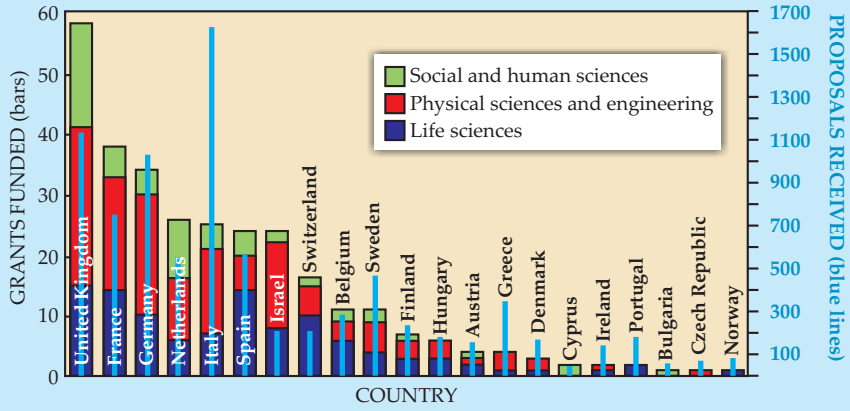
Proposals and awarded grants by country and field



Awarded grants (left axis, bars) and proposals (right axis, blue lines) in the European Research Council's first grant competition. The colors show the successful grants by subject. Proposals submitted from countries that did not receive any grants are not shown. (Data provided by the European Research Council.)

most effective anodes." The ERC grant, she adds, "is really good for people who love science. It can help you perform at your best since you don't have to worry about administrative or other issues."

"I would like to introduce new interdisciplinary graduate and undergraduate programs in nanoscience" to Aristotle University, says Aifantis. "In Greece, the best students usually go out of the country to get their master's and PhD degrees. The local environment often prevents those who stay behind from seeing science as something imaginative and creative. I want to open their horizons to show them something very exciting. I like that I can bring something new, instead of going to, say, Cambridge or Oxford, where they already have these big nanotechnology groups. Some people are telling me it might be more difficult if you are by yourself, but I kind of like the challenge."

It's too early to say what impact the ERC will have. But, says Winnacker, "we are getting a lot of calls. Universities now ask themselves, 'Why didn't we have a candidate for a grant? Why are the UK, the Netherlands, Switzerland, and Israel so successful?' " Governments take the number of grants hosted by each country seriously, he adds. "The French prime minister invited all the grantees who work in France, not only French people, to his office. Angela Merkel [the German chancellor] supposedly does the same thing." Tamás Vicsek, a biological physicist at Loránd Eötvös University in Budapest, Hungary, who has applied for an advanced grant, notes that starting-grant applicants who did well in the competition but didn't make the final cut will be "favorably treated" by Hungary's national research funding agency. The ERC grants, he adds, are "particularly significant" in countries with a low R&D budget.

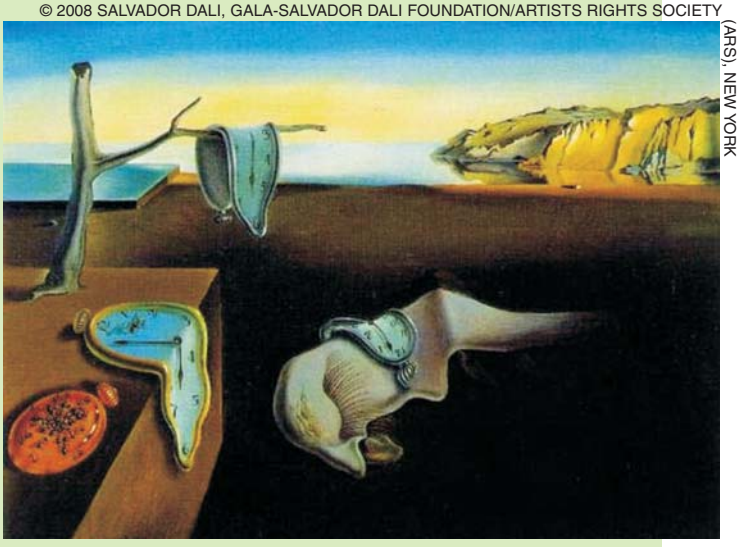
Toni Feder

Interpreting art to teach science

After 35 years of lecturing and researching, "you get fed up. It becomes boring!" says Abraham Tamir. So, for the past 10 years, the professor of chemical engineering at Ben Gurion University in Beer Sheva, Israel, who has published 10 books and 165 scientific articles, has been lecturing, setting up exhibitions—including a museum at his own institution—and writing columns on the interplay between art and science.

Tamir

"I am always looking, looking, looking," he says. "If I go to an art gallery, I'm looking for science in the art." Unlike some artists and scientists who explore connections between the fields, Tamir is not looking for art that derives from science or mathematics. Instead, he looks for ways that art illustrates scientific concepts. His goals, he says, are to get people to appreciate art more and to understand science better. Recently, PHYSICS



Relative art. In Abraham Tamir's classroom, scientific concepts such as special relativity are taught with art. The apple in René Magritte's *The Listening Room* represents mass going to infinity; the clocks in Salvador Dalí's *The Persistence of Time* show time stretching; and the face in Magritte's *The House of Glass* is an example of distance shrinking at relativistic speeds.

TODAY asked Tamir about his newfound passion.

PT: How did you become interested in using art to explain science?

TAMIR: When I was about 15 years old, my parents told me to learn art. I took courses in high school, and this gave me knowledge and interest in art. After many years teaching and researching in chemical engineering, I started to get interested in the interactions between science and art.

I developed a course and taught it at our university. I teach it to students in various disciplines—they don't have to know anything about art or science. The idea is to describe scientific subjects through art—to educate people so that when they are looking at pictures, or artwork, they should try to see what scientific subject is hidden.

PT: What are some examples?

TAMIR: I demonstrate Newton's third law—action is equal to reaction. If a painting shows a person standing on the floor, he is pushing the floor, and the floor pushes back. If there were no counter force, everything would fall into the floor. The order in the universe indicated by this and other basic scientific laws hints at some godlike force—only for scientific reasons do I believe in God.

Another example is Einstein's theory of special relativity. When you move at the speed of light, mass approaches infinity, thickness shrinks to zero, and time stretches. It's not so easy to understand this. However, there is a famous picture [by René Magritte] in which an apple fills the room—that can represent mass going to infinity. And there is a very nice picture by Salvador Dalí of watches oozing like Camembert cheese—time stretching. And in a painting by Magritte you see the front of a man's face from the back. In Einstein's theory this means that near the speed of light, thickness shrinks to zero. With these three pictures, I demonstrate Einstein's model.

PT: What other topics do you cover in your courses?

TAMIR: I give an introduction about art and science. I talk about the human brain, mathematics, symmetry, perspective, and fractals. In chemistry I discuss DNA, water, and other substances. In the life sciences, botany, zoology, evolution, twins, cloning, medicine, cancer, genetics, the human body. In the natural sciences, I use artworks to discuss matter, gravity, sound, light, shadows, colors, surface tension, time, Heisenberg's uncertainty principle, Ohm's law, thermodynamics, fluid flow, and many other subjects.

PT: Your interpretations seem very subjective; what are you trying to achieve?

TAMIR: I am trying to bring to the attention of people the possibility to identify scientific subjects in artworks. In particular, I want students to gain appreciation of art and science. In my experience, once you demonstrate the laws of science with art, you remember them better. If the students wouldn't have liked the course, they would say 'You are a nice guy, be healthy,' and they would not come to my course. But the course is popular, and now I teach it at different places.

Toni Feder

New radiation detectors for US ports leave lawmakers skeptical

Acquisition of next-generation radiation-detection technology that the US Department of Homeland Security says will vastly improve customs agents' ability to counter the smuggling of weapons-usable nuclear materials in cargo and vehicles has been delayed as Congress weighs allegations that the $1.2 billion system hasn't been adequately tested and evaluated.