

Book Review of *First Steps: How Upright Walking Made Us Human*

Jeremy DeSilva

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The positive reviews have been rolling in for Jeremy (Jerry) DeSilva's new book, *First Steps*. Written for the armchair anthropologist, *First Steps* is indeed an engaging foray into how science is done, how we study evolution, what it means to be human, and how our style of locomotion has influenced our humanity. In a helpful (and delightful) extended introduction (essentially Chapters 1-3), we also get a sense of what bipedalism looked (and looks) like in other creatures (e.g., *Tyrannosaurus rex*), and why the context of bipedalism matters as much as the form of locomotion itself. The narrative then picks up to include the evidence for diverse forms of bipedalism across our lineage, and how bipedalism changes across our lifespan today. Each chapter is written as a testimonial to the excitement DeSilva experiences in better understanding how locomotion shapes our relationships with others, and how understanding locomotion provides fodder for the scientific method at its best. Indeed, as a means of explicating how science is done and how we make claims, I have rarely found another book as edifying for the public as this one; given that I am asked monthly for book recommendations by non-experts, I have an extensive bibliography of such books with which to evaluate. As a direct comparison, Sean B. Carroll's *The Making of the Fittest* might be another one that purposefully seeks to use the narrative of something people care about—in Carroll's case, genes; in DeSilva's case, human evolution—to actively teach consumers how to understand the possibilities and joys of science (and in both cases, hypothesis testing).

That being said, *First Steps* does something I have not seen before in regards to representing the wide swath of people doing science. In the first few pages DeSilva exhorts what a wonderful world it would be if casts of fossils were available to elementary school children—if the study of human evolution was not just common, but widely accessible in a hands-on manner, better science could be done. He then spends the rest of the book modelling what it looks like when science is done by many, by the curious, by the excited. He references women, non-Americans, people at small universities, and people who curate and discover but do not necessarily publish widely. He refers to Mary Leakey first, and Louis as her husband who joined her in the field. He refers to the native names of locations first (e.g., Giiwas) before referring to the colonists' name (e.g., Crater Lake). He regularly refers to well-funded labs by the name of the university, but small labs by the name of their Principal Investigator (PI). He tells the story of well-

funded anthropologists from the perspective of members of the lab—emphasizing that the job of well-published authors is to inspire other's science, not to keep the science for themselves—how do they teach, how do they change perspectives, how do they contribute to the creation of hypotheses that are testable by others? He tells the story of human evolution from the perspective of people who do science because of their passion to understand how the world works. Who is not cited by DeSilva? Those who have hurt and marginalized others in their quest to control access to material. Apparently the wonders of our evolutionary story can be told without these voices.

As might be expected for a book that seeks to illuminate science as process as well as educate us about current understanding in bipedal evolution, *First Steps* is an engaging blend of paradigm and forward-thinking ideas. The story of the Laetoli footprints takes an entire chapter, is intricate and exciting, and clearly lays out the importance of these trackways for cementing ideas about the form of bipedalism among australopithecines. As a person who studies baby carrying, I was particularly pleased to note the mention of the Dikika child, and the importance of carrying as an anti-predator avoidance strategy for slow bipeds. In fact, the reminders that ecological context is where evolution happens is clearly and elegantly woven throughout each chapter—time of day matters, group living matters, predation matters, injury (and healing) matters. Through all of this, bipedal walking (in all its forms) matters as the crucial factor that orients selection on our lineage.

In the discussion of Nariokotome, DeSilva is comfortable referring to the specimen as male, and spends considerable time detailing the importance of the growth spurt as managing increased body and brain size, and increased meat eating as driving (allowing for) some of these changes—all important paradigms. He does not, however, mention any shift in pelvic shape, given of course the ongoing discussions of pelvic shape transitions right now. In the discussion of climbing, he is comfortable illustrating the difficulties our stiff ankles make when vertical climbing and does not detail his passionate support of the work on ankle mobility among human populations who regularly climb today. In these ways he lays out an understanding for the public that balances what is widely accepted as well as up to date in light of professional conversations—though he is able to elegantly integrate Gerta Keller's volcanic eruption hypothesis for dinosaur extinction!

Additionally, while we often talk about the importance

of walking as a selection pressure, we almost always focus on the tradeoffs for the adult. Rarely does a broad book about human evolution talk about some of the most important moments in bipedal selection—those of child development and reproduction. In the chapters, *Baby Steps and Birth & Bipedalism*, DeSilva weaves together ideas about cultural norms, emotional imperatives, and bone biology to guide the reader through how walking matters at each life stage. Is it adaptive for toddlers to learn to walk? What is their niche? How do we manage the 10,000 hours of learning to become competent walkers? Hint: it is because walking is joyous (we do not need running to release those endorphins!). And even here, he is able to integrate the narrative of social inequities, systemic racism, and the obstetrical dilemma paradigm into an informative assessment of how culture shapes our interpretation of data. In the next edition, I am hoping for a narrative as to why humans walk while we protest! With DeSilva's prose elucidating that we walk to think and be creative, and we make sure our friends and family are able to walk, walking in order to undo social inequities seems to be a logical next step in our understanding of the human condition.

I have been a member of the American Association of

Physical (Biological)Anthropology's Committee on Diversity since 2008. Since that time the committee (and its subcommittees) has exploded with members and with ideas of how to be more inclusive, as an organization but also as a science—how can we include diverse voices, perspectives, time zones, languages, learning styles, and publishing backgrounds? How can we possibly tell the story of human evolution without the voices of people who have harmed others across their careers? How can we make sure that our science is disseminated fairly and created fairly? How can we destigmatize non-traditional backgrounds? I understand that this can be difficult when also writing in the public square, but here is a book that does this apparently effortlessly. Obviously, this is not effortless! This is purposeful and requires careful planning and attention, and of course, a deep willingness to do the extra work to understand from whence (and whom) our data come. Others interested in this space should take note of how DeSilva manages this work. DeSilva sets up anthropology as a testable science; he sets it up as exciting and wonderful; and he sets it up as a science that is *driven* by a hugely diverse group of women and men from everywhere in the world. This is science education at its very best.