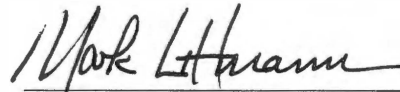


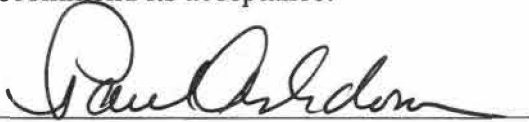
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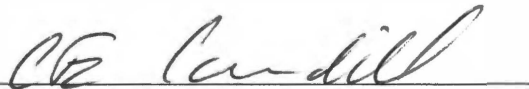


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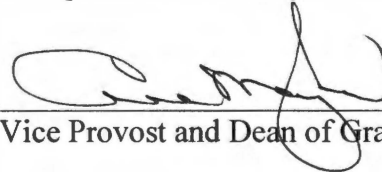


Paul Ashdown



Edward Caudill

Acceptance for the Council:



Vice Provost and Dean of Graduate Studies

The Sin of Synecdoche
David Quammen's Epistemology and Literary Science Journalism

A Thesis
Presented for the
Master of Science
Degree
The University of Tennessee, Knoxville

Jason Brian Gorss
May 2003

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Dedication

To my parents, without whose gracious support (financially and otherwise) I never would have finished this degree, much less started it.

And to Sarah, who lovingly kept me on task with gentle prodding, strong coffee, and no small amount of food.

Acknowledgments

Many thanks to Dr. Mark Littmann. Just about everything positive that happened for me academically and professionally in the past two years was somehow related to his encouragement and assistance. From my inauspicious debut in his feature writing class to my current job as a science writer, he has been a tireless advocate and a valuable mentor.

And to my other committee members, Drs. Paul Ashdown and Edward Caudill, I am grateful for the support and fine example these men have provided, both to me and to the other fortunate students under their tutelage in the School of Journalism and Public Relations.

I would also like to thank the subject of this thesis, David Quammen, who kindly spoke with me about the original idea and pointed me in the right direction. While I hope my interpretations do him justice, I am certain my meager paraphrasing will not.

Abstract

Journalists face a difficult task. They must report events with objectivity and context to help readers make informed decisions. Literary journalists add to their burden by trying to mingle reporting with artfulness, while still maintaining credibility with their audience. Literary journalists who write about science have yet another audience to keep in mind: the scientific community. They must maintain the respect and trust of scientists by accurately explaining their research and the scientific process.

How can a science writer balance these competing demands of creativity and credibility? David Quammen, an essayist who has written extensively about science and the natural world, offers a good platform to begin exploring the issues. In addition to his large body of work that is both artistic and technical, Quammen has had much to say about the role of epistemology and factuality in science writing.

One of the tools Quammen uses extensively in his science writing is synecdoche — a figure of speech in which the part is used to represent the whole. Quammen’s definition of synecdoche includes the figurative use of objects or living things, not just words.

But there is a potential problem with synecdoche: it is basically a form of generalization, and generalization in science is only allowable after many replications. This is the “sin of synecdoche.” But is it truly a sin?

By examining Quammen’s exhortations about epistemology and his use of synecdoche, this thesis will explore the role of synecdoche in science writing and determine if, in the proper hands, it can be an artful and reliable way for a science writer to perpetuate his rhetorical ends.

Preface

This thesis is not intended to be an exhaustive critique of David Quammen's work. It is not, in fact, a critique at all; rather an objective analysis. Quammen is a brilliant stylist who controls a vast arsenal of rhetorical weapons, but here I am interested in one particular literary technique that appears in his writing about science and nature: synecdoche. To this end, I will make every attempt to avoid discussion of other tools common to literary journalists (e.g., immersion reporting and character development), not because they are absent from his work, but because any analysis that included all such items would be more of a dissertation than a thesis.

In the spirit of journalistic objectivity, I will also try to avoid offering my opinion about Quammen's claims. He obviously has a reason for writing and an argument he is trying to make; this will become evident. I intend to examine the *way* he makes his arguments, not the arguments themselves.

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Chapter 1

More than Journalism

In November 2001, Michael Finkel wrote a richly detailed profile for the *New York Times Magazine* about Youssouf Male, an impoverished African teenager who became a cocoa plantation laborer on the Ivory Coast (Finkel, 2001). The piece was a moving description of young farm workers in West Africa and a commentary on latter-day slave trading. It was also a fabrication (Kurtz, 2002).

Finkel's character was a composite, a combination of a number of real people — including one named Youssouf Male — to form a symbolic individual. He lost his job as contributing editor to the magazine as a result, and the negative publicity has since jeopardized his career as a freelance writer.

Finkel is just the most recent journalist who has come under fire for supposedly making things up. Stephen Glass allegedly fabricated more than two-dozen pieces for the *New Republic* in 1998 (Kurtz, 1998). John Berendt took liberties with chronology and other facts in his book *Midnight in the Garden of Good and Evil* (Berendt, 1999). Janet Cooke's tale of an 8-year-old heroin addict in a 1980 *Washington Post* story turned out to be invented, prompting the paper to return a Pulitzer Prize (Maraniss, 1981). In 1972, Gail Sheehy created a composite character for her report on prostitution in *Newsweek* (Foer, 2000). Truman Capote was famously lambasted by George Plimpton in a *New Yorker* piece about Capote's various inventions in his true-crime story *In Cold Blood* (Plimpton, 1997).

Why would writers of nonfiction turn to the fictional tactics of novelists? As Finkel tells it, he was trying to convey a “larger reality” about child slavery (Kurtz, 2002). His simple statement penetrates the heart of the issue. Finkel and the others were attempting to be literary: to color their work with the lasting and transcendent tones of literature. They were trying to practice the emerging genre of literary journalism.

Literature is not an easy term to define, but most definitions would likely include a statement about pulling larger meanings out of individual stories. The themes of good literature should transcend the specific situation and time in the story.

Literary journalism is no easier to define, but the same basic idea forms the basis of the practice: Literary journalists try to convey larger realities, as Finkel noted. Their stories just happen to be real events — news, so to speak.

As such, literary journalists are at a serious disadvantage: Novelists and other fiction writers can make things up; journalists traditionally have no such luxury. They are constrained by the boundaries of fact and credibility, and when they push those boundaries too far, there can be consequences. Finkel and the others demonstrate this all too clearly.

Philosophers have a word that can help address these concerns: epistemology. It is the study of how we *know* things. In journalism, it is similar to credibility — presenting information in such a way that makes the reader feel safe putting his faith in the writer. Journalists have a certain responsibility to the reader, a code that must not be violated. Some would say this requires unmitigated objectivity on the part of the nonfiction writer. Others have no problem with opinion and speculation, but never fabrication. And still others have looser strictures, placing more emphasis on emotional resonance than sheer

fact. Who holds the right point of view? Herein lies an essential question, one that cannot be glossed over by any thoughtful writer.

*

David Quammen is one writer who has unequivocal views on the subject of factuality. He is, it seems, a bit of an epistemological theorist, and his work offers a platform to begin exploring the array of issues surrounding the topic.

Quammen was raised in Cincinnati, Ohio, and educated “by Jesuit priests and Southern novelists,” as he describes it on his resume (which he titles “tedious but reliable facts about David Quammen”). He is, presumably, referring to his high-school education followed by undergraduate studies at Yale and a stint at Oxford as a Rhodes Scholar, where he immersed himself in the work of William Faulkner. He moved to Montana in 1973 and has lived there ever since — staying, he says, “for the snow and the privacy and the bracing Scandinavian gloom.”

Quammen began his career as a novelist, but eventually found he could combine his interest in the natural world with his writing prowess to keep food on the table — something that wasn’t so easy as a fiction writer. On top of a number of published freelance pieces, he spent 15 years writing a column called “Natural Acts” for *Outside* magazine, where he was given wide latitude to explore the world of science and nature. His essays (along with some other magazine articles) have been combined into four books: *Natural Acts*, *The Flight of the Iguana*, *Wild Thoughts from Wild Places*, and *The Boilerplate Rhino*. He has also published one book-length work of literary journalism: *The Song of the Dodo*, an exhaustive treatise on island biogeography and extinction.

Quammen has won two National Magazine Awards, an Academy Award in Literature from the American Academy of Arts and Letters, and the PEN/Spielvogel-Diamonstein Award for the Art of the Essay in 2001. He is in the process of finishing a new book about large predators and their relations with humanity.

Quammen's various writings reveal his apparent interest in three particular things: synecdoche, epistemology, and William Faulkner. This list could, in fact, be expanded to include freakish creatures, out-of-the-way locations, whitewater kayaking, beer, trout, and most every other kind of animal (except toy poodles, for which he harbors a serious disdain). But it is those original three categories of special interest that merit a closer look.

First, there is the matter of William Faulkner. The annals of literature probing Faulkner's use of structure, point of view, time, and incest are, to say the least, voluminous, and they will not be added to here. What is important is Quammen's acknowledged obsession with Faulkner in his formative years and the subsequent influence on his writing style. Quammen has described Faulkner's writing as being filled "with ingenious, slightly befuddling literary techniques and narrative structures that reflect Faulkner's own interest in epistemology — that is in the ways and the limitations of knowing. . . . I've never stopped being interested in the ways, the styles, and the limits of knowing" (Quammen, 2002).

Quammen has, in fact, devised his own "epistemological" term to describe writing that calls itself nonfiction but does not take facts seriously: *factoidal jive*. "Factoidal jive is writing that uses factual material not as its irrefragable substance but only to give itself an aura of reality, consequence, and urgency," he says. "It doesn't let itself be bound by

the inconvenient and mundane hindrances of faithful factuality. . . . Factoidal jive is a form of counterfeit nonfiction — and in fact it's worse and more pernicious than counterfeit money, because it tends to devalue the real thing" (2002).

His no-holds-barred assault on factoidal jive begins with Truman Capote's *In Cold Blood*, which he calls the "beginning of a certain arrogant, confused trend in which the blurring [of the line between factual writing and fiction] is made a point of pride among writers, and in which the honorable label 'nonfiction' is specifically, spuriously applied to the resulting products" (2002).

The tradition, Quammen says, has been carried on to our day, where "serious reporters . . . under pressure from editors' expectations or their own artistic and professional ambitions, create elegant falsifications that appear to be factual but are more shapely, more dramatic, than the factual data that careful reporting has turned up. Wanting the grace and the focus of art, wanting also the urgency and the authority of reality, a journalist sometimes combines the two, but conceals that act of combination from the readers" (2002).

Quammen places Michael Finkel in this category, with his use of a composite character without informing his editors or readers. Quammen says he actually knows Finkel well, and had him over for dinner just after the incident in question. His description of the encounter offers more insight into Quammen's position on factuality:

At one point, almost recklessly, [Finkel] said: Well, maybe I was striving for a *higher truth*. . . . When I hear a journalist or a nonfiction writer talk about altering facts in service of "higher truth," I feel a chill of alarm and revulsion. . . . John Berendt offered roughly the same sort of defense, with the same magic word, when he was challenged about the departures from fact in his *Midnight in*

the Garden [of Good and Evil]. He reportedly said: “The truth that I was telling was the actual story, and I do not think that I distorted the truth by cutting these corners.” Whatever that means, it doesn’t satisfy me. . . . “Truth” is a lofty word, but also a vague and dangerous one. It has no proper role, I submit, in discussions of journalistic protocols and ethics. It has no objective, definable meaning within the epistemology of nonfiction writing. It means whatever the user wants it to mean. It means: *My vision of the world is more right, more pure, more deep than yours is. Never mind the facts. Facts are mundane. . . .* Nonfiction writing can be gloriously artful. Fiction can seem profoundly real. Whatever falls halfway between those two genres, claiming the merits of both but accepting the responsibilities of neither, is a lower, shabbier, more muddled, less compelling form of work (2002).

*

Quammen’s line of thinking is in agreement with a number of communications scholars who have stated the need for a criterion of “verifiability” in literary journalism — that a writer’s work be based on actuality, not fabrication (Connery, 1994; Sims, 1984). This notion seems obvious at first glance, but two recent scholarly articles by John Hartsock and James Aucoin are of particular interest because they call this need for verifiability into question, and they support a view that Quammen might rightfully deem as promoting factoidal jive.

Hartsock examines literary journalism’s “epistemological fluidity,” calling the form an “epistemological moving object.” He suggests that, rather than trying to pin it down with verifiability, we view it as a process that is part of a “larger quantum narrative that reflects approximation of critical sites and not clear definition of boundaries” (Hartsock, 1999: 433). With the term “quantum,” he is borrowing (dubiously) from theoretical

physics. He says that all cognitions are essentially subjective — an obviously deconstructionist statement — and he compares this to the “fundamental uncertainty of the phenomenal world.” Here he brings in (and misinterprets) the famous Heisenberg uncertainty principle:

As the physicist Werner Heisenberg noted of our efforts to objectively measure the phenomenal world, “what we observe is not nature in itself but nature exposed to our method of questioning.” That exposure determines how nature will appear in accordance to the whims of the questioning we choose to apply. Heisenberg well understood how “selections” provide only one subjective vantage point on phenomenal experience (1999: 441).

Hartsock continues, claiming, “all tropological mediations are in a sense always ‘fictional’ even as they may make a claim to reflecting a phenomenal status. . . . In its documentary concern, narrative literary journalism has the courage to acknowledge a phenomenal world that is fundamentally indeterminate and, in doing so, not to reinscribe it in a cryptotheological faith . . .” (1999: 442,443). Finally, all the physicist (or literary journalist) can arrive at is “only approximate meanings, not essential meanings, a circumstance that finds its linguistic mirror in the findings of the deconstructionists” (1999: 443).

Basically we find here the time-honored mantra of postmodern intellectualism: we can never really *know* anything, so why bother? Perhaps this is all true within its theoretical framework, but Hartsock’s arguments serve only to justify those who would take great liberties with fact; he provides no help to the journalist sitting at his “phenomenal” desk, trying to create artful nonfiction without getting fired.

James Aucoin also acknowledges the deconstructionist view of knowing: “Insisting on verifiability for accepting literary journalism into the domain of journalism . . . ignores the mounting evidence from science and philosophy that denies the existence of a verifiable reality that can be described through logical-positivist empiricism and affirms that reality is socially and culturally constructed (Aucoin, 2002: 7).” Aucoin’s argument is strikingly similar to (and just as questionable as) Hartsock’s. He does, however, take a more practical approach than Hartsock by combining narrative theory and epistemic responsibility — the moral philosopher’s term for credibility — in the hopes of assessing the quality of literary journalism, as opposed to dismissing summarily the concept of verifiability.

Aucoin examines the writings of Polish journalist Ryszard Kapuscinski and asserts that, while Kapuscinski consistently fabricates dialogue and characters, his credibility remains intact. Aucoin puts forth a number of reasons for this seeming contradiction: “The authorial presence is integral to the epistemology of Kapuscinski’s journalism and to the establishment of his credibility” (2001: 11). “Using personal voice to establish credibility is a device of the literary journalist” (2001: 12). “Kapuscinski builds credibility by showing readers his reporting process, the difficulties he has gone through to obtain information, and his willingness to defy authorities in order to get firsthand information” (2001: 13). These techniques are the underpinnings of Kapuscinski’s style, in which he “subtly establishes himself as the arbiter of truth” (2001: 13).

Readers need such an authority in this disordered world, according to Aucoin. And measuring journalism by typical standards of fact and verifiability is not appropriate in our confusing times. Instead, solutions grounded in narrative theory offer an alternative

strategy for judging literary journalism: “Narrative theory offers the criteria of verisimilitude, probability (Does the story cohere free of contradictions? Is it credible?), and fidelity (Is the story logical and of sound reasoning? Are the reasons given ‘good reasons’? Is it true to its own values?). . . . narrative ‘truth’ is judged by its verisimilitude rather than its verifiability” (2001: 14-15).

Aucoin may be on to something with his discussion of narrative theory, a point that will be dealt with later in more depth. But, as with Hartsock’s discussion, Aucoin seems to be mired in theoretical nonsense. Is it really necessary for a journalist to dance around the facts with fancy philosophical footwork? Is it truly not possible to create artful journalism without being the reader’s “arbiter of truth”?

Kapuscinski has said he was trying to do “more than journalism” (2001: 1). This sounds conspicuously similar to Finkel’s defense that he was looking for a “larger reality.” Here is a slippery slope, one that potentially leads to the glorification of fiction and the belief that nonfiction is an inherently inferior enterprise. And while it is all so airily theoretical on paper, the obscure philosophic notion of epistemology is not so obscure when careers are on the line.

In writing about science, the issue seems especially pressing. Science is empirical; it is strictly concerned with verifiable facts. If a food critic recommends the baked Brie bundle at a new French restaurant, you might just take him at his word and try it. But if a science writer warns that eating Brie can cause cancer, you will probably want some solid facts before abandoning your beloved cheese.

*

Journalists have a difficult task: reporting the facts with objectivity and the proper context to help readers make informed decisions. Literary journalists add to this burden by trying to mingle reporting with artfulness, while still maintaining credibility with their audience. Literary journalists who write about science have another audience to keep in mind: the scientific community. They must maintain the respect and trust of scientists by accurately elucidating their research and the scientific process (two very difficult things to grasp).

This thesis will examine a potential link between epistemology and synecdoche — a literary device that Quammen has used in his writing and has discussed in detail. The assertion is that science writers can be “literary” without sacrificing verifiability and succumbing to the relativism of Hartsock and Aucoin. The analysis will cover epistemological concerns in science writing, synecdoche as a potential tool to help resolve these concerns, and Quammen as a case study of one who uses the technique. It will not be a “scientific” study, as it were, but it will provide anecdotal evidence as to the potential effectiveness (or ineffectiveness) of synecdoche in the hands of a literary science journalist.

Chapter 2

Making Facts Yodel

Tony Hillerman once said that he switched from journalism to fiction because he wanted to work with clay rather than marble, with something more malleable than hard facts (Pearson, 1997: 121). He has, with this statement, both encapsulated the chief difficulty facing the nonfiction writer and given much credit to those who excel in nonfiction as an art form all its own — not just a stepping stone on the road to becoming a novelist.

One writer who has been lauded for his ability to write artful nonfiction is John McPhee — his example can be instructive for the purposes of this study. Through a career spanning more than thirty years, McPhee has consistently fashioned works of art from the marble of everyday realities, particularly in *Annals of the Former World*, his four books on the geology of the United States recently collected into one large volume. What could be less malleable than rocks? McPhee himself said it this way: “Like all writing, writing about geology is masochistic, mind-fracturing self-enslaved labor — a description that intensifies when the medium is rock” (1999: 7). Yet somehow McPhee manages to teach the reader a great deal of geology while not losing him along the way.

William Howarth has said it is McPhee’s ability to “burnish objects until they become reflectors of character and theme” (Howarth, 1976: xiii) that helps give his work a literary touch. For example, to teach about the formation of the Appalachian Mountains, he goes into great detail about the Delaware Water Gap: “Understand a fragment and you’ll have gone a long way toward understanding the whole” (McPhee, 1999: 9).

Howarth says McPhee has a “novelist’s propensity for symbols. . . . By examining things as they are, he converts familiar objects into *synecdoches*, mere particles of experience that represent its totality” (Howarth, 1976, xiii).

Synecdoche is a figure of speech, like metaphor or simile. The categorization of figures of speech originated with the ancient Greek and Roman rhetoricians, who referred to them as the “flowers of rhetoric” (*flores rhetoricae*). The figures of speech have to do with using language in an unusual or figurative way. The two main categories of figures are schemes and tropes. A scheme is an artful deviation from the ordinary *arrangement* of words; a trope is an artful deviation from the ordinary *signification* of a word.

Synecdoche is a kind of trope in which one thing is referred to as another; other such tropes are simile, metaphor, metonymy, and personification. In synecdoche, a whole is represented by naming one of its parts — e.g., “Check out my new set of *wheels*,” here an entire vehicle is referred to by a specific part: wheels. Or, “The rustler absconded with 500 *head* of *longhorns*.” Both “head” and “longhorns” are parts of cattle that represent them as wholes.

Synecdoche has had a contentious history in the literature of rhetoric, and it has been used to explain associations in everything from visual art to music (much like metaphor, except that synecdoche has not become such a large part of the public consciousness). But even in its strictest linguistic sense, it is hard to distinguish between synecdoche and other literary devices.

Take metonymy, for example, which is a reference to something by naming one of its attributes. “The *pen* is mightier than the *sword*” contains two metonymies: The pen is an attribute of thoughts that are written with a pen; the sword is an attribute of military

action. Meanwhile, “He shall think differently when he feels the point of my *steel*” has been classified as a synecdoche, because a sword is a member of a larger class of things that are made out of steel (representing a type of “species-genus” relationship, with the sword as the species and the steel as the genus).

Quammen does not use synecdoche in this strict (and confusing) sense. He adopts a looser definition, where synecdoche does not have to be just a figurative use of words; it can be a figurative use of objects or living things. As Howarth said, synecdoches are “particles of experience that represent its totality” (Howarth, 1976, xiii). Likewise, McPhee: “Understand a fragment and you’ll have gone a long way toward understanding the whole” (McPhee, 1999: 9). When a writer is trying to elucidate a sweeping scientific theory — such as the theory of evolution, which is one of Quammen’s main topics — synecdoches can be used to bring the subject to a more personal and practical level that is easier for the reader to grasp. By describing a particular object or living thing in detail, while keeping an eye toward its symbolic potential, the writer provides a “particle” of the larger picture.

But even within the loose guidelines provided by McPhee, Howarth, and Quammen, synecdoche can be a bit confusing. As described, it is hard to distinguish synecdoche from symbolism. And synecdoche is, it seems, a form of symbolism — a subgroup of the larger category. A symbol, however, is not necessarily always a synecdoche. Two key aspects set synecdoche apart.

Webster’s New Universal Dictionary, in its definition for symbolism, includes this phrase: “the practice of investing things with a symbolic meaning or character.” This implies an activeness, in which the writer imparts a certain thing with meaning to help

achieve his literary ends. With a synecdoche, the thing already *is* a symbol; it does not need to be invested with meaning. Rather, the writer's task is to "burnish" the object, as Howarth described it, or to polish it and make it shine forth with meaning that is not apparent to the untrained eye. The writer who uses synecdoche is not putting anything *in*; he is pulling something *out*.

The second critical aspect of synecdoche follows the first: the thing referred to must exist in actuality. It must be a real, verifiable entity. As with a scientific experiment, it must in some way be reproducible. One should be able to go out and find (perhaps with extraordinary effort, in some cases) what the writer is using as a symbol. This makes synecdoche wonderfully useful to the literary journalist who attempts to deal in facts. A properly wielded synecdoche can be a splendid literary device, a way of conveying larger meanings without preaching or pandering, a way to *show*, not tell. And, as an added bonus, synecdoche rests upon a foundation of actual objects; thus it has interesting implications for epistemology and science writing.

McPhee and Quammen use synecdoche in the tradition of William Wordsworth, the English poet who, in his "Preface to *Lyrical Ballads*," sought "a certain colouring of imagination, whereby ordinary things should be presented to the mind in an unusual aspect," and he wished "to make these incidents and situations interesting by tracing in them, truly though not ostentatiously, the primary laws of our nature" (Brown, 1978: 152). Wordsworth's desire to find the underlying "truth" in a situation without pretension seems to be the opposite of Kapuscinski's style.

The list of ordinary things that McPhee has "presented in an unusual aspect" is long: "a glass of concentrated orange juice reflects a reluctant acceptance of the world as it is; a

bulldozer represents the destructive side of mankind; a frightened bull moose becomes a symbol for the juxtaposition of appreciation and insensitivity” (Sanders, 1980: 73); an old water pump symbolizes the battle between development and maintaining the pure water under the Pine Barrens.

The common denominator of all these details is that they are real objects; McPhee actually encountered them during his travels and used them as tools to convey his message. That is why they are synecdoches. McPhee’s passion for details is demonstrated throughout his work — by long lists of poetic geological nomenclature, strange facts about the people he encounters, and detailed description of scenes and objects. Including such details, though they may seem gratuitous at times, can in fact boost a writer’s credibility, convincing the reader that he deals in actualities.



Quammen has talked about synecdoche frequently in his “writing about writing,” so to speak, as in the introductions to his essay collections. But he even brings it up within the essays, where he actually comes out and tells the reader he is using synecdoche. Quammen has, in fact, gone so far as to name one of his essays “Synecdoche and the Trout.” Here is an excerpt from the beginning of this essay:

It’s a simple question with a seemingly simple answer: “Why do you live in Montana?” . . .

“The trout,” you answer, and they gape back blankly.

“The trout,” they say after a moment. “That’s a fish.”

“Correct.”

“Like Lox.”

“In some ways similar.”

“You like to go fishing. *That’s* why you live out there? *That’s* why you spend your life in a place without decent restaurants or bookstores or symphony orchestras, . . . It’s because you like to go *fishing*?”

“No,” you say. “Only partly. At the beginning, that was it, yes. But I’ve stayed all these years. No plans to leave.”

“You *went* for the fishing, but you *stayed* for something else. Aha.”

“Yes. The trout,” you say.

“This is confusing.”

“A person can get too much trout fishing. Then it cloy, becomes taken for granted. Meaningless.”

“Again like lox.”

“I don’t seem to fish nearly as much as I used to.”

“But you keep talking about the trout. You went, you stayed, the trout is your reason.”

“The trout is a synecdoche,” you say, because these friends are tough and verbal and they can take it.

A biologist would use the term *indicator species*. Because I have the biases of a literary journalist, working that great gray zone between newspaper reporting and fiction, engaged every day in trying to make facts not just talk but yodel, I speak instead of synecdoche. We both mean that a trout represents more than itself — but that, importantly, it does also represent itself.

“A poem should not mean/But be,” wrote Archibald MacLeish, knowing undeniably in his heart that a good poem quite often does both. Likewise a trout (Quammen, 1998: 19-20).

Quammen’s reference to “making facts yodel” is similar to Howarth’s concept of burnishing objects to represent themes. In this essay, Quammen uses the trout as a synecdoche — a verifiable entity that exists in reality and also carries greater

implications. The presence of trout signifies a variety of physical factors that must exist in a river for a trout to live there. The trout then signifies crystal clear water. The trout signifies, to Quammen, loneliness and solitude. It signifies a good possibility of seeing particular wildlife in the area, such as osprey and kingfishers. “Like a well-chosen phrase in any poem,” Quammen says, “the very presence of trout signifies at more than one level. Magically, these creatures are literal and real. They live in imagination, memory, and cold water” (1998: 21).

The rest of the essay is a series of vignettes, snapshots from an earlier time in his life when he worked as a fly-fishing guide. He idealized the way of life but he found it to be — like any job — not without its downsides (e.g., dealing with coddled kids and their dysfunctional parents, ripping the hook from a foolish rookie’s eye). He eventually grew tired of trout fishing, but trout never ceased to be important to him. It signifies a number of things, but, as he says, it represents itself. “For instance: I can remember the first trout I ever caught as an adult,” he says, “and precisely what the poor little fish represented to me at that moment. It represented (a) dinner and (b) a new beginning, with a new sense of self, in a new place” (1998: 21).

This essay is just the first and most blatant example of Quammen’s use of synecdoche. Synecdoche also appears on two other levels, beside just within an individual essay. Synecdoches run throughout each of the four compilations, and they span the entire body of his work. Despite the casual and perhaps random appearance of his writing (he once said his editors’ only stipulation was that “each essay, no matter how aberrant, should contain at least passing mention of an animal, a scientist, or a tree” (2000: 10)), his topics and subjects are carefully chosen. He is using the essays to

perpetuate certain themes in order to support an argument — in fact, as we will see, almost everything he writes seems to be serving the same rhetorical end.

His steady job as a monthly columnist provided him the benefit of cohesion, making him more of an essayist than a journalist. His pieces are not disjointed; they were, he says, written for compilation. In the introduction to *Natural Acts*, his first book of essays, he says, “the first section of this book . . . was taking shape in my head as a sequence of essays long before I began making my living from magazine work, and . . . I have tried to shape *all* of these pieces as essays more than as ‘features’ or ‘profiles’ or ‘articles,’ because old magazines go to the ragpicker, after all, whereas old books of essays are allowed to turn yellow with dignity on the shelf” (1985: xvi).

This idea became more apparent to Quammen as the years passed. In his most recent compilation, he wrote, “[T]he bond that grows between a columnist and a magazine readership over a period of years, I submit, is more like the situation with a book. Themes recur. Ideas are teased at, tested by time as well as by further delving, advanced in small stages. Hobbyhorses are ridden, stabled, and trotted out again later. Characters reappear” (2000: 11-12).



Quammen is trying to perpetuate themes and make arguments in a creative, artful, literary way, but he is absolutely strident about maintaining factuality. The question is: Does he successfully use synecdoche to form his themes without sacrificing verifiability? And, if so, *how* does he do it and what can other writers gain from studying his methods?

Chapter 3

The Sin of Synecdoche?

Immediately upon moving forward — before even reading a single essay by Quammen — we encounter a problem: In the realm of science, the right to generalize is very hard to earn. Never should one generalize from a single experiment to explain a wide range of phenomena; only after many replications can a scientist even begin to make generalizations. We learn this in our very first science class, and it is perpetually beaten into our brains. How, then, can synecdoche — essentially a generalization from the part to the whole — be considered a suitable device for a science journalist?

Many scientists have problems with science writers who are always trying to make analogies, metaphors, and other sweeping generalizations out of their research to come up with a good news “hook.” Writers are looking for symbolic potential, while scientists tend to be very literal. They rarely make generalizations in their technical papers, and only on occasion will they speculate about the implications of their work. There is good reason for this: Science writing and science are not the same thing, and they do not always (or even often) share the same goals. The two disciplines cannot, therefore, be held to the same standards. But the fields are inextricably linked. Without science writers, much of what happens in the scientific community would remain unknown to the public. And without scientists, there would be nothing for science writers to write about. So it is desirable to find some common ground for each to work from.

Reconciliation may come from the terminology of science itself, and from Quammen’s own comments about writing. Quammen uses synecdoche liberally, yet he

also claims to be big on facts. Does this match with his vehement exhortations about epistemology?

Quammen has said that “scientists, in their research and in their communications, generally embrace three cardinal values, among others, and that those cardinal values are expressed by three strong, solid words: *precision, accuracy, validity*” (2002). Precision implies that a scientist’s measurements are finely calibrated, that they are exacting. Accuracy implies that the measurements correspond closely to the reality of what’s being measured. Quammen offers an example to explain how the two concepts differ:

For a simple illustration, imagine two people watching a herd of deer at dusk in a meadow. Each person gauges the number of deer and writes an observation in his or her notebook. The reality, between you and me, is that there are 23 deer of the species *Odocoileus virginianus*, commonly known as the whitetail. The first person has written: “7:10 pm. Twenty-two whitetail deer.” His observation is precise – because he has recorded the exact time, and because 22 is a firm, discrete number – but it’s not accurate, because 22 is the wrong number. The second person has written: “Dusk, meadow, fading light; about two dozen deer.” Her observation is entirely accurate, so far as it goes, but not precise (2002).

In addition to being accurate and precise, quantification in science should also be meaningful. That’s where validity comes in — whether you are actually measuring what you think you are measuring (internal validity), and whether you can generalize these measurements to a larger population (external validity).

Quammen has noted that this ability to generalize is always the hardest part of a scientific endeavor: “Having had many chances to study scientists as they study nature, I’ve seen that science itself is a fallible human activity, not a conceptual machine-tool,

and that while accuracy and precision can be easily achieved, validity and meaning cannot” (2001: 12).

The same can be said of writing about science: The hard part is making the facts line up in some sort of meaningful and interesting pattern to make the reader feel that his investment of time is worthwhile. As mentioned before, one typical technique is to generalize from anecdotes or symbols to a larger meaning. The idea is always to *show*, not tell. And in science writing — an inherently abstruse enterprise — the potential of losing the reader becomes even more immediate. But does the problem of generalization in science itself mean that the science writer can never generalize? Is it necessary to always include all of the facts, statistics, procedures, numbers, *ad nauseam*, because that’s the way the scientific papers gain their credibility?

In a word, No.

One solution is for science journalists to strive to achieve accuracy and validity, not precision. Precision generally bores the casual reader and should be used only when absolutely necessary. The deer example from above illustrates the point: the first person runs a greater risk of being wrong than the second person because the first person was trying to be precise. The second person is less specific; therefore, while she could be drastically wrong in her estimation (for example, she could be thinking they are mule deer instead of whitetail deer), the words she has chosen are basically accurate. Plus, the second person still gets to the important part of the story, as far as the general public is concerned. As Quammen has said, “You’re always adjusting the dials to be accurate without being too precise. If you leave all the qualifications in, you can kill the writing” (Anton: 17).

Quammen addressed the situation from another angle in “Certainty and Doubt in Baja” (Quammen, 2000: 47-54), an essay in which he comments on the inherent difficulty of achieving validity (actually measuring what you think you’re measuring) in science, and especially in evolutionary biology.

The scientists in the essay are trying to determine if a lizard from an island will run slower than a mainland lizard, ostensibly because the island lizard has no natural predators and thus can afford to be slower. But designing an experiment to actually test this is difficult, because you can’t know what kind of effect your presence is having on the lizard (recall Heisenberg: “what we observe is not nature in itself but nature exposed to our method of questioning” [Hartsock, 1999: 441]).

Quammen compares the science journalist to these scientists; the journalist seeks “drama, a simplified understanding of an impossibly complex subject, and of course cheap laughs” (2000: 47). Quammen reminds us that fieldwork in evolutionary biology is not all “binoculars and gorillas” or “safari pants and hammocks,” but it also involves a great deal of tedium and reductionism. Science seeks some pattern that might connect one thing with others, but, “since nature is chaotic and almost infinitely various, the search for patterns must involve reduction: complex living creatures and systems reduced to a rough sketch of themselves” (2000: 49). These days, the scientist uses mathematics to draw this sketch. The literary journalist also has tools at his disposal, one of which is synecdoche.

Quantification must be meaningful; it must have validity. As Quammen puts it: “There’s always the chance that a nice set of numbers might describe nothing more than a carefully measured red herring” (2000: 50). One way scientists achieve increased validity

is through repetition — carefully replicated experiments done over and over. This can also be true for the literary journalist, especially in the case of a columnist like Quammen. He is able to express his themes by repeating them many times over in the form of different examples. These miniature snapshots, when taken together, represent something much larger. They are synecdoches.

A look at Walter Fisher's narrative paradigm theory can be helpful (Fisher, 1984). This is what James Aucoin used to analyze the writings of Ryszard Kapuscinski. The basic premise of narrative paradigm theory is that humans are essentially "storytelling animals," and that all human communication can be understood as a form of narrative. Rationality is determined by the nature of persons as narrative beings — their inherent awareness of *narrative probability*, what constitutes a coherent story, and their constant habit of testing *narrative fidelity*, whether the stories they experience ring true with the stories they know to be true in their lives. Narrative probability shares some similarities with internal validity, as do narrative fidelity and external validity.

In short, the way humans make their decisions is through stories that offer "good reasons" to act one way or the other. The logic of good reasons is the method of determining a good story, based essentially on the criteria of narrative probability and narrative fidelity.

The proposition that synecdoche can be a powerful tool for the science writer rests on this concept: *synecdoche can be a form of both accuracy and validity*. It is accurate because it can correspond closely to the reality of the science that is being discussed, without making boldly precise claims. It offers validity because it is a way of generalizing from the part to the whole and perhaps even beyond, while maintaining

simplicity so as not to lose the reader. At the same time, it is a form of reductionism — reducing complex subjects to simple examples.

Diane Ackerman (like Wordsworth and McPhee) has described how she approaches the idea of simplifying scientific material: “I pick out contingency samples, like a NASA space probe that detects the history of a planet in a single soil sample. I’ll pick a few of those samples to focus on in depth when I simplify” (Anton, 1995: 17). This is what synecdoche can do.

Chapter 4

The Angle of Approach

Quammen's essay compilations deal mostly with the world of science and its practitioners. This analysis will focus on essays that are primarily about the natural world, leaving out (for the most part) those that deal with physics or some other branch of science. Most of his essays have something to do with nature, so maintaining this focus should help understand his basic themes more clearly.

As mentioned earlier, Quammen seems to use synecdoche on three levels: individual essays, book compilations, and his overall body of work. Each of these levels will be examined in turn, moving from the close-up to the larger picture. The goal is to understand what Quammen's themes and arguments are, and to analyze how he uses synecdoche to fashion them.

It is important to keep in mind that Quammen's definition and use of synecdoche are both rather loose, making it difficult to discern what exactly is a synecdoche, as opposed to some other literary device. The key is that he is using a real object — whether it is a plant, animal, or person — to represent a larger concept. And he is not investing these things with meaning, as in symbolism; he is simply polishing them to make their meaning shine forth.

*

Individual essays

Quammen's four published compilations contain 107 essays — the fruit of 15 years as a columnist for *Outside* as well as various freelance features for magazines. Instead of summarizing every essay or grouping them into categories for placement in a table, the most interesting and useful will be culled from the group to provide key examples of Quammen's use of synecdoche.

The first example has already been described: "Synecdoche and the Trout." It is more of a "personal discovery" essay, as opposed to an essay about a plant or animal. Quammen has a few of these, where he combines science with details about his personal life. These essays don't perpetuate his overall themes as obviously as the others, but they are a good place to begin to see Quammen at work with synecdoche.

Another essay along the same lines as "Synecdoche and the Trout" is "Strawberries Under Ice" (Quammen, 1998: 253-267). Ice plays a huge role in this piece, both as a real entity and as symbolism. It begins: "Antarctica is a gently domed continent squashed flat, like a dent in the roof of a Chevy, by the weight of its ice. That burden of ice amounts to seven million cubic miles. Melt it away and the Antarctic interior would bounce upward; Earth itself would change shape. This grand cold fact has, to me, on the tiny and personal scale, a warm appeal. Take away ice and the topography of my own life changes drastically too" (1998: 253). Here ice is a physical phenomenon with interesting implications on a global scale as well as, figuratively, in Quammen's own life.

He describes the gradient of net mass balance as it applies to glaciers. This tells of the collective profile of a sheet of ice — what has been lost and what has been gained through various natural processes. At the time described in the essay, Quammen was also

asking himself, What has been lost and what, if anything, gained? He holed himself up in an ice cave in lieu of attending a New Year's Eve party as a means of introspection. He had recently fled Oxford University and the "dandified snobbery" that went along with it to move to Montana. Quammen epitomizes his Oxford experience by mentioning Eights Week, a springtime festival highlighted by lots of champagne and strawberries.

In Montana he found an agreeable group of friends whom he cherished. One of those friends died when she slipped on a patch of sidewalk ice. This is mentioned in a section where Quammen describes ablation — the scientist's fancy word for loss. A glacier loses chunks of its mass through natural processes like wind erosion and melting. Over time, Quammen laments losing touch with certain friends, including the ones associated with the woman who died. They "disappeared from my life by wind erosion or melting" (1998: 260).

When the temperature drops sufficiently, a bridge of ice can form in a river and cut off the flow, sending a cover of ice reverberating upstream. The Madison River in Montana has a stretch called the channels that is dear to Quammen for its solitude, fishing, and sentimental value: He once spent a day walking the Madison channels with a female biologist, whom he later married. Certain years, this river gets choked with its own ice, but the upstream water still has to go somewhere. It spreads out across the valley, spills over the banks, and covers the entire meadow with standing water that quickly turns to ice. Quammen tells the story of a man in 1863 who was foolish enough to build his house down in the meadow, only to be run from his home when the ice came.

"The channels of the Madison are a synecdoche," Quammen says. "They are the part that resonates suggestively with the significance of the whole" (1998: 266). He quotes a

nineteenth-century Russian thinker named Konstantin Leontiev, who said, “To stop Russia from rotting, one would have to put it under ice” (1998: 266). Quammen elaborates: “In my mind, in my dreams, that great flat sheet of Madison River whiteness spreads out upon the whole state of Montana. I believe, with Leontiev, in salvation by ice” (1998: 266).

Quammen and his wife love Montana for various reasons, including the cold, the solitude, special places like the Madison channels, and the people (even those lost and forgotten). They earnestly believe in preserving the quality of life in this place, and they half-joke of retreating to Antarctica when Montana has been “ruined.”

One final image ties the essay together: an article from *National Geographic* that shows a picture of strawberry plants covered with a thick layer of ice. “These strawberry plants grew in central Florida. They were sprayed with water, says the caption, because subfreezing temperatures had been forecast. The growers knew that a layer of ice, giving insulation, even giving up some heat as the water froze, would save them. In the foreground is one large strawberry. The photocopy shows it dark gray, but in my memory it’s a death-defying red” (1998: 267). Here he uses the same terminology that earlier described the glacier, the snow cave, and the Madison channels. Strawberries also make another appearance.

While weaving together all of these strands, Quammen teaches a great deal of science — about fluid dynamics, glacier calving, river ecology — but he seems to be making a bigger point. He hints here at a theme that appears many times over in his writing: preservation. In this case, it is preservation of certain things he loves, particularly Montana and the wild seclusion it represents. His moving to Montana was a sort of

“salvation by ice.” Quammen addresses this theme of preservation and salvation with synecdoches: ice, snow, strawberries, the Madison River channels. They are small pieces of the natural world and of his life that resonate suggestively with the significance of the whole. Later this theme will be expanded to preservation and conservation of plant and animal species.

Another essay is more direct and simple with its use of synecdoche: “The Great Stinking Clue” (2000: 93-102). It is about the durian, a tropical fruit that is “renowned throughout Asia for its luxuriant flavor, its peculiar anatomy, and its indecent stench. . . . You could think of it — as one botanist has done — as the great stinking clue to the evolution of tropical forests” (2000: 93). The synecdoche here is obvious: understanding the durian fruit (the part) helps one to understand tropical forests (the whole).

The word *fruit* can be defined as a seed-bearing structure shaped so as to facilitate the seed’s dispersal. “Why is dispersal so crucial?” Quammen asks. “Because it allows a plant to enlarge the number and range of its own offspring. . . . it’s the standard on which evolution mediates survival, extinction, and change” (2000: 96). Here the suggestiveness of the durian is taken another step beyond understanding tropical forests; Quammen sees this concept of dispersal, illustrated by the durian, as an underpinning of evolutionary theory.

One of the most effective means of dispersal is in the belly of an animal. Plants evolve attractive fruits to entice animals to eat them and disperse them. The general tactic for plants is to form an eye-catching fruit, but the durian’s smelly pulp is evolution run amok: “In lieu of a flashy color, it advertises itself with a garish smell” (2000: 97).

Quammen cites a scientist who based an entire theory of island forest formation on the durian. Without going into the details of the theory here, the point is that the durian is a vestige of times past — its large size successfully facilitated its dispersal and led to other fruits adopting similar forms, thus requiring the formation of trees with strong trunks and woody branches. This type of fruit, which was the earliest form, is the precursor to all other fruits and their assorted berries, capsules, and seeds. And finally, “the durian theory can contemplate the hairless arboreal mammal that lurched from the forest in its increasing austerity, to slaughter the wild herds, to harvest the wild grain, and to hack down the testimony of his origin.’ He meant us” (2000: 99). Here, this single explication of the dispersal of the durian fruit is (quite boldly) extrapolated to represent man’s disregard for the natural world.

The durian fruit is also used as synecdoche in a different way, one that becomes apparent when viewed in the larger framework of Quammen’s writing. The durian can lead to an understanding of nature as a whole. Nature is paradoxical, being both beautiful and cruel at the same moment. Likewise, the durian fruit — a single fragment of nature that is illustrative of the whole — “tastes strange, rich, wonderful,” while simultaneously smelling “like a jockstrap” (2000: 95).

In “The Narcotic of Empire” (2000: 25-34), Quammen writes about the historical importance of the tiny tropical island of Run in the southern Moluccas. In the 1667 Treaty of Breda, the English traded Run to the Dutch for what is now Manhattan. “[Run] belongs to a select class of backwater sites that have assumed frontwater import on the strength of strategic resources,” Quammen says. “On the island of Run, the resource at issue was nutmeg” (2000:26).

There are three synecdoches in this essay. Nutmeg — with its fortuitous natural packaging and narcotic effects (two or three tablespoons of nutmeg can act as a hallucinogenic drug) — represents man's uncanny ability to exploit evolution's exquisite handiwork for his own purposes. The island of Run is, in Quammen's words, "the world's most inconspicuous yet eloquent symbol of changing commodity values and myopic diplomacy" (2000: 26). It is not just another tropical island, but one that demonstrates how a nation (in this case, the Dutch) whose focus is on one tenuous commodity faces peril for their shortsightedness. *Ducula concinna* — a pigeon that may have spread nutmeg seeds beyond the Moluccas, helping destroy the Dutch monopoly on nutmeg — is a symbol of nature's consistent ability to thwart human ambition.

These three examples are synecdoches, not just symbols, because they are real things that have significance in themselves as well as a larger historical significance. Here Quammen has combined a tale of empire and exploitation with unusual scientific facts about nutmeg and its role in the natural order. Once again, the reader learns something about science, but Quammen is able to suggest his overarching rhetorical and philosophical ends.

In "A Better Idea" (1985: 3-7), Quammen uses the sea cucumber to rid us of "the anthropocentric presumption that *Homo sapiens* represents some sort of evolutionary culmination, embodying all the latest and best ideas" (1985: 3). Humans and sea cucumbers share a similar problem: forcible entry by small parasitic fishes. It's not an extremely pressing concern for the general population, unless you spend a lot of time swimming in the Amazon River. But it can be serious, especially in the case of the candiru, a fish with spines over its gill covers that point to the rear. If a candiru gets

inside a person, Quammen notes, it can't be removed without risk of bleeding to death. The sea cucumber, however, has evolved a brilliant solution: "They eviscerate. They turn themselves inside out. They blast their own gut and internal organs out through their own anus, cast the whole smear away into the ocean, evicting in the process a single surprised pearlfish. And then — within as little as nine days, for some species — the sea cucumber regenerates a complete new internal anatomy" (1985: 7). This detailed example of the sea cucumber's anatomical advantage over humans is but one (albeit slightly silly) indication of the wide variety and splendor of the natural world — a world that, contrary to the belief of many people, contains some pretty slick creatures.

In "Hard Parts" (2000: 35-46), Quammen writes about fossils as an art form — specifically trilobites. These Cambrian arthropods aren't normally what one might consider beautiful, but Quammen says that it's hard to miss their aesthetic dimension in a book by Riccardo Levi-Setti, a physicist at the University of Chicago. One of Levi-Setti's aspirations was to demonstrate that "dinosaurs were not the only prehistoric animals that inspire awe and fascination. Trilobites tell us of an earlier world, perhaps less threatening, when life on earth could still explode into a myriad of new, unseen, uncounted forms discovering their own way to survive" (2000: 38). The key phrase is, "Trilobites tell us of an earlier world," indicating that these fossils are but a small piece of a much larger world that existed in the past. They are synecdoche.

Trilobites seem to represent two things in this essay. First is the idea that certain things that are typically considered ugly can actually be quite beautiful when viewed from the right perspective, especially in nature. Secondly, Quammen says these trilobites pose a question: What will we humans leave behind as fossils when we are gone?

Humanity is perpetrating a mass-extinction event surpassing any such catastrophe since the death of the last dinosaurs, according to Quammen. Though he never makes the point explicitly, he seems to be saying that what we leave behind will be evidence of our domineering spirit toward nature and our materialistic greed — our “Coca-Cola culture.” These fossils hint at the larger picture of the earlier world, just as our litter will hint to future generations about the reality of our time.

There are many more essays that could provide helpful examples in this area, but these few should suffice for the purposes of understanding how synecdoche can be used within a single essay or feature story.



Book compilations

Each of the four collections of Quammen’s columns and magazine articles begins with an introductory essay. These introductions offer great insight into Quammen’s reasons for choosing certain pieces and the impact on the overall “message” of each book. The essays are not collected according to chronology; they are grouped by subject and theme into sub-sections, and each book has an intentional theme. This theme may be unique for each of the four books, but they share common ideas and messages. While not all of Quammen’s themes are supported clearly with synecdoche, it is helpful to understand these themes in the context of his broader work.

Natural Acts

Quammen's first collection, *Natural Acts: A Sidelong View of Science and Nature*, was published in 1985. It takes its title from the name of Quammen's monthly column, but the subtitle hints at the general theme of the collection. "The subject matter is nature and the nature of science," Quammen says. "The point of view is generally oblique and (or so I flatter myself) counterintuitive. My ambition has been to offer some small moments of constructive disorientation in the way nature is seen and thought about" (1985: xvii). He says that much of nature writing can be "heart-squashingly boring" or "harmlessly quaint." What distinguishes good writing about science and nature is, in his opinion, the angle of approach, the choice of perspective. In this book, the view is from the side — from a different angle than the usual.

The earlier quote from Wordsworth comes to mind again, where the poet sought "a certain colouring of imagination, whereby ordinary things should be presented to the mind in an unusual aspect," and he wished "to make these incidents and situations interesting by tracing in them, truly though not ostentatiously, the primary laws of our nature" (Brown, 1978: 152).

In this collection, Quammen is drawn particularly to "certain creatures that are conventionally judged repulsive, certain places that are conventionally judged desolate, certain humans and ideas that are conventionally judged crazy" (Quammen, 1985: xvii). These creatures, places, and humans are his synecdoches; by looking at them from an unusual angle, he uses them to "trace the primary laws of our nature" and to disabuse the reader of certain long-held notions. He is drawing out their meaning, not fabricating any meaning of his own design, which makes these things different from symbols.

The first section of the book is titled “All God’s Vermin,” which hints at the irony that repulsive creatures can play a beautiful role in the natural order.

The sea cucumber, as described earlier, is used to show that man is not necessarily the pinnacle of evolutionary success. The creative defense it has evolved, which is scientifically interesting in itself, also represents the bigger concept of man’s predictable hubris.

In “The Widow Knows” (1985: 13-17), the fearsome female black widow — frightening not only for her poisonous bite but also for her murderous reproductive habits — represents nature’s inherent ability to control populations and maintain ecological harmony. “The most efficient natural predator controlling any population of black widow spider is, very likely, the female black widow,” Quammen writes. “In that balance between vast reproductive potential and limited life-supporting resources, it is evidently the female black widow who serves as chief gyroscope” (1985: 15). The female black widow seems ruthless and cruel, but she is actually helping the population gain evolutionary success by killing others when necessary to maintain the crucial balance between an incredible ability to reproduce and a lack of resources to support more spiders. She is profoundly paradoxical, and she represents all of nature, which is even more paradoxical.

In “Sympathy for the Devil” (1985: 24-29) (Quammen’s first essay for *Outside*), the perpetually annoying mosquito is actually portrayed as an ecological hero because its presence makes tropical rainforests virtually uninhabitable for humans, thereby helping to preserve these essential areas from man’s exploitation. Quammen presents a view of the mosquito that most people never see — a positive view that is indicative of similar ideas

he addressed in “The Widow Knows.” Both spiders and mosquitoes get a bad rap, but they play important roles in the natural order. They are both vicious and useful at the same time, just like nature itself. And man’s attitudes toward nature, Quammen seems to be showing, are skewed because of bad information. He is trying to change those views by filling in gaps in our knowledge.

In “A Republic of Cockroaches” (1985: 53-60), the much-despised cockroach is considered as one of the most evolutionarily successful species on the planet, perhaps more so than humans. Quammen tells of a researcher who envisions the world after nuclear annihilation — a world where a few luckless humans will live alongside a thriving population of cockroaches. Once again, he is using this example to disabuse humans of the notion that they are the height of evolution on the planet. We just might be outlasted by cockroaches.

Natural Acts uses synecdoche in other ways as well. In “Jeremy Bentham, The *Pieta*, and a Precious Few Grayling” (1985: 105-118), Quammen describes the grayling fish as beautiful and highly coveted by fishermen. Yet the fish is absolutely useless, as is the snail darter, another fish similar to the grayling. Quammen uses these two cases to make the point that evolutionary success is the only necessary grounds for the value of a species. More to the point, the fact that a species exists — that it arrived the hard way across millions of years of randomness — is the only reason one should need to be concerned with preserving it. Quammen addresses this topic of animal rights more directly in “Animal Rights and Beyond” (1985: 135-140), where he questions the pervasive societal belief that man is the measure of all things. These continued illustrations of the underlying value of certain living things, combined with the reminders

about man's unwarranted self-centeredness, are synecdoches because they are specific creatures with inherent value that also represent Quammen's views about the natural world as a whole.

In the section "Prophets and Pariahs," Quammen uses people — mostly scientists — in two ways. The first is to demonstrate that while nature can be strange, man is in fact stranger. In "The Lives of Eugene Marais" (1985: 72-78), he describes a naturalist who held to the thoroughly odd (but intriguing) notion that a colony of termites was actually one living organism, an animal known as the termitary. In "The Man with the Metal Nose" (1985: 79-84), Quammen tells of Tycho Brahe, a mischievous Danish astronomer who lost his nose in a duel, only to replace it with a prosthesis made of gold and silver alloy, for which he perpetually carried a box of ointment to keep it lubricated. In "Voices in the Wilderness" (1985: 85-90), we discover that Francis Crick — the scientist who shared a Nobel Prize for discovering the structure of DNA — supposedly believed that life on earth began four billion years ago when single-celled organisms arrived in a spaceship.

The other point Quammen makes with these men is that scientific inquiry is not the flawless enterprise it is often made out to be. This is a theme he deals with more in the later books.

Finally, in "The Big Goodbye" (1985: 141-148), Quammen comes right out and says that man is in the middle of perpetrating the largest mass extinction in the history of the world. Here is a subject that has already been hinted at in other essays and will appear again through more examples.

These themes are addressed, in one way or another, with synecdoche. Whether it be with a person, place, or thing, Quammen is using a single part of nature to hint at larger ideas about the natural world.

The Flight of the Iguana

The subtitle for Quammen's second book of essays — *The Flight of the Iguana: A Sidelong View of Science and Nature* — is the same as the first, and understandably so because he still maintains his oblique view of science and nature. The title, however, is from a particular essay in which this sidelong view begins to illuminate a larger portion of his thought pattern.

This is a book of freaks — of plants that eat frogs and snail-like critters with octopus arms — but it is not simply a freak show, Quammen says. “There will be giant earthworms, yes, there will be dogs without voices and chimpanzees talking in sign language, yes, there will be an iguana that sails through the air, needless to say, but the whole point of exhibiting such creatures is not for us to peer shudderingly at some sad monsters . . . the point here is simply nature itself on a good day. On a *normal* day. . . . These unpopular beasts . . . are the natural and true-born practitioners of life on this planet” (1988: x). These animals, as in the previous book, are synecdoches that stand for man's attitude toward nature — both what this attitude is and what Quammen thinks it should be.

There are two main subjects that tangle their way through the book: the surprising intricacies of nature and man's attitudes toward these intricacies. “Not to wax portentous,” Quammen says, “but it seems to me that almost nothing bears more crucially

upon the future of this planet than the seemingly simple matter of human attitudes toward nature” (1988: xi).

The black widow spider makes another appearance right from the start and continues to have an influence on the entire book. There’s a reason for this: “The black widow spider is not just a spider, not just a poisonous spider, not just a poisonous spider that happens to have a high degree of menacing but undeniable beauty; it is all those things and more. To me it’s synecdoche, representing its own vivid self as well as other and broader meanings. Dangerous but not malicious, exotic-seeming but in truth rather common, ruthless as a mate, tender (and sometimes again ruthless) as a mother, death-dealing and life-seeking, fierce and vulnerable, gorgeous or hideous depending upon how we happen to see it, the black widow spider *is* nature” (1988: x-xi). To Quammen, human attitudes toward the black widow spider — or the mosquito, the marine iguana, the Canada goose, the European earthworm — are indicative of human attitudes toward nature.

The first section is “Faces Unlike Ours,” and the first essay is “The Face of a Spider” (1988: 3-9). It is, of course, about the black widow spider. One day Quammen ran across more than 100 black widow spiders on his desk (he swears he’s not making this up). He ends up killing them, but he has much inner conflict over the incident and they haunt him for years. He says they stand for something: a question — How should a human behave toward the members of other living species? Quammen’s rather unusual but fully serious answer is eye contact. Make eye contact with the animal before you decide to take action (as in not simply killing a black widow because it frightens you). “[W]hen I make eye contact with one, . . . I am reminded that the human style of face is only one accidental

pattern among many, some of the others being quite drastically different. I remember that we aren't alone. I remember that we are the norm of goodness and comeliness only to ourselves. I wonder about how ugly I look to the spider" (1988: 8). These spiders are clearly synecdoches because they actually appeared on his desk and make for an interesting story by themselves. But, when properly "burnished," Quammen makes them stand for a whole host of questions with much larger implications.

Other essays lead down the same road. In "Talk is Cheap" (1988: 114-121), Washoe the Chimp represents the question, "What is a person?" Washoe was a famous chimpanzee that astounded the world with his sign language and, supposedly, made a special bond with his trainer. He was much more like a "person" than some humans, but he certainly did not have the rights and privileges accorded to one with personhood. Washoe represents all other chimpanzees, and Quammen uses him to make the reader question his preconceived ideas about the differences (or similarities) between humans and other animals.

In "The Descent of the Dog" (1988: 63-69), dogs — one of the few animals respected and loved by most humans — are portrayed in a different light. Quammen tells of research that explains the dog's annoying tendency to bark incessantly as a product of artificial selection, or selective breeding by humans. Our attitudes toward dogs are causing a negative impact on their evolution. Extrapolate this notion further, and we see that our attitudes toward the natural world are causing a negative impact on it. The dog is just one representative example.

"The Beautiful and the Damned" (1988: 147-154) explores a similar notion with the cheetah. First, Quammen explains that, despite the appearance of beauty and majesty, the

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cheetah is actually not well. It is deficient in genetic diversity, or, in lay terms, it is inbred. Humans are possibly the cause of this; throughout much of history, the cheetah was a popular pet of royalty. Thousands of cheetahs were taken from their wild breeding pools and kept in captivity for sport and pleasure, never to return again. They are now an endangered species. In this essay, the cheetah is synecdoche in two ways. It stands for man's impulse to capture and possess nature. It also represents Quammen's point that things are rarely what they appear to be, especially in nature.

Two essays in this compilation introduce a topic that will become one of Quammen's most important: island biogeography. His 1996 book, *The Song of the Dodo*, is the culmination of his research into evolution and extinction on islands, but he began to lay the foundations for this work with his early essays.

In the essay from which the book gets its name, "The Flight of the Iguana" (1988: 161-175), the marine iguana and the Galapagos tortoise are used to illustrate the apparent peculiarity of evolution on islands. The marine iguanas in the Galapagos Islands show an indifference toward human proximity, or tameness, because they evolved in an environment lacking natural land predators. The giant tortoises got huge for the same reason — they had no need to quickly escape anything. These aspects, however, prove to be a dire handicap when humans come around and introduce non-native species. Quammen admits that island species have a tendency toward quicker extinction for other reasons, mainly because they are not well equipped to disperse. "In truth, humanity's role in destroying island species only accelerates (grossly and cataclysmically, yes) what is otherwise in some sense inevitable. . . . But then in the long run we're all goners, and the

Earth itself is just another doomed biological island” (1988: 175). Whereas the iguanas and tortoises represent island evolution, islands represent the earth itself.

In “Island Getaway” (1988: 107-113), Quammen expands upon this idea. He explains why studying islands is important to understanding evolution and extinction as a whole: “Speciation and extinction tend to happen more rapidly on islands. At the same time, the level of species diversity . . . is almost always lower than on the continental mainlands. Therefore the complex relationships balancing life against death, stasis against change, the success of one species against the decline of another, show themselves more clearly in such places. The history of life on islands reflects — in a heightened and simplified way — the entire evolutionary process” (1988: 108). This is why islands make such a good synecdoche: they are simplified versions of the whole evolutionary process. When presented properly, islands “reflect” this process in a clearer way because the science is easier to grasp. As an example of how Quammen presents the concept of extinction on islands, he uses *Boiga irregularis*, a snake species that was introduced by man on the island of Guam and came close to killing all the birds on that island. The birds evolved in a habitat with no natural predators because islands are isolated, but now man’s intervention — which brought the snake — is jeopardizing their lives. This small instance is happening on a larger scale as non-native species are spread to parts of the world with little regard for their possible effects.

With his introduction to island biogeography, Quammen is showing the reader examples of how human attitudes toward nature cause problems that are often unforeseen, and he is beginning to use these examples to convince the reader to change his attitude and his actions.

Wild Thoughts from Wild Places

“The title of this book alludes to a scarce resource,” Quammen says of his third essay compilation, *Wild Thoughts from Wild Places*. “Wild places, in the ordinary sense of that phrase, are in preciously short supply on planet Earth at the end of the twentieth century” (1998: 11). By now this should sound like a familiar refrain. But while Quammen certainly laments this condition, he takes a lighter approach in compiling these essays than in the previous two books.

Instead of getting into the tricky argument of why one should regret the loss of wild places, he intimates a definition of wild places that’s a little more “stretchy and inclusive.” He seems to be trying to see the situation in a more positive light; yes, places that are typically considered wild are being destroyed (the subject of most of his other work so far), but there are other places to find wildness: “The world is big and wondrous, full of odd sights and strange beasts and weird noises and charmingly demented people with great stories to tell and (despite the increasing scarcity) more than a few wild places” (1998: 15). The strange beasts and charmingly demented people referred to here are the same synecdoches that have appeared in previous essays, only in slightly different clothing.

Quammen’s definition of a wild space in this book includes the foothills of Los Angeles, where coyotes are able to survive in extremely close proximity to the city. It includes the Cincinnati Zoo, where they study and breed endangered species. It even includes Manhattan, whose unusual canyon ecology fosters evolutionary adaptations in

the pigeon. Each of these places are small examples of his larger theme — that you don't have to go to traditionally "wild" places to experience the wonders of nature.

The book begins with "Synecdoche and the Trout" and ends with "Strawberries Under Ice," two essays that have already been discussed. Both of these essays concern his most beloved wild place — Montana — and he says it is no coincidence that they begin and end the book. They both mention his original move to Montana, what he calls his conversion experience or baptism into a new life in the Wild West. The essays in between are, on the whole, more personal. They are divided up into four geographical sections: "The River," "The City," "The Mountains," and "The Heart."

But just when it might seem that Quammen is getting a bit soft, a closer look reveals that he is far from abandoning his serious concern about man's attitude toward nature. In fact, Quammen seems to be giving the reader his deeply personal reasons for loving Montana, and wilderness in general, as a more sentimental way to persuade the reader that protecting such places is important.

Four particular essays in this collection use specific animals as synecdoches, all of them in some way dealing with man's influence on nature. Notice that the topic is no longer just man's *attitudes* toward nature; Quammen has moved on to examine the serious consequences of man's actions.

In "The White Tigers of Cincinnati" (1998: 81-89), white tigers play a similar role as the cheetah and the dog in previous essays. The white tiger is a genetic mutation that occurs in the wild, but can also be selectively bred in captivity. Zoos across the country have bred and kept these animals, not because they are endangered, but because they are worth a great deal of money, Quammen asserts. And as with the cheetah and the dog, this

selective breeding can have many negative effects on the tigers, including “susceptibility to disease, lowered fertility, raised incidence of stillbirths, reproductive deformities, skeletal deformities, and loss of adaptability to new circumstances” (1998: 85). The white tiger represents the consequences of man’s greed and desire to possess and control nature.

In “To Live and Die in L.A.” (1998: 90-99), the coyote represents the unintended consequences of man’s attempts to control nature. Thousands of government dollars are spent yearly to kill coyotes as a means of protecting ranchers who graze their animals — mostly sheep — on public land. The net effect of all this slaughter, Quammen says, is exactly the opposite of what is intended. The mechanism is complicated, but the result is actually an increase in the population of coyotes that are likely to kill livestock.

In “Superdove on 46th Street” (1998: 109-117), Quammen writes about feral pigeons in New York City, “super” birds that “reflect a potent amalgam of two evolutionary forces — artificial selection as practiced by human breeders and natural selection as effected by all other forms of circumstance — that may be unique in the history of animals” (1998:110). The feral pigeon is like a weed, selectively bred by humans to have special qualities but wreaking havoc on more natural species of pigeon like the rock dove. The feral pigeon stands in as one example of a much larger problem: humanity is changing the world’s flora and fauna — not just exterminating some species but transforming those that remain. He asks the reader to imagine “supergrizzlies” or “superwolves” that are too smart to attack people; or “supermosquitoes” that drink only from hummingbird feeders. “We’re headed toward that,” Quammen says, “and to me it’s a dreary prospect. If we come to such a point, with the surviving species (few as they may be) merely cultivated reflections of human dominance, human sufferance, human

fancy, we'll have selected away something precious. When the last beasts and the last plants left alive are all just as super as we are, the world will be a crowded and lonely place" (1998:117).

In "Before the Fall" (1998: 118-126), Quammen relates the story of a tent caterpillar outbreak in his hometown, using this species as an example of other species that have the characteristic tendency toward outbreaks. And, as might be expected, humans could be considered as the biggest outbreak species on the face of the earth because of our explosive increase in population in a relatively short period of time.

One other essay in the collection is worth mentioning, not because it uses synecdoche, but because it introduces a key topic: fragmentation. In "Only Connect" (1998: 56-65), Quammen introduces the Wildlands Project, in which the goal is to connect fragmented parcels of land — wildlife preserves, parks, wilderness areas — to allow animals to pass from one to another unobstructed. "[O]ur forests and prairies and wetlands and natural deserts are inexorably chopped into pieces, leaving discrete and far-flung fragments to stand insularized in an ocean of human impact" (1998: 58). The island metaphor is important, as it shows how studying island biogeography leads to an understanding of ecosystem fragmentation on the mainland. As humans chop up ecosystems, the separate parcels become like islands. And, as Quammen has demonstrated, species on islands are more susceptible to extinction.

The Boilerplate Rhino

In Quammen's most recent collection of essays, *The Boilerplate Rhino: Nature in the Eye of the Beholder*, he deals with many of the same issues he dealt with in the earlier

three books: how humans react to the natural world; humanity as “a ruinous ecological outbreak population of unprecedented puissance” (2000: 12); humanity also as strange and wonderful; and reality tends to be vastly more complicated than initial assumptions would suggest. Three essays that perpetuate these themes have already been discussed, and they won’t be re-analyzed here (“Hard Parts,” “The Narcotic of Empire,” “The Great Stinking Clue”).

One relatively new theme does, however, seem to make an appearance in this book: the limits of scientific knowledge. Quammen says that over the years of intense research into widely various subjects, he has learned that “additional investigation generally leads toward increased complexity, ambivalence, even confusion, not toward increased certainty” (2000: 13) Faulkner’s influence on Quammen’s epistemology, or ways of knowing, is apparent throughout this compilation. Quammen says he wasn’t aware of this as he wrote these essays years ago; “Maybe their hold upon me represents a vestigial effect from my years of immersion in the novels of William Faulkner” (2000:13).

In “Certainty and Doubt in Baja” (2000: 47-54), an essay that has already been discussed, Quammen writes about the inherent difficulty of achieving validity in evolutionary biology. It is a less concrete science than, say, physics or chemistry. This difficulty leads one to question the ability of science in general to address epistemological issues.

“The Boilerplate Rhino” (2000: 201-210) gives the book its title, and it deals with the limits of human knowledge in general, not just scientific knowledge. Quammen says that most people get their view of nature from magazines and television documentaries, which are necessarily flawed in the picture they present. To demonstrate the distortion of

these media, Quammen tells of the German artist Albrecht Dürer and the rhinoceros he was commissioned to draw for King Manuel I of Portugal in 1515. Dürer never saw the real rhinoceros, only a bad representation; but he made a fanciful woodcut and supposedly distributed it to a large number of people. These people were, as people today are, getting a wrong impression of nature through distortion (purposeful or not) by artists and the media. Quammen lumps himself into this category as well: “That constitutes a chastening reminder for someone like myself, with a bias in favor of the written page and a sour prejudice against mass-market video: a reminder that, although images can be deceptive, they don’t stand convicted alone. Writing is just another form of concoction. Words can lie too. You can trust me on this, probably” (2000: 209). Durer’s boilerplate rhino — a real piece of art — is also a representation of the limits of human knowledge, despite our best and most sincere attempts.

In “God’s Weakness for Beetles” (2000: 239-246), Quammen puts forth what he calls the Parable of Coleoptera: “unidentified Amazon beetles as tokens that nature is vastly complex, human knowledge small” (2000: 13). They are “tokens,” or particles of experience, that cause Quammen to ask, “Why are there so many different species of beetle?” The question and the luminescent beetles he describes are synecdoche, representing a larger question: “What is the origin of species?” The surprising and slightly unsettling answer to both questions is that no one really knows.

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Entire body of work

By now, Quammen's general themes should be readily apparent. Certain things appear as synecdoche over and over again in various forms: fossils, trout, black widows, ice, water, islands, crazy scientists, etc. And certain strands of thought weave their way throughout all of these essays:

- Seemingly ugly creatures can in fact be beautiful.
- While nature is strange, man is often stranger.
- Humanity is not necessarily the pinnacle of evolutionary development.
- Evolution is a powerful creative force, resulting in the surprising intricacies of nature.
- Scientific knowledge is limited, and things are more complicated than they seem.
- Man's attitudes toward nature are fundamentally flawed.
- Humanity is a ruinous outbreak population.
- Man is not just eliminating species from the earth, but also altering those that remain.
- Anything that has survived the randomness of evolution deserves to live, whether it has utilitarian value to man or not.

Perhaps the single most important issue to Quammen is island biogeography and its implications for understanding extinction. Man's wrong attitudes toward nature are leading to a more fragmented ecosystem, which is ultimately leading toward extinction for many species. This topic is alluded to in a number of essays, both explicitly and implicitly, and it is basically the overarching theme of *The Song of the Dodo*: understand evolution and extinction on islands and you will understand evolution and extinction

everywhere. The earth is composed of many large islands, also known as continents. It's like one giant synecdoche.

Quammen does not like to be considered a "nature writer" — a term he understandably hates because it implies a sentimental affinity for fuzzy critters and rainbows. Instead, if all his work had to be classified under one term, perhaps the most appropriate one would be *conservation*. Quammen is a conservationist; he is interested in conserving plants, animals, wild spaces, and a simpler way of life because he sees implicit value in such things. His goal in writing, it seems, is to make his values explicit.

A quote from the end of "Only Connect," Quammen's most direct essay about ecosystem fragmentation, provides what seems to be an underlying reason for the way Quammen uses synecdoche: "The Wildlands Project has great merit. But it will never succeed and probably shouldn't, I suspect, if the effort to realize it becomes an us-versus-them political battle, since us-versus-them is just another form of fragmentation. It can only succeed through patient persuasion" (1998: 65). People are rarely converted quickly to a new way of thinking; they need to be slowly persuaded. Offer the reader one example after another, over many essays and many years, and he just might begin to change his attitude — the first step toward changing his actions. Quammen uses a wide range of synecdoches to affect this slow change. These things are important by themselves, captivating enough to be the subject of an entire essay. But they are even more important as indicators of bigger issues.

Chapter 5

Conclusion

From a scientific point of view, anecdotal evidence may be correct, but it is insufficiently tested, and therefore weak and unreliable. It cannot be used to prove a point. But in science writing, it can — and must. Synecdoche is one tool for the science journalist to be creative and artistic in his rhetorical strategies without sacrificing factuality, losing the reader, or abusing the trust of the scientists about whom he writes.

David Quammen's work — his epistemological theories and his use of synecdoche — can provide a good example to any writer trying to walk the blurry line between fact and fiction. In his writing, themes and arguments develop slowly and sink into the reader's brain. He uses one synecdoche after another to make his point without directly saying it. That's the idea of synecdoche: to make things obvious without actually coming out and saying why they should be obvious. In other words, to *show*, not tell.

After reading Quammen, specific animals and plants come to mind when thinking about the natural world. For example, remembering the black widow helps to remember that nature is both beautiful and dangerous. The cheetah comes to mind when thinking about man's impulse to capture and possess nature. Recalling the giant Galapagos tortoise helps to recall the peculiar aspects of evolution and extinction on islands. The tent caterpillar stands as a reminder that man is an outbreak species, perpetrating the biggest mass extinction in history. Very small examples represent sweepingly large ideas that could otherwise be hard to grasp.

Quammen has the benefit of cohesiveness over a span of time with his essays, but most journalists don't have the opportunity to write a monthly column with such autonomy. The average journalist is writing disparate pieces on various topics, struggling to meet short deadlines, and simply trying to make his editors happy. Still, as some of Quammen's writing demonstrates, synecdoche can work on the level of the individual essay, magazine piece, or book — by teaching about something technical without being too precise; by creating symbols out of everyday objects; by burning an image into the reader's mind to make him remember a larger message. It takes a keen eye and a creative mind to fully harness the power of synecdoche, but no one ever said writing artful nonfiction was supposed to be easy.

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Vita

Jason Gorss received his B.S. in chemical engineering from the Pennsylvania State University in 1997. Following a brief but tedious career as a process engineer with FMC Corp., he retreated to the mountains of Colorado for a year to help construct a Young Life camp and, admittedly, to snowboard. After another year at a Young Life camp in upstate New York, he began graduate school at the University of Tennessee in the spring of 2001. While he intended to study literature, he was unexpectedly attracted to the artful expediency of literary journalism. And, quite naturally, his past scientific experience led him to the world of science writing. While in school, he worked as a science-writing intern at Oak Ridge National Laboratory, a graduate assistant in the Science Communication Program, an editorial intern with the *Blue Ridge Press*, and a freelance writer for *Metro Pulse* and *The Knoxville News-Sentinel*. In the summer of 2002, he began working as a science writer at the American Chemical Society in Washington, D.C.