



On My Mind

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Of Chicks and Frogs

How Hollywood dumbs down movies about cute animals—and misses a chance to teach evolution.

AT LEAST SINCE THE SCOPES Monkey Trial religious forces have tried to corrupt American science education by sowing confusion about evolution, the cornerstone of biology. But their most pernicious effect may not be in overt inanities like anti-Darwin warning stickers in textbooks, which in any event the courts have stymied. Rather, they may have succeeded in making evolution seem so controversial and morally fraught that educators and entertainers sidestep the fuss and just don't go there.

A couple of popular recent movies offer a case in point. *March of the Penguins* delighted millions with its stunning footage of emperor penguins trekking through forbidding ice fields to bring food back to their offspring. But a striking aspect of the spectacle—that parents listen for the unique calls of their chicks, rather than feeding the nearest or neediest one—is left unexplored. What a missed opportunity to explain the core idea of modern evolutionary science, that organisms are adapted to promote the replication of their genes, rather than the greater good of the species. We are meant to experience moral uplift at penguins' parental dedication but are given no insight into the laws of nature.

Another recent dazzler, *Winged Migration*, is also evolution-free. We fly with the birds for thousands of miles as they brave predators, hunger and horrific weather. Yet we are never told why the birds undertake this semiannual madness. There is no mention that organisms are opportunistic in the competition for food and that many birds evolved to take advantage of the brief Arctic summer, with its concentrated profusion of insects and seeds, while escaping its winter, which is too cold for them to rear chicks. The film is a visual spectacle for us to gaze at uncomprehendingly.

One more example: I recently bought a frog from a Web vendor that claims that its wares are “perfect for class projects, science fairs and anyone who appreciates the wonder of nature.” Yet



***March of the Penguins* misses the core idea of evolution, that organisms adapt to promote the replication of their genes.**

the site fails to reveal the name of the creature (*Xenopus* or “strange foot”) or explain why it has such odd features, like being flat as a pancake, lacking a tongue and having feet that face backwards. This frog madly flaps food into its mouth with its forelegs, which the Web site describes as “clapping its hands.”

Once again, a golden opportunity to explain the living world has been wasted. The African clawed frog lives in water, but it evolved from standard frogs, who spend much of their lives above the surface. Over time *Xenopus* lost its sticky tongue (useless in the water), modified the use of its hands to catch prey and reshaped its feet and body for streamlined swimming. Its silly appearance is a product of this

retooling, a fascinating but untold story.

The only message conveyed by these supposedly educational media: Cute animals do weird things. This may encourage children to become eco-tourists but not to become scientists. From the time they are young, scientists are energized by explanations, by the “Aha!” that comes from understanding why something is the way it is. And with living things, the answer to “why” questions always involves evolution. When you take the evolution out of biology, you dumb it down, turning it into a circus of animal antics rather than a source of deep and satisfying insight.

The unspoken taboo on evolution is not just a tragedy of missed educational opportunities. Our health and economy increasingly depend on biomedical research, from the epidemiology of bird flu to the treatment of AIDS, which depends on understanding evolution. Asian countries, which lack America's squeamishness about evolution, are hell-bent on expanding their biomedical research sector. If we don't overcome our reluctance to excite our children with modern biological thought, it doesn't take a Darwin to predict who will be selected in this struggle for survival. **F**

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