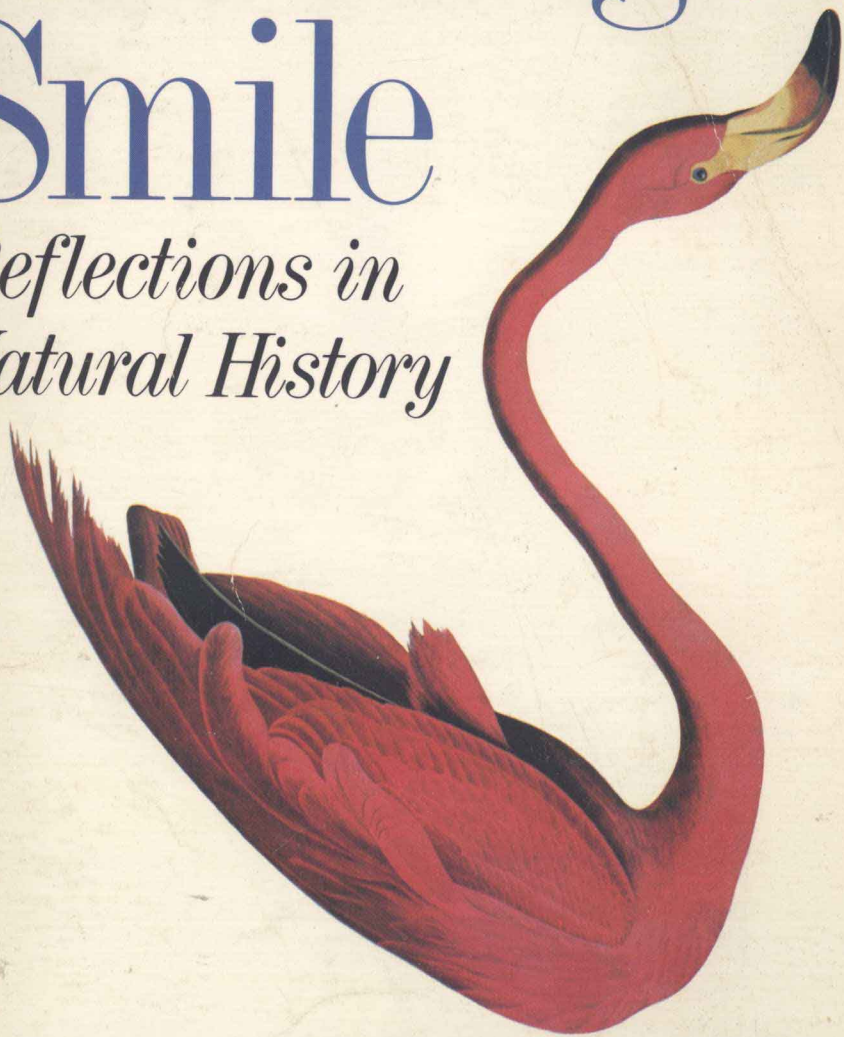

The Flamingo's Smile

*Reflections in
Natural History*



Stephen Jay Gould

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Natural History*

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The Flamingo's Smile

By the same Author

Ontogeny and Phylogeny

Ever Since Darwin

The Panda's Thumb

The Mismeasure of Man

Hen's Teeth and Horse's Toes

FOR DEB

for everything

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The Flamingo's Smile

Prologue

IN THE MEDIEVAL GLASS of Canterbury Cathedral, an angel appears to the sleeping wise men and warns them to go straight home, and not return to Herod. Below, the corresponding event from the Old Testament teaches the faithful that each moment of Jesus' life replays a piece of the past and that God has put meaning into time—Lot turns round and his wife becomes a pillar of salt (the white glass forming a striking contrast with the glittering colors that surround her). The common theme of both incidents: don't look back.

The Flamingo's Smile is my fourth volume of essays from monthly columns in *Natural History Magazine*; it also contains my hundredth contribution to a genre that I once considered both more ephemeral and impossible to sustain. Thus, I will also break Lot's injunction, hope for a sweeter fate, and look back upon the previous volumes.

One brand of Scotch often graces *New Yorker* back covers with its claim that Angus Mac-somebody-or-other (and ancestors of that ilk) have been throwing the caber on the same field since 1367, give or take a few years. "Some things never change," the bottom line (literally) proclaims. Some things better change (however difficult under punctuated equilibrium), if only to allay boredom, but fundamental themes (like a successful blend) should revel in persistence. If my volumes work at all, they owe their reputation to coherence supplied by the common theme of evolutionary

theory. I have a wonderful advantage among essayists because no other theme so beautifully encompasses both the particulars that fascinate and the generalities that instruct.

Evolution is one of the half-dozen shattering ideas that science has developed to overturn past hopes and assumptions, and to enlighten our current thoughts. Evolution is also more personal than the quantum, or the relative motion of earth and sun; it speaks directly to the questions of genealogy that so fascinate us—how and when did we arise, what are our biological relationships with other creatures? And evolution has built all those creatures in stunning variety—an endless source of delight (though not the reason for their existence!), not to mention essays.

To map the changes within this persistence, I reread the prefaces to my other volumes and found a coordinating theme, linked to times of composition, for each. *Ever Since Darwin*, as a first attempt, presented the basics of evolutionary theory as a comprehensive world view with implications for a political world (of years just following the Vietnam War) that treated human diversity more generously. *The Panda's Thumb* highlighted a series of debates (about rates and results) that arose among professional evolutionists and imparted renewed vigor and range to “this view of life.” *Hen's Teeth and Horse's Toes* appeared in the shadow of resurgent Yahooism—so-called “creation science” as preached by Falwell and company—and required a gentle defense of both the veracity and humanity of evolution.

The Flamingo's Smile has a different kind of trigger—a specific discovery with cascading implications. It now seems, to use the favored jargon of the profession, “highly probable” that an errant asteroid or shower of comets provoked the great Cretaceous extinction (dinosaur death knell and, conversely, the Introit for our own evolution). Moreover, such quintessentially fortuitous and episodic restructurings of life have occurred several times, perhaps even on a regular cycle of some 25–30 million years. The particulars are striking (pun intended, I suppose), but the general implications are even more arresting, and beautifully coincident with persistent themes that infest all my columns—the meaning

of pattern in life's history (partly random and, in any case, not designed for us or towards us); the social implications of scientific assaults upon pervasive biases of Western thought (my favorite four horsemen of progress, determinism, gradualism, and adaptationism—all severely questioned by the impact theory of mass extinction). At the center stands the one theme that transcends even evolution itself in generality—the nature of history. *The Flamingo's Smile* is about history and what it means to say that life is the product of a contingent past, not the inevitable and predictable result of simple, timeless laws of nature. Quirkiness and meaning are my two not-so-contradictory themes.

All this sounds awfully tendentious and may lead readers to fear that potential pleasure has been sacrificed on a bloated altar of imagined importance (my volumes have become progressively longer for an unchanging number of essays—a trend more regular than my mapped decline of batting averages from essay 14, and a warning signal of impending trouble if continued past a limit reached, I think, by this collection). My potential salvation in the face of admitted egotism must remain an unswerving commitment to treat generality only as it emerges from little things that arrest us and open our eyes with “aha”—while direct, abstract, learned assaults upon generalities usually glaze them over. Even my most grandiloquent essay (emphatically not my best)—number 29 on continuity itself—arose as a gloss on a small observation: the mingling of sacred and profane in the iconography of Pio Quatro's Palace in the Vatican.

I placed my essays on reversals and boundaries (part 1) at the beginning because they best exemplify this style of letting generality cascade out of particulars—three essays on inversions of general expectations (flamingos that feed upside down; female insects that supposedly eat their mates after copulation; flowers and snails that change from male to female, and sometimes back again); and two on continua and the problem of boundaries in nature (are Portuguese men-of-war individuals or colonies, are Siamese twins one person or two). Each essay is both a single long argument and a welding together of particulars.

Throughout most of Europe, the communication of science to a general audience has been viewed as part of humanism, as an honorable intellectual tradition stretching from Galileo, who wrote in Italian to bring science beyond the Latin confines of church and university, to Thomas Henry Huxley, who was as fine a literary stylist as many a great Victorian novelist, to J.B.S. Haldane and Peter Medawar in our own times. In America, this worthy activity has been badly confused with the worst aspects of journalism, and “popularization” has become synonymous in some quarters with bad, simplistic, trivial, cheapened, and adulterated. I follow one cardinal rule in writing these essays—no compromises. I will make language accessible by defining or eliminating jargon; I will not simplify concepts.

I can state all sorts of highfalutin, moral justifications for this approach (and I do believe in them), but the basic reason is simple and personal. I write these essays primarily to aid my own quest to learn and understand as much as possible about nature in the short time allotted. If I play the textbook or TV game of distilling the already known, or shearing away subtlety for bare bones accessible in the vulgar sense (no return work required from consumers), then what’s in it for me?

All these essays are based on original sources in their original languages: none are direct reports from texts and other popular summaries. (The propagation of error, by endless transfer from textbook to textbook, is a troubling and amusing story in its own right—a source of inherited defect almost more stubborn than inborn errors of genetics.) My errors are my errors.

These essays, in this light, fall into three categories. Most are exercises in personal scholarship. Some reach new interpretations (at least to me): I think that my reading of Tyson as a conservative supporter of the chain of being and not as an innovative pioneer of evolution resolves the disparities between his text and the usual analyses (essay 17); I found that Wells’s first statement of natural selection is not so consonant with Darwin’s later version as most commentators have held (essay 22); although Kinsey’s previous