

The Rap Guide to Evolution (DVD, 2012; Baba Brinkman, <http://rapguidetoevolution.co.uk/>; \$25.00)

The Rap Guide to Evolution, brainchild of the Canadian rap artist Baba Brinkman, is a series of 10 music videos produced with support from the Wellcome Trust. Brinkman also did a rap version of the *Canterbury Tales*. I liked the off-Broadway performance of this self-described “hip-hop tour of evolutionary biology.” Teachers may present science in surprising contexts in order to captivate a non-science-major or those with a borderline interest. A high point of my intro genetics lecture on Mendel is the YouTube video of rapping “monks,” cassocks swirling, dervish-like (“Peas, brothers”). Teachers may also be familiar with Pete Weatherall’s songs on DNA and cell division. Brinkman’s energetic performance videos, containing clever lyrics, engaging animations, choreography, and splashy graphics, may be used as hooks to spark interest in a genetics or science history lesson.

The menu-selectable videos include “Natural Selection,” “Artificial Selection,” “I’m a African,” “Creationist Cousins,” “Survival of the Fittest,” and six others. Some selections are suitable only for adult audiences: “Hypnotize,” “Darwin’s Acid,” “Worst Comes to Worst,” and “DNA” include images, lyrics, or graphics of a sexual nature.

Students will sing along with parts of “Natural Selection,” when the chorus intones the principle of natural selection: “The weak and the strong, Darwin got it goin’ on... whoever leaves the most spawn,” as the bearded rapper Darwin gyrates and twirls. A copy of the lyrics could be provided by the teacher in order to facilitate this sing-along. In “Artificial Selection,” Brinkman describes Darwin as “the first to translate his amazement at the wonder of life into a way to explain it.” My favorite video, and the best produced, is “I’m a African,” in which

Brinkman raps the origins of mankind: “Africa is where my momma got her mitochondria” accompanied by wild graphics. Don’t expect to hear the word “mitochondria” in a 50 Cent or Jay-Z rap. I’ve been humming “The fossil record has gaps but no contradictions” all morning.

In “Performance, Feedback, Revision,” Professor Baba compares the process of writing a rap with evolution and natural selection, showing how random changes due to mutations alter the text or performance piece (the genetic code). The altered text sees the light of day in the organism’s phenotype (the performance), which is accepted or rejected by natural selection (or the audience), feeding back on the endless creative cycle of life. The songs can be downloaded at <http://bababrinkman.bandcamp.com/album/the-rap-guide-to-evolution>.

Roberta Batorsky
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Fresh: New Thinking About What We’re Eating (DVD, 2009, 70 minutes; Ana Sofia Joanes, <http://www.freshthemovie.com>)

Viewing the DVD *Fresh* definitely gives one food for thought. We meet an urban farmer, a sustainable farmer (made famous in *The Omnivore’s Dilemma*), and a market owner confronting a Wal-Mart economy, among several farmers and other U.S. business professionals who are reformulating the food system.

The film exposes us to the industrial approach to agriculture, monoculture and factory farming. It’s all about efficiency. However, industrial standardization just does not work on everything, agriculture being a notable failure. Monocultures are dangerous, requiring a multitude of antibiotics, pesticides, herbicides, and fertilizers. We see industrialized livestock production with its

factory farms, feed lots, and manure lagoons full of hormones and pesticides. A quote from the film: “According to the Environmental Protection Agency, our present agricultural practices are responsible for 70% of all the pollution in the U.S.’s rivers and streams.”

Enter sustainable agriculture! Farmers practicing sustainable agriculture do not use more resources than they return. Joel Salatin, a sustainable farmer states, “If you’re committed to the land, then you do something different. You look at nature as the template, and say: how can we most closely approximate this?” The video supplies information about the increased health benefits, better taste and greater comfort to the animals that sustainable agriculture provides. Food is the foundation of this video, but it is really all about life.

This 70-minute film can be broken up into classroom-convenient segments and lends itself to productive discussions around the risks and consequences of industrial versus sustainable agriculture. One could find substance for bioethical investigations. I recommend this film for middle school students through adults.

Terra Antarctica – Rediscovering the Seventh Continent (DVD, 2009, 46 minutes; John Bowermaster, <http://www.videoproject.com>)

It’s all about the ice. This breathtaking video allows us to see the most pristine place on our planet, Antarctica, but the message is that the planet is in trouble. It’s a good news/bad news scenario. The good news is that the ozone layer is no longer growing, a result of the halt on chlorofluorocarbon emissions. The bad news is that in the past 50 years, the temperature has increased from 5°F to 9°F. This growing/shrinking continent of ice is the temple of the world’s weather; there is more precipitation than ever, and it is taking its toll on the diversity of animal life.

An example mentioned in the film is the 20% decline in the Adélie Penguin population.

Antarctica is a fragile ecosystem. As the ice shrinks and exposes the rock beneath, countries are already disputing ownership of the oil, diamond, and mineral rights. Another despoiler of Antarctica's fragile equilibrium is the 40,000 tourists per year who visit the continent .

If you or your students have never seen an albino penguin, a collapsing ice arch, men diving into 29°F water, swimming penguins, or 22-foot sea kayaks navigating ice flows and floating sentinels (icebergs), this video is for you. One of the themes we investigate with our biology students is the human impact on the environment. Students from middle school through college will have an opportunity to hone their critical-thinking skills by viewing and discussing this film.

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the complex of a community of organisms and its environment functioning as an ecological unit.

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