

# BOOKS & ARTS

## Orderly anarchists

The profit motive has led pirates to come up with surprisingly democratic and egalitarian social structures. It is a lesson in bottom-up economics, explains **Michael Shermer**.

### The Invisible Hook: The Hidden Economics of Pirates

by Peter T. Leeson

Princeton University Press: 2009.  
271 pp. \$24.95

In recent years, economists have joined the ranks of high-profile scientist writers in publishing thoughtful books intended for both the general public and their colleagues. In works such as *Freakonomics* by Steven Levitt and Stephen Dubner and *Nudge* by Richard Thaler and Cass Sunstein, seemingly every aspect of human life is examined from an economic perspective. Peter Leeson's book is a good addition to the genre.

A major theme of such books is that behaviour that seems irrational is in fact rational when economic incentives are considered. Take piracy. In *The Invisible Hook*, Leeson, an economist at George Mason University in Fairfax, Virginia, argues that acts such as flying the Jolly Roger flag, concocting code rules, and employing forms of punishment are rational responses to the pursuit of profits. Invoking Adam Smith's powerful economic metaphor of the "invisible hand", Leeson lays bare the structure of pirate societies. Along the way he offers one of the finest introductory courses in economics since Henry Hazlitt's *Economics in One Lesson*.

The public, Leeson explains, view pirates as "liars, cheaters, and traitors" and pirate society "as orderly and honest as an asylum for the criminally insane ... without a warden". This attitude is older than the *Pirates of the Caribbean* films: in 1726, for example, King George I received a petition from "the General Officers of the Army" that pirates were "professd enemies to all Order and Government".

This perception is wrong, according to Leeson. No community can succeed if it is utterly anarchistic. Adam Smith recognized this point a half-century after George I: "If there is any society among robbers and murderers, they must at least ... abstain from robbing and murdering one another." Leeson argues that pirate life had to be "orderly and honest" to meet its economic goals. These were those of any corporate enterprise: to turn a profit.

Lacking the social structures and political tools of civil society, pirates invented their own. *The Invisible Hook* shows what pirate order looked like, how it worked, and the incentives needed to maintain it even as they disrupted



Do modern-day pirates, such as these suspected Somali ones, need order and honesty to turn a profit?

order on the sea. It is also a lesson on how social structure forms naturally from the bottom up out of economic necessity, instead of from the top down by political fiat. Just as it has been shown that the Wild West of nineteenth-century America was a relatively ordered society, in which ranchers, farmers and miners came up with their own rules and institutions for conflict resolution long before the federal law could reach them, Leeson reconstructs from historical documents how pirate communities did the same thing. Benjamin Franklin allegedly said at the signing of the Declaration of Independence: "We must, indeed, all hang together, or assuredly we shall all hang separately." Surely some pirate captain conveyed the same sentiments to his crew, perhaps as a warship was bearing down upon them with guns blazing.

Pirates employed forward-looking economic practices. Many pirate ships elected their captains and had a strict set of rules for everyone to follow, placing restrictions on problem activities such as drinking, gambling, sex, desertion and fighting. Pirate sailors were better paid than those in many marine navies, they were

more tolerant of racial diversity among crews, employed clearer systems of corporal punishment, and divided the spoils with greater equanimity than their naval counterparts. Shirking one's duties during battle was particularly worthy of punishment because it could lead to the "free-rider" problem where loot was divided evenly between uneven efforts, breeding resentment, retaliation and "an-arrgh-chy". Pirate codes were specific in their laws and punishments for breaking those laws, to which pirate crews had to consent before sailing.

Leeson tracked down the sharing of contractual arrangements between captains, made possible by the fact that "more than 70 percent of Anglo-American pirates active between 1716 and 1726, for example, can be connected back to one of three pirate captains", and thus the pirate code emerged from "piratical interactions and information sharing" not from one central pirate king.

Across history, merchant and military navies have themselves hardly been beacons of enlightened liberalism, engaging as they did in questionable practices such as the British,

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French, and Spanish pillaging of native American resources in the sixteenth and seventeenth centuries, during the heyday of piracy.

Sovereign governments may have legalized such plundering, but they were not necessarily more moral than the pirates who re-plundered that same wealth. Both used the threat of force, as Leeson reminds us. He does not argue for moral equivalency, rather he explains that pirates form their own versions of civil soci-

eties for the same reason everyone else does: economic success.

*The Invisible Hook* is a good addition to the genre of popular economics: a fun and enlightening read, and rock solid in its scholarly *bona fides*. ■

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familiar world is confined to a four-dimensional space-time 'brane' that lies, in her theory, within a larger five-dimensional 'hyperspace'. Moving into the fifth dimension takes the fictional traveller into regions of vastly magnified gravity that distorts other attributes of reality and experience: time, distance, energy and mass.

The challenge was to depict this exotic journey as a beautiful experience for the audience. Parra samples the sounds produced by the singers and instruments and passes them through an elaborate digital system of real-time signal processing and synthesis. The instrumental and vocal scores are of stunning complexity, with more than 100 parameters of digital transformation, which evolve as the plot progresses. The warping of physical time, as experienced by Ellett's character, for example, is expressed through modulations of rhythm and the 'granularity' of the synthesized music.

The processed sounds are projected into the auditorium from an array of speakers, using signal delays that constantly shift the apparent locations of their sources. The audience hears this complex aural texture blended with the sounds produced directly by singers and instrumentalists. "You hear 70% the real musicians and 30% electronics, on average," Parra says.

The set is an articulated screen on which artist Matthew Ritchie projects video images evoking the two characters' conflicting perspectives. The kaleidoscopic, lava-lamp style of the images evokes a psychedelic atmosphere that seems slightly out of register with the idea that the fifth dimension is physically real.

By contrast, Lisa Randall is a scientist who stays close to experimental data. "I'm not a string theorist, I'm a model-builder," she says. "One of my fears was that by the time this happened we'd find out it wasn't even right." Experiments testing her ideas are expected to run in the Large Hadron Collider at CERN, Europe's particle-physics laboratory near Geneva, Switzerland, after it starts up again later this year. With luck, they might coincide with upcoming performances of *Hypermusic*. "It's a good time for science to inform art," says Randall. "People are interested. If there were extra dimensions, people would want to know." ■

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**Hypermusic Prologue will be performed on 27-28 November at Gran Teatre del Liceu, Barcelona, Spain, and on 6 December in the Grand Auditorium of the Philharmonie, Luxembourg.**

## Solo journey to a fifth dimension

### Hypermusic Prologue: A Projective Opera in Seven Planes

Hèctor Parra and Lisa Randall

Pompidou Centre, Paris. 14-15 June 2009

An opera about string theory and five-dimensional space is hard to imagine. But one premiered recently in Paris.

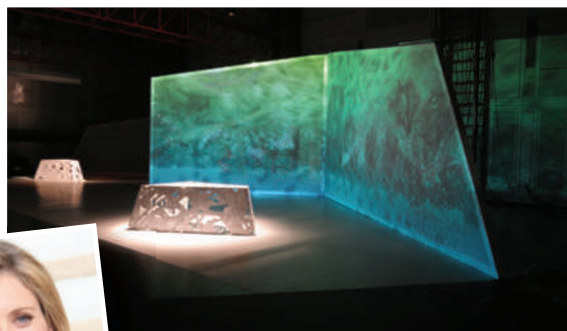
*Hypermusic Prologue* is a collaboration between composer Hèctor Parra and Lisa Randall, professor of theoretical physics at Harvard University and author of *Warped Passages: Unravelling the Universe's Hidden Dimensions* (Allen Lane, 2005), an account of cutting-edge physics, including string theory, and the possibility of additional spatial dimensions beyond those we sense. Singers James Bobby and Charlotte Ellett sang Randall's libretto, accompanied by musicians and technicians of the Paris-based Ensemble Intercontemporain. All gave admirable performances, with flashes of startling beauty.

Parra says that when he first read *Warped Passages*, something clicked. "For me it was a real discovery," he said. "For a few months I imagined reality vibrating like strings." The composer, who studied engineering before choosing music and whose father is a physicist, imagined a chamber opera in which music represented the phenomena of high-energy physics. He contacted Randall, who was keen to try a new genre. "In a book, if someone gets to some idea that they don't understand, they will stop", she explains. "You have more licence in a dramatic performance."

Parra's music is experimental, filled with glittering, jarring, liquid, fractured-icicle sounds, often electronically generated. It is as far from classical harmony as string theory is from clas-

sical mechanics. "It was the right kind of music for this kind of physics precisely because it is esoteric," says Randall.

The plot of *Hypermusic* is simple: a pair of lovers, played by Ellett and Bobby, separate because the woman feels something is missing, both in her life and in physics theory. Both characters are physicists; the female protagonist is also a composer. In the middle of the hour-long show, she takes a trip into the fifth dimension, which she experiences with vivid delight. "It is a nice metaphor for exploring a new world," says Randall. "Of course, it's unrealistic." Also unrealistic is that the male character seems to be intellectually stuck in pre-Einstein physics. Randall added that "just for humour value".



**Lisa Randall, physicist and librettist of *Hypermusic Prologue*; opera set above.**

Psychological depth gets intentionally short shrift. "The two characters are schemes, sketches," Parra explains. And the quantity of technical language in the libretto is breathtaking. "There's more physics in it than I had intended," says Randall. The composer and the production designer convinced her to include more, for atmosphere. "When you watch a movie about a painter you don't learn how to paint," she explains. "But you learn what it was for the painter to get immersed into that world."

Randall describes in *Warped Passages* how our