

Awards and Citations

Response by David Jablonski for the presentation of the 2017 Paleontological Society Medal



David Jablonski

I'm very grateful for this honor. And I'm grateful to Michael Foote for his very kind remarks. As is traditional, I want to say some serious thank-yous, and then a few words about our field and where it's going.

It may seem odd for an old guy to still be thanking his parents, but it's more clear than ever that a lot of what I do and how I do it comes from them. Both my parents were writers, and although there are few people more pragmatic than a free-lance writer trying to raise three kids in New York City, the most basic rule was to follow your passion, and of course that's what I've managed to do ever since. In light of the political climate, it may be worth saying that I also benefited from the social programs of my day. The Urban Corps put low-income kids into work-study jobs, and allowed me to work at the American Museum of Natural History, for an actual salary, which was literally a dream come true. And I'm eternally grateful to Norman Newell, Roger Batten, and Niles Eldredge, and their grad students for being so welcoming to what must have seemed like a hairy creature from another planet.

That early job set a theme to my career that I should mention. Museum curators and other staff have been incredibly welcoming to me wherever I've gone, not just giving me access to their collections, but also their often-underappreciated expertise on the taxonomy, phylogeny, ecology, and distributions of the organisms in their care. I'm not saying anything new here, but the value of museum collections, and the people who

tend them, is literally incalculable. Individually and as a society, we should do everything we can to support them, and also to find new ways for their personnel to archive and share their huge well of knowledge.

I've been remarkably lucky in my students, postdocs, and collaborators. The cliché that I've learned at least as much from them as they have from me, truly applies here. I can't list them, but several are in this room and I hope I'll get a chance to thank them again in a few minutes. One person who isn't in this room that I must mention is Jim Valentine. I've already said in print how Jim's *Evolutionary Paleoecology* book changed my life when I read it in college, and he's followed through on that promise ever since, as a friend and collaborator. It's been an immensely rewarding and enjoyable experience to work with him over these many years: he challenges and inspires me, and in the kindest way—the perfect combination for a colleague, especially when he's that much smarter than you are. Speaking of colleagues smarter than I am, it's been a privilege to be a part of the program at Chicago, embedded not only in a great geology department with a phenomenal set of paleontologists, but also in the Committee on Evolutionary Biology, an extraordinary consortium of faculty and grad students from multiple institutions. It's hard to imagine a richer and more interactive environment. Merging my weekly lab meetings with those of biologist Trevor Price is just one expression of that environment, but a fantastically valuable and fun one that deserves a special mention.

There's one more person I have to mention and of course that's Susan Kidwell. As everyone who knows us knows (as Lorde would say), she's the love of my life, and a truly amazing partner in science and in student training. She's a long-suffering sounding board and an unbelievably skillful and critical reader. What I've said so far has been riddled with superlatives, but words can't express how grateful I am to her for all that and more, not least for her willingness to let me dismantle the entire front half of our house every May for the past 28 years. And I can only hint at the joy of being able to dance with her, literally and figuratively, through that time.

Shifting gears, paleontology has changed a lot since I started, but we still walk around in a miasma of received wisdom. Some of this is quite accurate and true, but some of it is the raft of unexamined assumptions that we all carry—including ideas imported, or perhaps I should say imposed upon us, from other fields. There are many ways to help grow scientific knowledge, but we sell ourselves short when we don't examine assumptions or expectations from other fields that don't have as direct a window into the past as we do. That said, our data are

hardly perfect or complete, even under the best circumstances, and there's been great profit in working to integrate neo- and paleo-approaches to a growing array of questions in ecology, evolution, conservation biology, developmental biology, biomechanics, biogeochemistry, and many more.

But we should always remember, and proudly point out, that we have dynamics and diversity data in all its currencies—taxonomic, phylogenetic, functional, and morphological, to name a few. We have real ecological baselines and real ancestral character states, real paleobiogeographies, and dips and recoveries from perturbations of every conceivable scale, and some inconceivable ones too. The other great wing of what might be called historical biology, which works almost exclusively with present-day species and molecular phylogenies, is incredibly fertile as well. But think about how much is gained when we reach across the paleo-/neo-divide. To give just the most glaring example: molecular phylogenies necessarily put the maximum taxonomic diversity of any clade at the present day. But consider the living groups that we know are just shadows of their former selves—the horse lineage, the elephant lineage, the hominin lineage, and don't even get me started on trigonoid bivalves, campaniloid snails, or cassiduloid echinoids. Plenty of other groups with little or no fossil record must have had similar dynamics, but it's very hard to detect those patterns rigorously. The same goes for morphology—who'd guess from today's snapshot of biodiversity that there were carnivorous kangaroos, giant ground sloths, 2 m tall flightless predatory cranes, uncoiled nautiloids, coiled oysters, and so on, each showing the evolutionary and developmental accessibility of currently vacant parts of morphospace. And the same is true for spatial distributions: there are the rhinos and elephants that used to be in the New World, not just Africa and Asia, the hummingbirds that used to be in the Old World, not just North and South America, and fossil trigoniids and campanilids, which were global, from Patagonia to northern Europe, and are now only in Australia. To show how pervasive these effects are, all of the fossils used to time-calibrate the frog phylogeny in a recent *PNAS* paper are from North America, and none of those lineages is in North

America today. No algorithm reaching back from the extant branch-tips could have inferred that.

The point is that we have unique data along each of these key axes—time, space, and form—and without fossil data, analyses of the dynamics along any of those axes, short- or long-term, can be positively misleading. Which of course everyone in this room knows, although outside this room it tends to get more lip service than serious attention. But we need to do more than just point this out, though we should do that too. We need to participate fully in, and preferably drive, the integration of paleo research with the other strands of historical biology. Of course, many of the richest datasets of neontology don't match ours: songbirds, fruitflies, orchids, figs and their figwasps, and the rest. But there are many solutions to this disconnect, ranging from focusing on, or developing, study systems that are rich from both the paleo and neo sides, to pushing harder on non-traditional ways to use sparse or episodic fossil records. Some of this work is underway. It looks very promising, but there's a lot more to do.

To wrap up, I'm not in any way saying that we should work only on the fossil record of extant species, clades, or communities. I'm saying the opposite—that integrative and comparative work, on whatever group, in whatever environment, in whatever time interval, can be fascinating and consequential. It's the questions that are important, and it's conceptual integration, a two-way street, not just methodological integration, that's the key. With our endless set of natural experiments, we have a unique window into how the world works. And the amazing thing is we get paid to study and teach it. And for that I'm deeply grateful, and I'm deeply grateful to the Paleontological Society for this honor.

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