

**Historical Perceptions of Gender in Marine Animals  
as Studied Through Children's Educational Books**

**Emily Casaretto**

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**Committee:**

**Cleo Woelfle-Erskine, Chair**

**Cricket Keating**

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Emily Casaretto**

University of Washington

**Abstract**

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Emily Casaretto

Chair of the Supervisory Committee:  
Cleo Woelfle-Erskine  
School of Marine and Environmental Affairs

Children are fascinated by the natural world from a young age, evidence of an innate human tendency to form meaningful relationships with nature. At a young age, children are also exposed to various gender norming influences, such as the use of personal pronouns (she/her, him/his, it/its, they/their). I assessed thirty-nine historical children's books from the "Golden Age" of children's literature (1865-1926) for their use of personal pronouns in reference to non-human marine animals. These texts suggest that pronoun use in regard to marine animals is neither random nor systematic, but rather demonstrates a predilection toward masculine personal pronouns, particularly when describing active and/or dynamic characters, while the use of feminine pronouns occurs almost exclusively when describing reproduction of female marine animals. Additionally, illustrations of marine animals reveal a tendency to display animals as solitary figures in mostly sterile, biological formats that were typical of the time period, showing little evidence of anthropomorphism. Finally, there are notable differences between how boy and girl characters are depicted, with boy characters portrayed as more dynamic and active

participants in their interactions with the ocean. Using methodology drawn from ecofeminist scholarship, these observations suggest that elements of white heteropatriarchy and systems of oppression are evident in early texts about marine animals for children, and that educational reformers should consider the effects of these gendered tendencies in order to make marine education more inclusive.

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## **Abstract**

Children are fascinated by the natural world from a young age, evidence of an innate human tendency to form meaningful relationships with nature. At a young age, children are also exposed to various gender norming influences, such as the use of personal pronouns (she/her, him/his, it/its, they/their). I assessed thirty-nine historical children's books from the "Golden Age" of children's literature (1865-1926) for their use of personal pronouns in reference to non-human marine animals. These texts suggest that pronoun use in regard to marine animals is neither random nor systematic, but rather demonstrates a predilection toward masculine personal pronouns, particularly when describing active and/or dynamic characters, while the use of feminine pronouns occurs almost exclusively when describing reproduction of female marine animals. Additionally, illustrations of marine animals reveal a tendency to display animals as solitary figures in mostly sterile, biological formats that were typical of the time period, showing little evidence of anthropomorphism. Finally, there are notable differences between how boy and girl characters are depicted, with boy characters portrayed as more dynamic and active participants in their interactions with the ocean. Using methodology drawn from ecofeminist scholarship, these observations suggest that elements of white heteropatriarchy and systems of oppression are evident in early texts about marine animals for children, and that educational reformers should consider the effects of these gendered tendencies in order to make marine education more inclusive.

**Keywords:** gender expression, historical children's literature, marine animals, ocean literacy, pronoun usage

### **Dedication**

For my mother, who taught me the importance of books for children; and for my father, who taught me to love the outdoors.

In memory of Peggy Hopp, who always believed in me.

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Cleo Woelfle-Erskine, FRESH Water Relations Lab

Sandra Kroupa

Cricket Keating

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## **Chapter 1: Introduction and Objectives**

### **1.1 Introduction**

The motivation for this research started with a pair of shark-print shorts. While working as a watersports instructor in the Caribbean, I generally preferred longer-length “men’s-style” board shorts. Compared to their counterparts in the women’s section, which were short, chintzy and seemingly available only in loud floral patterns, men’s board shorts conveyed a sense of authority and were infinitely more practical: they covered a wider swath of skin from the intense tropical sun, they didn’t chafe when covered by a windsurfing or kiteboarding harness, and they always had deep, functional pockets. However, I noticed while shopping in department stores that shark-print clothing was exclusive to the boys/men section, on board shorts and otherwise. Sharks are perceived as “masculine” creatures, but is there something fundamentally masculine about sharks? Or instead is this purely a societal construct, resulting from decades of film and television stereotype that has bled its way into fashion?

This observation made me wonder whether other marine animals are similarly gendered, whether there might be historical roots underpinning this gendering phenomenon, and what the implications of this could be for the future. Given my background as a watersports instructor, primarily for English-speaking families, I was particularly curious how marine educators, parents, and those whose work involves inculcating a conceptual understanding of marine life in young children could improve their approach to teaching.

## 1.2 Some Useful Definitions

Throughout this paper the terms *gender* and *sex* (as well as the various categories within these groupings) are used frequently. I have provided definitions of these terms below, in order to avoid confusion.

**Gender:** In her 2004 book *Evolution's Rainbow*, ecologist Joan Roughgarden defines gender as “the appearance, behavior, and life history of a sexed body” (p. 27). As a trans woman who struggled to understand the intersection of her identity and her research, Roughgarden explores the incredible diversity of animal life (particularly marine life) as a means to celebrate and elevate gender and sexual diversity among all bodies. Current scholarship continues to explore the links between queer/feminist studies and biology/ecology (Govindrajani 2018; Hayward & Weinstein 2015; Giffney & Hird 2008).

Gender is a social category, and thus a society is responsible for the constraints that tend to define different gender groups within that society (society decides what makes someone “manly”, “feminine”, “girly”, “macho”, etc.); society may also change its interpretation of these constraints.

Gender is widely considered to exist only in humans (i.e. not present among non-human animals). However, humans confer gender and gender expression, as well as stereotypes of gender expression, upon non-human agents; examples of this may include referring to animals by the gendered pronouns “he/she”, illustrating animal characters with gendered clothing/hair, and/or ascribing gender to animals based on their behavior, etc. (Lambdin et al 2003; Merritt & Kok 1995; Hamilton 1988).

**Sex:** Sex is the recombination of genes that occurs in reproduction (Roughgarden 2004, p. 22). Sex is a biological category, and determinations about an organism’s sex are based upon whether the organism produces large gametes (as in females and eggs) or small gametes (as in males and sperm).

Psychologist John Money first distinguished between biological sex and gender in his 1955 paper “An Examination of Some Basic Sexual Concepts”. Prior to this, the word “gender” was primarily used to refer to grammatical gender in linguistics (when nouns are distinguished into gender categories, prompting grammatical agreement between nouns and other parts of speech).

**Essentialism:** Feminist scholars use essentialism in reference to a tendency to group bodies into categories using a prescribed set of fundamental features or “essences” (Howie 2006; Kirby 1991). For example, using biological categories as proxies for gender categories (This body has female reproductive parts, therefore it is a woman, e.g.) is considered essentialist logic.

**Gender expression:** Gender expression refers to the ways in which a person chooses to communicate their gender to themselves and/or others. This may include choices in clothing, hairstyle, makeup, behavior, etc. (Airton 2018; Youdell 2005).

### 1.3 Problem Formulation

When it comes to gender imparted onto marine animals, we are likely to use several physical and behavioral attributes when making determinations of masculinity or femininity (or neither). Similar to the way that we use a variety of cues to make determinations about a person's gender, some of these attributes may be based on biological features, such as sharp teeth or long eyelashes, or on interpretations of natural behavior, such as animals engaged in predation or child-rearing. These features are often exaggerated, and stereotypically gendered, for dramatic effect in media. For example, consider Angelina Jolie's fish character "Lola" in the movie *Shark Tale*, with long fins that resemble flowing hair, or Pat Carroll's octopus-like character "Ursula" in the movie *The Little Mermaid*, whose tentacles resemble a strapless dress. Depictions of sharks provide another common example. Sharks may be considered more masculine because they are perceived as "fierce predators" (Friedrich, Jefferson & Glegg 2014); sharks are considered fierce predators because of their portrayal as such in movies and on television (consider the *Jaws* novel/film or Discovery Channel's *Shark Week*)<sup>1</sup>, and society is responsible for making an association between masculinity and predatory behavior (Polk 1994; Poteat, Kimmel & Wilchins 2011; Ferguson 2018).

While there is considerable binary gendering that occurs with relation to marine animals, as described above, it is important to point out that marine animals have also been used within the field of trans-ecology to elevate multiple sexualities and non-binary ways of being. In *Lessons from a Starfish*, Eva Hayward explores how a starfish regenerating a lost limb relates to concepts of transformation and regeneration (Hayward 2008). In *Evolution's Rainbow*, Joan Roughgarden catalogs multiple instances of non-binary sexualities, genders, and family configurations among fishes, marine invertebrates, and marine mammals (2004). From interpretations of Charles Darwin's studies on intersex barnacles (Wilson 2002) to homosexuality among marine mammals (Bagemihl 1999), the marine realm boasts incredible

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<sup>1</sup>Incidentally, the International Shark Attack File, based out of the Florida Museum of Natural History in Gainesville, FL, compares shark attack statistics with other fatal events. For example, you are more likely to be struck by lightning, hit while riding a bicycle, or bitten by a New Yorker than attacked by a shark in the United States. (<https://www.floridamuseum.ufl.edu/shark-attacks/odds/compare-risk/bicycle-related-fatalities/>)

diversity, sexual and otherwise. And yet, in much popular media for children, we see this diversity reduced to stereotypical gender binary.

Attributing gender to marine animals may occur in several ways. Perhaps the animal ends up primarily on one kind of gendered clothing for humans (sharks on men's/boys' clothing, e.g.). Perhaps animal characters are disproportionately masculine or feminine in media -- for instance, the shark characters in the film *Finding Nemo* ("Bruce", named as homage to the shark in *Jaws*, "Chum", and "Anchor"), are all masculine: voiced by masculine actors and referred to by masculine pronouns.

Pronoun use is another way that animal characters are given gender. Pronouns: words used in place of a noun or noun phrase, and which are used as subjects or objects of a sentence in first-person, second-person, or third-person forms (Merriam Webster). A table of pronoun usage in English is provided on the next page for reference.

**A note on epicenity:** In linguistics, epicene words are nouns that take only one form, regardless of whether they refer to male or female subjects. For example, in English *parent*, *cousin*, and *friend* are epicene nouns, while nouns like *nephew* or *stewardess* are not. Gender-neutral and unisex terms may also be described as epicene, and more recently the use of “they/them” personal pronouns to refer to an individual in a gender-neutral manner has become perhaps the best-known epicene modification in English<sup>2</sup>. Outside of linguistics, epicenity refers to a general loss in gender distinction, similar to androgyny (Everett 2011). Although epicenity does not directly relate to the work completed in this paper, it is relevant as a topic of discussion for educational reform that is more gender-inclusive.

English is maddening and insufficient. So it goes.

<b><u>Subject pronouns</u></b>	<b><u>Object pronouns</u></b>	<b><u>Possessive pronouns</u></b>	<b><u>Reflexive pronouns</u></b>
I	Me	My/Mine	Myself
You	You	Your/yours	Yourself
He	Him	His	Himself
She	Her	Her/hers	Herself
It	It	Its	Itself
We	Us	Our/Ours	Ourselves
They	Them	Their	Themselves

(Adapted from “pronoun” definition in Merriam-Webster)

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<sup>2</sup>Various organizations are creating guides for contemporary usage of inclusive pronouns among youth, ranging from the Gay, Lesbian, & Straight Educational Network to Teen Vogue, as well as Lee Airton’s 2018 book [Gender: Your Guide](#).

In both fictional and non-fictional works, animals are described using a variety of gendered and non-gendered pronouns. English-speakers tend to use pronouns in deliberate and non-random ways when we talk about non-human animals, even in casual conversation about a neighbor's dog or a child's stuffed animal. The intended purpose of this kind of gender assignment to non-human animals (vis-a-vis pronoun use or other devices) varies; in reading through the literature on gendering in children's books specifically, I have identified four of the possible reasons for this pronoun assignment (Schneider et al 2019; Whelan, Hingston, & Thomson 2019), although there may be others: anthropomorphism, default uses in English, writing clarity, and artistic license.

Anthropomorphism: the attribution of human personality or characteristics to something non-human, as an animal, object, etc. is a common device used to elicit interest in both children and adults (Oxford English Dictionary 2016). The first known use of the term appears in the 17th century, referring to human embodiments of the Christian God, and early evidence of anthropomorphism is found in the Hebrew Tanach and Aesop's fables (Causey 2018). Anthropomorphism is widely considered an innate human tendency, intended to counteract the negative feelings associated with social isolation (Hutson 2012; Taylor et al 2013). In stories, anthropomorphism helps readers identify with characters, and it produces a fantastical and sometimes humorous quality that adds entertainment value (Markowsky 1975). Having animal characters that talk, wear human clothes or hairstyles, and referring to them by gendered pronouns are some of the ways animals are anthropomorphized in stories.

There is also evidence that in English-speaking cultures, the default gender for all animate creatures is male unless explicitly shown otherwise (Silveira 1980; Hamilton 1988; Merritt & Kok 1995). In a 1980 paper, Silveira suggested that this "people = male" bias propagates sexist thinking and isolates non-male individuals; Lambdin extended this argument to include non-human animals into an "animal = male" hypothesis, for both children and adults (Lambdin et al 2003).

Gendered pronouns may be used to provide clarity when describing multiple animal characters. For instance, in the 1902 children's story "Tom Cod and Mrs. Lobster", referring to each character by different pronouns (Tom Cod by the masculine he/his, and Mrs. Lobster by the

feminine she/her) simplifies the dialogue throughout the story, something that may be important when designing children's stories at earlier levels of reading difficulty and/or lower lexile ranges (Cyr 1902; Doman 2012).

Finally, artistic license plays a role in the development of characters for fictional stories. Authors may simply create animal characters that display feminine or masculine characteristics for the purposes of building a narrative. Furthermore, authors may choose to follow or break conventional gender norms when developing these characters.

### **Overview of research completed for this paper:**

For this thesis, I investigated pronoun use patterns in describing marine animals across historical books for children from the 19th and early 20th centuries. Additionally, I analyzed a selection of images from these books to further assess how visual elements affect the reader's conceptual understanding of the animals described in the text. I also explored differences in how boy and girl characters featured in the text interact with the ocean. Finally, I attempted to situate this information within its historical context, as a means for broadening my understanding of the works themselves.

### **1.4 Research Objectives**

The University of Washington Libraries maintain a collection of historical children's books. Described in greater detail in the following subsection, a selection of these (39 total) books forms the primary source text for analysis. I wanted to draw both qualitative and quantitative information from these books, in order to satisfy a broad audience, everyone from classically-trained ecologists to marine educators and the parents of small children. I wanted this work to tell a story, hopefully a compelling one.

To this end, I divided the research into a few components: analysis of the text, analysis of the illustrations, with research on historical context enriching this analysis. My guiding questions for the *textual analysis* are: Which personal pronouns are used to refer to marine animals, and with what frequency? Is there a pattern to when shifts (switches) in personal pronoun use occur in the text? How might historical context and authorship inform our understanding of these texts? My guiding research questions for the *visual analysis* included: what is the visual context in

which marine animals are depicted? Is there evidence of anthropomorphism in the illustrations? And how might historical context inform our understanding of these illustrations?

#### **1.4.1 The University of Washington Historical Children's Literature Collection**

The University of Washington Libraries' Special Collections Department maintains a collection of historical children's literature. This collection contains over 7,000 volumes from the 17th-20th centuries, featuring alphabet books, grammar books and primers (textbooks to teach reading skills), fables, etiquette books, and others.

## **Chapter 2: Methodology**

### **2.1 Feminist and Ecofeminist Framework**

As a branch of feminist scholarship, ecofeminism is lexically defined as the intersection of feminism and environmentalism; more specifically, it is the acknowledgement that the oppression of women and environmental destruction are both facets of patriarchy and colonialism (Buckingham 2004). Early ecofeminists argued for the elevated position of women as natural caregivers, better attuned to the natural rhythms of an “Earth Mother” (Carolyn Merchant and Val Plumwood, e.g. see Diamond & Orenstein 1990). This perspective has been criticized by contemporaries as essentialist, and modern ecofeminist work largely focuses on including diverse perspectives (beyond one that has traditionally been Western, white, and middle class), as well as incorporating elements of environmental justice (Stein 2004; Mann 2011). The 1992 UN Conference on Environment and Development was the first international platform to lobby for “gender mainstreaming”, or the inclusion of gender issues in discussions of global environmental efforts.

As it relates to the research completed for this paper, the feminist framework issues a challenge: while I am primarily concerned with gender as it relates to marine animals, I must also keep a weather-eye open for instances of other regimes of oppression. Indeed, evidence of white heteropatriarchy is evident in the primary source texts, and issues of gender bias must be acknowledged as one component of a broader system of oppression.

### **2.2 Positionality Statement (because research doesn't occur in a vacuum):**

I grew up in Redwood City, California, a suburb tucked between San Francisco and San Jose. My father has enjoyed hunting waterfowl and upland game since well before I was born, and he taught me to hunt from a young age, an experience which profoundly shaped my relationship to the natural world and to my identity as a woman. Hunting requires me to continuously confront the uncomfortable reality that on some scale, to some degree, other life is sacrificed to sustain my own. But more generally, and perhaps more importantly, most of the time the hunter's experience is no different from anyone else who spends countless hours alone in the woods. This unstructured time in wilderness confers personal skills and knowledge: learning to build a fire,

how to read a deer track, or what to do when you get your period in camp<sup>3</sup>. Spending time in wilderness is not always pleasant or easy (indeed, the most meaningful experiences are often the uncomfortable and dangerous ones), but Nature provides a judgment-free space to cultivate one's own identity and relationship to the natural world.

Finding a judgment-free space in wilderness meant a great deal to me as an adolescent, when virtually everyone struggles with self-image issues, and when I personally struggled with being overweight. Being fat meant feeling indelicate and unfeminine, so I leaned into my identity as a hunter as a coping strategy: wearing baggy camouflage clothing, denying myself any feminine tendencies, and identifying as the “outdoorsy one”. This was, I suppose, my first foray into investigating the relationship between gender expression and the natural world<sup>4</sup>.

I graduated from Yale University with a B.A. in Psychology, writing my undergraduate thesis on individuals' perceptions of wild game meat as compared to domesticated meat. It intrigued me how people form assumptions about the unfamiliar, even and perhaps especially when such assumptions have no basis in fact or personal experience. I continue to be interested in these kinds of implicit attitudes, particularly how they affect our conceptual understanding of the marine environment, something as equally unfamiliar as game meat for many people. An unfamiliarity with the ocean doesn't preclude people from forming conceptions of the marine environment, conceptions that are routinely displayed (in books, television, films, toys, clothes, etc.), to varying degrees of biological accuracy and/or anthropomorphism. On a philosophical level, these murky conceptions define our relationship to non-human animals and the underwater world. More pragmatically, they inform our behavior on environmental policy and ocean conservation, critical issues in an increasingly global society and a changing climate.

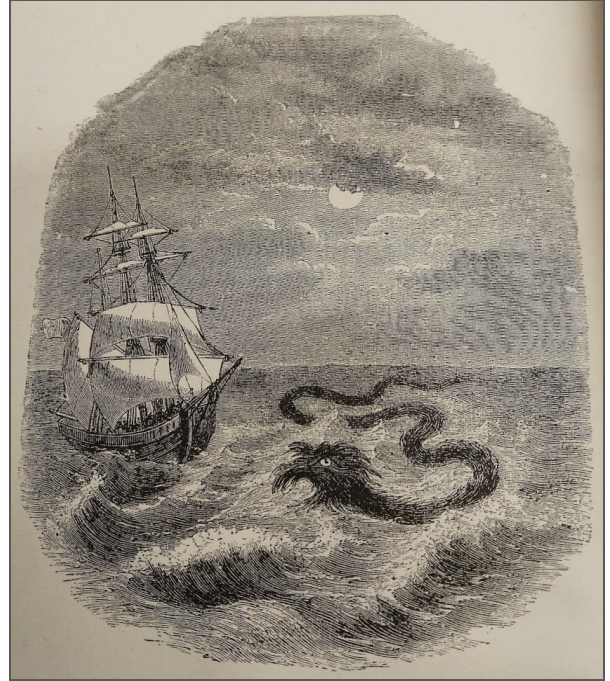
In the next section (Chapter 3), I review main categories of literature related to my research on marine animals as depicted in historic children's books: the history of children's literature and criticism, psycholinguistics, and gender. In Chapter 4, I lay out my main research questions. In

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<sup>3</sup> A Girl Scout Research Report estimates that young girls are 16% less likely to be taken outside to play, and research done by the Outdoor Industry Association shows that women's interest in outdoor activities decreases more steadily with age than men's.

<sup>4</sup> For what it's worth, I identify as straight, cisgender, female, and white. I use she/her pronouns for both myself and my female dog, although to the best of my knowledge she has no use for pronouns.

Chapter 5, I describe my research methods; Chapters 6 and 7 describe results and a discussion of those results. Chapter 8 features main conclusions and suggestions for future research.



“Legendary Sea Serpent” Devere, 1869  
University of Washington, Special Collections

## **Chapter 3: Context: Children’s Literature, Psycholinguistics, and Nature**

### **3.1 Children’s Literature**

#### **3.1.1 History of Childhood and Childhood Education**

**History of Childhood:** Childhood, or the state of being a child (Oxford English Dictionary 2016), is not a static social construct. Understanding how previous generations conceptualized childhood is a topic of continued study. This historical study of childhood was largely inspired by French historian Philippe Ariès’ 1960 book *L’Enfant et la Vie Familiale sous l’Ancien Régime*, in which he famously claimed that “medieval society the idea of childhood did not exist” (Ariès, 1960, p. 125). Although later critics (Steven Ozment, Nicolas Orme, Stephen Wilson) widely discredited Ariès’ theory of childhood as a purely contemporary construct, his claim sparked substantial inquiry on the history of childhood. While this fascinatingly cerebral concept is largely beyond the scope of this paper, it is worth noting that we bring our own biases about what constitutes childhood to the table when we examine children’s literature from previous generations, and attempting an historically-sensitive approach to the literature is needed.

#### **Childhood Education in the United States**

A few broad epochs characterize childhood education in the United States. In the pre-colonial era and early colonial era, education and religion remained tightly coupled, since the clergy was one of few literate communities in society (Kandel, 1936). In the United States specifically, this referred not only to settlers from Europe, but also missionaries whose intention was to convert indigenous peoples to Christianity (*ibid*). During the Colonial period (1607-1776), education in New England was modeled after traditional English pedagogy and the four pillars of Family, Church, Community, and Apprenticeship (Fraser 2014). Primary school became compulsory in the colonies in 1642, and schoolhouses were widely regarded as places of socialization and quasi-parenting for children while parents worked and provided for the family; in the South, where large plantations separated communities geographically, families hired private tutors for their children (*ibid*).

In the early days of the United States post-Revolution, the concept of Republican Motherhood emerged (Douglas, 1973). This associated the birth of the successful nation with a virtuous family and proper home life, a notion that elevated the status of women and made it easier for girls to attend school and become literate. However, teaching small children was coupled with childcare and domestic endeavors, which ultimately made it an inferior (ergo feminine) vocation in the eyes of general society (*ibid*).

Massachusetts passed the first compulsory education law in 1852, a trend that would spread across the U.S. throughout the 19th century in an effort to advance skills that were considered increasingly necessary to the success of the nation during the Second Industrial Revolution (Fraser 2014). Illiteracy would fall from 20% of the US population in 1870 to 4.3% by 1930 (NCES 1992).

The impact of slavery and abolition on US education is significant and sets its history apart from that of many other nations. Segregation played a large role in the American school system until *Brown v. Board of Education* in 1954 and the subsequent integration of public schools (Douglas, 1973). Many African American leaders saw educational reform as critical to the success of the civil rights movement, and the education gap between Caucasian and ethnic minority students continues to be a subject of concern in the U.S. today.

### **Child Labor**

The American pre-Revolutionary period regarded child labor as a public good. The Puritan, Methodist, and Quaker faiths considered idleness sinful, and there was a moral belief in the value of work, even for young people (Kandel 1936). Following the Revolutionary War, labor demonstrated commitment and loyalty to the new nation, and notable figures (George Washington and Alexander Hamilton, e.g.) encouraged child labor (Fliter 2018). This was not wholly different from expectations for children in Europe at the time, except that European children were generally trained using apprenticeship models within guild systems; because guild systems were internally-regulated, reasonable working conditions were enforced and employers were held accountable (*ibid*).

The Industrial Revolution (roughly 1760-1840) depended heavily on child labor. Mechanization within the textile industry required children's nimble fingers to operate spinning machines; unlike previous cottage industry trades, factories were often located far from home where working conditions could go unchecked (Fraser 2014). By 1810, an estimated 2 million children worked in factories in Europe and the US, and regulations to improve child welfare began around this time to limit working hours and inhumane work conditions (Fliter 2018). During this time period, the public perception of child labor shifted from public good to social taboo, and the concept of childhood as something precious to be nurtured through storytelling and play would eventually emerge (Fraser 2014).

### 3.1.2 History of Children's Literature

Writing as a means of preserving knowledge has existed for millennia.<sup>5</sup> As printing technology became more accessible and efficient, printed books consequently became more commonplace and reading for pleasure became more common. Innovations in printing also created opportunity for books written specifically for children to be published in a substantive way.<sup>6</sup>

The New England Primer was the first educational primer for the American colonies, initially published by Benjamin Harris between 1687 and 1690 (Roberts 2010). A Protestant who fled Great Britain to escape persecution, Harris's Primer featured 90 pages focused on basic reading fundamentals, much of it containing Puritanical themes and morals. Puritanical-Calvinist theology urged children to develop a sense of self relative to God and to the authority of their parents (*ibid*). John Newbery, of the eponymous Newbery Award, shifted his publishing house's focus to children's literature in 1744 with the publication of *A Little Pretty Pocket Book*; the New England Primer, and the later McGuffey Readers (another set of reading primers developed by college professor William Holmes McGuffey in the 1830-1840s), became widely used in schoolhouses, with distributions rivalling those of the Bible and the Merriam-Webster's Dictionary (Vail 1911, Norstad 1995).

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<sup>5</sup> German blacksmith Johannes Gutenberg's moveable type printing press, and the circulation of his eponymous Gutenberg Bible in the 15th century, is widely credited as the first large-scale printing project. However, this narrative is far more complicated. There is evidence of moveable type in several regions of East Asia several centuries earlier (Carter 1955).

<sup>6</sup> Additionally, determining what qualifies as a "children's book" is murky, particularly for historical works.

Closely linked to the wide distribution of readers for children was the growing acceptance of John Locke and the Educationalists' views on child development, of the child as a *tabula rasa*. If the child's mind was neither inherently good nor inherently evil, Locke supposed, then children needed to be nurtured with positive, imaginative stimuli in order to develop into productive, upright members of society (Androne 2014). This shift in thinking on cognitive development, coupled with innovations in print technology, ushered in a period that would retrospectively become known as the "Golden Age" of children's literature (Gubar 2009). Spanning roughly from post-Civil War era to the Great Depression in the United States, this Golden Age witnesses a surge in publications for children and particularly using more imaginative and fantastical prose, something that would eventually become ubiquitous in contemporary children's literature (*ibid*).

### **3.1.3 Gender Stereotypes in Children's Literature**

Scholarly criticism has explored gender gaps in children's literature. Turner-Bowker (1998) assessed Caldecott medal and honor books (1984-1994) for their representation of male and female characters and, based on the adjectives used, found that male characters are presented more frequently than female characters in titles and in illustrations, and that male characters are presented as more "active" and "potent" participants. Albers (1996) reviewed Caldecott medal books (1984-1995), cataloguing male and female characters, as well as characters representing people of color, and finding that female/PoC characters often reaffirm traditional stereotypes of subordination and marginalization. Although using animals as characters in children's literature may be an attempt to avoid some of these biases (also because animals are likeable and marketable, Goddard 2013), it is possible that even animal characters perpetuate biases vis-a-vis gender markers: putting an apron or eyelashes on an animal character marks them as feminine, for example (Medley-Rath 2013). Further, anthropomorphizing animals can be problematic, since associations have historically been made between non-white people and animals (Datcher 2019, Chen 2012). Nuanced sexism also exists in science textbooks, where female and non-binary individuals are portrayed less frequently, something which may be one reason for attrition among girls (and/or trans students) in pursuing STEM-related fields later in life, since

they do not see themselves represented in the text (Potter & Rosser, 1992). Thus, children's literature, even and perhaps especially award-winning literature, ought to be critically read and challenged as a mechanism for overcoming problematic stereotypes.

### **3.2 Psycholinguistics**

Psycholinguistics, or the cognitive study of how humans learn and use language, accepts the Sapir-Whorf Hypothesis of linguistic relativity: that the language we use influences the way we perceive ourselves and the world around us (Spivey, McRae & Joanisse 2012). Where gender is concerned, psycholinguists seek to explore how language influences an individual's gender identity and the gender identities of those in society. A primary area of research on this subject concerns grammatical gender: when nouns are distinguished into gender categories such as feminine/masculine/neuter, prompting grammatical agreement between nouns and other parts of speech. Although older versions of English used grammatical gender in more significant ways, only traces of it exist in Modern English, primarily when using pronouns (Corbett 1991). While discussing grammatical gender at length is outside the scope of this paper, it seems pertinent to at least mention that linguists have identified a number of broad categories assigning gender to words: semantic (based on the word's meaning), morphological (based on a word's relation to other words), and arbitrary assignment (*ibid*). Many linguists argue that grammatical gendering largely falls into this third, arbitrary category (e.g. the Spanish word for table is the feminine *mesa*, but this does not imply that there is something fundamentally feminine about tables); however grammatical gender is often used as a cue for determining the sex of unspecified characters (Franceschina 2005). That is, the gender of the noun in that language becomes the default gender for that animal (Saalbach 2012, Boroditsky, Schmidt & Phillips 2003). Further, adults and children of languages with only feminine/masculine articles (French and Spanish) display a tendency to assign matched gender voice to objects, but the same is not true in German; researchers posit that this may be due to the German language containing a neuter gender in addition to female and male genders for nouns (Kurinski & Sera 2011).

### **3.3 Perceptions of Children and Gender in Nature**

Children are fascinated by the natural world from a young age, evidence of an innate human tendency to form meaningful relationships with nature (the “Biophilia Hypothesis”, E.O. Wilson 1984). Children as young as 4 years’ old can generalize information from a book to reality (Geertz 2016) and can distinguish between animals and humans, extending biological properties of humans to non-human animals if they’re similar (Carey 1985). Evolutionary psychologists posit that bonds with the natural world are critical in childhood for healthy development, i.e. that human survival requires an understanding of the ecological complexity of the surrounding world (Sampson 2012). Ecopsychologists, or those who study the human relationship to the natural world, use principles from child development to examine how children form relationships to nature (Kahn 1999); many argue that there is an urgent need to immerse children in nature, both for the healthy cognitive development of the child but also for the sake of environmental conservation efforts (Louv 2005).

In addition to understanding how children perceive the natural world, we must acknowledge the intersection of gender and the natural world. Concerning the ocean specifically, Journalist Frederick William Wallace’s 1924 Wooden Ships and Iron Men is considered a “classic” portrayal of 19th century seafaring as a rugged, masculine endeavor (Creighton & Norling 1996; Wallace 1924). Contemporary scholars have challenged the assumption that seafaring existed in a purely unilateral form, pointing to evidence of female pirates, women’s roles within the whaling industry, and the intersection of gender and race on the ocean, among others (Bolster 2012; Creighton & Norling 1996). This intersection is complex, and although a complete analysis of maritime masculinity is another thesis in itself, as it pertains to the human relationship to the ocean (and issues of marine conservation, etc.) maritime masculinities are a fascinating and worthy topic of contemporary research (Crane & Ellison 2006; Land & Israel 1999).

## **Chapter 4: Problem Statement**

### **4.1 Statement of Problem**

Oceans cover roughly 70% of our planet, a fact many children learn in grammar school; even more astounding, the world's oceans contain 97-99% of Earth's water, absorb 26% of its carbon, and support an incredible array of species, including some of the most ancient (NOAA Ocean Portal). We may not live in it, and many of us may not even have an obvious relationship to it, but the ocean exerts a profound influence on our way of life.

*"In the end we will conserve only what we love, we will love only what we understand, and we will understand only what we are taught."*

-Baba Dioum, at the 1968 IUCN General Assembly (also attributed to Jacques Cousteau, and probably Mark Twain)

The above quotation (and its various iterations) circulates widely and often in environmental conservation circles. It is a fairly logical argument, and it implies that the natural environment is imperiled not only from intentional destruction by sinister agents, but also (and perhaps more catastrophically) from general complacency and ignorance. Following this logic, the forces of education, then understanding, and then love are necessary to counteract environmental destruction. My hope is that this work contributes to those two criteria in a meaningful way.<sup>7</sup>

**Why Study *Children's Books*?** If education is one of the keys to conservation, then we must understand how we educate ourselves about the ocean. To do this one might start with early childhood experiences, such as formal school education, books, and media targeted at children specifically. Research suggests that children who engage in educational activities related to marine issues, such as microplastic and marine debris, report higher levels of concern for these issues and awareness of their causes and solutions (Hartley, Thompson, & Pahl 2015).

Additionally, future generations are often cited as the motivation for environmental conservation efforts. We believe that we have a moral obligation to sustain the natural world for our children. And so, while children's books are often dismissed as trivial, they become an

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<sup>7</sup> Sorry, the love part is up to you.

important lens through which to understand how meaningful relationships to the marine environment are inculcated in childhood.

### **Why Study *Historical Children's Books*?**

As a strategy, simply teaching people about the ocean fails to address the fundamental temporal limitations that occur in the human relationship to marine systems. Our own meager lifetime's worth of experience imposes limits to a truer understanding of natural systems, and not knowing what we do not know can have serious repercussions when it comes to protecting the ocean. From one generation to the next, we habituate to an increasingly reduced sense of what constitutes wilderness, a phenomenon ecopsychologist Peter Kahn termed "environmental generational amnesia" (Kahn 1999). Even the most ocean-savvy child or stalwart environmental activist is confined to the contents of their own experiences, and of their generation's expectations for what constitutes a healthy forest or a pristine ocean. Many ecologists argue that a human lifetime is inadequate as a unit of measure for successfully sustaining wild systems, and one way to combat the shifting baseline is to consider viewpoints from generations' past.

Developing a more thorough understanding of our relationship to the ocean across generations creates a more robust perspective, one that hopefully translates to better outcomes for marine conservation efforts. At the very least, transporting ourselves back in time is entertaining; the human imagination appreciates a good narrative, and developments in science communication strongly suggest that imparting an aspect of storytelling into research increases its reach and relevance to the public (De Régules 2014; Veríssimo & Pais 2014).

### **4.2 Significance of Research**

As mentioned previously, we often use our own generation's understanding of natural systems, including the ocean, as a proxy for what nature can or should look like in the future, and this shortsightedness limits the efficacy of conservation measures. Going back through artifacts from past generations allows us to glimpse the historical roots of our relationship to marine life, which may better equip us to create a healthy and sustainable relationship in the future. Additionally, viewing these source texts through an ecofeminist lens adds evidence to the argument that

systems of oppression are persistent not only in human-to-human relationships, but also in human relationships to the natural environment. Finally, assessing how gender is imparted onto marine animals creates a dialogue for educators, both about how to effectively teach marine science concepts, and also how to do so in a manner that reflects a desire toward gender-sensitivity and the development of socially-progressive curricula.

### **4.3 Implications and Delimitations**

It is hoped that the results of this study inform those primarily involved in marine education: teachers, textbook authors, and parents of small children, about the specific ways we communicate marine science concepts to children, and how we may inadvertently advance oppressive elements of our history when we use gendered language to talk about marine life. Using non-inclusive language to describe marine life may deter marginalized groups from developing an interest in marine science and STEM fields (Potter & Rosser, 1992). Furthermore, if marine science curriculum is derived from primarily European/American, white, English-speaking sources, we must consider the limits these historical biases impose on our contemporary understanding. Promoting progressive gender identity values for children moving forward should be an important goal within educational reform circles. Additionally, the historical component of this work aims to make the narrative of our contemporary relationship to marine life more complete, perhaps yielding insight for future conservation efforts.

## **Chapter 5: Methods**

39 books were selected from the University of Washington's Historical Children's Literature Collection. From these books, stories about marine animals were isolated. The percentage of each book devoted to marine animals varies considerably: some books are instructional primers intended to teach reading skills to children and feature perhaps only a single story related to marine life, while others books focus exclusively on marine animals. While the primary focus concerns the depiction of marine animals, human characters interacting with the ocean were also analyzed for possible gender bias in the specific ways that men/boys/male characters compared to women/girls/female characters. Of the 39 books selected for analysis, 22 are attributed to male authors, 12 to female authors, and 5 are unattributed. All were of either American or English descent, and most were considered educators (teachers, professors, etc.) or clergy within religious organizations.

### **Historical Context**

The passages selected for analysis do not exist in isolation. Rather, they are situated within a wider historical context -- and as it pertains to societal perceptions of childhood and education, that historical period was one of radical change. To that end, I gathered information on children's education and child labor related to this time period (presented in Chapter 3); this information, coupled with a brief summation of the authors (see above), attempts to more adequately contextualize the selected corpus as part of a larger historical epoch.

Additionally, while gender is the focus of this paper's research, I discovered elements of these texts that implicate race and colonialism as well (see Figure 1). This is what lawyer/activist Mari Matsuda calls "Asking the Other Question": sexist elements are part and parcel of a broader system of oppression; to fully understand and overcome this system of oppression, we must consider all the pieces together (Matsuda 1991).



Figure 1. From Stone et al – 1932 (“Little Andy”, “At the Sea”, and “Playing Indian”)

### 5.1 Textual Analysis

Textual analysis is a primarily qualitative approach in which a piece of text is closely analyzed. When conducting a textual analysis, the methodology obligates the researcher to take certain ethics into consideration, namely to: 1-contextualize a text as part of the larger body of work in which it is found, 2-consider the genre of the text, and 3-consider the wider public context in which the piece was written (McKee 2003). For this project, texts were analyzed primarily for their use of personal pronouns in reference to marine animals. Pronoun use was counted and categorized (see Figure 2), flagging any switches in pronoun use, noting what was described in the text where the switch occurs. An example of a page of text with highlighted pronouns is provided below in Figure 2.

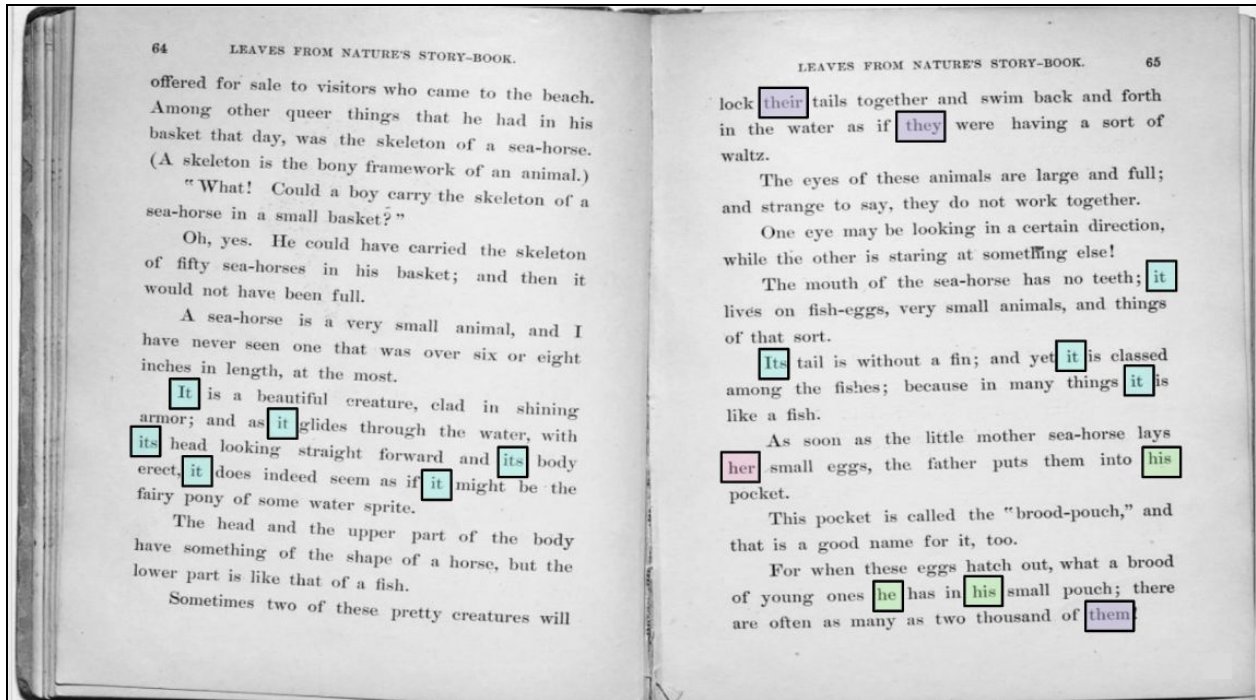


Figure 2. Sample page from Kelly's "Leaves from Nature's Storybook" (1893).

## 5.2 Visual Analysis

Visual analysis is another qualitative method which addresses the formal elements of an illustration or piece of artwork, in order to more fully derive meaning from the work (Van Leeuwen & Jewitt 2001). From the selected passages on marine animals, I assessed any illustrations present in the passages, using a few choice parameters. Specifically, I wanted to note whether the animals were depicted within a background/environment, whether the animals were drawn alone or in the company of other animals, and whether or not there were obvious instances of anthropomorphism.

## **Chapter 6: Results**

### **6.1 Textual Analysis**

<b>Total Books</b>	<b>Total pronouns used</b>	<b>It/Its</b>	<b>They/Their</b>	<b>He/His</b>	<b>She/Hers</b>	<b>Pronoun Switches</b>
<b>39</b>	<b>1551</b>	<b>582</b>	<b>611</b>	<b>289</b>	<b>69</b>	<b>64</b>
<b>%</b>	<b>100</b>	<b>37.5</b>	<b>39.4</b>	<b>18.6</b>	<b>4.4</b>	

**Types of books:** 18 natural history books, 7 marine life books, 10 readers/primers, and 4 anthologies (of fables, poetry, etc.)

#### **Observations**

Overall, the majority of pronouns used across these texts are epicene or gender-neutral, consistent with the more didactic (i.e. less narrative) style of writing for the time period. However, in looking at the gendered personal pronouns used, masculine pronouns are used four times as often as feminine pronouns (18.6% compared to 4.4%). Additionally, in texts where switches in pronoun usage occur (from gender-neutral to gendered pronouns or vice versa), there were a number of interesting patterns. For instance, feminine pronouns were used almost exclusively to describe female animals performing activities involved in reproduction or caring for young. Masculine pronouns were used to describe more dynamic actions among animals, such as when a hermit crab wins a fight (Kelly 1893), a crab's ability to regenerate a leg (Swinton & Cathcart 1880), or when exploited by humans (particularly in the case of whales). I also noted several instances in which feminine pronouns were used to describe Nature, the Moon, and the Sea. This relates to ecofeminist scholarship and the notion of the Gaia Principle (Sands 2015).

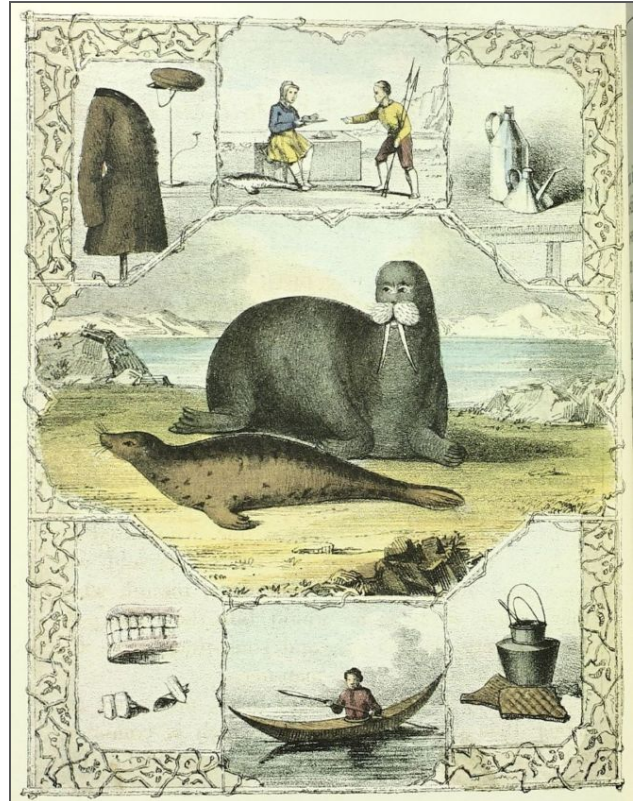
## 6.2 Visual Analysis

### Visual Analysis results

Total Books	Total Images	% of animals alone	% of backgrounds in images
22	219	57% alone 43% not alone	29% with background 71% without background

### Observations

Assessing the illustrations in these texts, the majority of marine animals are depicted without a background environment (71%). Additionally, more than half of the marine animals are depicted alone (no other animals featured in illustration, 57%). There was a notable anomaly among whales, in that they were often featured being hunted by humans, so while not drawn in isolation, I would argue that this is still a solitary depiction. Also, much of the time the entire animal was drawn, something that is uncharacteristic of reality, particularly for marine animals. And notably, anthropomorphism was uncommon in illustration, even in later works.



1844 "The Seal" (Unattributed)  
University of Washington, Special Collections

## **Chapter 7: Discussion**

### **7.1 Discussion of Results**

Overall, these historic texts used epicene or gender-neutral pronouns more often than gendered pronouns, suggesting that anthropomorphizing marine animals was relatively uncommon during this time period; this is perhaps in keeping with a preoccupation with classification that was common as scientists and researchers began to integrate the Linnaean taxonomic classification system with Darwin's theory of natural selection (Paterlini 2007, Secord 2000).

However, among gendered pronoun usage, there was an historic tendency to use masculine pronouns as a default in reference to marine animal characters (a ratio of 4:1) over feminine pronouns. This tendency follows previous research that an unspecified body is male unless otherwise specified (Lambdin's "Animal = Male Hypothesis" 2003). Additionally, feminine pronouns are used almost exclusively to refer to animals engaged in child-rearing or reproductive capacities. Thus, during the Golden Age of children's literature, white heteropatriarchy is evident in the human relationship to the ocean, something that is likely to color even a contemporary understanding of marine animals. Whether this tendency toward masculine as default is detrimental to students' relationship to the ocean remains unclear: many organizations currently support anthropomorphism of marine animals in academic curricula as a means for fostering empathy. To this end, the Seattle Aquarium actually encourages the use of gendered pronouns in its guide "Best Practices in Developing Empathy Toward Wildlife", suggesting that instructors may "refer to animals as 'he' or 'she'" as a means for framing content in a more empathic way. I argue that our tendency to default to masculine pronouns may corrupt this process, effectively excluding feminine and non-binary individuals from the conversation.

Anthropomorphism was uncommon in illustrations for these texts; perhaps this is something that becomes more evident in the years following the Golden Age of children's literature, since there

has been a shift in from didacticism to the more fantastical and imaginative genre we associate with children's literature today.

Where children are described in the texts, there are notable differences between how boys and girls are depicted interacting with the ocean. Girl characters are less dynamic, often featured in reactive roles: crying over waves carrying away a doll, being asked to cook a fish, getting upset after being hooked by a boy's fishing line, etc. Boy characters, by contrast, are more likely to be given active roles: surfing, fishing, catching creatures, e.g. This pattern follows previous study on gender stereotyping in children's literature (Albers 1996; Turner-Bowker 1998).

## **7.2 Limitations of Research**

One limitation of this research is the somewhat arbitrary way in which books are retrieved from the University of Washington Special Collections. It is difficult, costly, and time-consuming to catalog historical texts into digital formats, and there is often less administrative interest in doing so for children's books compared to other collections. Furthermore, the contents of children's books are often organized in ways that make them especially difficult to catalog: for instance, educational primers feature collections of stories covering a wide range of topics (from how pearls are made to biographies on Benjamin Franklin, e.g.) and sometimes do not include tables of contents. Thus, the books selected for analysis in this paper were retrieved personally by the Library's rare book curator: Ms. Sandra Kroupa, which I then evaluated for relevance. In a perfect world the collection could be searched digitally by keyword, but for the time being this was not possible; a positive externality of this was that it prompted me to engage fully and physically with the primary texts themselves, providing further opportunity to engage with the texts' larger context.

## **7.3 Implications for Future Research**

There are limits to what research may be accomplished within a two-year professional master's degree, and this investigation has only skimmed the surface of several study areas remaining to be explored. 1- The primary texts used in this analysis were selected from the late 19th and early 20th centuries (the "Golden Age" of children's literature, as loosely-defined by scholars of children's texts). Continuing the analysis into contemporary works for children would yield

further insight about historical trends in depictions of marine animals. 2- This analysis was completed using English language texts, evaluating personal pronoun usage in English. Comparing this information with other languages, particularly languages that have more robust instantiations of grammatical gender (Spanish, Italian, German, etc.) might uncover psycholinguistic idiosyncrasies of interest. 3- This analysis was also completed using Western cultural texts (from the United States). Evaluating non-Western texts, particularly those of First Nations and island and coastal communities and/or other cultures with distinct relationships to the natural/underwater world, would invariably prove to be a valuable complement to the research conducted here. And 4- Marine animals specifically were selected as the target category, given my area of interest. Comparing information about marine species to that of terrestrial species would help determine if marine animals receive special treatment, or whether this gendering phenomenon occurs across all members of the Animalia kingdom.

## **Chapter 8: Conclusions**

### **Future Goals: Creating a Handbook for Marine Educators**

In addition to a call for further study, the research I did may also be translated into a handbook for marine educators about the impact of pronoun use on student understanding. In 2005, a decentralized collaborative of marine educators and scientists formed the Ocean Literacy Network, as an interactive framework for better aligning science curricula and research on marine issues (Ocean Literacy 2005). The findings from this research complement ocean literacy's goal of making marine science more accessible to all.

Generally speaking, science communication is also increasingly becoming a topic of interest, if not moral obligation, for current researchers in the field of marine and ocean studies. Thus, creating a shorter, more legible adaptation of these findings explicitly for those teaching marine science concepts to students would be one way to make the research more useful for practitioners.

### **General Conclusions**

There are scholars and journalists who have taken it upon themselves to shift their language away from masculine pronouns in writing about humans (using she/her or they/them pronouns instead of defaulting to he/him when describing hypothetical persons). Research from this paper supports the idea that we should be equally inclusive when describing non-human animals, both for the sake of developing a more complete understanding of these animals, but also to further shift the societal pole away from a grammar system that promotes patriarchy. Although this research was unable to evaluate more contemporary children's books on marine life, there is some evidence to suggest that improvements have been made. Marcus Pfister's 1992 book The Rainbow Fish, for instance, features a glittery rainbow-colored fish that is referred to by masculine pronouns and a "Wise Old Octopus" that is referred to by feminine pronouns. Raffi's beloved "Baby Beluga" song uses second-person "you" pronouns, which eliminates gender markers. Shark Lady, the story of female shark biologist Eugenie Clark, is among Amazon's Top 40 Children's Marine Life books.<sup>8</sup> Concerted efforts are also being made to include non-white characters in children's books, with the Cooperative Children's Book Center reporting significant increases not only in books written specifically about non-white communities, but also books about non-cultural topics that feature "brown-skinned" characters (CCBC 2018).

Efforts to illuminate the latent sexism (vis-a-vis pronoun use) present in marine realms are also occurring outside children's literature. In April 2019, there was news coverage about feminists scratching off feminine pronouns on signage referring to ships at the Scottish Maritime Museum; this action prompted the Museum to reconsider its language and update the signs with epicene terminology (Baynes 2019). When it comes to environmental conservation, the Lorax may speak for the trees, but Dr. Seuss didn't specify how to do so (and certainly not which pronouns to use!). Fictional environmental stewards aside, there are already individuals heeding the call to make marine studies a more gender-inclusive discipline, as mentioned above. Pronoun use, and its implications on both our past and present relationship to the ocean, is a subject for which this thesis only scratches the surface.

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<sup>8</sup> Along with 3 Spongebob Squarepants books, Baby Beluga, and The Rainbow Fish (see <https://www.amazon.com/Best-Sellers-Books-Childrens-Marine-Life/zgbs/books/2846>)

## **Chapter 9: Works Cited and Primary Sources**

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