

A Fish Out of (Open) Water:

A Close Textual-Intertextual Analysis of the Monterey Bay Aquarium

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## Introduction

Zoos and Aquariums have become increasingly popular as a means to support conservation projects and science education. In fact, the Association of Zoos and Aquariums (AZA) estimates that over \$160 million has been spent on efforts to do so. Likewise, the number of people who visit these institutions has grown rapidly. Each year, more than 181 million people visit zoos and aquariums worldwide. 50 million children visit with families and 12 million visit on school field trips. In total, there are 233 accredited zoos and aquariums across the globe (AZA, “Zoo and Aquarium Statistics”). As climate change issues have become more pressing, Communication Studies scholars have turned to zoos and aquariums to study their effect on communicating conservation practices to the public. The most comprehensive analysis has been a three-year, nationwide study, conducted by experts and funded by the National Science Foundation, of the impacts of a visit to a zoo or aquarium in North America. The experts found that “going to AZA-accredited zoos and aquariums in North America does have a measurable impact on the conservation attitudes and understanding of adult visitors” (3).

One of the aquariums assessed in the study, and perhaps the most acclaimed aquarium in North America, is the Monterey Bay Aquarium (MBA). In fact, the MBA in Monterey, California, is consistently ranked as one of the largest and most impressive aquariums in the world. In 2007, it was named the top aquarium in the United States for kids by *Parents* magazine, and in 2014, it was ranked #6 for Trip Advisor’s “Top 25 Aquariums in the World”. The MBA’s average number of visitors is 1.8 million annually and the total number of visitors since opening has been nearly 50 million through 2011 (MBA, “Visitor FAQs”). With these

numbers only increasing as environmental issues are becoming more immediate, it is vital to analyze closely the rhetorical tactics the aquarium uses to educate its visitors about climate change and conservation.

Studying the rhetoric of an educational establishment or facility is not a novel concept. A common area of study for many rhetoricians is the museum. Typically, these museums are either cultural, historical, or artistic in nature. Influenced by museum study, a handful of rhetoric scholars, most notably Tema Milstein and Erik Garret, have studied the rhetoric of zoos. The current research surrounding aquarium rhetoric is very limited as it looks at aquariums broadly rather than focusing on the impact of a single institution. While this research is necessary for assessing the effectiveness of aquariums in general, it is also important to recognize that aquariums use different rhetorical tactics to convey their messages and they may have very different audiences. An extensive study of a single aquarium, like the MBA, is needed to analyze how particular visitors are directly affected by a particular aquarium's particular messages.

The approach used by the MBA to describe marine life is one that simulates a rebirth for the visitor by appealing to the five senses and memories of childhood; however this technique is ineffective because while it succeeds in helping the visitors feel more acquainted with the ocean, it fails to stimulate meaningful conservation changes due to the realities of anthropocentrism, consumerism, and capitalism that cloud the judgments of the visitors. First, I will describe the aquarium in detail including the rhetorical situation surrounding it. Next, I will discuss the method of close textual-intertextual analysis and how it can be used to unveil the ways the aquarium influences its visitors. Finally, I will argue that ocean conservation education is critical

and that the associations the aquarium makes through its use of sensory stimulations and nostalgic references severely threatens this process.

### **Monterey Bay Aquarium**

The MBA is funded by the Monterey Bay Aquarium Foundation, a nonprofit organization founded in 1978 by David and Lucile Packard. David earned his wealth and success by building one of the world's largest technology companies, Hewlett-Packard. Since its founding, the MBA has grown immensely and now has over \$400 million in total assets. It is located on the west end of historic Cannery Row, close to Carmel and Pebble Beach. Ticket prices are \$39.95 for adults, \$25.95 for children, and \$35.95 for students and seniors. A standard annual membership, which includes two adults plus children or grandchildren and two transferable guest cards, is \$300. The aquarium houses over 600 species and two massive tanks, one of which stores 1.2 million gallons of water and the largest single-paned window on earth (Conservation Institute, "10 Largest, Biggest & Best Aquariums In the World").

### **Method**

To become the most well informed about the rhetorical strategies the MBA uses to educate its visitors and how these strategies shape a person's views about conservation, a close textual-intertextual analysis is called for. This approach combines the details uncovered from a close textual approach and the insights learned from a reception study. The close textual approach is best attributed to Carl Burgchart and Michael Leff. Burgchart defined it as a method that "studies the relationship between the inner workings of public discourse and its historical context in order to discover what makes a particular text function persuasively" (199). Leff viewed it as a method by which "the critic can respond not to just the technical artistry in the text

but also to the ethical and political concerns that animate it” (66). This is made possible through a close analysis of one aspect of the rhetorical text, the relationship it has to the other aspects of the text, and a consideration for the context surrounding the time it was produced. Both definitions highlight the importance of the intersection between artistry and politics. By studying the context surrounding a rhetorical object, scholars using a close textual analysis will better understand the object’s historical and political significance. This approach has been most often used to describe written work but has also been extended to critique many other forms of rhetoric like film, music, and museums. While a close textual analysis of potentially persuasive artifacts is necessary for uncovering subtle or covert rhetorical tactics, this approach is limited in determining the artifact’s effect on diverse audiences.

Leah Ceccarelli, a professor of communication at the University of Washington, argues that “the close textual critic can only say how an audience is *invited* to respond; the critic is unable to make conclusions about the actual persuasive influence of the text” ( 8). To combat this limitation, some scholars have turned to audience reception studies. Stuart Hall describes this as a process of encoding and decoding messages in which the audience plays a crucial role in communication because “if no ‘meaning’ is taken, there can be no ‘consumption’” (91). Another important scholar in the field of reception studies is James Webster who suggests that audiences can be divided into three categories: audience-as-mass, audience-as-outcome, and audience-as agent (191). These categories help describe the level of degree that audiences may or not play in the persuasiveness of a particular message. Ceccarelli suggests a method that explores both the close details of an artifact and its historical effect on audiences over time. This is particularly an important concept for rhetoric surrounding the environment and climate change.

Anthropologists studying climate change have already recognized the importance of reception studies for connecting global issues to local people. Peter Rudiak-Gould, an anthropologist at the University of Oxford, notes that “a particular blind spot persists in climate-change ethnography, and that until we eradicate it we will appreciate only half the picture, and the subfield will have attained only a fraction of its potential as both a theoretical and applied endeavour” (9). He argues that without reception study of global warming discourse, scholars cannot begin to “diagnose the reasons for lingering apathy and skepticism in Western and industrialized nations” (12). This blind spot exists in Communication Studies as well, in which most analyses of scientific discourse focus on the people producing the rhetoric, not the people consuming it.

There are many different options for studying audience reception including testimonials, reviews, and focus groups. Many of the visitors of the MBA are traveling on vacation which makes a travel site the most useful and abundant area of reception study for the aquarium. TripAdvisor is the world's largest travel site. It offers reviews and advice from millions of travelers internationally on vacation spots, restaurants, and other tourist attractions. The MBA currently has 8,172 reviews on TripAdvisor. The site is the most comprehensive tool for conducting a reception study because it allows users to categorize the reviews by traveler rating, traveler type, time of year, and language. It also includes a feature that gives users the ability to search for specific words mentioned in the reviews. To conduct this study, I will generate 100 random numbers from a random sequence generator provided by Random.org. The generator produces a randomized sequences of numbers using atmospheric noise. I will use the first 100 numbers generated for my sample.

## Close Reading

### *Entrance*

Before studying the reviews of the aquarium, I will write about my own experience while visiting the aquarium in January of this year. Upon entering the aquarium, I was greeted with a large glass sign that reads: Come explore your connection to the animals, plants and habitats of Monterey Bay and join us in protecting the oceans for the future. The use of the word “explore” suggests that visitors are meant to carefully and thoughtfully travel through the different exhibits with the intention of discovering something new. This offers the visitor a very active role in the process of the discovery rather than the role of a passive audience member who travels through the exhibits for mere entertainment. On the ceiling, a giant killer whale is hanging down and facing a window with a view of the bay. The image of the whale facing the window and not the entering visitor is a bit unsettling. It is as if the whale is trying to escape the confinement of the aquarium and return home to the ocean.

### *The Ocean's Edge*

The bottom floor is dedicated to displaying the “Ocean’s Edge” or the coastal habitats of Monterey Bay. The largest exhibit on the floor is the Kelp Forest which is directly to the left of the main entrance. Before entering the Kelp Forest, the visitor is greeted with a Terry Tempest Williams quote that reads “Wilderness reminds us what it means to be human, what we are connected to rather than what we are separate from.” The quote is evidently placed to help the visitor feel more attached to the unfamiliar animals they are about to encounter. However, Terry Tempest Williams wrote this in reference to the mountain ranges of Utah which is a much different landscape than a multi-million-dollar aquarium. No part of the MBA can be considered

“wilderness” because it is a controlled and confined environment. Visitors traveling through the aquarium will actually feel progressively more detached from nature. While wild coyotes and rigid boulders may indeed connect humans to nature, glass tanks and plastic signs do not have the same effect. Wilderness breeds connection because it reminds us that every living being is imperfect and untamed. Our bodies and spirits are unique and ever changing just like the animals we see roaming through the rocky mountains. When we view the environment in its natural setting, we are reminded that we too are roaming and free. In contrast, aquarium tanks make us feel restrained, detached, and alone. We are reminded of the times we have felt trapped or dominated by another force. The quote was strategically placed in this exhibit to distract visitors from the fluorescent lights and glass tanks that prevent the animals from existing in the wild.

### *Ocean Homes*

In the Kelp Forest exhibit, a staircase directs the visitor up to the Splash Zone. The Splash Zone is the most family-oriented exhibit with bright colors and small children running around. Within the Splash Zone is the Ocean Homes exhibit, a kid-friendly zone where families are invited into the homes of various ocean creatures. Outside the exhibit is a designated place for parents to leave their strollers. While this makes the exhibit easily accessible for families, it sends the message that humans are in fact much different from the ocean creatures that don't require the use of man-made technology. Humans are welcome to the homes, so long as they rid themselves of anything that can be considered “unnatural”, which in effect highlights their differences from the animals instead of their similarities.

The descriptions of the tanks are written in language analogous to nursery rhymes. An example of this technique is the coral reef description which reads: Coral reefs around the world struggle to survive, if we care and work together, we'll keep the reefs alive. Nursery rhymes, according to speech expert Nancy Briggs, are effective tools to teach children because "a pattern of rhythm, rhyme, and alliteration, if repeated noisily and redundantly, will gradually establish itself in the subject's consciousness" (216). Children are easily persuaded by nursery rhymes because they respond positively to poetry and repetition. This type of language strengthens their memory and recognition of the content. Ultimately, this will help the children become less intimidated by information about the ocean because they have become familiarized with it over time.

Within the exhibit, there are many interactive elements and games for children. Many of the games include riddles. One game instructs children to: Read the riddle and match a dish with a fish. The riddle reads: My beakline mouth is a funny sight, I scrape and crunch with all my sight. According to linguists scholar W. J. Pepicello, "the function and answer format of riddles corresponds to the method of argumentation of the Socratic method, which proceeds toward clarification and logical definition through a series of questions and answers" (33). Aristotle himself recognized the power of riddles and wrote that "good riddles do, in general, provide us with satisfactory metaphors; for metaphors imply riddles, and therefore a good riddle can furnish a good metaphor" (123). Riddles are powerful tools for educating children because they force them to think logically and metaphorically which effectively strengthens their reasoning and contextual skills.

Another method of teaching children to use reason is through touch. There are many elements at the MBA that incorporate touch as a learning tool such as letting children pull out a toy eel from a wall to understand its length and size. Haptics, or the study of touch, stresses the importance of touch in the learning process. Touch is particularly effective for teaching children because it is the earliest sense developed in the fetus. Haptics scholars explain that “since touching means closeness, it can help to bridge the distances that separate us from one another” (546). By touching the toy eel, children feel closer to the animal which helps break down the barrier that separates humans from nature.

#### *Touch Pool*

Another exhibit that offers opportunities for learning through touch is the touch pool. Children can touch starfish, abalones, crabs, and more. On the MBA website, parents are encouraged to first show their children how to gently touch the animals underwater. The website explains that “by watching you, your children will learn that the animals can be explored in ways that are safe for the animal and safe for them (the animals won't hurt them!)” (MBA, “Infants and Toddlers at the Monterey Bay Aquarium”). Many children have never touched underwater creatures and express fear of the unfamiliar. By touching the animals, the children will become less fearful of and perhaps more connected to them.

#### *Coral Babies*

The aquarium houses a large playground in the Coral Babies exhibit. Children shorter than the height of a three foot long plastic seahorse are invited to pretend like they are coral reef animals swimming through waterbed waves and gliding down ocean slides. This displays sociologist George Herbert Mead’s concept of the “generalized other”. Mead argued that role

playing is essential to the development of the self conscious. By taking the role of others through imitation and play, children learn to better identify themselves with the particular roles (Mead, *Mind, Self, and Society*). Role playing helps prepare children to understand the varying communities and societies they will encounter in their lives, which in this case is a coral reef ecosystem.

### *Art*

Across the bridge from the Coral Babies exhibit is the art exhibit which brings a new perspective to the aquarium's message. Their latest gallery explores the impact of plastic pollution on migrating animals. It displays many forms of art made entirely of plastic, including turtles made of plastic cutlery and plastic bottles shaped like kelp. The featured artists Saya Ganz and Alison McDonald force the visitors to rethink the way they use plastic. Last year, *Science* magazine reported that "about 4 million to 12 million metric tons of plastic washed offshore in 2010 alone, or about 1.5% to 4.5% of the world's total plastic production—enough to cover every foot of coastline on the planet" (Chen, "Here's how much plastic enters the ocean each year"). As a result, "the millions of tons of plastic bottles, bags, and garbage in the world's oceans are breaking down and leaching toxins posing a threat to marine life" (Endangered Species International, "Important Call: Plastics Kill"). Shockingly, over 100,000 marine creatures die from plastic entanglement every year (Ocean Crusaders, "Plastic Statistics"). The plastic art serves as a visual reminder that marine animals are becoming more composed of plastic and, thus, less natural. The more plastic that enters the oceans, the less the ocean can be thought of as part of the natural world. The art exhibit is a haunting and sharp contrast to the other exhibits at the aquarium. While the other exhibits include psychedelic music and

fluorescent lights which make the visitors feel as if they have entered a new world, the art exhibit is a cold dose of reality with no music and standard lighting. It shocks the visitor and makes them pay close attention to our present circumstances by visually representing the harm we are causing to the oceans.

### *Call to Action*

Messages with a call to action for conserving the oceans are present throughout the entire aquarium. The most obvious call to action is the “Play Your Part” wall that encourages visitors to make smart seafood choices, save energy, and write their representatives. The extensive Seafood Watch program is solely dedicated to the issue of sustainable seafood. The program incorporates a brochure and phone application that teaches visitors about the impacts of wild-caught seafood and aquaculture, and even includes a search engine that allows people to search for restaurants near them that cook sustainable seafood. Both the application and brochure are extremely user-friendly. They categorize the seafood into: Best Choices, Good Alternatives, and Avoid. This simple breakdown paired with the educational content about fish farming practices is perhaps the most tangible take away from the aquarium.

The display also has a computer where visitors can directly write to their representatives about climate change and overfishing. Many U.S. citizens complain that writing representatives requires too much time and too many resources. Often, they either do not want to put in the effort or simply forget about it amongst their busy schedules. The computer is a clever way to mitigate any hesitation a visitor may be having about taking political action on ocean conservation.

### **Reception Study**

#### *Crowds*

In the TripAdvisor reviews, the visitors described several other barriers to adopting conservation practices. One of the most common trends in the reviews of the aquarium is that it is too crowded. A middle aged woman from London complained that there are “hundreds of bratty kids everywhere and you couldn't really see anything because there were too many people.” A mother from Washington expressed a similar view when she wrote that “it was dreadfully overcrowded. It was very difficult to see many of the exhibits”. This perspective parallels the very problem of caring for non-human animals that exists in the world outside the aquarium. We are currently experiencing Earth’s sixth mass extinction crisis. Every hour, three species die. Scientists have concluded that overpopulation of the human race is the main culprit. (Center for Biological Diversity, “Human Population Growth and Extinction”). This idea can best be summarized in *Human Domination of Earth’s Ecosystems* in which the authors concluded that “we live on a human-dominated planet and the momentum of human population growth, together with the imperative for further economic development in most of the world, ensures that our dominance will increase” (371). As population growth increases, people are forced to focus on ensuring their own survival through economic gain and urban development, a process that often neglects the well-being of animals. This leads to harmful practices such as hunting, poaching, and deforestation that threaten the habitats and lives of many species. While the aquarium is attempting to encourage visitors to mitigate these practices and care for non-human animals, it too is overpopulated which is clouding many of its conservation messages.

*Price*

Another aspect of the aquarium that is mentioned frequently in the reviews is the price. A man from Hawaii suggested that “at \$40 per person to go into this aquarium, you would be better off going straight to the shore and seeing the seals”. For many visitors, the issue was not so much the price as it was the price combined with the overcrowdedness. A woman from Ventura expressed “I feel it is not right to take advantage of people this way. It took us 2 hours to see the whole thing, and that was only because the place was jam-packed with people. I think they should limit how many people can be inside the building at one time”. For the MBA, this may be the only viable option. The Marketing Team at the MBA responded to one of the complaints on TripAdvisor by explaining that they “invest more in ocean education, research and advocacy than any other aquarium in the world. We also provide free admission and special programs for a quarter-of-a- million people during the year”. This claim can indeed be evidenced by the MBA’s most recent financial report that reveals that 62% of their expenses went towards exhibits, animal care, and programs. In addition, it shows that 17% of their attendees came on free visits through school or community days. While these numbers are impressive, it is still very concerning that many of the visitors seem to be overly concerned with the price. The MBA’s response justifies the price but does not at all address the issue that many people are still very upset about it. The fact that the price was so frequently written about in the reviews demonstrates that capitalism does not stop at the aquarium doors, a notion that becomes even more clear by the fact that there are four different gift stores inside the aquarium.

### *Conservation*

Aside from the entertainment benefits that many of the visitors enjoyed, many also commented on the aquarium’s conservation message. One man wrote that “education is

definitely their mission”. Another suggests that “the focus on conservation and how we can be involved is emphasised throughout your visit”. Many visitors praised the short films and documentaries available for viewing at the aquarium. They particularly learned from the live narrators that spoke throughout the film and offered the opportunity for questions and discussion.

On a case study of the Hot Pink Flamingos Exhibit at the MBA, an exhibit that explored the ways climate change is affecting marine life, Katz- Kimchi and Atkinson described that the MBA makes information more attainable to the public by “popularizing or mainstreaming climate change science, and second, by modeling normatively preferred social behaviors that might mitigate the effects of climate change” (36). Visitors frequently expressed understanding and acceptance of the high price after learning about all of the MBA’s conservation efforts throughout the exhibits. One woman admits, “at first I thought the admission price was a bit steep, but then learnt about the conservation activities that take place”.

### *Size*

Many of the visitors also frequently mentioned the large size of the aquarium, the tanks, and the non-human animals on display. One visitor remarked “this place is HUGE- lots to look at”. Another “loved the huge octopus”. One review was from an experienced scuba diver who wrote “when I entered that room a huge 90ft glass wall from the floor to the ceiling put me right in the middle of the ocean like on a dive. HUGE schools of sardines show their ever changing shape”. The fact that the visitors seemed to be most impressed with aspects of the aquarium that are considered huge is two fold. On one hand, it might mean that they are more likely to pay attention to large species such as whales, sharks, and sea turtles, while neglecting the smaller species like plankton, mussels, and barnacles. On the other hand, it might mean that the

aquarium is providing an “underwater experience” for the visitors and they are indeed grasping just how vast the ocean really is.

### *Interactive Displays*

Many visitors mentioned the interactive displays, especially the touch pools. While the MBA calls the touch pools the “border between two worlds”, some visitors mentioned the irony that was on display in the pools. A young woman from the United Kingdom “was a bit disappointed by the staff who were not all on the ball at supervising the touch tanks. I saw a kid pick up a starfish and smash it off of the tank before throwing it back into the tank”. Another visitor from Argentina “found those pools completely in opposition to the conservation mission the aquarium proclaims to have. And to contrast the multiple exhibits showing how human aggression on the oceans have nearly ruin them [sic]”. Although the touch pools were intended to help visitors, especially children, feel more connected to marine life, they may have a reverse effect on adult visitors when they witness children misbehaving with the different life forms.

### *All Ages*

Despite the numerous strategies the aquarium uses to cater specifically to children's needs, many visitors felt that it was suitable for all ages. A man from Hollister, California says he “has been to a few aquariums, and this one is one of the best for all ages. From the touching ponds to the special exhibits, there is something for everyone.” “A must see for all ages” was a common phrase used by the reviewers in this sample. One explanation for this response is that the MBA incorporates many adult references throughout the exhibits. The most obvious example of this is *The Jellies Experience* which mimics the *Jimi Hendrix Experience* with psychedelic

wall art and music. While children would not recognize this, many parents would appreciate this reference and thus enjoy the exhibit more.

### **Conclusion**

Over 80% of the reviews on TripAdvisor ranked the MBA as “excellent”. A significant majority of the visitors were excited about their trips and eager to share their experiences with others. Many of them also spoke about what they learned they can do to protect the oceans. However, hardly any of the visitors commented on whether or not they were actually going to adopt new conservation practices. Such practices could include eating sustainably sourced seafood, recycling plastics, or donating to organizations working to protect marine life. In a sense, the MBA succeeded in its mission to “*inspire* conservation of the oceans”. However, in order to persuade visitors to change their lifestyles to support the oceans, the MBA must shift its mission to “*affect* conservation of the oceans”. The experiences many of the visitors of the MBA had were self-centered and self-focused. This is problematic because as Tema Milstein explains, “discursive practices that incorporate significations of nature, animals, and certain people as subordinated ‘others’ will inevitably be loaded with ideology that contributes to reinforcing the structure of power relations” (26). When MBA visitors view marine life in tanks, they perceive them as distinct and separate from their own world which gives them a feeling of superiority over the animals.

Like many climate change issues, ocean conservation is sacrificed for consumerist and capitalist values. In many ways, the MBA visitors are viewing the aquarium itself as an object of consumption. This becomes clear by the fact that one of the most commonly written about topics on TripAdvisor was the price. It appears as though many visitors were “trying to get their

money's worth" at the aquarium by visiting as many exhibits as possible, a strategy that may lead to rushing through or skimming by many important conservation messages. Although the MBA offers free community days and even a virtual tour of the exhibits online, many visitors are still upset with the cost of admission.

In comparison to the MBA, the Los Angeles Zoo costs \$20 for adults, which is nearly half the price. This same pattern can be found when comparing most aquarium admission costs to those of zoos. Why are aquariums so much more expensive to visit than zoos? Perhaps one reason is because aquariums are usually placed along the coast, which attracts wealthier people who are willing to pay more. In contrast, zoos are often placed in cities and can be accessed easily by a bus or subway. In addition, aquariums spend more money on conservation efforts than most zoos do. A 2013 study by conservationist Dr. Paul O'Donoghue, found that "in reality, fewer than 1 percent of zoo species are part of any serious conservation effort, with many being inbred and having little genetic integrity and no conservation value" (Nolan, "All the Reasons Why Zoos Should Be Banned").

Most of the visitors who were concerned with the price of the aquarium were also upset with the large crowds. If the crowds were mitigated and the visitors were able to experience each exhibit leisurely, they might be more willing to accept the price. In contrast to aquariums, zoos provide open spaces, sunlight, and fresh air. Aquariums can often feel very crowded due to confined spaces and dark rooms. According to psychologists, the larger range of space that a person considers to be "near, the more likely it is he or she will feel claustrophobic" (American Psychological Association, "Psychologist identifies what may trigger claustrophobia"). Closely related to claustrophobia is agoraphobia which is a "fear of any situation where escape may be

difficult, or where help may not be available” (McIntosh, “What is agoraphobia? What causes agoraphobia?”). Places that induce agoraphobia are crowded areas where people can feel trapped. Just as the aquarium is taking marine life out of their natural habitats and trapping them into confined spaces, it is similarly keeping visitors closed off to the natural world and trapped behind the aquarium walls. One way to reduce the crowded spaces, and thus the sense of confinement the visitors feel is to offer more exhibits that are outside. This will allow visitors to breathe fresh air and take in sunlight. In addition, the MBA could brighten their lights in the exhibits so visitors can navigate through them more easily and feel less cramped.

Although this study provides a comprehensive analysis of the MBA, there are a few limitations worth noting. Most significantly is the audience used for the reception study. TripAdvisor typically attracts tourists who are most likely looking for entertainment on vacation and not necessarily an educational experience. Additionally, the age group of the audience was very limited because many children may not have access to the site or write reviews. A more comprehensive study should include testimonials and personal interviews with people as they are experiencing the aquarium. This would provide more current and detailed information. The study should also include interviews with children because they seem to be the MBA’s target audience. A new study should analyze other large U.S. aquariums such as the Shedd Aquarium or the Georgia Aquarium to investigate if they use similar rhetorical strategies as the MBA. It is also important to study aquariums in other countries such as the Okinawa Churaumi Aquarium in Japan or L’Oceanografic in Spain to examine any cultural differences in ocean conservation messaging.

The line between nature and technology is only becoming more blurred, which is drastically beginning to affect aquariums. In Japan, the Enoshima aquarium features a new exhibit designed by the Digitized City Art project that combines 3D animators, CGI, and artificial light displays to showcase the fish. It is even sensory operated so when a fish swims up to a certain part of the tank, the lights and sounds change. The CEO of the project, Inoko Toshiyuki, says “the artwork constantly alters itself in response to the movement of fish” (The Creator’s Project, “Is This the Digitized Aquarium of the Future?”). Another possibility for the future of aquariums is virtual reality. Tony Christopher, a theme park ride designer, is already working on this idea. He claims that “wearing the goggles to see virtual animals would totally change the zoo or aquarium experience” (McFarland, “A company bets its future on virtual-reality aquariums in China”). While this would eliminate the need to capture wild animals, a virtual reality aquarium may create a false sense of understanding about the natural world. Several critics of zoos and aquariums question the environmental discourse used and how the choice of rhetoric in these institutions contributes to an overarching theme of exploitation. These critics offer several suggestions for combatting this such as an online space to view animals in their natural habitat. The online footage would show the animals performing their natural roles like hunting for prey, becoming the victim of predators, caring for family members, giving birth, and finding shelter. It could also show detrimental human practices as they are actually occurring like overfishing and shark finning. If virtual reality aquariums do become available, they must be designed with the guidance of environmental and marine experts.

As the population of humans increases, the economic and social practices that threaten the marine environment accumulate. Not only do these practices affect the oceans but they will

ultimately affect our own lives. To mitigate these effects, we must become an ocean literate society. In “Science content and Standards for ocean literacy: A report on ocean literacy”, ocean literacy is described as “having knowledge about the ocean, being able to communicate about the ocean in a meaningful way, and being able to make informed and responsible decisions regarding the ocean and its resources” (2). By this definition, the visitors of the MBA would not be considered literate. The MBA has been inspiring their visitors to protect the oceans for nearly thirty years. Now is the time of cardinal exigency to push their visitors to take action.

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