Do you like sushi—the kind wrapped in seaweed? Did you know that the reason you can eat it is because your gut microbes acquired a gene (through horizontal gene transfer, or HGT) from marine microbes that were already good at digesting seaweed?

Scientists have discovered that genes also move from microbes into their host animal's genome, although Yong points out that their mere presence does not necessarily make them important: "Just because someone has a guitar in their room doesn't make them Slash."

That is not always the case though. Some animals, such as scorpions, mites, sea anemones, oysters, and water fleas, have used horizontally transferred genes to defend themselves against parasites.

Scientists are now building their own microbial minions, Yong says, citing examples of bacteria engineered to eliminate cancer cells or to go after pathogens. But, in the end, it would seem that God's design is superior:

> With all our intelligence and technology, [we] positively struggle to create new antibiotics … but simple animals like ticks and sea anemones can make their own, instantly achieving what we need many rounds of research and development to do. (p. 200)

The book starts and ends with the same dizzying shift in perspective, reminding readers of the reach of science, from the first looking glass to microbial minions. For Christians, this book reminds us of God's infinite character—infinitely large, infinitely small, and infinitely creative.

In summary, Yong uses historical anecdotes and imaginative descriptions to introduce readers to key players in our understanding of the microbial world. From the squiggly worm to corals, Yong chronicles example after fascinating example of the ubiquitous presence of microbes and the roles they play in sustaining life, or in taking it. This book finds an ideal audience in the layperson who is fascinated by science and nature, and in Christians who want to see for themselves evidence of God's design, right down to his signature in a cell.

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Environment

MAKING THE MOST OF THE ANTHROPOCENE: Facing the Future by Mark Denny. Baltimore, MD: Johns Hopkins University Press, 2017. 224 pages. Hardcover; $24.95. ISBN: 9781421423005.

The idea of the Anthropocene is, I have to admit, a disturbing one. Modern humans have changed the planet to such an extent that future scientists will see human influence everywhere they look, even in the remotest places: in the geologic record (due to nuclear tests), in the fossil record (due to rampant relocation of species), in ice cores (due to climate change), and in sediments (due to pollution by chemicals, nutrients, plastics, etc.). Given that human fingerprints are now all over everything, how then should we live? This, asked in the collective sense, is the driving question behind Mark Denny's *Making the Most of the Anthropocene*.

Of course, to chart a course for the future, either personal or collective, we would need some predictions about the challenges we will be facing, so that we can be prepared to meet them when they arrive. But how predictable is the future, really? Denny's book digs into this problem with, as he claims, "shtick," although if I had to pick a Yiddish term to describe his approach, I would have chosen "chutzpah." Taking a realpolitik approach to human nature, Denny argues that humanity will not be able to mount an adequate defense against, for example, climate change, due to our collective willingness to cheat when it comes to protecting the common good, and to follow narrow paths of self-interest rather than cooperate. Certainly the past 25 years of US history, with its glaring lack of action to address climate change, not to mention millennia of Jewish and Christian teachings on the fallenness of human nature, suggest that he is correct. Denny lumps these human failings under the term "collective stupidity," while you or I might use "original sin" to describe the same tendencies.

Is this another example of an elite member of the intelligentsia looking down on Joe Average? The "shtick" of this book is that Denny spins his dark tale with disarming humor and cleverness, without a shred of anger or bitterness. In this day and age, Denny's humane tone makes reading his book feel good for the soul, like a day at the spa—in spite of where he is taking you. It is a bit like enjoying an entertaining, Byzantine bus tour of a city and realizing part way through that you are being kidnapped. In reality, Denny is using all of his powers of persuasion—charm, logic, data, experience—to make his readers think differently, perhaps more realistically, about the future.

Climate activists sometimes say that only hope will motivate us to take action. Denial on the one hand, or gloom-and-doom on the other, are immobilizing. But Denny is trying to offer reality, not motivation, a little like the jaded author of the biblical book of Ecclesiastes. Each chapter is a shock to the system

and a pleasant surprise, containing unvarnished attempts at truth-telling that contrast starkly, in content and tone, with everything else you have read.

In the end, Denny argues that we need to use all the tools available—science, technology, diplomacy, and our very limited supply of wisdom—to avoid the worst effects of climate change. For example, he recommends that we nurture and develop, rather than reject, the "technological monster" of nuclear power, in spite of our disappointments with it (three accidents so far). Don't like nuclear power? He demonstrates the human brain's general inability to understand risks in a one-page chapter entitled "You Suck at Statistics."

It is stunts like this that make reading *Making the Most of the Anthropocene* so enjoyable. Many of Denny's chapter-essays are fascinating, opinionated, and subversive. Love, peace, and granola, anyone (chap. 31)? While at first they seem loosely connected to each other, eventually they form a web. Why does it matter that "Nobody Understands Economics" (chap. 35)? Economic scenarios are a larger uncertainty in next-century climate projections than the scientific uncertainty in climate models, and this has been true for many years.

Denny has written at least nine previous books about science for a general audience, and his ability to avoid jargon and hold the reader's attention while still getting the science right rarely wavers in this one. The only error I noted in the entire book had to do with details of the history of the discovery of the ozone hole by members of the British Antarctic Survey—a minor issue that does not substantially detract from the overall achievement. In this book, Denny has expanded his scope to cover a lot more than science, and readers will benefit from his ambition.

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Ethics

LOSING SUSAN: Brain Disease, the Priest's Wife, and the God Who Gives and Takes Away by Victor Lee Austin. Grand Rapids, MI: Brazos Press, 2016. 150 pages. Paperback; $17.99. ISBN: 9781587434075.

Victor Lee Austin's *Losing Susan* is a difficult book to classify. One could potentially find it shelved in bookstores under biography, medical ethics, caregiving, death and dying, spirituality, or theology. It would not be out of place in any of these sections. *Losing Susan* can also be a difficult book to read. The very title of the book gestures toward the unflinchingly honest and often painful account of a husband attempting to care for his wife in the face of terminal brain disease. The "In Memoriam" page with which the book begins signals to the reader from the outset that there will be no fairy tale ending to this story. The shadow of death hangs over everything. Even the depiction of the joyous courtship and marriage of the Austins ends on a foreboding note with the observation, "It would be fifteen years before her tumor was found" (p. 21). However, darkness is not the couple's only companion. There is another strange, often silent, character who accompanies Susan and Victor as they journey through the valley of the shadow of death: "the one everyone calls God" (p. 10). It is the God "who gives and takes away," whose presence sustains Victor and whose sheer ineffability gives rise to this priest and theologian's most raw and piercing reflections.

The book is simply divided into three chapters, entitled, "The Beginning," "The Middle," and "The End." "The Beginning" traces the initial meeting between Victor and Susan, the blossoming of their friendship while walking together to church during college, their courtship, and the early years of their marriage. Set to the soundtrack of the Song of Songs, the opening chapter is the story of a man who has been given the desire of his heart and has the opportunity to delight in the embodied presence of his bride. In the person of Susan, we encounter a woman of deep faith, with an aptitude for hospitality and for organically integrating the habits and practices of the Christian faith into the ongoing life of the home. A gifted writer, Susan stands as a true intellectual equal and spiritual partner to her husband.

Susan's first seizures led to the detection of her brain tumor and marked the beginning of her descent into illness. "The Middle" depicts this period of almost twenty years during which Victor would come increasingly to serve as caregiver to his wife. While this period is not bereft of grace or moments of joy, the burden of being a caregiver to a spouse whose health is failing takes its toll. Austin is racked by the guilt of not recognizing particular symptoms earlier. He experiences the agony of having to treat his life partner and mother of his children as a child herself. He is plagued by the anxiety that is brought on by the feeling of being out of control and not knowing how to respond to Susan's condition.

The occurrence of a grand mal seizure in July of 2011 marks the beginning of "The End," which traces the last year and a half of Susan's life. Amidst the forthright description of the travail and anguish that accompanied such things as selecting a nursing home