The Individual Benefits of Evolution

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The Individual Benefits of Evolution

The 200th anniversary of Charles Darwin's birth, widely and properly celebrated last 12 February, was a gratifying event for biologists. The founding father of modern biology was feted in articles, broadcasts, and gatherings, and evolution was even a pictorial motif on Google's home page. The public recognition was a notable plus for biology's image, especially as 12 February was also the 200th birthday of another great benefactor of human freedom, Abraham Lincoln.

Charles Darwin a benefactor of freedom? Yes. Even aside from the case argued by Adrian Desmond and James Moore in *Darwin's Sacred Cause* (Houghton Mifflin Harcourt, 2009)—that hatred of slavery inspired the great man to argue for a single human origin—understanding natural selection in itself opens paths to freedom. Consider the multiple ways in which the principle informs vital applied research in a host of disciplines, most notably today in agriculture and medicine. The dramatic effects of artificial selection practiced by humans were a clue that alerted Darwin to the broader principle of natural selection. Now that researchers understand that principle, they can manipulate it to more easily develop disease-resistant crops and to improve various types of drug therapy. Thus Darwin's legacy daily enhances freedom from hunger and disease.

But as important as these and other practical benefits may be, Darwin's insights can lead to another sort of liberation—from the sense of powerlessness to address the world's problems. Although Darwin showed unequivocally that humans are zoologically animals, he was also impressed by our species' exceptional qualities, including our "god-like intellect" and our benevolence to even the "humblest living creature." A modern understanding of human evolution makes clear that *Homo sapiens*' ability to manipulate its physical environment and the reasoning that supports that ability have granted us influence over the whole globe.

It is a breathtaking story: a process relying on random mutations for its raw material spurred the emergence of creatures who debate legal and ethical codes and care about their future. The evolutionary tale reveals us as constrained in crucial ways by our animal heritage, but also individually unique and uniquely able to envisage possibilities and make collaborative plans in a changing world. Good ideas, as well as advantageous genes, tend to spread. Teachers might find that these evolutionary insights, as well as the practical benefits stemming from natural selection, are an energizing counter to the misapprehensions of students who arrive in class believing that Darwinism promotes only immorality.

Persistent untruths about natural selection that blame Darwin's conception for social ills will have a baleful effect unless knowledgeable scientists promote a more accurate view. Yes, it is undeniable that social movements have in the past abused "survival of the fittest" to defend grave injustices, but that's all the more reason for biologists to help make amends. November will see the 150th anniversary of *On the Origin of Species,* another opportunity to put that volume on a pedestal. Biologists will be serving society well if they remember that Darwin's insight not only delivers practical benefits but also affirms humans' power to work together toward hopeful futures.

TIMOTHY M. BEARDSLEY
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