

## About the Cover

# A Fall From Grace To... Virulence?

Peter Daszak and Aleksei Chmura

Consortium for Conservation Medicine, 460 West 34th Street, 17th Floor, New York, NY 10001, USA

In Bruegel's painting of *The Fall of the Rebel Angels* we are witness to a tumbling maelstrom of falling rebel angels outcast from Heaven. Within the fray stands St. Michael in gilded armor, and his angels-at-arms serenely in pale albs, and almost as if threshing grain, hewing and striking down this inconceivable rout. The main focus of the image and what draws the eye is the extraordinarily creative mélange of creatures; mixtures of human, animal, plant, and inanimate objects slashing and stabbing as they fall from the great battlefields in the skies. They pour down in a vast column that stretches infinitely from the luminous sun; they fall from the light to the darkness. The column of falling angels is so numerous that it widens to encompass the whole lower canvas as it approaches the viewer. With a start, then, we realize that Bruegel intends that we too are in the thick of this. Will we succumb to the multitudinous horde? Are we to be cast downward into chthonic chaos represented here by the heaped up gibbering phantasmagory against which we rail and struggle?

Clearly Bruegel intended for us to identify with St. Michael and his comrades. The classic imagery of religious battles between humanity and evil, is straightforward fodder for us to digest, but is there another metaphor here? If the fallen angels represent the evil mirror image of St. Michael and his cohort, so they also represent the mirror image of our own genetic kind—pathogenic organisms which are otherwise just like us, but have fallen from grace through an evolutionary (not spiritual) pathway

that takes them to a netherworld where they can feed only on our genes, our cells, our flesh. On closer scrutiny, we can see that Bruegel has depicted the Natural World—specifically chosen it as proxy for the fallen angels—for both its fascinating wonder and horror. Thus may we surmise that nature was, in Bruegel's mind, itself as strange, wondrous, and horrific as the fallen angels that he depicted in the juxtaposed forms of otherwise anatomically correct fishes, bats, and frogs? Bruegel was an urban man and precisely because of his lack of intimate knowledge of Nature, he was likely able to observe it with such precision. No doubt he was influenced during time spent in France & Italy by that unique Renaissance creation, the scientific method, or means to learn about phenomena via empirical evidence. Today, we are not unlike Bruegel as we view the wondrously diverse animals and plants that represent nature, peering beneath this palimpsest the pathogens that threaten to plague us? AIDS, SARS, Malaria, West Nile Virus, and Avian Influenza are but a few of these fallen angels that have burst from out of the Natural world to wreck havoc causing countless deaths and economic losses.

In Bruegel's curious chimeras, we find yet another analogy—for the genetic recombination, mutation and evolution that negative-stranded RNA viruses in particular undergo as they shift, morph and adapt to their changing habitat—animal cells. Here St. Michael is at risk of more than just the prodding of a sword. Here he is at the mercy of the tooth and nail of glycoproteins sharpened and honed to strike with precision through the gaps in his golden armor. As Pulliam shows in this issue of *EcoHealth*, this battle continues in reality as human encroachment into wildlife

habitat, and the increasing globalization of agriculture, trade and travel bring us into dramatic juxtaposition with a seemingly infinite number and variety of viral angels hosted by the wildlife we contact and exploit. In this prescient scene, Bruegel reminds us that our battle against novel zoonotic pathogens is far from over: They lie in wait in a multitude of surely the same overwhelming dimensions as Bruegel's column of descending angels. Perhaps he reminds us also that it is the nature of our interactions with wildlife—here represented as an evil entity for humanity to vanquish—which cause new zoonoses to emerge in the first place. Perhaps the EcoHealth view is that if we tread carefully, we might avoid those nasty little pincers waiting to nip!

## THE ARTIST

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Born in Flanders either in Breda (located in present-day Netherlands) or Bree (in present-day Belgium), our cover artist, Pieter Bruegel the Elder (c. 1525–1569), achieved renown as a painter of peasant life and providing us with an unparalleled glimpse at bucolic and urban daily routine of the sixteenth century. Proverbs and biblical scenes, particularly from the New Testament, such as depicted on the cover of this issue, were among Bruegel's frequently painted themes. He was indisputably one of the masters of Renaissance painting. Bruegel died in Brussels in early September 1569. Though he died fairly young, he established a line of three generations of painters.