

Science in culture

Platonic puppetry

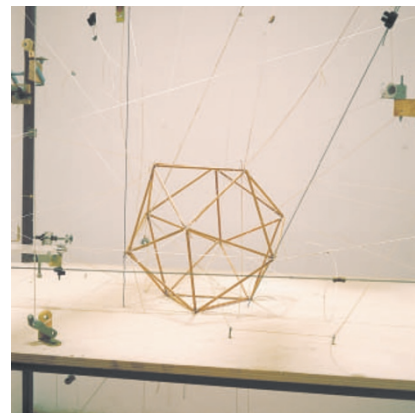
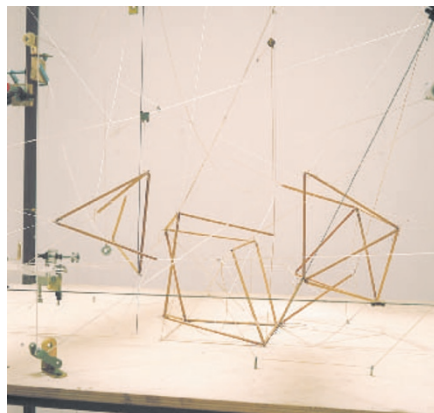
Attila Csörgö's kinetic sculptures bring regular polyhedra to life.

Martin Kemp

"Bringing order out of chaos" is a common enough phrase. It is applicable to any act of conspicuous resolution of what was previously a muddle. But in science and art it has more profound resonances. Many scientific experiments and many works of art rely on the setting up of conditions for discerning underlying order, first apparent to the scientist or artist, and then to ourselves as surrogate witnesses. A key difference, historically, is that science has repeatedly used time to set ordering processes in motion, either through the plotting of process or the dynamic achievement of experimental ends. The visual arts, by contrast, have been restricted largely to static evocations of order and disorder.

With the advent during the twentieth century of art that actually moves — sculptures in constant motion or images that exploit the technologies of video and computer graphics — this traditional limitation no longer applies. But it is rare to find motion in art used cyclically to choreograph, first, the transformation of orderly structures into intermediate states in which an inherent order is no longer discernible, and second, the reconstitution of a new regularity which is different from that of the original. Such transformational processes lie at the heart of the spectacularly intricate sculptures by Hungarian artist Attila Csörgö.

The dimension of time is embedded in all his work, whether it involves the rotational imprinting of an all-round image on a hemisphere by a spiralling camera, or devices in which apparently inchoate elements assume legibility under rotational motion. His most famous works, which first attracted international renown at the Hungarian pavilion in the Venice Biennale in 1999, exploit extraordinary mechanical contraptions to dismember and reconstruct the platonic solids — the five regular polyhedra that Plato believed to be



Taking shape: Attila Csörgö's geometrical figures are constructed and taken apart in real time.

the shapes of the fundamental components of the physical universe.

In the middle of a racked apparatus of electric motors, strings, pulleys and weights sit the skeletal shapes of a tetrahedron, an octahedron and a cube, composed, respectively, of 6, 12 and 12 wooden batons. As the apparatus whirs into motion, the cat's cradle of strings pulls the rods apart, deconstructing the geometrical figures. The rods wheel into space like the disarticulated limbs of broken puppets. If we could trace the tracks of the ends of the rods, we could mentally wind back time to realize the order still distantly immanent in the array. What happens next is not an exact reconstitution, however. The components twist unerringly to settle, end on end, into one of the more complex solids — a dodecahedron in one of the apparatuses, and an icosahedron in another. Momentarily resolved, the mechanisms then embark on the reverse direction of the cycle of dissolution and crystallization.

The process is beguiling, like a musical composition reaching a resolution that seems inevitable yet remains surprising. The visual quality even has

a sensual dimension — a quality suggested by the title of Csörgö's new exhibition, 'Platonic Love', which is at Kettle's Yard, University of Cambridge, until 9 May. He is tapping into the enduring aesthetic of the geometrical bodies, which has long fired cosmologists of a keplerian bent.

The geometrical results could, of course, have been achieved through computer graphics, but the visibility and evident physicality of the mechanisms are integral to the spectator's engagement. Our fascination with the raw mechanics of the process is akin to our continued delight in simple optical illusions, even in an age overloaded with film, TV, video and computer animations.

Csörgö, like a scientist, presents us with an anatomized vision of what lies inside dynamic phenomena, of how an array of no discernible order can be coherently characterized within a temporal frame as a moment in a constant flux between two oscillating states of resolution.

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two-edged. If any reproductive technology, including cloning, could be made safer than normal sexual reproduction (as may well eventually happen), then those who regard safety as decisive would have to abjure sexual reproduction for its safer technology-based counterpart.

The great promise of cloning in terms of human welfare, however, lies in the use of these techniques not for reproduction but for therapeutic purposes. The regenerative properties of stem cells that make them so attractive as a possible therapeutic tool also mean that the distinction between therapy and enhancement will inevitably be further eroded. Treatments that cause tissue to repair itself *in situ* and go on doing so are likely to extend lifespan. If therapies are

developed that modify cells to be resistant to cancer or HIV/AIDS, this will create unprecedentedly enhanced humans. Anyone who is disturbed by such a prospect will have the most agonizing of choices to make if the promise of stem-cell research is fulfilled.

A Clone of Your Own? provides engaging and clear explanations of both the basic scientific issues and related ethical issues surrounding cloning. Klotzko appears to have drawn on a wide range of published work on the ethics of cloning, and makes a large proportion of the arguments in the literature accessible in this short book. However, readers who are unaware of the literature may be left with the impression that Klotzko is the first, and almost the only,

person to have written on the ethics of cloning, which is far from the case. It is a pity that the author and the publisher have provided so little reference to the extensive ethics literature and given so little sign that they are even aware of it. Whether one's interest lies in the science or the ethics of cloning, the short list of further reading provided at the end of the book is unhelpful and misleading.

But this caveat aside, the drawings and other illustrations, and Klotzko's narration, make the book highly approachable. Members of the public who would like to understand what the debate on human cloning is all about should read this book. ■

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