

UC Riverside

UC Riverside Electronic Theses and Dissertations

Title

Reassembling the "Environment": Science, Affect, and Multispecies Educative Practice at the Aquarium of the Pacific

Permalink

<https://escholarship.org/uc/item/8ws4x5hs>

Author

Lloro Bidart, Teresa Katrina

Publication Date

2014

Peer reviewed|Thesis/dissertation

UNIVERSITY OF CALIFORNIA
RIVERSIDE

Reassembling the "Environment": Science, Affect, and Multispecies Educative
Practice at the Aquarium of the Pacific

A Dissertation submitted in partial satisfaction
of the requirements for the degree of

Doctor of Philosophy

in

Education

by

Teresa Katrina Lloro-Bidart

June 2014

Dissertation Committee:

Dr. Begoña Echeverria, Chairperson

Dr. Derick Fay

Dr. Farah Godrej

Dr. Margaret Nash

Copyright by
Teresa Lloro-Bidart
2014

The Dissertation of Teresa Katrina Lloro-Bidart is approved:

Committee Chairperson

University of California, Riverside

ACKNOWLEDGEMENTS

First, I express deep gratitude to all of my human research participants at the Aquarium of the Pacific. Given the ethnographic nature of this project, they allowed me to glimpse life in their personal office spaces, lunchrooms, and behind-the-scenes operations; many staff also graciously permitted to me to audio-record them as they taught at exhibits. During my time there, I learned how deeply most staff care about the work they do there—work for which many of them are not financially compensated.

I am also grateful to the nonhuman animals residing at the Aquarium. Due to my personal and ethical commitments, doing research in a space that holds wild animals captive was at times difficult, especially as I came to realize that researching there co-implicated me in their captivity. Therefore, I must acknowledge those nonhuman animals as research participants without whom this project would not have been possible.

The University of California, Riverside's generous Dissertation Year Fellowship and the Robert C. Calfee and Nel Little Endowed Doctoral Fellowship provided me invaluable financial support during my data collection final writing years. I am forever grateful for this assistance.

Last, I would like to acknowledge the support of the *Journal of Political Ecology (JPE)*, especially Dr. Josiah Heyman and the anonymous reviewers who provided constructively critical feedback on Chapter 5: "Structuring Human-Animal Relationships: Lorikeets as Bird Biopower." A modified version of that chapter appears in *JPE*.

DEDICATION

This dissertation is dedicated first and foremost to my parents, Arturo and Rosalind, for their innumerable sacrifices so I could have the financial means and personal confidence to accomplish all of my goals. This PhD is theirs as much as it is mine. I also dedicate this dissertation to my husband, Matt, whose patience, wisdom, and support guided me through many trying times throughout the last seven years and to my sister, Alicia, who through her own doctoral studies, inspired me to continue my education after completing my Master's degree.

I have developed into an ethnographic researcher passionate about environmental education thanks to the support of several people: My advisor, Begoña Echeverria, who provided me with innumerable hours of support, guidance, expertise, and constructive feedback. I thank her for pushing me to do research I care about *personally* and *professionally* and for believing in me when my confidence waivered. To my committee members, Farah Godrej and Derick Fay, I dedicate this dissertation to you for all of your hard work. Your courses and disciplinary perspectives indelibly shaped my research trajectory and for that I am so grateful. You both helped me discover work I truly love and believe in at the end of every day. I also thank my committee member, Margaret Nash, for her invaluable feedback during the dissertation writing

process and for her assistance with preparing this dissertation for a book proposal. To Maria Simani, thank you for the opportunity you granted me to do research when I hardly knew what that entailed! Your wisdom, advice, financial support, and friendship throughout the last five years have contributed to my growth as a researcher and person. And last, I thank my wonderful friend and colleague, Jennifer Branch, for listening to me babble about my work when no one else would and for providing emotional support throughout the whole process.

I also dedicate this dissertation to other teachers and professors who inspired me and taught me that I had something valuable to contribute to the world: Donna Michael, my sixth grade teacher; Eric Malstrom, my high school English teacher and now great friend; Linda Silveira, Elaine Brubacher, Caryl Forristall, and Barbara Murray, my undergraduate science professors who taught me that women could succeed in academe; and Robert Voeks, my cultural ecology professor who first opened my eyes to the world of the environmental social sciences.

And last, I dedicate this dissertation to all of the more-than-human animals inhabiting the planet, particularly those with whom I have shared my life. From the time I could walk and talk, a piece of my heart and soul has belonged

to the furry, feathered, and finned creatures that walk, fly, and swim the earth with us. My hope is that this research and all of my future work will in some way contribute to making the planet a better place for them as much as for us.

ABSTRACT OF THE DISSERTATION

Reassembling the “Environment”: Science, Affect, and Multispecies Educative Practice at the Aquarium of the Pacific

by

Teresa Katrina Lloro-Bidart

Doctor of Philosophy, Graduate Program in Education
University of California, Riverside, June 2014
Dr. Begoña Echeverria, Chairperson

Drawing on 14 months of ethnographic fieldwork at the Aquarium of the Pacific and Michel Foucault’s governmentality and biopolitics as an overarching theoretical frame, this dissertation engages in a political ecological analysis to explore how the institution, its staff, and nonhumans work to produce various sorts of knowledge about the environment. I argue that the educative assemblages imagined and formed there, which are intimately linked to institutional fiscal survivability, politically deploy nonhuman animals in the Aquarium’s “edutainment” project. Through the use of storytelling as a pedagogical tool to entertain, invoke compassion, and convey science to the public, staff encourage guests to have tactile, auditory, and visual encounters

with live ocean creatures in order to construct a natural world worthy of being saved, due to its instrumental and intrinsic value. I show how this public conservation re-education project attempts to highlight the voices of the animals being *represented* there, but not necessarily the voices of the animals *actually residing* there. I also draw out the implications of these representative practices and argue that the institution ought to utilize staff-nonhuman relationships, which are grounded in care and empathy, as a framework for developing visitor-nonhuman relationships.

TABLE OF CONTENTS

List of Figures	xii
List of Tables.....	xiii
Chapter 1: Introduction	1
Chapter 2: Research Site and Methods	15
Chapter 3: The Neoliberal Environmental Citizen: Structuring Action through Pedagogies of Expertise, Care, and Choice	54
Chapter 4: Constructing and Co-Teaching with Sharks	100
Chapter 5: Structuring Human-Animal Relationships: Lorikeets as Bird Biopower	156
Chapter 6: Transformations: Staff Affective Labor Practices	201
Chapter 7: Conclusion	218
Appendix A: Interview Protocols	222
References	231

LIST OF FIGURES

Figure

1. Aerial view of the Pike and Downtown Long Beach, 1925	17
2. Map of Long Beach area surrounding the Aquarium of the Pacific	20
3. Aerial photograph of Aquarium of the Pacific area, 1998	21
4. Aerial photograph of the Pike at Rainbow Harbor, 2014	21
5. The Pike at Rainbow Harbor, 2014.....	22
6. Paid staff recruitment.....	36
7. Shark Lagoon Exhibit, 2012.....	109
8. Shark “mistaken identity”	130
9. Shark plush toys available for purchase.....	138
10. Typical shark items for sale	139
11. Constructed trees in the Lorikeet Forest exhibit	167
12. Rainbow Lorikeet	168
13. Lorikeet nectar bar	172

LIST OF TABLES

Table

1. Aquarium admissions packages and prices	23
2. Aquarium visitor sample demographics	33
3. Exhibit staffing	34
4. Primary responsibilities of paid staff positions	39
5. Volunteer sample demographic data	44

CHAPTER 1: INTRODUCTION

A replica blue whale, the largest creature to ever inhabit the earth, hangs from the ceiling of the building's Great Hall. This replica—a human-made representation of an awe-inspiring animal—is designed, like the Aquarium's other exhibits, to challenge visitors to become curious about the ocean and its inhabitants. Oceans occupy a vast majority of the earth's surface area (70 percent), but because humans and ocean creatures cannot reside in each other's habitats, humans still know very little about the lively world existing there. The Aquarium, therefore, engages in an "edutainment" project where guests are enticed to come to know the oceans through fleshy, auditory, and, visual encounters with both living and nonliving nonhumans, much like the contact guests have with the replica blue whale when they initially walk through the Aquarium's doors.¹ These encounters are the focal point of this study.

Drawing on 14 months of ethnographic fieldwork I explore how the institution, its staff, and nonhumans work, through educative practices, to produce various sorts of knowledge about the environment. In these educative assemblages, nonhuman animals are politically deployed (Ogden, Hall, & Tanita,

¹ Edutainment refers to a combination of education and entertainment. Many staff members described the Aquarium in this way. Further, my fieldwork, which revealed both a focus on education and entertainment, supports assigning the institution this label.

2013) as staff utilize storytelling as a pedagogical tool to entertain and convey science to the public. Through invoking the epistemic authority of scientific knowledge while encouraging guests to have encounters with live ocean creatures, the institution aims to construct a natural world worthy of being saved, due to its instrumental and intrinsic value. I further show how this public conservation re-education project attempts to highlight the voices of the animals being represented there, but not necessarily the voices of the animals actually residing there.

Overview of Research Problem

The Aquarium is a non-profit 501 3(c) institution dedicated to ocean conservation education, which it enacts at exhibit sites through enrolling living and nonliving creatures in teaching and learning processes.² In conducting pre-fieldwork at the space, which aided in my conceptualization of this study, I became curious about the kinds of knowledge about the environment various Aquarium actors (including non-humans) produced. In particular, drawing on

² In the current study I utilize the term “enroll” in the manner of actor-network theory (ANT) approaches. That is, borrowing from Callon’s (1986) original work and Nespors’s (1994) application of ANT to physics education at the university level, I define enrollment as establishing networks and connections and enmeshing actors (both humans and nonhumans) in these networks. While the bulk of my analysis does not utilize the language of ANT per se, I do highlight how actors form educative assemblages as they produce knowledge about the environment.

work in the social studies of science, I wanted to understand how notions of what counts as scientific knowledge influenced the topics the institution and its staff officially sanctioned as teachable.

Initially, utilizing Latour's (1987) actor-network theory (ANT), I also intended to examine how Aquarium experiences impacted both staff and visitor identity development as they became enrolled in networks of knowledge production (or excluded from these networks). After the first few months of fieldwork, however, I realized that ethnographically studying visitor identity was methodologically challenging due to visitor transiency and my lack of ability to establish rapport with them. In addition, while I found ANT useful from a theoretical standpoint due to its inclusion of the nonhuman world as full actors engaged in the knowledge production process, I also became dissatisfied with ANT because it lacked a solid theoretical connection between knowledge and power. As a result, I turned to the work of Michel Foucault, who asserts that knowledge is never neutral. I aimed to better understand how and what kinds of knowledge are produced and, also following Foucault, how this knowledge makes particular subjectivities available (and others unavailable) to both guests

and staff.³ Simultaneously, I realized that there were many non-transient research participants *residing at the Aquarium* whom I had not fully engaged: the nonhuman animals.

After an extensive review of the informal science education literature, which overwhelmingly conceptualizes non-human living beings as objects to be utilized in human learning processes, I sought to better understand how animals are active participants in educative assemblages at sites like the Aquarium.⁴ In so doing, I explored not only the kinds of animal-human relations and relationships formed in this space, but also teased out some of the implications of these relations and relationships. As I delved further into my fieldwork, I realized that the political economy of the institution—a non-profit acting as private enterprise to ensure its own survivability—radically impacts on-the-ground teaching and learning processes, knowledge production, and the lives of

³ Due to visitor transiency and my limited ability to collect rich, ethnographic field data from guests, I did not do an in-depth analysis of visitor identity development. I instead focused on the kinds of subjectivities the institution, its staff, and animals made available to guests vis-à-vis teaching practices.

⁴ Some notable exceptions include the work of environmental education scholars like Connie Russell, Traci Warkentin, Leesa Fawcett, Helen Kopnina, and Helena Pedersen. In a recent *Canadian Journal of Environmental Education* piece written in response to a three-day seminar entitled “Making a Difference: The Opportunities for and Challenges of Producing ‘Useful’ Research” (in which Russell and Fawcett took part) the authors argue, “What we write can determine their [more-than-humans] realities: the way that we discursively frame nonhuman animals in our research and pedagogical efforts can rationalize, perpetuate, and/or challenge our relationships with them...” (Oakley et al., 2010).

the animals enrolled in those processes. I subsequently engaged in a political ecological analysis of the site to better understand this complex interplay between macro political-economic and micro-interactive forces.

To do this, I explored the following research questions:

- What kinds of knowledge about science and the environment do staff, animals, and visitors construct and produce?
- In what ways do these kinds of knowledge make particular subjectivities available (or unavailable) to staff members and visitors?
- What kinds of human-animal relationships do staff, animals, and visitors produce at the Aquarium and what are the implications of these relationships?

Conceptual Frameworks Overview

Foucault's governmentality (1991, 2008) and biopolitics (1978, 2003) provide the overarching conceptual frameworks for the study. In particular, I utilize Rose's (1993, 1996) advanced liberalism (i.e., neoliberalism) theorized through the lens of Foucault's "governmentality," to understand how Aquarium actors produce knowledge about the environment.⁵ I conceptualize the

⁵ Following Rose's interpretation of governmentality as "array of technologies of government," I utilize governmentality to focus on "the actual assemblages of diverse forces, techniques, and

Aquarium's teaching practices as technologies of government insofar as they encompass "strategies, techniques, and procedures through which different authorities seek to enact programmes of government in relation to the materials and forces to hand and the resistances and oppositions encountered" (p. 42).

Rose (1996) carefully distinguishes liberal societies from advanced liberal societies with respect to the role of expertise and the resultant strategies employed by actors. He argues that in advanced liberal societies experts are "'responsibiliz[ed]'...in relation to claims upon them other than those of their own criteria of truth and competence" (1996, p. 55).

As I conducted my fieldwork at the Aquarium, it became apparent that staff, particularly paid management staff, tailor their educative practices [technologies of government] not only to the scientific organizations with which they identified as they view themselves as knowers of scientific facts, but also to the envisioned advanced liberal citizen who made "claims upon them" with respect to having an enjoyable experience. In this model experts (Aquarium staff) are viewed as located within markets and they must fashion their governing

devices that promise to regulate decisions and actions of individuals, groups, organizations in relation to authoritative criteria" (1996, p. 42).

[educative] practices to meet the needs of citizens who pursue their own wellbeing within these markets.

After several months of interviews with staff working closely with live animals and observations of exhibits featuring live animals available for body-to-body contact, I realized I needed an analytic framework to allow me to understand how animal bodies at the Aquarium are enrolled in and also complicate human educative experiences. It was at this point I turned to Foucault's biopolitics and the work of scholars who have applied his ideas to nonhuman bodies (Chrulew, 2011; Luke, 1999, 2000a, b; Rutherford, 2011). Foucault (1978, 2003) developed the conceptual tools of biopower and biopolitics in order to explain how, in the nineteenth century, the State began to control the [human] biological in order to "make live and let die," whereas the Sovereign had previously operated through the mechanism of "let live and make die" (2003, p. 241). Essentially, Foucault argues that both state and non-state bodies made the management of life a political issue necessitating the intervention of the State. He distinguishes between disciplinary technologies (those acting on the individual body) and regulatory technologies (those operating at the level of the population). For Foucault, "biopolitics deals with the population, with the population as a political problem, as a problem that is

at once scientific and political, as a biological problem and as power's problem" (2003, p. 245).

In the last two decades, scholars have applied Foucault's biopolitics to the management of nonhuman bodies in various spaces including zoos, theme parks, ecotourism sites, and botanical gardens (Chrulew, 2011; Luke, 2000a, b; Rutherford, 2011). I argue that at the Aquarium, animal bodies are biopolitically assembled as they become enrolled in human educative experiences. I find that because the Aquarium fosters animal-human interactivity (i.e., touch experiences with captive, live animals) in a space of edutainment, the institution utilizes site-specific disciplinary and regulatory technologies to make animal bodies fit for these touch encounters. In addition, I contend that these micro-populations of animal bodies—particularly the Lorikeets inhabiting the Lorikeet Forest exhibit and the sharks in the shallow touch pools of the Aquarium's Shark Lagoon exhibit—serve as ambassadors for their own species, and for the environment more generally, as they are regulated at both the individual and population level in order to "make live."⁶ Following Foucault, this sort of "making live" subjects the animals at the Aquarium to a kind of political death, vis-à-vis what I call a

⁶ These exhibits are described more fully in Chapter 2.

unique type of “speciesism.”⁷ Akin to Foucault’s “racism,” in *Society Must be Defended*, i.e., “if you want to live the other must die,” they are isolated from members of their own species in the natural environment they typically inhabit so they may be displayed and *touched* for the benefit of the greater conservation good.

Dissertation Overview

In Chapter 2, “Research Site and Methods,” I describe the research site, paying particular attention to the institution’s historical development and subsequent political economy. In the latter half of the chapter, I describe the research methods I utilized and provide explanations as to how and why some research methods were complicated by the humans and nonhumans with whom I researched. Since my aim was to understand on-the-ground teaching practices and wider political-economic forces, I utilized ethnographic methods and document collection. Semi-structured ethnographic interviews with staff and

⁷ Animal studies scholars working in a multitude of disciplinary paradigms have variously defined “speciesism,” yet they all share a commonality in that the human subject is privileged in speciesist discourses. Andrezejewski, Pedersen, and Wicklund contend that it “is the name given to the presumption of human superiority over other animals and their subjection to oppression based on this belief” (2009, p. 140). Midgley describes it as “discrimination against nonhumans, thereby branding it as an offence against equality, parallel to racism, sexism, ageism, and the like” (1983, p. 65). And Wolfe, in a critique of cultural studies, contends that speciesism “involves systematic discrimination against an other based solely on a generic characteristics—in this case, species” (2003, p. 1).

guests, coupled with extensive participant-observation, allowed me to delve into knowledge production at the exhibit site, particularly the ways in which nonhumans are enrolled in this process. Through these interviews and participant-observation experiences, staff also provided me with initial understandings of the ways in which institutional survivability, intimately linked to the institution's conceptualization of good customer service, drives on-the-ground practices. These understandings led me to investigate freely-available online documents, such as newspaper articles and the Aquarium's 990 tax form, for additional evidence.

In Chapter 3, I explore how the Aquarium's constructions of (1) *science-as-epistemically authoritative knowledge system* and (2) *visitors-as-advanced liberal consumers*, co-influence the institutional and lived curriculum (content) and staff pedagogical practices. As a self-identified scientific organization, the institution places paramount importance on the teaching of a value-free and universal *science vis-à-vis* what I call "pedagogies of expertise."⁸ This *science* shepherds typically private matters (e.g. personal decisions impacting the environment) into the realm of public discussion and decision-making. Though

⁸ Throughout the dissertation I utilized the italicized term *science* to denote the very specific kind of science the Aquarium espouses and teaches. I will explore this *science* in subsequent chapters.

Rutherford (2011) found that scientific expertise served as the sole arbiter of content at the American Natural History Museum, at the Aquarium the envisioned visitor-as-advanced liberal consumer of edutainment experience also plays an important role, as staff utilize what I call “pedagogies of choice and care” and to create a positive guest experience. That is, the political economy of the institution necessitates that staff simultaneously embrace their roles (1) as expert educators within a scientific organization and (2) as customer care agents in edutainment organization located within the broader entertainment markets of the southern California region.

To conclude the chapter, I problematize the Aquarium’s advocacy and teaching strategies for two key reasons: (1) by shepherding the “private” (personal consumer and behavioral decisions) into a public conversation, they frame the solutions to *collective* problems in terms of the individual and avoid implicating systems of production as the root cause of environmental damage and (2) by framing only those environmental problems rooted in *science* as fodder for discussion at the Aquarium, they abdicate private and public responsibility for “political” environmental issues.

In Chapter 4, I argue that the institution’s various exhibit sites produce three related discourses about sharks, relying on naturalistic aesthetic, intrinsic,

and extrinsic valuing. These discourses work in concert with tactile experiences with live sharks to construct the image of a “disembodied shark” as charismatic megapredator.⁹ This shark, largely misunderstood and mis-constructed by the media and general public, is presented as worthy of human care. These discourses include: (1) a re-imagining of the shark as cute, cuddly, and desiring relations with humans; (2) a focus on the shark’s role as apex predator of *nonhumans* to perform ecosystem services; and (3) an emphasis on the mischaracterization of the shark as a killer of *humans* in the media. The Aquarium does not funnel its efforts into reconstructing the image of any one particular shark, like the Great White; rather it seeks to construct *all* sharks as benevolent and worthy of human care and concern through this disembodied

⁹ I utilize the term “disembodied shark” throughout the narrative to denote that the shark the Aquarium constructs and asks guests to save has no real body. That is, though the Aquarium encourages guests to corporeally interact with small sharks at the Shark Lagoon exhibit, it is not these small sharks they are challenged to save. Rather, the institution hopes to inspire guests to care more generally about shark conservation vis-à-vis the imagining of an attractive beast that performs essential ecosystem functions.

Charismatic megafauna include those species most frequently utilized in conservation messaging and advertising due to their physical attractiveness. As Small points out, “The ‘charismatic megafauna’, by definition, are large, glamorous animals that attract public attention, and indeed it has been shown that they dominate the covers of nature magazines” (2012, p. 38). Examples include elephants, rhinos, panda bears, polar bears, and seals. Drawing on the literature describing the charismatic megafauna, I call the shark the Aquarium constructs a “charismatic megapredator.” I use the term “charismatic” since the institution aestheticizes sharks to make them cuddly, cute, and appealing to humans; I utilize megapredator because though the Aquarium downplays the shark’s role as consumer of humans, it highlights the importance of the shark as predator of other species.

shark. In making this argument and drawing out its implications, I assemble ecocentric political philosophy, post-humanist scholarship, and environmental applications of Foucault's "aesthetics of existence" and biopolitics (Darier, 1999; Foucault, 1978, 2003).

Chapter 5 focuses on the Lorikeet exhibit. There I show how the Aquarium, its staff, and its animals, co-participate in an "edutainment" project, where the institution governs Lorikeet bodies through regulatory technologies crafted to ensure guests have a satisfying experience and become more conservation-minded. In this way, the Lorikeets are politically deployed (Ogden et al., 2013) in the fiscal survivability of the institution and in a conservation education project imagining visitors as advanced liberal consumers, insofar as they chose their edutainment experiences and their environmentally responsible behaviors. The resulting human-Lorikeet interactions promote sanitized encounters with wildness, limiting the development of empathic human-animal relationships for guests. Some staff working with the Lorikeets, in contrast, develop affective relationships with the birds as they come to see them as persons "like me" vis-à-vis their experiences with them (Milton, 2002, 2005).

In Chapter 6, I extend ideas introduced in Chapter 5 as I focus on the experiences of one staff member, Jennie. Drawing on Michael Hardt's

“Affective Labor,” which introduces the analytic concept of “biopower from below” and the work of environmental anthropologist, Kay Milton (2002, 2005), who highlights the importance of experience in order to develop empathic relations and relationships with the nonhuman world, I develop a model of affective labor that includes how humans, through their caring labor practices with the nonhuman world, come to view these nonhumans as “persons like me.” I suggest that though these affective labor practices are “productive of capital” (Hardt, 1999, p. 98), they are also transformative for some staff and have the potential to be transformative for guests.

In Chapter 7, the concluding chapter, I summarize my overall findings, discuss implications of my work, and suggest future research.

CHAPTER 2: THE RESEARCH SITE

Introduction

The Aquarium, located in downtown Long Beach is the largest aquarium in Southern California, the fourth largest in the nation, and hosts over 1.5 million visitors annually. During the current study, the institution featured 19 major habitats and 32 focus exhibits spanning two floors, housed indoors and outdoors. Reflective of the institution's overarching goals of education and edutainment, its mission statement is "To instill a sense of wonder, respect and stewardship for the Pacific Ocean, its inhabitants and ecosystems" and its vision statement, "To create an aquarium dedicated to conserving and building Natural Capital (Nature and Nature's services) by building Social Capital (the interactions between and among peoples)." The Aquarium self-describes as a place of "neutral ground" (Atkinson, Bader, & Piper, 2010) to gather "together experts and leaders from diverse backgrounds and different perspectives, such as recreational and commercial fishermen, environmentalists, industry executives, conservation biologists, artists, designers, and storytellers...to explore alternative solutions to difficult environmental and societal issues" (Hill, 2008, p. 4). A purported informal science education and free-choice learning institution, it seeks to create a more "scientifically literate public" through

“providing citizens with the knowledge to make thoughtful, informed decisions to solve the complex challenges facing humanity” (Atkinson et al., 2010, p. 4).

History

From the early 1900s to the 1970s the land directly adjacent to where the Aquarium now stands was a beachside amusement center called “Pike’s Place,” complete with the world-famous roller coaster, “Cyclone Racer.” (See Figure 1). The center, featured in countless films and television shows, such as “Abbott and Costello in Hollywood” (1948) and “The Six Million Dollar Man” (1977), attracted as many as 50,000 visitors per weekend in its heyday, including many US Navy service members and their families working and residing in the adjacent Navy facilities (Lorscheider, 2012). The Pike closed and was demolished in 1979 after a series of business closures in the area caused by myriad factors, including: (1) the establishment of the nearby Lakewood Center Mall; (2) competition with amusement parks like Disneyland and Knott’s Berry Farm; and (3) City of Long Beach municipal decisions, such as the installation of the Queen Mary. This closure greatly impacted the city’s tourist economy. In the 1980s and continuing through the mid 1990s, the city of Long Beach experienced a severe drug epidemic, which caused crime rates to skyrocket (Lorscheider, 2012). The Long Beach Naval Station and Long Beach Naval

Shipyards closed in the mid-1990s, leaving the city in a state “synonymous with the worst symptoms of urban blight and decay” (Lorscheider, 2012).

Figure 1. A 1925 aerial view of the Pike and downtown shot from the roller coaster, looking north. Image courtesy of the Long Beach Public Library.



In early 1990s, city officials and other interested stakeholders began talking of revitalizing the areas including and surrounding the old Pike Amusement Center. Ironically, given that Disneyland in Anaheim, CA was partly responsible for the closure of the original Pike amusement center, the initial project proposer was Walt Disney Company. The plan, called DisneySea, would have included a sea-themed amusement park, a cruise and pleasure ship port, a

shopping, dining, and hotel complex, and the Future Research Center, a site of oceanographic research. Fiscal and legal complications primarily associated with environmental concerns over the filling-in of 250 acres of shallow harbor and widening of the 710 freeway to accommodate the large numbers of anticipated guests (13 million per year), halted the project not long after its initial proposal. Long Beach city leaders, however, still believed development of the area would help to revitalize the entire city of Long Beach and envisioned a waterfront area, Queensway Bay, which would include shops, restaurants, and entertainment facilities, most notably, the Aquarium of the Pacific (Hill, 2008).

Since other aquarium project proposals in adjacent cities were simultaneously in progress, Long Beach officials worked to hasten the Aquarium's timeframe through establishing a Board of Directors and identifying a developer, Kajima Urban Development.¹⁰ Once the Board of Directors was in place, its members decided that gaining voter or philanthropic financial support would be too lengthy. The Board and the City of Long Beach, therefore, chose to issue tax-free revenue bonds to be repaid through admissions revenue once the Aquarium officially opened in June 1998 (Hill, 2008). These bonds were

¹⁰ Areas with competing projects included: Santa Barbara, Dana Point, Orange County, Downtown Los Angeles, and revitalization of the Cabrillo Aquarium in San Pedro.

initially issued by the Aquarium as a non-profit 501(c)3 institution, but in early 2000s ticket sales lagged and the Aquarium had difficulty making its bond payments (Weikel, 2000a, b). Given that the original bond issuing agency (the 501(c)3 Aquarium) could not refinance the debt due to tax laws, in 2001 the Aquarium transferred the leasehold to the City of Long Beach, which agreed to allow the Aquarium to continue to operate the facility. As of 2008, the Aquarium paid a minimum of just over \$3.5 million per annum to the City of Long Beach, making it the only institution of its kind in the US required to pay large rents to its host city (Hill, 2008). Typically, aquariums receive subsidies from local governments or pay no rent at all. As a result of this unique funding structure and the fact that the Aquarium does not have significant endowment funds, it is highly dependent on guest revenues (e.g. ticket sales) for its survivability.

Currently, the Aquarium is flanked on the east side by Shoreline Village, a complex of restaurants, bars, shops, and yachting, and sailing venues. (See Figures 2 & 3). The world famous ship, the Queen Mary, is docked on the southeast end of Queensway Bay. To the northeast sits Long Beach Convention and Entertainment Center; directly north locals and tourists can enjoy the Pike at Rainbow Harbor, which currently bears little resemblance to its namesake. (See

Figures 4 & 5). This shopping and entertainment complex primarily features corporate retail chains such as California Pizza Kitchen and Outback Steakhouse, though there is a “Historic Carousel” and “Giant Wheel” designed to give it a feel reminiscent of the old Pike Amusement Center. In fall of 2013, Long Beach city officials began talks of bringing a new Cyclone Roller Coaster—an investment of nearly \$130 million—in order to draw more tourists into the Long Beach area (Bradley, 2013).

Figure 2. Map of the Long Beach area surrounding the Aquarium, designated by the “A.” The Shoreline Village complex is just adjacent to the Aquarium on the southeast side. The Queen Mary, located southeast and across the Bay, sits near the Russian Submarine Scorpion. Pike at Rainbow Harbor is west of the Convention Center. Image courtesy of Google Maps.

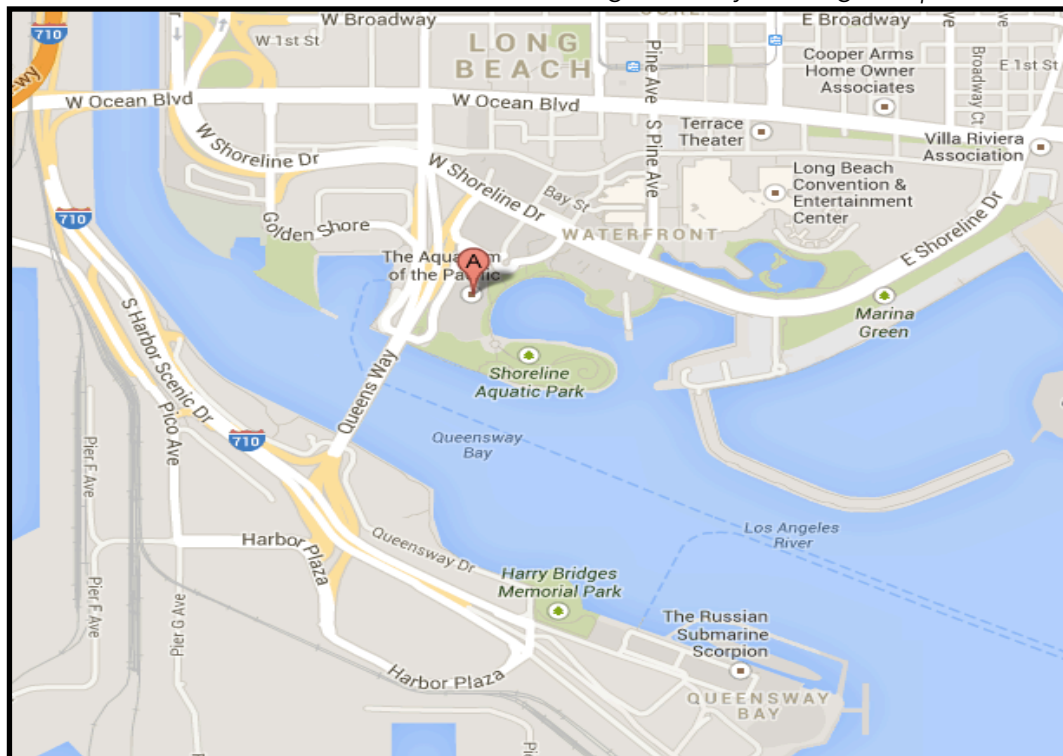


Figure 3. A 1998 aerial photograph showing the Aquarium of the Pacific and area around it including Rainbow Harbor and parking structure. Other buildings and part of the port can be seen in the background. Image courtesy of the Long Beach Public Library.



Figure 4. Aerial view of the Pike at Rainbow Harbor, 2014. Image courtesy of DDR Corporation, thepikeatrainbowharbor.com.



Figure 5. The Pike at Rainbow Harbor, 2014. The top of the “Giant Wheel” is visible in the far right of the photo. Image courtesy of DDR Corporation, the pikeatrainbowharbor.com.



Admissions

Aquarium general admission (February 2014) costs \$28.95 for adults, \$25.95 for seniors, and \$14.95 for children ages 3-11. Special packages bundle general admission with behind-the-scenes tours, whale watches, harbor tours, 4D film experiences, Queen Mary admissions, Battleship IOWA admission, and Los Angeles Zoo admission for discounted rates. (See Table 1). Annual membership costs seniors or students \$55, individuals \$70, senior couples \$90, couples \$105, families \$125, and grandparents (plus 4 grandchildren) \$125.

Additional membership packages (spanning up to \$5000 annual member dues) include transferrable membership cards, parking vouchers, guest tickets, movie tickets, Animal Encounters, and VIP tours.

Table 1. Aquarium admissions packages and prices.

Package	Adult	Child (3-11)	Senior (62+)
General Admission (GA)	\$28.95	\$14.95	\$25.95
GA + Behind-the-Scenes Tour + 4D Film (Web Only)	\$43.95	\$32.95	\$40.95
GA + Harbor Tour + 4D Film (Web Only)	\$39.95	\$19.95	\$34.95
GA + Behind-the-Scenes Tour	\$42.95	\$28.95	\$39.95
GA + Gray Whale Watch	\$48.95	\$30.95	\$44.95
GA + Harbor Tour	\$39.95	\$19.95	\$34.95
GA + Queen Mary Admission	\$42	\$19	\$42
GA + Los Angeles Zoo Admission	\$36	\$25	\$35
GA + Battleship IOWA Admission	\$33	\$21	\$13

The exhibits

I conducted fieldwork in every exhibit hall at the Aquarium (comprised of multiple exhibits) and at nearly every major free-standing exhibit.¹¹ I designed a

¹¹ Due to the June Keyes Penguin Habitat (summer 2012), the Ocean Exploration Hall (spring 2013), and the Monsters of the Deep 4D film (spring 2013) opening after I had commenced fieldwork, I chose not to include these sites in my study. I also did not conduct fieldwork at the Turtle Vision 4D film and at the Molina Animal Care Center. I observed guests interacting at the

broad range of fieldwork experiences to provide an overview of the institution's educational programs offered to the general guest. These exhibits and exhibit halls include: the Northern Pacific, Tropical Pacific, and Southern California/Baja Galleries, the Poles in Peril exhibit hall, the Lorikeet Forest, the Shark Lagoon, and the Ocean Science Center. Below I provide brief descriptions of these exhibit halls and exhibits. I will describe those exhibits (and specific portions of exhibit halls) studied in more detail in subsequent chapters.

The Northern Pacific Gallery: The Northern Pacific Exhibit Hall, designed to simulate the conditions of the Northern Pacific Ocean, is noticeably darker and mistier than the other rooms. Here visitors can engage in a variety of interactive and non-interactive activities, including some with sophisticated media technology. There is an interactive computer game, the sea otter exhibit where staff do regular feedings of the otters (the divers wear microphones so that guests can hear them speak and there is an educator outside of the tank standing with visitors who co-leads the show), various viewing tanks of puffins, jellyfishes, and other animals, and an interactive area where visitors can touch animals and talk to museum educators.

Our Watersheds exhibit and analyzed the exhibit's signage, though I did not have the opportunity to observe staff interpret there.

The Tropical Pacific Gallery: The Tropical Pacific Gallery does not have an interactive game like the Northern Pacific Gallery, and though there are daily feedings there are no charismatic megafauna (like the otters) to attract guests. Max, a management staff member, shared during one of our visits that it was a popular place for guests, even though it was “lacking the bells and whistles” of the Northern Pacific Gallery. He mentioned that he believed it was because people tend to be attracted to the exotic and colorful animals, like the sea dragons. I regularly overheard both adult and child visitors point to the clownfish and blue tangs, referring to them respectively as “Nemo” and “Dory,” drawing on Disney’s popular film, “Finding Nemo.”

Southern California/Baja Gallery: The Southern California/Baja Gallery, modeled after the habitats found in California and Baja California’s coastal waters, also features the Aquarium’s Seal and Sea Lion Exhibit, the Ray Pool, and the Shorebird Sanctuary. The exhibit hall begins in the Great Hall with “Blue Cavern,” a three-story high replica of kelp forests one might find near Santa Catalina Island.

Poles in Peril: The Poles in Peril Gallery occupied the Aquarium’s rotating exhibit hall from spring 2011 to spring 2013, when it was replaced by the Ocean Exploration exhibit hall. The focus of the exhibit was to educate the public

about climate change. The hall featured substantial signage, videos, several non-touch live animal exhibits, and a jellyfish touch station, where guests were given the opportunity to learn about increases in jellyfish populations stemming from warmer waters. In addition to teaching guests about the causes of climate change, the exhibit also focused on climate change effects and measures guests could take to ameliorate these effects.

The Lorikeet Forest: The Lorikeet Forest houses Rainbow Lorikeets (the population numbers fluctuate widely) in a 3,200 square foot outdoor aviary. Visitors can enter the aviary and feed the lorikeets for a fee of \$3, who often land on guests. It is the only live animal exhibit that does not feature marine or aquatic animals.

The Shark Lagoon: The Shark Lagoon is comprised of two major parts: (1) the interactive touch tanks where visitors can pet small sharks, watch them feed, and ask questions of Aquarium educators who stand in the pools with the sharks and often give informal presentations and (2) the non-interactive large tank where larger sharks are partitioned off from visitors who can only watch them through plexiglass walls or over the top of the open portion of the tank.

The Ocean Science Center: The Ocean Science Center is a room with a rotating globe in the center suspended from the ceiling and that shows films.

The website claims: "The Aquarium's Ocean Science Center uses a Science on a Sphere from the National Oceanic and Atmospheric Administration (NOAA) to explore our planet and tell stories about ocean phenomena and their impacts. Currently, the center is featuring daily shows on sea level rise and ports." It is not interactive, but the Ocean Science Center utilizes sophisticated media technology. It is also the only exhibit of its type at the Aquarium.

Behind-the-scenes tours and animal encounters

Behind-the-scenes tours (February 2014) cost \$19 in addition to admission fees. (Guests purchasing the tours simultaneously with admission receive a small discount). Aquarium members pay \$15. Tours operate at various times throughout the day, depending on the volume of guest interest. They typically last an hour and half and provide guests a glimpse of what life is like for both staff and animals behind the exhibit sites. Visitors also learn about the Aquarium's ocean water intake system, water quality monitoring, animal care and feeding, and exhibit maintenance.

In addition to behind-the-scenes tours, guests may purchase Animal Encounter experiences, affording them the opportunity to learn about a particular animal in depth. Animal Encounters are offered for sharks, penguins, sea otters, seals and sea lions; occasionally these tours are put on hold in order

to accommodate animal breeding seasons or illness. The cost to non-members is \$109 and members \$99. During the encounters, which last approximately two hours, visitors participate in the training and feeding of their chosen animal and are encouraged to ask questions of tour guides.

Weekend festivals

In the early to mid-2000s the Aquarium realized its visitorship was not demographically representative of the surrounding community, a quite common phenomena for institutions of its type.¹² In order to attract more diverse crowds, management staff decided to implement themed weekend festivals involving special booths, performances, and educational programs. Through engagement with community, cultural, and governmental organizations, the Aquarium now reports a more diverse visitorship than when it first opened (Koster & Schubel, 2007). These festivals include: the African-American, Human Abilities, Pacific Islander, Baja Splash, and Southeast Asia festivals.

¹² The *Aquarium of the Pacific Visitor Survey Report* for summer 2013 demonstrated that Aquarium visitorship is: 58 percent Caucasian; 25 percent Hispanic; 6 percent African-American and 5 percent Asian. (See Table 2). The benchmark averages for institutions of its type are: 69 percent Caucasian; 12 percent Hispanic; 11 percent African-American; and 5 percent Asian, illustrating that many institutions struggle with similar issues in recruiting visitors from diverse backgrounds. In publications, the Aquarium often boasts of its diverse visitorship (Koster & Schubel, 2007), despite the fact that its demographics do not reflect the demographics of the surrounding Long Beach community. The 2010 Census Bureau, for example, reported the following statistics for the city of Long Beach: 46.1 percent White; 40.8 percent Hispanic or Latino; 13.5 percent African-American; 12.9 percent Asian (US Census Bureau, 2014).

Methods

Given my interests in teaching, learning, and producing knowledge about the environment and, more specifically, how non-human animals become active members of these educative assemblages, I was drawn to the Aquarium as a research site. Faced with my own overall dissatisfaction with much of the informal science education research literature, I aimed to capture not only the contributions non-human animals make in these spaces, but also to make a contribution myself. That is, I wanted to unpack what teaching and learning looks like in this particular space and subsequently offer ways we might reimagine informal learning institutions more generally, particularly those which hold animals captive.

In order to do this, I worked initially with the Aquarium's Director of Education and Manager of Volunteer Services. Both staff members were eager to engage with ethnographic research there, especially since most of the research projects prior to mine involved survey methods. Surveys are advantageous because they can capture vast amounts of information from a large sample relatively simply. What they lack, however, is depth. The current study, in order to capture those nuanced, day-to-day interactions among people and nonhuman animals, is ethnographic, as I describe in more detail below.

Throughout the narrative, I assigned Aquarium actors, including nonhuman animals, pseudonyms to protect their identity to the greatest extent possible. In order to further protect identity, I also took the follow measures: (1) pseudonyms, though gendered, are not necessarily gender specific. That is, in some cases I assigned a female staff member a male pseudonym (and vice versa) and (2) I omitted position titles (e.g. Director of Education) and assigned more generic job titles (Management Staff) when only one person occupies that particular role. Though in some cases it is customary to utilize an institutional pseudonym in ethnographic work, the Aquarium requested acknowledgement in all publications.

Overview

Ethnographic methods allowed me to: (1) get close to informants to hear and participate in their conversations; (2) participate and observe at exhibits as informants co-constructed knowledge and their identities with human and nonhuman actors; (3) interview informants to inquire about their experiences; (4) collect documents that informed my study and enriched my ethnographic data; and (5) to pay close attention to the ways in which the built environment, non-human actors, space and time organized both visitors and educators, affecting the kinds of knowledge that are constructed.

Study Participants

Visitors

I recruited a sample of 28 visitors either at the Aquarium entrance, exit, or exhibit sites. To do this, I scanned visitor crowds for pairs or groups of three. Following (MacDonald, 2002), I reasoned that lone visitors would be reluctant to interview with me, since we lacked the established rapport so integral to ethnographic work. Groups larger than three, however, would require a large space and more time for organization than I had available. I also avoided asking guests to participate who: (1) conversed in languages other than English, assuming we would not be able to communicate; (2) accompanied small (less than five years old) children, as younger children would not likely sit through a 30-minute to one hour interview; (3) chatted with each other about plans immediately following their Aquarium visit; and (4) appeared to be in a rush, as evidenced by a quick pace as they approached the exit.

Guests who agreed to participate in the study were interviewed in pairs, with the exception of two groups of three, which included the only two children in my study (See Appendix A for interview protocol). Initially, I planned to include a sample of approximately 50 to 75 visitors. Recruitment, however, proved to be a challenge given the general unwillingness of visitors to

participate in a relatively lengthy (30 minutes to one hour) interview, despite Aquarium management staff providing me tickets to incentivize guest participation. In addition, I also intended to include a small sample of member visitors whom I would track over the study duration. Given that I was unable to directly contact members due to Aquarium privacy regulations, I had to rely on a Survey Monkey site advertised in the October 2012 monthly member newsletter. The newsletter included a short description of the study and asked interested members to provide their contact information on the Survey Monkey site. The site response rate was very low (five members). I followed up with all five members via email or phone; only three responded to my initial contact. Of those three members, all indicated they would be willing to participate and assured me they would contact me when they planned to visit the Aquarium. None of the members contacted me. As a result of these difficulties, my sample of visitors is smaller than planned.

The most recent Aquarium exit survey shows that visitorship is: 58 percent Caucasian; 25 percent Hispanic; 6 percent African-American and 5 percent Asian. Visitors are 71 percent female and 29 percent male (*The Aquarium of the Pacific visitor survey report*, Summer 2013) and the median household income is \$62,793. The average visitor stays for about three hours, though visitors in my

sample varied widely as to their length of stay. I made a concerted effort to recruit participants (based on physical appearances and surnames) that represented the full range of Aquarium visitors, similar to the attempts that Macdonald made to recruit “as broad a range of participants as possible” (2002, p. 221). As Table 2 below demonstrates, my sample is more ethnically diverse and more male than overall Aquarium visitorship.

Table 2. Aquarium visitor sample demographics, as compared to the most recent visitors statistics provided in The Aquarium of the Pacific Visitor Survey Report Summer 2013.

	Overall Visitorship	Study Visitor Sample	Visitor Sample (N=28)
Caucasian	58%	36%	10
Hispanic	25%	36%	10
African-	6%	21%	6
Asian	5%	7%	2
Female	71%	57%	16
Male	29%	43%	13

Staff

Approximately 50 paid staff members and over 400 volunteers comprise the Aquarium Education team. The roles of the paid staff and volunteers often overlap, though there are specific exhibits staffed exclusively by volunteers and others by paid staff members. (See Table 3). For example, both volunteers and paid staff train new volunteers and give presentations on the floor. The Aquarium, therefore, embraces a “one staff” policy, where volunteers enjoy

relatively the same treatment on the job as paid staff. Paid management staff provide volunteers with Aquarium badges, which grant them access to free parking and the back entrance of the building. Volunteers are also encouraged to utilize the staff cafeteria, staff break room, staff locker rooms, and staff bathrooms; they are also required to wear the same uniforms as paid staffers while working.

Table 3. Exhibits staffed by paid staff, volunteer staff, or both as of late summer 2012. Paid staff give scripted shows at exhibits noted with an asterisk. Volunteer staff speak on the mic at exhibits noted with two asterisks, but the shows are not scripted.

Exhibits	Paid Staff	Volunteer Staff
Lorikeet Forest**	X	X
Shark Lagoon**		X
Blue Cavern*	X	
Blue Corner ("Big Trop")*	X	
BP Otter Habitat*	X	
Northern Pacific Gallery Touch Lab		X
Whale Cart		X
Shark Cart		X
Seals and Sea Lions*	X	
Molina Animal Care Center*	X	
Ray Pool**		X
Penguins**	X	X
Jellyfish Touch Lab		X
Ocean Science Center		X (Guest Services)

Paid staff educators

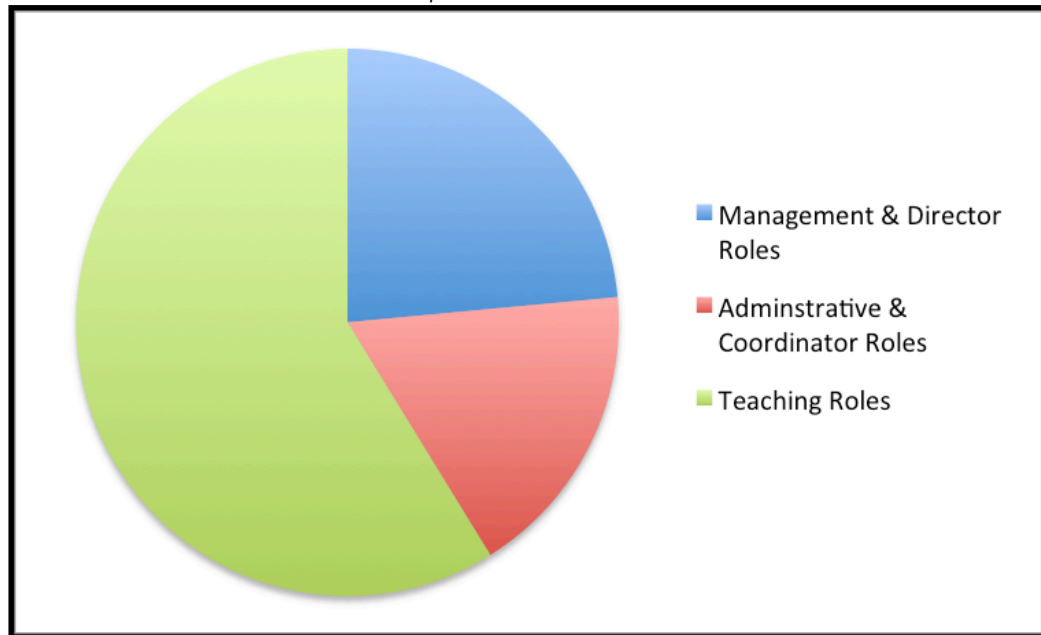
Given my interests in understanding the production of scientific and environmental knowledge at the Aquarium exhibit site, and how this knowledge

production frames environmental citizenship and human-animal relationships, I interviewed 17 Aquarium paid staff associated with education (See Appendix A for interview protocol).¹³ I also participant-observed at the following sites: (1) exhibits as paid staff gave live shows; (2) paid staff professional development seminars; (3) the Aquarium Education Office; and (4) the Aquarium staff lunch room. These sites afforded me the opportunity to “thickly” describe institutional teaching philosophies, on-the-ground enactment of these philosophies, and the ways in which paid staff co-constructed knowledge with guests and the nonhuman animals residing at the Aquarium (Becker, 1996; Geertz 1973).

Based on job descriptions the Manager of Volunteer Services provided, I divided paid staff into management or director roles, administrative or coordinator roles, and teaching roles. At the inception of my study, five positions fell under management or director roles and six under administrative or coordinator roles. (See Figure 6). Recruitment was based on access to study participants, impact on knowledge production at the exhibit site, and the need to create “thick descriptions” of the exhibit spaces (Becker, 1996; Geertz, 1973).

¹³ I interviewed a total of 19 paid staff members, 17 members belonging to the Education department and two to the Custodial department. These custodial staff were interviewed in order to gain a broader understanding of staff life at the Aquarium since my volunteer staff sample also included staff from the Husbandry Department.

Figure 6. Paid staff recruitment at the Aquarium.



I began by interviewing my initial site contacts, the Director of Education and the Manager of Volunteer Services, since I met them in pre-fieldwork meetings and had established rapport. Once I commenced my official fieldwork in July 2012, I became a “regular” at the Aquarium and was introduced to additional staff members, affording me the opportunity to build rapport as we informally chatted about life as an Aquarium educator. In September, I presented my study to a small group of staff who were able to attend. Through these means, I began to know the Education staff and felt comfortable requesting that paid staff participate in my study. I recruited to my study the following management/director positions (four total): Director of Education, Manager of Volunteer Services, Public Programs Supervisor, and Manager of

Interpretation and the following administrative/coordinator staff (three total):

Volunteer Services Coordinator, Education Volunteer Services Coordinator, and Science Interpretation Coordinator.

The paid staff team directly involved in teaching on the floor is larger and tends to experience higher turnover, often due to promotion or resignation.

When I commenced data collection, the teaching team comprised 34 members, some who worked part-time and were present at the Aquarium only once per week or less. I chose to focus on ten teaching staff members in order to collect richer data from a smaller sample. These staff members were selected based on their influence on teaching at the exhibit site and accessibility (i.e., willingness to participate). Five of these staff, titled Interpreter I or II, held entry-level, part-time positions and primarily taught at exhibits either through the delivery of scripted shows or vis-à-vis general interpretation or “interp” time, or unstructured hours staff spend informally interacting with guests on the floor. Typically, management staff assign entry-level teaching staff (Interpreters) to a particular exhibit or exhibit hall for 30 minute blocks of “interp” time before they rotate to another assignment. These staff members may also give behind-the-scenes tours, Animal Encounters, or whale watch tours, though their primary role is often teaching at the exhibit site. One of the paid Interpreters in my study

also held a volunteer position in the Husbandry department with the Lorikeets. Another was promoted to Education Associate approximately midway through my study.

The other five teaching staff members held Education Associate, Senior Education Associate, or Education Specialist positions. These positions typically involve a combination of teaching classroom programs, supervising overnight camp programs, running whale watch tours, behind-the-scenes tours, or Animal Encounters, and occasionally giving live shows. Some staff members at this level also partnered with local K-12 schools in teaching endeavors and might also be involved in grant work. One study participant who held an Education Specialist position was promoted to Youth Volunteer and Intern Coordinator in the Volunteer Services Department approximately one-third of the way into my study. (See Table 4 for paid staff job responsibilities).

Table 4. Primary responsibilities of paid staff positions. Note that staff must be prepared to step into roles to which they are not officially assigned.

	Live Shows	Interp Time	Animal Encounters	Behind-the-Scenes Tours	Education-1
Interpreter	X	X	X	X	
Education Associate	X	X	X	X	
Education Specialist					X
Senior Education Associate					X
Coordinators					X
Managers					

Volunteer educators

Volunteer educators begin at the Aquarium after they complete two induction seminars—Aquarium 101 and Critter College. A one-day workshop, Aquarium 101, reviews the nuts and bolts of life as an Aquarium staff member for all future volunteers (Dive, Husbandry, Horticulture, Guest Services, and Education). Led by a team of experienced paid and volunteer staff members, it introduces aspiring volunteers to Aquarium policies, the required staff attire (navy Aquarium shirt, stone-colored pants, white sneakers, no visible body piercings), and how to interact with guests; volunteers also participate in a behind-the-scenes tour led by a seasoned staffer. After completing this training, volunteer educators may enroll in Critter College.

Critter College, an abbreviated marine biology course for volunteer educators, takes place over two full Saturdays. During one session volunteers learn about Mammals, Invertebrates, and Birds followed by Fish and Sharks the following week. Volunteer educators cannot commence the next phase of their training, the shadow period, until they have completed Critter College. Critter College training involves a combination of traditional college classroom-style lecture combined with activities. One hands-on activity, for example, requires volunteers-in-training to do “mystery shopping” on the floor, or visit exhibits as she or he pretends to be a guest in order to critique or praise the skills of an education staff member. After mystery shopping, volunteers typically report back to the group and describe what they learned from the experience. Once Critter College is complete, volunteer educators begin their shadow period, which lasts until the new staff member feels comfortable enough to manage exhibits on her or his own. During the shadow period, new volunteers follow senior volunteers throughout the day in order to pick up both pedagogical and content knowledge.

The Aquarium volunteer staff tends to work shifts one day of the week. That is, there is a Monday staff, Tuesday staff, and so on. The weekends have first, third, and fifth Saturday and Sunday staff teams and separate second and

fourth Saturday and Sunday staffs teams to accommodate the large numbers of people who can only volunteer weekends. Due to this structure, volunteer staff members often shared that they only know staff members working their same day. Each day of the week, two "day captains" typically lead the volunteer staff, one in the morning (9am to 1:30pm) and one in the afternoon (1:30pm to 6pm). The Volunteer Services Manager selects day captains based on experience, expertise, and the willingness of the staff member to hold a leadership position. Unlike regular volunteer staff, day captains do not usually teach. Their role, instead, involves creating the daily schedule, ensuring that all essential exhibits (typically those housing live animals) are covered, and observing staff members as they teach to maintain customer satisfaction and animal safety. Staff normally rotate through exhibits every half hour. Occasionally, staff request to: (1) avoid exhibits (e.g. the Lorikeets) due to a dislike for particular animals; (2) have a lengthier stay at a favorite exhibit; or (3) move less frequently due to a handicap. Day captains typically honor these requests and tend to work closely with the Volunteer Services Manager and the Education Volunteer Coordinator to ensure that staff and Aquarium needs are met.

In addition to rotating through exhibits throughout the day, volunteer staff members must attend a weekly 30-minute professional development seminar

called Education Update, led by the paid staff member who is “Education 1” for the day or “Ed 1.” This paid staff member steps out of her or his normal position the day she or he is assigned Ed 1 (which normally remains the same day each week) in order to ensure all activities on the floor run smoothly. If there are schedule gaps at particular paid or volunteer staff exhibits, the Ed 1 is responsible for locating coverage and, in rare cases, covering the exhibit her or himself. Since paid staff members are assigned the Ed 1 role the same day each week, they typically know the volunteer staff on their Ed 1 day quite well. Volunteer staff also know them and generally enjoy the familiarity of their leader.

While there are typically over 400 volunteer educator staff members, my intent was to follow 19 of them closely throughout the duration of my study. In recruiting volunteer staff, I attempted to work with a sample broadly reflecting the demographic characteristics of the overall volunteer educator staff, though this proved difficult as volunteer educators self-selected into the study.¹⁴ With

¹⁴ Demographic information obtained from the Aquarium indicates that approximately two-thirds of volunteer educators are female and that they are about 46 percent White, 16 percent Asian, 13 percent Hispanic, 2 percent African-American, with the remaining percentage being a mixture of Hawaiian/Pacific Islanders (1 percent), Other (7 percent), and those who declined to state their ethnicity (15 percent). The average volunteer age is 34 years, though the majority of volunteers during the week are retired folks. Weekends tend to attract families and high school or college students who are unable to volunteer during the week. The Volunteer Services Manager, who shared this demographic information with me through personal correspondence (August 2013), also pointed out that the demographic information of volunteers is continually in flux as volunteers leave and new volunteers are brought into the fold.

the exception of two volunteer staff members I met through Aquarium 101 training in February of 2012, I recruited my volunteer sample through two means: (1) an email the Education Volunteer Services Coordinator sent to staff on my behalf, which briefly described my study and (2) advertisement of my study at Education Updates, during which I briefly described my research project. Of the 19 volunteers in my sample, two held volunteer Husbandry positions with the Lorikeets, one of whom also had a volunteer Husbandry position with the shorebirds and diving birds. I also recruited one volunteer who worked in both the Horticulture and Life Support departments. Since participation in the study was entirely voluntary, it was impossible to obtain a sample reflecting the demographics of the entire volunteer educator staff.

By January of 2013, my volunteer sample comprised of six men (32 percent) and 13 women (68 percent), which aligns with the overall gender demographics of the volunteer educator staff. With respect to age, my sample included two high school seniors, two college students, three individuals who were not retirement age (40s or 50s), but did not hold outside employment, one individual nearing retirement age who continued to work part-time while volunteering at the Aquarium, and 11 retired folks. I did not collect ethnic or age data from my informants; however, because I recruited the majority of my

volunteers from the weekday staff, my sample is likely older than the average age of 34 and more White.¹⁵ Utilizing descriptive attributes, surnames, and ethnic identifying information volunteered during interviews (which I did not request), my sample was 74 percent White (14 volunteers), 21 percent Hispanic (four volunteers), 5 percent Jewish (one volunteer), though it is possible these statistics would differ if volunteers had been asked to self-report ethnic information. (See Table 5).

Table 5. Volunteer sample demographic data.

	Overall Volunteer Education Staff	Study Sample	Number in Volunteer Sample (N=19)
White	46%	74%	14
Asian	16%	-	-
Hispanic	13%	21%	4
African-American	2%	-	-
Hawaiian/Pacific Islander	1%	-	-
Other	7%	5% (Jewish)	1
Declined to State	15%	-	-
Female	69%	68%	13
Male	31%	32%	6

¹⁵ Drawing on Claude Steele's (1997) stereotype threat, which indicates that when social identities are associated with negative stereotypes, people tend to perform more poorly on a variety of tasks, I chose not to inquire about my informants' racial or ethnic background. While interviews and observations are not designed to elicit "performances" from informants, prior fieldwork I have conducted with educators suggests that they sometimes feel they are in a test situation when interacting with an ethnographer. This is particularly true early on in the study when rapport has not been concretely established.

After recruiting the original 19 staff volunteer staff members, all whom I interviewed (See Appendix A for interview protocol), I collected more in-depth ethnographic data from a sample of nine volunteer staff members. This sample was selected based on several criteria: (1) regular presence at the Aquarium; (2) regular presence at focal exhibits; (3) willingness to be audio-recorded at the exhibit site while interacting with guests; (4) shift times (presence when I conducted fieldwork); and (5) volunteer accessibility to institutional information.

Study Design

Visitors

Transiency is one of the primary challenges in doing ethnographic work with visitors in aquariums, zoos, science centers, and museums (hereafter “museums”) (Hein, 1998). Whereas most ethnographers seek to get close to their informants as part of establishing rapport (Behar, 1997; Kondo, 1990), rarely are ethnographers in museums able to do so, unless they work primarily with staff. In Macdonald’s (2002) study of the Science Museum in London, she mainly worked with exhibit designers through the construction of a new exhibit, as the goal was to understand the “behind the scenes” process of exhibit design and elaboration. She acknowledged that when she and her team did

carry out visitor research, it posed unique challenges: "The research on visitors to Food for Thought was rather different from the ethnographic research on the exhibit's making. Visitors' own experience of the exhibition was relatively fleeting: typically they would come just once, for half an hour or so" (MacDonald, 2002, p. 220). Ethnographers who wish to study visitors, therefore, have a limited range of methodological tools available to them.

These methodological challenges impacted the current study, as my visitor sample is considerably smaller than planned. In addition, I initially intended to track visitors by fitting them with audio-recording devices and shadowing them as they traversed through the Aquarium, as Allen (2002) describes. However, I found that visitors, on the whole, were uncomfortable with the idea of being audio-recorded and subsequently abandoned that part of my initial study. Instead, I recruited visitors to participate in interviews at the conclusion of their visits, utilizing guidelines and modified sample questions MacDonald (2002) outlines. These interviews took place upstairs in Café Scuba, the Aquarium's dining facility, or outdoors on Harbor Terrace, a small eating area for staff and visitors overlooking the ocean. During these interviews, I utilized a semi-structured interview format (Spradley, 1979) designed to elicit participants' meanings through open-ended questions. As visitors responded to

questions and mentioned particular animals, exhibits, staff, or other general concepts and themes, I asked further probing questions. Depending on visitor responses, interviews lasted as little as 15 minutes and as long as an hour. Given the substantive and theoretical underpinnings of the study, in these interviews I focused on how visitors: (1) described and constructed their relation[ship]s with the animals; (2) highlighted particular exhibits and why; (3) constructed their own subjectivities vis-à-vis experiences at the Aquarium; and (4) described environmental and scientific messages they co-constructed and/or received at the Aquarium.

Staff interviews

Interviews with staff members took place in the Education Office, Tidal Zone and Splash Zone classrooms directly across from the Education office, in the old veterinary office behind-the-scenes, in the Staff Break Room, or on Harbor Terrace outdoors. The location depended on staff preference and room availability at the interview time. In designing the semi-structured staff interview protocol (See Appendix A), I drew on MacDonald (2002) and the substantive and theoretical frameworks guiding the current study. Like visitor interviews, my goal was to elicit participants' meaning through open-ended questions. As staff responded to questions and brought up particular animals, exhibits, kinds of

visitors, or other general concepts and themes, I probed with further questions. Staff interviews lasted from 20 minutes to approximately 75 minutes, depending on the length of staff responses. During interviews, I paid particular attention to: (1) teaching practices; (2) the role of the nonhuman in teaching; (3) stated goals of teaching practices; (4) staff constructions of science and the environment; and (5) messages staff hoped to convey through teaching. I re-interviewed three paid staff (two teaching; one management) and two volunteer staff (both who also had roles in Husbandry) at the conclusion of the study (summer 2013) in order to confirm and/or disconfirm initial findings.

Staff observations and audio-recordings

I began observing staff teaching and interacting with guests at exhibits in October 2012 and concluded in June 2013. Each day that I collected field data I had a general sense of which staff members would be present based on the paid staff schedule, which the Manager of Interpretation created each month and emailed to me, and the fact that volunteer staff members maintain strict fidelity to the day of the week they work. Staff schedules detailing exhibit and task assignments are not released until the start of each work day, so prior to arriving to collect field data I had a sense of which staff members I might be able to observe and audio-record, but no knowledge of the specific exhibits where

they would work. I, therefore, had to check both the volunteer schedule (posted near the back door where staff enter the Aquarium building and/or in the Education office) and the paid staff schedule (posted in the Education office).¹⁶ Once I knew which staff members were assigned to particular exhibits I made decisions about where I would devote my time. These decisions were impacted by: (1) locating staff who agreed to be a part of the study and (2) the presence of study staff at focal exhibits. I observed and/or audio-recorded staff teaching at every major exhibit at least twice, though I often made additional observations and recordings. At focal exhibits (Shark Lagoon and Lorikeet Forest), I observed and audio-recorded more often and for extended time periods.

Typically, when I arrived at an exhibit to audio-record a staff member, I would make eye contact or greet the staff member so that she or he knew I was present. While audio-recording, I would also take jottings, paying particular attention to how the staff member interacted with guests and animals (if present) and utilized the exhibit space. In some cases, particularly on slow days, staff

¹⁶ While staff typically do not know their exact schedule until they arrive for their shift, some have more specific knowledge than others. Certain volunteers are nearly always assigned to work specific exhibits at specific times based on their own preferences and that of their day captain. Mike, for example, who volunteered 2nd and 4th Saturdays, typically waded with the small sharks at the end of his shift. He preferred this schedule so he could return home after his time at the Aquarium to shower. Candy, who also volunteered 2nd and 4th Saturdays, enjoyed doing live feedings with the small sharks, which occur every Saturday at specific times. The 2nd and 4th Saturday day captain, as a result, would usually schedule Candy to live shark feedings.

members would informally chat with me about issues related to their work at the Aquarium or personal matters. At exhibits where staff wear microphones (mic'd exhibits), I was able to hold the audio-recording device in my hand and still capture high-quality audio.¹⁷ After a few unsuccessful attempts to audio-record staff at non-mic'd exhibits due to technical issues and background noise, I began to ask staff if they would wear the recording device around their necks. All staff whom I asked obliged. Typically, I would audio-record the staff member's entire shift at an exhibit, which normally lasted 30 minutes. Scripted shows, the exception, lasted 10 to 15 minutes.¹⁸

I wrote-up jottings into full fieldnotes either the same evening of data collection or the following day, in order to avoid the loss of key details (Emerson, Fretz, & Shaw, 1995). I followed the same general procedures when I took jottings in the staff lunchroom (where volunteers tend to eat lunch), in the Education Office (where paid staff cubicles are located), in the Splash Zone and Tidal Zone classrooms across the hall from the Education Office (where paid staff tend eat lunch), and at staff professional development seminars. I collected data

¹⁷ Staff wear microphones at the following exhibits: Lorikeet Forest, Shark Lagoon, Ray Pool, Seals and Sea Lions Show, Big Trop Show, and Blue Cavern Show. Non-mic'd exhibits

¹⁸ Scripted and mic'd shows occur at the Seal and Sea Lion Exhibit, the Blue Cavern Exhibit, and Blue Corner (Big Trop). Non-mic'd sites where staff interacted regularly with guests included: the Northern Pacific Gallery Touch Lab, the Jellyfish exhibit, the Whale Cart, and the Shark Cart.

an average of three times per week for about four hours each day. I chose to collect field data no more than three to four times per week throughout my study to allow sufficient time to write fieldnotes, process data, and write analytic memos (Emerson, Fretz, & Shaw, 1995; Hammersley & Atkinson, 2007).

By April of 2013, ten months into the study, I began to taper fieldwork due to repetition of findings. From April 2013 to August 2013, I conducted fieldwork an average of two to three time per month as I searched for “disconfirming evidence” (Erickson, 1986) that challenged my findings. I also conducted five additional follow-up interviews with key informants (three paid staff and two volunteer staff) during this time.

Nonhuman animals

Given my interests in human-animal relations and relationships, I considered myself a co-researcher with nonhuman animals at the Aquarium, particularly the Lorikeets and the small sharks, as I describe in subsequent chapters. While humans and nonhumans are obviously limited in their understandings of each other due to differences in communicative capacities, I aimed to understand the experiences and perspectives of nonhuman animals at the Aquarium as I contend that they impact not only quality of life for captive animals, but also the learning experiences of humans in spaces like the

Aquarium. To do this I drew heavily on multispecies ethnographic work (Candea, 2010; Callon, 1986; Haraway, 2008; Kirksey & Helmreich, 2010; Knight, 2005; Kohn, 2007; Ogden, 2011; Ogden et al., 2013; Pedersen, 2011; Tsing, 2010; White, 2013) to consider how humans at exhibits interacted (tactically through touch, discursively, and vis-à-vis nonverbal cues not involving touch) with the animals. Additionally, I made note of how the animals interacted with people through body language (initiating, acquiescing to, or resisting interaction; verbal cues, like squawking). Following White, who argues of the importance of incorporating “animal behavior and sensory data” (2013, p. 102) into multispecies ethnographies and Pedersen who calls the combination of phenomenological experience and ethological knowledge a “double articulation” (2012, p. 161), I also relied on the expertise of Husbandry staff members in interpreting animal behaviors.

Document Collection

In order to augment my ethnographic data and create a more complete picture of Aquarium practices, I collected a multitude of Aquarium documents, including print, digital, and online. These include: (1) printed visitor guides; (2) materials utilized and/or handed out at education workshops for paid and volunteer staff (digital and print); (3) official Aquarium show scripts; (4) Aquarium

annual reports; (5) pamphlets handed out to visitors; (6) the Aquarium member magazine, *Pacific Currents*; (7) the Aquarium's 990 tax forms (available freely online); (8) newspapers articles reporting on the Aquarium; and (9) information published on the Aquarium's website related to its educational philosophy.

Online newspaper articles and the Aquarium's 990 tax forms and, for example, assisted me in understanding why staff members continued to site customer service as an institutional focal point. As I detail in further chapters, the Aquarium's funding structure (detailed in the 990 tax form) hinges on ticket sales and other program services, so customer service is a high priority. In addition, comparing live show audio recordings with official Aquarium show scripts and with professional development materials handed out at workshops provided a means to investigate Interpreter fidelity to overarching institutional messages.

CHAPTER 3: SCIENCE, STORYTELLING, AND ADVOCACY

When they present on the thing [the documentary “Mermaids”], it’s just like the Bigfoot documentary. *(In a deep voice mocking the narrator of the documentary):* “I can tell that this foot is somehow strange because the mold is whatever and it is stretched and you obviously couldn’t have made this in any other way unless it was real. Or I found this hair sample and it’s torn from one end and it’s never been cut on the other end. Clearly there’s this long hair and, you know?”

Max and Helen, both management staff in the Education department, chatted with me one morning in the Education Office about “mockumentaries,” or documentaries designed to convey “untrue” phenomena, like existence of Bigfoot and mermaids as though they were backed by scientific truth. Though Max assured me that the documentary “Mermaids,” airing multiple times on the network “Animal Planet” is based on entirely trumped up science, he nevertheless argued for public discussion of the documentary at the Aquarium. In his words, “I was a proponent that we should play the mermaid documentary (Helen yells from afar, “I was with you!”) for promoting NOAA [the National Oceanic and Atmospheric Administration]. They [NOAA] could’ve used this and...the momentum...to really advertise themselves as an agency.” That is, while Max believed the documentary told a story of pseudoscience, he viewed it as an opportunity for a national governmental organization like NOAA (and a

non-profit institution like the Aquarium) to promote actual science. The Aquarium prominently features this theme of conveying science through *storytelling*.¹⁹

Reflective of its association with NOAA [and NASA] through collaboration and grant funding and its membership in the American Zoological Association (AZA), the Aquarium places paramount importance on customer satisfaction and the teaching of science and conservation in an accessible manner, such as through *storytelling*. The emphasis on the teaching of science, combined with a focus on customer service, drive decisions influencing what becomes fodder for discussion (i.e., the content or institutional curriculum) and how that content is taught (pedagogy).²⁰ Science serves as the arbiter of content and, as a result, the institution and management staff encourage teaching staff to engage with controversial and political topics, like endangered species preservation, climate change and evolution, precisely because it is believed they are grounded in scientific truth. Utilizing *storytelling* designed to convey scientific facts and

¹⁹ When I write specifically about the Aquarium's science and *storytelling* I italicize the terms.

²⁰ Here I borrow from Doyle's (1992) description of the institutional curriculum in formal school settings. While the Aquarium does not have a formal curriculum specified by standards, curricular documents created by management staff and co-created by management and teaching staff in workshops and seminars serve as an institutional curriculum guiding the on-the-ground, or lived curriculum co-produced by teaching staff and visitors. As I demonstrate in this chapter, what become both the institutional and lived curricula is largely guided by what staff co-construct as science content.

connect visitors to the environment through emotion and values, staff demonstrate that visitors can capably participate in the process of saving the planet through individual behavioral changes like recycling and reducing motor vehicle usage. Due to the institution's focus on customer service, staff are also careful to avoid what they call "crisis-framing" in their teaching, so that visitors do not feel despair or personal responsibility for damage to the planet.²¹ According to staff, "crisis-framing" is a kind of teaching focusing on environmental problems, not solutions. Aquarium staff, therefore, highlight those behavioral actions guests can adopt to be part of a solution, rather than focusing strictly on how humans have negatively impacted the environment—a historically common practice in environmental education (Tidball & Krasny, 2011).

In this chapter I articulate how truth claims of expertise in the mode of advanced liberalism (Rose, 1996, 1993), which are grounded in *science* and mediated through customer service, aim to produce an ethical and neoliberal environmental citizen (Fletcher, 2010) not individually culpable for environmental

²¹ I will discuss the role of animal bodies, as biopolitical beings enrolled in the Aquarium's educative endeavors, in later chapters (Foucault, 1978, 1992, 2003).

damage, but individually capable of positive behavioral changes.²² I also show how *storytelling*, a technology of the institution utilized to teach *science* through the lens of customer choice and environmental salvation, serves as a pedagogy of *expertise, care, and choice*—collectively designed to produce the Aquarium’s environmental citizen—a person having the free will and capacity to halt damage to the environment.

Conceptual Frameworks

Following Michel Foucault and his adherents (Foucault, 1979, 1982, 2008; Rose, 1993, 1996), I theorize the Aquarium’s focus on the teaching of science through *storytelling* as a form of green governmentality (Rutherford, 2011), with particular attention given to advanced liberal “technologies of expertise” (Rose, 1996; Rutherford, 2011) and what I call “technologies of choice,” manifested as pedagogies of choice. These technologies, primarily a reliance on the teaching of *science* through the lens of *storytelling*, imagine green environmental citizens as “subjects of responsibility, autonomy and choice” whom the institution is free to act upon “through shaping and utilizing their freedom.” That is, through envisioning autonomous advanced liberal subjects with particular tastes and

²² While Foucault utilized the term “neoliberal,” (Foucault, 2008), Rose (1993, 1996) utilizes “advanced liberalism.” I use the terms synonymously here.

desires, the institution then carefully crafts its educative acts to govern these subjects, particularly with respect to their edutainment choices and environmental behaviors. Following Foucault in the “The Subject and Power,” where he argued that institutions, as apparatuses of the state, should be analyzed “from the standpoint of power relations, rather than vice versa, and that that the fundamental anchorage of the relationships, even if they are embodied and crystallized in an institution, is to be found outside the institution” (1982, p. 791), I explicate how institutional power relationships, embedded in wider contexts of the epistemic authority of science, customer service and choice, and the political economy of a non-profit surviving in a capitalistic society, manifest as staff teach *science* through the lens of *storytelling*.

Science shifts meanings from one context to another (Gieryn, 1999; Jasanoff, 2005; Rutherford, 2011; Turnbull, 2000). Drawing on Gieryn (1999), I examine how Aquarium actors construct a *science* as a body of facts, concepts, and processes rooted in universal truth claims, carefully mapping the boundaries of what counts and does count as *science*. Like scientists who “use boundary-work to pursue or protect several different ‘professional goals,’” (Gieryn, 1999, p. 23) Education staff at the Aquarium utilize boundary-work to establish their

expertise as knowers of *science* in order to advance the production of an ethical and neoliberal environmental citizen (Fletcher, 2010; Guthman, 2008; Lemke, 2001; Luke, 1999; Rutherford, 2011) called to action because science demands such action. That is, *science* and the teaching of *science* become governmental “to the extent that...[such thought] seeks to render itself technical, to insert itself into the world by ‘realizing’ itself as a *practice*” (Rose, 1996, p. 41). However, *science*, guised as truth and expertise, is not the only lens through which this environmental citizen is produced.

Advanced liberalism, conceptualized through Foucault’s governmentality, entails that expertise (e.g. *science*) operate through the mode of “implanting citizens the aspiration to pursue their own civility, wellbeing and advancement,” which Rose calls “advanced liberal rule” (Rose, 1996, p. 40). In contrast to the classical liberal societies of the nineteenth century, when experts figures (like scientists) were imbued with authority stemming from “claims to knowledge, to neutrality and to efficacy” (Rose, 1996, p. 39) as a balance to interests of the state, the experts of advanced liberal rule are relocated “within a market governed by the rationalities of competition, accountability, and consumer demand” (1996, p. 41). As such, I demonstrate how the Aquarium, through *storytelling* manifested as pedagogies of expertise, care, and choice, governs

not only what guests can come to learn at the Aquarium, but also the kind of environmental citizen visitors might become.

Storytelling is the vehicle through which the objectives of those governing (the institution) are aligned with the self-governing capacities of visitors. As carefully crafted educative acts, these pedagogies leverage *scientific* knowledge as power and do not “immediately or directly” act on guests; rather, they act “upon their actions...on existing actions or on those which may rise in the present or in the future (Foucault, 1982, p. 789). Viewed through the lens of Foucault’s (1979, 1982) pastoral power, they allow the Aquarium to construct an ethical and neoliberal environmental citizen not individually culpable for environmental damage, yet empowered to make individual behavioral changes. This citizen is “ethical” to the extent that she internalizes particular environmentally responsible social norms (Fletcher, 2010) and neoliberal in that she is imagined to engage in cost/benefit analyses (Fletcher, 2010; Rose, 1996).

Foucault (1981, 1982) develops the idea of pastoral power in the modern state through an analysis of the shepherd or pastor in both Greek and ancient Christian thought. He carefully highlights that “new” pastoral power, in contrast to that of the Christians, involves narratives of “salvation...in this world,” which includes “health, well-being (that is sufficient wealth, standard of living), security,

protection against accidents" (1982, p. 785). Though Foucault did not specifically discuss the role of the environment as it relates to wellbeing or security, one can infer in the age of Hurricane Katrina, the nuclear spill at Japan's Fukushima plant, and the BP oil spill in the Gulf of Mexico, that Foucault would agree that in modern society, the environment and individual wellbeing are intimately connected.

Next, drawing on the work of ecofeminist philosopher, Plumwood (1996), I discuss the complex ways discourses of the epistemic authority of "science" at the Aquarium simultaneously figure into re-inscribing and disentangling public and private domains pertaining to environmental responsibility. In "Has Ecology Failed Democracy?" she maintains that the cultural ideals of the privileged in liberal democratic societies, who largely control access to information, are rife with the remnants of Cartesian dualisms. Those "spheres" culturally-constructed as most closely associated with the body, nature, materiality, or emotion (femininity, animals, minorities, material production or labor) have been relegated to the "private" and those with affiliated with reason and rationality (i.e., masculinity) to the "public" domain. In addition, the dualism of public/private ensures that those issues relegated to the sphere of the "private," (e.g. personal choices affecting nature or animal welfare) are eschewed from

public responsibility. I suggest that the Aquarium's advocacy and teaching strategies (pedagogies of expertise, care, and choice) willingly infringe on the "private" when it is perceived the argument is grounded in science, e.g. the teaching of climate science and the ways individuals can capably make personal decisions to halt climate change. That is, personal behavioral changes become public matters through the teaching of science and the requisite advocacy accompanying this teaching.

Teaching Science Content

At the Aquarium, staff produce a *science* tethered to the idea of a universal body of facts grounded in evidence that "belongs to everyone."²³ Similar to Roth and Barton's description of the presentation of science in schools as a "pure subject" (2004, p. 3), science at the Aquarium is largely an uncontested collection of facts, concepts, and processes guests ought to understand if they are to become green citizens capable of individual behavior

²³ In a biweekly professional development session for paid staff, Presenter Forum (April 3, 2013), approximately seven teaching staff and the Manager of Interpretation, Helen (workshop leader), discussed the philosophy of science. Helen claimed that some philosophers of science challenge the cultural situatedness of the scientific enterprise. She argued, "Science uncovers knowledge or solves problems irrespective of the culture." The rest of the group members concur, describing "science" with phrases like "universal culture" and "one world culture," agreeing that science is a universal body of knowledge belonging to everyone.

changes.²⁴ While Gieryn (1999) reminds us that the epistemic authority of science often shifts, Aquarium staff leverage *science* as a justification for the content they teach.²⁵ That is, content included in the Aquarium's institutional and lived curriculum counts as *science*; all that is excluded from the realm of *science* does not get taught. In this way, Aquarium staff establish *science* as a technology of expertise framing their own actions; they also imagine it as that which ought to frame the actions of visitors (Rose, 1996). In the interview excerpt below, I conversed with management staff member, Helen, about her role at the Aquarium. She explained that the Aquarium planned to shift its focus

²⁴ During the bulk of my observations of staff teaching on the floor, staff did most of the talking and guests most of the listening. Some staff, however, do recognize the importance of having guests make discursive contributions, particularly through questioning what they learn. In the same Presenter Forum workshop (April 3, 2103) described previously, Jeff comments:

I think it's about not spewing facts, but getting them to think and question. Like on the whale watches, it's easy because the interactions are there. Give the information necessary to get them thinking about it, but don't give them everything. Let them think about it. So we want them to be thinking like scientists.

Jeff highlights here that his goals are in line with that of the Aquarium, i.e., teaching science and having guests think like scientists. In his view, however, it is important that guests also "think and question." He acknowledges that this goal is easier to accomplish on Whale Watches, presumably because staff members spend a more significant amount of time (two to two and half hours) with the same guests in the whale's environment (versus the constructed Aquarium environment). After Jeff's comment, another staff member remarked that it easier to do this "on the boat," but that it is also possible at the exhibit site.

²⁵ In contrast to the Aquarium's framing of "science" as a pure subject or discipline, scholars working in the social studies of science and in science education have demonstrated that science "never takes on exactly the same shape or contents" (Gieryn, 1999, p. 14) from one locale to another; instead, its meanings shift as humans and nonhumans co-construct knowledge about the world (Callon, 1986; Latour, 1987) and carefully choose what and whom to include or exclude (Colucci-Gray, Perazzone, Dodman, & Camino, 2013; Gieryn, 1999).

from serving the needs of school groups to teaching *science content* to the general guest. Like most exhibit sites I observed at the Aquarium, *science* is constructed here as a body of facts and processes for staff to transmit to guests through conversation or *storytelling*:

Excerpt 3.1: September 12, 2012
Interview with Helen

We are continuing to put more and more emphasis on the interpretation that goes on in the Aquarium and serving the general guest. Jerry, our CEO, wants more science content, or up-to-date science content, recent science content, in what we are doing out on the floor. So that is our next hurdle, our big hurdle is that and focusing on the 1.5 million people...who walk through the Aquarium doors every year.

A few minutes later in the interview I ask her to elaborate what she meant by science content:

When we opened that [the Ocean Science Center] Jerry wanted people to go in and watch, like the Sea Level Rise movie, and then afterward we, when they would leave, and the plan was that they would come out to Harbor Terrace and we would do an additional, we being Education, an additional explanation on how climate change works...the sun's energy coming through the atmosphere, some is absorbed, some bouncing back, but basically heat trapping gases. He wanted to get into infrared, using words like infrared, you know, some of it is reflected back, you know getting into a lot of detail into how energy reaches earth and what happens to it.

The above passages illustrate the CEO's focus on having his Education staff teach facts (the sun radiates infrared rays; some gases trap heat), processes (the sun's energy comes through the atmosphere; some is absorbed and some bounces back), and topics (climate change) rooted in *science content*. This *science* explains how a controversial and political topic—climate change—is occurring. As I demonstrate below, precisely because the evidence for climate change is scientific, it becomes fodder for discussion at the Aquarium.

Similarly Max, a management staff member, locates the justification for the teaching of evolution—another controversial scientific, political, [and religious] topic—in the institution's identification as a "scientific organization." In the excerpt below, Max co-leads an evolution professional development workshop and explains why he asks his staff (present at the workshop) to incorporate evolution into their conversations with guests:²⁶

*Excerpt 3.2: October 12, 2012
Evolution Professional Development: Session #1*

Max explains to staff that their role is to bring Aquarium audiences current science. He shares that one of the ways this can be accomplished is through involving local researchers in what they [Aquarium staff] do. Later, he conveys to the group that visitor

²⁶ The workshop, attended by Aquarium paid staff from the Education Department (management and teaching) convened for a total of three sessions in conjunction with science professors and post-docs from a large research university in southern California (Research University) and with staff from a local museum.

misconceptions are important because the Aquarium is a member of the AZA and the AZA's mission statement clearly indicates that its member institutions should teach science. Max stresses that "for scientific organizations, the science has to be the most important part" and that if the Aquarium does not teach science, it becomes strictly an "advocacy organization."

Reflective of other professional development workshops I attended at the Aquarium, Max makes it clear that science mediates and justifies the Aquarium's institutional and lived curriculum. Shortly after discussing the institution's commitment to teaching science due to its membership in AZA, he briefly converses with one of the post-doctoral researchers (post-docs) from Research University about genetically modified organisms (GMOs):

*Excerpt 3.3: October 12, 2012
Evolution Professional Development: Session #1*

Jim, the post-doc, mentions GMOs as a possible topic for discussion in order to engage and hook audiences. Max shares that "there is not a scientific argument being waged about GMOs right now." He goes on to explain that the discussion about the pros and cons of GMOs is "outside the realm of science." Connecting this topic to climate change, Max argues that climate change conversations often center on "what we should do," which is "not science." "That's policy."

In this brief conversation, Max clearly demarcates science from policy. A short time later during the same workshop, he similarly establishes a boundary between science and advocacy as he explains that the Aquarium's focus is

teaching how climate change occurs (*science*) and not strictly on the negative consequences (*advocacy*). The boundary work (Gieryn, 1999) Max meticulously does in this excerpt establishes *science* as that which explains how particular phenomena happen (like climate change), but not how people should teach about the negative consequences (*advocacy*) or implement solutions (*policy*). Following Gieryn, Max is “convinced that its [*science*] claims are more accurate, trustworthy, and effective” (1999, p. 13) than that of *policy* or *advocacy*. For that reason, *science* becomes a “technology of expertise” (Rabinow, 2010; Rose, 1993, 1996) with which the Aquarium productively governs knowledge and practice. The boundaries Max draws here do not completely eschew *advocacy* and *policy* from discussion at the Aquarium, however. As I demonstrated previously and will further develop in later sections, the boundaries emerge as fuzzy when staff perceive *policy*, and particularly *advocacy*, as rooted in *science*.

Management staff recognize that, at times, fidelity to the AZA’s goals of customer service and teaching *science* conflict. When this occurs, as in the case of teaching evolution, *science* bends to customer service as staff struggle to explore methods to engage, but not offend guests. Craig, a mid-level paid staff member, discusses this tension in the following interview excerpt as I asked him

to explain how it is that the Aquarium has a more developed climate change education program than evolution education program (given that they are both controversial topics). The interview took place several weeks prior to the initial evolution professional development seminar described above, which Craig refers to in the passage:

*Excerpt 3.4: September 26, 2012
Interview with Craig*

Well right now, I think we're moving towards talking more about them [controversial topics]. We don't really have an official evolution thing, which is a big thing for science institutions. We talk about in the form of adaptation, but not, like, this is evolution...

Later in the interview he goes on to explain how the Aquarium plans to address teaching evolution:

...And I think that we have some professional development training coming up [referring to the upcoming October 2012 workshops], how to teach about this, how to talk about this to people, in a way that maintains, I guess, sensitivity, to people. Because, you know, we do avoid it, because people get upset. "I don't want you teaching my kid that." You know, even though it's science and we're teaching science here, "What did you expect when you signed up for a science class?" So it's just, one of those things as a customer service issue they've avoided, because if you avoid the problem then you don't have the problem, but at the same time a lot of place are moving towards, you know, how are we going to talk about this? How are we going to do this? You know, and a lot of it, it's a complex issue. And it's hard to understand and make understandable in an easy, clear and concise

way without, you know, just, you know, creating an argument with somebody.

As Craig explains, the Aquarium previously avoided teaching evolution in order to ensure guest satisfaction; it continues to struggle with how to tackle the subject without “creating an argument with somebody.” Imagined as advanced liberal subjects free to consume educational and entertainment experiences in any locale, visitors “responsibiliz[e] [staff] in relation to claims upon them [staff] other than those of their own criteria of truth and competence” (Rose, 1996, p. 55). That is, the institution is devoted to the teaching of a universal and pure *science*, utilized as a technology of expertise to govern what guests can come to know and learn about the environment. However this governing, situated within advanced liberal society, also necessitates attention to the ways in which visitors are also “subjects of responsibility, autonomy, and choice” (Rose, 1996, p. 54). Therefore, while *science* (expertise) serves as the arbiter of content choices (often controversial topics)—that which counts as *science* becomes fodder for discussion—neoliberal modes of thought simultaneously imagine a subject who must also be governed through appeals to autonomy and self-fulfillment.

Enter pedagogy as a technology of governing.

Teaching through *storytelling*, care, and emotion

“Pedagogies of expertise” are those techniques that aim to transmit scientific knowledge to guests. I call these “pedagogies of expertise” as most staff believe scientific knowledge is universal and, therefore, grounded in a type of truth with the potential to solve worldwide problems other knowledge systems cannot (Roth & Barton, 2004).²⁷ “Pedagogies of care” involve those practices staff utilize to connect guests to *science content* (and broader conservation issues rooted in science advocacy or policy) through emotion, values, and care (Milton, 2002, 2005). “Pedagogies of choice” are multilayered. On the one hand they involve discursive practices in which conservation issues are purposively framed in order to maintain a positive guest experience.²⁸ That is, guests are envisaged as consumers of edutainment experiences who, if

²⁷ Most staff who discussed the teaching of science framed scientific knowledge in this way, though there was some push back in one of the evolution professional development seminars. Tracy, a paid staff member, for example, pointed out that teaching staff often “default to giving facts” and “maybe we can talk about how science works.” Challenges to science as epistemically authoritative knowledge system also emerged in this seminar when Ashley, paid staff member and self-described Creationist, pointed out that she thinks the Aquarium has been doing a great job without teaching much evolution. In her words, “I looked at what you guys talked about I thought about how amazing it was that God created that. So what is our role and why do we need to teach it [evolution]?”

²⁸ Staff variously describe possible negative experiences as guests: (1) being scolded; (2) feeling despair or culpability for environmental damage; (3) feeling incapable of making positive environmental changes; (4) being bitten or defecated on by an animal; (5) not learning something new; and (6) not having the opportunity to interact with a staff member. Annual visitor survey reports confirm that the above concerns are warranted.

dissatisfied with their Aquarium visit, will not return to spend additional funds and will share their discomfiting experiences with others.²⁹ I characterize these as “pedagogies of choice” because they imagine autonomous advanced liberal subjects free to “consume” their own entertainment and educative experiences as they engage in cost-benefit analyses of where their leisure and education funds will be spent (Fletcher, 2010; Rose, 1993, 1996). They are also “pedagogies of choice” given that the same autonomous neoliberal subject is also envisioned as one concerned with individual wellbeing and security and therefore desiring to make behavioral changes that she or he chooses from a menu of options the Aquarium provides. In appealing to this subject through “pedagogies of choice,” the Aquarium hopes to promote particular kinds of environmentally responsible behavioral changes (that science dictates are necessary), such as recycling, consuming sustainable seafood, reducing fertilizer use, and turning off household lights when not in use—most of which are conceptualized as economically and ethically sound.

To accomplish these goals, management staff encourage teaching staff to tell stories in a manner that avoids what staff call “crisis-framing” and instead

²⁹ The Aquarium’s fiscal survivability in a capitalistic economy, particularly given the institution enjoys relatively few endowment funds, means that “program services” (i.e., income generated visitors) constituted nearly 70 percent of its revenues in 2011. (Aquarium 990 Tax Form from 2011).

teaches visitors that they are “innovators.”³⁰ Staff then craft these stories as acts of governing designed to connect visitors to the nonhuman world through care and emotion so that the neoliberal subject, a “free” individual not personally responsible for environmental damage, can save the planet through acts of what I call “environmental salvation.” Following Foucault’s (1981, 1982) notion of “new pastoral power,” which emphasizes salvation in this world (such as wellbeing, security, and protection) and the individual (as opposed to the masses), narratives of “environmental salvation” manifest as guests learn that though there are indeed environmental crises, individual redemptive acts like recycling can ensure the wellbeing, security, and protection of humans and the natural world. In order to avert crisis-framing, these individual redemptive acts are not construed as acts to pay for one’s own environmental sins; rather, they are to contribute to the healing of the planet due to damage inflicted by “humans” more generally. Precisely because visitors are “capable of action” (Foucault, 1982, p. 789), the Aquarium’s pedagogies of expertise, choice, and care function as a form of pastoral power structuring possible environmental actions in the service of the ethical and neoliberal environmental subject

³⁰ “Crisis-framing” and “innovators” are quoted as these are terms staff utilize, i.e., these are not my terms.

concerned with the ways in which she or he can pursue wellbeing, safety, and security as an autonomous subject (Foucault, 1982).

In the concrete stories Aquarium staff tell, these pedagogies often overlap, as Helen, a management staff member, explained in an interview after we chatted briefly about making science content accessible to people:

*Excerpt 3.5: September 12, 2012
Interview with Helen*

You're not gonna move people to behavior change with facts and figures. You're gonna move them when you connect that emotion and you make them emotionally invested in whatever that is. Science is facts and figures. Here are the facts and figures. But how does that apply to you? And where does this take our story of our planet. And to tell people that the planet keeps a diary and we just have to figure out what it's saying. You know presenting information in those terms to people so they're like, "I get what you're saying. I know what a diary is. I know what that means. It's a record of my day." The planet does the same thing, it's doing the same thing...I enjoy talking that way and I think it makes it more entertaining for the person and uh, when we talk about our world in ways that we experience it.

Like the boundary work Max, another management staff member, engages in to differentiate science, policy, and advocacy, Helen establishes a boundary between *science* and *storytelling* (Gieryn, 1999). In her view, guests cannot access *science*, as "facts and figures"; *storytelling* is the vehicle (or pedagogical tool of expertise, choice, and care) through which "facts and figures," or *science*

is made knowable to the general guest. Without *science*, humans cannot know what the planet is telling them; without stories, the public cannot understand the relevance of *science* to them; without either the public lacks the capacity to care about effectuating changes *science* deems necessary. By carefully navigating these boundaries, Helen reifies the legitimacy and power of *science*, constructing stories not as “facts or figures” themselves, rather the tools through which truth can be conveyed to the general public (Foucault, 1982).

One morning in the Education office, which staff colloquially call the ARC, Helen and I informally conversed about the role of *storytelling* at the Aquarium. I was unable to attend the professional development workshop she mentions in the excerpt, which involved the seminar leader teaching Aquarium staff how to utilize stories as an effective pedagogical tool. So, I asked Helen to give me a synopsis of what happened, and she obliged:

*Excerpt 3.6: December 12, 2012
Informal Conversation with Helen*

The thing she [the workshop leader] talked about and I think I've talked about with you [Teresa] is the whole emotional thing. You've got to connect to people emotionally if you want them to move. And the other thing she talked about that I thought was really, of course made 100 percent sense when somebody said it to you is that you need to focus on one and not the millions.

Helen provides an example of how the "Feed the Children Campaign" does a great job of focusing on a single child that each viewer might be able to help. She contends that this invokes empathy and inspires behavioral changes. She then goes on:

Uh, so, it was, you know, she [workshop presenter] gave us the meaning, purpose, and hope. That's what you want to give people in story. Give them meaning, give them purpose, give them hope. And her thing is, when you talk to somebody, you give them one thing that they can do. One thing that they can do. Not 12 things, one thing that they can do.

Helen highlights here that stories, as pedagogical acts of governing, are not only utilized to effectively convey science content, but also to effectuate behavioral changes to make people "move."³¹ Staff believe that visitors will be inspired to make behavioral changes if the message is positive rather than negative, i.e., individual people have the ability to make important changes science necessitates. Helen also led a separate professional development seminar where she and other staff members highlighted uplifting facts staff can share with guests (shark finning is now banned in U.S. waters) and provided concrete examples of positive framing through direct action (e.g. consumers can avoid purchasing products made with shark parts) versus negative framing

³¹ Examples of individual behavioral changes guests can make abound at the Aquarium. Locations include: placards in the Northern Pacific Gallery, Tropical Pacific Gallery, the "Seals and Seal Lions Exhibit," the "Our Watersheds" Exhibit, and the "What You Can Do" Exhibit (removed spring 2013); Aquatic Academy Forums; public, nightly lectures, and daily shows such as the "Seals and Sea Lions Show," the "Sea Otter Show," and the "Blue Cavern Show."

through statistical scare tactics (100 million sharks are finned by people each year).³² In response to some of her suggestions, teaching staff attending the seminar suggested they could share success stories with guests, “avoid blaming,” and provide specific behavioral actions, such as hanging laundry and avoiding the use of central air conditioning.³³ Through these pedagogies of expertise, care, and choice, explored in further detail below, the institution governs vis-à-vis the “conduct of conduct” (Foucault, 1982; Rabinow, 2010; Rabinow & Rose, 2006; Simons & Masschelein, 2006).

Pedagogies of Expertise, Care, and Choice in Action: The Otter

Show

The Aquarium’s Sea Otter exhibit, sponsored by BP and located in the Northern Pacific Gallery, features several daily shows where paid Presenters on

³² Shark finning is a practice whereby fisherman capture sharks, remove their fins, and then return the bleeding sharks to the water. The fins are typically utilized to make shark fin soup, a delicacy in some parts of the world. Conservation organizations have produced a variety of reports documenting the effects of finning on shark species throughout the world, particularly those inhabiting Pelagic waters. As a result, legislators have banned finning in many waters, though the practice continues on large-scale in some geographic areas where the demand for shark fin soup continues to support the practice (Camhi, Valenti, Fordham, Fowler, & Gibson, 2007).

³³ Ironically, we all shivered in what felt like an over air-conditioned room on a warm August day in Long Beach, CA. The classroom, however, as the website describes, “is LEED Platinum certified—the highest nationally accepted benchmark for green design, construction, and operations. In addition to being a fully functioning carbon-neutral classroom, this building serves as an example of alternative energy use, sustainable design, and water conservation and reuse.” See: http://www.aquariumofpacific.org/exhibits/our_watersheds.

the “dry side” interact with Husbandry staff and animals on the “wet side” of the Otter Habitat. A thick glass wall separates otters and visitors, but allows people to briefly glimpse the otters’ activities as they pass through the exhibit hall or watch a show. The habitat, partially covered in ice to mimic the cold waters of the northern Pacific Ocean, also features a pool of water butting up to the glass. The otters regularly swim in the water, doing “somersaults” as they groom their ultra-dense fur evolutionarily-designed to warm their bodies. Various placards throughout the exhibit hall contain facts about otter fur, feeding habits, and conservation, including its prominence as a “keystone species.”³⁴

Otter shows typically last 10 to 15 minutes like most other more formal, scripted shows at the Aquarium. During the shows, staff give a detailed description of the information outlined in the gallery’s placards. They also draw attention to the Husbandry and training activities in which they engage otters as part of their “health care” and wellbeing, including the shape recognition exercise performed during the show. During this activity, guests hold blocks with shapes imprinted on them against the glass wall. These blocks somewhat

³⁴ A “keystone” species is one that scientists have designated as playing a paramount role in its respective ecosystem. When keystone species decline, drastic and negative consequences often ensue. For example, when otter populations decline, their prey, sea urchins, multiply drastically. Urchins consume kelp and can destroy kelp forests if their numbers remain uncontrolled by otters.

resemble toy blocks for children, but they are instead glass or plastic squares about 6x6 inches in size. One depicts an “X” in red and the other a white square. Husbandry staff then cue the otter to “touch” the shape she or he is trained to recognize. The otter, if responding correctly, gently presses his nose against the glass where the shape is held. Audience members typically clap and cheer when the animals perform the behavior.³⁵

After the otters perform their behaviors, staff typically segue into a discussion of otter history and conservation along the Pacific coast of the US, particularly in California. The narrative, partially depicted below, tells a tale of environmental destruction, carefully avoiding language that might implicate individuals as the cause. Environmental “salvation” as redemptive acts also features as a theme:

*Excerpt 3.7: March 7, 2013
Charlotte, paid presenter, at Otter Show*

Charlotte: Uh, the first thing I want you to know is that sea otters have the densest and thickest fur of any animal on the planet...Well, that caused a problem back in the late 1800s, early

³⁵ Like during the Seal and Sea Lion Show, staff explain to guests that these husbandry activities, i.e., training the animals to recognize shapes or perform specific behaviors are an integral part of their “mental stimulation.” In this way, staff attempt to shift these acts out of the realm of animal performativity for human enjoyment and into the realm of animal care and wellbeing. This type of framing likely occurs due to the sustained criticism zoos and aquariums have endured regarding animal performances (Beardsworth & Bryman, 2001; Desmond, 1999; Pedersen, 2010a).

1900s because they were almost hunted to extinction because of this beautiful fur. Before the hunting started there were 300,000 sea otters or more across Russia, North America, and Japan. In 1911, they enforced the first Seal Treaty Act, which gave the otters the protection they have today. As of today, we have a little over 2,700 sea otters. And that's not a lot. We want to see the populations come up. And we're going to find out why in just a few moments....

Now, I talked about how we wanted to see the populations come up. And also, you'll notice I'm wearing some kelp, a replica of kelp. Well, down at the bottom of the kelp it's called the holdfast. And down there is where some of the sea otters' favorite food is [located]. There's abalone, snails, and clam. But one food, in particular, that is a good thing the sea otters eat and that's the sea urchins and that's because sea urchins have a tendency to eat the bottom of the kelp and it becomes detached. If we didn't have those sea otters eating those sea urchins, we would end up with an urchin barren. So that's why sea otters are so important to the kelp forest. [They are] apex predators [at the] top of the food chain. If we didn't have those otters here in the kelp forest, I don't think it would be the same because it affects all the other animals as well.

So what can we do to preserve this wonderful species? Well, the challenge they're having is, of course, you know we find trash in the ocean, but also, when people are treating their lawns that runoff goes down the storm drain, out into the ocean, and gets into the animals' food and they can become ill and, uh, they would no longer be alive. So we need to be aware of that. Uh, I know pretty soon, this year, they also have what we call sea otter awareness week where there are different things we can do to protect these amazing animals. So those are just some of the things we can do. And as you are going around the Aquarium, you'll notice there are recycle bins. When you do, think about the animals that have to live out in the ocean. We share the ocean

*with these animals because we share their food source. Thank you for so much for joining us today.*³⁶

In the opening segment of the story, Charlotte tells a biopolitical tale of otter management and recovery (Foucault, 1978, 2003), drawing on pedagogies of expertise, care, and choice. The otter's decimation due to hunting activities, discursively constructed in the passive voice as a pedagogy of choice designed to enhance the guest experience, obviates the need to directly implicate "people" or "humans" as the cause. This move allows staff to convey that though otter numbers have declined due to prior actions, visitors are not responsible for these actions. Further, biopolitical management vis-à-vis conservation biology (*scientific* expertise as population management) and policy actions informed by science have collectively contributed to otter population rejuvenation. This narrative, as a pedagogy of care, is also designed to connect to guests through a "value"—we should feel care and concern for otters as they are in danger of extinction, despite increasing population numbers.

In the next segment, Charlotte also draws on pedagogies of expertise to convey to guests why "we want to see the populations come up." That is, the

³⁶ I segmented the story here for analysis purposes. In the actual show, the narrative is continuous. In addition, though Presenters each slightly vary the content of the show, Charlotte, like other Presenters, maintains overall fidelity to the show's official script.

justifications for the need to increase otter numbers are grounded in the *science* of ecology. To convey that *science*, Charlotte constructs a tale of species interrelatedness by highlighting the otter's importance in her or his respective food chain—without the otters, as apex predators, there would be too many urchins. And when there are too many urchins, kelp forests get destroyed, leading to what scientists call an “urchin barren.” This *science* is utilized in the final passage of Excerpt 2.8 to validate the Aquarium's encroachment into the sphere of the private, i.e., individual behavioral choices impacting the environment (Plumwood, 1996). In this manner, the private becomes public.

To conclude the story, Charlotte utilizes pedagogies of care and choice to motivate visitors to make changes in their daily lives reflective of the neoliberal and ethical environmental citizenship the Aquarium imagines for its guests. In the first segment of the passage, Charlotte carefully avoided holding guests personally responsible for the damage done to sea otter populations in the name of customer satisfaction, as the neoliberal citizen is envisioned as in relation with “experts...organized and regulated through...acts of choice.” (Rose, 1996, p. 54). In this final passage, however, she structures fields of actions for guests (littering less; using less fertilizer on the lawn; recycling) to make them feel capable of contributing positively to the biosphere through acts

of environmental salvation. This move of advocacy, authorized by *science* and conveyed to guests through pedagogies of care, is designed to contribute to a positive guest experience and to allow encroachment into the realm of private decision-making. Infused with notions of pastoral power, i.e., individual guest wellbeing is connected to the otters through common food sources we share in the oceans, the Aquarium is authorized by *science*, structured through choice and care, to govern visitor action “for the good of the flock” (Foucault, 1981, 1982).

Of the twenty-eight visitors I interviewed at the Aquarium, approximately half cited specific behavioral changes they could enact in their daily lives to improve the condition of the environment.³⁷ In the interview excerpt below Al and Peg, a middle-aged white married couple, describe some of the actions they learned or relearned at the Aquarium, specifically at a temporary trash

³⁷ Of the visitors who discussed behavioral changes, the majority brought up these changes in response to the question, “Do you think the exhibits are designed to convey particular messages?” I did not inquire specifically about behavioral changes (unless guests first mentioned them) in an effort to ask non-leading questions. Those guests who did discuss specific environmentally responsible actions learned at the Aquarium cited the efficacy of the following: picking up trash, recycling, selecting farm-raised fish or seafood instead of wild caught or not eating seafood at all, conserving water, reducing usage of aerosols, fertilizers, and motor vehicles, donating money to save endangered animals, and utilizing efficient landscaping. Responses besides specific behavioral changes included: “being mindful,” “giving information,” “conservation,” “to show us natural exhibits,” “I wasn’t paying attention to messages,” “taking care of the oceans,” “sea level rise,” “encourage a human coexistence with aquatic animals,” “to show things aren’t as scary as people perceive them,” and “to keep the environment safe and clean.”

exhibit, "Saving Our Synthetic Seas," and at the Otter Show. Both have undergraduate degrees--his in financial planning and hers in communications. While neither self-identifies as scientist or expert, Peg's father was an aerospace scientist; they also both discussed informally studying science and history:

*Excerpt 3.8: February 23, 2013
Interview with Al and Peg*

Teresa: Okay. Uh, do you think the exhibits are designed to convey particular messages and if you do, what would you say those messages are?

Peg: Don't throw trash in the ocean.

Al: And I don't know if that one is permanent or not. The one with the junk? [Referring to a new exhibit]

Teresa: That one is brand new. That was put up a week ago.

Al: Oh okay.

Peg: And I was real clear on that. We live in a coastal community. We're only about 12 miles from the beach. And so there's been an awareness all my life of, "Don't over fertilize your lawn. Don't hose down your driveway. Keep that stuff out of the watershed." In fact, in my town, there are little plates that are next to the storm drain that says, "Don't dump, it drains to the lake." So it's one of those top of my, when you throw something away it doesn't really go away. You don't see it anymore, but it's still in the world and it's still doing damage.

Al: Yeah. I think not only the exhibit of the junk that you said just went up, but other places there was, you know, a definite discussion of, what was it, the "Who's the smartest otter?" The

interaction. It said okay, "The otters are sick because they eat sea urchins or because of oil and runoff or what?" It's an ongoing theme. And that's useful. Cuz frankly, we all eat out of there.

Teresa: So the whole theme of, basically—

Peg: Stewardship

Teresa: Yeah. Not putting stuff in the ocean. Okay. And by stewardship you mean?

Peg: Well, it does matter if you recycle your bottle or not and it does matter if you throw your trash on the ground or not. You know, it does matter that you don't waste water. It does make a difference.

In the above passage Peg, in particular, cites prior identification with the kinds of environmental issues and pro-environmental behaviors discussed at the Aquarium. As a member of a coastal community located north of the Los Angeles area, Peg describes an awareness "all my life" and "in my town" of how trash and fertilizer runoff contaminate watersheds; she also knows that water conservation is an important issue in California. Similarly, Al highlights his own connection to the ocean as he recognizes that if oil and runoff make otters "sick," they also make people ill since "we all eat out of there." In this way, Peg

and Al see their own environmental citizenship mirrored in the kinds of issues and practices (ideologies) the Aquarium highlights at the exhibit site.³⁸

These ideologies, designed to produce the Aquarium's version of an environmental citizen, are grounded in science and carefully crafted (through pedagogies of expertise, care and choice) to appeal to certain kinds of guests. Like Guthman's foodie subject in California (see footnote 25), the Aquarium and its staff (or "those doing the proselytizing") (2008 p. 1177) work to produce a subject constituted on the one hand through "neoliberal rationales of choice, responsibility, and competitiveness" and on other through dual-pronged notion of expertise (science) and care (values). As Peg and Al illustrate above, their own brand of "stewardship" coincides with that of the Aquarium's as they cite prior knowledge of conservation issues rooted in science (e.g. contamination of the watershed) and ethical reasons for caring about the oceans (stewardship matters).

³⁸ Drawing on Althusser (1971), Guthman discusses the constitution of the foodie or yuppie subject in California who is hailed by "notions of seasonal, local, and organic" to be "the carrier of transformation in agro-food politics" (2008, p. 1177). Simultaneously, she argues that this subject is also hailed by neoliberal ideologies. While Guthman (2008) suggests the utility of Althusserian framework, the Foucauldian-inspired lens of ethical and neoliberal governmentality (Fletcher, 2010) outlined in this chapter draws attention to how the Aquarium, through the invocation of *science* and *storytelling* develops its own ideologies about what constitutes environmental crises, practices, and citizenship.

In contrast to Peg and Al, who identify with the Aquarium's suggested environmental practices and actively discuss actions they can take to ameliorate environmental problems, Jim and Justine, a late-twenties married couple, described a contrasting experience:³⁹

*Excerpt 3.9: January 26, 2013
Interview with Jim and Justine*

Teresa: What sort of people do you think the exhibits are designed for?

Jim: Mostly for kids. It's very family-oriented. It has a lot of educational feedback...[and] is always talking about helping the environment and just giv[ing] lessons, especially to children, to learn more about the things that are, which is good...

Teresa: You mentioned helping the environment. Could you talk a little more about what helping the environment means?

Justine: At the sea lions show they showed the poster of the trash being dumped in the ocean and talked about how you know, it was definitely kid-oriented, you know, would you want to swim in there? Do you think they can swim in there? And then they held up some examples of garbage that's not good to throw away. How even if you do, like cut it up first, you know, so, I think about keeping the ocean the clean. That was the most that was talked about.

Teresa: Did you feel like that was a pretty strong message here at the Aquarium, or did you feel like it was only there sometimes?

³⁹ Jim, a web developer and Justine, a second grade teacher, both hold Master's degrees. He is Asian-American and she is white.

Jim: Uh, they mentioned it a lot so it was a very good driving point. Especially seeing that picture. It helps a lot of people see that you shouldn't throw away garbage like that...

Teresa: And besides that particular show that you watched, did you notice the message anywhere else? Maybe not that particular environmental message, but any other messages?

Jim: Uh, well the global warming one was a very strong message. Uh, so, what else?

Justine: But that wasn't a message for like, environmental stuff that we could do.

Jim: But it's something to be careful about.

Justine: But there's nothing that we can control, other than be prepared for it.

While Jim and Justine discussed the ways in which the Aquarium's teaching practices (i.e., pedagogies of care) appeal to children Justine, in particular, feels a lack of "control" over environmental issues. Specifically, Jim mentions that the occurrence of global warming was a "very strong message," but Justine points out that there is really nothing they can do circumvent global warming. Her solution, instead, is to prepare themselves for imminent changes, though she did not identify what this preparation would involve. In this way, the Aquarium's pedagogies of expertise, care, and choice heightened Jim and Justine's awareness of current environmental crises, but failed to provide a link between

these crises and specific behavioral actions they might take to become part of the solution.

Narrowing Engagement with Environmental Problems

As a self-identified scientific organization, the Aquarium (and its staff) believe that one of the primary roles of the institution is to bring current science to audiences in order to create a more scientifically and environmentally literate citizenry. The Aquarium also actively engages in advocacy so long as it is perceived as rooted in *scientific* evidence and truth. That is, science, a historically a white and masculine endeavor, (Eisenhart & Finkel, 1998; Haraway, 1989; 1991) serves as the justification for the movement of particular environmental issues (climate change, evolution, and endangered species preservation) out of the realm of the private into that of the public.⁴⁰ The Aquarium utilizes *science* to frame an environmental citizen, vis-à-vis expertise and structuring action (i.e., governmentality), who makes better private consumer choices precisely because *science* grounds the necessity of these changes.

⁴⁰ Recall that Plumwood (1996) argues that “nature” and that which is constructed as close to nature (the body, women, minorities, nonhuman animals) are those which typically become relegated to the sphere of the private and, as a result, are not part of public discussion. Hence, it’s important to consider how the institution and Aquarium staff draw on science’s epistemic authority, grounded in attributes typically associated with whiteness and masculinity, shapes the content of conversations at the Aquarium.

These advocacy strategies, while laudable for bringing attention to pertinent environmental issues, are problematic for two key reasons. First, by shepherding the “private” (personal consumer and behavioral decisions) into a public conversation, they frame the solutions to *collective* problems in terms of the individual (Foster, 2002, 2009) and absolve “the major areas of production and technology from democratic responsibility” (Plumwood, 1996). Further, by framing only those environmental problems rooted in *science* as fodder for discussion at the Aquarium, they abdicate private and public responsibility for “political” environmental issues. Environmental justice and inequity or changes to the political and economic systems that structure a host of environmental problems (including those the Aquarium eschews discussing), viewed as strictly political in nature, remain on the backburner (Foster, 2002, 2009; Plumwood, 1996).

Structuring action; limiting possibilities

Due to the Aquarium’s focus on meeting the customer service needs of guests imagined as neoliberal citizens, the institution aims to structure action at the level of the consumer. Drawing on science’s epistemic authority (Gieryn, 1999; Turnbull, 2000) the Aquarium grants itself the authority to infringe on private behavioral decisions guests make in their everyday lives. That is, the

bulk of the environmentally responsible strategies visitors learn at the exhibit site, such as reducing energy or water consumption, dietary modifications, and recycling involve changes to personal and individual consumption habits. As scholars point out, however, today's environmental problems are not individual, but collective and complex, or "wicked." (Foster, 2002, 2009; Krasny 2013). Framing individual actions as "bar none" solutions to avert "crisis-framing," suggests that environmental problems do not require collaborative efforts.

Further, in its focus on individual consumer behavior or what Plumwood calls a "private ethic of care and responsibility for nature," (1996, p. 155) the Aquarium's exhibits do not engage in any sustained critique of the systems of production largely responsible for environmental degradation. For example, "A Working Waterfront: The Ports of San Pedro Bay" video, showing throughout the day in the Aquarium's Ocean Science Center (a National Oceanic and Atmospheric Administration-sponsored "Science-on-Sphere") briefly mentions "environmental decline" at the Ports and then segues into an extended discussion of how innovation will simultaneously allow maintenance of this important "economic engine" and environmental quality. Depicted below is an excerpt from the video script, which is accompanied by images of the Ports and the innovative container ships utilized there:

Excerpt 3.10: "A Working Waterfront"

After decades of environmental decline, the seaports of San Pedro Bay are taking the lead in greening the shipping industry. To balance their loads, ships take on and discharge seawater in their ballast tanks. Ballast water can carry animals and plants that act like foreign invaders, threatening local species. To keep these intruders away, ships must flush ballast tanks three times while out at sea. Today, every step of moving goods is being examined to see where pollution can be reduced. Even the tugboats have gone hybrid. Every year tugs and pilots guide 20,000 transits safely in and out of port. Ships just keep getting bigger, making it a tight squeeze under existing bridges. Ships have the smallest environmental footprint on a ton per mile basis. And new trains, trucks and electric yard equipment are making the rest of the system more fuel- efficient. Who knows what innovations are just around the corner at the seaports of San Pedro Bay? Containers that collapse when empty. Maglev trains that glide goods away. Massive sails and solar arrays on even more massive ships. One thing is certain, these seaports will remain a powerful economic engine, leading the nation to a greener, more vibrant vision of global trade.

This excerpt illustrates how the institution, at the exhibit site, avoids discussion of the ways in which corporations over-produce goods and in so doing, wreak environmental havoc not only through the production process, but also through transportation mechanisms, as both require substantial inputs of fossil fuels. The focus, instead, is to highlight the successes of the global transportation industry and the ways in which it has cleaned up its act through devising technologically-based solutions. The overarching message the

Aquarium sends the general guest, then, is that production and transport can continue unabated so long as corporations utilize cleaner technologies (backed by science) to transport goods and as long as individual citizens make environmentally sound choices in their daily lives.

Muting voices

As science ushers particular controversial issues like climate change, evolution, and endangered species conservation into the public foray at the Aquarium, it becomes important to not only consider the content of the conversations that happen, but also those which are muted. Foucault points out, after all, that knowledge (which is never neutral) and power are intimately related:

The real political task in a society such as ours is to criticize the working of institutions which appear to be both neutral and independent; to criticize them in such a manner that the political violence which has always exercised itself obscurely through them will be unmasked so that one can fight them (Foucault, 1974, p. 171).

While there is a vast literature uncovering how mainstream environmental discourses emphasize particular issues (consumerism, conservation of wild spaces) and eschew others (environmental justice, indigenous land rights, corporate responsibility) (Lucas, 2013; Plumwood, 1996; Rutherford, 2011; Shiva,

2010), the focus of the following section is to highlight how the Aquarium's definition of *science* obviates discussion of particular environmental issues I contend are indeed supported by *science*. That is, the Aquarium's espousal of the classic "textbook" definition of science (Roth & Barton, 2004; Sismondo, 2010) narrows the degree to which it is able to engage with pertinent environmental problems.

As discussed previously, the Aquarium espouses and teaches a *science* grounded in facts, content and processes that are neutral. The institution also engages in advocacy, viewed as more political in nature; however their particular brand of advocacy is backed by the notion of a pure, apolitical science. Because the science grounding the advocacy is neutral and objective, management staff, in particular, feel confident that the controversial topics they choose to discuss are credible. Problematic is not necessarily that the Aquarium grounds its advocacy in *science*; rather, it is how the institution, particularly at the exhibit site, defines *science*.

Decades of work in the social studies of science and the philosophy of science have uncovered the complex and multifaceted ways in which science is itself a vastly political endeavor that produces political knowledge (Feyerabend, 1978; Gieryn, 1999; Haraway 1991, 1989, 2008; Harding, 1991; Jasanoff, 2005;

Knorr Cetina, 1999; Prakash, 1999; Turnbull, 2000; Wynne, 1996). At the Aquarium, *science* and advocacy are constructed as separate, but related entities with *science* occupying the most epistemically authoritative space due to its perceived neutrality.⁴¹ These modes of thought, entrenched in narratives of the Scientific Revolution and Enlightenment, relegate those issues the Aquarium views as impossibly neutral and therefore impossibly *science* to the realm of the unspoken or what Plumwood (1996) calls the “private.”⁴²

⁴¹ For example, the Long Beach break wall is a structure built to reduce wave action in the harbor for a variety of reasons, including reducing damage to ships. It has considerably altered the integrity of the area due to stagnant water that traps pollutants. Craig, a mid-level paid staff member, shared in an interview that “the Aquarium tries to walk the middle line on things like that” and that staff are directly instructed not to discuss the break wall with guests, even those who question staff members about it. Also recall that Education management staff member, Max, highlighted how the conversation about GMOs is currently “outside the realm of science.”

⁴² By utilizing the term “narratives of the Scientific Revolution and Enlightenment” here, I refer to dualisms established during this time period that many environmental scholars contend continue to impact thought and action today (Milton, 2002; Plumwood, 1996). Godfrey-Smith, a philosopher of science, describes the Scientific Revolution in the following manner,

The Scientific Revolution also fed into more general cultural and political changes. In the eighteenth century the philosophers of the French Enlightenment hoped to use science and reason to sweep away ignorance and superstition, along with oppressive religious and political institutions...These included empiricism, mechanism, and the inspiration of Newton, and a general desire to understand mankind and society in a way modeled on the understanding of the physical world achieved during the Scientific Revolution (2003, pp. 17-18).

Though historian of science, Shapin, argues that there was no actual Scientific Revolution, rather that it “emerges out of our present-day interests” (1996, p. 6), he nonetheless describes the changes brought on during that period in a similar fashion,

Therefore, though the institution advocates the public learn about climate change, for example, the content is narrowly construed as climate science (the chemical processes that cause climate change taught through pedagogies of expertise) and climate advocacy vis-à-vis green consumerism (taught through pedagogies of care and choice). While the opportunity exists to delve into environmental justice concerns intimately bound up with climate change and undoubtedly supported by scientific evidence (Adger, 2001; Kates, 2000; Thomas & Twyman, 2005) the Aquarium focuses on its brand of climate science and green consumerism.⁴³ For example, in one of the few permanent exhibits devoted to the discussion of the impacts of climate change on coastal communities, the Ocean Science Center's video, "Rising Sea" highlights two very different effects sea level rise: flooding and erosion in coastal California versus human displacement in Maldives, Alaska, and Bangladesh. Throughout the video, people living in these communities describe how they are coping with the effects of global climate change while viewers momentarily glimpse what life is like in these places:

It was widely considered that theological, moral, metaphysical, and political discussions had generated divisiveness and conflict. If a reformed natural philosophy was to offer a genuine certainty, then the demarcations between it and contentious areas of culture had to be made clear (1996, p. 105).

Excerpt 3.11: "Rising Sea"

California must prepare for increased flooding and erosion. By 2100, we could face sea level rise of five feet, or even more. [Wave crashing] In Southern California, Alec Looz is sounding the alarm by putting up measuring sticks all along the coastline in Ventura...San Francisco, one of our most vulnerable and beloved American cities, could face catastrophic flooding...For some communities, relocation is the only choice. In Alaska, the entire village of Shishmaref is planning to move inland. Johnny Weyiouanna: "That's why we have to move our houses. If they never move these houses, they would be in the water already, and we would be homeless." Around the world, coastal cultures thousands of years old could soon be lost beneath the sea. The Maldives is a nation of islands. If sea level rises five feet, most of the country will be under water...Around the world, regions shaped by river deltas are especially at risk. Bangladesh is on the frontlines. By the next century, 26 million of her people could be displaced.

The narrative and corresponding images of people coping with global climate change bring attention to its worldwide effects; however scant attention is paid to the disparities between the abilities of the people and communities in the featured regions to handle the impacts of rising seas. California is depicted as in danger of flooding and erosion, while it is clear that other countries face total displacement. The presentation of this information, however, is deliberately "neutral" in that there is no mention that California (a largely wealthy, Western state) arguably has greater resources to deal with the consequences of the changes; the narrative also avoids implicating Western nations as the major

cause of climate change. This framing mutes the voices of millions of people throughout the world and reifies the notion that science and a region's political economy are separate entities.

Conclusion

In an edited volume entitled *Trading Zones in Environmental Education: Creating Transdisciplinary Dialogue*, environmental education researchers Peters and Wals argue that to develop what they call "sustainability wisdom" we need to co-produce "scientific and technical knowledge," and practical wisdom (or what Aristotle referred to as *phronesis*), which has the capacity to "guide us in what should be done and how to act—in a moral, ethical, and political rather than technical and instrumental sense" (2013, p. 79). They contend environmental researchers and educators can accomplish this goal through a science-as-community approach, designed and implemented through practical theory-building as multiple stakeholders collaborate (Peters & Wals, 2013, pp. 92-93). While my study did not investigate staff's use of "practical wisdom" per se, it did uncover that scientific knowledge and neoliberal ideologies of choice are the driving forces behind the Aquarium's brand of advocacy. This advocacy ultimately frames how guests should act in a "moral, ethical, and political" sense with respect to the environment.

Drawing on Peters and Wals (2013) I argue here that advocacy in spaces like the Aquarium ought to be informed not only by scientific knowledge, but also practical wisdom. My conceptualization of how we must work to re-imagine these spaces, as I have outlined in this chapter, digresses from theirs in that I contend we have to redefine, broaden, and problematize what constitutes science so that practical wisdom is not separate from, rather embedded in what counts as scientific knowledge. That is, in the simple acts of talking or writing about science as an entity or knowledge system separate from advocacy, like Aquarium staff often do, or as separate from practical wisdom, as Peters and Wals (2013) do, we narrow the possibilities as to what science *can* and *ought* to do. That is, we reify the problematic Enlightenment dualisms many environmental researchers, philosophers, and educators ultimately seek to overcome.

Echoing this point in an interview conducted in the late '90s, science fiction writer Ursula LeGuin comments,

The odd twist is that we become so enamored of our language and its ability to describe the world that we create a false and irresponsible separation. We use language as a device for distancing. Somebody who is genuinely living in their ecosystem wouldn't have a word for it. They'd just call it the world (White, 1995; p.95).

In LeGuin's interview she focuses mainly on un-doing and re-doing our naming of things, but I want to suggest here that we also need to retool, particularly in educative spaces, what counts as science and scientific perspectives. When institutions like the Aquarium root their advocacy in a narrowly-defined and apolitical science, it restricts the degree to which they are able to engage with a variety of pertinent and pressing worldwide environmental problems.

CHAPTER 4: CONSTRUCTING AND CO-TEACHING WITH SHARKS

But we give people the chance to touch sharks. And people are convinced that sharks will eat them. Even if they're two feet long with a one inch wide mouth and clearly not going to eat them. They still have those preconceptions. People are afraid of the water. They are afraid of the things that live in the water. They don't really know what's there. There's just a tremendous amount that's not known about those things. And that's really the cool part. Everybody comes in and you always have something that you can amaze somebody with.

- Max, Education Management Staff Member

Introduction

As Aquarium guests approach the Shark Lagoon, the image of the gigantic, man-eating predator caricatured in movies like "Jaws" is immediately counteracted by three small, shallow pools housing the majority of the Aquarium's shark population on display. Most of these sharks grow only three feet in length and tend to huddle together, giving the appearance of "cuddling." In contrast to the great beasts of film and legend, swimming about in the depths of the Pelagic zone of the ocean and sometimes surfacing to stalk humans as fodder, these small sharks dine on sustainably-caught, restaurant-quality seafood graciously given to them by their human caretakers—Aquarium staff. These more diminutive, safe-to-touch creatures, not the larger sharks

housed behind the shallow pools, largely serve as the Aquarium's archetype for re-educating the public about the beast whom staff perceive as misunderstood.

The Shark Lagoon, devoted to experiencing, touching, and learning about sharks, is not the only location where people feel the predator's presence. Bonnethead and zebra sharks, for example, roam the waters of the Tropical Pacific Gallery upstairs and leopard sharks the Blue Cavern exhibit downstairs. In the So Cal/Baja Gallery guests can glimpse an unborn shark alive inside an egg case, as staff have removed a small piece of the case and replaced it with a clear plastic "window" for display. The Aquarium's two gift stores feature sharks in games, children's books, toys, and jewelry. Periodically, the Aquarium also invites guest lecturers who discuss the plight of the shark, its role as apex predator in ecosystems, and shark conservation.

In this chapter I argue that the Aquarium's various sites produce three related discourses, relying on naturalistic aesthetic, intrinsic, and extrinsic valuing (Rolston, 2002). These discourses work in concert with tactile experiences with live sharks to develop a charismatic megapredator, the disembodied shark. This shark, largely misunderstood and mis-constructed, is presented as worthy of human care and ought to be "saved" by humans. These discourses include: (1) a re-imagining of the shark as cute, cuddly, and desiring

relations with humans; (2) a focus on the shark's role as apex predator of *nonhumans* to perform ecosystem services; and (3) an emphasis on the mischaracterization of the shark as a killer of *humans* in the media. The Aquarium does not funnel its efforts into reconstructing the image of any one particular shark, like the Great White; rather it seeks to construct *all* sharks as benevolent and worthy of human care and concern through this "disembodied shark." In making this argument, I assemble ecocentric political philosophy (Rolston, 2002; Callicott, 1980, 1989), post-humanist scholarship (Derrida, 2003; Haraway, 2008; Smith, 2001; Yusoff, 2010, 2011), and environmental applications of Foucault's "aesthetics of existence" (Darier, 1999a, b) and biopolitics (Foucault, 1978, 2003) to disentangle these discourses and touch experiences, and to explore their implications.

Conceptual Frameworks

First, I show how Aquarium staff and sharks co-construct a "cute," "cuddly," and "athletic" shark that is, as result, deserving of human care and concern.⁴⁴ Drawing primarily on Rolston's (2002) "From Beauty to Duty: Aesthetics of Nature and Environmental Ethics," and Small's (2012) heuristic

⁴⁴ I will also problematize the connection between the Aquarium's appeals to aesthetic sensibilities and the possibilities for intrinsic valuing of sharks.

describing species' characteristics appealing to humans, I analyze how the Aquarium engages in what I call naturalistic "aesthetic nature renovation" as staff and sharks work to connect sharks' perceived aesthetic value to their intrinsic value.⁴⁵ Rolston argues that "beauty can give rise to duty" through an environmental ethic grounded in aesthetics not simply appealing to nature's beauty "a la art," but also biology or natural history (2002, p. 129). According to his model, which he appears to derive from Locke's (1690/1998) notion of primary and secondary qualities, two kinds of aesthetic qualities exist: aesthetic capacities (beholders' capacities for experience) and aesthetic properties (those that objectively lie in natural things). When humans come to aesthetically value the natural world, then, they are not only "excited by the incoming data...translate[ed] as aesthetic value" but "value the processes and products of generative nature that we are discovering." (Rolston, 2002, pp. 132-133). To illustrate, he explains how humans appreciate the "grace" in the motions of a leaping impala (aesthetic capacity), but for this grace to be realized, impalas rely on "muscular power" derived from "evolutionary achievement" (aesthetic property) (2002, p. 133). For Rolston, this kind of aesthetic valuing incites an

⁴⁵ Following Rolston I define intrinsic value as "for what it [the animal or aspect of nature] is in itself, and not simply instrumentally, for the pleasure it brings us" (2002, p. 137)

appreciation for the beauty humans perceive *and* the natural processes that produce that beauty, leading to intrinsic valuing and appreciation of the biotic community as a whole.⁴⁶

I contend that the Aquarium's aestheticizing of the shark is not only manifested in appeals to aesthetic capacities vis-à-vis perception of physically manifested aesthetic properties (such as an appreciation for the juvenile bonnethead's locomotive abilities as it swims about the pools), but also in aesthetic properties of shark sociality. Sharks, as described in later sections, appear to have social relationships with each other and to desire them with humans, adding to their aesthetic allure. While Rolston (2002) mainly highlights "evolutionary achievements" (aesthetic properties) predicated on *physical* categories such as color and apparent physical fitness, I argue that aesthetics capacities are also complexly bound to *social* aesthetic properties.⁴⁷

⁴⁶ Here and in the rest of the dissertation, "biotic community" refers to all of the living beings on the planet.

⁴⁷ Following Rolston (2002), I call these "social aesthetic capacities" because (1) sharks' social relationships with each other are "objectively there" whether or not humans are present and (2) sociality is an evolutionarily developed trait, much like musculature or color. He comments, "The attributes under consideration are objectively there before humans come, but the attribution of value is subjective" (p. 132). While the full extent of the social relationships may be generated by humans desiring sociality in sharks (particularly with respect to sharks' desires to socialize with humans), animal behaviorists and biologists have established that many species of sharks are objectively social, i.e., social regardless of human presence.

In the next section I examine how the disembodied shark is posed as an important apex predator of only *nonhuman* species, as it is disinterested in attacking or eating *humans*. The demarcation between shark-as-*nonhuman* killer (apex predator) and shark-as-*human* killer is critical as it authorizes staff to describe sharks in naturalistic terms, i.e., as beneficial for ecosystem stability and benevolent toward *humans*. Sharks, therefore, are “safe.” First, I draw on ecocentric philosophy to show how the sharks’ role as apex predator is highlighted to justify its importance to the marine biosphere (Leopold 1949; Callicott, 1980; 1989). Ecocentric philosophy grounds species’ claims to continued existence not in individual rights (Regan, 1985), rather in their role in maintaining ecological stability for the good of the biosphere (Callicott, 1980). Leopold succinctly describes this view, “Yet these creatures are members of the biotic community, and if (as I believe) its stability depends on its integrity, they are entitled to continuance.” (1949, pp. 246-247). Sharks, therefore, have “relative value” due to their critical role in the functioning of marine ecosystems. (Callicott, 1980, pp. 324-325).

Next, relying on Darier (1999a, b), Smith (2001), and Foucault (1978, 2003), I problematize the Aquarium’s strategies for promoting the valuing of sharks. Simultaneously naturalistic and anthropocentric, the institution engages

in a kind of biopolitical speciesism, akin to Foucault's (1978, 2003) biopolitical racism, which confers the State (or Institution) the power to discipline and regulate life; these practices authorize the death of some beings (the biologically inferior) in order to "make live."⁴⁸ I argue that the bodies of the sharks captive at the Aquarium are not only aestheticized in order to save the disembodied shark (constructed as biologically superior), but that they are also subjected to a "political death" as they are relegated to the category of biologically inferior and ostracized from life in the wild (Foucault, 2003). To conclude, I criticize conservation education research for its strict humanism and contend that if zoos and aquariums continue to capture and biopolitically regulate nonhumans in the service of conservation ends, then part of the public conservation education project should embed knowledge of not only the violence humans inflict on animals in the wild, but also that which is perpetrated against wild animals in captivity.

Shark Lagoon Exhibit Background and Description

The Shark Lagoon features two main sections: three shallow, interconnected touch pools housing the Aquarium's small (three feet or less) sharks and one massive tank the great sharks inhabit. Above these pools hangs

⁴⁸ I discussed various scholars' definitions of speciesism in the Introduction.

a large, turquoise blue canvas banner that reads, "SHARK LAGOON." The turquoise banner is complemented in color by canvas turquoise tarps that cover and shade, depending on the time of day, the entire exhibit. (See Figure 7). All of the pools are surrounded by rocky formations (similar to a high-end in-ground pool) designed to make the Lagoon appear more natural. The center pool and the far left pool are interconnected and at any given time of day, except during feeding, guests can touch the sting rays (Pacific cownose ray and reticulate whip ray) and medley of full-grown female sharks (epaulette, white-spotted bamboo, brown-banded bamboo, and zebra sharks) that inhabit these pools. The sharks tend to nestle close to each other, making it difficult, but not impossible, for guests standing on the opposite side of the pool to interact with them. Staff, not entirely sure why they do this, theorize it makes a group of small animals, much like schooling fish, appear larger to predatory species. Other staff describe them as "napping" when they exhibit this behavior, only interrupted during one of the scheduled feedings throughout the day or when staff gently lift a shark to the surface for humans to have body-to-body contact. At the time of feeding, staff announce a "no touch time," encouraging guests to remove their hands from the water to avoid being accidentally bitten by a hungry shark anxious to gobble up the bits of restaurant-quality seafood staff fling into the

water. Because the scavenging tropical fish cohabitating with the sharks and rays have fragile skin and gills, the Aquarium forbids guests from touching them. Staff on the mic regularly remind guests of this prohibition.

To the right of these two interconnected pools (if one faces the Shark Lagoon), is a smaller pool that houses baby bonnethead sharks (approximately one foot in length), tropical fish (as cleaners), horseshoe crabs, and various conchs. The baby bonnethead sharks, unlike the epaulette, bamboo, and zebra sharks, are obligate ram ventilators and must constantly swim in order to flush vital oxygen into their gills to breath. Guests often find baby bonnetheads difficult to touch due to their continual motion, though they are permitted to do so. These sharks, unlike the smaller sharks, cannot reside their entire lives in these pools. Though described by staff as smaller hammerhead sharks, bonnetheads reach up to five feet in length, making the small, shallow pool unsuitable as a permanent habitat. Guests may also touch the conchs and horseshoe crabs, but not the tropical fish.

Directly behind these shallow pools the Aquarium houses its larger sharks in a huge tank that resembles an in-ground swimming pool.⁴⁹ Guests are able to

⁴⁹ These larger sharks include a blacktip reef shark, a freshwater sawfish, a sand tiger shark, a sandbar shark, a whitetip reef shark, and a zebra shark.

view these sharks through two means: (1) behind the far right shallow pool through a top-open area (2) to the left of the far left shallow pool through plexiglass in a down sloping viewing area. Guests may “interact” with some of these sharks during feeding time as they watch Husbandry staff give a live “show” or if they purchase a “Shark Encounter” experience, which allows them the opportunity, while being supervised by a staff member, to feed one of the larger sharks. They are not permitted, however, to touch these sharks in the same manner they would touch the smaller sharks housed in the shallow pools.

Figure 7. The Aquarium’s Shark Lagoon Exhibit; a crowded day in July 2012.



Staffing the Shark Lagoon

The Shark Lagoon is mostly staffed throughout the day with volunteer educators.⁵⁰ The number of staff watching over the Lagoon fluctuates based on the number of guests expected (the Aquarium produces “expected visitorship” figures each day) and the number of volunteer staff available.⁵¹ During my 14-month study there, I witnessed days with only one or two staff members and a handful of guests, and other days with four or five staff members and hundreds of guests. A small staff area called the “Volcano,” located directly behind the center shallow pool, serves as the site where volunteer staff members stand or sit when they talk on the microphone to guests about the various animals that inhabit the Lagoon. Unlike many of the other large exhibits at the Aquarium, staffers speaking at the Shark Lagoon do not have a script. During volunteer training, paid staff teach them a variety of facts about the sharks, but which of

⁵⁰ Until 2011, paid Presenters staffed the Lagoon. As a cost-saving measure, Aquarium management decided to hand the exhibit over to volunteers to reduce the number of paid staff needed each season.

⁵¹ The number of volunteer staff available fluctuates based on the day of the week and sometimes according to time of day. Since volunteer staff members tend to work one day per week (usually the same day), the staff have “Monday” crews, “Tuesday” crews, etc. The exceptions are Saturday and Sunday, which have different crews for the first, third, and fifth Saturdays/Sundays and for the second and fourth Saturdays/Sundays. Some of these crews are larger than others, so different days of the week have varying numbers of volunteer staff available to staff the Lagoon. In addition, late afternoons sometimes have thin volunteer groups, as many prefer to be off “work” by 5 o’clock pm. A minimum of one staff member must be present at all times to supervise guests.

these facts volunteers share with guests and in what order, is generally up to the individual staff member.⁵² All staff members on the microphone verbally remind guests that they are to touch the sharks with two fingers (one finger is a “poke” and a whole hand is a “grab”) and most visually demonstrate the proper method by holding out two fingers as they make a swaying motion to simulate petting an animal. Guests encounter the “two-finger” touch rule at every exhibit allowing physical interaction, except the Lorikeet Forest where guests are advised not to touch the birds at all.

In addition to the person staffing the Volcano, a staff member may “wade” in the center pool, some may wander around to chat with guests and monitor their behavior, and another might post up at the Shark Cart, which is typically stationed behind the far right shallow pool.⁵³ The staff member “wading” dons the typical Aquarium uniform (navy blue shirt and khaki pants or

⁵² These facts include, but are not limited to: (1) Some sharks are egg-layers and some give live birth. The sharks in the shallow pools available for touching are egg-layers. These egg cases are called “mermaids’ purses.” (2) Sharks have rough skin called dermal denticles. (3) Most sharks in the world are smaller than three feet in size, despite popular conceptions that they are all the size of great white sharks. Eighty percent of sharks are less than eight feet in length. (4) Some sharks, called obligate ram ventilators, have to swim constantly in order to breath. (5) Sharks are finned in some parts of the world, which is contributing to their demise. (Staff are instructed in their volunteer handbook, however, not to mention the specific countries that fin sharks and consume their flesh, but this rule is occasionally broken). (6) Sharks have skeletons made of cartilage, so almost no fossils of sharks exist.

⁵³ Occasionally, the Shark Cart is also stationed inside the Great Hall. More typically, it is located outside in the Lagoon. On short-staffed days, the Shark Cart is not staffed and remains in the Education Office, called the Arc.

shorts) along with rain boots, since s/he is partially submerged in the warm, salty water with the sharks. The wader primarily teaches guests about the sharks and lifts sharks to the surface of the water so guests who cannot reach deep in the pool can touch them. Guests in wheelchairs or small children, for example, typically cannot stretch their arms far enough into the water to touch the sharks. The staff member working the Shark Cart chats with guests and allows them to touch shark jaws (most of which are plastic replicas) and real shark teeth.

“Big Trop” Exhibit and Blue Cavern Exhibit Description

“Big Trop,” staff’s colloquial term for the gigantic tank, is the Aquarium’s largest exhibit. Located in the Tropical Pacific Galley upstairs, guests can view exhibit animals from three locations or “windows” inside. It holds 350,000 gallons of water and houses over a thousand animals, including fish, corals, sea turtles, and zebra and blacktip reef sharks. The exhibit, modeled after “Blue Corner” off the coast of Palau, is a replica of a well-known dive site. Several times a day paid presentation staff (on the “dry side”) and volunteer dive staff (on the wet side) give 10 to 15 minute shows at the exhibit’s largest “window.” The paid presentation staff doing shows are usually entry-level, part-time staff members.

The Blue Cavern Exhibit, located downstairs in the Great Hall, is modeled after Santa Catalina Island's Blue Cavern Point, a kelp forest ecosystem. The exhibit, spanning three stories, contains 142,000 gallons of water and houses leopard sharks, California moray eels, California sheephead, giant sea bass, garibaldi, and other organisms. Like the Big Trop exhibit, shows occur here several times per day as a paid presentation staff member and volunteer dive staff member dialogue for approximately 10 to 15 minutes.

During both of the shows, dive staff wear special underwater microphones along with the rest of their gear. Their voices are audible, but often muffled as staff have to coordinate breathing and speaking. Both shows are scripted (unlike Shark Lagoon), though presenters and dive staff often ad lib as they highlight stories and facts they consider particularly salient or interesting. During the busy season (summer) staff give more shows per day to accommodate the increased number guests.

Aesthetic Nature Renovation

Though the Aquarium is not a conservation group per se, its mission statement makes it clear that "conserving natural capital" is a priority. Following Yusoff (2011), I focus on the Aquarium's discourses as a form of "aesthetic practices" as I ask: "How do beings come into being?" (pp. 579-580) and, more

specifically, how does the Aquarium's disembodied shark come into being?⁵⁴

Aquarium sharks, whose bodies have been captured and regulated, and Aquarium staff members actively participate in what I call, drawing on Rolston (2002), "aesthetic nature renovation."⁵⁵ Staff do this by assembling a hodgepodge of attractive features—cuteness, athletic grace, toy-likeness—and eschewing negative features—the ability to shred the flesh of other organisms, including humans—thereby fashioning a beast worthy of saving.⁵⁶ These processes, "aesthetic" because they explicitly induce visitors to value sharks through both aesthetic capacities and aesthetic properties, are also "renovative" in that they seek to expunge visitors' prior conceptions of sharks while simultaneously imagining new ones. The small sharks, as an integral part of this

⁵⁴ As I explain in the Introduction of this dissertation, I did not initiate my study asking these kinds of questions, but realized after I began ethnographic fieldwork that these were important questions to ask—and to attempt to answer.

⁵⁵ In this chapter, I focus on the discourses of staff members who utilize such aestheticizing practices; not all staff do this because of the un-scripted nature of on-mic discourses at the Aquarium. My volunteer sample consisted of 20 staff members, 10 who took shifts at the Lagoon while I was present doing fieldwork. Not all volunteer staff members go on the mic at the Lagoon, as they have a certain degree of freedom in choosing tasks they prefer. Of the ten volunteer staff members I closely observed at the Lagoon or interviewed, half utilized or described utilizing aestheticizing discourses.

⁵⁶ Recall that none of the sharks at the Aquarium hunt for food, which means that guests never have to view sharks ripping other animals to pieces. In theory, the sharks *could hunt*, as they inhabit both Blue Cavern and Big Trop with fish they might consume in the wild. Sharks do not hunt, however, because they are well fed by staff. Small (2012) points out that being a powerful predator is typically an attractive trait; the attractiveness diminishes, however, when the animal is viewed as predator of humans.

assemblage, actively participate in re-inventing the image of the shark by allowing humans to touch them.

“They cuddle” and “They’re like wind-up toys”

The bodies of the small sharks in the shallow pools, as a form of Foucauldian biopower (Foucault, 1978, 2010; Luke, 2000a, b; Rabinow & Rose, 2006), serve as the archetypes for the “cute,” “cuddly,” and “small” shark the Aquarium constructs for guests as staff and sharks work to entreat human aesthetic capacities through highlighting shark social and physical aesthetic properties (Rolston, 2002).⁵⁷ Guests are permitted to gaze upon *and* touch these sharks, due to the exhibit physical structure, which confines sharks and allows visitors to approach from virtually any side of each of the three pools, except the back of the exhibit. The small sharks tend to gather in particular sections of the pool, which the staff often describe as “cuddling,” “huddling,” or “piling up” as sharks “nap” or work to “appear larger to a predator.” In the excerpt below Candy, an Education staff member, describes the sharks’ behavior to visitors at the Shark Lagoon during a live feeding:⁵⁸

⁵⁷ Foucauldian biopower and its application to non-human animals are introduced in an earlier chapter of the dissertation.

⁵⁸ During this live scatter feeding, bits of restaurant-quality seafood are tossed into the water for any shark to grab. Staff feed larger sharks and ill or injured animals via target-feeding, where food is placed on the end of a pole and given to a particular animal.

Excerpt 4.1: January 13, 2013
Candy at Shark Lagoon

And they actually huddle along the walls like that for...safety purposes. In the wild, I mean a three foot shark isn't very big in the wild. So to protect themselves, they huddle just like that so that predators actually think that it's a bigger animal, except just one small shark. This is how they protect themselves from predators so that they live longer...So they do this all the time. We say that they're napping. We say that they're hugging each other. But it's basically just so that they can keep each other safe.

Mike, an Education staff member, similarly describes the sharks' benevolent sociality during feeding time in the pools:

Excerpt 4.2: November 12, 2012
Interview with Mike

There have never been fights over the food [during a scatter feeding]. There's more than enough...sharks, but they like to cuddle and they get together in different parts of the Lagoon. And the most current theory is they do this to appear larger to a predator than they are. If the predator attacks anyway, they scatter in a billion directions, give the predator a heart attack, and they get away.

These passages illustrate how Aquarium staff, together with the sharks, construct a beneficent "shark" as they appeal to human aesthetic capacities—sharks "cuddle" or "hug," making them attractive or aesthetically pleasing to watch. Cuddling and hugging, however, are also social aesthetic properties. Sharks demonstrate these behaviors in an objectively real sense, as evolution has

bestowed sociality upon them (even in the absence of human interpretation). This connection between aesthetic capacities and aesthetic properties, according to Rolston, is critical to translating aesthetic valuing into intrinsic valuing, "This is ecological aesthetics, and ecology is vital relationships...This 'interest' does lead me to care about its integrity, stability and beauty" (2002, p. 139).

Amiable shark-shark relations, coupled with guests' ability to touch sharks, also create the *possibility* of human-shark social relationships for guests at the Lagoon, aimed at characterizing a shark worthy of being saved.⁵⁹ Candy illustrates these possibilities in the interview passage below, as she responded to my question about teaching at the Aquarium:

Excerpt 4.3: January 13, 2013

Candy at Shark Lagoon

So like the sharks we have in Shark Lagoon. When we tell them it's okay to touch, they're like, really? Why? They're cool, you know? We're in there all the time when we're wading in the water. They don't come and like bite us because we're in there. They'll come and like snuggle and try to figure out what our legs are doing in

⁵⁹ The possibility of emotional human-animal relationships is also traditionally reserved for mammals and birds in Western conservation discourses. Bekoff (2007), for example, describes the importance of animal emotions to human health and happiness. His cases, however, all involve mammals. One notable exception is Porcher's *My Sunset Rendezvous, Crisis in Tahiti*, where the author, a wildlife artist turned conservationist, describes the social relationships she developed with sharks in a seven-year ethological study in Tahiti.

there [when staff wade in the small pools with the small sharks]. But, there's never been a shark that would purposely come up to us and bite us. So, I think a lot of that is trying to get the guests to understand that these animals are safe. And the purpose of the Aquarium is to show people that animals need our help more than anything. Instead of us trying to kill them because they look scary. That's the majority of what I try to tell them when I'm up there.

Candy simultaneously describes a shark safe to touch ("They don't come and like bite us...") and one interested in relations with humans ("They'll come and like snuggle and try to figure out what our legs are doing in there"). Here, she draws on aesthetic capacities; humans at the Shark Lagoon desire social relationships with the small sharks, who appear to reciprocate, aestheticizing the small sharks.

Following Rolston (2002), however, sharks' apparent eagerness to socialize with humans is *not* an aesthetic property; one cannot be certain interspecies sociality (particularly with humans) is an evolutionary trait objectively there (in the neural matter of the shark) without human presence. In Rolston's (2002) view, translating shark *intraspecies* sociality from an aesthetic property (evolution has bestowed intraspecies sociality upon sharks) to an aesthetic capacity (humans find watching these relationships aesthetically pleasing) could potentially lead people (guests) to locate intrinsic value in sharks. Shark *interspecies* sociality (*i.e.*, desiring social relationships with humans) certainly

appeals to aesthetic capacities, but not on account of any aesthetic property because a shark's desire to socialize with humans is not something objectively there, in a shark, prior to human contact and interpretation.⁶⁰ It is questionable, therefore, if these arguments can lead to intrinsic valuing. The implications of this flaw are important; the Aquarium clearly aims to inspire people to care more about the plight of sharks. Recall that Candy emphasizes that sharks *deserve* human assistance ("The purpose of the Aquarium is to show people that animals need our help...") precisely because they are docile creatures desiring human interaction. While aesthetic valuing (in an artistic sense) matters, "it may disorient us and leave us with too weak a locus of value to protect all the values in jeopardy" due to its strict focus on human interests (Rolston, 2002, p. 128). Further, in contriving an "Other" fit only for human consumption, it "assign[s] a very limited conception of biotic citizenship" to them (Smith, 2001; Yusoff, 2011, p. 586).

The Aquarium not only capitalizes on discourses of sharks "cuddling," "snuggling," and pursuing relations with humans, but also describes how they

⁶⁰ Shark sociality with other sharks is an "objectively there" evolutionary trait (aesthetic property), developed over millions of years as sharks have learned to get along with their own species in the wild. Shark-human sociality is socially constructed by humans (aesthetic capacity). There is also no scientific evidence to support a claim that sharks have evolved to be dependent on socializing with humans, as in the case of dogs or cats.

manifest “cuteness” as they appear like “wind-up toys” and “play tag” (particularly the baby bonnetheads). Sarah, on the microphone at the Shark Lagoon in the passage below, describes their “toy-like” appearance as she converses with guests. Shortly after, Rose highlights their locomotion as they “play tag”:

*Excerpt 4.4: December 8, 2012
Sarah and Rose at Shark Lagoon*

Sarah: There’s one baby nurse shark in here. The last I saw he was hiding out over there...and there are two baby bonnethead sharks in our little Lagoon over here...They just put them in there and they’re super cute. They’re just getting used to being out here. So, they look kind of like little wind-up toys swimming around.

A few moments later...

Rose: But they’re, did you get to see our little baby bonnetheads? They just brought them in yesterday. There’s one that’s going to be coming along. That’s a bonnethead shark. Two babies...There they go. They’re playing tag. Yeah. Aren’t they cute? I think they will lighten up afterwards. A lot of them are more of a grayish color. They are very, very, very cute. We’re all so excited.

Like Rolston’s “graceful” impala, beautiful because of its motions that please humans (aesthetic capacities) and its musculature (aesthetic property; an objective evolutionary achievement) sharks are touted as “cute” and like “wind up toys,” suggesting athleticism, grace, locomotion, virtuosity, speed, and an ability to entertain (aesthetic capacities) (Rolston, 2002; Small, 2012). These

aesthetic capacities are ignited by sharks' small, streamlined bodies and fins (aesthetic properties)—evolutionary achievements invoking an appreciation for sharks and their role in the biotic community (Rolston, 2002). Due to the connection between "art" and "biology" or aesthetic properties and aesthetic capacities, these discourses (in Rolston's, 2002 view) could incite intrinsic valuing, though I will problematize them in concluding sections of this chapter.

**"Critically important members of the marine ecosystem"; not
"human-eating beast"**

Sharks, generally considered apex predators in their respective ecosystems, stabilize prey populations and maintain ecological balance. When these prey flourish unchecked, they often unleash drastic and far-reaching consequences. For example, great shark population declines in the United States' eastern seaboard between Cape Cod, Massachusetts and Cape Canaveral, Florida, have caused mesopredator populations (particularly cownose rays) to explode and destroy bivalves and habitat (Myers, Baum, Shepherd, Powers, & Peterson, 2007).⁶¹ Scientists believe, therefore, that sharks perform

⁶¹ "Great" sharks in this study included sandbar, blacktip, tiger sharks, scalloped hammerheads, bull, dusky, and smooth hammerhead. As cownose rays destroy epibiotic bay scallop populations, it is likely they will begin to harvest infaunal bivalves, destroying seagrass that serves as a nursery for other organisms.

important ecosystem services by stabilizing food webs.⁶² In *The Land Ethic*, wildlife manager, forester, and environmental philosopher Aldo Leopold illustrates the ensuing mayhem when “larger predators are lopped off the apex of the pyramid”: “Domesticated species from other lands are substituted for wild ones, and wild ones are moved to new habitats. In this world-wide pooling of faunas and floras, some species get out of bounds and pests and diseases, others are extinguished” (1949, p. 254). Thus, the concern with the sharks’ ecological importance, predicated on conservation science, spurs discourses at the Aquarium grounding the shark’s value in scientific holism, or “the interrelatedness of organisms in natural systems and the connections between those systems” and axiological holism, which “ascribes value [to an organism] on the basis of usefulness to the biosphere” (Marietta, 1995, pp. 55-58).

The excerpt below depicts a “Blue Cavern” dive show at the Aquarium, where a Dive staff member swimming in the exhibit chats about sharks with an Education staff member posted outside the exhibit.⁶³ Both the diver and the

⁶² The notion of “ecosystem stability” is fraught with criticism, however. Hettinger & Throop (1999) argue, for example, that there is substantial scientific evidence documenting ecosystem instability. They suggest valuing “wildness,” which could be contextually-defined.

⁶³ Blue Cavern is modeled after Blue Cavern Point, a kelp forest along the northeastern coast of Santa Catalina Island. At the Aquarium, it is a large rectangular tank located in the Great Hall directly in front of entrance. Various organisms, including the once endangered giant sea bass,

Education staff member, Charlotte, construct a valuable “shark” for guests, due to its role as apex predator:

*Excerpt 4.5: December 10th, 2012
Charlotte at Blue Cavern Dive Show*

Charlotte: That’s right. That’s very important. I want to mention before we go, we didn’t talk about the leopard sharks and I think they are so important to the open ocean as apex predators. They keep the ecosystem in balance by killing the sick and dying animals.

Similarly, a placard flanking the front side of the Shark Lagoon entitled “Why are Sharks Important” explains:

*Excerpt 4.6
Placard at the Shark Lagoon*

Sharks are apex predators, or predators at the top of the food chain. These apex predators play an important role in ensuring healthy and diverse populations by feeding upon weak and diseased marine animals. When apex predators such as sharks are removed from an ecosystem, an imbalance can result. An unbalanced ecosystem can lead to population explosions, disease and shortages in food sources.

Grounded in ecocentric philosophy (Callicott, 1980, 1989; Leopold, 1949), this discourse shifts the conversation from the perceived savagery of individual sharks to the disembodied shark’s overall role in maintaining ecosystem balance,

the barracuda, and leopard sharks inhabit the exhibit. The Blue Cavern Dive show takes place at several scheduled times throughout the day and is scripted.

an extrinsic value. These statements contradict two key messages the Aquarium promotes: (1) the overall valuing of sharks as apex predators; staff highlight how sharks *do not* consume the fish in the exhibit, suggesting they are not predators and (2) the idea that sharks never desire to consume humans; staff emphasize Aquarium sharks' dissociation with humans as food simply because of the method utilized to feed them. The Big "Trop Dive" Show excerpt depicted below demonstrates these contradictions:⁶⁴

*Excerpt 4.7: November 6, 2012
Jeff at "Big Trop" Dive Show*

Jeff: ...Our sharks do not associate our divers with food. They don't see the fish in there as food. We actually feed them above and there's a big plastic piece that we go under water. The sharks know when that goes under the water they are going to get fed. And they are target fed from above.

The diver mentions how the sharks are target fed.

Jeff: Yeah, with tongs. Don't forget about the tongs. It's very important.

⁶⁴ This excerpt is typical of a Big Trop Dive Show, which is scripted. So while I refer to the discourses Jeff constructs, these are discourses any given paid Presenter might construct following the show script. As Huijer points out in "The Aesthetics of Existence in the Work of Michel Foucault": "The speaker or writer does not precede his spoken or written words, he is merely a vehicle, a 'functional principle' by which it is stipulated in our culture what is and is not said, or what is or is not written down and distributed" (1999, p. 63). The Presenter at the Aquarium, as an individual, does not contradict the Aquarium's discourses; rather, the Aquarium builds contradictions into its discourses that staff members ultimately articulate to guests.

In the excerpt, Jeff strips the shark from its role as apex predator, which directly impugns one of the Aquarium's most prominent reconstructive shark discourses. He does this to counteract the image of the bloodthirsty shark the Aquarium presumes many visitors expect, but in so doing, diminishes the extrinsic value of the shark the Aquarium works to establish through accentuating shark-as-apex predator.

Jeff also underscores the importance of sharks not associating exhibit divers with food. As I discuss below, one of the dominant Aquarium shark discourses involves convincing guests that sharks *absolutely* do not desire to consume humans. Attacks only occur as cases of mistaken identity. (See Figure 8). Further, staff emphasize that sharks do not find the taste of human flesh palatable. As Jeff explains the feeding process to guests above, he implies that Aquarium sharks do not wish to eat their human diving companions because of the method utilized during feeding, not because sharks are implicitly disinterested in eating humans. This rhetoric implies that sharks *can* attack and harm people, despite the prevailing message that they do not.

A few staff members recognize these contradictions and subtly resist the Aquarium's mainstream discourses. Though the Big Trop Dive Show is scripted,

Presenters have the opportunity to infuse bits of their own talk, as Fred illustrates below conversing with the diver, Vic:

*Excerpt 4.8: February 10, 2013
Fred at "Big Trop" Dive Show*

Fred: Well, you know, Vic, there is so much to do about sharks and things like that and people are very fearful of sharks. And in reality, we should all be, maybe a little fearful of things that we don't know that much about. But the reality is that you have a far greater chance of maybe having a vending machine fall on you than you ever do of being attacked by a shark. But, you know, we want to always caution people. If you encounter an animal that you are not familiar with, whether it's out on land or out in the ocean, the best and safest thing to do is simply get out of the water for a little while and get to a safe area. Or, just remain nice and calm and still. Very much like what Vic is doing. You'll see these sharks going all around and underneath Vic and pass Vic, but you don't have any qualms about being in there at all, do you Vic?

Vic, like the diver co-presenting with Jeff in *Excerpt 2.7*, confirms that he feels safe in the tank because the sharks are fed with poles and do not associate people with food. Fred acknowledges the threat of shark attack is rare through comparison ("people have a greater chance of being hit on the head with a vending machine"), and slightly retracts, suggesting that should guests encounter a shark in the ocean, they ought to exercise caution. Fred, the only Aquarium Presenter I observed advancing such admonitions, suggests that sharks are not the totally innocuous beasts mainstream Aquarium rhetoric

purports. Nature writer David Quammen asserts in his chronicle of man-eating beasts, *Monster of God*, that downplaying the threat or seriousness of animal attack tends to come more easily to those who do not regularly co-exist with flesh-eating animals (2003, p. 146). Humans living with them must confront the perpetual fear that they or family members may be attacked or eaten.⁶⁵ Fred, having decades of experience working directly with animals, is more trepidatious than his Education colleagues, who sometimes have little real-life experience with wild animals.

“When Human Met Shark”

As discussed in the preceding section, the shark is constructed as an important apex predator in marine ecosystems. An integral aspect of this discourse is the shark as predator of *nonhuman* species. While the popular media, in movies like “Jaws,” and in documentaries like “Shark Week” construct sharks as *human-eating*, the Aquarium envisions a benevolent *flesh-eating* beast who maintains ecosystem balance and mistakenly attacks humans on rare occasions, mainly due to poor vision or the need to defend.⁶⁶ The passage

⁶⁵ Sharks do not typically consume entire human bodies, though their bites can be fatal. Quammen (2003) chronicles the lives of people living with crocodiles, known to gobble up in tact bodies of humans and other large animals.

⁶⁶ While there are documented shark attacks, it is likely that the “man-eating” status of sharks in popular film has been exaggerated.

below, a typical conversation Aquarium staff members have with guests over the microphone at Shark Lagoon or at the Shark Cart, illustrates how staff construct shark attacks as cases of mistaken identity. While guests interact with and learn about *small* sharks, Rose seizes the opportunity to reconstruct the *great* shark, whose perceived viciousness is not attributed to maleficence, rather an acquired evolutionary trait—poor vision causing great sharks to mistake humans for seals or sea lions:

Excerpt 4.9: December 8, 2012

Rose at Shark Lagoon

Rose: The sharks in here are not babies...These are full grown bamboo sharks. Contrary to popular Hollywood dimensions, this is the average size of 60 to 70 percent of all sharks in the world. We've all been taught to think that they are like great whites and that they are all hunting us, which they are not. This is the average size of them...You see this one? The one that is beautiful that is coming toward you? That is an epaulette shark...I want to show you guys a picture...

Rose goes over to the Shark Cart and grabs the laminated cartoon drawing of a person in a wetsuit on a surfboard who, to a shark spying the person from below, appears seal-like. (See Figure 8).

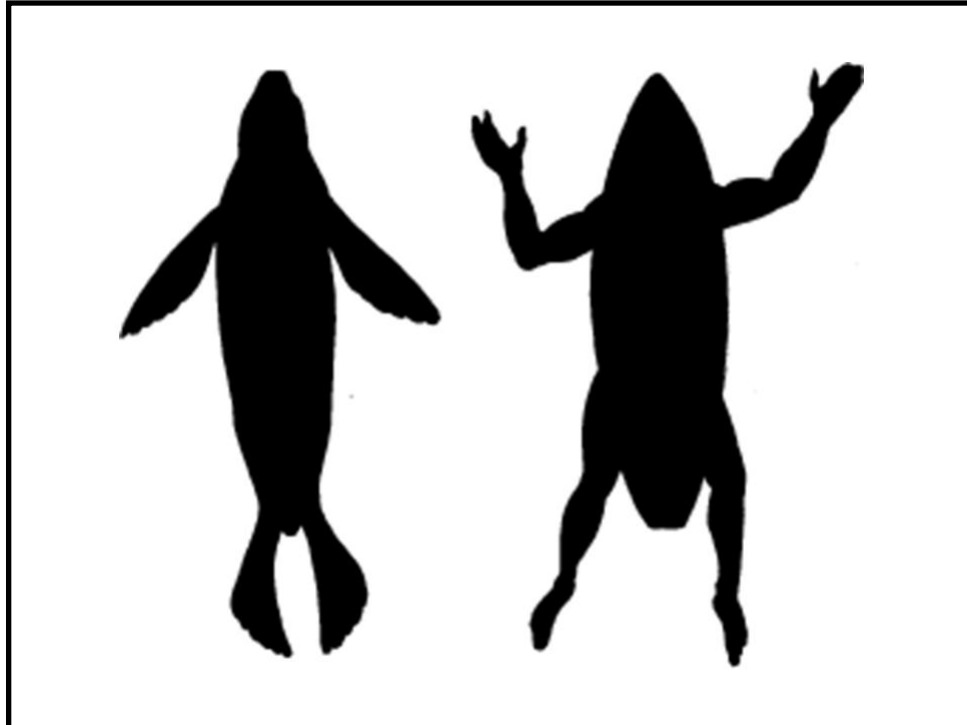
Rose: We get a lot of questions here at Shark Lagoon about shark attacks, especially white shark attacks. So somebody brought this to have us help and have you understand why that would happen. This is what a great white shark would see under the water as it's looking up. It would see a seal, which is what it likes to eat. And a seal is black and from underneath it is going to look black to him. Next to that is a surfboard, with a human being on the surfboard.

And the human being is probably wearing a wet suit, which is black. And if you were to put his arms down like that, as he's going like that through the water, that's why there is a mistake made. Great whites do not purposely go after human beings. In fact, it's been proven that if they take one bite, they know they didn't get a seal; they're not going to do anything else to you. That's the good news. The bad news, usually they bite you badly enough, you know, it's not very pretty. But, it's not on purpose. So you can see the difference on that...

In this passage Rose asks guests to challenge popular assumptions about sharks (their large size, their viciousness). Visitors are encouraged to do this through “becoming” shark for a brief moment. As they touch the small sharks, staff ask guests to imagine life as a visually-challenged, famished shark gazing upon what appears to be a sea lion, seal, or sea turtle (Haraway, 2008; Pedersen, 2011). (See Figure 8). In this multispecies entanglement, humans have the opportunity to re-imagine their relationship with the *disembodied shark* the Aquarium constructs, through a touch experience with an *individual* shark. In *When Species Meet* Haraway criticizes Derrida (2003) for “not becom[ing] curious about what the cat might actually be doing, feeling, thinking or perhaps making available to him in looking back at him that morning” (2008, p. 20). Though Derrida’s encounter and subsequent writings were based on interactions with a companion animal (*i.e.*, his cat), the idea that humans ought to “look back” at sharks is advocated at the Aquarium’s Shark Lagoon exhibit. Guests not only

view sharks, but *touch* them as they imagine what life might be like for them in the rough waters of the open ocean.

Figure 8. Diagram staff utilize at Shark Lagoon and the Shark Cart demonstrating to guests how sharks attack people through “mistaken identity.”



Staff explicitly describe the touch experience as one that facilitates the construction of the shark the Aquarium imagines for guests—an innocuous, friendly and mischaracterized beast. In the following interview excerpt I chatted with Helen, a paid staff member, about what visitors do at exhibits; she segued into a discussion about touching:

Excerpt 4.10: September 10, 2012
Interview with Helen

Touching is a great a way to, you know...a great way to talk to people. Especially, I love the people who are afraid to touch. Encouraging them and getting them to touch is something I love to do (laughing). Parents love it. It's a great way to uh, it's got a number of benefits. You know, you have encouraged somebody to experience their world, break down myths and misconceptions, especially with respect to sharks.

The focus on the touch experience of the *human* is directly linked to “breaking down myths and misconceptions” because it allows the educator to dialogue with guests as they have positive, embodied experiences with sharks.

The issue with this discourse lies with the emphasis on “becoming” the *disembodied shark* and not the *individual shark* with which the guest corporeally interacts. Recall that guests touch small sharks confined to a shallow pool, not the large sharks with which they are asked to “become with” and “learn with” (Haraway, 2008; Yusoff, 2011). This shifts the focus from the real-lived experiences of the small sharks to that of the disembodied shark inhabiting the ocean. Bioregulated so their bodies are available to guests (Foucault, 1978, 2010; Luke, 2000a, b; Rabinow & Rose, 2006), small sharks have no shelter inside the pools; those not interested in physical contact have no refuge should they prefer not to interact with people. Sharks can resist touching by swimming

to a different location, where another touch-eager person possibly awaits, or they can gather with other sharks.⁶⁷ Those sharks at the bottom of the huddle, typically less available for touching, locate a few moments of solace before their companions swim away and they become susceptible to human reach once again. In the concluding sections of the chapter I will discuss the implications of this problematic, working to re-imagine a more “worldly” space (Haraway, 2008).

While Rose, in Excerpt 2.9 above, attempts to convince guests that sharks mistakenly attack humans due to poor vision, Kristal modifies typical staff verbiage as she tries to persuade a concerned little girl at the Shark Cart, Susie, that sharks only attack when “bothered by people.” On this particular day, the Shark Cart was stationed indoors in the Great Hall. On other occasions, the Cart is parked outside near the Lagoon. Later, Kristal segues into a discussion of mistaken identity:

*Excerpt 4.11: February 25, 2013
Kristal at the Shark Cart*

Kristal: So most shark attacks, and there are only about 30 per year, there are only about 30 shark attacks a year, but there’s—

⁶⁷ Though staff indicate that the sharks huddle to appear larger to predators, it is plausible that they also huddle to circumvent interacting with humans, whom they may perceive as predators.

Susie: Which one is the most dangerous one?

Kristal: Well, none of them are dangerous unless you are messing with them.

Susie: I know, but which one, would be more dangerous?

Kristal: Where there are only about five that would mistake us like that. The Great White is one of those, the Mako is one, but see how you are on a surfboard or swimming you would look like a seal? As soon as they take a bite, though, and realize that you're not blubber...they let go...

Susie: Only if you're messing with them. Eh eh (as if she were poking them).

Kristal: Yeah. Only if you're messing with them.

Kristal's response to Susie in the above passage exemplifies most Aquarium staff members' commitment to re-educating the public about sharks. Young children, heavily influenced by the media, are typically more difficult to convince than adults.⁶⁸ Kristal began the usual conversation by attempting to persuade Susie that shark attacks are rare (only 30 per year), but Susie persisted in

⁶⁸ While Kristal was talking with Susie, for example, another volunteer staff member, Piper, chatted with a young boy, Jesse, about shark attacks. After working to refute his negative conceptions of sharks by displaying the diagram in Figure 3, Jesse refused to relent, as my following fieldnote excerpt illustrates:

Excerpt 4.12: February 25, 2013

When she showed him the caricature of the seal and surfer on the surfboard, the boy stared her straight in the face and told her that he saw a shark on TV look right at a person before attacking him. Brenda looked like she didn't know how to answer and told the boy that animals' goals in life are to stay alive so they have to eat other animals.

describing them as “dangerous.” To counteract Susie’s negative perception, Kristal shares that sharks only hurt people when they are “messed with,” which Susie finds more understandable and believable than “there are only about 30 shark attacks a year” and they “let go” when they realize “you’re not blubber.” Susie objected fervently to the idea of a benevolent shark, possibly because she was not able to “become with” the shark and “look back” (Haraway, 2008). While the Shark Cart displays shark jaws and plastic replicas of shark jaws, a concurrent touch experience with live sharks is absent unless the Cart is stationed outdoors near the Lagoon.

To further convince guests of the shark’s disinterest in harming humans, staff members physically interact with both the small sharks and great sharks, demonstrating to guests their own attempt to “become with” (Haraway, 2008). They wade with the sharks in the shallow pools at the Lagoon, partly to lift sharks to the surface so small children and physically-challenged adults may touch them and partly to re-emphasize the sharks’ harmlessness. When asked to elaborate those messages she believes are most important to convey to guests, volunteer Education staff member, Sarah, commented:

Excerpt 4.13: October 23, 2012
Interview with Sarah

Sarah: You know, people view sharks as this menacing, man-eating beast that they really aren't, you know? And I'm walking in there with a hundred little sharks and you can pet them and they're just sweet and docile and they just want to live their little lives just like everybody else on the planet.

While volunteer staff members like Sarah wade with the small sharks in the touch pools, highlighting their "sweetness" and "docility," (aesthetic capacities) dive staff members actually swim in the large tanks with the great sharks. During shows, they converse with paid Education staff on the "dry side." The excerpt below illustrates typical interactions among Dive staff, Education staff, and animals during the Tropical Dive show. During the Dive Show, staff not only swim with bonnethead, zebra, and black-tip reef sharks, but villainize the golden trevally, a harmless-looking fish, to distract visitors from the predatory sharks: ⁶⁹

Excerpt 4.14: November 6, 2012
Jeff at "Big Trop" Dive Show

Jeff: These little bonnetheads...this is as large as they get. A lot of people think that Hammerheads are aggressive sharks. This is not the case...We talked about how they are not really too aggressive, but there is a group in there that is very aggressive when it comes time to feed and that is going to be, one of them is hangin' out right down there (points to where they are in the tank). The rest of

⁶⁹ I summarize the diver's speech from fieldnotes, as I had permission to audio-record and utilize the Education staff member's exact words, but not the permission of the diver.

the motorcycle gang is going to be coming later on. That's the golden trevally.

Isabel, the diver, points out a golden trevally approaching her from behind.

Jeff: There we go. Wow, right there. The ones with the black, vertical stripes on them. They also have that little yellow trim...And why do I call them the motorcycle gang? Why do we call these ones the motorcycle gang?

Isabel explains that the fish are "ornery" and calls them the "motorcycle gang" because as schooling fish prefer to swim together, like a motorcycle gang travels together. She tells the crowd that when the golden trevallies eat, their stripes get much darker, signaling to other fish it is time to eat. She also shares that they are super aggressive feeders and that the diver who target feeds them does it with a bucket, attempting to make the feed last as long as possible so that the other animals in the exhibit can eat. If the trevallies are not eating, they will bug the other fish while they attempt to eat.

The dialogue above evinces the Aquarium's arguments about mistaken identity.

Not only are guests incorrect in assuming shark malevolence, but visitors err in believing harmless appearances signify innocuous behavior. The image of the "motorcycle gang" confiscating all of the food flung into the large tank conjures up media images of actual motorcycle gangs seizing neighborhoods or towns for their use. This caricature, coupled with divers swimming with the great sharks, re-focuses guest attention on the violence of the golden trevallies and not on the perceived viciousness of sharks. Instead, sharks become the

respectable “sheriffs” who benevolently maintain ecosystem balance for the good of the many.

They don’t all have “puppy dog eyes...”

The tensions between the shark the Aquarium seeks to construct for guests and the popular media image of the shark also unfold in the Aquarium’s gift shop, Pacific Collections. Figure 9 displays two plush toy versions of the shark guests may purchase, one more closely resembling a dolphin (doe-eyed, tucked-under teeth inside a small mouth, and a puffy head and body) and another a shark (eyes set more on the sides of the head, visible teeth, and streamlined face and body).

Figure 9. Shark plush toys available for purchase in Pacific Collections.



While the shop provides visitors a few non-living versions of cute, cuddly, and toy-like sharks for a price (recall these discourses prevail at the Shark Lagoon), the majority of offerings portray the typical media version of the shark with

words like “attack,” “monster,” and “angry”, conjuring visions of human killers.

(See Figure 10).

Figure 10. Typical shark items for sale in Pacific Collections.



Some staff, like Maria, recognize that the images provided in the gift shop contradict the “shark” the Aquarium works to re-imagine. As a new

Education volunteer at the time of our interview, she expressed concern with these discrepancies:

*Excerpt 4.15
November 30, 2012*

Maria: ... I feel like they [guests] come in, especially with the sharks, in an ugly way to see them and then I feel like it's our job to make them see the other way. They get to choose which ones they believe, but it's our job to show them. Look, they're not so bad. They're not so scary like the movies portray.

Teresa: And that's particularly with the sharks, not necessarily with everything else?

Maria: Especially with the sea lions. They're like, "Oh they're so cute. I want to touch them." But, I mean, you can see their giant teeth and they would most likely bite you, rather than a shark that you're touching. He's going to be like—he would get away from you—rather than bite you.

Teresa: So people think that the sharks are going to harm you and they're not and they think that the sea lions are huggable, and they're not?

Maria: Yes (laughing).

Teresa: How do you think it is that people develop those perceptions?

Maria: TV. I mean, I used to think that, too. And it's just TV. You see cuddly little creatures and if you look at the shop [the Gift Shop] itself you see cuddly little animals of sea lions and seals and then the sharks they show the teeth and they make it look really vicious.

Teresa: I see...

Maria: Some of the sharks are cute. Other ones you can just see all the teeth in them. And kids are going to be like, I don't want that. I want a nice one that's going to have puppy dog eyes and everything.

Maria's concerns depict a real affront to the Aquarium's goals of aestheticizing sharks into charismatic megapredators. Not only do staff confront contradictions as they chat with guests expecting to encounter the beasts of "Jaws," but they also have to cope with contradictions within the institution's material offerings to guests, such as toys, games, and books. Particularly interesting in this passage is Maria's comparison of sharks to typical charismatic megafauna, like sea lions. Like Jeff in Excerpt 4.15, who caricatures golden trevallies as "motorcycle gangsters" to show that innocuous appearances do not always equate with benevolence, Maria points to the viciousness of seal and sea lions, who appear cute, but "would most likely bite you." What both of their discourses reveal are the inherent difficulties and contradictions in aestheticizing any aspect of "nature," which I explore in concluding sections.

Theoretical Implications

Despite the Aquarium's attempts to aestheticize sharks, they remain predators indebted to the regular consumption of flesh for their own survival;

and while the size may vary, all sharks possess razor-sharp teeth evolutionarily-designed for this task. In the Aquarium's admirable effort to re-imagine a shark deserving of human care and concern, staff carefully evade these characteristics, accentuating what they believe will appeal to human sensibilities. Rolston asserts that this kind of renovation is customary among artists, "The aesthete repairs nature before admiring it. Landscape artists and architects are like flower arrangers; nature does provide raw materials, but raw nature is quite aesthetically mixed. One hunts, and picks and chooses, to make a bouquet or a garden" (2002, p. 136). He goes on later, however, to challenge the efficacy of this approach in conservation discourses. Utilizing the crane, "an ungainly hulk" not meeting the "pretty criteria" as example, Rolston (2002) contends that humans cannot value the crane based on artistic aesthetic criteria alone; rather, they must develop "a sense of biotic community" with an organism whose evolutionary accomplishments (survival throughout the last 40 million years) are, on some levels aesthetic. More importantly, valuing what is biologically, rather than artistically aesthetic about the crane, suggests that humans can come to intrinsically value what might typically be considered non-aesthetically pleasing aspects of nature.

In his edited volume, *Discourses of the Environment*, Darier levels a scathing critique of what he calls a “naturalistic” environmental ethic, like Rolston (2002) and Callicott (1980, 1989) propose, on the grounds that naturalistic ethics are just more “normative yardstick[s] to impose...on human behaviour and values,” like that of the anthropocentric and post-modern theories they oppose (1999a, p. 217).⁷⁰ Darier’s issues with naturalistic ethics, grounded in Foucault’s (1979, 2003) critiques of universalizing norms, center on how universal claims that “transcend the cultural and the historical” can be leveraged against humans and the natural world (1999a, pp. 217-218). In both the *History of Sexuality Volume 1: An Introduction and Society Must be Defended* (2003) Foucault clearly articulates his criticisms of normalizing practices entrenched in biology, science or medicine, through his “biopolitics,” which grants the State the power over life through “making live”:

For the first time in history, no doubt, biological existence was reflected in political existence; the fact of living was no longer an inaccessible substrate that only emerged from time to time...part of it passed into knowledge’s field of control and power’s sphere of intervention (1978, p. 142).

⁷⁰ Darier broadly defines naturalistic environmental ethics as ethics where “the ‘laws of nature’ are recognized as applying universally, the norms and solutions which are derived from them also claim to be universal, transcending the cultural and the historical” (1999a, pp. 217-218).

Foucault establishes these key connections among the biological, the political, and the power of the State to intervene, which serve as the foundation for Darier's criticisms of naturalistic ethics. For Darier, naturalistic ethics are problematic for their potential to broaden biopolitics to "all life forms" through "ecopolitics," or an "attempt to extend control ('management') to the entire planet" (Darier, 1999b, p. 23).

Darier's (1999a) response, a "Green aesthetics of existence," is entrenched in Foucault's aesthetics of self. According to Darier, Foucault describes "different aspects of ethics as understood since the Greeks" as (1) the morality in which individuals are "normalized"; (2) the morality of behaviors in relation to recommended rules or values; and (3) the "ethics of 'conduct'" or reflexive work on the self (1999a, p. 227). He goes on to argue that a Foucauldian environmental ethic would focus on the *human* self through practices of "'self-reflection, self-knowledge, self-examination' of the existing limits of what constitutes the 'environment' and the individual's conduct *vis-à-vis* the 'environment' and *vis-à-vis* oneself" (1999a, 227).⁷¹ Darier (1999a) stresses that the objective of his Green aesthetics of existence might not actually be to

⁷¹ Note that Foucault did not develop an environmental ethic in any of his work. Darier's (1999a) task, then, is mapping out what a Foucauldian environmental ethic *might* look like.

“save the planet,” but that processes of self-reflection might lead to valuing of the environment or natural world. His focus, then, involves a shift from what he views as a potentially totalizing ecopolitical ethic grounded in naturalism and authorizing the State to intervene in the lives of humans and nonhumans, to an ethics of the individual self. As example at the Aquarium, rather than focusing on the biological aestheticization of sharks, which Darier (1999a) would view as a Foucauldian ecopolitics for its normalizing of the “beautiful” and the “natural” and connecting those qualities to value, a Green aesthetics of self would focus on work to aestheticize the *human* individual through self reflection.

While Darier’s (1999a, b) approach is laudable for its focus on avoiding the potential pitfalls of strictly naturalistic ethics (i.e., possibly ecopolitical ethics a la Foucault’s biopolitics), it is flawed due its foundation in strict humanism. As Smith (2001) points out, Darier’s Green aesthetics of self conceptualizes the environment as incidental to the work of “self-fashioning” making it anthropocentrically reductive (2001, p. 58). Smith (2001), following Foucault (1992) in the *The History of Sexuality Volume 2: The Use of Pleasure*, argues that strictly focusing on the moral actions of the self and not on those actions forged through a “relationship with the reality in which it [the self] is carried out” (Foucault, 1993, p. 28) ignores potential “environmental dimensions” in

Foucault's work (Smith, 2001, p. 59).⁷² That is, Smith (2001) contends that a Foucauldian environmental ethic would not be limited to a Green aesthetics of self (Darier, 1999a); rather, it must also consider the "reality" in which the self lives, i.e., the natural world. He places importance on the recognition of an "Other" (i.e., someone or something in the natural world) "more than and different from me," which is a self-fashioning *in relation* to the natural world. This distinguishes his ethic from Darier's (1999a, b) in that the natural world is not incidental to self-fashioning; it also digresses from naturalistic ethics because of its focus on the human Self (Smith, 2001). His position, therefore, is more of an intermediate stance between Darier and naturalistic ethicists like Rolston and Callicott.

Despite their differing philosophical and ontological commitments, Rolston (2002), Smith (2001), and Yusoff (2011) agree in their cautioning against an anthropocentric aestheticized "Other" fit for human consumption. Smith's "Other," for example, formed through ethical relations resisting desire and possession of the nonhuman, is "more than and different from me." (2001, p. 61). What is problematic in Rolston's thinking and the naturalistic aestheticizing

⁷² Similarly, Smith (2001) develops his environmental ethic through an interpretation of Foucault, among others.

the Aquarium relies on, is that they teeter on “normalizing” biopolitical practices, reducing sharks to aspects of their biology capable of aestheticization and consumption (Darier, 1999a, b; Foucault, 2003). That is, the Aquarium constructs a disembodied shark biologically and aesthetically normalized to human standards of beauty and fitness in order to evoke care and concern for real sharks. However, if value is derived in this manner, then what becomes of those beings who fall short of the aesthetic norm? Rolston (2002) addresses this issue to some degree in arguing that aesthetics can be derived not only through artistic beauty, but also wonder in evolutionary achievements. Following Darier (1999a, b) and his interpretation of Foucault, however, grounding any ethic in the “universal truths” of science (i.e., evolution) is risky due to the potential of ecopolitical management. That is, Darier (1999a, b) would argue that if the value of organisms (including humans) is derived from biologically-based aesthetic criteria then the State (or other entities vested with formalized power) might be granted authority to intervene and manage bodies and populations in order to “make live” (Foucault, 1978, 2003).

It is essential to highlight here, that “making live” at the Aquarium paradoxically involves a Foucauldian “death.” While Foucault (1978, 2003) did not address “speciesism,” or “discrimination against nonhumans” (Midgley,

1983, p. 65) he advanced clear arguments about the role of racism in deciding “what must live and what must die” (2003, pp. 255-257). In his view racism functions to fragment humans, based on biological normalizing categories, into those that can live (the biologically superior) and those that must die (the biologically inferior “Other”). Foucault’s “murderous functions” of the State or other institutions vested with State-like power do not simply involve killing, but other forms of death such as “exposing someone to death, increasing the risk of death for some people, or, quite simply, political death, expulsion, rejection, and so on” (Foucault, 2003, p. 256). Applying Foucault’s biopolitical conception of racism to species below, I show how the Aquarium’s admirable attempts to invoke care and concern for the disembodied shark actually stem from anthropocentric and speciesist discourses justifying biopolitical (or ecopolitical) management of shark bodies, ultimately leading to a Foucauldian “death” for those sharks residing at the Aquarium.

Staff at the Aquarium draw on aestheticizing discourses grounded in biology in order to ask guests to feel wonder, compassion, and care for Aquarium sharks. As stand-ins for the entire Order *Hexanchiformes*, portrayed in the popular media as savage and brutal (biologically inferior Others), the small sharks are re-fashioned as Others-fit-for-human consumption. Paradoxically,

while the small sharks' "evolutionary achievements" are corporeally and materially present in the shallow pools at the Aquarium, they bear little meaning to the *sharks* in an environment where "survival of the fittest" is no longer bound up with hunting, mating, or other "natural" behaviors; instead, fitness is intricately connected with appealing to human sensibilities. This shark is not an "Other" fashioned as "more than and different from me," as Smith (2001) would advocate. Instead, the small sharks are "expelled" from and "rejected" by their own Species, Families, and Orders, as their meaning and value are derived from the way their "evolutionary achievements" provide pleasurable experiences for people, and not for the ways in which they provide the actual sharks with skills for survival. In a Foucauldian (2003) "political death," resulting from the Aquarium's conservation efforts, these sharks are set aside as biopolitical representatives of the disembodied shark they save through their own regulation, expulsion, and aesthetic appeal to *Homo sapiens*. That is, in order to make the biologically superior disembodied shark "live," the inferior small sharks must be subject to "political death." The ecopolitical management Darier (1999a, b) cautions against, therefore, manifests itself at the Aquarium as the capture and regulation of small shark bodies is paradoxically justified in what

appear as discourses of compassion and care in a conservation education project.

Implications: How Might the Shark-Human Experience be “Re-imagined?”

Aquarium staff, as illustrated in this paper, clearly care about shark conservation. Their epistemological and ontological commitments—one can learn to “know” truths about sharks and their own relationships with the natural world through tactile experiences with the captured bodies of small, docile, and harmless sharks—drive their teaching practices. These interactions are driven by the Aquarium’s desire to promote (1) a fun learning experience (customer satisfaction) and (2) guests’ conservation-minded attitudes and behaviors. Staff hope that if guests have a positive visit to the Aquarium, they will come to know these “truths” and subsequently develop care, compassion, and empathy for the sharks. While seemingly a non-anthropocentric endeavor—i.e., promoting care and concern for the disembodied shark—the actual encounter is anthropocentric in its entirety because guests are not asked to “become with,” “learn with” or “live with” the shark with which they interact; they instead consume what is contrived to appeal to humans through a sort of biopolitical speciesism. As described earlier in this paper, the real-lived experiences of the

small sharks in the pools are muted. They, therefore, serve as means toward a conservation end, but are not ends in themselves (Smith, 2001; van Buren, 2014). In the following interview excerpt, I asked Craig, a paid staff member, to discuss his teaching practices and interactions with guests. He highlights the tensions between promoting customer service (intricately tied to a conservation end) and the safety of the small sharks (the means toward that end):

*Excerpt 4.16: September 23, 2012
Interview with Craig Larson*

Oh. Yeah. So some of the spaces, like Shark Lagoon, you do have to be that police officer. Macho dude out there thinking he's really tough picking up a little 2 foot long bamboo shark, you gotta take care of that. So part of it, you know the initial reason you're there, we want people to touch, but we don't want people to destroy...So that kinda maintaining the safety and animal aspect of it is part of it, but you don't want to be like, "That's all I'm doing. On a busy day there's 300 people at Shark Lagoon, and you're, "Hey you! Stop that! Hey you, stop crawling on the wall," cuz it's anarchy out there, so just finding a nice way to be like, "Hi. I noticed you're really into that shark. Would you mind putting him down a little bit because they really don't like being out of the water." So, just kinda being, just keeping customer service in mind. That idea if people have a good experience they tell one person and if they have a bad one they tell ten. Uh, so, yeah being nice is important in a place like this. People don't come to feel like they've done something wrong. "Yeah, it's an open exhibit and you're encouraging me to touch the shark. You didn't say, 'don't pick it up.' So I picked it up and you're yelling at me. Who is this person?"

This passage, illustrative of the conflicts regularly unfolding at the Aquarium, is telling. Craig, like many staffers I interviewed and observed teaching, places an obvious emphasis on guest satisfaction that appears at odds with shark safety. While the discourses of “shark safety” suggest a concomitant privileging of the shark experience, he makes it clear that customer service is an equally important priority. Further, “safety” is only one aspect of shark wellbeing; other aspects of wellbeing, such as reproductive rights, the right to live in open water or hunt are silenced to highlight the needs of the “disembodied shark.”

While the focus of this paper is not to generate a normative argument about how to re-imagine an encounter with “full sovereign beings” (Yusoff, 2011, p. 85), I advance a reconceptualization of the human-shark experience drawing on work in posthumanism (Marran, 2011; Pedersen, 2010b; Yusoff, 2011). In doing so, I argue that if zoos and aquariums continue to capture, breed, and biopolitically regulate nonhumans in the service of conservation ends, then part of the public conservation education project should embed knowledge of not only the violence humans inflict on animals in the wild, but also that which is perpetrated against wild animals in captivity. A vast educational literature extols the virtues of kinesthetic learning and personal experience, particularly with respect to environmental and science education in

both formal and informal settings (Heath & Brown, 2007; Rahm & Ash, 2008; Roth & Barton, 2004). The point here is not to downplay the importance of these experiences, but to highlight what is missing from a vast majority of this literature: a consideration of how representations (fleshy and non-fleshy; living and nonliving) of the nonhuman Other impact (1) the lives of those nonhumans enrolled in human educational endeavors and (2) what humans can and do learn about the natural world in educative spaces. That is, if nonhuman others (e.g. small sharks) are captured for human learning experiences and subsequently aestheticized into biopolitical beings fit for human consumption, what happens to the lives of these sharks? What kinds of relationships do people develop with sharks in these spaces? And what do people come to learn about sharks?

Yusoff (2011) argues that we need to *learn with* other beings rather than *learn from* them: “Such *learning with*... hopes for a crossing between communities and the recognition of non-human claims; the right to exist, to have spaces and places made for them that suit their needs and sensibilities” (2011, p. 584). In this view, the real-lived experiences of nonhumans would not be incidental to human learning or shrouded in what appear at the surface as biocentric claims (Marran, 2011). Yusoff is also careful to point out that *learning with* “can also be part of a learning to pay attention to different kinds of

violence and danger that are uncovered through practice and being attentive to the impact and interference of our own practices on the lives of other subjects” (2011, p. 585). She draws particular attention to the role of “banal violence,” (Arendt, 1963) or that which is a function of “thoughtlessness, rather than radical will” (Yusoff, 2011, p. 579).

While the Aquarium subtly focuses attention on the banal and overt violence committed against the disembodied shark in the wild, it does little to acknowledge the violence inflicted on the sharks residing at the Aquarium as a result of their capture for human learning and enjoyment.⁷³ It is difficult to imagine how a small exhibit, where sharks have no refuge from touch-eager humans, is tailored to “their needs and sensibilities,” which Yusoff (2011) contends is an integral aspect of *learning with*. If the Aquarium were to do this, how might the guest learning experience be re-imagined? What if guests, rather than seeking out brief touch experiences with confined small sharks, instead were able to participate in the rehabilitation of injured or ill sharks? What if they were involved in the rehabilitation of natural ecosystems where

⁷³ The Aquarium, for example, purposefully evades the topic of shark finning, a complexly overt and banal practice of violence against sharks, in order to ensure a satisfying guest experience.

sharks reside in the wild? I explore the some of the possible answers to these questions in a Chapter 6.

CHAPTER 5: STRUCTURING HUMAN-ANIMAL RELATIONSHIPS: LORIKEETS AS BIRD BIOPOWER

Introduction

The Lorikeet Forest (the Forest) at the Aquarium is never quiet. Though the number of people in the Forest fluctuates widely, the brightly colored Rainbow Lorikeets constantly chatter, squawk, and fly about at staggering speeds. Their flight pattern is limited, of course, by an overhanging net extending more than 20 feet in the air. In the 3,200 square foot outdoor habitat, they land on (un)suspecting people, on branches of artificially constructed trees, on the ground where they build nests underneath the dirt, and on the wood fence posts demarcating spaces where visitors can and cannot walk. The birds seem most fond of visitors who have purchased “liquid gold”—specially-formulated-to-mimic-nature nectar they slurp up with their evolutionarily-fashioned beaks—and on staff members with whom they have developed a special relationship. The number of birds living in the Forest ebbs and flows as sick, injured, old, and aggressive animals are removed from the exhibit to live temporarily or permanently in the Barn behind Shark Lagoon and as new chicks hatch and are released.

Besides visitors who travel in and out of the Forest each day, usually for only a few minutes of time, the Lorikeets also have regular contact with Aquarium staff members, some who become recognizable to the birds. The first few months I ventured into the Forest, like any novice, I would jerk slightly to the right or left as I felt a Lorikeet come rushing toward what I thought was my head. Trained staff explained that when human interlocutors move suddenly, they actually increase the likelihood of a collision occurring. The Lorikeets more deftly avoid crashes with non-moving objects than moving ones, making my sudden movements possibly dangerous for us both. Aquarium staff work tirelessly to prevent these interactions by carefully monitoring, regulating, and surveying both the animals that live at the Aquarium and the over one million guests who visit them each year. The animals also participate as active agents in this monitoring. In this paper, I show how the Aquarium, its staff, and its animals, co-participate in an “edutainment” project, where the institution governs Lorikeet bodies through regulatory technologies crafted to ensure guests have a satisfying experience and become more conservation-minded.⁷⁴ In this way, the

⁷⁴ These disciplinary practices (Foucault, 1986, 2003) include: (1) Staff quietly survey and/or verbally admonish guests to regulate behavior; (2) Lorikeets bite, defecate on, and refuse to interact with guests; and (3) The institution requires that Lorikeets be fed a modified diet during the day and that they remain captive. The Lorikeets are managed biopolitically as staff monitor the health and numbers of the population, or “make live,” through disease management and

Lorikeets are politically deployed (Ogden et al., 2013) in the fiscal survivability of the institution and in a conservation education project imagining visitors as advanced liberal consumers, insofar as they chose their edutainment experiences and their environmentally responsible behaviors. The resulting human-Lorikeet interactions promote sanitized encounters with wildness, limiting the development of empathic human-animal relationships.⁷⁵

Conceptual Frameworks

I draw primarily on the work of Foucault and scholars who have theorized the production of environmental knowledge in a Foucauldian framework. Rutherford's "green governmentality," a form of governing that "necessitate[s] its [nature's] regulation and management by particularly located experts" reveals that governmentality and the commodification of nature work in concert to "to produce the truth about nature as not only scientized, knowable, and measurable, but also consumable." (2011, p. xvii-xix).⁷⁶ Rutherford's model,

breeding practices. I also borrow from Latour (1987), Callon (1986), and Haraway (1989, 2008) implicating not only humans, but nonhuman animals as actors.

⁷⁵ In this chapter "sanitized" encounters with wildlife refer to interactions where animal bodies are modified in order to bolster the human experience. The practices include the spatial and bodily regulation of Lorikeet bodies in the Forest.

⁷⁶ Rutherford's "green governmentality" is grounded in Foucault's "governmentality," which posits that "power is exercised in multiple sites, through different discourses, and often outside the traditional boundaries of the state" (Rutherford, 2011, p. xv). She notes, "For Foucault, power, and thus the ability to craft particular discourses, is not possessed or held but circulates

developed through a media analysis of Al Gore's "An Inconvenient Truth" and fieldwork at the American Natural History Museum, Disney's Animal Kingdom, and an ecotour to Yellowstone and Grand Teton National Parks, is useful for its conceptualization of the role of scientific expertise in producing knowledge about the environment. However, she does not fully tend to how neoliberal ideologies of choice impact institutional decision-making and knowledge production in informal learning centers, like the Aquarium. As a non-profit institution financially beholden to "program services," predominantly in the form of ticket sales, the Aquarium envisions and then caters to a neoliberal environmental citizen (with particular imagined tastes) in order to sustain itself in a capitalistic economy (Carrier, 2012).⁷⁷ This citizen is a rational consumer of education, entertainment, and leisure experiences who engages in a kind of

via networks that work through and produce bodies, subjects, discourses, practices, institutions, and representations." (2011, p. xxiii)

⁷⁷ In the early 2000s, for example, the *LA Times* published several articles detailing the Aquarium's fiscal woes (Weikel, 2000a, b). While it was reported that the institution was not in danger of shutting its doors, it was feared the Aquarium would not make its bond payments. As a result, new strategies were implemented to attract additional guests who would provide the needed funding. These included: new displays, more educational programs, increased marketing, doubling after-hours events, and adding more behind-the-scenes tours. While the Aquarium is currently financially solvent, cost-saving measures continue. Shark Lagoon and the Lorikeet Forest were recently converted to primarily volunteer staff, rather than paid staff (personal communication). To illustrate the importance of the revenue contributions made by visitors, in 2011 they were as follows: "Program services," i.e., income generated through educational programs (70 percent of total revenue); parking fees and food sales (6.5 percent of revenue); and goods, i.e., items visitors purchase in the Aquarium's gift stores (nearly 7.5 percent of revenue). Collectively, these sources constitute approximately 84 percent of the Aquarium's income (Aquarium of the Pacific 990 Tax Form 2011).

cost-benefit analysis in deciding where limited leisure funds will be maximally spent (Fletcher, 2010; Lemke, 2001). The Aquarium, therefore, seeks to establish a careful balance between promoting its own interests (teaching conservation “science”) and appealing to its consumers’ perceived tastes. To theorize the role of neoliberal consumer choice, I turn to the work of Rose (1993, 1996), Lemke (2001), and Fletcher (2010) who have collectively developed the notion of neoliberal governmentality drawing on the work of Foucault (1991, 2007, 2008).

Fletcher points out:

All of these realms [e.g. politics and social relations] become viewed as spaces, like the market, in which rational actors compete to maximise their use of scarce resources, and thus governance in all such areas should entail the construction of appropriate incentive structures to direct actors’ behaviors in beneficial ways (Fletcher, 2010, p. 174).

As I discuss below, precisely because the Aquarium imagines visitors as neoliberal consumers of entertainment and education experiences whose tastes they must accommodate in order to ensure their own prosperity, Lorikeet bodies become enrolled in a biopolitical project necessitating their management and regulation.

Foucault (1978, 2003) developed the conceptual tools of biopower and biopolitics in order to explain how, in the nineteenth century, the State began to

control the biological in order to “make live and let die,” whereas the Sovereign had previously operated through the mechanism of “let live and make die” (2003, p. 241). He distinguishes between disciplinary technologies (those acting on the individual body) and regulatory technologies (those operating at the level of the population) in order to demonstrate how, after making the management of life a political issue, the State intervened in its regulation. For Foucault, “Biopolitics deals with the population, with the population as a political problem, as a problem that is at once scientific and political, as a biological problem and as power’s problem” (2003, p. 245). In the last two decades, scholars have applied Foucault’s biopolitics to the management of nonhuman bodies (Chrulew, 2011; Luke, 2000a, b; Rutherford, 2011).

I first demonstrate that the biological and spatial management of animal bodies, as commodifiable forms of biopower, promote human-in-wild animal theme park relationships.⁷⁸ These institutionally-designed relationships attempt to provide guests with a satisfying experience in order to: (1) ensure that visitors spend funds at the Aquarium and (2) promote the Aquarium’s brand of

⁷⁸ Drawing on the regulation of animal bodies in the theme park atmosphere of the Forest, I call the encounters guests have with the Lorikeets “human-in-animal theme park” interactions. These interactions, as I describe in this chapter, are anthropocentric as the animal body is sanitized in order to meet human standards of wild animality in a space like the Forest. Further, because guests have paid not only for the interaction, but for the visit, the interactions are commodified.

“conservation,” i.e., if guests have enjoyable experience they will be more likely to adopt conservation-minded behaviors.⁷⁹ I then discuss the how the Lorikeets, as agentic beings, problematize these encounters as visitors and their staff caretakers attempt to manage Lorikeet bodies and behavior.⁸⁰ Like the battery hens and the research scientist studying them in Pedersen’s study, Lorikeets cannot escape their confinement or “forced labour” at the Aquarium, but they can “complicate, disturb, delay, or change the order of the working scheme” (2011, p. 19). Last, I show how staff engage in an ongoing disciplining of visitors, both covertly and overtly, which is heavily dependent on “technologies of vision” (Rutherford, 2011) and what I call “technologies of touch”.⁸¹

I close by discussing the potential implications of these relationships. The regulation of bird bodies in the Forest is intimately linked to the production of a

⁷⁹ Negative experiences, based on interviews with staff and annual Aquarium visitor surveys, include: (1) being defecated on or bitten by an animal; (2) having contact with animal death, sickness, or mistreatment; (3) feeling despair or culpability for environmental damage; (4) feeling incapable of making positive environmental changes; (5) being scolded by staff; (6) not learning something new; and (7) not having the opportunity to interact with a staff member.

⁸⁰ My use of the term “agency” here is not to imply that there is intentionality on the part of the Lorikeets as we would describe human agency. Rather, I utilize “agency” to demonstrate that nonhumans and humans co-produce relationships as they respond to each other’s actions, albeit utilizing different means of communication.

⁸¹ Disciplining, as Pachirat (2011) demonstrates in his ethnography of an industrialized slaughterhouse, involves a careful dance of distancing (what is distasteful is kept hidden away) and mediation (power is everywhere and all actors are implicated in it). Desmond (1999) contends that power relationships at zoos and aquariums are often hidden by exhibits that look natural, but I will show that that these relationships are not always covert.

satisfying experience for guests, imagined as neoliberal consumers of education and entertainment (or edutainment). The goal is to promote what the Aquarium views as a positive encounter for guests, designed to inspire repeat visits and environmentally responsible behaviors (Rose, 1993, 1996).⁸² While the institution must fiscally sustain itself through ticket sales, much like the “user fees” sustaining Jamaican parks that Carrier (2012) describes, the short-lived, sanitized, and commodified interactions guests then have with the Lorikeets, which frame human-animal interactions as consumptive, are unlikely to invoke care, compassion, and empathy for nonhuman animals and nature.⁸³

To establish a connection between the institution’s catering of animal bodies to guests and the kinds of human-animal relationships produced as a result, I look to the work of environmental anthropologist, Kay Milton (2002), who argues that when people have formative emotional relationships with the nonhuman world, they can identify with “other entities” and become empathic

⁸² The Aquarium’s conservation education program includes a heavy emphasis on individual behavioral changes guests can make in their daily lives. These examples abound at the Aquarium and include, but are not limited to: recycling, reducing fertilizer usage, conserving water and energy through a variety of means, and consuming sustainable seafood and/or less meat.

⁸³ I characterize human-Lorikeet interactions at the Aquarium as commodified because humans must pay for them through an admissions ticket and the purchase of nectar. Additionally, the interaction is packaged a commodity to be sold to guests insofar as Lorikeet bodies are regulated as biopower for that specific purpose.

not only to nonhuman animals, but also nature more generally. Within the deep ecology framework, identification with the nonhuman world is essential to self realization,

...the deep ecology norm of self-realization goes beyond the modern Western *self* which is defined as an isolated ego striving primarily for hedonistic gratification or for a narrow sense of individual salvation...the deep ecology sense of self requires a further maturity and growth, an identification which goes beyond humanity to include the nonhuman world (Devall & Sessions 1985, p. 158).

Building on the work of philosophers like Warwick Fox and Arne Naess, Milton explains that identification happens because western cultures employ a "person-based identification" grounded in the idea that "in order to identify with an entity we must perceive it in something resembling ourselves, in other human beings and in nonhuman entities," though it is also possible to "perceive personhood in other natural entities," besides nonhuman animals (2002, p. 79).⁸⁴

⁸⁴ Milton explains that Fox describes three general kinds of identification with other beings: personally-based (personal involvement with other entities), ontologically-based (realization of a common existence with other entities), and cosmologically-based (we and other entities belong to a 'single unfolding reality') (2002, p. 78). She argues that Fox's categories are useful, but incomplete, especially for western cultures. Milton distinguishes her "person-based identification" from Fox's "personally-based identification" on the grounds that the former requires personal involvement, while the latter depends only on a sense of similarity (2002, p. 79). She adds to the work of Naess and Fox by highlighting the role of emotion in deep ecology's "self-realization" and by arguing that the belief that all entities have a right to self-realization is ground in the "quality of selfhood" they share with human beings (2002, p. 84). Milton's work adds elements of what she calls "egomorphism" (seeing other entities as "like me") to deep ecology's "biocentrism," in the sense that she, like Williams (1980) and Marietta

Milton's framework, useful for its attention to the roles of experience and emotion in developing empathic relations with animals, falls short with respect to two key points, however: (1) Milton (2002, 2005) fails to consider how the condition of the nonhuman impacts the kind of personal experience a person can have in a particular environment and (2) Milton (2002, 2005) does not fully develop the degree to which humans can identify with other entities through the recognition of negative attributes or emotions. I argue that the anthropocentrically-orchestrated encounters visitors have with Lorikeets at the Aquarium (biopolitically-fashioned to please the envisioned neoliberal consumer) indeed provide experiences with wildlife. The quality of these encounters, however, is limited in that the experiences of the Lorikeets themselves are muted to privilege the guest experience. I also show how some staff members, despite the institution's belief that humans (i.e., visitors) ought to encounter Lorikeets in a sanitized fashion, accept the "negative" aspects of wildness, such as biting and defecating, and come to view the Lorikeets as "like me." Other staff reconcile these aspects of wildness through constructing a romanticized wild "other" they view as not "like me."

(1995) wants to put humans back in "nature," though Milton seeks to accomplish this task through the emphasis of emotional connections and person-based identification (Milton, 2002, 2005).

Exhibit background

In 2003, five years after the Aquarium opened, the Lorikeet Forest was constructed. Originally a lush, green, and forested aviary, the habitat now appears denuded, with constructed "trees" pieced together from dried out branches anchored in the ground and covered with ground cover, pebbles, and grass to appear natural. From these "trees" hang bird toys resembling those a pet bird owner would seek in a pet store. According to an Aquarium staff member, birds destroyed the live trees originally present in the Forest and they had to be removed. The Forest floor consists of a concrete pathway where guests are permitted to walk, flanked on both sides by guest-forbidden areas. Lorikeets generally build their nests in these spaces, either in the ground or in the provided nesting boxes. (See Figure 11).

Figure 11. Constructed trees inside the Lorikeet Forest.

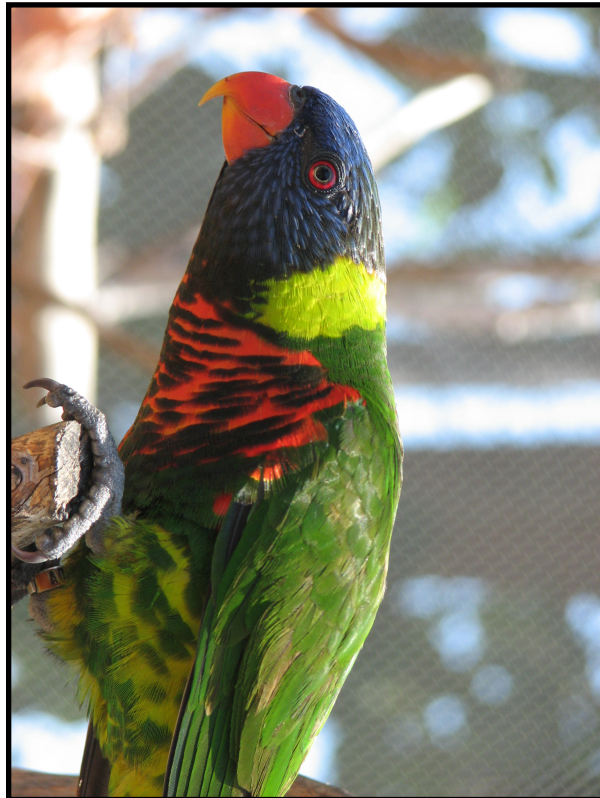


Lorikeet natural history

The exhibit features five subspecies of Rainbow Lorikeets of 22 subspecies that exist in the wild. According to the International Union for Conservation of Nature (IUCN), Rainbow Lorikeets (*Trichoglossus haematodus*) are a species of Least Concern due to their large range and population size, despite declining

populations and the fact that since 1981, when they were listed on CITES Appendix II, over one hundred thousand individuals have been recorded in international trade.⁸⁵ Rainbow Lorikeets are native to Australia and the South Pacific and are considered pests in Western Australia (Massam & Mawson, 2009).⁸⁶

Figure 12. Rainbow Lorikeet (*Trichoglossus haematodus*).



⁸⁵ The IUCN defines a species of Least Concern in the following manner: "A taxon is Least Concern when it has been evaluated against the criteria and does not qualify for Critically Endangered, Endangered, Vulnerable or Near Threatened. Widespread and abundant taxa are included in this category." (http://www.iucnredlist.org/static/categories_criteria_3_1). Other Lorikeet species are variously listed as Critically Endangered, Endangered, Threatened, Vulnerable, or of Least Concern.

⁸⁶ <http://www.iucnredlist.org/details/160032124/0>

Staffing the forest

Forest staffers are either part of the Husbandry or Education team. As their department titles suggest, the former are mainly responsible for animal care, though they may occasionally interact with guests and do some teaching. Due to their role in animal care and time spent with the animals, Husbandry staff tend to feel closer to the animals than Education staff; they know the animals' names, can recognize them and distinguish them from similar members of their species, and, in some cases, have developed relationships with them. Education staff manage visitor behavior, talk with guests over the microphone about basic Lorikeet facts, and have conversations off microphone with smaller groups of guests (what the staff members refer to as "interpretation or "interp" time.")⁸⁷ Education staff typically work 30-minute shifts at one exhibit before rotating to another exhibit, which limits their opportunity to spend time with animals at any given location.

⁸⁷ Though the Aquarium does have what they call live animal "shows," the talking over the microphone in the Forest is not considered a show, as there is no specific time of the day the talks take place and there is no set script, like in the Seals and Sea Lions or Otter Shows. During these live "shows," Husbandry staff in other departments also co-present with Education staff.

Brightly Colored Birds as Biopower: Biological and Spatial Management as “Edutainment”

Staff overwhelmingly believe visitors come to the Aquarium to be entertained, primarily through interactions with animals and staff. These assumptions are grounded in evidence from annual Visitor Survey Reports, where guests during the summer of 2013 cited entertainment (94 percent) and interest in marine life (86 percent) as their top reasons for visiting, followed by education (52 percent).⁸⁸ Education, therefore, is often “slipped-in” and related to the entertaining experience, as a staff member relayed to me in an interview:

*Excerpt 5.1: October 11, 2012
Interview with Charlotte*

I asked Charlotte why she thinks guests visit the Aquarium:

I think, for example, our Penguin exhibit opened in May. Just certain animals that people really like, you know, “HUH! They have penguins?” So I think people want to see the different animals, the different types of fish. I think in a sense they want to be entertained. I think that’s where the teaching comes in. You have to entertain them and inform them at the same time. For me, I say, learning to be fun. I’m teaching them, but I want them to have fun while they’re learning. Certain animals draw people. Shark Lagoon is popular. The Lorikeets are very popular.

⁸⁸ In addition to the statistics cited in the text, in the summer of 2013 guests also cited the following reasons for visiting the Aquarium: sightseeing (70 percent); curious to see (62 percent); bring children (57 percent); other (18 percent); because I’m a member (16 percent). (Aquarium of the Pacific Summer Survey Report 2013).

As illustrated above, the institution and its staff postulate that guests, envisaged as neoliberal consumers of edutainment experiences “seeking to fulfill themselves with a variety of micro-moral domains or ‘communities,’” will not return to spend additional funds if dissatisfied with their Aquarium visit and may also share their discomfiting experiences with others (Rose, 1996, p. 57). As such, guests are thought to engage in ongoing cost-benefit analyses as they decide where their leisure and education dollars will be disbursed (Fletcher, 2010; Lemke, 2001). This knowledge, as I describe further, drives many decisions concretely affecting the lives of the Lorikeets as the institution and its staff manufacture the kinds of human-animal interactions they believe visitors desire.

When visitors approach the Forest, two Guest Services volunteer staff members greet them. One monitors the entrance and the other stands behind what looks like a tiki bar at a tropical island getaway. Rather than advertising nightly drink specials, however, this one displays a sign that reads “Feed nectar to the birds” or “Alimente los periquitos con nectar,” “\$3.”⁸⁹ Another sign to the left, entitled “Lorikeet Hunger Meter,” indicates to visitors how hungry the

⁸⁹ Lorikeet bodies also generate revenue for the institution through nectar sales. In 2011, nectar sales earned \$389,454 for the Aquarium, which constitutes 2% of Program Services revenue and 1.4% of total revenue (Aquarium of the Pacific 990 Tax Form 2011).

birds are; one to the right lists the over 50 ingredients found in the nectar, specially prepared by Husbandry staff to “mimic nature.” (See Figure 13).

Figure 13. Lorikeet nectar bar.



Besides the ticket (or membership) that guests must purchase to gain entry into the Aquarium, the purchase of nectar represents the first commodifiable and regulated interaction they can have with the Lorikeets. By selling the nectar to guests, the Aquarium gains financially and, in effect, controls human-animal interactions—only those guests who choose to purchase it typically have body-to-body contact with the birds. The Lorikeets do not usually land on humans

(unless they have food) and visitors are not allowed to grab, touch, or otherwise force physical interaction. The nectar, therefore, becomes the tool to facilitate contact. As Desmond explains in her text *Staging Tourism*, animal reliance on people for food in zoos and aquariums is typical, despite the attempt to create a space that seems “natural.” She comments,

The illusion is that we are seeing not only authentic animals but authentic performances of species-species behavior as well. In fact, what we do see in this display of wildness is a display of total dependence on humans for food, care, protection, and survival (1999, p. 164)

Unlike most zoo and aquarium exhibits, the Forest Lorikeets become totally dependent not on their usual staff caretakers, but on *visitors* seeking a short-lived experience with wild animals.⁹⁰

To ensure guest satisfaction, as a staff member shared with me while she worked inside the Forest, exhibit Lorikeets are fed nectar during the day to make their feces water-like and less viscous so that when they defecate on unlucky visitors, it makes it less likely their momentary animal companions will offend them:

⁹⁰ Knight’s analysis of monkey parks in Japan revealed a similar phenomenon. Visitors there enter into a food exchange with monkeys, producing human-animal interactions that would be impossible without food (Knight, 2005).

Excerpt 5.2: February 21, 2013

At this point we (a Husbandry staff member and I) are standing right at the edge of the entrance to the Hut, where there are ropes to signal to guests that this is a forbidden area. The Hut is small structure near the exit of the Forest where staff temporarily house, in small, wire mesh bird cages, a small number of injured birds or juvenile birds who will eventually be released into the Forest or permanently taken off exhibit to live in the Barn. I was afraid of getting pooped on by one of the birds perched on the roof of the Hut because I saw it happen to a guest a few minutes earlier.

Teresa: I was looking up because one of them projectile pooped on a little girl (laughing). It was like water. Oh, it peed on you. That's what they said. Because it was like water.

Jennie: What happens is that we don't feed them the smoothie in here. The ones in the Barn (where Lorikeets are housed off-exhibit) get it during the day. But they specifically don't give it to these guys until after dark, or 'til closing so the poop won't get more obnoxious for people.

Teresa: Oh I see.

Jennie: So it's that liquid, loosey stuff. And then at night they get the smoothie, their more substantial meal. It makes their poop a little more—

Teresa: Thicker?

Jennie: Yeah. So they have to feed them differently in here, just so—

Teresa: To accommodate the guests.

In addition, the nectar is a lighter meal that does not fully satiate the birds. This allows a greater number of guests to purchase nectar and have interactions with the Lorikeets the institution imagines they crave. The Aquarium, by specially designing this meal to make the birds' feces less offensive and then selling the nectar to guests, regulates the Lorikeet population on display in the Forest as a form of biopower, controlling and commodifying both the birds and the human-animal interaction. Regulation of bird bodies not only "makes live," but also supports the economic survivability of the institution (Fletcher, 2010). Through this physiological modification the Aquarium produces a "sort of body," for guests, utilizing waste "rendered [almost] invisible" as one of the key ordering principles (Anderson, 1995, p. 642, 645). Though Foucault theorized biopower specifically as the regulation of human bodies in the interests of the state and the so-called "common good," (Rabinow, 2010) the Aquarium's regulation of animal bodies and human bodies figures prominently into the commodification of nature for human consumption as Aquarium guests are imagined to seek a wild, but not too wild encounter with animals and nature. Therefore, bird bodies, as biopower, provide a two-fold benefit for non-profit institutions like the Aquarium: (1) they participate in making the Aquarium financially solvent in a capitalistic economy through governing visitors as consumers with choices and

(2) they satisfy the guest desire to have an encounter with nature, which the Aquarium presumes will assist in conveying its educational messages.

In an analysis of the shift of zoos (and aquariums) from institutions that promoted the visitor "gaze" to institutions dedicated to education and entertainment, Beardsworth and Bryman (2001) point out that wild animals in zoos and aquariums are "sanitized" in what they call the process of commoditization. Through spatial and bodily regulation the Aquarium packages the birds as an *interactive* (and not just visual) product that can be sold to guests for financial gain. Though the habitat and their food have been constructed to mimic nature, elements of true wildness are missing there. Unable to forage, the birds become dependent on humans for food; they cannot fly about and seek a mate elsewhere, so they must choose a mate from the other birds in the Forest; and they have become, over time, habituated to the presence of human beings.

Lorikeets discipline their human companions

The prior section described how the Aquarium offers guests access to some of the untamed, savage, and unpredictable aspects of nature they are presumed to desire, but in an anthropomorphized and restrained way as bird bodies are bioregulated to fiscally benefit the institution. Lorikeets, as wild

living beings, however, often complicate this regulation. They bite staff and guests, refuse to land on visitors (sometimes even those visitors who have purchased nectar), and they continue to defecate, despite strictly consuming nectar during the day. These forms of Lorikeet “resistance,” as demonstrated below, sometimes complicate visitor, and even staff, satisfaction.

Be careful! They might bite!

On a busy day, one can spy rows and rows of strollers parked in front of the doors of the Forest, many overflowing with all of the typical accouterments of American toddlers and their parents—toys, blankets, baby wipes, spare diapers, rattles, and spare items of clothing. I asked a volunteer educator in an interview to talk about her role at the Aquarium and she explained that some years ago management staff decided strollers pose a hazard inside the habitat. Lorikeets can unknowingly crawl into the carriage of the strollers, requiring an unlucky staff member to remove them. This has resulted in bloody encounters with the birds in the past. As a result, the staff member at the entrance of the Forest informs guests with strollers that they must leave them outside and shows them where they may be parked. Guests who choose not to comply cannot enter. Lorikeet biting, therefore, serves as a mechanism to regulate human behavior. People wishing to have physical contact with the birds, or simply

venture into their home must abandon their strollers outside the habitat or be denied the opportunity to interact.

The threat of being bit also deters some staff members from taking a shift in the Forest. In an interview Rose, a staff member, describes being savagely and repeatedly bit by a Lorikeet one day as she accidentally stepped on its nest. She justifies the bloody encounter as not the fault of the Lorikeet, but rather due to the unnatural human-wild animal physical contact that takes place in the Forest as birds attempt to carry out their normal activities (nesting), despite continual intrusion by humans. Notice how she cites lacking the ability to mistreat the bird (partly because guests are watching), despite being in physical pain:

*Excerpt 5.3: October 26, 2012
Interview with Rose*

Teresa: Is there any exhibit that you won't go to?

Rose: There is one that is not my favorite and my day captain, Vera, she knows I will go there if I have to. We are sitting right next to it.

Teresa: The birds?

Rose: The Lorikeets.

I laugh because everyone seems to have a strong opinion about the birds.

Rose: I was attacked. And it was my fault. This is called getting used to the fact that these are wild animals and they do have their patterns of behavior and getting to understand them and I was in there and I stepped in front of a brood box that had a pair inside, a breeding pair, and the male didn't like that and he came out and attached himself to my ankle. And it drew blood. And you have to be really professional. I know I'm free [she's a volunteer staff member], but I still have to be professional.

Teresa: Yeah.

Rose: So I couldn't kick him off because you can't mistreat him. You can't swear at him, you can't yell at him. People are going, "You have a bird on your..." "I know I have a bird. And I know I'm bleeding." So I finally went like that and got him off (shows how she shooed him away with her hand), but then I got him on my hand and so he drew blood there, too. So, that's why I don't, but I do, I take my people in there when we have the tours. I go through and tell them my story. And I tell them, "I hope you like it. Because a lot of people love it." And they do.

Teresa: Yeah. The people I've talked to either love, love, love the birds or "No thank you."

Rose: I was okay up until that and then I was like, "No thank you."

She goes on to explain that she still loves birds and even shows me a piece of "bird" jewelry she likes to wear. However, due to her bloody interactions, Rose no longer takes shifts in the Forest.

Rose's case illustrates that the packaging of human-Lorikeet interactivity requires a kind of bioregulation that renders Lorikeet bodies consumable; as

vital, living beings however, they are not entirely manipulable. In contrast to Luke's (2000a) historical analysis of the Audubon Society, which, through "technologies of Audubonization," constructed an innocuous, anthropomorphized, and romantic vision of wild birds so that people would "care" about and want to protect them, the Aquarium constructs a beautiful Lorikeet, but certainly not a defenseless one, given the continual warning that birds may bite and the stories above illustrating that they have bitten in the past. Whereas the Society sought to modify human-animal interactions through advocating gazing upon and photographing aesthetically pleasing and gentle creatures (i.e., there would be no body-to-body contact with live or dead animals, only "technologies of vision"), the Aquarium actually promotes body-to-body contact ("technologies of touch") and therefore sanitizes those aspects of wildness (spatial and biological) amenable to regulation, while simultaneously warning humans of non-regulable aspects (i.e., biting). These "technologies of touch" aim to provide visitors with satisfying experiences at the Aquarium so that they will contribute to the fiscal survivability of a non-profit institution indebted to ticket sales for funding in a capitalistic economic structure.

They just won't land on me!/Get these birds OFF of me!

At any given time, birds continually fly about and land on trees as they feed, groom, nest, and occasionally, depending on the season, mate. As guests make their way through the habitat, some stop to take photos with the Lorikeets or film them as they carry out their daily activities, others stop to read the placards flanking each side, and those who purchase food attempt (usually successfully) to feed them. While some visitors are bombarded with Lorikeets as soon as they enter with food, others must be more patient in order to have their desired interaction. The prohibition of touching lessens the likelihood that the Lorikeets will bite guests and ensures that guests do not improperly handle the Lorikeets. Guests may attempt to feed the Lorikeets; however, the decision to land on a human and sip up nectar is entirely up to the individual bird. If the Lorikeets are not hungry or seem disinterested in food, the visitor must seek out more famished birds and wait for physical contact. The Lorikeets, in this way, participate actively in creating the kinds of interactions guests can have with them, i.e., the actual interaction is also Lorikeet-driven. This happens despite the Aquarium's attempt to spatially regulate and manage the Lorikeets to make them more accessible and acceptable to guests who have paid for certain kinds of interactions:

Excerpt 5.4: February 23, 2013

People carried around their little vessels of nectar in ice-cream cone fashion, patiently waiting for the birds to approach them and lick up the delicious treat with their tongues that evolved over time to be adept at lapping up nectar from plants. Of course, like everyday, there were folks who waited patiently for birds to come up to them, but their wait was to no avail. The birds, for whatever reason (perhaps lack of hunger or perhaps animal-intuition about which humans are "safe" and which are not) would not come near, while other folks were nearly toppled over by four or five birds that landed on any available extremity, including the head. At one point today, there was a man so covered in birds that others gathered around him to watch, some taking photos and others filming. It was quite the spectacle.

Staff members support this avian-initiated disciplining, as my conversation with a staff member in the Forest illustrates:

Excerpt 5.5: December 7, 2012

There are different ways to interact with them. And what we tell the guests, I tell the guests, is they consider fingers aggression. Don't use your fingers. This is an invitation (she holds her arm out the way she would if she wanted a bird to get on her arm to sit). So we teach them how to interact. And then the bird gets to say, "Yeah. I'd like to come see you" or "No. I don't want to." And this is their house and they get to make the rules.

Conversations with guests indicate their cognizance of how the birds mediate their interactions. In this interview, I chat with Jose and Leticia, a young married couple with children, inquiring about the exhibits they visited:

*Excerpt 5.6: February 12, 2013
Interview with José and Leticia*

Teresa: Oh you went in the Lorikeet Forest?

José: Yeah. And we got to feed them, too with the special liquid. I don't know what it was.

Teresa: Did you guys get to touch them at all?

José: Actually, when you touch them they kind of go to the side and they kind of want to fly away. But I managed to kind of touch one while it was eating.

Teresa: So you had the food? Did you have the food in your hand and they ended up in your arm?

José: Yeah. You have to grab it like an ice cream cone (he shows me with his hands and arm). And you have a little, yeah, and they just come to you. They just fly and go to you.

Leticia: It was funny cuz, like, I wouldn't like go to them. I don't know. They would like push me and they would land on top of me.

José: Yeah see. They were flying to her. And I was right there alone. And then I got like four of them coming to me. So I had a bunch of birds on me.

The above passage illustrates that most guests, as they traverse through the Forest, have understood how to feed the birds, realize the interaction is Lorikeet-dependent, and are willing to be patient. Most guests do not, however, interact with a staff member who has knowledge about the birds; there

is no forum for guests to question why the birds are held captive; guests are not involved in animal rehabilitation; and guests are not aware that their feeding the birds often disrupts Lorikeet territorial behaviors.

Good luck polka dots

In *The History of Sexuality* Foucault (1979) discussed the State's regulation of bodies in the name of health and hygiene (among other state projects). In modern society, hygiene has come to mean maintaining the body as clean and therefore free of potential disease-causing agents, many of which are associated (rightly or wrongly) with feces (Curtis & Biran, 2001). Many guests and staff, therefore, have developed a cultural aversion to feces. The threat of being defecated on is large enough that some volunteer educators refuse to take a shift inside the Forest, despite the fact that the paid staff members who supervise volunteer training ask volunteer staff members-in-the-making to convince guests that Lorikeet poop is innocuous because "It's just nectar. So they shouldn't feel bad because it would be worse if they pooped out fish." The "threat," of course, is nothing new, as the theme of avoiding bird poop occurs in countless films, novels, and cartoon strips and recently became a concern due to avian flu epidemics caused, in part, by humans who had contact with infected bird feces. An online search of "bird poop" reveals myriad sites

dedicated to selling cleaning products specially designed to remove the feces and halt damage to paint (on cars, for example) or clothing.

Kristal, a volunteer staff member refusing to work in the Forest explains that the bird feces damage clothes:

*Excerpt 5.7: October 27, 2012
Interview with Kristal*

Teresa: No birds for you either?

Kristal: No.

Teresa: Did you have a bad experience with the birds or you're just not into the birds?

Kristal: I'm not into poop. These guys projectile poop.

Teresa: Yeah.

Kristal: At least 12 feet. It's got a bleach-like quality. So, most of the people that work in there have these little white spots on there, bleach-outed. Good luck polka dots they call them.

While staff members like Kristal refuse to work in the Forest, some staff and guests do take chances. Below, Sydney and Cisco, both first time visitors, discuss how they do not mind the feces; to them it's what one expects in an interaction with an animal. They express, however, being slightly uncomfortable with how fast the body-to-body and feces-to-body contact took place once they

were inside. Lorikeets, as captive wild animals, can exercise agency and moderate human behavior, vis-à-vis these interactions:

*Excerpt 5.8: March 6, 2013
Interview with Sydney and Cisco*

Teresa: Oh you did? So could you tell me about what happened when you guys walked in [to the Forest] and you had the food in your hands, like tell me about your experience in there?

Cisco: I got attacked as soon as I walked in. A bird already got on me and did his duty on me and then he took off after that (laughing).

Teresa: Oh. Did he poop on you?

Cisco: (laughing) Yeah.

Sydney laughs, too.

Teresa: So did you know going in they were probably going to land on you since you bought food?

Cisco: Yeah.

Teresa: So you were comfortable?

Sydney: Not that fast, though.

Teresa: Not that fast?

Cisco: I knew it could've happened.

Teresa: And you were okay with being pooped on?

Cisco: Yeah. It's just a bird. That's what he does.

Other visitors, like Paula, Stacey, and Bobby, tread lightly into the Forest. Stacey, a college student, and Bobby, a senior in high school, visited the Aquarium with a family friend they called Aunt Paula. It was their first visit, but Paula had been several times prior. For them, refusing to purchase nectar decreased the likelihood of being defecated on:

*Excerpt 5.9: February 23, 2012
Interview with Paula, Bobby, and Stacey*

Teresa: Could you talk a little about what you did at the exhibits? So did you just go in and look, did you touch, did you read, did you talk to people that work here?

Paula: Yeah. We talked to some people. And we took a lot of pictures. And a lot of "oohs" and "aahs." You know? (laughing). So yeah.

Bobby: Nothing major. We took pictures. Interacted a few times with other people who are here. Uh, watched birds, uh, nothing else, really. Went through and looked around.

Paula: It was a little crowded.

Bobby: Yeah.

Teresa: It was crowded. Yeah. Did you guys actually interact with the birds? Did you buy the food and have them land on you?

Stacey: We just took pictures.

Teresa: Not really into having the birds land on you?

Paula: Not into having birds poop on us.

They all laughed.

Teresa: But you guys did go in there?

Stacey, Paula, and Bobby: Yes.

Thus, despite the Aquarium's goal of regulating Lorikeet bodies as biopower through feeding them a special diet during the day in order to ensure customer satisfaction and fiscal survivability, bodies still must defecate. Waste, in this context, cannot be completely "rendered invisible," (Anderson, 1995, p. 645), so guests (and staff) must ultimately confront feces.⁹¹

⁹¹ As the staff members and Aquarium guests cited above demonstrate, no universal "modern attitude" toward bird feces exists. Attitudes toward "matter out of place" (i.e., dirt, excrement, menstrual blood) have been variously shaped by constructed categories that are "public matters" (Douglas, 1966, pp. 36-41). In *The Civilizing Process*, Elias (1978) traces the history of development of aversions to "natural functions" that increasingly became isolated from public view. This concealment occurred through complicated processes of social change whereby it became largely inappropriate to defecate, urinate, flatulate, or belch in public in Western societies. Therefore, some "modern" Aquarium guests, though seeking contact with "wildness," expect a sanitized version that will not upset their notions of contemporary "dirt" avoidance, systemically tied to hygiene, aesthetics, knowledge of pathogenic organisms, and more importantly, for Douglas, notions of "matter out of place" (1966, p. 36). However, as some of the interview excerpts above illustrate, particularly that of Sydney and Cisco, bird feces do not put off all Aquarium guests. The Aquarium as an institution assumes, though, that most guests would be offended and regulates bird bodies as a result.

“STOP THAT! DON’T DO THAT!” and “Keeping an eye on the kids”

Forest staff engage in multiple forms of disciplining visitor behavior. They gaze over guests as if security or police officer, surveying their actions. Some staff members actually describe their roles as “babysitters” or “policemen.” When necessary, they respond to inappropriate actions in multiple ways, including polite or scathing verbal admonitions followed by explanations as to why the behavior is inappropriate and, very rarely, by using their own body as a means to grab the attention of the offending visitor. In order to ensure a satisfying experience for visitors, staff are trained that the primary means they should interact with guests is through politely and positively suggesting correct behaviors, rather than scolding them for improper actions. While Education staff on the microphone may appear to be giving visitors a “show” or Husbandry staff feeding the birds in the Hut may seem as though they are not paying attention to guests as they bustle about, they are constantly surveying guest behavior. The following fieldnote excerpt illustrates how staff are active in regulating guest behavior, especially on a busy day. Also note the way the physical space necessitates staff actions; there are areas where birds are permitted to tread, but guests are prohibited and confined Lorikeets cannot escape guests who might do them harm:

Excerpt 5.10: February 20, 2013

I noticed some of the kids tried to climb over or under the short wood fence separating the concrete area from the grassy play area for the birds. The education volunteers (there were several present at that time), husbandry volunteer, and the paid education staff member all ran around like busy bees trying to keep the kids from entering these forbidden areas. In all interactions I observed, the staff members were polite (i.e., they used "please," did not yell, and explained themselves) when asking the guests to obey certain rules. Several times, I also noted parents reinforcing the rules after hearing the Aquarium staff member explain why they exist – animal safety and human safety. Jennie, with her deep commitment and love for the birds, was probably the busiest, as every time she noticed someone potentially misbehaving (crawling or climbing where s/he shouldn't or trying to poke the birds with a finger) she rushed over and gently told the guest how to interact properly with the animals.

During my time at the Aquarium I did not observe any staff overtly scolding guests, though several told stories of when they felt compelled to utilize more forceful means. Institutionally, these actions are undesirable because they are believed to negatively affect the guest experience and could, therefore, fiscally harm the Aquarium. In this way, staff, like Lorikeets, are carefully managed in order to cater to a neoliberal consumer of edutainment experiences who sustains the institution through ticket sales and other purchases. The following excerpt depicts a conversation I had with Sharon and Jennie in the Forest one morning. Since both have worked in the Education and Husbandry

departments, I asked them to describe how those roles might be different, since several staff members had shared each department follows different unwritten rules:

Excerpt 5.11: December 6, 2012

Sharon: We're [Husbandry] expected to be diplomatic, but if it comes between an animal being injured and a guest having a good experience, we pick the animal.

Jennie: And the Education people are a little more reluctant to do that because they...

Sharon: They get in trouble if they do. That's the thing. They're not supposed to.

Jennie: We're supposed to be diplomatic, too. And I try just as hard to be diplomatic in Husbandry as I do in Education, but to be honest with you I will honestly, hands down, protect the animal and try not to, I try to make the guest, nothing negative with the guest, but if it comes to I have to chose – oh well. I'm not going to let the animal get hurt.

Note that in the above passage, both Sharon and Jennie acknowledge the importance of “being diplomatic”; in another excerpt Sharon discusses avoiding “customer complaints.” These examples illustrate the tension at the Aquarium between privileging the experience of guests (neoliberal consumers of edutainment experiences) versus that of the Lorikeets. In this space, the typical visitor “gaze” upon confined wild animals (Desmond, 1999; Milstein, 2009) has

metamorphosed into a different kind of asymmetrical human-animal interaction (Haraway, 2008) that seemingly necessitates third-party regulation. Guests crave a short-lived interaction with the “wild,” which the institution heavily promotes, but is challenged to do in prescribed and regulated way in order to ensure the safety of the Lorikeets. The institutional focus on guest satisfaction, driven by the Aquarium’s fiscal requirements, is at root anthropocentric as it constructs an experience designed to meet human needs and wants (Devall & Sessions, 1985; Watson, 2008). Through bioregulating and commodifying animal bodies and nature (Rutherford, 2011), the institution hopes to guarantee its own existence. The staff who work directly with the birds in the Forest, however, embrace a different approach and view themselves as “protectors” of the animals, as I describe in more detail in a later in the concluding chapter.

As the Aquarium utilizes processes of concealment and visibility (surveillance), guests become subjects able to come to know particular kinds of Lorikeets (healthy, vibrantly-colored birds with watery feces who will land on people carrying cups of nectar), but not others (sick, injured, ill, aggressive, nesting, or juvenile animals).⁹² Staff disciplining and surveying of guests is

⁹² Recall that ill, injured, or uncooperative Lorikeets (those who regularly bite staff members) are hidden from guests either in the Hut or the Barn. In this way, the process is similar to that of the

essential to this process. Were guests to break the rules, they might come to know the Lorikeets in ways not fashioned by the Aquarium. Though staff are the experts in this space because they have institutional authority and knowledge of the Lorikeets, they alone do not produce a satisfying experience. The Lorikeets themselves also participate in this process. In the Forest, the spatial availability of healthy and “happy” Lorikeets, the spatial isolation of those birds who do not conform to the ideal (recall that injured, ill, or uncooperative animals are concealed from guests), and staff surveillance of guests and animals work in concert to co-produce wild animals fit for human consumption in a theme park atmosphere. Through biopolitical regulation of bird bodies and “act[ing] upon them [visitors] through shaping and utilizing their freedom” (Rose, 1996, p. 54) the Aquarium packages a sanitized encounter with nature designed to promote its own institutional viability and conservation education project.

Implications: Forging human-animal relationships at the Aquarium

Zoos and aquariums have endured sustained criticism because they have historically encouraged visitors to “gaze” over captive wild animals in simulated habitats (Beardsworth & Bryman, 2001; Milstein, 2009), encouraging the

industrialized slaughterhouse described by Pachirat (2011) in *Every Twelve Seconds*. There, concealment and visibility worked in concert to produce animal bodies as food for human consumption.

Cartesian separation of humans and nature (Milton, 2002, 2005; Williams, 1980). The Aquarium, therefore, seeks to address this criticism by imagining a neoliberal consumer of environmental edutainment experiences craving to put the “human” back in “nature” through nonhuman and human body-to-body contact. Their goal is to deliver this contact while simultaneously ensuring their own prosperity. However, body-to-body contact cannot substitute for sustained “contact” with nature or contact in a space less lopsided than of the Forest. Below, I explore how staff, whose experiences with the Lorikeets are qualitatively different than that of guests, develop intersubjective relationships with the birds.

Milton (2002), as previously detailed, argues that experiences with nature are essential if humans are to develop an empathic understanding of other living beings and the environment. She notes, “And, as we have seen, a consequence of identification with other entities is assumed to be that people will *feel* inclined to act benevolently toward them.” (2002, p. 84) In problematizing the term “anthropomorphism,” she conceptualizes “egomorphism,” which occurs when people perceive nonhuman animals as “like me” (based on *experiences with* them), rather than “human-like” (based on an *attribution of characteristics*) (2005, p. 261). However, in extending intersubjectivity and personhood to

interspecies relationships, Milton does not address (1) the impact of the quality or kinds of interactions humans have with animals in particular spaces or (2) the human capacity (or lack thereof) to identify with the violent and “unpleasant” aspects of nature, such as Lorikeet biting, both of which I discuss in further detail below.

Through egomorphism, Milton (2005) argues that as long as nonhuman animals *appear* to share mutual understandings, our own sense of personhood and their sense of personhood can be developed. This seems to suggest that humans may form egomorphic relationships with nonhumans, irrespective of the environment in which the interaction occurs. Following this line of reasoning, in the Forest, where bird bodies are regulated in order to cater to the advanced liberal consumer of edutainment, it might be possible for guests to locate personhood in the Lorikeets through their personal experiences with them (Rose, 1996). I contend, however, that development of personhood with nonhumans is impacted by the *quality* of experiences people have with the nonhuman world. That is, the institutional governing that occurs through the advanced liberal strategies described previously, constructs an entirely anthropocentric encounter where guests are unlikely to develop egomorphic relationships with the Lorikeets (Foucault, 2008; Rose, 1996).

Understanding whether or not humans can see other beings as “like me” that may cause them harm or remind them of their own sometimes violent and predatory nature also has significant consequences for nature protection, given that people frequently cite desiring to save those animals most like humans, i.e., the charismatic megafauna. (Rolston, 2002; Small, 2012). Rose, the staff member in the Forest savagely and repeatedly bitten by a Lorikeet nesting in a brood box, serves as an example of how Aquarium staff can develop empathic, emotional, and intersubjective relationships with animals, despite exposure to their brutality and despite not viewing their actions as “like me.” Rose grounds her intersubjectivity with the Lorikeets in a lack of physical interaction, whereby she and the birds live mutually undisturbed. She couples this lack of interaction with respect for them as living beings not “like me,” but as romanticized wild “others.” In contrast, Jennie, the staff member working regularly and directly with the Lorikeets, derives her intersubjectivity from ongoing, sustained relationships with them where she sees them as “like me,” despite the Lorikeets regularly defecating on her and biting her. In a follow-up interview with Jennie, which began with her proudly displaying a large wound on her hand resulting from an encounter with a nesting pair of birds she commented, “You get much more, day-to-day [in Husbandry], and you get to know the animals and you

develop relationships with them.” For Jennie, the Lorikeets are “like me” because of their “positive” characteristics (they “love” each other, they are identifiable and have names, they feel pain) and “negative” characteristics (they bite and defecate). Rose’s case suggests that intersubjectivity is not predicated on personhood or egomorphism and that violence (biting) can preclude a human from seeing an animal as “like me.” Jennie’s case intimates the opposite—her intersubjective relationship with the Lorikeets derives from her ability to view them as persons despite regular exposure to life’s unpleasant aspects (biting, defecating).

Many staff working directly with the birds in the Forest, like Jennie, do develop ongoing relationships with them. One afternoon there, Justin, a staff member, brought me over to where a few Husbandry folks interacted with birds near the Hut. Below is a fieldnote excerpt from that day:

Excerpt 5.12: November 8, 2012

At the end of my time in there, Justin took me over to where some Husbandry staff were interacting with the birds. One of them (Cindy) was allowing one of the birds to kiss her on her mouth. It was obvious she genuinely cared for the little green bird. The look in her eyes as she glimpsed its face told a story about how her relationships with the birds were not sanitized theme-park interactions, but rather empathic (think “intersubjective”) understandings of another creature. She then went right out to where some of the birds were perched on the trees and put them

on her finger. I was a little shocked to see these kinds of body-to-body contact, given that there were many guests present in the Forest and guests, of course, are prohibited from having these kinds of interactions with the birds. Having been savagely bitten by a pet parrot years back, myself, and knowing that my husband got stitches in his face after his pet parrot ripped his lip open, I told her she was brave for letting the bird kiss her face. She snapped back that she just knows which ones she can allow to do that, indicating to me that her relationships with the birds involved more than just providing the necessary nutrition and shelter.

Just a few moments later, I overheard Justin talk to a group of boys that looked about 5 years old and appeared to be roughhousing:

Excerpt 5.13: November 8, 2012

Justin (to the boys): What is going to happen when you scare the birds? You think they have a sharp beak? You see how sharp their beaks are? You see these cuts and welts left on my hand? It's all from the birds. It's not a good idea. So, how about we don't try to scare the birds? It's not a good idea. Thank you.

Juxtaposing these two types of interactions reveals striking differences.

While the Husbandry staff member allows the birds to kiss her face and has them perch on her finger, Justin, in order to ensure a safe interaction (for both the birds and the boys) and a satisfying guest experience free of bloody encounters with birds, disciplines the boys into either not interacting with the birds or into having only limited contact with them. In this way, the institution's need to commodify, sanitize, and regulate bird-human interactions limits the range of

emotional experiences people can have with the Lorikeets. Cindy's case illustrates that staff, some trained in the science of husbandry, can develop emotional and intersubjective relationships with the animals. As Candea (2010) points out, the role of affect and emotion in the care of and scientific study of nonhuman animals has been constructed as an anthropomorphic hindrance to the development of scientific knowledge about other species. My study suggests that emotion figures prominently into the development of empathic relationships with other species, allowing humans to come to "know" them in still bounded ways, but perhaps opening up the possibility for interspecies intersubjectivity.

Implications: Theoretical

This chapter demonstrates that physical interactivity between nonhumans (i.e., wild animals) and humans in a space like the Aquarium necessitates different types of bioregulation when compared to spaces where nonhumans and humans do not physically interact. Theoretically, it suggests that researchers must continue to modify and reconfigure Foucault's original concepts (biopolitics and biopower) in order to understand the regulation of nonhuman bodies in institutional spaces where human-nonhuman entanglements are complexly bound to fiscal survivability. In the Forest, for

example, Lorikeet bodies are manipulated not only to “make live” in the Foucauldian conceptualization of the term, but also to financially benefit the institution vis-à-vis a heightened guest experience. At the Aquarium, then, biopolitics is as much about maintaining a healthy population of Lorikeets as it is with ensuring the “making live” of the institution.

Though governing in this space produces visitors as consumers of animal bodies, Milton’s (2002, 2005) theories— person-based identification and egomorphism--suggest that personal experiences with the nonhuman entities matter with respect to inspiring humans to care and be empathic toward nonhumans. Since staff develop intersubjective relationships with the birds as they have both positive and negative personal experiences with them, there exists the potential for guests to have intersubjective relationships as well. This would require, however, the enactment of a governing less focused on constructing neoliberal consumers and aimed instead at exploring the possibilities for empathy, compassion, and care.

CHAPTER 6: TRANSFORMATIONS: STAFF AFFECTIVE LABOR PRACTICES

In a basement under one of the beautiful public buildings of Omelas, or perhaps in the cellar of one of its spacious private homes, there is a room. It has one locked door, and no window. A little light seeps in dustily between cracks in the boards, secondhand from a cobwebbed window somewhere across the cellar. In one corner of the little room a couple of mops, with stiff, clotted, foul-smelling heads stand near a rusty bucket. The floor is dirt, a little damp to the touch, as cellar dirt usually is. The room is about three paces long and two wide: a mere broom closet or disused tool room. In the room a child is sitting. It could be a boy or a girl. It looks about six, but actually is nearly ten. It is feeble-minded...The door is always locked; and nobody ever comes, except that sometimes--the child has no understanding of time or interval--sometimes the door rattles terribly and opens, and a person, or several people, are there. One of them may come in and kick the child to make it stand up. The others never come close, but peer in at it with frightened, disgusted eyes. The food bowl and the water jug are hastily filled, the door is locked, the eyes disappear. The people at the door never say anything, but the child, who has not always lived in the tool room, and can remember sunlight and its mother's voice, sometimes speaks. "I will be good," it says. "Please let me out. I will be good!" They never answer...

This is usually explained to children when they are between eight and twelve, whenever they seem capable of understanding; and most of those who come to see the child are young people, though often enough an adult comes, or comes back, to see the child. No matter how well the matter has been explained to them, these young spectators are always shocked and sickened at the sight. They feel disgust, which they had thought themselves superior to. They feel anger, outrage, impotence, despite all the explanations. They would like to do something for the child. But there is nothing they can do. If the child were brought up into the

sunlight out of that vile place, if it were cleaned and fed and comforted, that would be a good thing indeed; but if it were done, in that day and hour all the prosperity and beauty and delight of Omelas would wither and be destroyed. Those are the terms. To exchange all the goodness and grace of every life in Omelas for that single, small improvement: to throw away the happiness of thousands for the chance of the happiness of one: that would be to let guilt within the walls indeed.

-Ursula Le Guin
"The Ones Who Walk Away From Omelas"

Like the child in the passage from Le Guin's (1973) "The Ones Who Walk Away From Omelas," depicted above, the nonhuman animals at the Aquarium are held captive and manipulated in order to benefit animal and human kind in various ways. Though most Aquarium animals are not completely isolated from members of their own species like the child in "Omelas," they still lead a captive life and are subjected to continual human intervention. In previous chapters of this dissertation, I have pointed to how specific Aquarium practices fail to consider how the animals residing there are enrolled in educative processes that may be detrimental to their own wellbeing—and to the human's educational experience as the focus becomes meeting the needs of the envisioned advanced liberal citizen.

In this concluding chapter, drawing on Kay Milton's *Loving Nature* and Michael Hardt's "Affective Labor" I focus on how a particular Aquarium staff

member, Jennie, labors “affectively” as she has sustained and real-lived experiences with both animals and people at the Aquarium. Unlike the citizens of “Omelas,” who have infrequent contact with the captive child and subsequently feel pity and pain as they are unable to help the child, I argue that those Aquarium staff who labor affectively have the opportunity to engage themselves and others in practices that may be transformative, rather than strictly in the service of a capitalistic and advanced liberal edutainment project.⁹³ I introduced Jennie as a volunteer educator and Lorikeet caretaker in Chapter 5 and established how she develops intersubjective relationships with the Lorikeets as she comes to see them egomorphically or as “like me.” In this chapter, I highlight the specific relationship between her affective labor practices and her ability to see the Lorikeets egomorphically. I also juxtapose her affective labor practices with the pedagogies of expertise, choice, and care I

⁹³ Beardsworth and Bryman point out the need for more studies of zoo [and aquarium] staff, particularly the ways in which zoo employees engage in a type of “emotional labor practice” conceptualized as “a control [of the self] which is geared to expressing socially desired emotions in the course of service transactions” (2001, p. 96). While their focus is on the emotional labor practices that collectively produce “good customer service” for guests and the resulting tensions staff feel as they perform this emotional labor, my aim here is different. I show how, in caring for Aquarium animals (which is intimately connected to good customer service and institutional survivability), staff labor affectively and, in some cases, come to see the animals as “persons like me.”

discussed in Chapter 3 and the “technologies of touch” introduced in Chapters 4 and 5.

Conceptual Frameworks

Hardt describes immaterial labor as that which “produces an immaterial good, such as service, knowledge, or communication” (1999, p. 94). He argues that affective labor, or caring labor, is a face of immaterial labor production that produces and reproduces affects, social networks, forms of community, and a particular kind of biopower, which I describe shortly. At the Aquarium, these caring labor practices produce a wide array of intangible “goods,” such as entertainment and educational experiences and, in some cases, a sense of community with the nonhuman world. Though Hardt (1999) points out that immaterial labor often serves the interests of the global capitalist economy, he maintains that it might also be useful in anticapitalist projects, which is the focus of this chapter.

Hardt also criticizes Foucault’s biopower for its focus on “biopower from above,” which examines how “the emerging forces of governmentality [are utilized] to create, manage, and control populations,” and calls for attention to the “situation for the perspective of the labor [and laborers] involved in the biopolitical production,” which allows us to “recognize biopower from below”

(1999, p. 98). While I find Foucault's "biopower from above" approach analytically useful in preceding chapters, in this chapter, I utilize Hardt (1999) to focus on how some staff, in conjunction with the animals, also labor "from below" as they work to produce affects, subjectivities, and "life" that resist some of the Aquarium's mainstream education and entertainment projects.⁹⁴

Affective labor, though Hardt (1999) does not explicitly point it out, is inherently experiential. That is, people [and nonhumans] labor affectively through their real-lived experiences with each other. Combining these insights with Milton (2002), who argues that experiences with nature are essential if humans are to develop an empathic understanding of other living beings and the environment, I develop a model of affective labor that includes how humans, through their caring labor practices with the nonhuman world, come to view these nonhumans as "persons like me." Milton notes,

As we engage with our environment we perceive meanings in it; this is how it becomes known to us. It is the meanings which give things their value. In other words, we value things by perceiving meaning in them. These meanings become known to us through the emotions they induce, which we then experience as

⁹⁴ In analyses in prior chapters, I also highlighted the ways in which nonhuman animals are enrolled in the educative process and, in so doing, considered how the animals' own moments of resistance contributed to these processes. Drawing on Hardt (1999) these moments of resistance can be conceptualized as "biopower from below" as the animals biopolitically produce a sort of "life," not necessarily for themselves, but for their fellow creatures whom the Aquarium hopes to save through its conservation education projects.

feelings...the process of valuing things in the world is inseparable from the emotions and feelings they induce in us; without these emotions as feelings there would be no value (2002, p. 100).

In the following sections, then, I focus on how Jennie's real-lived experiences with the Lorikeets, laden with affect and emotion as she develops relationships with them and comes to see them as persons "like me," serve as a form of affective labor with the potential to transform Aquarium practice.

Laboring Affectively: Seeing Lorikeets as "Like Me"

Jennie, as I described briefly in Chapter 5, is a volunteer staff member with roles in both Husbandry and Education. Toward the middle to the end of my study, Jennie resigned from her position in Education to focus primarily on her Husbandry work. She explained that once she was able to secure her first Husbandry position, her priority became spending time with and caring for the animals. For Jennie, Education involved too much interacting with and/or entertaining guests and not enough attention to the lives of the animals residing there. By the time my study concluded, Jennie volunteered two to three full days per week caring for Aquarium animals.⁹⁵

On the day I conducted a semi-formal follow-up interview with Jennie, which I excerpt below, she also took me on an informal behind-the-scenes tour

⁹⁵ In order to maintain Jennie's anonymity, I do not fully describe all of her Husbandry positions.

of the “Barn,” which is the structure behind the Aquarium’s Shark Lagoon that houses program animals and off-exhibit Lorikeets.⁹⁶ During this tour, she bustled about the facility in a manner very similar to the many times I had witnessed her cleaning and working in the space of the Lorikeet Forest. She pointed out some of her cleaning and feeding duties and also went on to explain why certain birds had particular housing arrangements—i.e., some had paired up and were mating or caring for eggs, some get along poorly with other birds, and some had acquired illnesses and were being cared for by staff. I also met Lola, the Sulfur Crested Cockatoo, a program animal housed at the Aquarium for at least the last six years.

In our first interview, conducted nearly a year prior to the follow-up interview excerpted below, Jennie had just acquired her first Husbandry position and was quick to point out how different it was from working in Education. At the time of this follow-up interview, she had nearly a year experience in Husbandry and was also working in several different departments. I hoped, therefore, to get a sense of how she felt about her work in Education versus her

⁹⁶ Based on the Aquarium website description, program animals are those which “staff take around the Aquarium to interact with guests.” During my time there, the program animals in the Aquarium’s “animal collection” (staff term) varied quite a bit. Some of the animals I personally saw included Lola, the Sulfur-Crested Cockatoo, a porcupine, and other wild animals able to be successfully trained to interact with people. Animals unable to be trained for this type of interaction, like the Aquarium’s Arctic Foxes, are typically sent to other facilities.

work in Husbandry, after having substantial real-lived experiences in both roles. Notice how she describes Feathers, a juvenile Lorikeet she came to know well through serving as her caretaker. Many months prior to this day Jennie took me behind-the-scenes inside the Hut, the small structure inside the Forest where a few birds are held off-exhibit. At that time I met a tiny Feathers, patchily covered in grayish-white down feathers and the green and blue feathers of Lorikeet adulthood:

*Excerpt 6.1: August 14, 2013
Follow-up Interview with Jennie*

Jennie: You get just much more, day-to-day [in Husbandry], and you get to know the animals and you develop relationships with them.

And later, she illustrates the depth of her coming to know the birds:

Jennie: We have all these little babies. Feathers, you remember Feathers.

Teresa: I remember Feathers.

Jennie: Feathers, Feathers had—Feathers is still the cutest bird in there, but Feathers now is all cuddly, and Feathers comes up, Feathers is in the Barn in these big walk-in flights, and Feathers comes up and Feathers will play and she gets your hand and you can hear Feathers over all the different birds, she has a different—it's a she by the way. I was sure she was a boy, but she's a girl. And she has this little melodic voice that you can hear very differently; and it's just so cute.

As Jennie points out, through her “day-to-day” work in Husbandry, she has come to know the animals and develop relationships with them. That is, in laboring to ensure that the Aquarium animals stay healthy and in line with regulations set forth in the Animal Welfare Act, which is intimately tied to the capitalist project of institutional sustainability, Jennie also affectively and emotionally engages with the Lorikeets.⁹⁷ In this excerpt, she sees and comes to know the intricacies of Feathers’ behaviors—playing, singing, and physically interacting.⁹⁸ She does not attribute “cuteness,” “playfulness,” or “cuddliness” to Feathers’ simply because she recognizes these behaviors as “cute,” “playful,” and “cuddly” in humans (which Milton would describe as anthropomorphic point of view due to the *attribution* of human characteristics), but due to her personal involvement *with her and caring for her*, allowing her to come to know Feathers as “like me.” Personally involved with them and their care, which is essential to Milton’s (2002, 2005) model, Jennie feels a range of both positive and negative

⁹⁷ See: <http://awic.nal.usda.gov/zoo-circus-and-marine-animals>. According the website for the Animal Welfare Act, “The Animal Welfare Act was signed into law in 1966. It is the only Federal law in the United States that regulates the treatment of animals in research, exhibition, transport, and by dealers. Other laws, policies, and guidelines may include additional species coverage or specifications for animal care and use, but all refer to the Animal Welfare Act as the minimum acceptable standard. The Act is enforced by the USDA, APHIS, Animal Care agency.”

⁹⁸ In several other interview or informal conversations excerpts, Jennie similarly describes other Aquarium animals.

emotions (joy, excitement, empathy, and sorrow), which collectively contribute to her attribution of personhood to the Lorikeets.

Jennie's ability to see the Lorikeets as persons "like me," grounded in her experiences affectively laboring *for* and *with* them, interestingly allows her to transfer her compassion and empathy for one avian species to another. Though her affective labor depicted in the passage below is intimately tied to the institution's advanced liberal project (i.e., good customer service that is "productive of capital") (Hardt, 1999, p. 98), it was also clear that as Jennie gazed upon the injured pigeon she felt a genuine concern for its wellbeing and hoped that it would be well-cared for or euthanized so that it would no longer suffer. Several passerby questioned Jennie and other staff about the pigeon, and staff became worried it would negatively affect the guest experience. Not long after, Security hauled off the injured animal:

Excerpt 6.2: December 15th, 2012

When I walk up to the Shark Lagoon, Jennie is standing there looking at a sick pigeon sitting on the ground. It's between the far left pool and the center pool when facing the Shark Lagoon. Its feathers are ruffled, it looks "puffy" and it's not moving—all signs that it is ill, based on my many years experience raising birds as a young adult and teenage girl. She has a sad look on her face, as she is a bird person and really has empathy for them.

Teresa: It's sad. You don't want to just leave it there and have somebody accidentally hit it.

Jennie: Obviously. Whatever happens to it is better than this.

Teresa: Poor guy.

Jennie: I've had two guests come up to me and say, "You've got a pigeon over here and it doesn't look good." And it's not a place where we want people to be feeling like that. We want them to have (inaudible). You know?

Security staff come by to pick up the injured animal. Jennie comforts a few children who are looking on with concerned faces. She reassures them that the man is going to get the bird help. A few minutes after the sick pigeon is carried away, I chat with Jennie about what it is like for her working behind the scenes with the Lorikeets

Jennie: Yeah. And I got a little eye opening yesterday to, you know, I'm all happy thinking I get to feed them and clean up. And I don't mind cleaning bird poop and all that stuff. Well, she [her supervisor] goes, now you've got to be honest with me. You're going to see a lot of stuff. They die and you care for them and they die and she goes, if it gets to be too much for you, tell me. Cuz I don't want you to feel really bad about it...And I thought, (inaudible) about the pigeon. So it's hard...because you get to know them [the Lorikeets]. You know their names. You-I just want the fun part.

In this last excerpt, Jennie directly connects her compassion for the Lorikeets to caring for them while they are ill. While she explains that she never thought about how overwhelming it might be to have to deal with the suffering or loss of an animal in her care, her empathy, compassion, and emotional

attachment to the birds are bound up to the ways in which she sees them—as living beings who have identifiable features (the ability to suffer and feel pain when they are ill) and names (personhood). In this way, she enters into an intersubjective relationship with them, interacting through a “mutual understanding.” (Milton, 2005, p. 263). While we cannot know the degree to which the Lorikeets participate in this “mutual understanding” or intersubjective relationship, recall that Milton argues that whether or not animals actually involve themselves intersubjectively with humans is irrelevant; it only matters that they appear to do so (2005, p. 263). Though identification with animals based on their perceived personhood (or human-likeness) is an anthropocentric view, it nonetheless suggests the importance of the role of emotions and the recognition of personhood in nonhuman entities for *some* humans, particularly those who see themselves as caretakers of or affective laborers for their nonhuman companions.⁹⁹

⁹⁹ I italicize “some” here to highlight that not all volunteers at the Aquarium necessarily recognize this personhood in animals. Recall that Rose, in Excerpt 5.3, described them as wild animals, who do what wild animals do.

Transformations and Possibilities: Affective Labor versus

Pedagogies of Care

In Chapter 3, I defined “pedagogies of care” as those practices teaching staff utilize to connect *science content* (and broader conservation issues rooted in advocacy or policy) to emotion, values, and care. These practices primarily involve staff discourses/discursive techniques as they perform semi-scripted shows or have informal conversations with guests; both enroll live animals in the process. That is, as staff tell stories about the animals residing at the Aquarium, whose bodies are on display for guests to view and/or touch, staff utilize ethical or affective arguments to: (1) facilitate the science learning process and (2) inspire guests to care about conservation issues. While these practices are laudable in their goals, I suggest here that more transformative engagements would entail guests affectively laboring in a manner similar to staff like Jennie.

Most staff implicitly believe that storytelling (verbal engagement: science + affect) coupled with physical contact with animals fosters positive emotional experiences for guests. In interviews, for example, staff discuss instances where they actively encourage guests to handle both live and dead animals parts, like shark teeth, otter pelts, and whale jaws—albeit in a controlled manner—at the various touch labs and exhibits throughout the facility (Moon Jellies, Shark

Lagoon, Ray Pool, The Whale Cart, Shark Cart, and others). Though guests are told not to touch the Lorikeets, body-to-body contact is also encouraged there through the selling of nectar.

While my data do not clearly indicate why staff believe touching creates these kinds of experiences, I conjecture that it occurs for two reasons: (1) a vast educational research literature extols the virtues of the right kinds of “kinesthetic” learning experiences (Allen, 2004; Allen & Gutwill, 2004; Rahm & Ash, 2008) and (2) staff believe touching assists in deconstructing the visitor “gaze” so that guests can come to know the animals and absolve any fears or misconceptions they hold about them. Multiple researchers, for example, have described the sustained criticism zoos and aquariums endure because they have historically encouraged visitors to “gaze” over captive wild animals in simulated habitats (Beardsworth & Bryman, 2001; Milstein, 2009; Pedersen, 2010a), encouraging the Cartesian separation of woman/man from nature (Milton, 2002, 2005; Williams, 1980). The Aquarium, therefore, seems to want to address this criticism by imagining a neoliberal consumer of environmental edutainment experiences craving to put the “human” back in “nature” through human/non-human animal body-to-body contact. Their goal is to deliver this contact, which is tied to institutional prosperity, while simultaneously educating guests

(pedagogies of expertise, choice, and care) and inspiring them to care more about the natural world.

Drawing on my ethnographic work with Jennie, I argue here that the brief and often sanitized body-to-body encounters guests have with animals at the Aquarium, accompanied by the discourses of pedagogies of care, cannot substitute for affective labor practices, like those described in this chapter. Though guests do have real-lived experiences with nonhuman animals there, they are inherently designed as entertaining, leaving little room for guests to affectively labor and engage intersubjectively with Aquarium animals in a manner similar to Jennie. To illustrate, while visitors have the opportunity to feed the Lorikeets, the experience is not advertised as one of care, rather as encounter with foreign land and exotic body:

Transport yourself to the coastal lowlands of Australia when you enter Lorikeet Forest, a 3,200-square-foot outdoor aviary. More than 100 lively lorikeets fill the trees. Purchase a small cup of nectar, the lorikeets' favorite food, to feed the birds as you walk through the exhibit. They will land on your hand, arm, shoulder or even your head to get a sip of sweet nectar! (Aquarium website)

As this Aquarium website excerpt illustrates and as I have demonstrated in prior chapters, guests are not asked to affectively labor *for* and *with* the animals whom they touch and view at the Aquarium. Instead they are entreated,

through discursive and tactile means, to “have a great time” and subsequently care about some “animal,” “environment,” or “nature” out there in the universe—like the disembodied shark. In a re-imagined space, guests might be encouraged to question why the animals are held captive, animal bodies might not be biopolitically regulated to heighten the guest experience and, as Milstein suggests (2009) they might participate in animal care and feeding and be exposed to ill or injured animals normally housed behind-the-scenes and out of view. Sick animals are typically hidden from visitors to ensure an entertaining experience and so the animals can rehabilitate in a “safe” environment.¹⁰⁰ My work with Jennie demonstrates the complex ways in which affective laboring vis-à-vis real-lived experiences with animals is intimately connected to the ability to see those animals as persons “like me.” I contend that for Aquarium practices to be truly transformative, guests [and staff] must affectively labor *for* and *with* the animals.

In opening this chapter with Le Guin’s “Omelas,” I hoped to draw parallels between the captive child and captive animals at the Aquarium to show how zoos and aquariums engage in edutainment projects for the good of the

¹⁰⁰ Peace (2005) similarly finds that “death” and “killing” are taboo topics for whale watch guides in Australia who believe that tourists do not want to engage in conversations about such drab and depressing topics as death. This highlights the tension between entertainment and education that *ecotourism* sites face.

many—i.e., broader conservation issues—without sufficiently tending to the good of the few—i.e., the captive animals. This finding, of course, is not new. What I offer here, however, is a model for affective labor practice that demonstrates how people, through direct experiences caring for captive animals, come to view them as persons “like me.” Though Jennie “labors from above” for the institution—as clearly demonstrated in the pigeon incident (Excerpt 6.3)—she also “labors from below” as she becomes emotionally invested in the wellbeing of Lorikeets comes to know as individuals worthy of care and concern. If other staff and, more importantly, guests were to labor affectively in this way, perhaps aquariums and zoos might be more transformative spaces inspiring the public to engage in transformative practice.

CHAPTER 7: CONCLUSION

Summary of Findings

This dissertation has demonstrated how the Aquarium, as an institution, politically deploys nonhuman animals in processes that: (1) teach about the environment and (2) ensure institutional sustainability. To do this, staff rely on pedagogies of expertise, care, and choice, and technologies of touch; all of these strategies entreat visitors to learn more about their relationship with the natural world so they might become more conservation-minded and concerned with environmental problems the Aquarium deems significant. In so doing, however, the institution mutes the experiences of the animals actually residing at the Aquarium, as they become representative members of their own species or of the environment more generally.

Implications and Future Research

Though there is a national obsession with science and environmental education in both formal and informal settings, as evidenced by the vast financial investments the National Science Foundation, the National Oceanic and Atmospheric Association, the National Aeronautics and Space Administration and a host of other governmental bodies make in education, few

researchers study these spaces from the perspective of multispecies education. That is, most of the educational research literature treats nonhuman animals as objects to facilitate the acquisition of human learning outcomes typically entrenched in the natural and physical sciences. As a result, they pay scant attention to the nonhuman animals that become part of these multispecies educative assemblages.

I utilized a Foucauldian analysis in the current study to examine how the institution and its staff biopolitically enroll non-animals in educative processes intimately linked to institutional survivability. In Chapter 6, Hardt's (1999) "biopower from below" and Milton's (2002, 2005) "egomorphism" provided a lens to examine how staff who labor for the institution "from above" have the opportunity to engage in transformative practices as they also engage affectively and develop relationships with the animals residing there. The implications of these findings are important not only from a theoretical standpoint, i.e., analyses including biopower from "above" and "below" capture how people (and nonhuman animals) labor *both* for and against neoliberal projects, but also from a pragmatic standpoint in that they have the potential to transform practice.

Despite frequent media attacks on zoos, aquariums, marine parks, and similar institutions, which typically occur when a documentary like “Blackfish” is released and incites public unrest, it is unlikely that institutions holding nonhuman animals captive for human education and enjoyment will cease to exist in the near future. These institutions—multispecies educative spaces because staff often co-teach with animals—are typically anthropocentric, however, because they are at root designed to benefit the people who visit and not the actual animals residing there. The current study’s conceptualization and findings are salient, therefore, because they (1) demonstrate that staff typically co-teach with nonhuman animals in these spaces without fully engaging guests in conversations about the animals’ real-lived experiences and (2) suggest that more transformative teaching practice is a possibility.

I contend here that if the Aquarium were to shift its focus from entertaining and educating the envisioned neoliberal consumer and instead engaged guests in affective labor practices, visitors might be more likely to empathically experience the nonhuman “Other” as “more than and different from me” Smith (2001), rather than as object for human use. This type of transformation might occur through undoing the typical encounters that occur in these spaces in order to reassemble new possibilities. Based on the findings of

the current study and reviews of the literature, there needs to be more research in informal spaces that considers how (1) discourses; (2) tactile experiences; and (3) the physical and built environment, often inadvertently, reproduce master narratives that continue to conceptualize animals in these spaces (and in others) as resources for human ends (in this case education). To do this, the field of education, and I refer here to both scholars and practitioners of education, needs to “move beyond the human-centric confines of dominant western educational theories and practices” (Taylor, 2013, p. 7). This might be partially accomplished by bringing the perspectives of ecofeminist and posthumanist scholars (Haraway, 2008; Pedersen 2010a, b; Plumwood, 1996; Taylor, 2013) and multispecies ethnographers (Candea, 2010; Helmreich, 2009; Kirksey & Helmreich, 2010; Ogden, 2011; Ogden et al., 2013) to bear on educative spaces, as I have done in this dissertation.

APPENDIX A: INTERVIEW PROTOCOLS

Guest Interview Protocol

Background

1. How is it that you came to visit the Aquarium today? (Prompt, if necessary, with questions like: What did you come to see?)
2. Have you visited before?
3. Do you visit museums often? If so, how often would you say?
4. What other sorts of things do you do in your free time?

The exhibits

5. I'm interested in your visit today. Tell me about the exhibits you visited.

(Here pay close attention to the exhibits they mention and do not mention and what they mention about the exhibits, i.e., the animals, interaction, what they saw, what they liked.)
6. What did you think of these exhibits? (Did you have favorites? Were there ones that you thought were not engaging?)
7. What did you do at the exhibits? (The goal here is to get them to talk about learning and/or knowledge construction, interactivity, having fun, touching animals, etc.)
8. [If they mention learning] What did you learn?

9. Do you feel more knowledgeable about a particular topic as a result of your visit today? (Again, an open-ended question to get them to discuss whether or not they think they have learned about science.)
10. Were you surprised to see any of the exhibits here?

Identity

11. Do you think differently about anything as a result of your visit today?
12. What sort of people do you think the exhibits are designed for?
13. Would you say that you are this sort of person?
14. Do you think that the exhibits are designed to convey particular messages? If so, what are those messages? Feel free to talk about specific exhibits.

Relationships with animals/environment

15. Do you have any pets? If so, please tell me about them. (As they talk about any pets they may have, probe further. Do they take their pets to the vet regularly? How long have they had them?)
16. Are you involved in any groups related to animals or the environment? If so, could you please tell me about them? (If they are, ask them to talk about their activities, how long they have been involved, etc.)

17. Did you have any contact with the animals here at the Aquarium today? If so, could you tell me what that was like? (Probing: How did you end up touching the animal? Could you tell me what you thought about when touched it? Did you expect to be able to touch animals here or were you surprised?)

General background

18. Can I ask how old you are?

19. What do you do for a living?

20. When did you leave school? Have you done any studying since then?

21. How much have you studied science? (If they indicate having studied science quite a bit, ask if it is typical for their family and friends.)

Teaching Staff Interview Protocol

Background

1. How is it that you came to work (or volunteer) at the Aquarium?
2. How long have you been here and how often do you work (or volunteer?)
3. Tell me about your educational background.
4. Tell me about your professional background. Have you worked (volunteered) at a place like the Aquarium in the past?

Role at the Aquarium

5. What is your role here at the Aquarium? (Prompt them to discuss the exhibits where they work if they do not mention them and get them to elaborate on any informal roles they may have, if mentioned. Also make note of any other staff members/nonhuman actors they mention as they may indicate important "networks" and "associations.")
6. So your official role here at the Aquarium is as "educator." Tell me what that means to you.
7. Take me through a "typical" day here for you. What do you normally do?
8. What, specifically, do you teach? (Listen here for them to talk about whether what they teach counts as science to them or if counts as something else.)

9. Describe what you do when you teach at an exhibit. (Listen here for them to discuss their pedagogical philosophy. Do they see themselves as experts and believe they need to correct misconceptions? Do they see themselves as facilitators and want visitors to co-construct knowledge with them? Do they talk about teaching “science” or about teaching something else? Do they even mention visitors? Do they mention the non-human world? Do they mention other staff members?)
10. When you teach, what do visitors do? (Listen for them to discuss visitor interaction (or lack thereof), visitor reactions, visitor engagement, what they believe visitors learn, how visitors interact with the nonhuman world, etc.)
11. Can you describe a “telling incident” that you’ve had here at the Aquarium? (If they cannot think of anything, prompt them with: Is there some moment of triumph or defeat that sticks out in your mind?)

Educator views of visitors

12. What do you believe motivates visitors to come to the Aquarium? (Do they cite leisure, learning, or some other reason? If they cite learning, do they specifically mention science, the environment, conservation, marine animals, or some other term that suggests visitors come to learn about

something science-related? This question is designed to get them to talk about their view of the Aquarium-do they see it as an institution of learning?)

Management Staff Interview Protocol

Background

1. How is it that you came to work at the Aquarium?
2. How long have you been here and how often do you work?
3. Tell me about your educational background.
4. Tell me about your professional background. Have you worked at a place like the Aquarium in the past?

Role at the Aquarium

5. What is your role here at the Aquarium? (Prompt them to discuss the exhibits where they work if they do not mention them and get them to elaborate on any informal roles they may have, if mentioned. Also make note of any other staff members/nonhuman actors they mention as they may indicate important "networks" and "associations.")
6. So your official role here at the Aquarium is part of the education staff.
Tell me what that means to you.
7. Take me through a "typical" day here for you. What do you normally do?
8. Do you ever teach and if you do, what do you teach? (Listen here for them to talk about whether what they teach counts as science to them or if counts as something else.)

9. (If they teach): Describe what you do when you teach. (Listen here for them to discuss their pedagogical philosophy. Do they see themselves as experts and believe they need to correct misconceptions? Do they see themselves as facilitators and want visitors to co-construct knowledge with them? Do they talk about teaching “science” or about teaching something else? Do they mention the non-human world? Do they mention other staff members?)
10. (If they teach): When you teach, what do visitors do? (Listen for them to discuss visitor interaction (or lack thereof), visitor reactions, visitor engagement, what they believe visitors learn, how visitors interact with the nonhuman world, etc.)
11. Can you describe a “telling incident” that you’ve had here at the Aquarium? (If they cannot think of anything, prompt them with: Is there some moment of triumph or defeat that sticks out in your mind?)

Educator views of visitors

12. What do you believe motivates visitors to come to the Aquarium? (Do they cite leisure, learning, or some other reason? If they cite learning, do they specifically mention science, the environment, conservation, marine animals, or some other term that suggests visitors come to learn about

something science-related? This question is designed to get them to talk about their view of the Aquarium-do they see it as an institution of learning?)

REFERENCES

- Agar, M.H. (1996). *The professional stranger: An informal introduction to ethnography*. San Diego, CA: Academic Press.
- Adger, W.N. (2001). Scales of governance and environmental justice for adaptation. *Journal of International Development*, 13(7), 921-931.
- Allen, S. (2002). Looking for learning in visitor talk: A methodological exploration. In G. Leinhardt, K. Crowley & K. Knutson (Eds.), *Learning conversations in museums* (pp. 259-303). Mahwah, NJ: Lawrence Erlbaum Associates.
- Allen, S. (2004). Designs for learning: Studying science museum exhibits that do more than entertain. *Science Education*, 88, S17-S33.
- Allen, S. & Gutwill, J. (2004). Designing with multiple interactives: Five common pitfalls. *Curator*, 47(2), 99-112.
- Althusser, L. (1971). Ideology and ideological state apparatuses. In L. Althusser (Ed.), *Lenin and Philosophy and other Essays*. New York: Monthly Review Press.
- Anderson, W. 1995. Excremental colonialism. Public health and the poetics of pollution. *Critical Inquiry*. 21(3): 640-669.
- Andrzejewski, J., Pedersen, H., & Wicklund, F. (2009). Interspecies education for humans, animals, and the earth. In J. Andrzejewski, M.P. Baltodano, and L. Symcox (Eds.), *Social Justice, Peace, and Environmental Education* (pp. 136-154). New York, NY: Routledge.
- Arendt, H. (1963). *Eichmann in Jerusalem: A report on the banality of evil*. New York, NY: Viking.
- Atkinson, P., Bader, D., & Piper, H. (2010). *Aquarium of the Pacific 2010 Annual Report*. Long Beach, CA.
- Beardsworth, A. & Bryman, A. 2001. The wild animal in late modernity: The case of the Disneyization of zoos. *Tourist Studies*. 1(1): 83-104.

- Becker, H.S. (1996). The epistemology of qualitative research. In R. Jessor, A. Colby & R. A. Shweder (Eds.), *Ethnography and human development: Context and meaning in social inquiry* (pp. 53-71). Chicago: University of Chicago Press.
- Behar, R. (1997). *The vulnerable observer: Anthropology that breaks your heart*. Boston: Beacon Press.
- Bekoff, M. (2007). *The emotional lives of animals*. Novato, CA: New World Library.
- Bradley, E. (2013). Long Beach council moves forward with Cyclone Racer roller coaster proposal. *Press Telegram News*.
<http://www.presstelegram.com/general-news/20131001/long-beach-council-moves-forward-with-cyclone-racer-roller-coaster-proposal>
- Callicott, J.B. (1989). *In defense of the land ethic*. Albany, NY: State University of New York Press.
- Callicott, J.B. (1980). Animal liberation: A triangular affair. *Environmental ethics*, 2, 311-338.
- Callon, M. (1986). Some elements of a sociology of translation: Domestication of the scallops and the fisherman of St. Brieuç Bay. In J. Law (Ed.), *Power, action, and belief: A new sociology of knowledge?* (pp. 196-223). London: Routledge.
- Camhi, M.D., Valenti, S.V., Fordham, S.V., Fowler, S.L., & Gibson, C. (Eds). (2007). The conservation status of pelagic sharks and rays: Report of the IUCN Shark Specialist Group, Pelagic Shark Red List Workshop. Oxford UK: Tubney House, University of Oxford.
- Candea, M. (2010). "I fell in love with Carlos the meerkat:" Engagement and detachment in human-animal relations. *American Ethnologist*, 37(2), 241-258.
- Carrier, J.G. (2012). Dollars making sense: Understanding nature in capitalism. *Environment and Society: Advances in Research*, 3, 5-18.

- Chrulew, M. (2011). Managing love and death at the zoo: The biopolitics of endangered species preservation. *Australian Humanities Review*, 50, 137-157.
- Curtis, V. & Biran, A. (2001). Dirt, disgust, and disease: Is hygiene in our genes? *Perspectives in Biology and Medicine*, 44(1), 17-31.
- Darier, E. (1999a). Foucault against environmental ethics. In E. Darier (Ed.). *Discourses of the Environment* (pp. 217-240). Malden, MA: Blackwell Publishers.
- Darier, E. (1999b). Foucault and the environment: An introduction. In E. Darier (Ed.). *Discourses of the Environment* (pp. 1-33). Malden, MA: Blackwell Publishers.
- Derrida, J. (2008). *The animal that therefore I am*. New York, NY: Fordham University Press.
- Desmond, J.C. (1999). *Staging tourism: Bodies on display from Waikiki to Sea World*. Chicago: University of Chicago Press.
- Devall, B. & Sessions, G. (1985). *Deep ecology: Living as if nature mattered*. Salt Lake City, UT: Peregrine Smith Books.
- Douglas, M. 1966. *Purity and danger*. London: Routledge and Kegan Paul.
- Doyle, W. (1992). Curriculum and pedagogy. In P.W. Jackson (Ed.), *Handbook of research on curriculum* (pp. 486-518). New York, NY: Macmillan Publishing.
- Eisenhart, M. A. & Finkel, E. (1998). *Women's science*. Chicago and London: The University of Chicago Press.
- Elias, N. (1994). *The civilizing process*. Oxford: Basil Blackwell Ltd.
- Emerson, R. M., Fretz, R. I., & Shaw, L. L. (1995). *Writing ethnographic fieldnotes*. Chicago: University of Chicago Press.

- Erickson, F. (1986). Qualitative methods in research on teaching. In M. C. Wittrock (Ed.), *Handbook of Research on Teaching, Third Edition* (pp. 119-161). New York: Macmillan Publishing Company.
- Feyerabend, P. (1978). *Science in a free society*. London, UK: Verso.
- Fletcher, R. (2010). Neoliberal environmentalism: Towards a poststructuralist political ecology of the conservation debate. *Conservation and Society*, 8(3), 171-181.
- Foster, J.B. (2002). *Ecology against capitalism*. New York NY: Monthly Review Press.
- Foster, J.B. (2009). *The ecological revolution*. New York, NY: Monthly Review Press.
- Foucault (1974). *The archaeology of knowledge*. London, UK: Travistock.
- Foucault, M. (1978). *The history of sexuality volume 1: An introduction*. New York, NY: Vintage Books.
- Foucault, M. (1981). Omnes et singulatim: towards a criticism of "political reason." In S. McMurrin (Ed.), *The Tanner Lectures on human values II* (pp. 223-254). Salt Lake City: University of Utah Press.
- Foucault, M. (1982). The subject and power. *Critical Inquiry*, 8(4), 777-795.
- Foucault, M. (1992). *The history of sexuality volume 2: The use of pleasure*. Harmondsworth: Penguin.
- Foucault, M. (2003). *Society must be defended*. M. Bertani and A. Fontana (Ed.). New York, NY: Picador.
- Foucault, M. (2008). *The birth of biopolitics: Lectures at the College de France 1978-1979*. (M. Senellart, Ed., G. Burchell, Trans.) New York, NY: Palgrave MacMillan.
- Foucault, M. (2010). *The Foucault reader*. P. Rabinow (Ed.). New York, NY: Vintage Books.

- Fox, W. 1995. *Toward a transpersonal ecology: Developing new foundations for environmentalism*. New York: State University of New York Press.
- Geertz, C. (1973). *Thick description: Toward an interpretive theory of culture*. New York: Basic Books.
- Gieryn, T.F. (1999). *Cultural boundaries of science*. Chicago, IL: The University of Chicago Press.
- Godfrey-Smith, P. (2003). *An introduction to the philosophy of science: Theory and reality*. Chicago, IL: University of Chicago Press.
- Guthman, J. (2008). Neoliberalism and the making of food politics in CA. *Geoforum*, 39, 1171–1183
- Hammersley, M., & Atkinson, P. (2007). *Ethnography: Principles in practice*. New York: Routledge.
- Haraway, D.J. (1989). *Primate visions*. New York, NY: Routledge.
- Haraway, D.J. (1991). *Simians, cyborgs, and women*. New York, NY: Routledge.
- Haraway, D.J. (2008). *When species meet*. Minneapolis, MN: University of Minnesota Press.
- Harding, S.G. (1991). *Whose science? Whose knowledge?: Thinking from women's lives*. Ithaca, NY: Cornell University Press.
- Heath, S.B. & Brown, M. (2007). *Diverse learning and learner diversity in 'informal' science learning environments*. Paper prepared for the National Research Council's Board on Science Education for Learning Science in Informal Environments Study.
- Hein, G. E. (1998). *Learning in the museum*. New York, NY: Routledge.
- Helmreich, S. (2009). *Alien Ocean*. Berkeley, CA: University of California Press.
- Hettinger, N. & Throop, B. (1999). Refocusing ecocentrism: De-emphasizing stability and defending wildness. *Environmental Ethics*, 21(1), 3-21.

- Hill, S. (2008). *History of the Aquarium of the Pacific: The first 10 years*. Long Beach, CA: Halbert Hargrove.
- Jasanoff, S. (2005). *Designs on nature: Science and democracy in Europe and the United States*. Princeton and Oxford: Princeton University Press.
- Knorr-Cetina, K. (1999). *Epistemic cultures: How the sciences make knowledge*. Cambridge, MA: Harvard University Press.
- Kates, R.W. (2000). Cautionary tales: Adaptation and the global poor. *Climatic Change*, 45, 5-17.
- Kirksey, S.E. & Helmreich, S. (2010). The emergence of multispecies ethnography. *Cultural Anthropology*, 25(4), 545-476.
- Knight, J. (2005). Feeding Mr Monkey: Cross-species food 'exchange' in Japanese monkey parks. In J. Knight (Ed.), *Animals in person: Cultural perspectives on human-animal intimacies* (pp. 231-253). New York, NY: Berg.
- Kohn, E. (2007). How dogs dream. *American Ethnologist*, 34(1), 3-24.
- Kondo, D.K. (1990). *Crafting selves: Power, gender, and discourses of identity in a Japanese workplace*. Chicago: University of Chicago Press.
- Koster, E.H. & Schubel, J. (2007). Raising the relevancy bar at aquariums and science centers. In J.H. Falk, L. D. Dierking, and S. Foust (Eds.), *In principle, in practice* (pp. 107-120). Lanham, MD: AltaMira Press.
- Krasny, M.E. (2013). Introduction: Tales of a transdisciplinary scholar. In M.E. Krasny and J. Dillon (Eds.), *Trading zones in environmental education* (pp. viiii-xxxvii). New York, NY: Peter Lang Publishing.
- Latour, B. (1987). *Science in action: How to follow scientists and engineers through society*. Cambridge: Harvard University Press.
- Lemke, T. (2001). 'The birth of bio-politics': Michel Foucault's lecture at the Collège de France on neoliberal governmentality. *Economy and Society*, 30(2), 190-207.

- Leopold, A. (1949). *A Sand County almanac: And sketches here and there*. Oxford, UK: Oxford University Press.
- Locke, J. (1998). *An essay concerning human understanding*. (2nd ed.). London, UK: Penguin Classics. (Original work published 1690).
- Lorscheider, M.K. (2012). *Reinventing Long Beach: The fight for space and place in Post-Cold War Long Beach, 1990-1999*. Unpublished master's thesis, California State University Long Beach, Long Beach, California.
- Lucas, M. (2013). Regrounding in place: Paths to Native American truths at the margins. *Canadian Journal of Environmental Education*, 18, 126-141.
- Luke, T.W. (1999). Environmentality as green governmentality. In E. Darier (Ed.).
- Luke, T.W. (2000a). Beyond birds: Biopower and birdwatching in the world of Audubon. *Capitalism Nature Socialism*. 11(3): 7-37.
- Luke, T.W. (2000b). The Missouri Botanical Garden: Reworking biopower and florapower. *Organization Environment*. 13(3): 305-321.
- Macdonald, S. (2002). *Behind the scenes at the Science Museum*. Oxford, UK: Berg Publishers.
- Marietta, D.E. (1995). *For people and the planet*. Philadelphia, PA: Temple University Press.
- Marran, C.L. (2011). Beyond domesticating animal love. *Mechademia*, 6, 39-50.
- Massam, M. & Mawson, P. (2009). Battling bird damage. *Australian Viticulture*, 13(6), 16-23.
- Midgley, M. (1983). *Animals and why they matter*. Athens, GA: The University of Georgia Press.
- Milstein, T. (2009). "Somethin' tells me it's all happening at the zoo": Discourse, power, and conservationism. *Environmental Communication*, 3(1), 25-48.
- Milton, K. (2002). *Loving nature: Towards an ecology of emotion*. New York, NY: Routledge.

- Milton, K. (2005). Anthropomorphism or egomorphism? The perception of non-human persons by human ones. In J. Knight (Ed.), *Animals in person: Cultural perspectives on human-animal intimacies* (pp. 255-269). New York, NY: Berg.
- Myers, R.A., Baum, J.K., Shepherd, T.D., Powers, S.P., & Peterson, C.H. (2007). Cascading effects of the loss of apex predatory sharks from a coastal ocean. *Science*, 315(5820), 1846-1850.
- Nespor, J. (1994). *Knowledge in motion: Space, time, and curriculum in undergraduate physics and management*. London: RoutledgeFalmer.
- Oakley, J., Watson, G.P.L, Russell, Constance L., Cutter-Mackenzie, A., Fawcett, L., Kuhl, G., Russell, J., van der Waal, M., & Warkentin, T. (2010). Animal encounters in environmental education research: Responding to the question of the animal. *Canadian Journal of Environmental Education*, 15, 86-102.
- Ogden, L.A. (2011). *Swamplife: People, gators, and mangroves entangled in the Everglades*. Minneapolis, MN: University of Minnesota Press.
- Ogden, L.A., Hall, B., & Tanita, K. (2013). Animals, plants, people, and things: A review of multispecies ethnography. *Environment and Society: Advances in Research*, 4, 5-24.
- Pachirat, T. (2011). *Every twelve seconds*. New Haven: Yale University Press.
- Peace, A. 2005. Loving leviathan: The discourse of whale watching in Australian ecotourism. In J. Knight (Ed.), *Animals in person: Cultural perspectives on human-animal intimacies* (pp. 191-210). New York, NY: Berg.
- Pedersen, H. (2010a). *Animals in schools*. West Lafayette, IN: Purdue University Press.
- Pedersen, H. (2010b). Is 'the posthuman' educable? On the convergence of educational philosophy, animal studies, and posthumanist theory. *Discourse: Studies in the Cultural Politics of Education*, 31(2), 237-250.
- Pedersen, H. (2011). Counting affects: Mo(ve)ments of intensity in critical avian education. *Canadian Journal of Environmental Education*, 16, 14-28.

- Pedersen, H. (2012). Unstable mixtures: Zooethnographic educational relations as difference, contagion, critique, and potential. *Other Education: The Journal of Educational Alternatives*, 1(1), 152-165.
- Peters, S. & Wals, A.E.J. (2013). Learning and knowing in pursuit of sustainability: concepts and tools for transdisciplinary environmental research. In M.E. Krasny and J. Dillon (Eds.), *Trading zones in environmental education* (pp. 80-104). New York, NY: Peter Lang Publishing.
- Plumwood, V. (1996). Has democracy failed ecology? In F. Mathews (Ed.), *Ecology and Democracy* (pp. 134-168). Portland, OR: Frank Cass.
- Prakash, G. (1999). *Another reason: Science and the imagination of modern India*. Princeton, New Jersey: Princeton Univ Press.
- Quammen, D. (2003). *Monster of god*. New York, NY: W.W. Norton and Company.
- Rabinow, P. (2010). Introduction. In P. Rabinow (Ed.), *The Foucault reader* (pp. 3-29).
- Rabinow, P. & Rose, N. (2006). Biopower today. *Biosocieties*. 1(2): 195-217.
- Rahm, J. & Ash, D. (2008). Learning environments at the margin: Case studies of disenfranchised youth doing science in an aquarium after-school program. *Learning Environments Research*, 11, 49-62.
- Rolston, H. (2002). From beauty to duty: Aesthetics of nature and environmental ethics. In A. Berleant (Ed.), *Environment and the arts: Perspectives on environmental aesthetics* (pp. 127-141). Hampshire, UK and Burlington, VT: Aldershot.
- Rose, N. (1993). Government, authority, and expertise in advanced liberalism. *Economy and Society*, 22(3), 283-299.
- Rose, N. (1996). Governing "advanced" liberal democracies. In A. Barry, T. Osborne, and N. Rose (Eds.), *Foucault and political reason* (pp. 37-64). Chicago, IL: The University of Chicago Press.

- Roth, W. & Barton, A.C. (2004). *Rethinking scientific literacy*. New York, NY: Routledge.
- Rutherford, S. (2011). *Governing the wild: Ecotours of power*. Minneapolis, MN: University of Minnesota Press.
- Shapin, S. (1996). *The scientific revolution*. Chicago, IL: The University of Chicago Press.
- Shiva, V. (1998). *Staying alive: Women, ecology, and development*. New York, NY: South End Press.
- Simons, M. & Masschelein, J. (2006). The learning society and governmentality: An introduction. *Educational Philosophy and Theory*, 38(4), 417-430.
- Sismondo, S. (2010). *Introduction to science and technology studies*. Malden, MA: Blackwell Publishing Limited.
- Small, E. (2012). The new Noah's Ark: Beautiful and useful species only. Part 2. The chosen species. *Biodiversity*, 13(1), 37-53.
- Smith, M. (2001). The face of nature: Environmental ethics and the boundaries of contemporary social theory. *Current Sociology*, 49(1), 49-65.
- Spradley, J. P. (1979). *The ethnographic interview*. New York: Holt, Rinehart and Winston.
- Steele, C. (1997). A threat in the air: How stereotypes shape intellectual identity and performance. *American Psychologist*, 52, 613-629.
- Taylor, A. (2013). *Educating for sustainable common worlds at the eve of the Anthropocene*. Public Seminar, University of Western Sydney Spring School for Sustainability.
- The Aquarium of the Pacific visitor survey report*. (Summer 2013). Morey Group.
- Thomas, D.S.G. & Twyman, C. (2005). Equity and justice in climate change adaptation amongst natural-resource-dependent societies. *Global Environmental Change*, 15, 115-124.

- Tidball, K.G. & Krasny, M.E. (2011). Toward an ecology of environmental education and learning. *Ecosphere*, 2(2), 1-17.
- Tsing, A. (2010) Arts of inclusion, or how to love a mushroom. *Australian Humanities Review*, 22, 191-203.
- Turnbull, D. (2000). *Masons, tricksters and cartographers: comparative studies in the sociology of scientific and indigenous knowledge*. London and New York: Taylor & Francis.
- U.S. Census Bureau. (2014, January 27). *State & county Quickfacts: Long Beach, California*. Retrieved February 11, 2014, from <http://quickfacts.census.gov/qfd/states/06/0643000.html>.
- van Buren, J. (2014). Environmental hermeneutics deep in the forest. In F. Clingerman, M. Drenthen, and D. Utsler (Eds.), *Interpreting nature: The emerging field of environmental hermeneutics* (pp. 17-35). New York, NY: Fordham University Press.
- Watson, R. (2008). A critique of anti-anthropocentric ethics. In L. P. Pojman and P. Pojman, (Eds.), *Environmental ethics: Readings in theory and application*. (pp162-167). (5th ed). Belmont: Wadsworth/Thomson Learning.
- Weikel, D. 2000a. Aquarium gets state aid as revenue drops. *Los Angeles Times* Retrieved from: <http://articles.latimes.com/2000/jul/01/local/me-46667>
- Weikel, D. 2000b. Financially troubled aquarium seeks to refinance debt. *Los Angeles Times* Retrieved from: <http://articles.latimes.com/2000/nov/22/local/me-55720>
- White, K. (2013). And say the cat responded? Getting closer to the feline gaze. *Society & Animals*, 21, 93-104.
- Williams, R. 1980. *Problems in materialism and culture*. London: Verso.
- Wolcott, H.F. (1990). On seeking-and rejecting-validity in qualitative research. In E.W. Eisner & A. Peshkin (Eds.), *Qualitative inquiry in education: The continuing debate* (pp. 121-152). New York: Teachers College Press.

Wolfe, C. (2003). *Animal rites: American culture, the discourse of species, and posthumanist theory*. Chicago, IL: The University of Chicago Press.

Wynne, B. (1996). Misunderstood misunderstandings: Social identities and public uptake of science. In A. Irwin and B. Wynne (Eds.), *Misunderstanding science* (pp. 19-46). Cambridge, UK: Cambridge University Press.

Yusoff, K. (2011). Aesthetics of loss: Biodiversity, banal violence, and biotic subjects. *Transactions of the Institute of British Geographers*, 37(4), 578-592.