

An award-winning director and a renowned mathematician

join forces to create a groundbreaking film

"... a stunning short film... offers an unusual romantic vision of mathematician." (Le Monde)

Edward Frenkel

Kayshonne Insixieng May

Is there a mathematical formula of love without death?



Rites of Love and Math

A film by Reine Graves and Edward Frenkel

Homage to the film «Yukoku» by Yukio Mishima. Produced, written and directed by Edward Frenkel and Reine Graves. Director of Photography: Daniel Barrau. Associate Producer: Sycomore Films. Supported by Fondation Sciences Mathématiques de Paris.

rites of love and math

A film by Reine GRAVES and Edward FRENKEL

Homage to the film "Yukoku" by Yukio MISHIMA

Written by Edward FRENKEL and Reine GRAVES

Director of Photography: Daniel BARRAU

Associate Producer: Sycomore Films

Supported by Fondation Sciences Mathématiques de Paris

CAST:

Mathematician: Edward FRENKEL

Mariko, his lover: Kayshonne INSIXIENG MAY

26 min, in color, HD with 5.1 surround sound

Official Web site: <http://www.ritesofloveandmath.com/>

Trailer: <http://vimeo.com/15492339>

French TV Report: <http://www.youtube.com/watch?v=43oXtACTjXc>

IMDb page: <http://www.imdb.com/title/tt1530994/>

Official Selection of the [Sitges International Film Festival](#), 2010.

Official Selection of the Sexy Paris International Film Festival, 2010.

Grand Festival Award, Berkeley Film and Video Festival, 2011.

rites of love and math in the media

... a stunning short film... offers an unusual romantic vision of mathematician.

(Rites d'Amour et de Maths, **Le Monde**)

...an astonishing film... Aesthetically perfect...

([The Duality between Love and Math](#), **Tangente**)

The clean red, white and black color scheme, the simplicity, the staging of it on a Japanese theater set, the music... – all lend themselves to the symmetry, logic and metaphor of math while also breaking through the barriers of conventional cinema... vibrant and captivating, bringing abstraction to life... a truly enthralling and resonating film.

([Rites of Love and Math](#), **San Francisco Examiner**)

Berkeley professor Edward Frenkel brings his passion for math to the masses – by starring in an erotic film.

([Erotica, Intrigue, and Arithmetic in 'Rites of Love and Math'](#), **East Bay Express**)

Simply gorgeous looking... Vivid colours and cautious use of sound give things a fresh flavor... the surprise comes from the tattooing...

([Short Film, Short Review: Rites of Love and Math](#), **Twitch**)

Sensual math film.

([Rites of Math Professors and Berkeley](#), **San Francisco Bay Guardian**)

Feature film... with drama, intrigue, love, sex and a tattoo.

([The true language of love? It's math, says Berkeley professor Edward Frenkel, whose steamy new film touches a nerve](#), **UC Berkeley News**)

University of California-Berkeley Professor Edward Frenkel is world-renowned for his work with automorphic representations and the geometric Langlands conjecture. He's also a trailblazer in a different arena: erotic film.

([Berkeley Math Professor Edward Frenkel Branches Out Into Erotic Film](#), **Huffington Post**)

...highly stylized ode to Japanese cinema featuring a sex scene and a ritual suicide... is what Edward Frenkel chose to convey his passion for mathematics.

([Math Professor Creates Unconventional Film](#), **Daily Californian**)

Set in the Japanese Noh theatre, like Mishima's film, Rites is... beautiful to look at... If Frenkel's goal was to bring more people to maths, he can congratulate himself on a job well done.

([Erotic Equations: Love meets mathematics on film](#), **New Scientist**)

Who says math isn't sexy?

([X³-Rated Thriller](#), **Science Magazine**)

rites of Love and Math

Synopsis of the Film

Mathematics is first and foremost pursuit of Absolute Truth and Beauty. This is the story of a Mathematician who has found, after many years of hard work, the ultimate Formula of Love. At first, he was thrilled that his formula would benefit people, bringing them eternal love, youth and happiness. But later he discovered the flip side of the formula: it could become, if used in the wrong way, a weapon against Humanity. And so forces of Evil are now after the Mathematician. They want to take possession of the magic powers of his formula and use them in order to achieve their sinister goals. The Mathematician knows that there is no escape for him, and he is ready to die. But he has to protect his formula. The Mathematician has a secret love affair with a beautiful Japanese woman, Mariko. They decide that he will tattoo the magic formula on her body.

Notes on the film “Rites of Love and Math”

The film *Rites of Love and Math* is a sprawling allegory about Truth and Beauty, Love and Death, Mathematics and Tattoo, set on the stage of the Japanese Noh theater. How did this movie come about and what motivated its creators?

Edward Frenkel is Professor of Mathematics at University of California at Berkeley and one of the leading mathematical physicists. In 2008 he became the first recipient of the Chaire d'Excellence award bestowed by the Fondation Sciences Mathématiques de Paris, which enabled him to spend a year in Paris. Reine Graves is a talented French filmmaker who has directed a number of original and controversial films that have won prestigious awards (Pasolini Prize for *Je vous salue Judas* and Henri Langlois Prize for *Contrast*).

Having met in Paris, Frenkel and Graves decided to create a film showing the beauty of mathematics. But how to do this without getting bogged down in technical details of the subject that could scare away non-specialists? Looking for the right metaphor, they came across the idea of making the tattoo of a mathematical formula as a way to express its beauty. They found the aesthetic language for expressing this allegory in the enigmatic film *Rite of Love and Death* (also known as *Patriotism* or *Yukoku*) by the great Japanese writer Yukio Mishima. That film had a very unusual and mysterious history of its own: banned for almost 40 years, with all copies supposedly destroyed after Mishima's death, it was finally released on DVD in 2008 (in the Criterion Collection) after the original negative was miraculously found in a jar of tea... The fascinating imagery of Mishima's film and the original idea of Frenkel and Graves have led to the creation of their *Rites of Love and Math*.

The film premiered at the Max Linder Panorama Theater in Paris on April 14, 2010, and has been subsequently screened at film festivals and other venues on three continents. It has been featured in *Le Monde*, *San Francisco Examiner*, *UK Guardian*, *Huffington Post*, *Science magazine*, and other publications, as well as TV and radio programs around the world.

Statement by the directors

This film is about the beauty of Mathematics. It is a fantasy and allegory, in homage to the rich and exquisite aesthetics of the short film *Rite of Love and Death* (also known as *Patriotism* or *Yukoku*) by the famous Japanese writer Yukio Mishima. That film, made in 1966, was banned for almost 40 years after Mishima's death, but it came back on DVD in the Criterion Collection in 2008.

We were fascinated by the elegance and beauty of Mishima's film and thought that this aesthetic framework would be perfect for the film that we had envisioned. In our film we follow some elements of Mishima's style and visual imagery, but not his story or his ideas. Like Mishima's film, our film is set on the stage of Japanese Noh Theater, and we also have the music from Wagner's beautiful opera *Tristan and Isolde* (as a well as a rock variation on its theme) playing in the background. But our main character is a mathematician (not a military officer of Mishima's film) who becomes a hostage of the magic powers of a formula he has invented. Our main idea is that a mathematical formula could be beautiful, just like a painting, or a poem, or a piece of music.

Mathematics represents here ancient knowledge and truth which merge with the human body in the ultimate act of love. In our film the painting on the wall reads "Truth" in Russian, instead of "Sincerity" in Mishima's film.

The name of the female character is Mariko, which means "truth" in Japanese. The film is symbolic, and Mariko represents in it Truth and Mathematics, for which mathematicians sacrifice their lives.

The dangers posed by the "formula of love" allude to the moral dilemmas that scientists face in their research, which may sometimes be used for evil purposes.

REINE GRAVES

Biosketch

Reine Graves was born in Libourne, near Bordeaux. She studied literature and then took up a career as a model and started taking acting classes. But she really wanted to be a film director, so she moved to Paris to study directing. There she became the muse of famous photographers and fashion designers such as Jean-Loup Sieff and Martin Margiella. She was photographed by Nan Goldin. Her career and worldview were also influenced by the writer Jean Rolin, painter Pierre Weiss and filmmaker Robert Kramer.

Graves has written and directed an adaptation of *Medea* for the Gerard Garouste Foundation "*La source*". She played the role of Grace Kelly in Pierre Huyghe's remake of *Rear Window* and performed in theater, in plays by Ibsen, Goethe, Moliere, Kleist and Nathalie Sarraute. She also played the role of the muse in a documentary film on the painter Pat Andrea.

Graves has directed several award-winning films such as *Contrast* (Henri Langlois Prize), *Je vous salue Judas* (Pasolini Prize), and *Marylin*, which was made during her stay in New York in 2001.

Her most recent film, *Rites of Love and Math*, co-written and co-directed with Edward Frenkel, tells the story of a mathematician who has invented a formula of love.

EDWARD FRENKEL

Biosketch

Edward Frenkel grew up in Russia and then moved to the US. He received Ph.D. in Mathematics from Harvard University at the age of 23 after one year of study. He stayed on at Harvard, first as a Junior Fellow at the prestigious Harvard Society of Fellows, and then as an Associate Professor. He was offered Full Professorship at University of California at Berkeley at the age of 28 (one of the youngest ever), and he has been Professor of Mathematics at Berkeley since then. In 2008 he received the first Chaire d'Excellence award from Fondation Sciences Mathématiques de Paris.

Frenkel has authored two books – most recently, *Langlands Correspondence for Loop Groups* – and about 80 articles in mathematical journals, and he has lectured on his work around the world. Among his other awards are the Hermann Weyl Prize and Packard Fellowship in Science and Engineering.

Recently, Frenkel has turned to cinema, driven by the desire to show the beauty of mathematics and unveil some of its secrets to wide audience. He has co-produced, co-directed and co-written the film *Rites of Love and Math* with Reine Graves, in which he has played the lead role. He has also written (with the writer Thomas Farber) a screenplay for a full-length feature film [*The two-body problem*](#).

Visit <http://math.berkeley.edu/~frenkel>

Is there a mathematical formula of love without death?

Jacques Henric

There is an old story which we are told over and over in the literature and the arts: that of a union between Eros and Thanatos. In Western culture, Homer has given it the point of departure, the great Greek theater took it to the next level, and Christianity brought its personal touch to this omnipresent concept of life. The author of *Tristan and Isolde* told us from the outset that it was a beautiful “story of love and death” that he was giving to all of us.

The Orient, the Middle and Far East, has never been particularly willing to celebrate the inescapable link between love and death. But Japan was the exception to the rule. One could deal with the issue in a long-winded tedious way, or one could go straight to the heart. This is what Mishima has done in his film *Rite of Love and Death*. In just thirty minutes of the filmed spectacle the essential has been said.

There is also a lesser tradition in literature, philosophy and morals, which strives to ease and even bluntly cut the link between Eros and Thanatos. In the course of the XVIII century, French Libertines followed it, but in the XIX century, with the advent of Romanticism, “love to death” came back into fashion, and the past century (not to mention the current one) did nothing to liberate itself from the influence of this ideology and this moral philosophy. In Japan, on the other hand, a deep-rooted tradition, close in spirit to that of French Libertines, has nourished a grand and steady literary current as well as an essential trend in painting striving to produce the most beautiful images. One can see this attitude, both ethical and aesthetic, in the Japanese term *ukiyo*, which means a certain ideal of gallantry, as evidenced by the existence of geishas and the narratives in which they are the heroines (this invokes the erotic prints of Hokusai and Utamaro or the photographs of Araki which are their kitschy continuation, notably the series *Tokyo lucky hole* and its “Polamandala” -- according to *Erotism of classical Japan* by Alain Walter).

However, Mishima did not belong to this culture of pleasure. The psychoanalyst Catherine Millot has defined the concept of love and sex as “erotism of grief.” Mishima’s superb film illustrates in a radical fashion a certain impossibility of sexual possession; more precisely, what Lacan calls the sexual non-relation (not the act, but the non-relation -- what a mathematician would mean by this logical term). This does not prevent, as demonstrated in the film, the suicide from occurring as the result of sexual exaltation. The non-relation manifests itself rather by the fact that, according to Mishima, orgasm (*juissance*) is the noble pathway to what psychoanalysts call “castration complex,” and the final scene of *seppuku* is to be viewed as the “passage to the act,” the disembowelment evoking in truth a real castration in front of a woman. “There existed in me a certain pure and simple split between the spirit and the flesh,” wrote Mishima as the narrator of *Confessions of a mask*.

What has motivated Edward Frenkel and Reine Graves to make their film *Rites of Love and Math*? Is it to drive not just the nail, but the knife, if one may say so, between spirit and flesh, or is it to finally reconcile them? Without a doubt, they first had to revisit the film of Mishima in its continuity and get as close as possible to its formal beauty. But how can they, at the end of the day, create a distance from its mortified theme? In the film that they envisioned, the central character is not a military man but a mathematician. He fights not for honor, but, like his ancestors in science and philosophy, for truth. So here is the question, philosophical, religious, political, moral: should one sacrifice himself and die for the truth?

Yes, said Socrates, Giordano Bruno, Michel Servet..., and all scholars and thinkers who did not compromise with the truth and preferred death to disowning it. No, said the philosopher Kierkegaard.

Let’s see what the response is of Reine Graves, the author of several avant-garde films, not very politically correct, which have won prestigious awards (Pasolini Prize for *Je vous salue Judas* and Henri Langlois Prize for *Contrast*) and Edward Frenkel, Professor of Mathematics at University of California at Berkeley and brilliant mathematician (among his numerous honors are Hermann Weyl Prize and Chaire d’Excellence from Fondation Sciences Mathematiques de Paris), who has always had the ambition to track down the absolute truth. How do they respond to this crucial question in their film *Rites of Love and Math*?

About the author: Jacques Henric is a renowned French writer and critic, and a founder and editor of the influential art magazine *ArtPress*.