

Science as Myth

by

Dana Diehl

A Practicum Presented in Partial Fulfillment
of the Requirements for the Degree
Master of Fine Arts

Approved April 2015 by the
Graduate Supervisory Committee:

Thomas McNally, Chair
Tara Ison
Melissa Pritchard

ARIZONA STATE UNIVERSITY

May 2015

ABSTRACT

The goals of science and myth go hand in hand. Both seek to see beyond the senses. Both seek to understand the environment and the human mind. Both seek patterns. Both invent, through narrative, reasons for things happening the way they do. This considered, how do writers use myths in contemporary literature? How do they use science? Myth and science are stories that belong to everyone, stories that are shared. For those who are brought up learning science in school or who are raised in a religious society, how can writers take advantage of these shared associations, these shared memories, when writing fiction? What is the power of science in fiction? This essay seeks to answer these questions.

TABLE OF CONTENTS

| | Page |
|-------------------------|------|
| CHAPTER | |
| 1 SCIENCE AS MYTH | 1 |
| WORKS CITED | 24 |

CHAPTER 1

SCIENCE AS MYTH

“But when we’ve been everywhere, and it’s only a matter of time, where will we go next, when there are no more wildernesses?” – Jeannette Winterson, *Sexing the Cherry*

Science was my first lens through which to see the world. My parents, both geologists, took my brother and me on drives through rural Pennsylvania, and would point out valleys carved out by glaciers. My mother could pick up a stone by a creek and tell me its journey, composition, and age based on its shape and coloring. My father could read the safest way to canoe down a river by watching for the slightest ripples. In the early spring, we’d dig still-frozen, still-sleeping frogs out of our garden. I didn’t have religion, but I had the natural world, and parents who knew stories about how it came to be.

This initial interest in science has continued through my writing. I’m obsessed with dropping scientific fact or theory into my stories and using it as a metaphor for my characters’ emotional states. I’m interested in the ways that the violence, contradictions, joys, and patterns in the natural world can mirror our internal lives. However, I am also interested in the mythic, in the stories we make up about our universe. Before we knew the earth was a round and solid body, people believed our planet was hollow. The ancient Mandan people believed their ancestors emerged from a subterranean land through a cave on the northern side of the Missouri River. Before genetic studies developed, there was a belief in spontaneous generation—that life

could spring from inanimate objects. Maggots could be born from dead flesh, Chemist Jan Baptist van Helmont believed that scorpions could be created from basil placed between two bricks and placed in sunlight. Ancient Greeks saw lightning, and thought it was Zeus, throwing fiery bolts down from the heavens. Like modern scientists, these people were looking for patterns and drawing meaning from these patterns.

Recently, I've become infatuated with the observations in Aelian's *On the Nature of Animals*. Aelian, born between 165 and 170 CE, was a Roman author and teacher of rhetoric. *On the Nature of Animals* is a collection of "facts" and anecdotes on animals. It's unlikely he believed all the stories, but we see it as a sort of early encyclopedia: an early effort of people trying to relate to and understand animals through a combination of fable and fact gathered from observation.

Some passages are descriptive and accurate: "The Horned Ray is born in mud. It is very small at birth, but it grows to a huge size. Its belly is white; its back, head, and sides are inky black" (Aelian, 10). Some personify animals: "The octopus is greedy, sneaky, and voracious, and it will eat anything. It is probably the most omnivorous creature in the sea. Here is the proof: in times of hunger, it will eat one of its own tentacles" (13). Others are absurd, but feel legitimate in their confidence: "Storks use this method of warding off bats, who make their eggs infertile: they set the leaves of the plane tree on their nests, and any bat who approaches becomes numb

and can do no harm” (13). These passages reveal a need to categorize nature, to understand nature, and to find the self in it. It’s a need that we share with our ancestors.

I argue that the goals of science and myth go hand in hand. Both seek to see beyond the senses. Both seek to understand the environment and the human mind. Both seek patterns. Both invent, through narrative, reasons for things happening the way they do. Science and myth only differ in their approach and priorities. In her book, *Mythology*, Edith Hamilton points out,

When the stories were being shaped, we are given to understand, little distinction had as yet been made between the real and the unreal. The imagination was vividly alive and not checked by the reason, so that anyone in the woods might see through the trees a fleeing nymph, or bending over a clear pool to drink, behold in the depths a naiad’s face.
(Hamilton, 13)

Where we see photosynthesis, the refraction of light, early people saw Gods and Goddesses and magic. Hamilton referred to myths as early science, “the result of men’s first trying to explain what they saw around them” (19). The Greeks noticed that the Dipper did not set below the horizon. They could not yet know about orbits and hemisphere, and so they invented a story about a goddess becoming angry at the Dipper, also known as the Great Bear, and announcing that it should never sink into the sea. Zeus was the reason for lightning. Poseidon was the reason the sea could be life-bearing and treacherous. A real myth isn’t connected to religion. A real myth, Hamilton claims, is an explanation of something in nature. Crossley-Holland’s observations on Norse myths would support this. He also described myth as a dramatic narrative

through which humans try to explain their origins and their surroundings (Crossley-Holand, xxxix).

This considered, how do we use myths in contemporary literature? How do we use science? Myth and science are stories that belong to everyone, stories that we share. For those of us who are brought up learning science in school or who are raised in a religious society, how can we take advantage of these shared associations, these shared memories, when writing fiction? What is the power of science in fiction?

In *Hero with a Thousand Faces*, Campbell speaks on the place of the natural world in the stories we tell. He claims that

The center of gravity, that is to say, of the realm of mystery and danger has definitely shifted. For the primitive hunting peoples of those remotest human millenniums when the sabertooth tiger, the mammoth, and the lesser presences of the animal kingdom were the primary manifestations of what was alien—the source at once of danger, and of sustenance—the great human problem was to become linked psychologically to the task of sharing the wilderness with these beings. An unconscious identification took place, and this was finally rendered conscious in the half-human, half-animal, figures of the mythological totem-ancestors. The animals became the tutors of humanity. (Campbell, 390)

He argues that we became psychologically connected to the beings that kept us alive and could also kill us. Once we brought the plant and animal worlds under our social control, our wonder shifted to the sky. However, according to Campbell, “today all of these mysteries have lost their force; their symbols no longer interest our psyche.” We now accept our environment in technical, “mechanical” terms. Though I do not agree that these symbols have lost their power, I do agree

that our interests have shifted. Ancient people drew great meaning from their surroundings, because they were so mysterious. How have scientific developments impaired our ability to see the mystery and magic in the world? Campbell explains that for the ancients, dangerous presences dwelled just beyond the “protected zone of the village boundary, in the wild [...] The regions of the unknown (desert, jungle, deep sea, alien land, etc.) are free fields for the projection of unconscious content” (79). But are these regions unknown anymore? If unknown regions are like blank canvases on which to place our unconscious thoughts, where do we place them now? Humans have been, in a sense, to alien planets. We’ve been deep in the sea. We can visit deserts and deep jungles by hopping on YouTube. Almost anywhere in the world we can hop on a phone and identify our coordinates, our location, we can identify every mystery that surrounds us. Where are the unknown regions? Where do we place our imagination? Campbell calls symbols the “vehicles of communication” (236). So where do our symbols come from?

...

To begin to answer these questions, I want to first look to modern novels and short story collections that reference century-old myths. Kevin Crossley-Holand, author of *The Norse Myths*, gives one definition of myth as being a “sacred history set in a mythical time, involving supernatural beings who create man and whose actions provide paradigms for men” (Crossley-Holand, xxxix). Because they are stories that are widely known and seek to explain the natural world, I’d broaden this definition to include fairy tales and religion.

In her novel, *Sexing the Cherry*, Jeanette Winterson uses intertextuality by drawing on fairy tales such as Rapunzel and the Twelve Dancing Princesses. She also makes reference to the well-known hero narrative (man receives call to adventure, leaves on boat, has adventures, perhaps saves a woman, returns home changed). Winterson revises these familiar stories to include more well-rounded and self-possessed women than the original tales. The main female character in the novel is large, strong, and impervious to bullets; she crushes and destroys men. The women in the story are frustrated with men and their hero's journey: "I don't hate men, I just wish they'd try harder. They all want to be heroes and all we want is for them to stay at home and help with the housework and the kids" (145). Half way through the novel, we're introduced to Twelve Princesses who tell their stories of love. One relates:

You may have heard of Rapunzel. Against the wishes of her family, who can be best described by their passion for collecting miniature dolls, she went to live in a tower with an older woman [...] One day the prince, who had always like to borrow his mother's frocks, dressed up as Rapunzel's lover and dragged himself into the tower. Once inside he tied her up and waited for the wicked witch to arrive. (Winterson, 52).

In Winterson's version of the story, the witch-character and Rapunzel are in a relationship. Rapunzel *wants* to be in that tower. The prince, who happens to be a cross-dresser, is the intruder; he is not the welcome savior. Winterson is clearly making a statement about gender roles, and her message comes across so loudly and clearly, because she is tampering with a story that is so familiar to us. We have expectations, and when those expectations aren't met, it jars us. We pay attention.

In an interview with the *Paris Review*, Winterson shares her history as an Evangelical Christian. She explains that she was raised with Bible stories, and even now that she has left religion, these stories are part of her internal narrative. She says, “I like to know a lot of stories and myths. That is extremely important to me. It helps me think about things, it helps me piece things together. It makes a bridge. I think it’s one of the ways human beings have always understood their environment and the challenges that environment has posed.” She claims that referencing myths and fairytales is a way of coaxing these forgotten, internalized stories back into people’s consciousness and allowing them to re-see these stories. By retelling Bible stories, she gets to reinvent herself. She goes on:

One of the good things, I think, about the Christian faith is that it draws on such a wealth of images and symbols, which even the least church-minded of us still recognizes. We are two thousand years of Western Christianity. That’s in our body and our blood [...] You have to have your own symbols and myths to express your collective past. (Winterson)

Winterson argues that symbols we are raised with still have their power. We can give new life to myths by revising them. There’s a theme in *Sexing the Cherry* of seeing. Nicholas Jordan, a character from the 1990’s, says, “I tried to look at a pineapple and pretend I’d never seen one before. I couldn’t do it. There’s so little wonder left in the world because we’ve seen everything one way or another” (127). By editing familiar stories, we are able to see them again and rediscover the wonder. Winterson’s retelling of the Twelve Dancing Princesses lets us see the story in a new way. We see its absurdity, we see its sexism. We see its ability to be used in new ways, for our changing values.

Another novel that draws on myth is Carol Maso's *The Art Lover*. This novel takes the shape of a collage. It reveals layers of truth by juxtaposing autobiography with fiction with art with myth and religion. The characters in this book struggle with death. The fictional Caroline's mother killed herself when she was young, and now Caroline's father has died. The author, Carole, inserts herself into the story, talking about a friend who is dying of AIDS. The novel is littered with small sections about Jesus. The Jesus in these stories is going to die, and doesn't understand why. In a section titled, "Jesus Learning to Swim," we see Caroline's mother, Veronica, holding Jesus in the water:

She's helping the baby Jesus put on his water wings. Carefully she takes the tiny dimpled arm and bends it at the elbow. First one, then the other. He puts his face in the water. He begins to cry. 'Don't cry,' Veronica whispers, swirling her hand in the water. 'Kick your feet. Keep moving. The dark is not so dark.' (165).

Jesus is a useful symbol in this story, because even non-Christians are familiar with the Christian symbolism of the crucifixion, a death to achieve atonement, and his rise from the dead. Jesus as a symbol provides Maso with a safe, familiar space to explore the meaning of death. Like some of the characters in Maso's story, Jesus knows he is going to die. However, his death had meaning, and he was resurrected. Will Caroline's loved ones also die with meaning? In *The Hero with a Thousand Faces*, Campbell writes, "It is obvious that the infantile fantasies which we all cherish still in the unconscious play continually into myth, fairy tale, and the teachings of the church, as symbols of indestructible being. This is helpful, for the mind feels at home with the images, and

seems to be remembering something already known” (177). Myths are useful as symbols, because they are so familiar to us. Myths are shared memories and points of connection. In her novel, Maso can explore big concepts by using symbols that we feel “at home” with.

...

To further explore writers’ relationship to the natural world, I turn to creative nonfiction writers Annie Dillard and Diane Ackerman. In her narrative nonfiction book, *Pilgrim at Tinker Creek*, Dillard explores and contemplates Tinker Creek, close to her home in Virginia. It’s a unique book because, despite calling herself a pilgrim, Dillard never physically leaves her immediate setting. Also, it is not autobiographical in the traditional sense, because we never see the speaker as a social being. She feels more like a pair of eyes. An observer.

A reoccurring theme in this book is the subjectivity with which we view the world.

Dillard relates:

I used to be able to see flying insects in the air. I’d look ahead and see, not the row of hemlocks across the road, but the air in front of it. My eyes would focus along that column of air, picking out flying insects. But I lost interest, I guess, for I dropped the habit. Now I can see birds. Probably some people can look at the grass at their feet and discover all the crawling creatures. I would like to know grasses and sedges—and care. Then my least journey into the world would be a field trip, a series of happy recognitions. (17)

In this passage, she points out that there are layers of seeing. We might walk the same path day after day and miss certain details. The more familiar we become with a place, in fact, the more likely we are to miss things. We become numb to it. We take for granted that the place works in

predictable ways. She wonders how long it would take us to notice the pattern of the seasons if we had never been told about the seasons. Dillard considers that “Specialists can find the most incredibly well-hidden things” (19). With their specific set of knowledge for the names of things and the way an aspect of their environment works, they’ll be seeing through a different lens than the average person. Even animals might be capable of seeing what the average human cannot:

There is ultraviolet light that is apparent to animals, but invisible to humans [...] A nightmare network of ganglia, charged and firing without my knowledge, cut and splices what I do see, editing it for my brain. Donald E. Carr points out that the sense impressions of one-celled animals are *not* edited for the brain. ‘This is philosophically interesting in a rather mournful way, since it means that only the simplest animals perceive the universe as it is.’ (21)

Such a sad and lovely thought: only the smallest creatures see the universe as it is. But unlike humans, they cannot draw meaning from what they see. Humans, who do draw meaning from their surroundings, who do not only see but perceive, are stuck in their familiar ways of seeing. I can’t help but turn Dillard’s musings into a metaphor for writing. Good writers take a swarm of potential details and present only the ones that are most specific, most telling, most interesting. Writers have the job of peeling back the obvious layers so that their readers can see their lives in a new way.

Dillard observes that someone who has been blind his or her whole life, and suddenly gains the power of sight, will be unable to sort and prioritize what they see. Dillard references studies of people who have recently recovered sight. One boy described a hand as “something

bright and then holes.” A girl described grapes as “dark, blue and shiny...It isn’t smooth, it has bumps and hollows” (31). Are these people seeing in a truer way, with less of a filter?

In her book, Dillard observes the violence of nature, its cruel deaths and ruthlessness. But she is also in awe of the natural world. She isn’t interested in it solely as a metaphor or a symbol. She is interested in nature for nature’s sake. She writes, “You take huge steps, trying to feel the planet’s roundness arc between your feet,” amazed by her world and her experience of it (37). Reading Dillard, I revisit the childlike joy of exploration. I am reminded that everything has a history and a story. When Dillard looks at a crow, she doesn’t just see a crow, she sees its use of aerodynamics, its waterproof feathers, its evolution from a reptile state of existence. It’s an important lesson for writers, to push the way we observe and to see in new ways.

Diane Ackerman is another nonfiction writer who focuses on the natural world. Her book, *The Moon By Whale Light*, is a collection of four essays on animals that people, in general, know little about: bats, whales, penguins, and crocodiles. She chooses these animals because, “each would teach me something special about nature and about the human condition: about our terror of things that live by night, or the advantages of cold-bloodedness; about intelligence and music, or our need to withstand most any ordeal to behold a nearly extinct life-form before it vanishes” (xv). Ackerman believes that by observing animals, we can learn something human nature. She did much of her research in the field. She compares going into the field to entering an alternate reality that “has its own social customs, time zones, routines, hierarchies, and values”

(xvi). In nature, living in close proximity to animals, she observes that she and the naturalists “relish being new, anonymous, at their own disposal, untrackable, freed from their past, able (even required) to reinvent themselves” (xvi). Ackerman’s language for getting close to nature is so similar to Jeanette Winterson’s feelings for using myth. Winterson rewrote fairytales and Bible stories as a way to break free of her past and “reinvent” herself. Ackerman enters the world of animals to step outside her norm and reinvent her existence. Both the retelling of a myth and the emergence into nature are methods of re-seeing the world.

The first essay in Ackerman’s collection covers bats. Most of us know a few things about bats. We know about their echolocation and their penchant for caves. They get stuck in our attics. We expect they have rabies. We associate bats with creatures of the night, vampires, Halloween. Through her essay, Ackerman peels back these myths and reveals that some bats, the false vampire bats with a wingspan of a yard, mate for life; the male and female take turns with child-rearing. Female bats choose mates on their ability to provide a good home; they choose the males with the good cave space. “None of these strategies is all that foreign from what we see going on in people” (12). She goes on to describe female bats as living in a sorority of future mothers, in nursery colonies. It is difficult to describe the lives of animals without using the vocabulary we associate with human lives. We must use words like sorority and nursery to describe the bats’ habits. Our projection of human characteristics onto animals and how we then respond to these associations (with fear, or with warmth) reveals our own values. Even when we

strip away the myth of the bat, we find new stories to tell. We revise our old symbols into new ones.

Both Ackerman and Dillard discuss the subjectivity of our senses. Ackerman reminds us that “We forget that the ocean floor includes some of the tallest mountain ranges on earth—we just don’t see them. And there are the magnetic features, about which we know so little. Because we don’t steer along the magnetic web of the planet, we forget that other animals do” (128). The modernists are distinctive for their refusal of constructs. They refused gender roles and assumptions about identity, time, and space. In the early 1900’s we were learning about genetics, special relativity, the atom, the Big Bang, the Uncertainty principle; discoveries were being made that changed the way we viewed ourselves. The modernists’ writing changed to reflect this. Faulkner broke rules of grammar and punctuation. Woolf told *The Waves* from the perspective of six different characters. I think we’re still learning that time and space are, in part, constructs. Every time one mystery is solved, another appears. We still don’t know, for example, what dolphins use their complex (and therefore difficult to maintain) brains for.

Whales have spurred many myths. Humpback whale songs gave birth to the siren myth. The Inuits considered themselves “people of the whale.” The Koryak hold meetings in which they confess their sins to the whales. Throughout history, they’ve represented the large, the monstrous, the grand. Only recently have we been able to enter the whales’ world. The modernists’ writing was affected by the scientific discoveries of their age. I believe that our

prose will continue to be effected by modern discoveries, as scientific advancements challenge our previously held beliefs and symbols. In his craft book, *Maps of the Imagination: The Writer as Cartographer*, Peter Turchi examines the writer as a form of mapmaker. He writes:

Artistic creation is a voyage into the unknown. In our eyes, we are off the map [...] Some of the oldest stories we know, including creation myths, were attempts to make sense of the world. Those early storytellers invented answers to the mysteries all around them [...] The stories and poems we write today rarely take on the task of explaining natural elements or the failure of crops; for those answers, we turn to science or some other form of belief. Nevertheless, in every piece we write, we contemplate a world; as that world would not otherwise exist, we create it even as we discover it. (13)

The act of writing is an act of discovery. Writers, like scientists and mapmakers, will find new ways of treading familiar ground.

...

Finally, I look to contemporary fiction writers who merge science and myth: Anthony Doerr, Italo Calvino, and Laura van den Berg. Anthony Doerr writes lyrical stories based on scientific or historical facts. His collection, *The Shell Collector*, explores the lives of scientists, naturalists, and hunters—people who see the natural world in minute detail. His lyricism often guides us to reimagine how we perceive science. “The Hunter’s Wife” is a good example of this. In this story, a hunter meets a girl, a magician’s assistant, marries her, and takes her to his cabin in deep woods Montana. The world Doerr creates is real, but feels like a fantasy. In the deep Montana winter, they explore the hibernating animals. They find a hibernating bear in a hollow: “The opening was dark, as if he’d punched through to some dark cavern, some netherworld.”

The real world is compared to the netherworld. Through simile, Doerr merges fact with fantasy. As they watch the sleeping bear, “Above her shoulder a star separated itself from the galaxy and melted through the sky” (47). Doerr’s description allows us to focus on the mystery of the falling star, he allows us to forget the science of it. *Separated. Galaxy. Melted.*

The tension in the story comes from the characters’ two different ways of seeing the world. The hunter sees is rationally, logically. He trusts nature to work in predictable ways. His wife, though, discovers that she can read the dreams of dead and living animals. By touching them, she receives visions of what they see. When she touches the bear, she sees “Summer. Blackberries. Trout. Dredging his flanks across river pebbles” (48). The two characters in this story represent two extremes in how to view nature: the logical, rational perspective and the magical, emotional perspective. However, as the story progresses, we sense that their ways of seeing aren’t very different. When the hunter looks out the window, he sees “wolf tracks crossing the river, owls hunting from the trees, six feet of snow like a quilt ready to be thrown off.” He sees the river freezing and thawing, chunks of ice moving toward the Missouri, he sees bears hibernating in hollow trees. When Mary looks out at the world, she sees “burrowed dreamers, nestled under roots against the long twilight, their dreams rippling into the sky like auroras” (Doerr, 54). While their methods of seeing are different, both are seeing the hidden things, the things that others wouldn’t notice. They see below the surface. The descriptions of

fact are mixed with the emotional, while the magic is mixed with fact. The snow is like a heavy quilt, while the girl's dreams are like auroras.

The story is full of facts: "You probably know, the hunter told Maples, that wolves are hurdlers. Sometimes the people who track them will come to a snag and the prints will disappear [...] People used to think it was magic—flying wolves. But all they did was jump. One great coordinated leap" (49). He talks of "native trout leaping fifteen-foot cataracts," and honeybees that hibernate in dense balls, in hidden cavities: "He pried a globe of honeybees from its hive, slow-buzzing, stunned from the sudden exposure, tightly packed around the queen, each bee shimmying for warmth" (51). A fact of nature is described so poetically, a string of modifiers that describe the bees as shimmying, slow-buzzing, stunned. Doerr mixes the poetic and lyrical, the abstract, with the scientific to confuse our understanding of what is "reality." In this world, science is just as mysterious as myth.

Italo Calvino, in *The Complete Cosmicomics*, also makes myth out of science. The stories in this collection start with a dry description of a difficult scientific theory, and build stories around these theories. The stories are narrated by Qfwfq, a being who travels through time, changes form, and sees everything from the beginning of the universe to the present day. Calvino's anthropomorphization of concepts, beings, and pieces of matter enables us to access ideas and time periods that are normally beyond human comprehension. "The Aquatic Uncle" is based on the fact that at one stage in evolution, certain animals left the water for the land. "All at

One Point” is a story that imagines what it would be like to be at the beginning of the universe, when all matter existed in a single point. The beginning of the universe is described like a family gathering. The stories question our experience of time and space by telling stories that take place when space and time were very different. The stories ask us to imagine how we’d experience time differently if we existed over millennium instead of decades.

“The Distance of the Moon” begins with this piece of science:

At one time, according to Sir George H. Darwin, the Moon was very close to the Earth. Then the tides gradually pushed her far away: the tides that the Moon herself causes in the Earth’s waters, where the Earth slowly loses energy.

Calvino exaggerates and fictionalizes the real-world theory of the drifting moon by imagining a time when the moon was so close to the earth we could climb up onto its surface without entering space. He explores this concept for all its worth. His characters play in the moon’s orbit, gather seaweed that the moon trails in its wake, and at one point his characters even get stuck on the moon. The story is a mix of vague, faux science [“[B]ecause the distances from the Sun were different, and the orbits, and the angle of something or other, I forget what [...] Orbit? Oh, elliptical of course: for a while it would huddle against us and then it would take flight for a while” (Calvino, 3)] and the obviously fantastical:

Now, you ask me what in the world we went up on the Moon for; I’ll explain it to you. We went to collect the milk, with a big spoon and a bucket. Moon-milk was very thick, like a kind of cream cheese. It formed in the crevices between one scale and the next, through the fermentation of various bodies and substances of terrestrial origin which had flown up from the prairies and forests and lakes, as the Moon sailed over them. It was composed chiefly of vegetal juices, tadpoles, bitumen, lentils, honey, starch crystals,

sturgeon eggs, molds, pollens, gelatinous matter, worms, resins, pepper, mineral salts, combustion residue. (6)

There's a particular humor in Calvino's writing the results from the clash of the conversational voice, the scientific voice, and the absurd details. Calvino moves from the conversational ("Now, you ask me...") to the formal ("the fermentation of various bodies and substances of terrestrial origin..."), mimicking the cause-and-effect sentence structure and attention to detail that we associate with science writing. However, the details, even in their specificity, are obviously absurd ("tadpoles, honey, sturgeon eggs..."). Calvino merges science with nursery tale by referencing the story that the moon is actually made of cheese.

Calvino is considered to have invented a new genre, the science-based fantasy. So what does this genre do that others don't? What is the power in science-based fantasies? In a *Paris Review* interview, Calvino says he was interested in the conflict between the world's choices, and man's obsession with making sense of the patterns he observes. Calvino's stories bring light to the fact that, no matter how much we learn about the universe, it will still be a mystery to us. It is still something we are trying to conceptualize. We might "know" that the universe started at a single point, but can we really understand what that means? By merging science and the fantastical, Calvino encourages us to continue questioning.

Helen Humphreys approaches science differently, more subtly. Her novel *Wild Dogs* is about a group of six people whose dogs have been let go. The dogs have formed a pack in the forest, and their owners go to the edge of the forest in the evening to watch for them. Sometimes

the dogs appear, and sometimes they don't. If they do appear, they often stay in the forest. The novel explores the thin line between domesticity and wildness. The dog owners are unsettled by their pets' transition into wildness. Spencer, one of the men responsible for finding and hunting down the dogs says,

I thought about the dogs in their den, curled around the last little scrap of the night. I thought of how those dogs used to belong to people [...] What would kill the dogs in that life would be accidental, or the slow running down of their bodies. They didn't need to be wary of danger in that old life, and yet, were they? Were their wild instincts in place then? Is that why they could turn so quickly? Were they never who they appeared to be? (131).

This question runs throughout the book: What stands between our composed domesticity and our wildness? The story isn't just about the dogs' wildness; it is about our potential for wildness as human beings. The novel ends with unexpected violence; Spencer man shoots a woman who has joined the dog pack. The passage that describes the violence is unemotional and concise and direct: "It wasn't a dog. I think I knew that from the beginning. But it was wild. I knew that too. It was waving and moaning and started to come towards me. Then it made a screeching sound and I shot it" (133). Like the dogs, the man slips quickly into instinct. He doesn't understand what he is seeing, and he shoots. He doesn't think. He shoots.

The novel mirrors themes of the wild in ancient myths. The town and the homes are the "protected village," and the forest is the "region of the unknown," where anything can happen. The dog owners' fears are projected onto the forest, and they rarely venture past the line of trees. One of the central characters in this novel is Alice, whose ex-boyfriend released her dog into the

woods. Alice falls in love with Rachel, an expert on wolves, Rachel who is tormented by the mysteries of wolves: “There’s something that can’t be figured out about wolves [...] No one knows why they choose one animal over another to kill. A wolf will sometimes be staring down a deer, will have run the deer, separated it out from the herd, and be ready to kill it, and then, at the last minute, the wolf will change its mind, release the deer” (41). Rachel suggests one explanation: the deer telepathically asks the deer if it is willing to die and assesses its will to live. Then it decides if it will kill the deer or spare it. Even the scientist in this world can’t find provable, concrete solutions and must turn to myth and magic.

A critical point in the story is when Alice goes camping with Rachel. While Rachel is gone, looking for wolves, Alice observes the animals around the camp. The creatures in her vicinity seem to act without reason. A raccoon abandons its fish and scrambles into the woods, though it wasn’t yet full and there wasn’t any danger to scare it away. A duck swoops in and out of a lake again and again, each time landing in the same spot, each swoop made without an obvious yield. A heron poses in the shallows with no reward for its patience. Like Rachel couldn’t discover the wolves’ motivation, Lily can’t figure out these animals’ driving force. The animals’ unpredictability foreshadows Rachel ultimately leaving Lily. In *The Hero with a Thousand Faces*, Joseph Campbell observes, “Not the animal world, not the plant world, not the miracle of the spheres, but man himself is now the crucial mystery. Man is that alien presence with whom the forces of egoism must come to terms” (391). Part of these characters’ obsessions

with understanding the animals' inner lives is their desire to decode their own mysteries. Alice wishes to understand her relationships. Rachel is trying to understand what it means to be herself. On her relationship with Alice, she says, "I had lost myself. It was that simple. I had allowed myself to become subsumed in someone else, and it felt terrible. I had lost the ability to track the wolves, to be attuned to their presence, because I had transferred that affinity over to Alice [...] Being connected to another human being was much less secure than understanding the wolves" (165). She relates an experience with bringing a wild wolf pup into her home to raise as a pet. The pup ended up suffering in captivity. Rachel feels like that dog. Pushed into the wrong environment, she will die. The characters in this novel explore their own neuroses and weaknesses by trying to understand their animals.

Another contemporary writer who merges science with myth is Laura van den Berg. In her first short story collection, *What the World Will Look Like When All the Water Leaves Us*, scientists and family members of scientists who, like in Doerr's collection, are challenged to see beyond fact. In one story, a woman dresses up as Bigfoot and chases people who pay to play-hunt Bigfoot. Meanwhile, her boyfriend is dying; he is suffering from the realities of life. In another story, "Inverness," a woman is in Scotland searching a rare flower, the *linnaea borealis*. She meets a band of Loch Ness monster hunters, who are seeking Nessie with scientific equipment—submarines, sonar, maps. The monster hunters believe that Nessie might be an elasmosaur, a dinosaur that became extinct millions of years ago. Myth merges with science.

Throughout the stories, thematic comparisons are made between the search for a rare flower, and the search for a loch monster. The narrator says about the flower, “They’re very rare now, so I suppose I’m looking for the extraordinary” (van den Berg, 86). She can identify the flower, give it a name, but she can’t actually find it. Both the narrator and the monster hunters search obsessively for something that they are unlikely to find. Throughout the story, the narrator struggles with a recent break-up. Her feelings are projected onto the science and the search of science in the story. When she finds the rare flower, for example, she observes, “Today I found a twinflower. It was, like so many other things, not at all what I had hoped” (101). We’re led to think that like the flower, her relationship was disappointing, not as great as she had hoped. Later, the narrator watches the monster hunter team go into the lake:

The submarine disappeared gradually, like a vessel that had sprung a slow leak. I wondered what McKay was seeing through the tinted window. Murky water, shimmering fish darting past? [...] Sarah was as still as a sentinel, and I wondered if this was an accurate portrait of their life together: he goes, she waits. (104)

Sarah and McKay’s roles as scientists mirror their roles as husband and wife. Their physical separation in this moment represents a pattern in their marriage: McKay pursues his obsessions, while Sarah waits for him to return. As the story progresses, the narrator becomes more understanding of the monster hunters’ goals. She begins to see their aims as being not so different. The story ends with her imagining dipping into the water with them, the submarine “headlights piercing shadows, the interiors of caves [...] When a dark something moved in front of the window, the object was too large to identify; I only saw pieces and parts of a giant mass”

(106). The narrator's pain is too large and complex for her to find and identify. The narrator tries to make sense of her pain by looking at the ways that scientists, or searchers, find what they are looking for. Ultimately, she learns that even what you find what you are looking for, it might not be the satisfying answer. It might not be something you can truly comprehend.

...

Campbell claims that stories are important, because they teach us how to live, how to overcome our obstacles. "One does not know toward what one moves. One does not know by what one is propelled. The lines of communication between the conscious and the unconscious zones of the human psyche have all been cut, and we have been split in two" (Campbell, 388). The goal of story is to form a bridge between the conscious and the unconscious. Some writers use common memories and symbols from myth to bridge this gap. Others use science, and some combine the two. The characters' journeys serve as a pattern for readers who are following similar journeys. "The individual," Campbell says, "has only to discover his own position with reference to this general human formula, and let it then assist him past his restricting walls" (121).

Why am I so obsessed with merging science and myth in my stories? Why are the authors I've studied obsessed with this? How can science and myth guide us? A similarity I see between these collections and novels I've read is that the characters are looking for answers. They are looking for explanations. The narrator in "Inverness" wants to understand her break up. In "The

Hunter's Wife," the characters want to understand each other. In *Wild Dogs*, Rachel is choosing between living in society and living a solitary life. They are all looking for a lens through which to see their life.

The first lens many of us receive is myth. Even if we weren't raised religious, we were likely raised in a religious society. As Winterson points out, you don't have to be Christian to understand the symbolism of the cross. Some of the first explanations we were given for the world came from myth: *Don't be bad, because Santa is watching and will give you... We are here because of God... Don't go into the forest alone, because a wolf in disguise might eat you...* Some of our myths are nursery rhymes. Early on, these stories become part of our subconscious. When the lens of myth becomes insufficient for us, we move to science, to observed patterns, to theory. We look to physics, biology, geology, psychology. Evolution. Atoms. Continental drift. DNA. Science should be the be-all and end-all. But, I think, we often find that it is not. A man or woman who is suffering from depression will not be satisfied with explanations of hormonal imbalances or psychological trauma. Someone who has lost a family member, or who has just been broken up with, will not find answers in a science book. Often, the factors that are illuminated by science are invisible to us: we can't imagine a time before time, or what it means to be in expanding universe, or how DNA unravels inside us. We can observe these things in a way, but only abstractly – through telescopes, microscopes, equations. To move toward answers, we need to draw on all of our resources: myth and science. In *Sexing the Cherry*, Nicholas

Jordan asks where we go when there are no more wildernesses. There still are wildernesses. Our job as writers is to find them.

The power of science in stories, is that science belongs to all of us. Scientific discoveries and advancements affect all of us. As writers, we can explore the implications of these new discoveries. We can find new ways of looking at the familiar. “Scientists need to be choreographers and code-breakers as well as observers,” Ackerman says (88). Writers should do the same: observe, break codes, look for the wildernesses within the wildernesses.

WORKS CITED

- Ackerman, Diane. *The Moon by Whale Light*. New York: Vintage Books, 1991. Print.
- Calvino, Italo. *The Complete Cosmicomics*. New York: Penguin Classics, 1969-2010. Print.
- Campbell, Joseph. *The Hero With a Thousand Faces*. Princeton, Princeton Press Bollingen Series, 1949. Print.
- Crossley-Holland, Kevin. *The Norse Myths*. New York: Pantheon Books, 1980. Print.
- Dillard, Annie. *Pilgrim at Tinker Creek*. New York: Harper Perennial, 1974. Print.
- Doerr, Anthony. *The Shell Collector*. New York: Scribner, 2002. Print.
- Hamilton, Edith. *Mythology*. New York: Meridian, 1940. Print.
- Humphreys, Helen. *Wild Dogs*. New York: Norton, 2004. Print.
- Maso, Carole. *The Art Lover*. San Francisco: North Point Press, 1990. Print.
- Turchi, Peter. *Maps of the Imagination*. San Antonio, Trinity University Press, 2004. Print.
- van den Berg, Laura. *What the World Will Look Like When All the Waters Leaves Us*. Westland: Dzanc, 2009. Print.
- Winterson, Jeanette. *Sexing the Cherry*. New York: The Atlantic Monthly Press, 1989. Print.

26

26