



Rites of Love and Math

A film by Reine Graves and Edward Frenkel

Homage to the film “Rite of Love and Death” by Yukio Mishima
With Edward Frenkel and Kayshonne Insieng May
26 minutes,
Supported by Fondation Sciences Mathématiques de Paris
Available at:
<http://ritesofloveandmath.com/>

Reviewer: Julie Rehmeyer

The climax of the new film “The Rites of Love and Math” comes – both literally and figuratively – when the Mathematician has just finished tattooing his formula of Love onto his beloved’s belly in a passionate, mathematical frenzy. She writhes from the jabs of his bamboo tattooing pen, finally breaking through the silence to cry out in pain, ecstasy, something.

Mathematics, we’re supposed to see, is an erotic art.

While that idea might induce giggles and embarrassed glances around the departmental common room at tea-time, it has a noble pedigree. Socrates taught that the first moment of longing after a sexy body is also the first step in learning to love absolute, unchanging, unembodied truth. Loving one beautiful body naturally leads to adoring beautiful bodies in general and then to loving all beautiful things and then to loving most the most beautiful things of all. For Socrates that means philosophy, with only a brief stop along the way at mathematics. But we mathematicians can perhaps forgive him for a slight misapprehension of what lies at the very peak of human endeavours in order to consider how his conception may illuminate the experience of doing mathematics.

As absurd as the juxtaposition of mathematics and erotic ecstasy might seem, mathematicians do love doing mathematics passionately. A mathematical problem can seduce: sometimes instantly and totally, in the mathematical version of love at first sight, and sometimes more slowly, like a striptease, as the problem reveals more of itself over time. Coaxing the problem into succumbing demands one’s full powers of creativity, attention and devotion. A puzzle can obsess one much as a lover does, present even when absent, occupying the mind while the body blankly pushes change into the parking meter or refills the coffee cup.

Of course, non-mathematicians rarely get a glimpse of this. There are few things less erotic, after all, than a mathematics exam returned covered in red ink.

“The Rites of Love and Math” undertakes the noble task of baring the erotic side of mathematics to all and its co-creator, mathematician Edward Frenkel, was so committed to the effort that he was willing to bare his own erotic side to all – along with much of his front and back – in the process. He plays the Mathematician, who has resolved that he must kill himself to protect his discovery

of the formula of Love from the forces of Evil that would somehow use it as a “weapon against Humanity”. But first he makes highly stylized love to his secret girlfriend Mariko (Japanese for “Truth”), moving slowly from one erotic pose to the next as Wagner’s Tristan operatically questions the meaning of life. His final task is to keep his formula alive but safely concealed after his death by tattooing it onto his beloved’s belly. The music shifts to a cacophony of electric guitars and Mariko and the Mathematician lock eyes as she submits to the rapturous pain of being indelibly marked with mathematics. She writhes in some unknowable combination of agony and pleasure as he becomes lost in frenzied concentration, no longer aware of anything beyond her beautiful, increasingly mathematical belly. He brings his effort to a climax with its final $d\omega$ as her masochistic pleasure reaches its own crescendo. Finally, revealed in blue ink on her lustrous flesh is beauty itself: the formula of Love (which is taken from Frenkel’s own work on the Langlands program).

Having finished his task – and still without so much as a glance at his beloved’s face – the Mathematician stabs himself with the bamboo pen. Mariko, meanwhile, is too absorbed in her own recovery to notice. Once she’s come to, she kisses his dying body and slowly, artfully pulls on her kimono, glancing back as she walks away from her fading lover, her body now carrying his mathematical seed.

The plot raises basic questions that it never answers like: What the heck is a “formula of Love” anyway? How could it be used as a weapon against humanity? And how does tattooing it on Mariko’s body help matters? Instead of narrative thrust, the film aims to develop an aesthetic vision of mathematics. The events unfold on a Japanese Noh stage, with no dialogue, a minimum of props and, with the exception of the tattooing scene, only the slowest and most controlled movements. It is trying to be a kind of visual poem, with the brushstrokes of scene and plot pointing toward some allusive (and elusive) whole.

Frenkel and his co-director Reine Graves meant the film as an homage to the 1966 Japanese short film “The Rite of Love and Death”, in which the main character is a Japanese lieutenant played by Yukio Mishima, a three-time nominee for the Nobel prize in literature who also wrote, directed and produced the film. At the start of that film, the lieutenant is in a nasty fix. He had planned but then not participated in a coup that has now failed and, as a member of the Imperial Guard, he will be required to kill his comrades the following day. The only honourable path, he decides, is suicide before morning. His bride Reiko resolves to join him in the everlasting, welcoming death so completely that she “feels as she did on her wedding night”. As in Frenkel’s version, they make love, showing off the effects of Mishima’s bodybuilding in a series of beautifully framed poses. The lieutenant then disembowels himself, lingering as he pushes down his loincloth to find the ideal spot to thrust the sword into his perfectly muscled abdomen. He sweats and grimaces as he pulls the sword across his belly, his intestines finally spilling from his body. Meanwhile Reiko (and the

camera) follows his sufferings in gory detail, achieving an intensity of communion that far exceeds the lovemaking. Reiko helps him finish the job by thrusting the sword into his neck and then cuts her own throat.

The original film, though disturbing, bizarre and nearly unwatchable, presents a vision of life as a work of art: pure, austere beautiful, uncompromising, honed sharp as a sword. The film embodies the same aesthetic itself and this unity gives it a powerful resonance even while Mishima's obsessions in the movie – the blurring between sex and violence, the rigid sense of honour, the almost inhuman physical strength and the extreme narcissism – leave the viewer feeling simultaneously reproached for being soft and disgusted by the film's self-destructive and over-simplified ideal. Mishima embraced his vision so thoroughly that four years later, he attempted a coup himself and committed hara-kiri upon its failure. (One certainly hopes that Frenkel doesn't plan a reprise.) Mishima's widow destroyed all copies of the film and it was only 35 years later that the negatives were discovered in a tea box.

The remake takes on the spare outer aesthetic of the original, imitating it shot by shot, while dispensing with the inner aesthetic. The Mathematician's self-sacrifice comes not from an inner compulsion for honour but from an altruistic desire to protect the world. In the original, sex and violence are interwoven by the demands of the aesthetic but in Frenkel's version it becomes an accident of a peculiar moment, as the eroticism of the lovemaking bleeds into the scene of tattooing and suicide. The enjoyment the characters derive from the intermingling then becomes a strange, cringeworthy bit of oversharing. The physical beauty of the movie becomes an illustration of the abstract beauty of mathematics but its physical manifestation is no longer central to the film's vision of the world. The allegory of the original turns into caricature, its diamond-hard inner core replaced with a mash-up of contrived ideas and a dash of mathematics.

This could be forgiven if the film presented a coherent vision of the erotic nature of mathematics. After all, Frenkel is a mathematician, not a professional actor or filmmaker and the movie is at its core an open love-letter to mathematics. But what could the vision be? That mathematics is something burned into the flesh of a woman, causing her pain and delight? Or, if we take the act of writing the formula as a stand-in for the discovery of it, that doing mathematics is far more engaging than sex, so compelling that a mathematician will ignore his beloved while doing it? (One hopes that mathematics' potent charms do not inevitably leave its practitioners so disengaged.) As a picture of mathematical collaboration, the vision is one-sided, with Mariko apparently knowing nothing of the mathematical content and being only a passive repository for it – a piece of paper. Even if we see the Mathematician's beloved as a stand-in for mathematics itself, it's hard to come away with anything beyond the claim that mathematics is sexy.

Socrates offered a deeper analysis two thousand years ago. Though his preferred department in the academy is philosophy (literally, "love of wisdom"), by substituting a few words his comments can easily be read as applying to mathematicians:

"He who in youth has the seed of wisdom and virtue-mathematics implanted in him and is himself inspired, when he comes to maturity desires to beget and generate. He wanders about seeking beauty that he may beget offspring... above all when he finds a fair and noble and well-nurtured soul, he embraces [him], and to such an one he is full of speech about virtue mathematics and the nature and pursuits of a good man mathematician, and he tries to educate him... and they are married by a far nearer tie and have a closer friendship than those who beget mortal children, for the children who are their common offspring are fairer and more immortal. Who, when he thinks of Homer and Hesiod and other great poets Hilbert and Hardy and other great mathematicians, would not rather have their children than ordinary human ones?" (Plato's Symposium, Benjamin Jowett translation, 209b – 209d)

Or, to put it more simply, one of the greatest erotic encounters (though, assuredly, a chaste one) is that between an advisor and a student. A more explicit cultural understanding of the role of the erotic in mathematics might help protect students from Eros gone wrong.

More generally, this points to a little-known aspect of mathematics: it is a social sport. While occasionally an Andrew Wiles will lock himself in the attic for seven years to crack a great problem, most mathematicians work out their ideas by talking about them. They teach their students, they bounce ideas off one another, they nurture their love of mathematics through sharing it. Out of the bond of joint exploration and joy in mathematics grow mind-children carrying the genetic material of both parents, unlike the sterile seed of Frenkel's equation spilled on Mariko's belly.

One of the most uncomfortable aspects of the film is that it creates an erotic relationship between Frenkel and the viewer, whether the viewer wants it or not. Frenkel is acting as the older man, striving to share his love of mathematics and to seduce the viewer into joining him in that love. But this time, Eros has failed him.

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