

SCIENCE IN FILM

Better Reception in Europe?

Stuart Firestein

Sometime in the career of every scientist there is a moment when he or she asks “Why, really, am I doing this? Who cares?” Imagine how much more intense that feeling might have been for ancient astronomers trying to fathom why some stars wandered through the heavens in predictable but incomprehensible paths—gazing up each night at a star-filled sky and wondering what it all meant.

Spanish director Alejandro Amenábar’s film *Agora* captures this passion and how it often borders on lunacy. The film is set against a panoramic history of the struggle between the faith demanded by religion and the incessant questioning of the scientist (even if the two world views coalesce on many things). Amenábar has chosen early 5th century Alexandria for his place and a female Greek philosopher, Hypatia, as his heroine. Neither is perfect, because the history is blurred. But both are powerful as metaphor, with just enough historical fact to be curiously, and frighteningly, contemporary.

When the film begins, the cult of Christianity is on the rise in Alexandria, whose great library houses the largest extant collection of classical writings. In fact, this was probably only the daughter library, the Serapeum, as the main library seems to have been destroyed earlier (Julius Caesar is often blamed). No matter, the library is the repository of ancient knowledge and the center of the intellectual life of the pagan Greeks who governed the city and practiced an early form of science.

Only slightly less historically blurred is the character of Hypatia (played with grace and passion by Rachel Weisz), a brilliant female philosopher, mathematician, astronomer, and teacher, whose existence has been verified although none of her writings have survived. Among her multiple interests seems to have been conical curves, the geometrical method of finding the four main curves (circle, ellipse, parabola, and hyperbola) within different cuts of a cone. She is portrayed as courageous: Besides disregarding the political dangers she faces, she insists on not settling for the

Agora**Alejandro Amenábar, director**

Mod Producciones, Himenóptero, and Telecinco Cinema, Spain, 2009. 126 minutes. <http://agorathemovie.com/>

easy answers (at that time, the ungainly but predictively powerful Ptolemaic system of circles within circles).

One of the many beauties of the film is its seamless interplay between the personal and the panoramic, in both time and space. Amenábar uses shots of Earth from space and of the city-state of Alexandria from high overhead to frame the self-important and antic-looking activities of individuals scurrying about trying to understand a world they can never quite grasp. This visual metaphor captures the futile, foolish, beautiful, and inevitable faces of science. At one point, Hypatia remarks that if only she could unravel a little more and know what governs the “wanderers” (the observable planets), she could go to her grave happy. It is a deeply touching moment because you, we, know how much there is she will in fact never know. And we can’t help think, are we any different?

Amenábar’s film surprisingly and unflinchingly dives into the tension between science and religion, and the view he offers is not black and white. The “scientific” Greeks are just as devoted to their pagan gods as the new Christians are to their savior. The Greeks are blind to the truth of planetary movement because they cannot imagine Earth moving or the heavens being governed by anything but perfect circles. Science can be as blind as religion, and the results can be almost as devastating.

In a particularly compelling cinematic moment, as the Christian mobs sack the library, scrolls are ripped from their shelves, torn apart, and flung into the air. The camera slowly pans from the roof to the floor; gravity seems disjointed as papers fly in all directions and rationality is chased out the door, not to return for another ten or so centuries. How unsettling to watch the world turned over so easily, by a mob, by politicians manipulating a crowd.

Hypatia, working her way through the mechanisms of the heavens while nearly blind to the far more complicated mechanisms of humankind, makes the leap to a heliocentric universe and planetary orbits guided by ellipses, not perfect circles. If perfect circles aren’t the rule in the heavens, why should we expect perfection here on Earth? Her realization comes just as she is seized and murdered by a mob of Christian zealots, convinced she is a witch for espousing crazy ideas about God’s creation and for not accepting her subordinate role as a woman.

Because this is the movies, Hypatia is given the moment when she realizes that elliptical orbits are the solution to her paradoxical observations and that Earth indeed moves through the heavens, it is just another wanderer. While there is no record that she had this epiphany, her study of conical curves makes it plausible. In any case, it would be



another 1200 years before Johannes Kepler, a devout Christian, demonstrated the elliptical paths of the planets and changed our view once and for all.

Agora is a movie you don’t want to miss. Released last year in Europe to considerable acclaim, it won the Sloan Foundation award for best science film at the Hamptons International Film Festival (2009) and has finally found an American distributor, after a year-long search. See it, take your students to see it, take your mother to see it. It is a profoundly affecting film.

Another European film did not fare so well in its Atlantic crossing. I recently had the opportunity to see two versions of Jacques Perrin and Jacques Cluzaud’s *Océans*. The French original was released in January to popular and critical acclaim. The Disney-distributed version debuted in the United States on Earth

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Day. It is no secret that the two versions are quite different, with the Disney release marked by several cuts, and that some of the sponsoring organizations had their affiliations removed from the American version.

In one omitted scene, a young boy and an older man walk through a natural history museum of extinct marine animals. Another missing scene shows them standing in front of an admittedly beautiful aquarium exhibit while the narrator remarks “but if this is all there was it would be ... a sad reflection of the real world” we are destroying. The suspicious may see the deletion of this touching scene as an egregious act of corporate self-interest (Disney being a big player in the marine theme park biz).

In the U.S. version, Pierce Brosnan drones on with an insipid narration, full of platitudes and often unwarranted optimism. The more powerful original has little narration and leaves the viewer undisturbed to experience the beauty of the oceans without being told

Océans

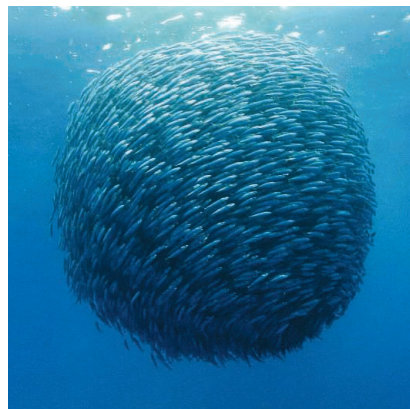
Jacques Perrin and Jacques Cluzaud, directors

Galatée Films, France, 2009.
100 minutes.
www.oceans-lefilm.com/

Oceans

Jacques Perrin and Jacques Cluzaud, directors

DisneyNature, USA, 2010.
87 minutes. <http://disney.go.com/disneynature/oceans/>



what to think. The worst transgression of all may occur in an unlikely place: the credit roll. In the original, a thoughtful warning about the state of the globe from the older man and his young companion dissolves into the credits. These roll to a slow and pensive ballad while haunting footage, mostly from earlier scenes, maintains the sense of humility appropriate to thinking about the oceans and what we are doing to them. In the Disney version, a nonsensical upbeat derivative rock song, “Make a Wave,” accompanies shots of the cameramen and others actually making the movie—as if the whole thing were just some more Hollywood pretend.

Now it may be that once Disney becomes a film’s American distributor, one has to expect concessions for the children who will now be the target audience. And perhaps a case can be made that getting to young children and making them environmentally conscious will serve an important future function. But public policy about the environment is being decided now by adults who are uninformed or misinformed—not by children who in 30 years might feel good about the oceans because they saw this movie when they were 8.

To me, a larger question is why there is no adult market in the United States for an environmentally sensitive and demanding film with an informed and important scientific message. Did potential American distributors turn down Amenábar’s star-filled, award-winning, historical action film because it had a cogent scientific theme? Why are films like *Océans* and *Agora* finding strong, sophisticated, adult audiences in Europe and failing to attract attention in America?

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FILM: ENVIRONMENT

Takes on Hunters and Roads

Once again, we took advantage of the annual Environmental Film Festival in the Nation’s Capital to sample movies that “celebrate the wonder of the natural world and illuminate the growing challenges to life on Earth.” This year’s festival (the 18th) featured 155 films, many of which explored links between our foods and the environment. Some works addressed the ecological implications of various human activities; others focused on green practices and potential solutions to the problems we face. A few—

such as the four-part *Rauta–Aika (The Age of Iron)* (1982), filmed from poet Paavo Haavikko’s interpretation of the Finnish national epic, *Kalevala*—seemed hard to link to the environment under even the most inclusive approach. The screenings were often enhanced through discussions with the filmmakers and involved experts and activists. Brief descriptions of all of the films can be found at www.dcenvironmentalfilmfest.org/films.php. Here are comments on several that we managed to catch.

Lords of Nature: Life in a Land of Great Predators. Karen Anspacher-Meyer and Ralf Meyer, directors. Green Fire Productions, USA, 2009. 60 minutes. www.lordsofnature.org

The early-20th-century extirpation of wolves from Yellowstone National Park was followed by pronounced changes in vegetation. Elk browsing on young trees had a drastic impact on willow, cottonwood, and aspen. After wolves were reintroduced to Yellowstone in the 1990s, recruitment of these trees rebounded (elk became more skittish and shifted their feeding habits). The wolves also had other effects: their kills supported more scavengers; beaver recolonized streams, feeding on the flourishing willows; pronghorn lost fewer calves to coyote; reestablished streamside vegetation retarded erosion and provided cover for birds, fish, and invertebrates. Yellowstone serves as the film’s prime example of the ecological importance of top predators, and the Meyers highlight research carried out there by Bill Ripple and Bob Beschta. *Lords of Nature* follows the scientists to Zion National Park, where they record data on the similar effects of cougars on ecological diversity and resilience.

Recognizing that the large predators can only persist when they are tolerated by humans, the filmmakers visited livestock producers in Minnesota (home to more wolves than any state except Alaska) and Idaho. These cattle farmers and sheepherders describe nonlethal approaches (such as trained guard dogs, fencing flocks at night, and spooking predators) that they have successfully used to reduce their losses to (and conflict with) wolves.

The film returns several times to the experiences and reflections of wildlife biologist Aldo Leopold. While working for the Forest Service, he had helped

