

MEDIA COLUMN

In addition to longer reviews for the media column, we invite you to watch for and submit short snippets of instances of women in mathematics in the media (WIMM Watch). Please submit to the Media Column Editors: Sarah J. Greenwald, Appalachian State University, greenwaldsj@appstate.edu and Alice Silverberg, University of California, Irvine, asilverb@math.uci.edu.

A Conversation About the Film *Agora*

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In this article, Capi Corrales Rodríguez (CCR) and Alice Silverberg (AS) have a conversation about the film *Agora*.

CCR: I went into the theater, with a female physicist friend, ready to have a wonderful time. I had heard on the radio that Amenábar's film *Agora* stands for reason against prejudice, for science against superstition and for freedom against coercion, all of them values that I identify with. Furthermore, said the newsperson, the director takes us to fifth century Alexandria, a geographically and historically fascinating place, and there, to the life of a most interesting female mathematician and philosopher, Hypatia. I was captivated right away. As soon as the movie began, I started smiling. With his Google Earth-like initial images, Amenábar brings to mind *Asterix and Obelix*, one of the most wonderful pieces of fictional resistance against an intransigent (and not very smart) invader, letting us spectators know that we are about to be told an engaging story of heroes bravely standing against a greedy enemy. How is it, then, that despite my willing attitude, the promising ingredients and the suggestive beginning, I was never able to get into the movie?

Could it be its absolute lack of plausibility? No, I do not think so. I am completely entranced every time I read *The Three Musketeers*, *Homer's Daughter* or *Shadows of the Pomegranate Tree* or watch *The Iron Mask*, *Shakespeare in Love* or television series like *I*, *Claudius* and *The Wire*. Nevertheless, I cannot care less whether or not these wonderful pieces of historical fiction could be true. It is not truth that I need, but credibility: only when a story is capable of being believed, only when it has intrinsic coherence, can I be moved and trans-

ported into it, identify with its characters and live with them through their fortunes and misfortunes. But Amenábar did not give us such a possibility. Whenever we were about to be carried away by the tale, whenever we were about to dive in, he cheated. And each time this happened, I felt as if I were a surfer riding a wave and my board had suddenly been removed from under my feet. Who can enjoy being treacherously thrown, over and over again, into cold water? Not me, and this is why I did not like *Agora*. And the more I think about it, the less I like it.

AS: What I liked most about *Agora* was the strong depiction of a protagonist who was an intelligent and mathematically inclined woman. That's unfortunately very unusual in popular entertainment. What I most disliked was the fictionalization. What we know, or think we know, about Hypatia seems to me to be much more interesting than the fiction that was chosen to replace it.

CCR: My thoughts about the film led me to recall *Samarkand*, the wonderful historical novel by Amin Maalouf. In this fictional history, Maalouf takes us into the world of the Persian mathematician, astronomer and poet Omar Khayyam, who, like Hypatia, spent all of his life dedicated to mathematics and thought at the vertex of a whirl of political intrigues and religious fanaticism crucial for the coming to be of our present civilizations. Unfortunately, there is hardly any other similarity between Maalouf's Omar and Amenábar's Hypatia. The first is a man who fully and freely lives a fascinating life and grows to be a wise elder; his choices are guided by his passion for knowledge, for mathematics, for the power of the mind, for beauty and pleasure. We want to be like him. We want to be with him. We want to live, see and feel what he lived, saw and felt.

On the contrary, Amenábar's Hypatia is a young girl with such a limited life that it is not surprising that she chooses to study the stars. What else could she do? Who, in her right sense, would like to live like her, always trapped under the walls built around her by men's gazes? As female mathematicians, we understand well how inhibiting that is. There are no other women around her: no female colleagues, no female relatives, no female friends, no female playmates, no female servants. Even when she is naked in the intimacy of her bathroom, she is exposed to men's surveillance. No matter how beautiful and young the slave boys bathing her were, the image gives us goose pimples. What a male fantasy! Is that the prize that a woman must pay to have the body of Aphrodite and the mind of Plato? If so, I don't know a single woman that would be willing to pay it.

Whether such a woman as Amenábar's Hypatia could really have existed or not, is irrelevant for me. I simply cannot be less interested by his tale and, according to what I have heard from friends living all over the world, many other women felt the same way. Considering the clear commercial stand of the movie and that we, women, make up at least fifty per cent of film audiences, I think Amenábar would have been better off had he chosen to present a more desirable character. He certainly could have done so. Although not much is known about the real Hypatia, the sources (analyzed, for example, in [Dzielska, 1995] chapters 2 and 3) present us a woman who, as Khayyam, fully and freely lived a fascinating life and grew to be a wise elder. When we read about her, we want to be like her, we want to be with her, we want to live, see and feel what she lived, saw and felt. By the time she died, in her sixties, she occupied an important social, political and cultural position in Alexandrian society.

AS: The film and our discussion about it prompted me to read more about Hypatia. As you know, there is a lot of controversy about the history and the dates.

While researchers now think it likely that Hypatia was about 60 years old at the time of her death in the year 415, arguments can be made that she was born as late as the year 375, in which case she would have been 40 when she was killed ([Deakin, 2007] gives justifications for various birth years).

As Dzielska points out, the legend and myth of Hypatia have persisted in our culture more than the facts. And some of it was perpetuated by influential figures, such as Edward Gibbon in his *Decline and Fall of the Roman Empire* and Carl Sagan in *Cosmos*, which makes the fiction harder to shake. The more romantic fictional interpretations of Hypatia, which the film seem to follow, favor a very young Hypatia.

Naturally, I would have preferred a middle-aged heroine to the "male fantasy" Hollywood beauty we were given (Deakin believes Hypatia was both old and beautiful). However, the isolation of the female scientist surrounded by men was so familiar to me as a mathematician today that, while sad, it seemed effective.

CCR: I found the descriptions of the religious upheavals to be neither credible nor interesting. Among Hypatia's students, all of them members of the Alexandrian oligarchy, there were pagans, Jews and Christians, and most of them became powerful members in the political and ecclesiastical hierarchies. The sources indicate that she was killed because of her political influence. When in 412, three years before Hypatia's murder, Theophilus, the Christian Patriarch of

Alexandria, died, two candidates struggled to be the next Patriarch. One was Theophilus' nephew, Cyril, the other the Archdeacon Timothy, whose candidacy was endorsed by the city's Imperial Prefect Orestes. Cyril became Patriarch and, after establishing an alliance with Rome, started to prosecute and seize the properties of the Emperor's Pagan and Jewish supporters, becoming in this way a danger for the metropolis, Constantinople. As Imperial Prefect, Orestes openly opposed and refused to endorse Cyril's excesses, who then brought into the city, as his personal Praetorian Guard, five hundred monks from the Nitria Desert. When, in 415, Orestes founded his political party, Hypatia openly spoke in its favor and, consequently, the political circle under her influence supported Orestes. Experts indicate that for this reason Cyril's supporters killed her. Hers was a political crime. She was not victim of the excesses of an illiterate and fanatic mob, but the objective of a plot by the Alexandrian hierarchy. Out of this material Amenábar could have created several wonderful fictional characters. Unfortunately, he seems to be among those who still believe that women are never supposed to grow to be wise elders, and that never, never before in history, no matter when and where, have women held political power or influence, that being just feminist wishful thinking. Whatever does not happen in our Western society has never happened before, because, is not ours, at least for women, the best of all possible worlds? Come on, Alejandro, we are in 2010!

AS: I thought that the film did a reasonable job of making the political intrigue and Hypatia's political power clear. The extent to which Hypatia's murder was a premeditated political plot or the action of a spontaneous mob seems also to be controversial, with the less scholarly depictions favoring the latter.

CCR: There is one more aspect in the film I felt cheated by: its scientific content. I am aware that this aspect is not essential for a movie to be credible but, nevertheless, as a female mathematician involved also in scientific popularization, this aspect of the movie is important for me. Explaining scientific ideas and history of science to a general public is quite a difficult task, but when it is done well, scientific popularization can be truly fascinating. The friend with whom I went to watch *Agora* teaches physics at an adult education high school, while I teach mathematics at a university. Having heard on the radio some references to orbits and planets, while waiting for the movie to start we had been playing at guessing its scientific material. Neither of us expected to find references to Hypatia's recently discovered work (mostly on

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Euclid, Diophantus or Apollonius), which is too theoretical to have cinematographic value. It had to be something visually powerful. What examples could we think of that, coming from the ancient Greeks, would be visually powerful? Eratosthenes' calculation of the radius of the Earth using only sticks and camels? Ptolemy's orbital system? Aristarchus' heliocentric model of the Universe? What, out of the many wonderful scientific works of the ancient sages, had Amenábar chosen? To our surprise, nothing else than the elliptical orbits of the planets and free falling of bodies from ship masts! I find it extremely implausible that Hypatia, a theoretician who lived long before the age of telescopes and at a time in which words were still used to denote numerical quantities, could have made Kepler's discovery that the ellipse is the curve that explains the orbits of the planets, or figured out Galileo's Law of Inertia. For me, the claim that Hypatia could have made such discoveries is not just a blunder or a subtle case of European intellectual colonialism; it is a cruel way of blasting over the heads of the audience a balloon full of freezing water.

AS: Maybe my expectations have become unreasonably low after watching too much American television, but I actually liked the film's attempts to convey the way scientists think. I thought it did a good job with the visual images and the clear simple explanations, and I felt that the concepts were close enough to what could have been discovered at the time, that I found them sufficiently credible in the context of the film.

CCR: In Spain, Amenábar's film had many spectators because the public's curiosity was aroused simultaneously on two fronts. On the one hand, it won seven of the 2010 Goya Awards of the *Academia de las Artes y las Ciencias Cinematográficas de España*; on the other hand, many religious groups protested against it. Consequently, in the first weeks after it was released, people went to see the film that had won so many Goya Awards and that had made various religious groups so angry. But it was not very successful; it got very poor reviews from the specialized critics and it was found mostly boring by the public.

When the Spanish artist José Luis Alexanco was asked for a definition of Art, he answered: "I don't know how to define what Art is. What I know is that, as Flamenco musicians say, either a piece has art or it does not have art." Despite the correctness of the values it defends and the interesting issues that it addresses, *Agora* has no art. It takes place at a

concrete time, the fifth century, in a concrete city, Alexandria, and depicts the life of a concrete woman, Hypatia, and none of this can be taken lightly. The fifth century, with the emergence of organized religions, is a hinge-century in the history of Europe and the Mediterranean; Alexandria was one of the cradles of Western civilization; and Hypatia, besides being an active member of one of the most interesting schools of thought that we know of, is one of the few adult women—among the many born before the twentieth century who were intellectually and/or politically powerful—whose existence has not been completely washed away from our collective memory. Unfortunately, Amenábar proves to be no *chef* for such ingredients. Posing no questions and lacking ideas in its structure, *Agora* tells us way too much that is both trivial and not credible and hides even more that is most interesting. Perhaps there lies the clue to its lack of art.

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