

and their (very low) probability of surviving the journey and establishing themselves far from the home site (7). Further refinements of dispersal kernels could incorporate trade winds (8) and other underlying mechanisms (9). Such a mechanistic modeling approach (9) is especially promising for rafting, the primary mechanism of transoceanic dispersal highlighted in *The Monkey's Voyage*—for which uncertainty can be reduced by incorporating information on the properties of the rafts as well as on the passengers, wind drifts, and oceanic currents (10). Furthermore, there exists a wide spectrum of dispersal-vicariance scenarios. Historical biogeography should go beyond assigning cases to these two extreme alternatives and should instead quantify their relative importance. The scope of investigation should also be expanded beyond the hallmark examples of terrestrial species moving across oceans, because long-distance movements of marine and aerial species, as well as those of terrestrial species over land, have also greatly contributed to shaping the geographical distribution of the world's biota.

Considering the probability of an explanation is essentially the common practice of nearly all aspects of our life. Yet, it is not only the histories of life and human societies that have largely been shaped by unlikely black swan events. Each of our lives is a product of an idiosyncratic chain of events, which can be considered highly improbable yet an evident reality. The central arguments of *The Monkey's Voyage* appear to be increasingly well recognized nowadays in such diverse fields as statistics, economics, engineering, computer sciences, earth sciences, chemistry, physics, and biology. It is time to proceed beyond broad awareness of the general concepts to develop quantitative frameworks to better understand the unexpected—and to cope with the high impact of rare and unpredictable “monkey's voyage” events.

References

1. C. Darwin, *The Origin of Species by Means of Natural Selection* (John Murray, London, 1859).
2. A. R. Wallace, *Island Life* (Macmillan, London, 1880).
3. G. Nelson, *J. Hist. Biol.* **11**, 269 (1978).
4. N. N. Taleb, *The Black Swan: The Impact of the Highly Improbable* (Random House, New York, 2010).
5. J. Klafter, I. M. Sokolov, *First Steps in Random Walks: From Tools to Applications* (Oxford Univ. Press, Oxford, 2011).
6. V. Méndez et al., *Stochastic Foundations in Movement Ecology: Anomalous Diffusion, Front Propagation and Random Searches* (Springer, Heidelberg, 2014).
7. R. Nathan, *Science* **313**, 786 (2006).
8. J. Muñoz et al., *Science* **304**, 1144 (2004).
9. R. Nathan et al., *Trends Ecol. Evol.* **23**, 638 (2008).
10. M. Thiel, L. Gutow, *Oceanogr. Mar. Biol.* **42**, 181 (2005).

10.1126/science.1250904

EXHIBITION

“Nature and Art Beneath One Roof”

Charles III of Spain (1716–1788) was at heart a scientist. As an Enlightenment despot, he conceived the museum of the Prado in Madrid as a place where arts and sciences would be united. Unfortunately, his death and the Peninsular War (1808–1814) intervened, and his original notion of a royal natural history cabinet was eclipsed by the magnificence of Spanish and Netherlandish paintings. Perhaps it's arrogant to try to resurrect the notion of the Prado as a cabinet of curiosities, but contemporary Spanish artist Miguel Ángel Blanco has had the temerity to insert a selection of installations of natural objects in direct response to the great paintings.

Blanco has emplaced his 22 “interventions” with delicacy, because after all most visitors come to puzzle over Velázquez's *Las Meninas* and do not want to be distracted by an albino sparrow. Or they would prefer to sorrow with Juan de Flandes' *Crucifixion* rather than inspect the gems at the foot of

the cross. Nor would they want to be long deflected from Goya's stunning *Witches' Sabbath* to admire the anatomy of the hags' familiars (bat skeleton, cobra, toads, salamander, and moose hoof) displayed, many in jars of formalin, below. Although the stuffed Veragua bull staring at its feminine counterpart in Peter Paul Rubens' *Rape of Europa* certainly has presence and the wolf-whistle calls of birds of paradise giving voice to Frans Snyders' *Concert of Birds* do echo down the long gallery, maybe the intrusions are too polite. And I am not sure Blanco's approach entirely works—in part, because his pieces are so dwarfed by the splendor of the Prado's permanent collection. Nevertheless, his project succeeds in prompting visitors to look again and to notice how very often natural objects were used as props and symbols in great paintings by grand masters.

—Caroline Ash

10.1126/science.1253427



Miguel Ángel Blanco's *The Veragua Bull*. Rubens' *The Rape of Europa* (1628–29) and *Bos taurus*.