

R16 MS

Exhibitions

Art plus maths: do they add up?

Benjamin Secher goes to Paris to find out what happened when the weird and wonderful film-maker David Lynch was invited to explore the beauty of numbers

On the top floor of the Fondation Cartier art gallery in Paris, a mathematician with an equation on his tie and a glint in his eye leans towards me as if to divulge a secret. His name is Don Zagier, and he's a number theorist. "I shouldn't be here," he says softly. "What I know about art is less than the man in the street knows about mathematics by a long shot." "But," he adds, flattening his hair across the dome of his head, "I do believe that, at the highest level, the pleasure maths gives is an artistic pleasure. It's not the pleasure of solving a problem or of

doing something useful. It is the pleasure of beauty."

Across the room sits Cédric Villani, a charismatic thirtysomething Frenchman who last year won the Fields Medal, the maths equivalent of the Nobel Prize. He is saying something about "fat triangles" and "lazy gases" that has the *mademoiselles* on his table spellbound: their eyes fall on the flamboyant silk bow that droops below his chin, on the sparkly spider-shaped brooch pinned to the lapel of his tailcoat. Villani has the mind of Pythagoras and the dress sense of Baudelaire. "I forged this look when I was 20," he tells me later, "and there is no rational explanation behind it."

Zagier and Villani, along with a handful of other leading mathematicians – among them Jean-Pierre Bourguignon, head of the French Institute of Advanced Scientific Studies, and robotics expert Pierre-Yves Oudeyer – are here on the opening day of the gallery's new exhibition not as visitors but as contributors.

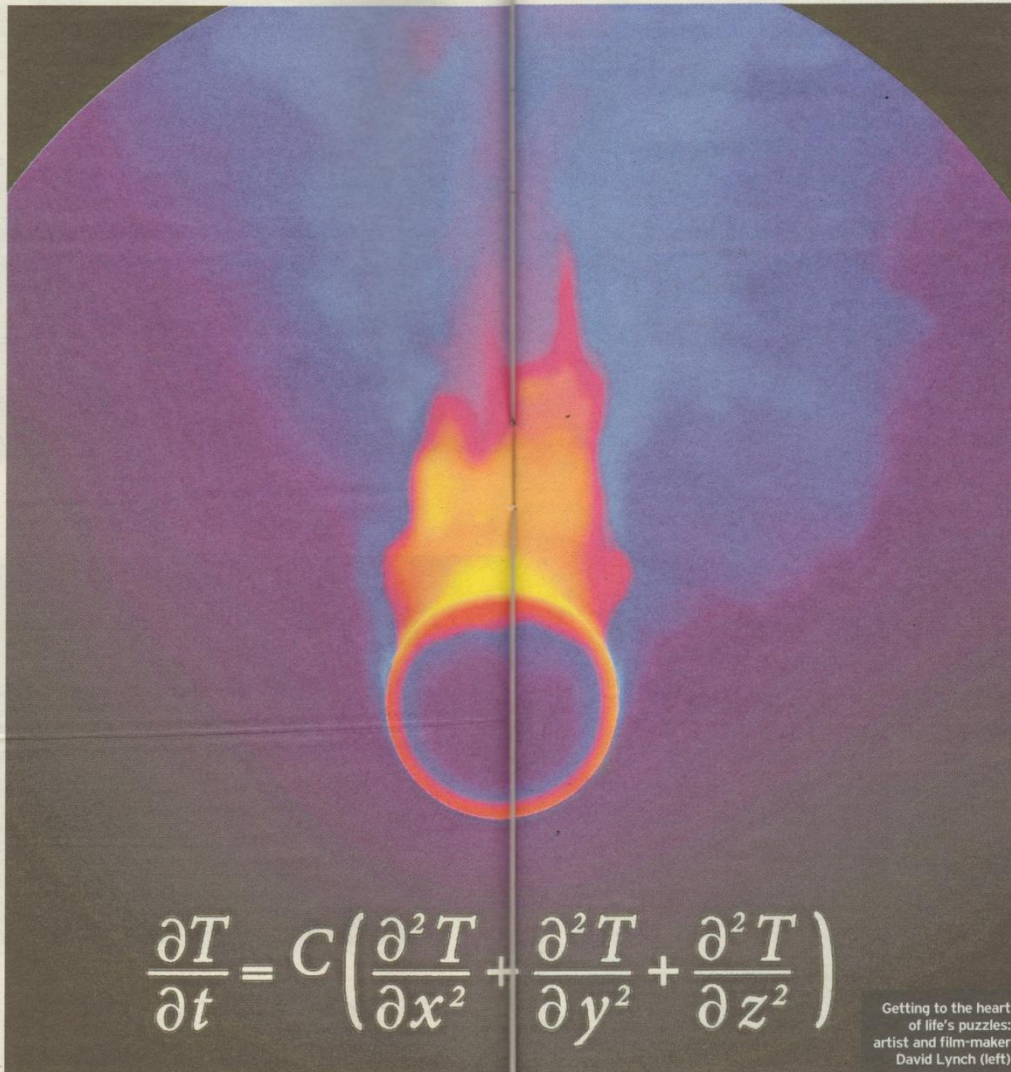
Mathematics – A Beautiful Elsewhere was dreamt up by Fondation Cartier's pioneering director, Hervé Chandès. It is almost certainly Paris's first ever exhibition to explore the aesthetic potential of what he calls the "abstract art par excellence" and what the rest of us know simply as maths. "The art world is all ego, ego, ego," says Chandès. "With mathematicians it's not like that."

He had been toying with the idea of bringing science into the gallery for years when he heard a mathematician talking on the radio about the financial crisis and decided now was the time. He got in touch with Bourguignon who, in turn, contacted the cream of the mathematics community.

Within months, he had furnished Chandès with a dossier containing what he and his colleagues considered some of the most artistically rich ideas in contemporary mathematics. All that was then needed was an artist with the imaginative dexterity to transform the ideas in that dossier into an engaging series of interactive exhibits. Chandès recruited his old friend, film-maker, artist and former Fondation Cartier exhibitor David Lynch.

The American has imposed a typically unsettling design on the show. One room houses an imposing white

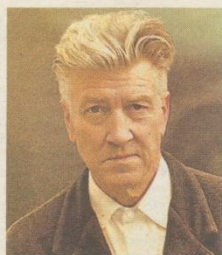
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structure in the shape of a zero. Inside, a punishing two-hour filmed history of maths, inspired by the reclusive Russian mathematician Misha Gromov and part-sung by Patti Smith, is screened on a continuous loop while, opposite, an animation of a fire flickers on a screen in the hearth.

The neighbouring room hosts a live feed from the control room of the Large Hadron Collider at CERN. When I look, it's lunchtime in Geneva: a lone scientist, surrounded by monitors, seems to be fishing something out of a Tupperware box with a fork. Across the gallery, a colony of robots bestowed with "artificial curiosity" by Oudemeyer, and given skull-like faces by Lynch, chirrup like canaries when they're happy and flounder like dying worms when they're not.

Downstairs, the gallery's cinema is screening a documentary by Raymond Depardon and Claudine Nougaret. They have invited mathematicians to present to the camera their brilliant ideas – and terrible teeth – in a succession of beautifully framed four-minute encounters. "Mathematics is imbued with the human spirit," declares Britain's Michael Atiyah in one of them.



'Mathematicians are like painters but their medium is numbers'

"It is a reflection of what people dream."

This is all terrifically engaging and utterly disorienting, so I seek out Lynch, who has flown in from Hollywood for the opening, in the hope of getting some answers. He is closeted away in one of the gallery's offices, proudly sporting a paint-spattered blue workcoat from the famous Parisian printing studio where he's been making lithographs. I ask if maths was already on his mind before Chandès

contacted him. "No," he says with what is either exquisite deadpan timing or deadly seriousness. "I was not interested in maths at all.

"I guess in an abstract way I thought of the great mathematicians as artists, but then when I met these mathematicians I saw it way more clearly. They're just like painters, but their medium is equations and numbers. They're all fired up, they love life, they're happy." He smiles beatifically. "Mathematicians are bright and shiny."

Back on the gallery floor, tucked almost out of sight, Lynch has posted a disclaimer. "The mountains in *The Film of the Universe* are said to be 10²⁶cm" it begins, referring to an animation projected on to the ceiling that depicts objects found in the visible universe arranged in order of size, from the smallest hadron to the largest galaxy. "In reality the mountains on Earth are closer to 10⁶cm but I just felt 7 was so nice and lucky that it had to be 7." What's an order of magnitude between friends?

This kind of thinking – and the mind-bending anti-logic built into the narratives of his films such as *Mulholland Drive* and *Lost Highway* – makes me wonder if Lynch considers maths to be an enemy of the sort of mystery

on which so much of art thrives. "I do think there are mysteries that, when they're solved, you get depressed because it's over," he says gnomically. "But then there is also the big, big mystery and when that is solved, there'll be no depression. In some way, mathematicians are helping to unravel that big mystery."

The show – which also contains sculpture by Japan's Hiroshi Sugimoto and collage by Brazilian artist Beatriz Milhazes – provides plenty both to feed the eyes and tax the brain, but the extent to which it succeeds in narrowing the ideological gulf that separates art from maths remains debatable.

In the end, Lynch admits, "the world of mathematicians is a pretty private club and there are not a lot of people who can go in that room and understand what is going on". He pauses, as if to calculate something, and his raised hands flutter hypnotically on either side of his face. "I would say it is probably easier for the mathematicians to understand me than it is for me to understand them," he says. I wouldn't be so sure.

© *Maths - a Beautiful Elsewhere* is at Fondation Cartier, Paris (00 33 1 42 18 5650; fondation.cartier.com) until March 18 2012