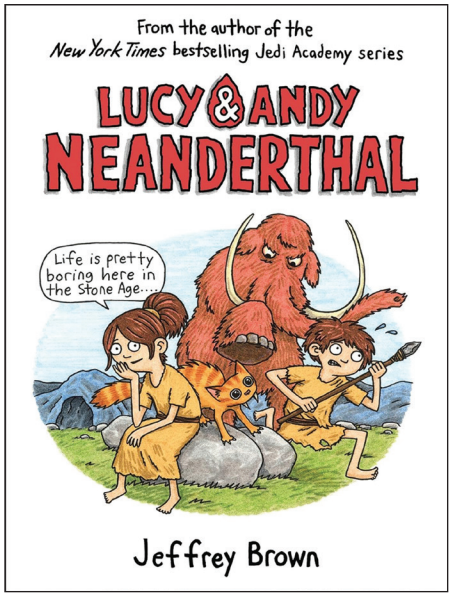
# BOOK REVIEWS

KIRSTIN MILKS AND FRANK BROWN CLOUD, DEPARTMENT EDITORS



***Lucy & Andy Neanderthal***. By Jeffrey Brown. 2018. Yearling. (ISBN 9780525643975). Paperback. 240 pp. $7.99. Hardcover and ebook also available.




Currently, my carport is littered with broken walnut shells, ground-up sidewalk chalk, pulverized grains of rice, and an absurd number of various sizes and shapes of rocks. I blame Jeffrey Brown. My children have been reading his *Lucy & Andy Neanderthal* series, and now they've taken to playing "early humans" whenever they go outside. And it gets worse! Last weekend, when my spouse took a quick jaunt over to the high school to set up the next week's biology lab, I sat on the couch for a brief rest. My kids couldn't get up to anything too disastrous in 10 minutes, right? Wrong. They'd learned that traditional Neanderthal stone knapping – to make spearheads, knives, and hand axes – involved heating the stones first, so my children had assembled a pile of sticks and were using a magnifying glass to light them on fire. A thin plume of smoke rose over our driveway.

And yet, I still feel compelled to recommend this book. I'm a bit dismayed about the increased likelihood that my home will be destroyed, and I *may* have shouted a few inappropriate things when I hurried outside barefoot to preempt driveway fires and located a sharp wedge of walnut shell with a tender part of my foot, but, honestly, attempting to reenact moments from ancient humans' lives is one of our best techniques for understanding the process that led from our ancient ancestors to us. Paleontologists needed to sit and craft their own tools out of stone to appreciate the knowledge and skill that this work requires. And only by deeply empathizing with the sensory perspective and life experiences of other creatures can we authentically understand their behaviors. (One of my favorite examples is from Jesus Rivas and Gordon Burghardt's essay "Crotalomorphism," in which they explain that a snake might believe that we humans camouflage ourselves when we notice snakes, since a common fear response is for blood to flow away from our extremities, making us harder to see for animals who perceive infrared radiation.)

Much of the *Lucy & Andy Neanderthal* books are simple cartoons, vaguely in the spirit of *Peanuts* or *Calvin and Hobbes*, in which a group of children evade chores and bullies while engaging in hijinks and braggadocio. After each multipage episode, though, a page or two depicts contemporary archaeologists explaining why it's plausible that Neanderthals could have done things like what we've just seen. In the first book of the series, I thought that these explanations were invariably excellent, presenting complex data in an approachable way. For example, at mealtime, most characters are shown cutting mammoth steaks by holding the meat between a hand and their teeth, and then the contemporary scientists explain that we believe this was common because a similar practice has been observed in modern human cultures and Neanderthal teeth often have angled scoring marks from their own knives.

Stray details in the second and third books of the series irked me, such as the cartoon paleontologists saying that "Neanderthals weren't as smart as people are now. No Neanderthal ever graduated from college," conflating intelligence with knowledge in a way that's unhelpful for young people to be exposed to, or a cartoon scientist shown inspecting DNA with a microscope. But I'm particularly cantankerous, the sort of person likely to complain about even relatively uncontroversial statements like "Humans first cultivated specific plants around 10,000 years ago, so Neanderthal kids never had the chore of weeding their vegetable garden." (Although large-scale sedentary agriculture didn't begin until around 10,000 years ago, humans probably made efforts to enrich patches of vegetation for preferred food sources long before that – ancient human children probably *did* help with weeding.) Honestly, the scientific basis of these books is generally quite good.

If my children's reaction is anything to go by, this series also does an excellent job of sparking curiosity and imagination in school-aged readers. *Lucy & Andy Neanderthal* can inspire comics-inclined children to add more scientific observation and speculation to their play. That feels like winning to me – especially if I manage to sweep up all of my children's sharp rock fragments before they puncture my car tires … or my feet!

Frank Brown Cloud
public scholar
Bloomington, IN
fcbrowncloud@protonmail.com

Editors' note: Kirstin has her AP Biology students complete a winter "summer reading" assignment. The following was written for ABT by Mallory, one of Kirstin's students,

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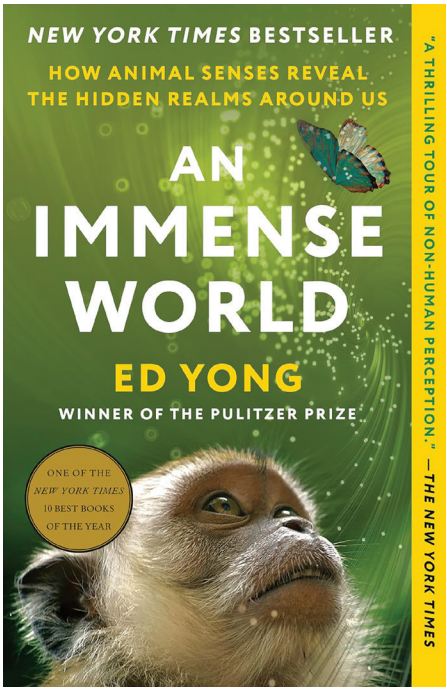
based on her insightful and generative book talk. Do you know a high school or college student who loved a recent biology-themed book and wants to review it in these pages collaboratively with you? Let us know at kmilks@mccsc.edu.

***An Immense World: How Animal Senses Reveal the Hidden Realms Around Us***. By Ed Yong. 2022. Penguin Random House. (ISBN 9780593133231). Hardcover. 464 pp. $23.49. Paperback, audiobook, and ebook also available.




*An Immense World* by Ed Yong delves readers into a world greater than their own: the world of animals big and small. Yong explores the many different types of senses found in the animal kingdom and focuses on one category per chapter. In each chapter, he discusses not only the facts that scientists know, but also how they came to know them as facts, including what observations and experiments led to conclusions. Furthermore, he explores what scientists *don't* know, and is transparent about the fact that the field of science exists to explore new ideas and the unknown, not discuss things already known.

Yong is careful not to compare human and animal senses; instead, he writes about animal senses in terms of a whole separate realm that does not deserve to be limited by our own senses. He argues that the term "sixth sense" as being arbitrary and only used in relation to our personal limitations of vision, hearing, olfaction, gustation, and tactician. For other animals, those five senses may be unnecessary, and fewer senses, or even entirely different senses, are what prove to be most important for them. Furthermore, he contradicts the idea that intelligence should inherently be based on human terms such as vision.

I'm a current high school senior who read this book last year as an independent reading assignment for AP Biology and really enjoyed it. I want to be a veterinarian, so I'm fascinated with animal behavior and the biology of animals and loved learning from Yong's deep dive into *why* and *how* animals use certain senses and not others. While I believe a lot of my personal interest in this book has to do with my career aspirations, I think anyone would benefit from reading it. Yong has written a wonderful book that is easy and fun to read, allowing students to stay engaged with the book so they can gain the most from the science in it. Plus, I feel *An Immense World* included enough scientific background, analysis, and history to be useful for educators.

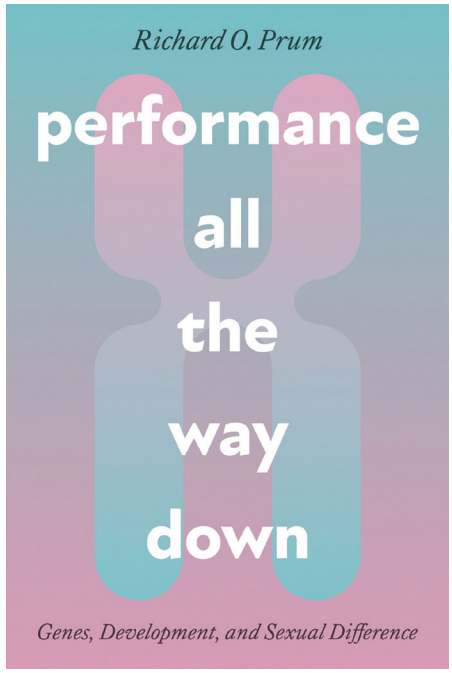
This book left me thinking about how, as the title conveys, there is *An Immense World* outside of our own "bubble" of senses. Learning how other animals view the world created, for me, a feeling of connection to things I haven't experienced and gave me a new perspective on the world – both of which could very well make a great lesson in high school, college, and beyond.

Mallory Henderson
AP Biology student
Bloomington, IN
Correspondence c/o Kirstin Milks
kmilks@mccsc.edu

***Performance All the Way Down***. By Richard O. Prum. 2023. Chicago University Press. (ISBN 9780226829784). Paperback. 268 pp. $22.50. eBook also available.

We humans love to categorize the world around us. When my eldest was first learning to talk, she decided that every animal was either a cat or a dog. I found myself trapped in an argument with an unyielding baby: she kept jabbing her finger at a picture book and announcing "Da," while I kept saying, "No, that's a pig!"

And I felt a strong sense of *déjà vu* recently when a 10 month old paused on my living room carpet, pointed at the pet rabbit that we inherited from my father-in-law, and said "Ga" (cat). If "cat" and "dog"




were the only possible classifications for nonhuman animals, I suppose I'd agree with each of these babies' assessments – our rabbit *is* vaguely cat-like – but our world need not be divided into these babies' artificial cat/dog binary.

In *Performance All the Way Down*, Richard Prum offers a harder sell: that we've been hampering ourselves as people and as scientists by splitting the entire human world into a male/female sexual binary.

Personally, I think it's obvious that this supposed binary doesn't fit everyone. Even in the Talmud – an ancient compendium of Jewish philosophy – several additional categories were offered for members of the community whose physiological development resulted in a person whose body didn't match the expected phenotype for either male or female.

But a categorization scheme doesn't have to be perfect to be useful. In the book *Invisible Women*, Caroline Criado Perez documents numerous real-world examples, from fields such as medicine, automobile design, and city planning, where researchers noticed that women were being systematically harmed … just as soon as the researchers introduced a man/woman category to disaggregate their datasets. Until researchers checked to see whether there was some commonality between the people being harmed, we'd known only that the world we've built was failing some people. We would undertake very different future action than if we knew we'd built a world that systematically fails women.