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Audience as Participant: The Role of Personal Perspective in Contemporary Nature Writing

Nature writers aim to transform their readers into enlightened and active participants in conservation efforts. To enhance their calls to conservation, they select an appropriate level of narrative distance which allows their audience to become a participant in their work. The depth to which authors reveal their thoughts and emotional responses to their topic suggest not only their objectives, but also their field of study—with career scientists approaching subjects and situations in a way that professional writers often embellish in a more dramatic manner. Through the use of in-text questioning, directly addressing their audience, and revealing their personal experience, contemporary nature writers create a journey for their readers, from Colin Tudge in *The Tree: A Natural History of What Trees Are, How They Live, and Why They Matter* to Brian Switek in *My Beloved Brontosaurus: On the Road with Old Bones, New Science, and Our Favorite Dinosaurs* to David Quammen in *The Song of the Dodo: Island Biogeography in an Age of Extinction*. This personal engagement is established through historical and autobiographical details that make calls for conservation action effective. By analyzing the methods that contemporary nature writers use to connect with their audience, it's possible to determine whether an author's pleas for conservation will be heeded and to what extent readers will be moved to act.

The choice between limited, personal, and introspective narrative forms is not a choice between good, better, or best. The mode of communication from the author must match their subject and the stated aims of their mission for writing. An author may choose a limited perspective which allows the reader to take the journey for themselves, as demonstrated by Helen Scales in *Poseidon's Steed: The Story of Seahorses, From Myth to Reality*. Or an author may opt to bring readers into their innermost thoughts and

feelings along their journey, which helps to facilitate a deeper connection with nature through emotion, experience, and narrative—as Katie Fallon does in *Cerulean Blues: A Personal Search for a Vanishing Songbird*. These choices of narrative perspective are often generated through the author’s career and worldview, with career scientists like Stephen Jay Gould in *Bully for Brontosaurus: Reflections in Natural History* and Helen Scales in *Poseidon’s Steed: The Story of Seahorses, From Myth to Reality*, operating most often in a limited perspective, while professional journalists and writers like James Prosek in *Eels: An Exploration, from New Zealand to the Sargasso, of the World’s Most Mysterious Fish* lean toward the introspective.

The Limited Narrative Perspective

Nature writers like Helen Scales and Colin Tudge adopt a narrative perspective in which the use of strong, first-person narration is limited. The narrative voice acquires authority because of the author’s profession or field of study. Scientists are prone to use this fact-based approach in their writing. Their texts focus on objective data, historical anecdotes, and scientific research rather than the author’s personal experiences. This understated style prevents an author’s exploits from taking precedence over their subject. Both Scales and Tudge are career biologists, and their scientific training plays a key role in how they write. The focus of their works is centered on the reader’s experience, not on their own. While their approach to using first person narration is similar, it’s Scales who is more adventurous about offering her feelings, the reasons behind writing her book, and trying to personally connect with her audience. This difference is apparent in the way the authors begin and finish their books, but even moreso within the body of their texts.

The majority of Tudge’s book—*The Tree: A Natural History of What Trees Are, How They Live, and Why They Matter*—avoids first person narration, and when an “I” does appear, it is hardly ever a bridge to introspection. Some examples of this fleeting “I”: “I like the whimsical notion that since pollen contains the entire male gametophyte it is, botanically speaking, flying moss” (Tudge 69); “In Panama in 2003 I was shown a mangrove that had been filled in with rubble to provide a park for containers” (174); “It seems to

me that all of the ideas outlined above to explain the diversity of tropical forests and the impoverishment of temperate forests could apply at any one time” (307). In all of these examples, Tudge does not go on to build a scene around his experience and he doesn’t provide dialogue. His approach is restrictive when it comes to his experience. Tudge chooses to focus on the natural history of trees (as the subtitle of his book implies) rather than his own personal experiences because he wants his audience to connect with the biological history he is outlining. By providing side-glances into his memories, he’s establishing himself as an authority, while allowing his readers to reflect on their own experience with trees. The audience becomes a participant by both bringing their own affinity for trees into Tudge’s book, and by using Tudge’s understanding to see trees in a new way once they’ve closed its pages. When Tudge pleads for better treatment for trees, his call-to-action is predicated on the reader’s own experiences, not his own.

In contrast, Helen Scales uses her personal experience as an emotional anchor point at two critical points in *Poseidon's Steed: The Story of Seahorses, From Myth to Reality*. While the bulk of her book is focused on historical anecdotes and scientific information about seahorses, Scales uses first person narration only in the book’s Prelude and Epilogue. The prelude begins with Scales directly prompting the reader to imagine the seahorse in detail, interwoven with questions for her audience. These questions provide a forward thrust by urging the reader toward the answers. She anticipates a reader’s line of thought as the audience’s experience mirrors the writer’s explorations. In-text questions, as a craft tactic in nature writing, also encourage the reader to think outside the pages of the book, fostering new lines of thought within the reader and making them a part of the work’s mission to educate and entertain. Instructing readers to “imagine” or “picture” a scenario actively engages them in the flow of ideas and concepts that the writer is presenting. These imperative sentences ignite both the imagination and tactile senses of the reader, illuminating natural history topics for a general audience. By encouraging interactions with these ideas in the reader’s mind, the writer can foster a deeper connection to his or her non-human subjects:

Peer at a seahorse, briefly hold one up to the light, and you will see a most unlikely creature, something that you would hardly believe was real were it not lying there in the palm of your hand, squirming for water. Should we presume these odd-looking creatures were designed by some mischievous god who had some time on her hands?

(1)

Scales instructs her audience to imagine each anatomical feature of the seahorse, using questions to repeatedly engage the reader while maintaining the descriptive details: "...how about a suit of magical color-changing armor, a perfect fit, and a crown borrowed from a fairy princess, shaped as intricately and uniquely as a human fingerprint" (1).

After a single paragraph that establishes the reality and rarity of seahorses, Scales produces another paragraph comprised solely of questions:

What is it that makes seahorses seem so special, like miniature dragons of the sea?
Where does their peculiar appearance come from, why do they look like nothing else on earth? What goes on during a day in the life of a seahorse? And how did they evolve to be the only species in the world in which males give birth? (2)

Now that Scales has introduced the seahorse, she introduces herself, placing the subject of the piece firmly on the seahorse and not her personal story. A one sentence paragraph follows the series of questions: "As a marine biologist, I tinker with these sorts of questions, the questions that fascinate me and occasionally keep me awake at night and certainly move me to do the things I do" (2). After describing her first dive as a 16 year old girl, Scales tightens the focus of her personal experience with the oceans by honing in on her seahorse obsession:

Of all the hundreds of thousands of fish that live in the seas, I quickly realized it was the seahorses I wanted to see the most. Something about them felt subtly irresistible to me, something to do with their perplexing appearance tangled up in my longing to

understand their obscure lives. From then on, no matter what I was supposed to be doing down there, I began to keep an eye out for the silhouette of a down-turned snout or the twitch of a chameleon-like eye. (4)

Scales uses her own emotional connection to the seahorse to foster the same connection in her audience. She focuses on simply intriguing the reader using her perspective on seahorses, and then fosters her audience's journey into seahorse folklore, history, and science.

The first person "I" Scales has crafted throughout the thirteen pages of her Prelude disappears in Chapter 1. First person narration does not reappear until the penultimate paragraph of the book's Epilogue. Throughout this post-script, Scales does not rely on her experiences. She uses first person narration conversationally—not as the driving force behind the narrative. Nevertheless, her personal perspective carries the weight of all of the preceding chapters and the Prelude. Her thoughts resonate with the reader after nearly 200 pages of historical seahorse information:

I've also realized even if I never see a wild seahorse again, it wouldn't be so bad. To see one is to contemplate one, to pause briefly in blissful tranquility and wonder why and how. But that memory doesn't fade and the recollection of a single seahorse is enough to last a lifetime. In the end, all that really matters is that they are still out there somewhere. I expect there are many people who spend their whole lives in or next to the sea and who will never be in the right place at the right time to see a seahorse. But the world is absolutely a better place just knowing there are seahorses swimming through the oceans. (193)

Scales then provides one last imperative instruction to her reader:

Imagine what it would be like if all we had to tell our grandchildren were stories of a time when there used to be wonderful creatures called seahorses living wild in the oceans. They looked like miniature horses with rolling eyes and tiny monkey's tails. It

was the males that had babies—no animals do that anymore—and they changed color as if by magic and danced elegant dances every day with their faithful partners. If stories were all that were left of the seahorses, I don't suppose anyone would believe us. (193)

The final "I" interjects perspective rather than experience, letting the reader contemplate this dismal daydream. Scales uses her first person narration sparingly, so when she does use "I" in a sentence her reader is aware of it. Scales has set out to use her experiences to augment the wonder of seahorses, not to put her experiences center-stage. The subtitle of her book includes the phrase "The Story of Seahorses" which is exactly what she offers—bookended by her personal thoughts.

But in the chapters between the Prelude and Epilogue, Scales differs from Tudge because she provides her reader with scenes and dialogue—even when she does not insert herself into the scenes. When Scales describes the seahorse exhibit at the Tennessee Aquarium, first person narration is absent:

Kids run frenetically from tank to tank, drowning out gentle aquarium melodies with cries of "I wanna ride a seahorse," "Look how fat they are!" "Seahorse! Seahorse! Look, Mom!" "They look sad," "These ones have wings like dragons. I'll call them dragon horses!" Some children press their faces close to the glass tank walls, trying to spot tiny dwarf seahorses, each one as tall as a postage stamp but perfectly formed, hiding between blades of Florida Keys seagrass. (143)

The scene continues on for several more paragraphs as Scales describes the children, their speech, and the adults strolling around the exhibit. In other chapters, Scales provides dialogue taken from historic writings or film clips. She describes events in detail even when her first person narration is not present. Tudge avoids the use of dialogue and scene setting throughout his book, demonstrating that while he and Scales have both elected to use a limited form of narrative perspective, each author adopts a much different approach within this style.

Like Scales, Tudge chose a fitting subtitle for his book: *A Natural History of What Trees Are, How They Live, and Why They Matter*. This puts emphasis on the author's limited role in the text. But unlike Scales, Tudge is reluctant to inject himself into his book in any substantial way. He uses "I" only when he feels his presence will help to reinforce an interesting aspect of a particular tree or to offer his viewpoint. In contrast to the personal Prelude Scales provides her audience, the reader does not get any information about why Tudge is fascinated by trees in his Preface. Instead, the moments with a first person narrator are incredibly fleeting: "A yew I met in a churchyard in Scotland has a label suggesting that the young Pontius Pilate may once have sat in its shade"(Tudge xi). After remarking that it's dubious to suggest Pilate was there beneath the tree, Tudge does not question whether the tree itself existed then. "I once found myself in an old kapok tree in Costa Rica in which biologists had thus far listed more than four thousand different species of creatures" (xiii). That sentence is the final one in its paragraph. Tudge doesn't build a scene around the experience or tell his audience what it's like to be in the kapok tree—the acknowledgement of the wonder around him is enough.

This pattern of brief "I" moments continues throughout Tudge's book, which is mostly a description of the numerous tree families around the world, along with the evolutionary history of trees and their place in humanity's past, present, and future. The final chapter focuses on the future of trees, yet Tudge still uses first person narration in a limited manner for much of his conclusion. A notable exception is a section which relies on his expertise: "Trees could indeed stand at the heart of all the world's economics and politics, just as they are at the center of all terrestrial ecology. The more I have become involved with trees in writing this book, the more I have realized that this is so" (369). Despite this, Tudge doesn't rest on his expertise to drive his ideas about trees home. The final paragraph uses the collective "we" instead of the first person "I" to call on the reader for action: "Trees are, of course, at the heart of things. How could it be otherwise? The human lineage began in trees. We have left our first ancestors far behind, but we are creatures of the forest still" (405). By invoking the third person, Tudge creates

common ground that serves as a springboard to a call to action. But this plea is a subtle one—based not on a personal connection between Tudge and the reader, but on the interconnectedness of all living things.

The Personal Narrative Perspective

Nature writers employing a personal perspective create a direct connection between their experiences and their readers. Writers like Thor Hanson, Bernd Heinrich, Andrew Blechman, and Brian Switek seek to cement the personal and universal connections that they and their audience seek with the natural world. Their travels, interviews with experts, and first-hand accounts of their subjects create a compelling story for the reader. Engaging first person narration also provides a storytelling structure to which other facets of the work—research, interviews, science, history—can be affixed. This variety of material keeps the reader engaged while using the author as a focal point, tying the textual and existential elements together.

In *Feathers: The Evolution of a Natural Miracle*, Thor Hanson takes the familiar subject of feathers and creates an intriguing journey into how they evolved, how birds use them for a variety of functions, and how humans have discovered a wide range of uses for avian feathers. Hanson, and other authors who have adopted the personal approach, use the same techniques of limited narrative writers to connect with the reader. By implementing direct address, in-text questioning, and personal experience into their work, they continuously engage with their audience. But Hanson and his fellow personalized nature writers have elevated the role of their own experience in their writing. The story of their story becomes hugely significant, and they reveal their thoughts on their subject throughout their work.

Hanson begins his Preface with the following: “Vultures made me do it. That’s my stock answer now, whenever people ask me about this book. It was vultures that first spurred my interest in feathers, years ago on a research project in Kenya” (xiii). While this opening may be reminiscent of Scales and especially Tudge in referencing “this book,” its placement as the entryway into the book is important for two reasons. First, Tudge writes, “the more I have become involved with trees in the writing of this

book” (369) at the very end of his long labor. He looks back on the book to draw conclusions and reflect on the journey he has undertaken. Hanson is referencing his book journey in the second sentence—and referring to himself in the first. And unlike Helen Scales, who takes some time to introduce herself, or Colin Tudge, who never becomes a character, Hanson tells the reader who he is at the very outset—a field biologist. He also immediately tells the story of how feathers interested him. This is a clear declaration that the book’s journey will be about feathers, but the book is about the journey as much as it is about the feathers themselves. Hanson is more than a narrator. He’s the main character.

Being present from the very first sentence, Hanson’s continual use of the strong “I” throughout the book creates a conversational air. The book is a journey the audience takes with the narrator, as opposed to an exploration that has been planned for the reader by a sparsely present author. The strength of this personal narrative perspective is in its presence. Readers witness not only the subject at hand, but the author’s experience of the journey to understand that subject. Hanson’s approach differs from that of Tudge and Scales from the very outset of his book. He brings the reader into his world—his sensory perception as well as his thought processes in his interaction with other characters. If Tudge and Scales describe other characters in their books, they do not directly interact with the author inside the text. Hanson opens a conversation with his reader that brings his viewpoint and the other characters’ viewpoints out of a purely historical or scientific context and into a personal one. This shift into Hanson’s personal experience grounds the work in an emotional human connection to a non-human subject. His authorial experience becomes a conduit for the natural world, rather than simply the gateway that Tudge and Scales provide.

Hanson’s use of dialogue—both externally, between himself and other characters, and internally, where his thoughts are communicated to the reader—is one of the most drastic departures from the limited perspective Scales and Tudge provide. Dialogue serves a variety of functions in nature writing: engaging the reader with human interest about scientific topics, fostering connections or highlighting

differences between characters, and creating a theatrical dynamic that drives the work forward while remaining rooted in the author's experience.

Through direct communication with the reader, Hanson often refers to his book project, things he decided against doing, and the process of writing, itself. In these moments, Hanson provides glimpses of his interior world to the reader. While he does offer personal thoughts and feelings about his subject—feathers—his awareness of the book he's writing and the journey within its pages is the hallmark of narrative perspective at a personal level. Using a conversational approach, the reader 'walks' with Hanson, experiencing his thoughts and feelings along the way.

Hanson writes: "People say we're in the middle of nowhere, and they have a point," admitted Greg Willson, the center's director of excavations. I suppressed an urge to correct him. I'd just driven across eight hundred miles of sagebrush and tumbleweeds, and I knew for a fact that I'd passed nowhere *long* before reaching Thermopolis" (23-24). Hanson begins this section with dialogue from another character (which he goes on to detail in the following paragraphs through Willson's dialogue). The phrase, "I suppressed an urge to correct him" gives the reader a glimpse into Hanson's thoughts during a moment of connection with another character—something limited perspective nature writers avoid. Hanson uses this technique throughout the book. Other examples include: "To truly understand *Archaeopteryx* and the origin of feathers I needed two things: an actual specimen and a good paleontologist" (23); "I didn't ask Ken about his motivation or the obvious personal risks he took to jump and fly with Frightful—his drive and curiosity seemed answer enough" (139); "But she didn't hang up, so I started explaining about the book project, and pretty soon she got curious" (196); "Writing the preceding paragraph, I felt a bit like a huckster plugging some miracle product on late-night television—'But wait, there's more!'" (246). By working all of the information, interviews, and personal experiences into a narrative structure, Hanson creates a through-line that keeps the reader turning pages.

In-text questioning is one of the most powerful and effective methods that any nature writer can use to move their story along. Scales, Tudge, and Hanson all employ the technique in their writing, but Bernd Heinrich in his book, *Mind of the Raven: Investigations and Adventures with Wolf-Birds*, uses a more personal variation of the concept. His questions not only guide the reader through his work, but they are born from Heinrich's own experiences. These are not general questions, but personal ones in which Heinrich's audience becomes invested. Heinrich adopts a formula that he uses in all 29 chapters of his book. He begins his chapters with a brief anecdote about ravens that personally involves him, then he moves on to the questions raised by that behavior. The rest of the chapter is devoted to how Heinrich devises an experiment to test the behavior and what the results of his observations help him to conclude. It's a straightforward formula, but it works so wonderfully that Heinrich doesn't deviate from it at any point of the book. Chapter Two follows this formula and begins with the personal hook: "For years, I wondered if ravens in the wild who had discovered food were instrumental in bringing in, or 'recruiting,' others to the feast" (Heinrich 12). As a personal narrator, Heinrich is there from the first sentence and he lays out the topic for the rest of the chapter. Heinrich continues with the narrative that got his mind working:

My usual field approach in the early 1980s was to drag a calf carcass into the woods and then watch from a hiding place, hoping to see something interesting. Eventually, after four years and thousands of hours watching, I determined that various adult ravens lived in pairs near my study, while juveniles seemed vagrant, wandering widely, coming and going. (12)

After fleshing out these facts with additional information, Heinrich moves on to the question section where he introduces another character, John Marzluff. Throughout the book, Heinrich's tests and observations involve a number of different people and these various characters help to provide human interest that is never static from chapter to chapter:

In 1988, John Marzluff...joined me to tackle the next problem: how ravens recruited others from the communal roost. Did they perform a dance, as bees do in a hive? Did the birds have specific “follow me” signals? Did the most knowledgeable birds leave the roost early and purposefully provide a cue that the roost-birds follow the first bird out? Did the dominant or the most subordinate juveniles recruit? Who benefited and why? What were the costs of recruiting? (13)

By the chapter’s end, the results have been described but a new set of questions is already beginning to percolate in Heinrich’s mind. The final sentence is often a segue into the next chapter: “Perhaps the best chance of seeing the involvement of mind would be by embracing individual variation and using it as a tool in future experiments” (30). And so the cycle begins again.

Heinrich’s repetitious questioning is effective beyond the bounds of a writer’s craft choices. His process mirrors the way that ravens investigate curious elements of their environment and conduct personal tests. Because the tests are personal for both himself and his raven subjects, the entire Heinrich cycle is grounded in individual experience, as much as it is grounded in scientific experimentation. The continual testing of reality is equivalent to the personal inclinations toward scientific inquiry. In addition to a scientific correlation, one of Heinrich’s aims is to illustrate the human levels of intelligence that ravens possess. His questioning approach moves his stories along while also fostering connections between the mind of the raven and the mind of humanity.

In works like those written by Colin Tudge and Helen Scales, conflict is largely scientific—a lack of understanding, the contradictions between new discoveries, the tensions between different worldviews, and the struggle to find a way forward ecologically. But personal nature writing gives voice to characters who are passionate about a subject, creating a more visceral reaction in readers.

Andrew Blechman’s *Pigeons: The Fascinating Saga of the World’s Most Revered and Reviled Bird* uses conflict and fascination to create an entirely different type of narrative presence. Blechman’s pigeon-

related adventures are all based on the extraordinary people who are obsessed with pigeons—either the city officials who want them off their buildings or the everyday people who compulsively feed large quantities of seed to urban birds, even when this activity threatens the birds’ health. Human stories highlight not just how interesting pigeons are, but how important pigeons can be to people. The birds and Blechman are both in the middle. It’s the characters’ perception of the birds that has the most profound effect on the pigeons, Blechman, and the reader. By using his personal experience as the vertex where these diverse opinions come together, Blechman consolidates the world of pigeons and allows the reader to make their own conclusions. Once again, the audience has become a participant through the author’s journey.

Blechman begins his book similarly to Hanson. He introduces himself but he also introduces the conflict that will sustain the work’s narrative structure:

For much of my life, I didn’t have a strong opinion about pigeons. At best, I found their incessant bobbing and waddling mildly charming to watch as I walked through the streets of New York City. It was my college girlfriend who first alerted me to their nefarious lack of hygiene. They may look harmless, she informed me, but they’re actually insidious carriers of hidden filth—“rats with wings”—that eat garbage off the streets and crap in their own nests. (Blechman 1)

Blechman sets “mildly charming” against “insidious” from the outset so that his lack of “strong opinion” can serve as a fulcrum. The following chapters explore pigeons and their relationships with humans which are often full of surprise for readers who may not have given the birds much thought prior to opening Blechman’s book. Pigeons are illuminated to be astonishing athletes, expert navigators, and even war heroes. Blechman learns about pigeons from both sides—the pigeon trainers who race pigeons, breeders who fancy their feathers, pigeon exterminators, and even those who shoot pigeons for sport.

Blechman, Heinrich, and Hanson write about living animals—an activity which appears comparatively easy to the task before authors like Brian Switek, who deal with dinosaurs that have been extinct for 66 million years. Switek takes on the challenge of connecting long vanished animals to a modern audience with *My Beloved Brontosaurus: On The Road with Old Bones, New Science, and Our Favorite Dinosaurs*. His approach to using characters to create conflict on the page takes a different tack. Switek concerns himself with what ancient fossils can tell us about the lives of dinosaurs, and how our perception and understanding of these animals has changed with new discoveries and new scientific techniques. The conflict Switek presents is not found on two sides of a scientific debate, but rather, in the personal conception of dinosaurs in the reader's mind. Switek's journey throughout the book fleshes out the scientific transformation of dinosaurs so that his audience can imagine the ancient beasts differently. Switek's battlefield is the reader's brain.

Like Blechman, Switek is telling a transformation story as dinosaurs become more complex and fascinating animals than the bloated monsters they were once thought to be. Unlike Blechman, however, Switek adopts a different method for describing this transformation. Both authors travel and speak to experts, but Blechman profiles the people he meets. Switek is far more concerned with what the experts can tell him about certain fossil specimens. Blechman's subject is the transformation of a person's perception of the pigeon based on what they know. Misinformation comes from those ignorant of pigeons, so the best way to build conflict is to show those who love pigeons and those who hate them. Switek's conflict draws upon his childhood memories of dinosaurs and the way the extinct beasts were once portrayed, and he updates that view by speaking with modern scientists. Profiling scientists is not necessary beyond the institution that employs them and perhaps their specific field of study.

When Blechman first attends a pigeon racing club meeting, he describes one of the characters he will reference several times in the course of his book:

Orlando, with his natural buoyancy, easy charm, and boyish smile, stands out from the crowd. His boisterous enthusiasm and loud wisecracks are generally out of step with the club's pervasively dour mood. Despite being in his mid-forties, Orlando shows few signs of traditional maturing. His olive skin is smooth and nearly unwrinkled; he regularly dresses in sneakers and jeans, works erratically, and lives with his mother as well as his chatty young wife Omarya, more than twenty years his junior. (Blechman 20)

All of this information, and the many pages of description to follow, continue providing insight into Orlando as a character. This is in sharp contrast to Switek's approach when he meets someone for the first time. Switek introduces a new character with the following sentence: "I decide to call on Mark Goodwin, the University of California, Berkeley, paleontologist who had worked with Horner to describe how baby *Triceratops* grew into burly adults" (Switek 87). The following paragraphs describe in detail the Valley Life Sciences Building "where Goodwin works" and the fossils contained herein. Even the specimens in Goodwin's office are given nearly two full paragraphs of descriptive sentences. Switek makes it clear that his story is about dinosaur fossils and what they tell scientists—not about the scientists themselves. Nevertheless, the scientists and the journeys Switek makes to visit them and their fossils provides a compelling element that would not be present without those personal experiences. As Switek learns more about dinosaurs, so does his audience.

While Switek's mode of description for his interviewees may not be highly detailed, his attachment to dinosaurs is emphatically articulated. In *My Beloved Brontosaurus*, Switek addresses his love for the "thunder lizard" in impassioned personal terms.

A bulky hill of inanimate flesh, "Brontosaurus" was the epitome of what it was to be a dinosaur. I remember her fondly. The long-necked giant was my introduction to how magnificent dinosaurs were, but she evaporated into the scientific ether just as soon as I met her. Today, "Brontosaurus" lives on only as a memory. But I cherish that

memory, and I'm not alone. "Brontosaurus" is an icon that embodied the lifestyles of the big and scaly. To hear that the dinosaur didn't exist felt less like a technical mistake than a betrayal. (9)

Switek makes Brontosaurus the "mascot" of his book, placing the animal at the fulcrum between scientific fact and public adoration. His deep attachment to the creature, introduced by his recollections of visiting the skeleton at the American Museum of Natural History in scene form, are the hallmarks of a modern science writer using a personal perspective. His experience fuels the narratives he will produce throughout the book while also generating both affection and awe for the dinosaur with his audience.

Switek's approach differs from those of scientists turned writers, like Stephen Jay Gould.

Though no less impassioned on the subject of *Brontosaurus* and scientific controversy, Gould focuses on the dinosaur as a gateway to other subjects—the established conventions for naming and debating genera and species monikers, the rapid popularization of dinosaurs in the late 1980s, and the history of dinosaur paleontology. Gould even asserts that the controversies over the name of the animal—whether *Apatosaurus* or *Brontosaurus*—is an "issue that could hardly be more trivial—for the dispute is only about names, not about things" (Gould 21). It is not until the end of the essay that Gould establishes his position in the debate, and he does this as part of an extended satirical section that plays on the exaggerated nature of flared tempers—*Apatosaurus* means "deceptive lizard"; *Brontosaurus* means "thunder lizard"—a far, far better name (but appropriateness, as we have seen, counts for nothing). They have deceived us; we "brontophiles" have been outmaneuvered (24). The "apatophiles" may be an invented enemy in a joke, but Gould's style relies on sound argument and relevance to larger scientific questions. The hooks he uses in his essays allow the audience to be introduced to topics that they may otherwise not have pursued. And while Gould does interject personal opinions and uses a first person "I" to do so, he doesn't often construct scenes in his essays. He is operating with a limited narrative perspective, as Tudge and Scales

have, to create a journey for his reader. As a scientist, Gould communicates his trade through rhetorical logic, while Switek and others connect with audiences through their own experiences and emotions.

The Inner Narrative Perspective

Some nature writers like Katie Fallon and David Quammen choose to explore a topic in such great detail that their journey becomes just as, or even more, important than the subject matter. The human connection readers feel for the introspective author is then transferred to the writer's chosen topic. Introspective writers tend to be writers first and amateur scientists second, unlike authors with a personal perspective, who are often primarily scientists or science writers. Katie Fallon provides her readers with a detailed look at the entirety of her journey to understand cerulean warblers in *Cerulean Blues: A Personal Search for a Vanishing Songbird*. The book contains the elements readers would expect to find: birdwatching, interviews with scientists, banding cerulean warblers with field biologists, and traveling to the bird's Colombian wintering grounds. But Fallon doesn't stop with these encounters. Her book is, as the subtitle suggests, "a personal search" and she provides her audience with details about her personal life that have a profound effect on both her and her story.

The most startling of these personal experiences comes in Fallon's second chapter. The entire chapter is a harrowing account of the massacre at what was then Fallon's place of employment, Virginia Tech. Fallon describes the confusing events as she was confined to her office, and how she learned that one of her former students had been killed. As Fallon's emotions flow, she becomes totally removed from her main subject for nearly the entire chapter, but at its conclusion, a short section reveals why this diversion has been included. While contemplating a William Cullen Bryant poem that normally gives her comfort, Fallon begins a struggle to keep her life and her plans together:

Even though the poem didn't work this time (I couldn't even get all the way through it without breaking down), I was trying to take Bryant's advice; I would "go forth under

the open sky” and “list to Nature’s teachings.” I did my best to bury my feelings of sorrow, despair, and the choking anxiety that gripped me late at night, and I tried to concentrate on the purpose of this trip: to search for and investigate my little blue friends, the cerulean warblers. (Fallon 25)

Fallon’s struggle does not fade at the end of Chapter 2. Her harrowing experience persists throughout the book, and serves as an obstacle she must constantly overcome. The fact that the massacre has nothing to do with cerulean warblers is unimportant because it has everything to do with Fallon’s mental state during the writing of her book. Therefore, she feels that this information is critical to her reader’s understanding of her journey. This resistance and anxiety also provides a personal conflict that plays against the romantic lives of the little cerulean warblers. Fallon moves her readers by her honesty and openness with her emotions, which create a deep connection with her audience—moving them to care for both Fallon and the warblers.

Rising above the tragedy, Fallon resolves to continue, thanks largely in part to another person who becomes a main character in the story, her husband Jesse: “I had been looking forward to this trip to West Virginia for several months; after recent events, though, I’d considered canceling it. Jesse insisted that I go. He reminded me, at times not so gently, that I must keep living, that I couldn’t let this ruin my life” (25). Jesse figures in several of the adventures later in the book: camping at Kanawha State Forest, visiting mountaintop removal sites, and always urging Fallon to keep going despite her difficulties. Even Fallon’s dog, Mr. Bones, is along for many of her experiences. Her experiences with the warblers would stand on their own, but by including these highly personal and introspective sections, her journey combines the affections of both the heart and the head. The additional characters not only illuminate her personal journey, but create a sense of the reader tagging along for the journey with Jesse and Mr. Bones. By being present for intimate family moments, Fallon’s audience becomes more invested in her passions and her struggles.

Fallon is adept at incorporating the intellectual and emotional elements of her story because she is trained as a writer, not a scientist, though Fallon once aspired to be a field biologist. She reveals this during a sleepless night in a cabin before heading out with some bird banding biologists:

I didn't want to be the stereotypical bookish writer; I wanted to show I could hang with the biologists. The discussion of college degrees earlier made me consider the path I'd taken so far, and how different my life could be if I'd made slightly different decisions. I'd begun my career as a wildlife and fisheries science major at Penn State University; unfortunately, my immaturity (combined with an active social life) led to a failing grade in chemistry and less-than-stellar performances in other "weed-out" freshman classes. Instead of buckling down, getting serious, and retaking chemistry—which was required for the wildlife degree—I spun my wheels for another semester or two before finally switching my major to English. (54)

After explaining how she flourished in English classes, Fallon admits she still has some unresolved feelings about biology. "While I loved the English major and don't regret my decision to switch, I still carried a small chip on my shoulder about failing as a wildlife biologist before I'd even begun" she writes (55). She's not on this journey just to learn more about cerulean warblers—she's here to prove to herself she could make it as a biologist in a certain sense, and to learn more about herself. The external conflict employed by Blechman and other nature writers has become internal strife for Fallon.

David Quammen also requires an emotional response to his book because his subject is both bleak and rooted in the destructive nature of humanity. In *The Song of the Dodo: Island Biogeography in an Age of Extinction*, Quammen traces the history of biogeography from the days of Darwin and Wallace to the present. Quammen deliberately keeps the science to very short sections within the book—only a page or two at most. The rest of the text features the stories of the people who shape the science of biogeography. Quammen is often with them, traveling the world to meet people and experience habitat

loss and other biologic stressors. Towards the end of the book, this somewhat standard pattern is broken as Quammen is assaulted in Rio:

Three guys appear from nowhere and knock me down. Having never before been mugged, I behave badly, forgetting in the heat of the moment that it's poor form to shout for help and highly inadvisable to struggle. The three muggers are skinny young street thugs. One of them snatches a watch off my wrist, one digs for my hip-pocket wallet, and with the third I conduct a fierce little tug of war over the strap of my shoulder bag. Meanwhile I scuffle and holler—very ingloriously, like a rat pinned to the ground with a barbecue fork. (Quammen 580)

Unlike Fallon, Quammen doesn't refer to this incident later. He doesn't explain its inclusion in the text, yet this incident is the main focus of an entire section. Quammen talks about the police station afterwards and the confusion about paperwork, but he doesn't state why this event should be included in his book. It has nothing to do with the miquiri monkeys Quammen has come to Brazil to see. It has nothing to do with island biogeography. On one level, the mugging humanizes Quammen. Until this point, he has been the distant narrator, the guide, and the interviewer—but not a flesh and blood person. The details of the mugging allow us to sympathize with him personally. On another level, being mugged is a reinforcement of humanity's darker nature which is revealed throughout the book. Humans have pillaged the natural world for a variety of reasons, all of which are outlined in Quammen's text. Through this incident, the reader must confront humans treating each other just as badly as they treat the ecosystems on which they depend. The mugging is a challenge for Quammen to overcome. Although it happens towards the end of the book (and he's not struggling throughout as Fallon does), the reader gets a sense of the dangers Quammen faces as he travels to remote locations. One of the recurrent themes is that there are no hopeless cases when it comes to preserving rare species and habitats. Perhaps Quammen's undaunted nature about the mugging is another example of avoiding despair.

Conclusions

Unlike many human-centric stories which are engaging on an emotional level, nature writing is often undertaken as a way to save a species, an ecosystem, a planet in peril. The act of making readers care is fundamental to the survival of the wild places in our increasingly modernizing global culture. While getting people to take notice of an issue is highly important, many of these authors have opted for a direct appeal for action.

For instance, James Prosek's conclusion to *Eels: An Exploration, from New Zealand to the Sargasso, of the World's Most Mysterious Fish* provides an example on how to raise a call for action once a web of connections between author, reader, subject, and nature itself has been built:

Preserving diversity of fishes or any other type of creature around the world is about preserving the sources of our awe and inspiration. If we lose the creatures that form the foundation of our spiritual systems, if we lose those things that inspire us to be spiritual at all, then we will all be lost. We've been given the gift of inquisitiveness, the capacity to reflect on our own emotions, to create, to imagine. But that gift must be sustained. It can be fed by interpretations of nature already imagined, by books and paintings, by skins and bones of dead animals in natural history museums. But if we can, why not preserve the source as well, to allow people to drink from the original wellspring? (279)

Quammen and Fallon both include small sections after their conclusions about how the reader can get involved to help preserve the natural world. Without knowledge and an emotional connection to nature, readers would not help to shift public opinion and policy that make the difference for so many creatures. Nature writers require audience participation on every possible level because it is the reader's world that is at stake—not a world of fiction, or a world beyond their reach. Quammen repeats a sentence from a

scientist named Soulé that becomes a mantra throughout his book, “There are no hopeless cases, only people without hope and expensive cases” (538). The nature writer transfers personal connection into a call to action—whether that action is merely to appreciate the natural world or to do something about a certain cause. By implementing their personal experiences and connecting with their readers, nature writers are uniquely positioned to transform their audience into a participant in the story. After all, it is the reader’s world that is threatened and the reader’s world to treasure.

Works Cited

- Blechman, Andrew D. *Pigeons: The Fascinating Saga of the World's Most Revered and Reviled Bird*. New York: Grove Press, 2006. Print.
- Fallon, Katie. *Cerulean Blues: A Personal Search for a Vanishing Songbird*. Washington, DC: Ruka Press, 2011. Print.
- Gould, Stephen Jay. *Bully for Brontosaurus: Reflections in Natural History*. New York: Norton, 1991. Print.
- Hanson, Thor. *Feathers: The Evolution of a Natural Miracle*. New York: Basic, 2011. Print.
- Heinrich, Bernd. *Mind of the Raven: Investigations and Adventures with Wolf-Birds*. New York: Ecco, 2006. Print.
- Prosek, James. *Eels: An Exploration, from New Zealand to the Sargasso, of the World's Most Mysterious Fish*. New York: Harper Perennial, 2010. Print.
- Quammen, David. *The Song of the Dodo: Island Biogeography in an Age of Extinction*. New York: Scribner, 1996. Print.
- Scales, Helen. *Poseidon's Steed: The Story of Seahorses, From Myth to Reality*. New York: Gotham Books, 2010. Print.
- Switek, Brian. *My Beloved Brontosaurus: On the Road with Old Bones, New Science, and Our Favorite Dinosaurs*. New York: Scientific American, 2013. Print.
- Tudge, Colin. *The Tree: A Natural History of What Trees Are, How They Live, and Why They Matter*. New York: Three Rivers Press, 2005. Print.