: before the electrocution shadowy figures pass in front of the

[256] "Bad elephant killed. Topsy meets quick and painless death at Coney Island," *The Commercial Advertiser*, New York, Jan. 5, 1903.

camera, and again after what appears to be a quick cut (probably to ensure the safety of the scene), another shadowy figure appears in the background, standing on something above and behind the elephant.

While the elephant was slated to be executed anyway, this public demonstration cannot be understood outside of the "current wars" of the late nineteenth century. Edison's decision to employ alternating current in this film had much to do with his patents concerning direct current, and was part of his attempt to demonstrate the dangerousness of alternating current, which was feared to be deadly. This campaign involved the public electrocution of not only Topsy, but also of several cats and dogs; the elephant, being so large, was the ultimate test of the damage alternating current could inflict on living beings. Indeed, this was the first horror film, for just as much as it presented its viewers with a gory scene, it tapped into their fears of technology and industrialization, the work place and the electrification of their homes, the onslaught of which they were both responsible for and unable to stop. That the backdrop of this event was the amusement park at Coney Island collapses both the terror and entertainment of technology and mechanization. Doane writes that electricity "seems to effectively annihilate delay, the distance between cause and effect, and to evoke the idea of the instantaneous."[257] She goes on to cite Mark Seltzer, who points out the capacity of electricity to evoke the "fascination with the sense of immediacy and of the pure present."[258] Though hardly a representational practice, the combination of electricity, animal and cinematic display suggests the fascination with the immediacy of media, and

[257] Doane, *Cinematic Time*, 151.

[258] Mark Seltzer, *Bodies and Machines* (New York: Routledge, 1992), 11, cited in Doane, *Cinematic Time*, 151.

the danger of sensory stimulation to overwhelm the living body even as we are drawn to it.

This film captures the motif of the appropriation and displacement of animality present from the earliest moments of Edison's motion pictures. The presence of human figures in the film, the two ellipses of time, and literal displacement of life from the elephant with the electrical current, harbinger of the twentieth century of both mechanization and media, all point to an attempt to infuse culture, its practices of production, circulation and representation with animality at the cost of animal life itself. In a sense this has been a presence in the regimes of looking that power the display of animal life since the earliest days of the Zoological Garden of London. Likewise, an elephant at the Exeter Change menagerie had to be killed because it threatened the lives of its keepers (Fig. 4.13). An autopsy of the elephant, Chunee, revealed that he had probably suffered from a severe toothache, which precipitated its violent and erratic behavior. The execution of the animal was an enormously public affair; not only did hundreds of spectators look on as the animal was shot with over a hundred and fifty bullets fired into its body, only then to be done in with a harpoon, the story was widely reported, featuring a drawing of the scene showing the caged elephant rearing at the barrage of bullets. The structures and organization of containment and observation ultimately overtook the very life they sought to present.

So too the electrocution of the elephant: the very energy that powers the cinematic apparatus overtakes the animal that it sought to present. While the film itself strikes us now as perverse, inhumane and as a wanton disregard of the value of life, this film is intimately bound up with the anxiety over the presence and representability of life itself

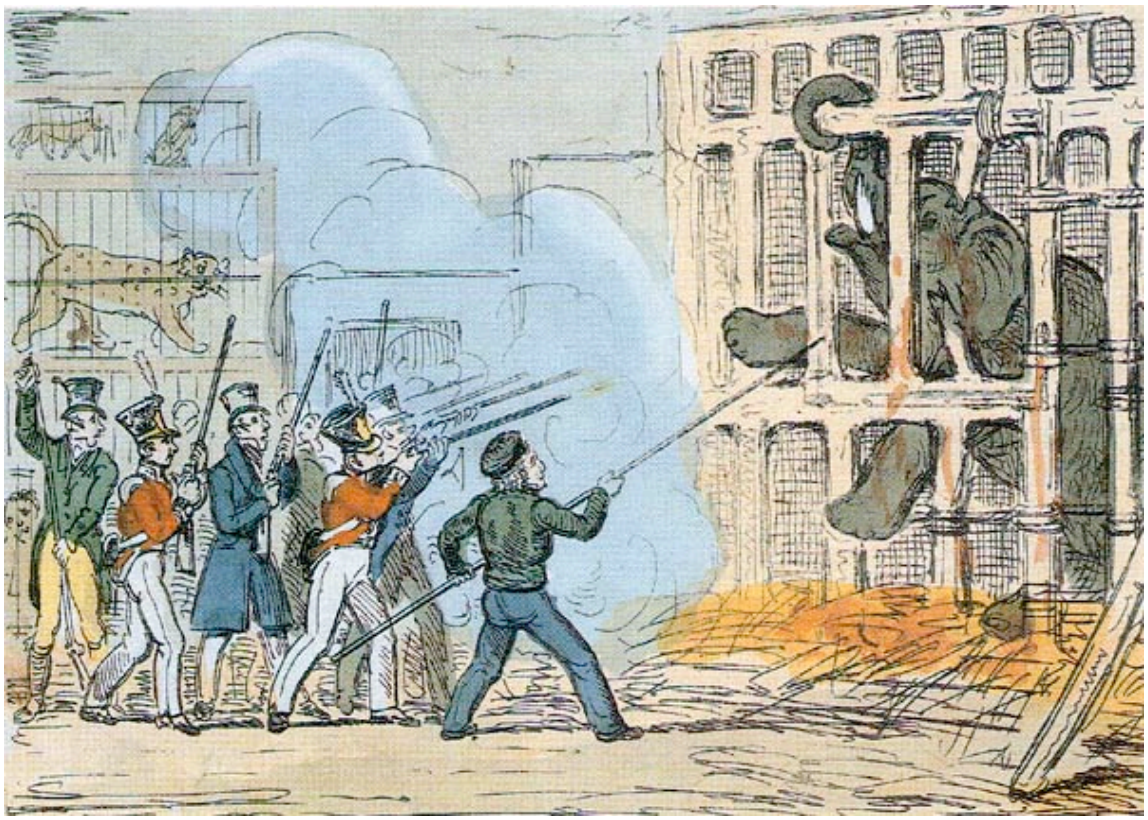

Fig. 4.13. An image of Chunee's death at the Exeter Change in 1826.

and with the advent of narrative. Lippit writes of this film in his book *The Electric Animal;*

> Thomas Edison has left an animal electrocution on film, remarkable for the brutality of its fact and its mise-en-scene of the death of an animal. The single shot [sic] of an animated film-elephant collapsing from the surge of electrical current brings together the strange dynamic of life and death, representation and animal, semiotic and electricity. It is emblematic of the uncanniness of the medium. …Cinema, then, can be seen as the simultaneous culmination and beginning of an evolutionary cycle: the narrative of the disappearance of animals and that of the rise of technical media intersect in the cinema. The advent of cinema is thus haunted by the animal figure, driven as it were, by the wildlife after death of the animal.[259]

This film appears to bring the nature of both animal display and cinematic representation to that end to which it has always pointed. The horror here, which the film evokes, however, is not merely the danger of alternating current, or even electricity itself but of our attempts to represent life in both the culture of the display of animals and of film. The containment of animals in cages, the stilling of bodies in motion accomplished in photography and obsessively repeated in cinema appear to bring life closer even as they push it further and further away toward death. The staging of the film demonstrates this displacement of animal being and the sense of accomplishment present in the figures taking claim of what they've done also carries the sense that as humans step into these animal spaces that they too may be next.

[259] Lippit, *The Electric Animal,* 197.

This stepping into position, however, is accomplished by the rudimentary form of editing known as "ellipsis,"[260] a fundamental tool in the creation of a narrative diegesis. In both cases, it is only after these ellipses that human figures appear in the frame. After the cut and the elephant is strapped into the electrocution device, figures pass out of focus in front of the camera, and after the animal lies dying on the ground, a cut and the appearance of the figure behind her. The appropriation of animality and occupation of the animal space is in this case, deadly, accomplished in a sense only through the death of the animal, but also in and through the cutting up and reassembling of the natural world the cinema by its very nature appears to present so clearly. What is left in this case is a world in which humans can live, for the time being, but which takes too great a toll on the animal. Doane refers to the ellipsis (for some reason, she only notes the first) as that time which is deemed to be uneventful or outside of the event proper, as "dead time." She writes that this "dead time" is conceived of as

> …a by-product of grasping the event's clear cut and inherent structure. It would be more accurate, I think, to assume an understanding of "dead time" – in which nothing happens, time which is in some sense "wasted," expended without product – is the condition of a conceptualization of the

[260] Given that the camera does not significantly change position or angle, under the continuity system by which narrative cinema has operated for nearly the last one hundred years, this cut is referred to as a jump cut. Doane specifically describes it as such. A jump cut is variously defined as a cut that breaks the 30 degree rule (not changing the angle by more than 30 degrees after a cut) or as any cut that breaks any of the rules of continuity editing. However you define it, given that this film predates any solid establishment of the continuity system, the term jump cut fails to capture the function of the edit. Ellipsis too is a term of continuity editing though it is more generally understood to be a cut that indicates the passage of time or action. It is both an economy of editing and for the creation of a diegesis. Strictly speaking, when ellipses operate within the continuity system the camera changes either position or angle, however, for the purposes of this film, the elision of time is more precisely at hand, even as it may serve to generate a diegesis, it has little to do with the continuity system, aside from being an inchoate movement toward it.

> "event." From this point of view the documentary event is not so far from the narrative event.[261]

What is interesting here is that Doane's analysis shifts the question of deadness from the animal and the scene of death that is presented to that which has been extracted. Just as that time is dead in terms of the human construal of an event, apparently internally coherent, it seems more properly to have been the time that animal life cannot do without. Her analysis raises the stakes on the opposition between humans and animals in highlighting the fact that that which humans seem precisely to undertake in their organization and representation of the world is that which the animal cannot tolerate. Just as the west seemed to reinvigorate representation with life in the case of the cinema, so too did they set straight away to exclude that life once again.

Doane also writes of the same tendency that, "narrative would constitute a certain taming of the instability of the cinematic image."[262] The statement, which harkens Gunning's that the Spielberg-Lucas-Coppola "cinema of effects" "are tamed attractions" suggests however that cinema, especially narrative cinema could not tolerate the complete eradication of animals and animality from the cinematic space. While the advent of narrative, even in its most primitive cases such as *Electrocuting an Elephant* appears to come at the overwrought domination, relegation and often death of the cinematic animal, the taming of cinema requires not necessarily the death of the animal, though many perish, but the creation of a space or spaces in which the animal can be said to exist. The very manner in which narrative cinema requires the generation of a diegetic world demonstrates this very fact; a diegetic world operates by cutting out and extracting

[261] Doane, *Cinematic Time*, 161.

[262] Ibid., 159.

the natural, animal world by placing it in juxtapositions and attributing to it references that it cannot on its own undertake. The relation of the natural world to a diegetic one is precisely the relation of the natural habitat to the zoological habitat. The instability of the early cinematic image is precisely the onslaught of images of the natural world without any more order than the natural world carries with itself. While the advent of sound cinema contributed a great deal in terms of the creation of diegeses because it pointed to the world just outside of the frame and beyond, the creation of a diegetic world in early silent narrative film had to avail itself solely of the manipulation of spaces. It thus cut out pieces of the world – all that dead, uneventful time, which is however proper to the living world, not unlike the laying in wait that the zoo cut out – in order to reconstitute something more orderly than the natural world in its own unfolding. As much as the London Zoo, and even Carl Hagenbeck's contextualized habitats sought to recuperate that receding natural world, all of those undertakings, like cinema, were riven with animal death. Cinema was forced, much like Hagenbeck, to tame that animality in order to create a form of representation that did not carry so bluntly that mark of death, inevitably as threatening to human as animal life. The cinema of tamed effects, tamed moving images must however face the same question that the zoo is confronted with: is there any animal to be seen there at all? It is a question formed not for the utility of the answer it might provide – perhaps there isn't one – but rather for the value of a question that perhaps must be asked of all human representation, again and again.

Coda: Twenty-first Century Animal Images

Though the relative popularity of zoos has waned amid the rise of other forms of visual entertainment, and though the growing popular knowledge of the natural lives of animals has belied the artificiality of zoological habitats and mounted ethical concerns about the keeping of wild animals in captivity, and though cinema has largely become a vehicle for narrative, popular fascination with watching animals is perhaps as strong as ever. Aside from the nature shows featured on the PBS and the Discovery Channel, a cable television station, Animal Planet, is now entirely dedicated to shows about animals. "Animal Cams" have become increasing popular, not simply in the cases of zoological habitats equipped with camera feeds that stream on the internet, such as the popular Panda Cam at the National Zoo, but also cameras affixed to collars and put on animals in the wild, such as National Geographic's project, Crittercam,[263] have sought specifically to reveal the private, wild lives of animals. Animal documentaries have also become increasingly popular, such as *Winged Migration* and *March of the Penguins*. More recently, the BBC's award winning series, *Planet Earth*, broadcast in 2006 on the Discovery Channel "was the most watched cable event of all time reaching more than 100 million viewers."[264] In each of these cases, the apparatus, whether film or high definition digital video, operates as an instrument of revelation, employing astounding

[263] See http://www.youtube.com/watch?v=VpAR4OV-9Ds for an example of the Crittercam. All of the clips discussed here can be seen at www.youtube.com/user/wanolan/ in the section titled "favorites."

[264] "Planet Earth, Award-Winning BBC Television Program, to Become Children's Book Publishing Program With Scholastic" http://money.cnn.com/news/newsfeeds/articles/marketwire/0392738.htm

resolutions, frame rates of up to 1000 fps, and increasingly small and durable cameras that can go just about anywhere. As cameras are both attached to animals – animal becoming camera and vice versa – and extend the capacity of the human sensory perceptual apparatus, the camera seems to bridge across the divide between humans and animals. This bridge however, just as the bars in a zoo cage, threatens a double function: to cross that divide, but also to hold it in place.

In terms of humans seeing themselves as animals, we need simply perhaps reference the extreme popularity of pornography that has emerged with the internet. Though surely operating within a myriad of complex cultural forces, such as issues of gender, race, religion and morality, pornography cannot be thought outside of a consideration of the fact that it appears to strip human behavior of its cultural trappings and allows a supposed "natural" or "animal" behavior. This sexualized animal behavior is explained by the enormously popular song "The Bad Touch" by the Bloodhound Gang, released in 1999: "You and me baby ain't nothing but mammals / So let's do it like they do on the Discovery Channel." But the desire to see ourselves, living and moving is perhaps just as well located in the obsessive recording of our lives with surveillance cameras, video phones, YouTube, webcams and reality television. We might, like Gunning's dating of the end of the Cinema of Attractions by the percentage shift to narrative film, suggest that we have easily turned the other way. An assessment of the proportions of what film or video cameras record would no doubt reveal that the non-narrative has easily again taken over narrative representation several fold. We might credit this shift to the dissemination of cameras, radically increasing access to such technologies and democratizing cinematic representation, but this perhaps loads the

technology itself with too much agency. The technology and its markets respond to a clear fascination with seeing ourselves in such representations. We of course ought to credit this in part to emergence of the star system and celebrity throughout the twentieth century; such technologies allow us to step into that celebrated position. The sheer amount of videos on Youtube, their approximation of the "Cinema of Attractions," and the proliferation of surveillance and home video cameras all suggest, however, that this answer falls well short of answering the question of our fascination with visual recording. In many ways, our moving imaged bodies now confirm our status as meaning making beings far more than being able to read, write, or constitute our identities in language. In a process of reciprocal determination, like that of the first zoos, Hagenbeck's habitat designs, and the proto-cinematic arrangements of Muybridge and Marey, our fascination with animals has carved out numerous spaces that accommodate animal lives, however bare, and reward our gaze. As we have seen, throughout these examples of animal images a number of characteristics of the place of animality in the emergence of cinema persist, though in modified, specified form. These characteristics include the tension between science/education and art/entertainment, the association and collapse of animal and cinematic apparatus, an attempt to recuperate a set of relations to animals that strike us a real and/or natural, but also a sense of trying to organize the animal world into a structure that confirms the human/animal distinction, with humans safely on top, even as it guarantees our access to a natural, animal world.

Though there are numerous cases of scientific studies of animal behavior using increasingly advanced cameras, which in many ways mimic the studies of Muybridge and Marey, Kim Bostwick's study of manakins, a variety of bird that emits a high pitched

chirp, demonstrates the continued involvement of the study of animal behavior and cinematic technologies.[265] Until Bostwick's study, there had been a long-standing mystery about how the birds actually make the array of buzzes and chirps, apparently with the flapping of their wings. Long-term studies of the manakin's musculature and skeleton failed to reveal how this bird could actually produce such sounds; here is the failure of the cabinet scientist. Because of the speed of the animal's wings, the naked eye could not hope to determine the nature of the animal's behavior; here is the failure of the field naturalist. It wasn't until Bostwick's use of high speed video cameras, recording at up to 1000 frames per second, that we learned that the tips of the birds wings clap together at the height of its wing stroke to produce the call. Such a study, well over a century after Muybridge's first photographic study of animal motion, is not simply an improvement on the recording devices and innovation of their application. Rather, it suggests an infinitude of animality that an infinitude of technological advance might reveal. Likely, Muybridge and Marey could scarcely have imagined the need beyond capturing images much more quickly than the 100 fps accomplished by Marey, whereas we might ask, what secrets of animal life might be revealed by 5000 fps, 10,000, a million? Is there a diminishing return? Is the revelation of life so intimately tied to photographic technology?

From one perspective it is fruitful to understand the reciprocal determination and proliferation of spaces carved out specifically for looking at animals as a matter of tuning and specification. The case of the 2001 film, *Winged Migration,* offers an excellent example. The documentary, which focuses on the migratory behavior of different species

[265] See http://www.pbs.org/wnet/nature/deepjungle/episode1_bostwick.html for a synopsis of the episode of PBS's show Nature in which her work is covered. Also available at this link is a video explaining the study.

of birds around the world, employs cameras designed to fly along with the birds as they make their migratory journey. The filmmakers accomplished this by introducing the camera to a flock of birds at a young age, allowing them to become familiar with the mechanism over a long period of time such that the flock would allow the bird sized plane with camera to fly alongside them as they flew.[266] The result was previously unseen, breathtaking views of birds flying. While telephoto lenses had in the past allowed intimate views of birds taken from far away, the proximity of the of the camera allowed for shorter angle lenses which give the images a sense of depth and proximity. Further, that the camera is essentially tracking along with the bird instead of panning from the ground gives the viewer the perspective of actually flying in formation with the bird. Truly, in *Winged Migration*, one has the sense that they are seeing birds in a sense for the first time, in their natural behavior and environs. These images too, straddle the same tension between science/education and art/entertainment. While the scant narration provides information about the birds' migratory practices and the challenges they face along with cinematic representation of their actual journeys, the images presented by the film offer the viewer a distinctly visual pleasure. As much as the strategies of filming the birds are designed to impact the birds as little as possible in order to allow for the greatest possible revelation of their lives to the camera, the close up images of birds flying perhaps don't tell us anything more about how a bird flies but rather give us yet another fascinating perspective on that flight. While fascinating, such views can hardly be said to produce scientific knowledge or educate the viewer as to the birds' behavior and relation to the world around it. Or perhaps they do. While entertaining, the views of flying in formation with bird are dramatically intimate. Though a mechanical apparatus, the film

[266] See http://www.youtube.com/watch?v=BsPWi4XUXzw for a clip of this film.

was in a sense only possible insofar as the birds treated the camera and small plane as another bird, allowing it to fly in formation with them. "In formation" here sets itself against information, the fundamental pieces of both scientific knowledge production and the dissemination of such through education. Information, by definition, arrives already set in an interpretive structure that explains it. Setting these images of flying birds in formation however, strips away the interpretive and scientific perspectives with which we explain birds, generating a sense of something completely new that we must now make sense of again, generate a relation to that won't fully tack down or *capture* a secure knowledge, but instead only a relation, forever subject to change. That the film encourages us to do this from the perspective of another bird in formation gives us, on the one hand the possibility of regarding other animals as animals ourselves, and on the other hand, puts us in a relation to the animal that strips away, at least in part, our interpretive strategies.

Like *Winged Migration*, many recent documentaries, both feature length theater releases and television documentaries, have eschewed a common staple of educational documentary, the talking head interview, in order to maintain focus on the lives of the animals. In the same vein, many documentaries have significantly reduced the amount of narrator voice over allowing the images and animals themselves to reveal the nature of their lives. The BBC series *Planet Earth,* exhibits this privileging of images perhaps more than any other contemporary example. Filmed over the span of five years, with a 25 million dollar budget, the largest ever for a series of this kind, the documentary series was also the first of its kind to be shot entirely with high definition digital cameras.[267]

[267] See the BBC's website for release information: http://www.bbc.co.uk/pressoffice/pressreleases/stories/2006/02_february/01/earth.shtml

There are no interviews, only a moderately spare narration from Sigourney Weaver (in the American version) or David Attenborough (in the British version). Moreover, the text of that narration repeatedly draws its viewers' attention to the images presented. This however goes beyond the narrator referencing the images on the screen to frequent reference to the strategies and mechanisms of recording those images. Perhaps the most dramatic of these is footage of a shark breeching the surface to attack a seal.[268] The shots in question record the footage at a thousand frames per second, in order to be able to slow down the one second strike to roughly 40 seconds, preserving a sense of fluid movement. Remarkably, the slowing down of the footage opens up a length of time, into which the narrator inserts a reference to the technology of representation, "[t]he strike of a great white shark lasts a mere second. Slowing it down forty times reveals the technique and immense strength of this massive predator."[269] Even without the narration, watching the footage, like so many shots in the Planet Earth series is an experience of wondering how they managed to produce such images, it immediately becomes both a wonder of technology and a wonder of nature. Camera operators all over the world spend months in nature lying in wait for the most elusive animals to capture footage of that which has never been seen before and the captured footage takes on the endangered, precious status of the animal itself. A time-lapse shot of a tree's foliage changing throughout the seasons collapses months into seconds as it arcs around the tree. Such camera movement with time-lapse photography again draws our attention both to the natural event being recorded and the event of recording itself, accentuating the strategy of building a track around a tree in nature, with the camera ever so slowly moving in an arc around the tree

[268] See http://www.youtube.com/watch?v=5ZPhQewYf3c for the clip discussed here.

[269] "Pole to Pole," *Planet Earth*. BBC. (Season 1, Episode 1), April 11, 2006.

to produce such a shot. Finally, each episode concludes with a 5-10 minute documentary on the recording itself, explaining the technology, time and effort, as well as the challenges to recording the footage we've just been shown. Just as the series, and I take it in many ways to be one of the best of its kind, attempts to connect us to the natural world, to deepen our investment in protecting that world, and to allow us to wonder at the actual, natural lives of the animals it shows to us, it cannot help but interpose and even foreground the technology of representation.[270] On the one hand, foregrounding the means of production accomplishes the task of calling our attention to the particular effect mechanisms and strategies of recording can have on the subjects they present. On the other hand, our fascination with the technology, with the marvel of the display itself pushes the animal further and further away, even as it reveals its life.

Finally, it is important to note that the advance of these technologies is not simply for the connection to animals they appear to offer us. They also continue to allow us a form of representation that we can set in contrast to the slipperiness of language, and which appears to ground us in our animal bodies and the world we live in.

[270] It is worth noting here that the series demonstrates in all of the various means by which it captures astounding footage of the natural world a commitment to not disturbing the animals' lives. Evident in both the footage itself as well as the short "making of" documentaries at the end of each episode, it is a rare exception that the animals are even aware of the filmmakers presence, still rarer that their presence as any detectable impact on the animals' lives.

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