

The false dichotomy that has been constructed between GM crops and organic farming can be illustrated with numerous similar examples. Another discussed by the authors is *Bacillus thuringiensis* (*Bt*) toxin, which has been successfully commercialized by Monsanto. These small insecticidal proteins, synthesized by widespread soil bacteria, can be applied in an almost unregulated way by organic farmers. This has been done for many decades. Yet when genetic engineering is used to place the gene encoding the *Bt* toxin in a plant's genome, the resulting GM plants are vilified by the very people willing to spray the product encoded by this same gene over otherwise similar plants. The organic movement's sustained rejection of this current application of GM appears increasingly illogical as evidence continues to accumulate that it does reduce pesticide use. In fact, this reduction is the principal reason farmers pay more for the biotech seeds—their lowered expenditures on pesticides are saving them money.

The authors marshal many additional examples to support their thesis that GM technologies and organic agriculture are quite compatible. Their discussion of these two topics exposes the complexity of the biological systems in which the issues surrounding them have to be addressed. This highlights the superficial nature of much of the GM debate, in which both sides make oversimplifications that support unnecessarily polarized standpoints. The biology is more complex. Unlike most protagonists, Ronald and Adamchak do not crudely lump together every GM crop as though they are all the same. That oversimplification blurs the issues (2, 3) to the detriment of fruitful consideration of topics that are increasingly important in a world in which we need to produce more food, fiber, and fuels in the face of global environmental change. In contrast, the authors calmly argue something that makes perfect sense to me, but their book will be controversial.

All proponents of organic agriculture, especially the noisier ones such as Prince Charles, should read *Tomorrow's Table*. Ronald and Adamchak's clear, rational approach is refreshing, and the balance they present is sorely needed in our increasingly polarized world. In addition, plant scientists—who have the privilege of greater knowledge than most in this area and who therefore have a responsibility

to share their understanding with a wider audience—will find the book provides useful information and arguments to help them when doing their next “science in the pub” talk.

#### References

1. K. Xu et al., *Nature* **442**, 705 (2006).
2. M. Tester, *Nature* **402**, 575 (1999).
3. M. Tester, *New Phytol.* **149**, 9 (2001).

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## EXHIBITIONS: ART

### Global Perspectives

You wouldn't necessarily think of the Black Hills of South Dakota as the place to find innovations in communicating mathematics through art. However, the small town of Spearfish offers visitors an extraordinary gallery owned by a man who has devoted his life to capturing the total visual world. Painter Dick Termes creates Termespheres, pictures on globes that provide what Termes calls a sixfold perspective.

As he describes them, “What you are seeing when you look at a Termesphere painting is an inside-out view of a total physical world around you

on the outside surface of the hanging and rotating sphere. If you were on the inside of the sphere this painted image around you would seem normal, but I make you read it from the outside.”

The gallery itself is a wooden geodesic dome. Walking inside feels like floating in space past planets that capture pieces of different realities. Among the many works on view are a spherical model of Shakespeare's Globe Theatre, a surreal portrayal of the senses “not so much outside as within ourselves,” and a cityscape based on a rhombic dodecahedron. Optical illusions abound, and the viewer's perspective seems to snap from inside to outside the scenes.

Termes has exhibited his spheres in one-man and group shows, and they also appear in the permanent collections of art and science museums, mathematics departments, local governments, and corporations. For example, Science Centre Singapore includes Termes's *Life in a Fish Bowl in The Mind's Eye*, an exhibition on optical illusions. *Human Cage*, acquired by the Glasgow Science Centre, also presents an illusion. Are you, the observer, looking at birds in a cage? Or are you in the cage itself, surrounded by strange birds and animals? Your perspective shifts as you look at the sphere.

One of the artist's creations became part of the 100th birthday celebration for M. C. Escher in 1998. Termes took the famous picture of Escher holding a mirror ball and flipped it around: The 36-inch-diameter sphere creates the illusion that one is standing inside of Escher's mirror ball, looking out at his room. According to George Escher, Termes's recreation of the room is faithful (even to the lack of a door in the attic room, as that was hidden in the floor).

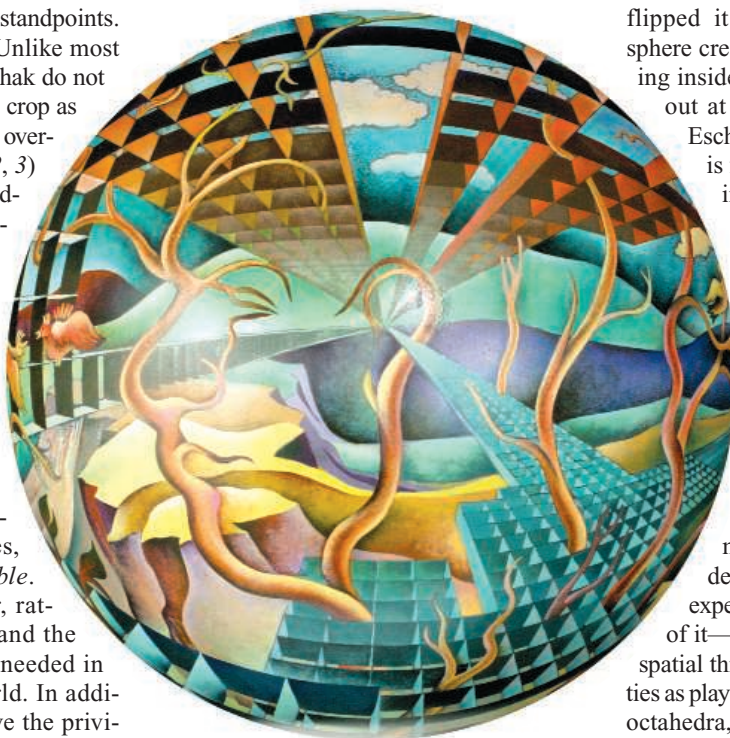
Currently Termes divides his time between creating designs on the surfaces of transparent spheres and developing a traveling display called “Up, Down, and All Around: Geometry in Your Visual World.” That exhibit (sponsored by the Hands-On Partnership for Science, Literature, and Art in South Dakota) primarily targets middle-school students, but children of any level are expected to be able to get something out of it—especially in terms of developing spatial thinking skills. Through such activities as playing with mobius strips and building octahedra, students should be turned on by and to both math and art.

—Barbara Jasny

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#### The Termesphere Gallery

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*The Six Senses.*