

Copyright Problems

I can claim the unusual distinction of having had a cartoon published in the *Brazilian Journal of Theoretical Physics*. It was placed there by my friend Nick Rivier.

The cartoon was inspired by the remarks of a conference lecturer, to the effect that the originator of certain geometrical constructions is inclined to threaten legal action if others reproduce them.

It seemed strange, as if Pythagoras would sue for geometrical harassment if someone were to touch his hypotenuse. So I conceived the cartoon (right) in which an artist objects to another's squiggles on the grounds that they are topologically equivalent to his. (Although two things that are topologically similar are unlikely to infringe copyright.)

A real life example is a current legal case involving Penrose tiles. A British toilet roll manufacturer is selling toilet paper embossed with Penrose tiles. It has been claimed this is an improper use of the tiles. The design of the tiles is an actual representation of a topological idea, and therefore entitled to copyright protection. We want to keep readers informed of the outcome of the case.

The matter raises very serious issues. However innocent our motives, we may all be infringing copyright legislation pretty regularly in our publications. How do we know where to draw the line, or rather where drawing the line is illegal?

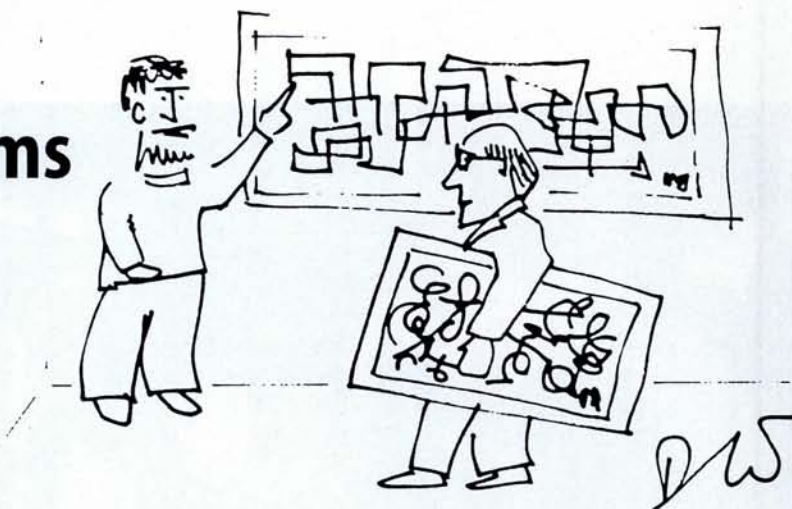
Denis Weaire

(the author is a contributing editor to this magazine and EPS President)

Top right The copyright cartoon first appeared in the *Brazilian Journal of Physics*. It re-appeared in the book *Statistical Geometry of Tissues*, and appears here, with the artist's permission. (see N. Rivier, *Theory of Glass Rev. Bras. Fis.* 15 (1985) 311-378; and *Statistical Geometry of Tissues* A.I. Zotin & I. Lamprecht editors)

Right Two Penrose tiles, invented by British physicist Sir Roger Penrose, which, when tiled, will never form a pattern that repeats itself

Copyright covers the form of expression of an idea, and not the idea itself. Since we are using the tiles **right** to illustrate a point and not to promote a product, we hope no-one will complain about our use of them



YOU CAN'T EXHIBIT THAT — IT'S TOPOLOGICALLY EQUIVALENT TO MINE !

Copyright Basics

Copyright gives an author the right to control the use or copying of his or her work (hence the term copyright). And the basic rule is: you can't make money with another person's idea, writes David Lee.

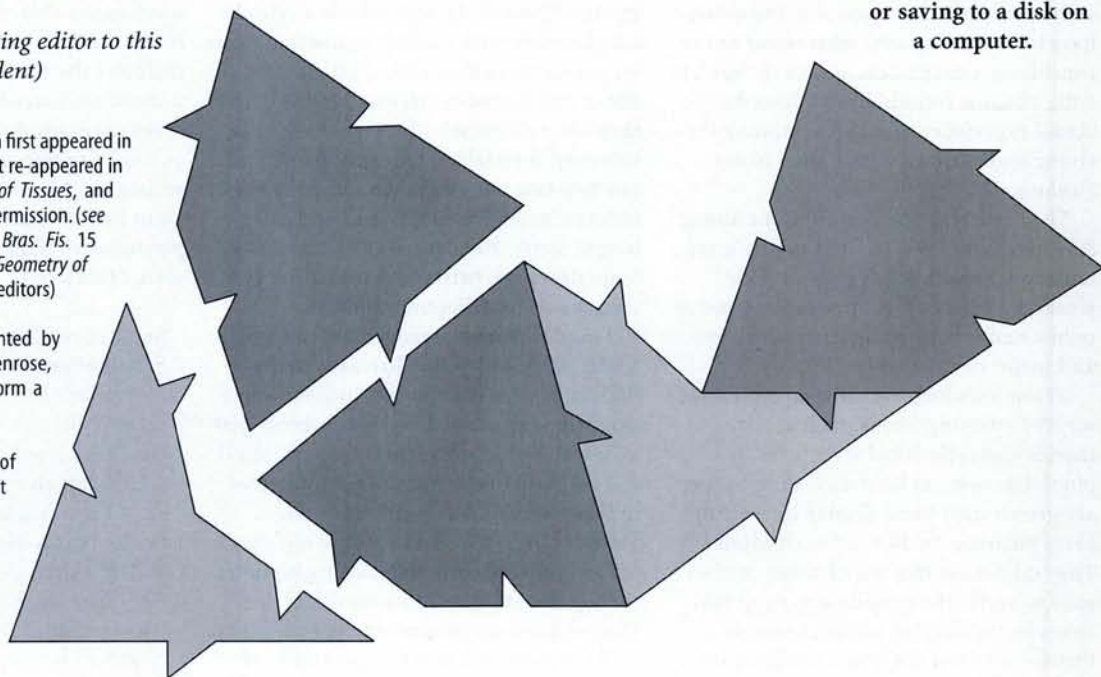
Copying is allowed, in most countries, in a certain set of circumstances – the 'fair use' exceptions. Under these exceptions one person may make limited use of another author's work, without asking permission, in, for example, research, criticism, review, teaching in schools, etc.

This legitimate use is itself limited to practices that do not prejudice the author's economic and scholarly (etc) interests in the work. Examples: Amount of material copied – 500 words of a 10,000 word article (allowed) versus nine lines of

a 10-line poem (not-allowed); the use of the material copied (to highlight an idea versus promotion of a product); the amount of work involved, the originality, or relevance to the material copied (a bar chart from readily available data versus a figure describing the results of original research or experiment).

The term 'copyright' is a category of intellectual property—others are patents, designs, trademarks—that protects original works of authorship, such as literary works (fiction and non-fiction), musical works, etc. Unlike other forms of intellectual property, which normally require registration with a governmental agency, copyright is automatic and exists as soon as the work is transcribed in a tangible (ie copiable) form, such as recording for

music, writing on paper, or saving to a disk on a computer.



from page 93 self." Indeed, Szilárd was so upset about Oppenheimer being called before a security hearing that he drafted a public complaint. With all that Oppenheimer knew, Szilárd wrote with bitter irony, "wouldn't arresting him and shooting him without trial be the only prudent course of action from the point of view of 'National Security'" And, after physicist Edward Teller testified against Oppenheimer, Szilárd proposed that Oppenheimer defend Teller publicly. Szilárd added, however, that he could not tell if this suggestion was serious or not.

Yet in a profound way, Szilárd's wit prompted significant results in the Soviet Union. In 1947 Szilárd wrote the political satire "My Trial as a War Criminal," in which he is arrested by Soviet invaders for his work on the A-bomb during the Second World War. This satire appeared in *The Voice of the Dolphins and Other Stories* in 1961, and was read that year at Sarov (the top-secret Soviet nuclear-weapons centre) by physicist Andrei Sakharov. "My Trial" led Sakharov to question his own work on nuclear weapons and, eventually, to protest this effort, first within his homeland, then to the world. For this Sakharov received the 1975 Nobel Prize for Peace.

During much of his lifetime Szilárd preferred to work behind the scenes, giving those in power the ideas they needed to govern effectively. But he also engaged world leaders directly or through close friends. Szilárd proposed and drafted the 1939 letter from Albert Einstein to President Franklin Roosevelt that warned of Nazi Germany's nuclear research and led to the Manhattan Project. He also

wrote to Soviet Premiers Josef Stalin and Nikita Khrushchev. During a private meeting in New York, in 1960, Szilárd asked Khrushchev to accept the proposal for a Moscow-Washington Hot Line.

"I find it difficult to get away from telephones," Khrushchev complained to Szilárd, "and even at the beach they mount a telephone for me. The only way to escape is to go into the water." Still, Khrushchev agreed, if the U.S. president were also willing. In a jocular mood during their conversation, Szilárd handed Khrushchev the gift of a new razor.

"If you like the razor," said Szilárd, "I will send you fresh blades from time to time. But this I can do, of course, only as long as there is no war."

"If there is a war," said Khrushchev, "I will stop shaving. Most other people will stop shaving, too."

When the threat of a nuclear war actually came, during the 1962 Cuban Missile Crisis, Szilárd so feared the US-Soviet confrontation that he fled Washington for Geneva. There Szilárd went to the European Centre for Nuclear Research (CERN) and walked into the office of its director, his old friend the physicist Victor Weisskopf. "Leó," said Weisskopf, looking up from his desk in surprise. "What are you doing here?"

"I'm the first refugee from America!" said Szilárd, his dread of nuclear war masked by humour. Now we know that there was no nuclear war, but recent disclosures about the crisis only confirm Szilárd's fear that the danger was real. From Geneva, Szilárd gained Khrushchev's approval for the "Angels Project" as a posi-

tive step to restore trust between Moscow and Washington.

Unlike his friend Eugene Wigner, Leó Szilárd had little faith in civil defence as a response to the threat of nuclear war. Instead, Szilárd tried to prevent a war from occurring in the first place rather than lessen its consequences. So Szilárd took special delight when he learned about the troubles that had befallen Willard Libby. A Nobel laureate in chemistry, an Atomic Energy Commission member, and a vocal critic of arms-control negotiations, Libby had built a 'poor man's' fall-out shelter in his back yard, using railway sleepers and sandbags, to demonstrate that anyone could be safe during a nuclear attack. But when Libby's shelter was damaged in a brush fire, Szilárd remarked that this proved two things: not only "that God exists, but that He has a sense of humour."

William Lanouette, a staff member for Newsweek and National Journal, gave this talk at the Szilárd Centennial Memorial; the talk now appears in the Centennial Volume edited by George Marx

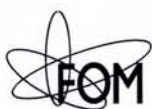
Further reading

W. Lanouette *Genius in the Shadows: A Biography of Leó Szilárd, The Man Behind the Bomb* (University of Chicago Press, 1994)

Leó Szilárd Centennial Volume edited by George Marx, published by the Eötvös Lorand Physical Society contains the talks given at the centennial memorial

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Beam time is allocated on the basis of a review of the submitted research proposals by a Programme Advisory Committee. **Access is free of charge** for all non-proprietary research. The facility is supported under the European TMR Programme for Access to Large-Scale Facilities and limiting funding for travel and subsistence is available for researchers from EU countries.

Guidelines for submitting a proposal and further information on FELIX and ancillary equipment are available by internet

<http://www.rijnh.nl/DEPARTMENTS/LASER/FELIX/felix.html>

or via Mrs Laura M.P. van Veenendaal

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