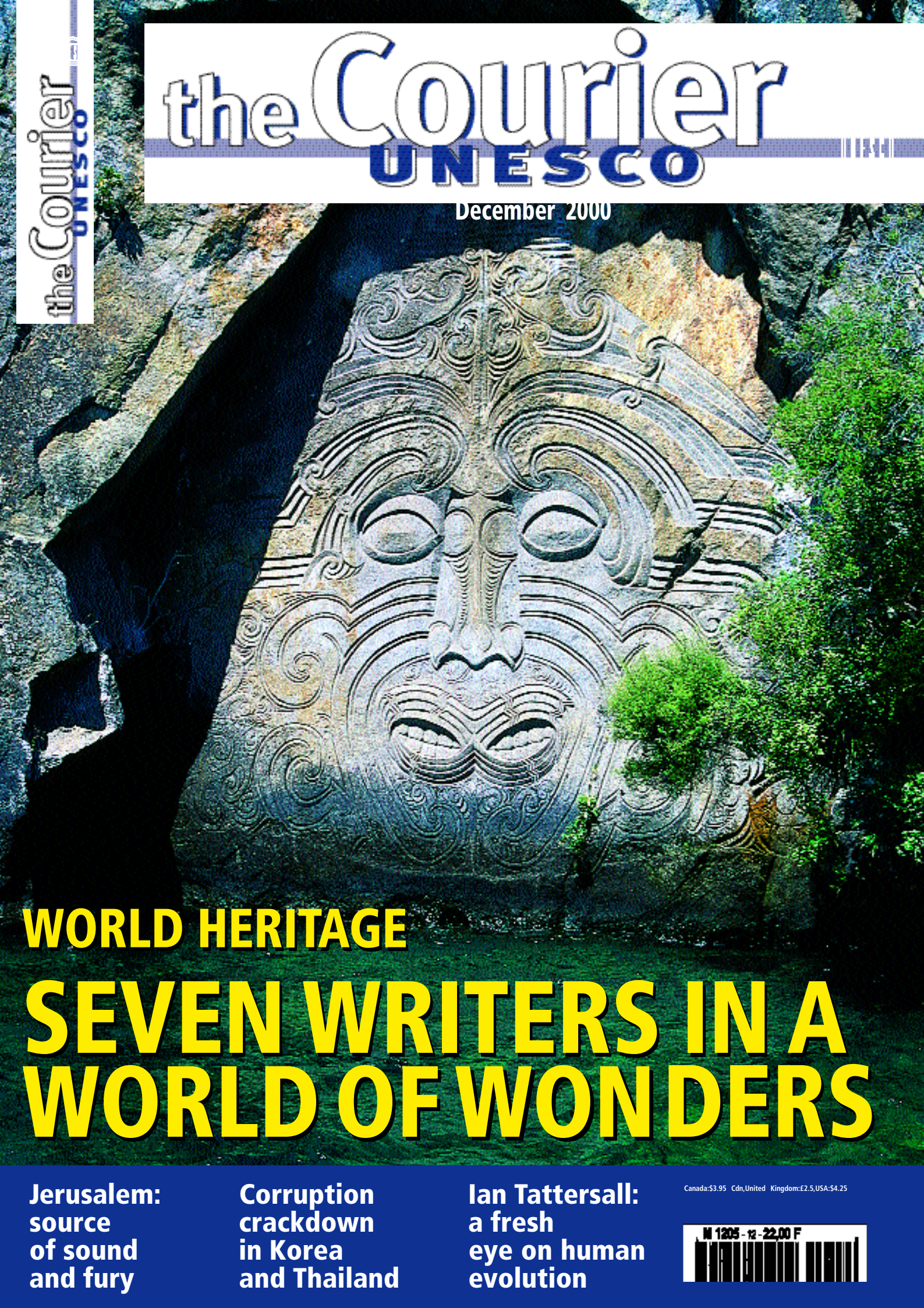


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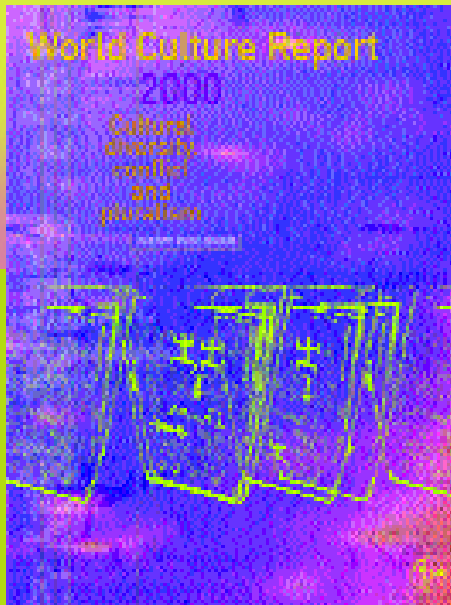
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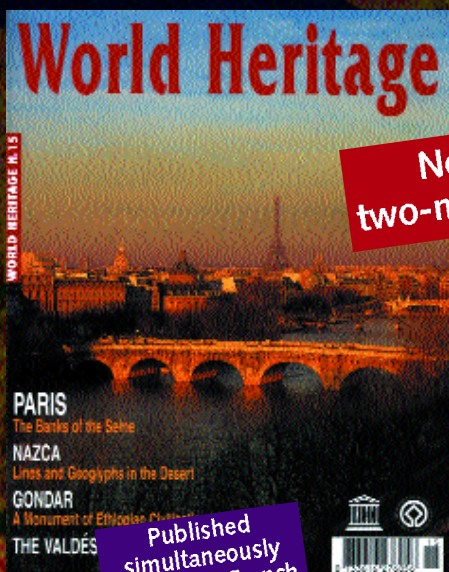
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Focus



Maori sculptures in New Zealand

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Seven writers in a world of wonders

As the third millennium begins, the notion
of world heritage continues to break new
ground. Influenced by Western tradition,
UNESCO's World Heritage List long gave pride
of place to monuments. Gradually, natural sites
have gained their rightful place, along with
those described as "mixed" (both cultural and
natural). Finally, sites singled out for the
exceptional vitality of their traditions are now
attracting recognition. In this dossier, seven
writers share their vision of a small selection
of these global wonders.

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The Trans-Siberian



Hawking goods on the platform of a station near Novosibirsk.

**"I can tell any train by the noise of the wheels
European trains beat four four time,
in Asia it's three five or three seven"**

Blaise Cendrars, *Prosody of the Transsiberian and of Little Jeanne of France*, 1913
(translated by John Dos Passos)

n's grand bazaar

PHOTOS BY FRÉDÉRIC HERMANN, TEXT BY MICHEL JAN

FRÉDÉRIC HERMANN IS A FRENCH PHOTOGRAPHER. MICHEL JAN IS A FRENCHWRITER SPECIALIZING IN CHINA WHO RECENTLY PUBLISHED *LE RÉVEIL DES TARTARES, EN MONGOLIE SUR LES TRACES DE GUILLAUME DE RUBROUCK* (PAYOT, 1998) AND *LA GRANDE MURAILLE DE CHINE* (IMPRIMERIE NATIONALE EDITIONS, 2000).



© Frédéric Hermann

From Moscow to Beijing, travellers have five days to indulge their nostalgia in a legendary journey alongside adventurers and the odd bit of illegal trade

It takes more than five days to get from Beijing to Moscow through Mongolia—no trip for the impatient. But I have always loved this journey. At one time the departure was a solemn occasion, with deserted carriages pulling out of the station before a row of Red Guards waving Mao's little red book to the strains of *The East is Red*. Nowadays, it is a hectic affair, with a myriad of goods overflowing in jam-packed corridors.

As the train pulls out of the station it seems to lurch in front of the corner tower rising on the Tartar city's southeastern edge, a rare vestige of the old ramparts, as if hesitating for a last time. Some travellers let their eyes linger on the outlying neighbourhoods of China's capital, while others begin their adjustment to the small, slow-moving cell they will call home for the next five days. During the journey's first few hours, the train clatters through the hilly northern Chinese countryside, where the Great Wall—at first well-restored, later reduced to a state of pitiful ruin—once marked the limits of the civilized world. Working through the landscape of loess, ochre and gorges dotted by scrawny willow trees, the train slowly chugs up to the Mongolian plateau. Depending on the season, the landscape rolling by is worn down by summer rain or frozen like a rock in the dead of winter.

The train's steady beat and the spectacle of this epic land, as fascinating as a receding shoreline, inspires a mood of contemplation—that is until the passengers are overcome by drowsiness caused by neither boredom nor weariness, but a combination of daydreaming, reading, conversation, whispered secrets and treasured moments liberated from time, which seems forgotten or at least less pressing. After Datong, further north in Mongol country, the steppe stretches out monotonously to the horizon. A horseman keeping a herd of camels and a yurt are signs of humanity in the endless space, sparsely covered with grass in midsummer, a moonscape from November to spring.

As evening falls, darkness creeps through the train. The lights in the cars have wiped out the outside world. In the heart of a desert that the passengers have forgotten, a strange coziness fills the compartments. The outdated decor in first class—worn-out velvet the colour of crushed raspberries, pink ribboned shades on table-lamps next to the windows, bevelled mirrors, imitation mahogany veneer and faded green curtains—keeps up the illusion of past luxury. A closed world, carried by the clackety-clack of steel on steel, advances into the night. The sleeping-car bunks are stacked three high. A weak light shines on languid bodies dappled in shadow. Skillfully tied-up and stacked luggage fills the rest of the space.

Ulan Bator, the Selenga valley and the shores of Lake Baikal, Irkutsk, Tomsk, Novosibirsk, Sverlovsk (renamed Ekaterinenburg), the Urals. The days go by ticking off a litany of names that turn like the train's wheels. ►

The Trans-Siberian's grand bazaar



The train's measured pace opens the way to contemplation: here, a Russian woman from Siberia gazes out.

**"If I was a painter I'd splash a great deal of red,
a great deal of yellow on the end of this journey
Because we must all of us have been more or less cracked
And an enormous delirium brought the blood
out on the drawn faces of my traveling companions.
As we drew nearer Mongolia
That roared like a burning building"**

Blaise Cendrars, *Prosody of the Transsiberian and of Little Jeanne of France*, 1913



In the Trans-Siberian's regular cars, the bunks are stacked three high. The "national" wagons stop at every border and are replaced by others. Russian cars only run in Russia, Mongolian ones in Mongolia and Chinese ones in China. Along the way, the traveller crosses a whole cast of characters: soldiers (below), traders, traffickers, thieves and other adventurers.



© Frédéric Herrmann



Changes are slow and the passengers have settled into their habits. They return from the samovar at the end of the corridor with faltering steps, following their daydreams, leaning their elbows against the window; or weary of a journey that seems endless, they play cards and chess.

The dining car changes with each country. The food's quality is uneven and offers a crude gastronomic tour first of China, then Mongolia and finally Russia. But canteen or greasy-spoon, it is part of the trip, attracting a steady flow of passengers and adding its own touch of the exotic. The powerful smell of garlic, the steam of boiled mutton and the bitter aroma of *solyanka* ►

The Trans-Siberian's grand bazaar



Some don't travel light.

(cabbage soup) juxtapose the swaying and creaking axles. At opening time it's the liveliest place on the train, with a varied clientele. A few Westerners, curious about the smallest detail, try to strike up conversations with the natives in a common language. Chinese warily check out their neighbours and, further away, Russians hunch over their borscht, disoriented by the throng of foreigners.

Only a few diplomats from east Asia used to take the Trans-Siberian back to the USSR. But in the past few years, the weekly train between Beijing and Moscow, which travels

by way of Mongolia or Manchuria, has been frequented by passengers travelling for a host of different reasons. The most common is trade, a product of shortages on the opposite side of a border, the resourcefulness of merchants and the flurry of peoples who have now rediscovered bartering after years cut out of market activity. There are also the "specialists" drawn to international express trains, on the lookout for shady opportunities or even ready to commit a crime. Female adventurers looking lost and would-be immigrants who withhold their names and dream of an elysian Europe still roam the wagons.

The further the train reaches into Siberia, the livelier the corridors become. Train employees and passengers, all of them Chinese, unwrap cargoes including sacks of rice, bundles of clothes and plastic utensils. The stops are few and far between, but when they do come, the platform suddenly turns into one giant bazaar. Rows of Russian women offer the most unexpected items: berries from the neighbouring forests, hot potatoes, tawdry lamps, shoes designed for discomfort. Men and women walk across the tracks, wending their way between the cars as they carry sacks bulging with who-knows-what. A teenager flees after snatching a pair of trousers offered for sale by a Chinese man leaning out of a train window. Suddenly, the locomotive's siren

**"After Irkutsk the journey became very much slower
Much too slow,
We were in the first train
that went around Lake Baikal"**

Blaise Cendrars, *Prosody of the Transsiberian and of Little Jeanne of France*, 1913

puts an end to the buying and selling, and the passengers rush back on the train, already thinking about the next stop.

And so on—until the Trans-Siberian reaches the area just outside Moscow, rolling through villages dotted with white or gold church towers resembling the birch trees that blanket the Russian countryside in autumn.

The journey is a source of adventure and a muse. Isn't Blaise Cendrars' *Prosody of the Transsiberian* one of modern poetry's most beautiful verses? Travelling across Asia to reach Europe still captures the imagination. It is as if the people roaming from one continent to another, frozen in our memories, alone represent what is unchanging in human destiny. ■



THE WILL OF THE CZARS

The "real" Trans-Siberian travels 9,198 kilometres from Moscow to Vladivostok. The train only runs on Russian territory, on a line that was finished in 1916. It was built to double a line completed in 1904 that the Russians considered too unsafe after the Russo-Japanese war of 1904-1905 because it crossed Manchuria. Today, two lines link Moscow and Beijing. At first, they follow the Trans-Siberian route before forking southward, one through Manchuria, the other through Mongolia.



A moment of elation before the expanse of Mongolia's steppe.

© Frédéric Herrmann



Irrigation in the Ebro delta: are farmers abusing cheap water?

When the rain in Spain is not enough

Spain uses vast quantities of water. To meet its country's needs, the government has resorted to technical solutions such as diverting the Ebro river—a project that many people have condemned for squandering a precious resource

OCTAVI MARTI

UNESCO COURIER JOURNALIST

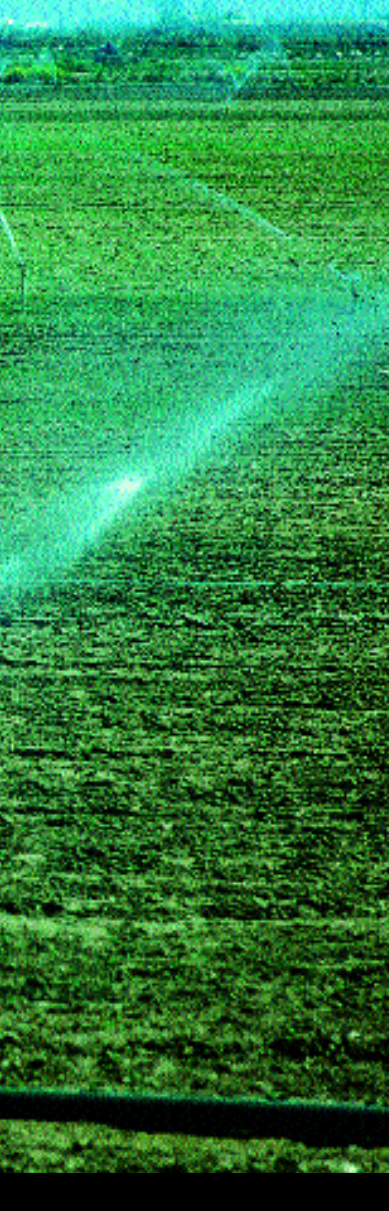
“**W**hat we call ‘the water problem’ in Spain is going to become ‘the water war,’” predicted Spanish ecologist José Manuel Naredo in 1997. Three years later, the 400,000 people who marched through the streets of Zaragoza (a town of 650,000 inhabitants) on October 8 appeared to prove him right. Their target was the National Water Plan (NWP), unveiled by the government on September 5.

The plan's centrepiece is the diversion of a billion cubic metres of water each year from the River Ebro to occasionally or permanently arid regions on the country's Mediterranean coast. For inhabitants of the province of Aragón, the 700,000 million pesetas (more than \$3.5 billion) that the government intends to spend on building 529 kilometres of new waterways and several dams are simply 700,000 drops of water in a cup that is already spilling over.

Aragón feels robbed. The 400,000 demonstrators may have been exaggerating a little when they shouted that the waters of “our Ebro” would be

used to keep golf courses green, fill swimming pools for tourists and supply amusement parks while others die of thirst and neglect. But as Naredo observes, “people no longer accept the mainstay of Spanish water policy for the last century, of taking water where you find it and transferring it to where it's needed.”

The opponents of the NWP have stepped up their attacks. They say water supplies can no longer be managed on technical criteria alone. The planned diversions are dangerous, they argue, because the Ebro basin has not had a water surplus for the past quarter of a



© W. Silvester/Keapho, Paris

keep on growing and requires the building of costly aqueducts. They agree that the irrigated area of around 3.5 million hectares should not be increased, but defend the river diversion plan and talk of building more than 70 new dams at a cost of three thousand billion pesetas (about \$15.5 billion) over eight years. All of which clashes with a European Union directive defining every water catchment area as a distinct management unit and ruling out water transfers from one area to another.

But the ministry insists it is no longer possible to “go backwards,” declaring that the NWP “will solve the water problem for good.” Spain’s 1,070 big dams already make it the world’s leading country in terms of proportion of dam-created lakes to total land mass. The fact is, however, that many serve no purpose, since for months on end they are filled to only five or 10 percent capacity.

Spain began its first major river diversion scheme in the 1960s by linking the Tagus in the west and centre-west to the Segura in the southeast—a transfer of 600 million cubic metres of water a year. But in 1999, the province of Castilla, which the Tagus flows through, refused to supply a drop more than 40 million cubic metres, less than 10 percent of the amount originally planned.

What had happened? Maize growing, which requires a lot of water, expanded in the regions along the Tagus (the Mancha and the Meseta). To irrigate today’s 150,000 hectares of maize, you need to draw heavily on underground water and also pump more from the Tagus. In Murcia (watered by the Segura), which benefits from the diversion scheme, irrigated areas have grown enormously. Biologist José Luis Benito notes that “absurd though it might seem, the diversion of the Tagus has turned a hitherto occasional and irregular drought into a systematic and permanent one.”

Forty million hectares of Spain have a Mediterranean climate. Because the rainy season and warm weather do not coincide, there is little vegetation. Planting maize, alfalfa, potatoes and beans in such a climate is not a particularly sound idea because these crops depend upon a lot of

water. In the Mancha, for instance, it takes a tonne of water to produce a kilo of maize. If water was not subsidized, as Pedro Arrojo has noted in his study of the irrigated regions of Aragón, 90 percent of this land could not be profitably farmed.

This has led the historian Tello into calling for a new agricultural policy based around sustainable development which would preserve subsidies for “maintaining balanced land use and other social and environmental reasons,” but hand out the aid directly to farms rather than using it to bring down the price of water, fuel and chemical fertilizers.

If water for irrigation were not 100 times cheaper than water for industry, crops unsuited to Spain’s climate would be abandoned. But Tello has proposed a solution already adopted in the United

States through the California Water Bank. This “market” allows farmers, at certain times of the year, to re-sell some of their water stocks to cities that need it. Because they make money from this, they can then grow crops that need less water, even if they are less profitable. So the cities get the water they need, the farmers do not lose money and water resources are not over-used.

Of the one billion cubic metres of water that will be diverted under the NWP, 300 million will go to the Valencia region, 430 million to Murcia, 90 to the Andalusian province of Almería and 180 to Catalonia. But the latter has no water shortage, and is unlikely to have one for at least another 25 years judging by its

Water for irrigation is 100 times cheaper than water for industry

century.

But their main criticism is that the diversion of the river is completely unnecessary. Economic history teacher Enric Tello believes the answer to Spain’s water problems lies in “reorganizing the supply.” He argues that the country is suffering from “water schizophrenia” and that “sooner or later taxpayers will wonder why they are still subsidizing the irrigation of crops that are already being subsidized and are often produced in excessive quantities.”

This “schizophrenia” arises, he says, from the huge gap between the price of water for irrigation, which is almost free, and the much higher cost of water used in cities and industries. So why not try to narrow that gap? The answer could lie in a small detail that both Tello and Naredo point to: Environment Minister Jaime Matas launched the NWP at the headquarters of the Public Works Employers’ Federation.

The ministry offers a quite different spin. Officials say demand for water will



current population growth. Naredo adds that after Barcelona's preparations for the 1992 Olympic Games, which involved shutting down old industrial plants that consumed a lot of water, "the city's water table rose to the point that it had to pump water out to avoid flooding the subway and underground parking lots."

Tello has looked into the potential benefits of "a system that would penalize waste and encourage saving and recycling water." Whenever industry has realized water can cost it 10 times less through careful planning, it has changed its patterns of use. Tello has also shown that investing 100,000 pesetas (about \$500) to equip every household in Catalonia with electrical and water appliances that can save and re-use water would be cheaper than a projected scheme to channel water from the River Rhône, in southern France, to Barcelona, at a cost of around 200 billion pesetas (more than \$1 billion).

Taxing water in a more consistent way would solve another big problem: that of outdated piping. Pedro Arrojo has noted that the water network in Zaragoza was

so leaky that no difference was registered between daytime and nighttime consumption. In the market gardening area around Valencia, the price farmers pay for water is fixed by the amount of land they need to irrigate, meaning that losses caused by faulty piping are generally ignored. Another example is the Jucar imperial canal, which is built directly in the earth and results in massive leakage.

The second largest ecological reserve under threat

Spain gets 346 billion cubic metres of rainfall each year, of which 109 billion remains after evaporation. This should be enough to meet an annual demand of 35 billion cubic metres, 80 per cent of it for agriculture, which usually pays one peso per cubic metre.

In areas where the price of water for irrigation is higher (30 pesetas a cubic metre) because it comes from desalination plants or from underground, farming is very sophisticated. Almería, which 20 years ago was Spain's poorest

province, is today the country's fastest growing one and relies upon the most foreign labour (which is neither welcomed nor assimilated). Because yields are very high, the province has 13,000 hectares of land that are illegally irrigated.

The diversion of the Ebro is an ineffective response to Spain's cultural, social, political and economic problems. Opponents of the scheme say it even creates new difficulties: the defenders of the environment are especially worried that the Ebro delta, the country's second biggest ecological reserve, might disappear.

Since the end of the 19th century, sediment in the river has dropped by 95 percent. As a result, the government has to invest about 20 billion pesetas (\$100 million) to add sand to some beaches. One thing is nevertheless certain: if desertification continues to advance in Spain, the country will not be needing extra sand. ■

Water wars

FREE OR FOREIGN: THE WATER BATTLE IN BOLIVIA

Should water be supplied by local authorities or private companies? A violent conflict in Bolivia has recently shown that both can work, but only if the wishes of consumers are taken into account

BY JORGE CUBA

BOLIVIAN JOURNALIST

A bill to privatize Bolivia's government-owned water network recently sparked off a "water war" that grew into one of the Andean country's most serious social crises of the past few years.

The conflict erupted in January 2000 when the price of drinking water was tripled in the central Bolivian city of Cochabamba, and peasants in the surrounding arid region suddenly found that the water they had been drawing freely for generations no longer belonged to them. City-dwellers accustomed to subsidized water supplies were confronted by the true market price, while the peasants—mostly Quechua Indians who had owned the water for centuries—

involuntarily found themselves customers of Aguas del Tunari, a subsidiary of the British firm International Water.

No clean water for one third of the people

These changes were the result of Law 2029, a bill passed at the end of 1999 which privatized state drinking water and sewage disposal. "The law's big mistake was to privatize the sources of the water as well since franchises are usually only applied to administration of the service," says Bolivian hydrologist Carlos Fernández Jauregui, a UNESCO water expert. Furthermore, the law was pushed through without any kind of public hearings and under pressure from the French firm

Lyonnaise des Eaux, which is in charge of the water supply in the capital, La Paz, through a local company called Aguas de Illimani.

In South America's poorest country, where a third of the population has no access to clean water and 70 percent of people live below the poverty line, there are plenty of reasons for social unrest. Once begun, the water conflict escalated into a much wider rebellion lasting 10 chaotic months and causing huge economic losses, an 11-day state of siege and a dozen deaths.

The unrest was serious enough to make the government cave in. In April, Aguas del Tunari pulled out of the contract they had signed with the state to build a dam at Masicuni aimed at boosting



“What is ours is ours and cannot be taken away”: marching against the hike in water rates in

© Julie Plezen/AP/Boomerang, Paris

terms the privatization law gave to contractors were justified in terms of the need to attract enough investment to pay for the multi-million-dollar project on top of the money provided by Bolivian taxpayers. In the end, however, the project backfired on President Hugo Banzer’s government: Aguas del Tunari is demanding heavy compensation for having to withdraw from the project, stoking fears that if the state does not pay up, Bolivia’s reputation with foreign investors will be harmed.

Taking culture and customs into account

But the departure of these foreign firms is not necessarily the best solution, not even for the poor. Due to their international experience, multinationals are usually better value for money than local public utilities, they use the water more effectively and pay better salaries for their technicians. Governments, for their part, must shield citizens from the natural commercial appetites of these giant water companies.

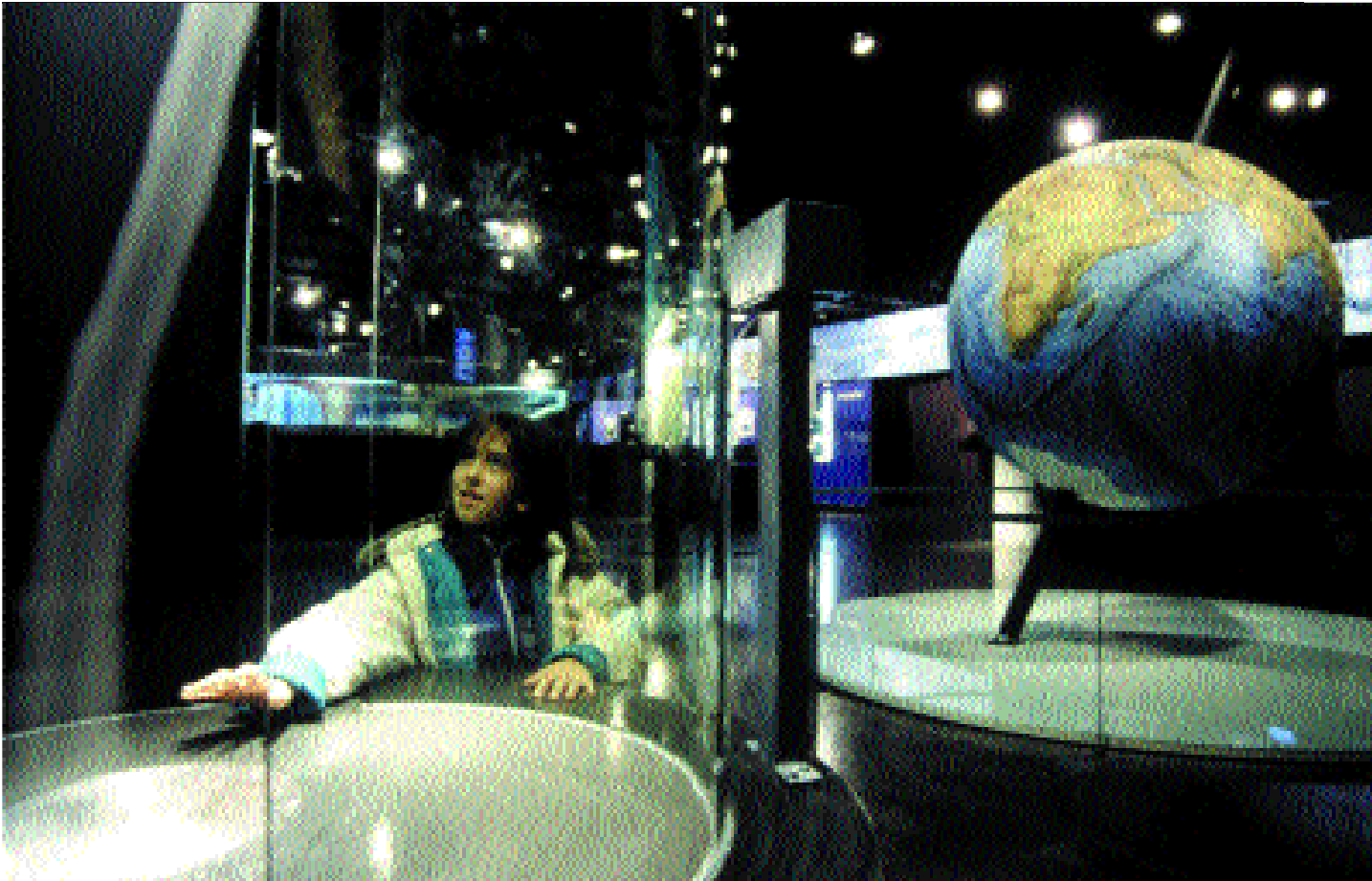
In Fernández Jauregui’s opinion, Bolivia’s water problems stem from administrative failures, and Bolivians are paying for their inexperience in water legislation. “There aren’t any laws or institutions and there isn’t enough suitable infrastructure to cope with the water problem,” he says.

Other Latin American countries, in contrast, have acquired useful experience in solving the thorny conflicts caused by water. Communities are very attached to the free supply of water enjoyed by previous generations, but through frank and open

dialogue they can also come to understand that it is a scarce resource which must now be paid for. “There were obviously other ways to tackle the water problem in Bolivia,” says Fernández Jauregui. “Water legislation has to be based on consulting local people, as other laws are. If local culture, customs and ways of life had been taken into account, all these problems could have been avoided.” ■

the Cochabamba region’s water supply. But in spite of the citizens’ victory in the “water war,” Cochabamba’s basic problems have not been solved. The city has no more than five hours of water a day, and only 40 percent of farmers in the surrounding area have access to clean water. “The only way to end Cochabamba’s water shortage is to build the dam,” says Fernández Jauregui. “The other solutions are just sticking

plasters.” Other plans, such as one to tap into underground rivers, have so far made little headway, while efforts to form a cooperative or limited company with the involvement of local people have come to nothing. Aside from the dam, the Mísicuni plan includes building a tunnel, water purification plants and sewage farms to the tune of \$300 million. The generous



A tactile exploration of our planet in a room devoted to understanding the thriving of life on earth.

Hands on: in this museum, touching is the rule

Jorge Wagensberg eavesdrops on visitors to the science museum he runs in Barcelona. The conversations he overhears enable him to imagine

JORGE WAGENSBERG

SPANISH PHYSICIST AND DIRECTOR OF THE
LA CAIXA FOUNDATION SCIENCE MUSEUM IN BARCELONA

Some time ago I got into the habit of leaving my office to eavesdrop on visitors in every nook and cranny of the La Caixa Foundation Science Museum that I run in Barcelona. A lot of what they say proves very interesting, and excellent food for thought about what a modern science museum should aim to be.

Once, I was hot on the heels of a young father and his son of about seven. They paused in front of a *mimosa pudica* plant whose leaves recoil when you touch them.

Father: Did you see that?

Boy: What? What's happening? Hey! But is it real or not?

Father: It's real. Don't you see?

I lingered behind them as they approached a model of the Amazon that compresses a day's life in the rainforest into the space of 10 minutes, including an electrically-generated storm, torrential rain and a rainbow. In the middle of the show, the entranced boy looked up to his father and asked once again: "Dad, is this real or not?" To which his father replied: "It isn't real... Watch carefully!"

A few minutes later, at an underwater archaeology exhibit with a giant aquarium featuring a sunken ship and huge moray fish swimming between the furniture in

the captain's cabin, I heard another exchange:

Boy: They're real, aren't they?

Father: Of course. You can see that.

Boy: And the furniture?

Father: Hmm. I don't know. I think some of it is

The boy's metaphysical obsession—about whether things are real or not, about the difference between experience and theory, between a replica and "the actual thing"—was much stronger than his father's. Unwittingly, this young visitor reopened a critical debate in our museum over when to use a real-life object, when

to use a replica and whether the two can be combined.

In any case it's clear what a museum must not do: namely boil down its exhibits to excerpts from a book whose crammed pages can be read by the long-suffering visitors as they walk down a hallway into rooms full of scale models for demonstrations and videos and computers that look like shopfronts of electrical stores. One of the most elementary mistakes made by today's museums is to forget that the absolute priority is to be real.

Just as classes, conferences and seminars are based mainly on the spoken word, cinema and television on images and books and magazines on the written word, museums and exhibitions should focus on the real object or event. For it is the prospect of encountering reality that draws people to museums.

In recent years, science museums have been at the vanguard in terms of changing their collections, methods and engagement with the public. Our slogan these days is "please touch." The old concept of the display case has been replaced by that of experience, and the academic label has changed into a more literary one. Above all, the former highbrow attitude has been overtaken by an effort to involve all five human senses.

A careful mixture of touch, feelings and thought

Another thing I've learnt on my strolls around the museum is that we still have a long way to go before youngsters feel comfortable there. I recently came across a little girl, no more than six years old, throwing large stones at a wooden open-air kiosk used in summertime as an ice-cream shop. It was winter and the kiosk was closed. I reached her just as she was about to throw another stone. As soon as she saw me, she dropped it and looked down shamefacedly. I stood there silently for a moment before she looked up, gazed at the kiosk, then turned to me and asked: "Is that yours?"

To get our young visitors to treat things in the museum with care, they have to feel they have a stake in them. Though it is not easy, one way is to try to stimulate their senses. In a science museum, the most effective stimuli are a careful mixture of touch, feelings and thought.

Let's take a few examples. Once I quietly shadowed a boy of about 10 into the museum's big vivarium, which had an exhibit called "Invisible Stillness." At first he saw nothing. But behind the glass and amid dry leaves, earth and roots, lived three dozen stick-insects (*Extetosoma*

tiaratum). The boy was puzzled and looked around, clearly annoyed. He must have thought it was a joke or that the exhibit was being repaired.

Then he spotted a notice saying: "There are 30 big insects in here." With an incredulous look, he seemed to be wondering how so many insects could be invisible in such a small space. Then he saw them—one...two...three. "Hey, now I get it! There they are," I heard him say as I watched his face light up. His eyes had been looking at the insects, but his brain hadn't seen them. That is emotional interaction. The boy, like many other visitors, was enthralled by everything he saw after that.

Next to the vivarium is a window in which you can see a mass of scattered dots with no discernible pattern. If the visitor touches a lever, some of the dots arrange themselves into the shape of an animal. This is an example of genuine manual interactivity: move the lever and the animal appears; release it and the creature disappears before your eyes.

It is a small trick that arouses the imagination and makes the point that many hunted animals stay absolutely still when a predator is terrifyingly close to them. Applied in daily life (why do we wave to attract the attention of a waiter who pretends not to see us?), it explains what mental interactivity means, and allows the visitor to make comparisons and even reinterpret previous experiences.

The main job of a modern museum should be to go beyond preserving heritage, informing, training and even teaching, and to generate this kind of excitement through objects and real

phenomena. People can then physically experience the feelings of the scientist, who is not seeking either good or evil but simply trying, like anyone else, to come up with as much knowledge as he or she can about the world in an effort to make humanity's cosmic solitude bearable. That's why scientists do experiments—they are endeavouring to converse with nature. A museum should strive to make visitors plunge like divers into the scientist's quest.

For the best ideas, tune into the young

Based on my experience as a museum director and eavesdropper, I think we should pay close attention to what children say, because we might learn something from youngsters who are learning themselves. Our museum is for people of all ages or education. But the youngest visitors have what turn out to be certain very good ideas. So we must tune into their thoughts, like those of two boys and their mother as they were coming out of our large weather exhibition. One boy was about 10 and the other about five and had to run to keep up. The 10-year-old seemed annoyed.

Boy, 10: Mum! Mum! What's in the Amazon?

Mother: OK, we'll go and see. But maybe you'll be disappointed.

And then from somewhere behind me, a little voice.

Boy, 5: Mum?

Mother: Yes dear?

Boy, 5: What's disappointed? ■

Barcelona's Science Museum

Opened in 1981, the La Caixa Foundation Science Museum is the first of its kind in Spain. Its main aim is to spread scientific and technical knowledge among the general public, especially students. To do this, it encourages contact between scientists, teachers and scientific institutions. It covers an area of 7,000 square metres and another 30,000 are currently being added on.

To know more:

www.fundacio.lacaixa.es



Budding scientists at the helm.

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SEVEN in a World

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his voyage is a personal one: seven writers share their vision of a small selection of wonders chosen from the 630 cultural and natural sites on UNESCO's World Heritage List. The Senegalese poet Charles Carrère sets forth his approach to heritage, as both an inheritance and a gift to be passed on, a fruit of many meetings and exchanges, an expression of memory and hope (p. 17). As Professor Léon Pressouyre explains, the criteria for selecting world heritage sites have considerably evolved since the adoption in 1972 of an international convention to protect these

treasures of humanity, now spread across 118 countries (pp. 18-19).

Our journey begins with the wanderings of Chinese writer Lu Wenfu in the gardens of Suzhou (pp. 20-22). Serge van Duijnhoven recalls his childhood near the Kinderdijk windmills, forever threatened by the sea (pp. 23-25). Mauritanian writer Moussa Ould Ebnou describes how his country's 12th and 13th century cities are inexorably being reclaimed by the desert sands (pp. 26-28). Rafael Segovia of Mexico testifies to the unwavering tenacity of Guanajuato, a town that surged from the belly of the mountain in the 15th century with the discovery of silver and gold mines (pp. 29-30). In the Philippines, Alfred A. Yuson admires the rare complicity forged between nature and the indigenous tribes who have patiently sculpted the rice terraces of Luzon Island over the past 2,000 years (pp. 31-33). And finally, Juan Goytisolo brings life to the notion of oral heritage by inviting us to Morocco to hear the legendary storytellers of Jemâa-el-Fna square, in Marrakesh.

Dossier concept and coordination by
Jasmina Sopova, UNESCO Courier journalist



The World Heritage emblem symbolizes the interdependence of the world's natural and cultural diversity. While the central square represents the results of human skill and inspiration, the circle celebrates the gifts of nature. The emblem is round, like the world, a symbol of global protection for the heritage of humankind.

WRITERS d of Wonders

O P I N I O N

HERITAGE, A LESSON IN GIVING AND RECEIVING

CHARLES CARRÈRE

SENEGALESE POET AND PAINTER, VICE PRESIDENT OF THE INTERNATIONAL POETRY HOUSE IN BRUSSELS (BELGIUM).
ONE OF HIS MOST RECENT WORKS IS *HIVERNAGE* PUBLISHED BY L'HARMATTAN (PARIS, 1999).

Heritage is a timely theme in a world shaken by an intense and violent crisis, one which calls into question an entire system of values while eroding the relationship between people and the environment. The effects of industrial and technological evolution testify to this: the sacred pact between people, nature and the universe has been severed. The planet is poisoned. And life seems threatened in all its different forms.

This crisis not only beckons us to rethink our approaches to development but the very notion itself. For too long, development has solely been seen through the materialist lens of production and consumption. Today, intellectuals, artists and writers are increasingly convinced that this concept, which sacrifices culture to economic growth, the qualitative to the quantitative, can only bear catastrophic consequences.

Today, we renew our longstanding call to place culture ahead of all else. The great landmarks in humanity's history have always been in the domain of culture. It is not a question of creating cultural, ethnic and geographical ghettos. On the

contrary. Putting culture first means appreciating the specificity and richness of our respective identities, building on the heritage of the past and enriching that which we bequeath to future generations. It is a heritage to which all peoples, nations, continents, in short, all civilizations could contribute their own irreplaceable values.

This would lead us towards a humanism of "giving and receiving" that the Martinique poet Aimé Césaire has so fervently called for. This humanism offers a new way of conceiving the terms of exchange. The outcome is a symbiosis of cultures so that they don't become alike or fuse, but are enriched through encounters with each other. This "culture of the universal," cherished by the Senegalese poet Léopold Sédar Senghor, is not a universal culture but a meeting of civilizations.

It is in this meeting that humanity's world heritage lies. Human beings distinguish themselves from animals by their creative spirit, with which they transcend the horizons of the visible. Fire, once mastered, is transformed into

rustlings of life, colours and shapes. The first staff our ancestors leaned upon, the first stones they chose to rest upon, the first cave in which they sought shelter, were all tinged with the colours of light. Human beings were born in beauty from the outset: for the beautiful they were born.

Created by stardust, peoples crossed the world, sprinkling it with stones as guideposts, just as in the tale of Hansel and Gretel. As time passed, they built monuments carrying the stamp of their genius and the permanence of their species.

For coherent action, we need an image of the past and a vision of the future. For if science cannot answer questions regarding their earliest origins, nor those of the afterlife, human beings will climb many mountains to proclaim their faith in life. Their spirit of resistance and their hope springs from this faith. It is a faith that is proclaimed, like a vital need, on the front of their buildings.

From the cabins of their childhood to the columns of temples, on each stone, behind every door, this hope will be forever engraved. ■

The past is not just made of stone

The world's heritage is about more than monuments and natural wonders—the intangible ideas and beliefs that make up our collective memory also have their rightful place

LÉON PRESSOUYRE

FRENCH UNIVERSITY PROFESSOR

LÉON PRESSOUYRE

A professor at the Université Paris I, Léon Pressouyre is president of the Commission for the conservation of Bosnia-Herzegovina's national monuments, within UNESCO. He was the ICOMOS coordinator (International Council on Monuments and Sites) for the World Heritage Convention between 1980 and 1990 and represented France on the World Heritage Committee from 1990 to 1997. He is the author of *The World Heritage Convention, Twenty Years Later* (UNESCO, 1993).

What is the common thread running through the UNESCO World Heritage sites featured in this issue, which have inspired a constellation of writers and artists fascinated by their unique and irreplaceable nature? The sites may not be stars on the tourist circuit, nor are they formally connected with each other, but they are telling examples of some recent changes in our attitudes towards heritage.

One is the steadily vanishing division between cultural and natural heritage. The other is a growing awareness of the value of intangible heritage, which is being undermined and too often brushed aside by the unstinting advance of globalization.

The World Heritage Convention, adopted by the UNESCO General Conference in 1972, fashioned a vital, ground-breaking idea into an international legal statute. But it defined humanity's heritage very conservatively under two headings: the cultural and the natural. This marked the culmination of a long tradition and of a more recent intellectual effort to match the splendours of art with the wonders of nature.

Humanity's admiration for its own creations was displayed as far back as the second century B.C. in the famous list of the seven wonders of the world—a world narrowly confined to the eastern Mediterranean.

Tides, phoenixes and volcanoes: proof of divine power in nature

Few people are aware that the wonders of nature were in fact listed well before the modern era and the birth of environmental awareness. A 12th-century Latin manuscript held in the French National Library, for instance, contrasts the seven destructible man-made wonders with seven wonders of nature which, the author says, are proof of divine power.

On the list are tides, plant germination, the phoenix (the mythical bird that rises from its own ashes), a volcano (Mount Etna in Sicily), a hot spring near Grenoble (France), as well as the sun and the moon. These were wonders unaffected by age or accident, the author maintains, and their demise could only come with the end of the world, whereas the man-made wonders were destined to disappear well before then.

The 1972 Convention reflects this dual European tradition. It was not the product of a debate among philosophers, historians and sociologists about the

concept of heritage, but simply the convergence of two schools of thought. One came directly from the 1931 League of Nations conference in Athens, and concerned preserving cultural heritage as defined in terms of classical notions of a "masterpiece" or "wonder of the world." The other stemmed from the first international conference on protecting nature, in Bern in 1913, which was followed up by the Brunnen conference in 1947 and the foundation the following year of the World Conservation Union, whose aim was to pass on to future generations "unspoiled" natural sites untouched by humans.

Vineyards and rice terraces find their way onto the List

This division between cultural treasures (thought of as monuments created by human beings) and natural ones (which owed nothing to human involvement) long dominated the application of the 1972 Convention. In 1994, nearly half the sites on the World Heritage List were cultural ones within Europe. Nothing could have been further removed from the spirit of the Convention.

When in June 1994 the World Heritage Committee adopted the recommendations of experts who had looked into how representative the List was, it absorbed the very different conception of culture espoused by anthropologists and ethnologists, one that encompasses a complex mixture of social organizations, ways of life, beliefs, know-how and expressions of past and present cultures.

The accession to the List of cultural landscapes, such as the rice terraces of the Philippine Cordilleras and France's Saint-Emilion vineyards, is one of the

The Convention Concerning the Protection of the World Cultural and Natural Heritage, adopted in 1972 by the UNESCO General Conference, encourages states to choose exceptional sites for preservation. To date, the Convention has been ratified by 161 countries. In November 2000, the World Heritage List consisted of 630 sites in 118 countries—480 of them cultural, 128 natural and 22 described as mixed. ■

To know more:

www.unesco.org/whc

World Heritage Review, published quarterly by UNESCO Publishing www.worldheritagereview.org



Pomp and circumstance in Kandy, Sri Lanka, during an annual pilgrimage to venerate the Buddha's tooth.

© J. Vieszi/Ask Images, Paris

positive outcomes of the 1994 change in guidelines. A few years earlier, even though public interest in historical gardens (such as those of Shalimar, in Lahore, Pakistan) was fully recognized, sterile debates would probably have prevented them gaining a place on the List.

The same goes for industrial heritage. Before they began being put “openly” on the List, industrial sites were admitted in disguise: the salt mines at Wieliczka, in Poland, and the royal salt works in the French town of Arc-et-Senans, for example, were accepted in 1978 and 1988 on the basis of their architectural merit. Meanwhile, the prestige of monuments declined as interest grew in roads, railway networks, rivers and canals—all of them long neglected by the List, perhaps because of legal problems involved in preserving them.

Moving away from classical definitions of a masterpiece

Such choices reflect a significant change in our concept of heritage. By finally questioning the idea inherited from ancient times and firmly rooted in European culture of what a masterpiece is, the World Heritage Committee opened the way to a more balanced picture of humanity's heritage. A shared and indivisible heritage, where the interaction of people and nature is fully recognized, is gradually winning converts from the incomplete vision of heritage that the 1972 Convention perpetuated despite its best intentions.

No longer is the sacred Maori mountain in New

Zealand's Tongariro National Park seen as very different from Mount Athos, in Greece, even though the forests and volcanic craters of the first are monuments steeped in sacred meaning while the second houses the world's largest collection of Byzantine art.

Legends, beliefs and traditions: safeguards to our collective memory

So intangible heritage—the amorphous body of beliefs, legends, written and oral traditions along with forms of behaviour that make up our diversity—has made a vigorous comeback onto the World Heritage List. The 1972 Convention made only passing mention of intangible heritage and tied it to the existence of material evidence. But after long neglect it now seems that intangible heritage is the key safeguard to humanity's collective memory, precisely because of its very vulnerability.

What would happen to Marrakesh—whose city walls, mosques and palaces are preserved like museum pieces—if the Jemâa-el-Fna Square was no longer a vibrant and colourful meeting place of cultures, filled with music and hubbub and the aromas of several worlds that we are lucky to know?

What would the Sri Lankan city of Kandy be like without its annual pilgrimage that draws thousands of the faithful to venerate the remarkable relic that is the Buddha's tooth? And what would become of the World Heritage site of Sukur, in Nigeria, if the highly structured society living there suddenly lost all its centuries-old traditions? ■

The heritage of a country is essentially its cultural identity, and whether big or small, majestic or simple, physical or non-physical, it must be maintained and have a meaning for every new generation.

I.M. Pei,
American architect
(1917-)



Rocks are the soul of the gardens and trees their most precious good. Here, in the "Garden of the Master of Nets."

The soul of Suzhou's gardens

The Suzhou gardens in southern China recreate nature in miniature to celebrate the harmony between heaven and Earth. An initiate guides us along their winding paths, decoding a host of refined symbols

LU WENFU

CHINESEWRITER



In the 13th century, the Venetian merchant and adventurer Marco Polo was the first Westerner to introduce Suzhou to Europe. For him, this paradise on Earth was above all a flourishing silk-production centre. Later, other Europeans fascinated by the city, which is criss-crossed by canals, called it "the Venice of the Orient." In the 1980s, I helped to spread Suzhou's fame by presenting it as a paradise for gourmets in my novel, *The Gourmet*. And when, in 1997, UNESCO inscribed Suzhou on the World Heritage List because of its classical gardens, the town's reputation acquired yet another dimension.

Cruel as they may be, human beings are children of nature and cannot live without mountains, water, grass, trees, sunshine and air. If we are far away from those elements, we feel stifled, ill at ease, trapped. As soon as we can, we go on vacation. But rather than travel, which can be a tiring, expensive and even dangerous exercise, why not make a replica of nature in miniature, "an artificial nature"

intended for daily use?

In Europe, for example, parks are huge. Immense forests crossed by abundant rivers stretch as far as the eye can see without any obstacles to mar nature's spectacle. These parks are actually large stretches of nature that have been "fenced off" and touched up a bit by adding a building here and there on the banks of a river or at the edge of the woods.

Chinese landscaped gardens, on the other hand, put more emphasis on the idea of harmony between heaven and Earth, a salient feature of Chinese philosophy. The gardens of Suzhou are actually a man-made landscape. Its designers have replicated all of nature's basic features in miniature on flat ground. Since it is impossible to move mountains, they built rock gardens. Since the courses of rivers cannot be changed, they dug canals into the earth and made water flow through them. And the ground beneath Suzhou is so gorged with water that all it takes is a hole three metres deep to create a pond. The people who live there, without a false sense of shame, acknowledge that they have "falsified" mountains and rivers. But that "falsification" is a work of art in the fullest sense of the term and, consequently, fundamentally truthful.

Rock gardens are the soul of Suzhou. The stones of which they are made—the soul's receptacle—

come from Lake Tai, which is located near Suzhou. Worn down by erosion, these delightful, steep rocks were so famous that even the emperors of the distant north sent their builders to bring them back to decorate their gardens. The most famous and precious among them are called “rock peaks.” The assessment of their quality is based on three criteria. They must be “slender” rather than “bulky,” they must contain horizontal as well as vertical “tunnels”; and their surface must be wrinkled rather than smooth.

But there is more to creating a work of art than piling up beautiful rocks. The first rock garden masters, highly skilled and very cultured craftsmen, appeared at Suzhou under the Tang (618-907) and Song (907-1271) dynasties, a period when gardens were flourishing everywhere in China. The successors of these first landscape designers were so numerous and talented that under the Ming dynasty (1368-1644), the town and its surrounding area was dotted with between 200 and 300 gardens. Today, 77 are left, of which 27 have been designated national landmarks. But many of them are actually just large courtyards containing small gardens decorated with flowers, plants, bamboo and rocks, like the ones that were once found in most of Suzhou’s houses.

Changing the landscape with every step: a rule of garden design

Qing Gu Yiliang was an undisputed master under the Qing dynasty (1644-1840). He created the limestone “Mountain of the Villa of Embracing Beauty”¹ (*Huanxiu*). Gu Yiliang went blind towards the end of his life, but his followers completed the work under his supervision. And therein lies the secret of the mountain’s beauty: it was built by the master’s soul, rather than his hands. It is the exact replica, in miniature, of the real mountain that lived in his heart. Its dimensions are modest—it covers less than 500 square metres and its peaks are no more than seven metres high. But the moment you go inside, you feel as though you are walking into the entrails of a huge, wild mountain located on the edge of a winding gorge. And you think of these words by Chen Congzhou, a current-day specialist on Chinese gardens: “the mountain that looks like a rock garden is strange; the rock garden that looks like a mountain is a thing of wonder.”

However, it takes more than a mountain to make a landscape. Water is another of the gardens’ crucial features. But to bring water to the gardens, it is necessary to either make use of an already-existing pond or stream, or dig into the ground. In any case, the builders must know how to open trenches and make water flow through them, to create and then re-unite the branches of a river. In

short, they must know how to imitate the bends of a river in order to obtain what we call “sinuous currents.” The masters of Suzhou excelled in this art.

Rivers mean bridges. The gardens of Suzhou are dotted with all manner of miniature stone and wooden spans. For example, the “Garden of the Master of Nets”¹ (*Wangshiyuan*) has a very pretty little bridge that can be crossed in two or three strides.

Suzhou has mountains, rivers, bridges—but what about trees? A landscape with neither plants nor flowers is a desert. Old trees are the most precious feature of classical Chinese gardens because anything is possible, including laying out a Suzhou garden in the United States, except making an old tree. In the “Lingering Garden”¹ (*Liuyuan*) there is a thousand-year-old ginkgo tree. The shade of its fan-shaped foliage is where the master decided to build the rock garden.

Visitors to Suzhou must not be impatient. Unlike Versailles, where the splendid vista of palace and park can be taken in with a single, sweeping glance, the gardens of Suzhou are hidden behind narrow streets like demoiselles in a boudoir. When you walk into a garden, you might even feel a bit disappointed: the first thing you see is a long, zig-zagging gallery. This is the “winding path leading to serene beauty,” a basic feature of the garden’s architecture. At first sight, it may not look very interesting. But before you know it, a patch of garden behind a wall will wink at you through the latticework of a sculpted window. Trees and pavilions can be made out in the distance. After a few steps on a winding path, a magnificent garden appears before your eyes.

“Changing the landscape with every step” is the second rule that must be observed in classical Chinese garden design. The scene shifts as you walk along. To avoid the impression of monotony and repetition, the designers erected walls pierced with sculpted windows that divide the gardens into

LU WENFU

Born in 1928 in the Chinese province of Jiangsu, Lu Wenfu has lived in Suzhou since 1945. A journalist, he went on to become a novelist and has won several national literary prizes. Vice President of the Association of Chinese Writers, he is the founder and editor of the *Suzhou Magazine*, published monthly. His books translated into English include *The Gourmet and Other Stories of Modern China* (Readers International, 1987).



The gardens are dotted with miniature stone and wooden spans.

1. Site inscribed on UNESCO’s World Heritage List.
2. Two sentences of which certain words set up relationships between them with corresponding meanings and sounds. Usually, these “matching” words occupy the same position in both sentences.

One must choose pebbles the size of a goose egg so that the paving resembles the brocade of the Shu region.

Ji Cheng,
Chinese landscape artist
(1582-circa 1634)



Latticed windows sculpt space in the "Garden of Harmony."

© Marie Beaton/Explorer, Paris

several sections without obstructing a view of the entire complex. Your eyes are never at rest in a garden of Suzhou. At every turn, the sight of a rock, a stand of bamboo or a banana tree takes the visitor by surprise. Each plot of land has been designed to resemble a splendid painting. A dead angle here

would be like a failed brushstroke.

This method of dividing up space with doors, windows, galleries, rock gardens and streams creates the impression of contemplating a scale-model of nature. It provides what we call "a glimpse of grandeur through the miniature."

Gardens inspired by poets, painters and calligraphers

Today, landscape architects design projects before building a park or playground. The masters of the gardens of Suzhou had no plans. They took their ideas from poetry. They also drew plenty of inspiration from Chinese painters, who often returned the compliment by exalting the beauty of their works. Thus, many painters, poets and calligraphers helped to create the gardens of Suzhou.

The gardens were never really finished. As time went by, they were enlarged, enhanced and perfected. Once a rock garden, a stream or a pavilion was completed, the masters had the custom of inviting their lettered friends to savour famous liqueurs and give free reign to their fertile imaginations. The guests inscribed calligraphy on the door lintels and parallel sentences on the uprights². They also gave advice on where to build a new bridge or pavilion. Later, the masters embellished the garden heeding the advice they had received and invited their friends back to have a drink and write poetry.

Had it been any other way, the gardens of Suzhou probably would not have the refinement that has made them so famous. ■

REFLECTIONS OF CHANGE IN CLASSICAL CHINA

Classical Chinese garden design, which seeks to recreate natural landscapes in miniature, is nowhere better illustrated than in the four gardens in the historic city of Suzhou. Universally recognized as masterpieces of the genre, they were inscribed on the World Heritage List in 1997. The gardens reflect not only the profound importance of natural beauty in Chinese culture, but also the political, economic and cultural changes that took place in classical China.

Created between the 16th and 18th centuries, when classical Chinese landscape design was at its height, the gardens of Suzhou were designed to deeply satisfy both the minds and the souls of the city's inhabitants. Today, these microcosms, which enclose all the basic features of nature and culture – water, stone, plants, buildings, poetry and painting – contribute to the study of China's architecture, human sciences, aesthetics, philosophy, botany, hydraulic engineering, environmental sciences and folk culture.

The "Humble Administrator's Garden" is the largest of the four gardens (52,000 square metres). It contains a lake, which covers one-fifth of its surface area, and a wide array of plant species, including lotus, wisteria, forsythias, trees and flowering shrubs. Its central part is a reproduction in miniature of the lower Yang-Tseu-Kiang, the world's third-longest river after

the Amazon and the Nile.

The "Lingering Garden," which stretches out over more than 23,000 square metres, contains the famous "cloud-shrouded peak" (a 6.5-metre-tall limestone formation) and the gardens' most beautiful collection of engraved stele. It was designed by Xu Taishi and dates back to the late 16th century.

The much smaller "Garden of the Master of Nets" (5,400 square metres) was built in the 18th century. Its most distinguishing feature is a magnificent house with four successive courtyards built in strict observance of feudal rules. The smallest of the four gardens (less than 2,200 square metres), and probably the oldest, is the "Garden of the Mountain of the Villa of Embracing Beauty", which belonged to the royal academician Shen Shixing and housed the famous "mountain" designed by Qing Gu Yliang (see article). Its artificial glens, trails, grottos, gorges, cliffs, crests and cliffs vie with nature. ■

Irrigating time with the Kinderdijk windmills

It's impossible to picture the Netherlands without windmills, but they have done far more than inspire the great Flemish painters. Without them, half the country wouldn't exist

SERGE VAN DUJNHOFEN

DUTCHWRITER

As a child, I thought of windmills as helicopters flying over the landscape of my imagination. Their astonishing shapes looked both archaic and futuristic to me. They were strange, timeless machines sailing on the elements: earth, water and wind.

Sometimes my father, a hydraulic engineer in northern Brabant, took me on a polder (land recovered from the sea), where a humpbacked mill-keeper taught me the "language" of windmills: "a windmill with its sails puffed out walks 'on its head,'" the gentleman told me. "During a storm, it walks 'bare-legged.'" Windmills could be either "happy" or "in mourning," they could work alone in the solitude of a polder or in couples on the banks of a *boezem* (the basin of a polder near a river and above its water level). Each visit was an adventurous expedition to a land of make-believe, a world made up of still, dark water covered with white foam, of musty reservoirs, rustling wind and strong scents.

When I went to Kinderdijk-Elshout, located

northwest of the Alblasserwaard ("land on the water's edge"), I joyfully discovered that it smelled like the pumping stations of my childhood. A smell of fresh water, cool stones, diesel fuel, grease and tools. Curious, the first thing I did was walk over to the plant. I wandered around the big machines, and ended up in the repair shop. The sight from the bay windows took my breath away. The polder, the dikes along two canals, the broad bed of the Lek river, the waving reeds in the two upper basins, the 19 windmills stretching out as far as the horizon, proudly holding up a dark and threatening sky, looked as if they had been painted by Ruysbroeck, Rembrandt, Mesdag or some other brush-wielding magician. Only a distant grey building and an odd-looking apartment complex shaped like a ferryboat reminded me that I was in the present.

The Alblasserwaard, which lies close by the sea and at the mouth of several swollen rivers, has always been threatened by water. It has been flooded at least 30 times. The last deadly tide swamped the area in 1953, killing 1,800 people. But the saddest, and most famous flood is still the one



When winter arrives, out come the skates: a feast on ice in Kinderdijk.

© Emile Luder/Rapho, Paris



Hear the creaking ribs of the woodwork.

© J. Bizarro/San Marcos, Madrid

aftermath of a major flood in 1726, it became obvious that drainage mills were indispensable.

A first row of eight round, stone mills was built in the Nederwaard in 1738. Two years later, the same number of mills was erected in the Overwaard, parallel to the first row, but this time they were constructed of wood and had eight sides with thatched roofs. As the years went by, this complex grew with the addition of new mills, locks and pumping stations. This innovative hydraulic irrigation system acquired a reputation and became known as “drainage by stages.” First, the mills drained water in the lower basins and polders. Then, they channeled it to raised reservoirs. Lastly, the excess water passed through half a dozen locks before draining into the river.

Today, the mills are kept in working order, ready to serve in the event modern equipment breaks down. And all of them are inhabited. A swing in a little yard, vegetables in a garden, a fisherman’s rowboat moored between reeds provide a glimpse into the occupants’ everyday lives. Just one mill is open to the public during the summer. Inside, you can see not only the impressively-sized cogwheel, but also picture the frugal life of a mill-keeper and his family.

Inside the mill itself, you feel as if you’re on a boat in the middle of the sea. As it turns, all the ribs in the woodwork creak. In the entrance, a dead muskrat hangs in a cage. At the beginning of the last century, the muskrats were imported for their fur from America and the present-day Czech Republic, but they soon became a veritable scourge for the inhabitants; their digging and scratching caused major damage to the dikes. Even today, they are hunted on a massive scale, cooked in wine sauce and eaten under the more appetizing name of “water rabbits.”

“I wouldn’t live in one of those windmills for

AN INGENIOUS SYSTEM

UNESCO inscribed the Kinderdijk-Elshout network of windmills on the World Heritage List in 1997. The network attests to the ingenuity and bravery of the Dutch people, who developed a highly intelligent hydraulic system to stabilize and cultivate a large stretch of peat bog in the Netherlands.

Located on the northwest edge of the Alblasserwaard (“land on the water’s edge”), the complex helped drain the inner districts of the Overwaard (“the high land”) and the Nederwaard (“the low land”) until 1950, when the mills were closed. The 19 remaining mills are still in operating condition.

The site and its upstream and downstream polders, equipped with natural drainage systems, rivers and streams, windmills, pumping stations and spillways, have remained virtually unchanged since the 18th century. Today this typically Dutch landscape is officially protected as a cultural monument and a natural reserve.

SERGE VAN DUINHoven

A writer and historian, Serge van Duijnhoven is an all-round artist. Born in 1970 in Oss (Netherlands), he lives and works in Brussels (Belgium) where he created the group De Spooksprekers, with the rapper Def P and the saxophone player and poet Olaf Zwetsloot. In collaboration with a theatre troupe, he also founded the Millennium review. His works include *Obit* in orbit, a CD of poems and music (Bezige Bij/Djax Records, 1998), as well as poetry collections and fiction.

that occurred on the night of November 18 to 19, 1421, when the water swallowed up some 60 villages. Legend has it that a cat managed to keep a baby rocking in its cradle in the middle of the roiling waves. The dike that the cradle landed on was named Kinderdijk, “the child’s dike.”

Ready to serve if modern equipment breaks down

Dutch history owes much to the windmills. True, the western Netherlands could not have been built without the dikes, but the windmills are what keep the diked land habitable. Without them, half of present-day Holland would not exist. The Dutch would have ended up leaving the land, worn down by their futile struggle against water.

“God created the world, but the Dutch created Holland,” said René Descartes. The French philosopher was very familiar with the country for having lived there a while, but he wasn’t entirely right. More than 5,000 years ago, many places that had been wrenched from the sea were already inhabited. The remains of a canoe and a female skeleton (named *Trijntje*) were discovered during work on the Betuwlijn, a new, highly controversial railroad line.

The Alblasserwaard’s earliest long drainage canals were built in the 11th century. A hundred years later, a dike already surrounded almost the entire area and the basins of the two rivers that flow across the Alblasserwaard, the Alblas and the Giessen, were developed. They became the districts of the Nederwaard (“the low land”) and the Overwaard (“the high land”). In 1277, Count Floris V of Holland set up the district’s Water and Polder Administration, an organization in charge of dike upkeep. But these efforts would not suffice. In the

anything in the world," says Henk Bronkhorst, who manages them for the polder authority. "They're too humid, too cramped and too inconvenient!" And yet, he feels passionate about the mills and is glad to see them on UNESCO's World Heritage List. "That recognition will probably help us save them from being torn down", he says.

Wine and poetry for the new windmill inspectors

Indeed, Dutch windmills have suffered a terrible fate. There were nearly 10,000 of them in 1860. Today, just 900 remain. Indeed, it is nothing short of a miracle that so many mills at Kinderdijk have been preserved. In 1950, the Polder Administration was preparing to tear down all the mills that were "out of service." Replaced by diesel-powered hydraulic pumps that could evacuate water much faster, they were perceived as useless and too expensive to maintain. But the worldwide renown they have acquired will help to assure their future, and Bronkhorst hopes it will be easier for him to raise money for their restoration. "We really need it. The stone of the round mills has become porous over the years and a fifth mill is collapsing," he says.

Managing the windmill area is no easy task. The local communities, farmers, Calvinist ministers, business people and officials regularly quarrel over their upkeep, the building of access roads and parking lots and the cost of restoration projects. The site's inscription on the World Heritage List has spurred the creation of an organization in charge of managing the interests of all the windmills within the designated area.

At the entrance to Kinderdijk, west of the locks, stands the Gemeenlandshuis, the community house. This is where officials gather to assess the danger in difficult times and decide on which measures to take. During senior-level meetings, they share a large meal in a room adorned with paintings by 17th-century masters. The Overwaard inspection authority used to welcome its new high-level members by serving them wine in cups that could contain up to one litre. Each new member was asked to drink it all in one gulp, before writing a poem in the community house book. One of them goes like this: "the cup was offered to my lips/with these words: drink up, comrade/because you took the risk/here we push away water, not wine." The inspectors used every means at their disposal in their war against water—even the muses!

It's easy to reach the Overwaard windmills from the community house. The closer you get to the central

dike, the further back you go in time. Automobiles give way to peacefully grazing cows and sheep. The only sounds you hear are the chattering of aquatic birds such as bitterns, purple herons and sea martins, the crowing of a rooster and reeds rustling in the wind. You can smell the fragrance of ripe apples that have fallen from the trees. I remain silent at the sight of five moss-green umbrellas sheltering the patience of a few old men fishing. The wings of the mills turn stubbornly as gales can reach force six on the Beaufort scale.

But what are the windmills draining? What are they transporting from one place to another?

The Kinderdijk landscape symbolizes an endangered species, the typical Dutch windmill. But for the people of the Netherlands, it also symbolizes their never-ending struggle to keep their land. "The land is still sinking," says Henk Bronkhorst, "and the water level has risen in the past few decades. We had to add another reservoir, a sort of funnel, to the upper basin to be able to collect more water, as well as an extra pump for the locks."

Weapons to push back the sea's never-ending advance

Galloping on his nag Rocinante, Don Quixote tried to attack the windmills. With windmills as their only weapons, the Dutch are trying to push back the sea's never-ending advance. According to some forecasts, in a few hundred years the Netherlands will no longer exist because of global warming. Water will take back from people what they have taken from her. Time will tell if they will have been as bold as the lord of La Mancha, Don Quixote.

The farms and cottages lie quiet and dejected in the barren land and the only things alive are the windmills . . . whose strong sails catch the force of wind thrashed with the rains.

Henri Polak, Dutch politician and writer (1868-1943)



Being inside a windmill is not unlike stepping onto a boat rocked by the seas.

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The treasures in Mauritania's dunes

Once, Mauritania's ksours were thriving centres of trade and learning. Today, the country is struggling to save them from sand, wind and oblivion

MOUSSA OULD EBNOU

MAURITANIAN WRITER



© Laurent Monlauphapho, Paris

Waves of white, beige and red sand incessantly blow from the north and south, crashing against the purplish mass of the Adrar, a mountain range that crosses Mauritania between the Majabat El Koubra and Aouker deserts. The dunes conceal four jewels: Oudane and Chinguetti in the north, Tichitt and Oualata in the southeast. These old, stone-built cities date back to the 12th and 13th centuries and were once very prosperous, but today they only barely survive in such a hostile environment. Oudane, Chinguetti, Tichitt and Oualata may be drawing their last breath, but they are essential to understanding the history of this area, whose fate was closely linked to the water table and the trade routes that span the Maghreb, the Sahel and black Africa.

These cities, known as *ksours*—of which Chinguetti was probably the most famous—were located on major caravan routes, and over the centuries turned into metropolises of trans-Saharan trade, especially in gold and salt. The Chanaguita [inhabitants of Chinguetti] were skilled merchants who established regular contacts with the Maghreb, Egypt and Arabia to the north, and Guinea, Côte d'Ivoire and Nigeria to the south, playing an important part in the spread of both Arabic and Islamic culture. Trade caravans from Chinguetti sometimes employed over 30,000 camels carrying salt, wool, gunpowder, dates, millet, wheat and barley. They returned from the south with gold powder, slaves, ivory, animal hides and ostrich feathers. These goods were subsequently resold in Cairo, Sijilmassa, Fez and above all Tlemcen, where Venetians and Genoese traders stocked up in the two *fondouks* that were specially set aside for them.

According to some sources, the origins of Oualata, which means “shady place” in Berber, probably date back to a period preceding Islam. By the 13th and 14th centuries, Oualata had become



© Ch. Lionel Dupont, France



such an important trading centre that its name appeared on European maps. A great Muslim family, the Maqqaris, had built a warehouse there for gathering goods from the south and storing merchandise from the north before they were resold. Oualata was also where pilgrims from west Africa assembled before travelling on to Chinguetti, a departure point for the annual caravan to Mecca. This pilgrimage had made the city so famous that for a long time Mauritania was known as Bilad Chinguel—the land of Chinguetti.

Libraries and schools guard priceless manuscripts

A major trade route connected Oualata with Oudane, which was a very prosperous city, especially between the 14th and 18th centuries. But trade was not its sole source of wealth. Learning has always been extremely important to Mauritians. Sunnite Muslims of the Malikite rite, they turned their *ksours* into renowned intellectual centres that attracted many foreign students. To this day, their libraries and *madrasas* [Koranic schools] have jealously preserved some 40,000 priceless manuscripts. At one time up to



Defying time: the entrance to a mosque in Chinguetti.



The arabesques on Oualata's walls still inspire the drawings traced on women's hands (see photo p. 26).

© M. Renaudeau/Hoa Qui, Paris

40 scholars lived on the same street in Ouadane, or at least that's what people say. And if the etymology of the city's name is any indication, that was most likely true, since it means "the city of the two wadis": the wadi of the palm trees and the wadi of knowledge.

Benefiting from its location on the route between Oualata and Ouadane, Tichitt grew into a magnificent city. The town's multi-storied houses—with blind walls on the ground floor, a door for only opening to the outside and façades built of coloured stones—are fragile remnants of typical Mauritanian architecture.

The buildings' subdued polychrome stands in sharp contrast to the exuberant façades in Oualata, where the doors, porches, vents and windows are trimmed with white drawings against a reddish-brown undercoat. The rosettes around the lustral stones are especially beautiful. People living here brush their fingers over them before performing ritual ablutions with water that has often been in short supply in a town whose narrow streets are stifled by sand and dust.

But Oualata's most famous paintings adorn the walls of inner courtyards. Composed of simple,

endlessly repeated designs, these arabesques show the stairs, doors, windows, alcoves and openings off to their best advantage. They are usually painted with a substance made of brown ochre, charcoal, gum and cow pat.

Children's laughter replaced by the stubborn whistling of the wind

These decorations are typical of Oualata. In Ouadane, on the other hand, the houses were built of pink or grey sandstone and a mortar made of clay and straw. All the walls in the city were covered with clay to protect them from the scarce rain, giving them an extremely sober, refined appearance. Today, this coating only remains in places, testimony to the decrepit state that the entire city has fallen into. The laughter of children running through the narrow, astonishingly angular streets and up cramped stairs between two blocks of houses has faded away. The teeming throngs have vanished forever. A single sound now breaks this realm of silence: the whistling of the wind as it stubbornly blows against ghostly façades. Ouadane's families have moved to a small part of the "upper town," deserting all the other

Deserts stir our emotions because they represent Nature as it was before human beings came on the scene. They also show us what it may be like after we have disappeared.

Théodore Monod,
French naturalist
(1902-)



Intricate designs adorn the interior of a house in Oualata.

MOUSSA OULD EBNOU

The author is one of Mauritania's greatest French-language novelists. He currently serves as cultural advisor to his country's president. Moussa Ould Ebnou has written two novels, *L'amour impossible* and *Le Barzakh*, published by L'Harmattan in Paris in 1990 and 1994 respectively.

neighbourhoods. And if a few buildings are still standing in the rest of the city, it is thanks to the foresight of their builders, who provided them with ledges to protect them from rain and wind erosion.

In Chinguetti too the sand has slowly invaded the courtyards of abandoned houses, to the point that the floors of formerly inhabited rooms lying under collapsed stone walls are now more than one metre below street level. But this city remains "the soul of the country," and population loss has been less severe than in Ouadane, Tichitt and Oualata. The square minaret of its famous mosque, which was the national symbol of Bilad Chinguel for a long time, is still afoot and defying time.

By contrast, Tichitt, located in a basin at the foot of the Adrar, is much less protected from the

sand. Legend has it that seven towns have been superimposed on this site, and the one that has come down to us today is irretrievably sinking beneath the dunes. Only the upper stories of a few houses are visible—the rest has been swallowed by the sand. As recently as a century ago, this oasis was farmland that produced enough food to feed a population of several thousand inhabitants. Today, the few wind-battered palm trees are dying, half-buried in sand. The final blow came last year, when torrential rains destroyed 80 percent of the town. Luckily, the splendid mosque and its square minaret, the most beautiful building of all, survived.

Musicians still sing the glory of life in the ksours

Although Mauritania's old towns have lost ground to the Sahara in the north and the Sahel in the south, along with suffering a devastating, decades-long drought, they refuse to go quietly into the night. The creative genius of ancient civilizations is still the driving force behind Mauritanian culture. The designs on Oualata's walls are the same as those still drawn on the hands and feet of Mauritanian women. They can also be found in jewelry, leatherwork and woodwork, the embroidery on men's garments, the dye of women's veils, the weave of traditional carpets and even the bills of the nation's currency, the *ouguiya*. The melodies of Vala, a famous musician from Chinguetti who has become an emblematic figure of Mauritanian music, are still played on the *tidinit*, the Moorish lute. Other traditional compositions, such as the *awdid*, which was once performed as the Tichitt caravans were being loaded, immortalize the various aspects of life in the *ksours* when they were at the height of their glory.

Thus tradition is passed down from one generation to the next, like the beams that still pump water from old wells in the small farm plots and nonchalantly bow up and down across the centuries. ■

TRADE, RELIGION AND CULTURE

In 1996, the old Mauritanian ksours of Ouadane, Chinguetti, Tichitt and Oualata were included on the World Heritage List as the last vestiges of traditional desert life. Each of these towns is typical of the settlement pattern of nomad populations. Each has a few main streets that served as the caravans' access roads or led directly to the palm groves and cemeteries. All were surrounded by defensive walls, today reduced to a few fragments, which marked the limits between the old ksour and newer neighbourhoods. Their architecture also developed to meet the requirements of nomad life: houses were used to store goods most of the year, while the inhabitable rooms fulfilled various functions depending on the season or time of day. These four medieval towns are the last existing ksours. They were trade and religious centres as well as focal points of Islamic culture that housed tens of thousands of ancient manuscripts. Despite local and regional conflicts, drought, famines, epidemics and the end of the caravan trade, they have survived to this day. Isolation, new administrative and economic centres in other parts of Mauritania and the constant outflow

of their inhabitants have nevertheless further jeopardized their existence.

At the request of Mauritania's government, UNESCO launched an international campaign in 1978 aimed at preserving these cities and funded restoration and conservation work, especially to save the mosques. Two years later, the Mauritanian Scientific Research Institute set up a photographic and documentary archive. In 1993, the Mauritanian government created the National Foundation for the Preservation of Ancient Towns, whose purpose is to help the towns overcome the causes of their decline and revitalize them with integrated preservation and development programmes. A project to preserve and renew Mauritania's cultural heritage funded by the World Bank also includes the old towns in its remit. ■

Guanajuato: fortunes made of silver

Once home to the world's largest silver mine, this Mexican town has bred many zealous and fiercely devout souls. Today, flocks of tourists, university students and a prestigious theatre festival kindle its spirit

RAFAEL SEGOVIA

MEXICAN WRITER

Nestled in a narrow gorge of the Sierra Madre in the heart of Mexico, Guanajuato is one of those post-Columbian towns hewn out of rock that seem to spring straight from the mountains. Contrasting with the arid landscape of Cuanaxhuata ("the hill of the frogs"), this elegant 450-year-old dame of the Spanish Era continues to protect herself behind fortifications from the region's fierce winds, just as she did for three centuries against repeated attacks by the nomadic Chichimeca people, sworn enemies of the Spanish conquerors.

The town lies above a network of subterranean streets. Its majestic old mansions, baroque and neo-classical churches, palaces, convents and hospitals have all the charm of a bygone era.

Narrow winding streets that faithfully espouse the uneven terrain echo with the footsteps of times past and the crystalline tinkle of fountains splashing onto stone slabs. And a touch of forbidden romance still hovers on the Callejón del Beso ("Street of the Kiss"), which is so narrow that a Romeo and Juliet who once lived opposite each other stole furtive embraces leaning from their balconies. Their story ended sadly: she was shut away in a convent and he was forced to flee into exile.

The tale of a zealous explorer who dug for hidden treasure

The spirit of Guanajuato, guarded by its stone walls, is impregnated by a rich memory which doesn't trap the town in a sleepy past. Once upon a time, it had just a single street that wound its way through the rocks to reach a vast esplanade, now the Plaza de los Pastitos. Today, modern highways cut through the mountains, giving better access to this tourist and university town, which is also an economic and cultural centre.

The little provincial burg of 50,000 inhabitants has been stirred from its slumber by the thousands of tourists crowding its outdoor cafés, by businessmen drawn to its prosperity, by miners who, like their forebears, still dig gold and silver out of the ground, and by students who liven up a multitude of small squares with their youthful enthusiasm.

Not to mention the din that has engulfed the town every October for the past 20 years or so when the Cervantino dramatic arts festival draws leading international performers along with hordes of onlookers—and not always the most educated sort. Their noisy revelling drove the townspeople to ask

the federal government to abolish the prestigious cultural event.

As I make my way through this crowd, I cannot help wondering what life would have been like had this town followed a more tranquil course than its turbulent history. At times a bustling metropolis, at others a sleepy village, Guanajuato has evolved with the flow of political events and the ups and downs of the mining industry. This chequered course seems to have left its stamp on the local mentality. Aware of their precarious existence, living off chance discoveries, forever waiting for riches while fearing



The town's 50,000 inhabitants are aware of their fragile existence.

© Marco/Ask images



Narrow lanes echo tales of forbidden romance.

RAFAEL SEGOVIA

To say the least, this Mexican writer, born in 1951, feels at home in all the arts, from photography and filmmaking to the theatre, television and video. A literature professor and prolific author of literary essays, Rafael Segovia has co-ordinated a string of cultural events. He notably staged a performance presented at the 1986 Cervantino festival of dramatic arts, *The Poets' Altarpiece*, or *Love and Death in the Golden Age*. A collection of his numerous literary essays is forthcoming.

poverty, the inhabitants of Guanajuato are cautious, stubborn and fiercely devout.

To prove the point, take the zeal of one Antonio de Ordoñez, who convinced himself that he would unearth a hidden treasure. When the Valenciana mine, five kilometres from the town, was abandoned in 1760, he refused to believe its resources were exhausted and began a long and arduous prospection of the area. The adventure took him to the brink of death and despair but his belief was not to be shaken.

After four years, his companions nearly gave up on him, but he used his gifts as a preacher, alternating sermons and prayers, to persuade them to continue with their quest. Four more years of ordeals and suffering passed. And then the longed-for miracle occurred. Antonio de Ordoñez discovered the Veta Madre, the Valenciana mother lode, one of the richest in the world.

A 525-metre descent into the bowels of the earth

Ordoñez became wealthy and Guanajuato turned into the world's biggest silver mine. Like many other mines in the region, it is still in operation. Its main shaft is 525 metres deep and it has almost 40 kilometres of galleries. In the beginning, the workers went down slanting steps more than 700 metres into the bowels of the earth. Each miner had to climb them 14 times a day carrying 75 kilos of ore every time. This gives an idea of the wealth the Spanish Empire amassed over three centuries.

To thank God for rewarding his efforts, Ordoñez decided to offer part of the riches he had drawn from the earth, so he built a magnificent church, one

of the most impressive in the whole country. The altarpiece covered with gold leaf, the rich decoration and still largely intact paintings and artifacts make La Valenciana church a unique example of Churrigueresque art, the Mexican baroque that smoothly combines Indian and Spanish styles.

Once the bastion of the strictest Catholic morality

A quick tour of Guanajuato suffices to understand the predominant role played by the Catholic church. In the 17th and 18th centuries alone, more than 15 convents, temples, churches and chapels were built in an area of less than two square kilometres, which is today the old city centre. Such religious zeal is also reflected in the street names. Calle del Campanero ("Bellringer Street"), for example, commemorates Luis Antonio Solorzano, the Santa Fé parish bellringer who ruled the townspeople's lives at the beginning of the 20th century, letting them know when it was time for mass, when wakes for the dead were being held and, if necessary, when the curfew hour had arrived.

For many years Guanajuato was a bastion of the strictest Catholic morality. The inhabitants, locked inside the town as if in one huge house, all knew each other and anyone who broke the rules of decency was singled out for reproach. It was fertile ground for all kinds of outlandish passions, which Jorge Ibagüengoitia wove into thoughtful and humorous stories. The work of this warm-hearted, talented Guanajuato native, who died young in 1983, still inspires Mexican playwrights and new wave filmmakers, immortalizing the surreal and conservative mood of this little town slowly being eclipsed by modern life. ■

MARRIED TO THE MINE

Founded by the Spanish at the beginning of the 16th century, the town of Guanajuato, capital of the state of the same name, became the world's leading centre of silver extraction in the 18th century. Located in the centre of Mexico, Guanajuato has always had a symbiotic relationship with its mines. Everything in the town testifies to this: its picturesque "subterranean streets," its sumptuous churches like La Compañía and La Valenciana which are considered to be among the finest examples of baroque architecture in Central and South America, the construction of numerous dams and hydraulic installations, not to mention the mines themselves. The deepest shaft, the Boca del Infierno ("Mouth of Hell") plunges down a breathtaking 600 metres. The historic town of Guanajuato and its adjacent mines were added to the World Heritage List in 1988. ■



© Daniele Biglino/Contrasto

The best rice is cultivated by the poorest farmers on the highest, most inaccessible terraces.

Dancing anew on the stairways to heaven

Safeguarding the spectacular rice terraces of the Philippines begins with preserving the culture of those who created them.

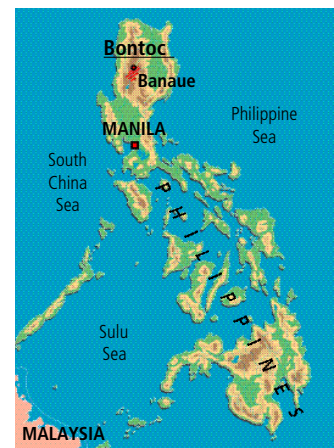
In August, after nearly 50 years of silence, the drums of Ifugao priests once again resounded across the mountains of Luzon Island, marking a revival of ancestral customs

ALFRED A. YUSON

FILIPINOWRITER

Filipinos often refer to the Banaue rice terraces as the eighth wonder of the world, and understandably so. Of all the exquisitely sculpted rice terraces which climb the slopes of the Cordillera in Luzon, the largest island in the Philippine archipelago, those of Banaue are the finest expression of the genius of local tribes. With the terraces of Mayoyao, Kiangan and Hungduan, they represent a “trademark” of Ifugao culture. As the Filipino architect and conservationist Augusto Villalon has written, “the terraces are the only Philippine monument constructed without any foreign influence or intervention, and without enforced labour of any kind.” They endow the province of Ifugao with a unique landscape, born of a harmonious complicity between human beings and their environment.

For the past two millennia, rice has been planted under the harshest conditions, at an altitude of over 1,000 metres. To construct their terraces, farmers first have to identify concave areas, place stone markers there and fill the cracks in the slope with gravel to avoid slippage. As each layer of walling is added, the level of soil is raised, with some walls reaching six metres in height. Without animals and only rudimentary tools, these farmers have patiently recarved the steep mountain slopes, respecting their natural curves. Sometimes no larger than three metres, the terraces are irrigated by an ingenious system. Bamboo conduits of different diameters deliver just the right amount of water to the young rice shoots. A complex system allows the water run-off to flow downhill and flood the terrace next in line.



Here, men and women repeat the gestures and practices of their ancestors. Like 2000 years ago, they use only organic fertilizers and pesticides of plant origin, harvested in the neighbouring forests. Those who own the lower, larger terraces are the wealthy elite, while the peasants till the upper, narrower spaces. The Ifugao people prize their *tinawon*, a fragrant homegrown upland rice, preferring it to the commercial lowland variety. Other staples such as sweet potatoes are also grown in forest clearings, but only rice is prepared during celebratory feasts—along with chicken and pork.

After Ferdinand Magellan reached the Philippines in 1521, the Spanish easily occupied the lowlands. But they encountered stiff opposition in the mountains from what they called “restless and warlike tribes.” Headhunting by certain tribes particularly appalled and infuriated the Spanish, who mounted punitive expeditions with such regularity that today the episodes read like a game of tag carried on between two cultures over three centuries.

But the Spanish never pacified the mountain peoples. It was not until the American occupation that began in 1898 and the opening of the highlands by army engineers that the tribes were finally subdued. American Episcopalian missions then met with more success than the Spanish attempts at Christianization.

Selling the gods for large sums of money

Despite a strong missionary presence that lasted a full century, the Ifugao continued to cling to their animistic beliefs. The *bul-ol* or rice god is a particularly revered figure in their pantheon. A pair of *bul-ol* figures carved from hardwood stands watch over each family’s granary. During ceremonial rituals, Ifugao elders slaughter chickens, recite divine incantations and pour the sacrificial blood over the head of the *bul-ols* for a good harvest. Even though the tradition of honouring the *bul-ol* remains strong, it has become difficult to find a finely carved, antique rice god strapped to the wall of an Ifugao house. Families have long since learned to part with their heirlooms in return for large sums from itinerant collectors.

There have been other changes: fewer of these families can now claim to live solely off the terraces. They require extensive repairs, and the irrigation system must be dredged periodically. With a growing population, each child inherits a smaller plot of land. And sadly, most of the younger generation— attracted to the lures of city life—are reluctant to undertake the laborious chore of rice farming. The highlands account for seven percent of the total land area of the Philippines, but are home to less than two percent of the country’s population.

Aware that the rice terraces are at risk, the Filipinos have made them a national affair. The government declared them “national treasures” in 1973, and a little over a decade ago, established the autonomous Cordillera Administrative Region (CAR) to encompass all the land-locked provinces of the Cordillera mountains.

But while several programmes have focused on the physical preservation of the terraces, using a



© F. Meyer/Magnum, Paris

Filipinos are intent o

scientific and technological approach, few efforts have been taken to preserve the indigenous cultures that created them. And it is widely believed that if this culture dies, the farming practices will go as well.

In mid-August 2000, the National Commission for Culture and the Arts (NCCA) spearheaded the revival of a farming ritual called *Patipat* which *mumbaki* (Ifugao holy men) had celebrated for the last time in 1944. So after many years of silence, the *tagtags* once again resounded in the village of Amduntog. Beating rhythmically on these wooden shields, menfolk dance through the rice fields to drive away evil spirits and rats, which eat crops and dig burrows, causing seepage and erosion.

“After chanting invocations and offering animal sacrifice, the *mumbaki* joined several males from the village in the beating of the *tagtag*,” observed the Filipino writer Dexter Osorio. “All were dressed in the traditional red loincloths of the Ifugao and adorned with the crimson leaves of the *Ti* plant or *dongla*, which are used for special rituals. The percussive sounds resulted in a complex rhythm of interlocking beats, to which the line of performers half-arched, half-danced as they made their way around the village. Leading the line was a spear-

ALFRED A. YUSON

Author of poetry collections, novels, essays and children’s stories, Alfred A. Yuson is vice chairman of the Writers’ Union of the Philippines. A documentary filmmaker and scriptwriter, he teaches literature at Ateneo de Manila University. He has received several literary distinctions, including the Centennial Literary Prize (marking the independence of the Philippines) for his novel *Voyeurs & Savages* (Anvil Publishing Inc., 1998). His most recent work is an essay entitled *The Word on Paradise* (Office of Research & Publications, Ateneo de Manila University, 2000).



© McCurry/Magnum, Paris



To this day, the terraces endure, but more importantly, they continue to function.

Fidel Ramos, former Philippine president (1928-)

on preserving their rice terraces, which were declared "national treasures" in 1973.

wielding *munggihi*, who punctuated the beat with spear thrusts and an occasional whoop echoed by the other participants. At the edge of the rice terraces, the group was met by another parade of dancers from the neighbouring village of Nalnay, half of whom were children who beat their shields with an enthusiasm that rivalled those of their elder counterparts. The two lines of paraders merged in a controlled orgy of sound, colour and motion, and proceeded to make their way down through the terraces toward the river, where the rats and bad spirits were meant to drown. A member of the Nalnay contingent confessed that their older men did not want to join the ritual, so it was the children who did."

Like Dexter Osorio, we might well wonder whether Ifugao culture itself isn't suffering from erosion. "Ever since standardized Western education and Christianity was introduced to the Cordilleras," he writes, "age-old rituals have been set aside and traditional beliefs forgotten, resulting in apathy and an eroded sense of identity."

Still the enthusiastic participation of children in the ritual is a promising sign. Cultural erosion may not be irreversible. Hopefully, it isn't too late to keep alive the genius of our ancestors, who shaped these magnificent stairways to bring us closer to heaven. ■

THE ENDURING ROLE OF RITUAL

Located in the northern Philippines, Luzon is the largest of 7,000 islands dotting the Philippine archipelago. Rice terraces blanket steep mountain slopes, spreading across an area of 20,000 km². Inscribed on the World Heritage List in 1995, the four clusters of terraces found in the municipalities of Banaue, Mayoyao, Kiangan and Hungduan are all located in Ifugao province.

The terraces evoke a harmony that has been preserved between the inhabitants and their environment. Each cluster is surrounded by a buffer ring of private forests (*muyong*), managed according to tribal practices. Covered by steeply pitched thatched pyramidal roofs, the villages' one-room dwellings are raised above the ground on four posts and reached by a ladder which is pulled up at night.

A centrally located ritual rice field is the first parcel to be planted or harvested. Near the dwellings is the ritual hill, usually marked by a grove of sacred betel trees where the holy men (*mumbaki*) carry out traditional rites.

For the past 2,000 years, knowledge of these rituals and farming practices has been passed orally. These methods are the expression of the Ifugao's mastery of watershed ecology and terrace engineering. In the past decades, many terraces have been abandoned and deforestation has caused serious damage. As farming of the terraces is intricately connected with religious, cultural and social traditions, a whole system of values has to be preserved. The absence of a broad vision having led to sporadic attempts at preservation, the Ifugao Terraces Commission, created in February 1994, developed a six-year master that takes a holistic approach. ■

JUAN GOYTISOLO

Born in 1931 in Barcelona, Juan Goytisolo lives in Paris and Marrakesh. His numerous essays, short stories and novels—including in English *Marks of Identity*, *Count Julian*, *The Marx Family Saga*, *Space in Motion*, *Quarantine: a Novel* and *Juan the Landless*—have won him international renown. His most recent works published in English are *Marrakesh Tales* (*Serpents Tail*), *Landscapes of War* (*City Lights Books*) and *Inferno and Paradiso* (*Actar Editorial*).



There is no other square like this in the world. Every day, musicians, storytellers, dancers, jugglers and ba

Jemâa-el-Fna's thousand and o

The oral traditions of Marrakesh's famous square are unique in the world for their richness and variety. They are also the roots of a new concept: humanity's oral and intangible heritage

JUAN GOYTISOLO

SPANISH WRITER

My first contact with oral tradition on Marrakesh's Jemâa-el-Fna square led me to start thinking about the specific nature of written literature, and the differences between these two modes of expression. In oral communication, the speaker can refer to the context at any time: in other words, to a specific situation with which the listeners are familiar. In written literature, the author and reader have nothing in common aside from the text written by the former and membership (by birth or learning) in the same linguistic community. Oral literature establishes a line of communication between a speaker and a listener, both of whom experience the world in a similar or even identical way. Reading a novel, on the other hand, establishes communication between a narrator and a reader; the

former is unable to verify whether the latter possesses, at the time of reading, sufficient knowledge of the context to understand the text. That is why the reader, distant from the text in space and/or time, needs an intermediary to recreate the context and fill in the gaps. Hence the presence in translated novels of the editor's or translator's explanatory notes.

In the *halca*, the circle of listeners and spectators that forms around the storyteller, none of that is necessary. The storyteller addresses these people directly; they are his accomplices. The text he recites or improvises functions like a score, leaving the performer a wide margin of freedom. In the oral tradition, changes in voice and oratorical rhythm, expressions and gestures play a fundamental role: even a seemingly sacred text can be parodied and



ards stage new shows to teeming crowds.

© Richier/Photo Qui, Paris

One nights

lowered to a scatological level. In children's stories and *chansons de geste*, the frequent use of para-linguistic devices and cynegetic sketches (which evoke hunting), stresses the magic, power or dramatic aspects of the episodes being told.

As my knowledge of *darixa* (Morocco's Arabic dialect) improved, I was able to appreciate the richness and variety of the oral traditions preserved within Marrakesh's Jemâa-el-Fna square. I attended performances of classical works like *The Thousand and One Nights* and *Antaria*, legends based on *Xeha*, *Aicha* and *Kandixa*—to mention just three popular folk heroes—comic improvisations, and a number of sexual pantomimes by highly talented *halaiquis* (storytellers), of whom Saruh and Bakchich, both now dead, merit a special mention. They expressed themselves effortlessly in the spectators' dialect, using euphemisms which only those sly folk with long experience of the *halca* could decipher.

Jemâa-el-Fna is a great melting pot of folk cultures where the Berber and *gnawi* traditions converge. The Berber tradition is characterized by songs and recitals in Tamazight, the language of the majority of Berbers, or in Soussi, the language of Berbers from the Agadir region. Performances range

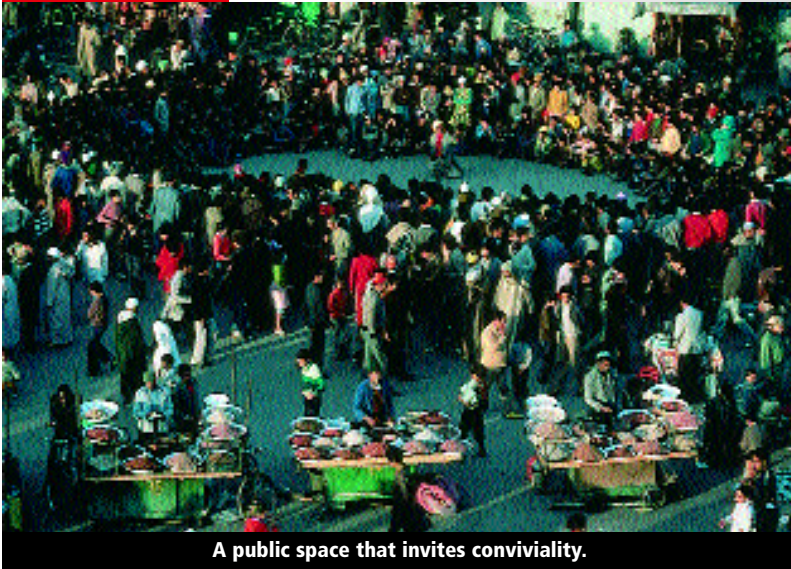
from love poems to elegies to works of moral and social criticism. *Gnawi* are the descendents of slaves who belonged to a popular confraternity. Their vast repertory includes invocations and prayers that are part of ritual trance ceremonies. Professor Hamid Hogadem has recently assembled recordings he has made of present-day *halaiquis* from the three traditions in a single volume, which will be soon be published with the support of UNESCO.

Everything belonging just to the present is doomed to perish with it

As the years go by, my thoughts on the specificity of literature have extended to the relationship between oral and written traditions. In the European and Arab cultures I am familiar with, their interdependence shows that a codified and listed oral tradition has nurtured the development of written literature, which returned the favour by seeping into the circuits of oral story-telling. Many lyrical and narrative medieval texts have been written for public performance, and can only be properly understood when their acoustic and para-linguistic dimensions are taken into account. It is highly significant that the 20th century's most innovative and sensitive narrative authors, including James Joyce, Louis-Ferdinand Céline, Arno Schmidt, Carlo Emilio Gadda, Guiamaraes Rosa and Guillermo Cabrera Infante, combined writing with basic features of the oral tradition. Their novels—featuring a whole range of competing voices—sound as if they were meant to be read aloud, enabling readers to appreciate the true value of the underlying literary exploits. For my part, I would point to how much the square's oral cross-winds inspired me in writing my novel *Makbara*. My work would probably have been different without them. The act of listening—in other words, the simultaneous presence of the author or storyteller and an attentive audience—gives a new dimension to poetic and narrative texts, as it did in the time of Chaucer, Boccaccio, Juan Ruiz, Ibn Zayid, and Al Hariri. A buried thread links the Middle Ages to the literary avant-garde of the twentieth century. As the great Russian theorist Mikhail Bakhtin subtly showed, a work cannot survive the centuries to come unless it has been nurtured by the centuries that have gone before. Everything belonging just to the present is doomed to perish with it.

For many reasons, the fragility and precariousness of Jemâa-el-Fna causes me ongoing concern. The spectacle offered by the square is the product of a fortunate combination of circumstances (some documents indicate that it existed as far back as the mid-16th century), but it may vanish, swept away by the assault of unbridled modernity that jeopardizes our lives and our works. Considered until recently as a vestige of the Third World by a large part of Morocco's Europeanized elite (causing the square to be temporarily closed after independence before popular pressure compelled the authorities to re-open it), it is paradoxically appreciated for its very anachronism. Urban planners and technologically-advanced societies from "developed countries" even consider it a desirable model, worth emulating as a site where people from all walks of life come to meet and talk with each other, as well as eat, shop and stroll, enjoying the richness and variety of a place that





A public space that invites conviviality.

Marrakesh was the city where black and white legends crossed, languages mingled and religions clashed with the immutable silence of the dancing sands.

Fatima Mernissi, Moroccan sociologist and writer (1940-)

is continuously in motion. As I wrote in these pages years ago, the square may be destroyed by decree, but not created by one. Becoming aware of that will probably help to save it.

Ever-increasing traffic, environmental deterioration and, above all, certain building projects that flagrantly violate a law passed in 1922—projects which, if they are actually built, will disfigure the environs of Jemâa-el-Fna forever—are serious enough to merit a worldwide campaign to save the square’s endangered oral and intangible heritage. Since the meeting of experts from many different and sometimes very distant regions organized by UNESCO in Marrakesh in June 1977¹, we have been acutely aware that this is the only place on the planet where musicians, storytellers, dancers, jugglers

and bards put on a new show before large crowds every day of the year. The square offers us an ongoing spectacle in which the distinction between actors and spectators fades: everyone can be one or the other if he or she desires. We live in a world where the information technology juggernaut is homogenizing and impoverishing our lives by bottling them up in the remote-controlled darkness of privacy. Jemâa-el-Fna offers the exact opposite: a public space that fosters social life through a mixture of humour, tolerance and diversity created by its poets and storytellers

In 1997, UNESCO’s general conference adopted the concept of humanity’s oral and immaterial heritage, giving vital backing to plans to protect a vast number of oral and musical traditions, crafts and knowledge, not to mention the “living human treasures” who possess them.²

Today, it is no longer possible to deny that all cultural richness, which sowed the seeds of what we call “high culture,” will be swept away if we do not rush to its rescue. ■

1. *During this international consultation of experts focusing on the preservation of places where folk culture thrives, a new concept of cultural anthropology, the oral heritage of humanity, was defined.*

2. *The individuals who embody the skills and techniques necessary for carrying out certain aspects of a people’s cultural life and ensuring the long-term survival of its tangible cultural heritage.*

UNESCO TO THE RESCUE OF THE HALAIQUIS

Languages, oral literature, music, dance, games, mythology, rites, customs and craftsmanship are among the “cultural expressions” that UNESCO has been committed to protecting since 1997.

At the source of this innovative undertaking was the Jemâa-el-Fna square and the commitment of one man, Spanish writer Juan Goytisolo, who spends part of each year in Marrakesh. “It all started a few years ago, when I wrote an article against the plan to build a 15-story glass tower on the square,” he says. “I fought the project, because I’m convinced that any change in the layout of Jemâa-el-Fna would endanger the miracle that has taken place there every day for five centuries [see article]. I think the authorities were receptive to my argument, especially when I told them, ‘What would happen if they cut 60 metres off the Eiffel Tower? Such a decision involves not just the Paris city government, but humanity as a whole!’ The project was abandoned.”

Not much later, another project was born: creating a list of humanity’s masterpieces in the fields of oral and intangible heritage. Oral traditions and other forms of expression of folk culture, as well as the places where they flourish, could soon boast that new title. UNESCO Director-General Koïchiro Matsuura has named a nine-member jury that will be renewed every four years. The earliest applications can be filed by

December 31, 2000, and the first gems on the list of humanity’s oral and intangible heritage will be named in June 2001. New works will be added every two years.

“UNESCO’s backing,” says Juan Goytisolo, “can be used to change the minds of the authorities and opinion-leaders and to encourage many people to take a fresh look at certain cultural phenomena. It is important to understand that the loss of a single halaiqui (storyteller) is much more serious for humanity than the death of 200 best-selling authors. Unesco cannot save the halaiquis alone, but it can help. We have recorded their voices and their tales are going to be published, but even that is not enough. We must avoid turning something which is living into a museum piece, but help to keep it alive. We must see to it that storytellers do not end up begging on the streets at the end of their lives. It is not hard to imagine, for example, schools taking their student to listen to the halaiquis, introducing them to their own culture and teaching them that not all tales belong to Walt Disney.” ■

Striking where it hurts

Civic groups in Korea led an unprecedented campaign to blacklist corrupt politicians in recent elections, but the old guard is blocking the will to reform

GLENN MANARIN

SEOUL-BASED JOURNALIST

There is an old saying in South Korea that if a man rose to high political office, his family would be financially set for three generations. But in their young democracy, Koreans are discovering that they have the power to topple corrupt politicians and band together to battle political vice.

The National Assembly elections last April will go down as a landmark for civic empowerment. On January 10, the Citizens' Coalition for Economic Justice (CCEJ), a non-governmental organization, released a list of 167 "unfit" candidates. Past involvement in corruption scandals, violations of the nation's Election Law, and resistance to democratic and anti-corruption reforms were among the criteria for being blacklisted.

In the following days, a temporary alliance of 470 civic groups formed the Citizen's Alliance for the 2000 General Elections (CAGE) in an effort to build both unity and power in numbers. CAGE came up with an additional 47 names, threatening that if the nation's parties didn't nominate different candidates, they would launch full-scale rejection campaigns against the allegedly unethical politicians.

To no one's surprise, parties accused CAGE of "political terrorism" and drew attention to electoral laws preventing non-political groups other than labour unions from engaging in political campaigning. But with the public steering the agenda—opinion polls showed that 80 percent would not vote for blacklisted candidates—President Kim Dae-jung and

the Assembly amended the Election Law, permitting CAGE's existence. Groups also successfully lobbied the government for the mandatory release of candidates' past criminal, tax and military service records.

The new legislation was a deadly blow for corrupt politicians. Fearing rejection campaigns, parties screened candidates more carefully and nominated many younger hopefuls. Simultaneously, many party heads nominated blacklisted politicians in spite of CAGE's pledge. The coalition responded with a "rejection-list" of 86 candidates and highlighted 22 main targets, most of whom were long-time political heavyweights.

In with the young and out with the string-pullers

CAGE held street rallies, petition drives, phone and e-mail campaigns and set up websites aimed at the youth vote in particular. The sites, which featured the endorsements of popular film, television and music stars, received almost one million hits during the run-up to the election.

On April 14, Koreans awoke to a new, much younger polity. Voters had rejected 70 percent of the blacklisted candidates. Of the 22 special targets, only seven were elected. First and second-term lawmakers, many in their 30s or 40s, made up 80 percent of the new assembly. The election was heralded as a turning point in Korean politics: a new force had emerged, the civil society sector, determined to rid the country of crooked politics.

The rise of this broad coalition can be traced to Korea's powerful democracy movement that peaked in 1987, when middle-class workers and labourers joined students to demand fair and democratic elections, forcing President Chun Doo-hwan to accede. "The anti-corruption movement succeeds the democratic movements of the past decades," says Kim Geo-sung of the Anti-Corruption Network in Korea (ACNK). "This wasn't possible before because we [civil society] didn't have enough power for these kinds of activities"

But mobilizing a citizenry accustomed to reading about influence-peddling and payoffs in headlines would not have gained



Demanding the right to engage in political campaigning.

Yun Jai-hyung/AP/Boomerang, Paris

such momentum without the shock of the 1997 financial crisis, which brought on the most economically painful recession since 1953. Policies that nurtured collusion between the government, the *chaebols* (industrial conglomerates) and banks were widely believed to have precipitated the crisis. "The crisis was the responsibility of the politicians who were pulling the strings of the economic system," says Kim Young-rae, a political scientist at Ajou University in Suwon. In July 2000, a report by the Korea Economic Research Institute stated that corruption had eroded national economic growth by 1.5 percent.

"We took the opportunity of elections this year to end the irrational cycle of re-electing people who had been connected with corrupt dealings," says Woo Pil-ho a co-ordinator of the People's Solidarity for Participatory Democracy (PSPD).

Following the election, problems within the civic sector itself threatened to derail the nascent movement. Several prominent civic leaders were involved in scandals, including accusations of accepting money from influence-buying corporations. One CAGE official was arrested for accepting a large bribe from an election candidate.

Meanwhile, in the National Assembly, junior lawmakers keen to push further anti-

corruption reform vowed to cross party lines, an act once unfathomable in Korean politics. They met fierce opposition, however, from the old guard who demanded party unity. And although President Kim has pledged his support for

**"We took the
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the election reform bill, the splintered Assembly, in which no party holds an outright majority, has been deadlocked for most of the year. In November, after another bribery scandal erupted, the president reaffirmed his government's determination "to mobilize prosecutors,

police and financial watchdogs to eradicate corruption with a resolve that this be the last battle."

Organizations like ACNK know that their mission involves wholesale societal change. "We need to change the system and public consciousness," says ACNK's Kim, drawing attention to the emphasis put on the group over individual initiative. "We have a kind of system for preserving corruption. Anyone could be a whistleblower, but if he is, he'll become an outcast."

But CAGE's success encouraged the nation's top civic groups to form the Korean Civic Social Solidarity Alliance. This permanent coalition is seeking legislation requiring politicians to account for all funds and guarantee democratic party structures, particularly with respect to nominations, as well as greater public participation in monitoring and evaluating elected officials.

As one of Asia's most developed countries and a young democracy, Korea is being watched closely by the rest of the continent. "Serving as a model can be one of the best practices of Korean NGOs," says Kim. "We believe other countries can adopt such activities, but the situation depends on the power of their civil society." ■

Striking where it hurts

A THAI CRUSADE FOR CLEAN POLITICS

New watchdogs now have the teeth to fight corruption but old-style politics aren't going to disappear overnight. Some say this will take no less than a revolution in political culture

LAURENCE W. SRESHTHAPUTRA

BANGKOK POST JOURNALIST

Not a day goes by in Thailand without some new tale of corruption being aired in the press. Some see a revolution underway while others question the use of attacking such a long-accepted disease. So what chances do the anti-corruption crusaders have?

If events this year are anything to go by, they might well be gaining the upper hand. The first senatorial elections by popular vote held in March turned into a veritable soap opera with the newly established Election Commission ordering more than half the races to be run again because of irregularities or vote-buying. In the end, it took five rounds of voting to fill all the seats.

Later in the month, Sanan

Kachornprasart, the all-powerful interior minister and secretary-general of the ruling Democrat Party, was forced to resign after the National Counter-Corruption Commission (NCCC) accused him of falsifying documents concerning a \$1.2 million loan. Another key event was the rioting in the southern province of Nakhon Si Thammarat set off in early September by police corruption.

The crash that killed tolerance for bribes

The list of scandals gets longer each day in a country where corruption drains away 10 to 20 percent of the national budget—about 2.25 to 4.5 billion dollars.

"There's clearly a knock-on effect," says Pasuk Phongpaichit, an economics professor at Bangkok's Chulalongkorn University and author of several books on corruption. According to the drafters of the NCCC programme, "there is broad consensus in favour of a national crusade against corruption aimed at reforming the whole society." A recent poll showed that Thais saw government corruption as the country's third most serious problem, behind the economic crisis and the rising cost of living, and just ahead of drugs.

This great urge for change is the culmination of a long process that began in the late 1970s when the army agreed to a power-sharing deal. Since then, Thailand has seen civil society grow and become a



A giant hand advertises the Democrat Party's campaign for "Politics with Clean Hands."

© Sakchai Lait/AP/Bourmering/Paris

player on the political scene, notably by taking a strong stand against an attempted military coup in May 1992. What was tolerated 30 years ago is no longer acceptable.

Several political leaders have stood out in this period of transformation. In November 1985, Chamlong Srimuang, an austere former army commander,

The obligation to disclose financial assets has already caused a few heads to roll

became the most popular mayor Bangkok has ever had. A few years later, police lieutenant Prathin Santiprapop, known as "Mr Clean," ran an efficient operation to stamp out a profitable nationwide timber-smuggling scheme.

Then, in 1997, came two events that hastened the course of Thai history: the Asian financial crash and the enactment of a new constitution. "People tolerated the waste of money in bribes when things were going well, but much less at a time of economic crisis," says Phongpaichit.

In July 1997, a 40 percent devaluation

of the national currency led to a slump that immediately threw millions of people out of work. But the crash also opened the way to reform and restructuring, especially in the financial sector, where secrecy encouraged corruption.

People knew economic recovery could only come through political reforms. The drafting of a new constitution, the 16th in the country's history, switched into higher gear. It introduced new checks and balances, such as a constitutional court, the NCCC, a national election commission and a human rights commission.

Parliament followed up with a law giving everyone access to administrative documents. "The new constitution provides the legal means to investigate government officials after complaints from citizens and organizations," says Phongpaichit. The NCCC can prosecute and punish deputies, senators and cabinet ministers and has various legal weapons. The most feared is the obligation to disclose financial assets, which has already caused a few heads to roll, and the so-called "50,000 signatures law," which can force authorities to investigate someone suspected of corruption.

But these weapons can be difficult to handle. "Someone who wants to start a petition first has to appear before the Senate and then prove that the minimum 50,000 signatures collected are genuine," says Deunden Nikomborirak, of the Thai Research and Development Foundation.

Beyond these practical considerations

is a sense that corruption is profoundly rooted and all-pervasive—even among doctors, teachers and monks. The latter have been involved in many recent scandals, even though the law still forbids looking into the assets of their temples.

"It's very hard to make people realize that what they've done all their lives is in fact illegal and can land them in court," says Abhisit Vejjajiva, head of the prime minister's office. "You really have to change the political culture and that's not going to be easy."

A daunting task awaits corruption investigators

Many aspects of Thai culture and social values—such as respect for hierarchies, a distaste for confrontation and the belief that wealth and a powerful job go hand in hand—tend to encourage corruption.

The task ahead might seem daunting: "We haven't done very much so far," admits Krirkiat Phipatseritham, a former rector of Thammasat University and a member of the NCCC, who reels off figures to prove his point. Seventy percent of cabinet ministers, 60 percent of parliamentary deputies and 30 to 40 percent of senators are involved in corruption, he asserts. "We have to keep an eye on about 5,000 people," he says. "We've inherited 3,300 case files, of which only 700 have been dealt with so far." Clearly, the anti-corruption crusaders are not about to claim victory but the big clean-up has well and truly begun. ■ ►

Jerusalem: source of sound and fury

In a small precinct of Jerusalem's Old City, 4,000 years of history have generated a religious, symbolic and mythical intensity unmatched anywhere in the world

RENÉ LEFORT

DIRECTOR OF THE UNESCO COURIER

Israelis and Palestinians do agree upon at least one point: their most recent negotiations at Camp David stumbled over the future status of Jerusalem, and especially a tiny 15-hectare area—a precinct perhaps more holy, sacred and exalted in the eyes of several religions than any other in the world.

The heart of the problem—a quasi-rectangular area measuring just under 500 metres by 300, carved out of the rock at its northern end and elevated on the east and west sides where the land slopes—is about a fifth of Jerusalem's Old City, forming its southeast corner.

Temple Mount to the Jews and the Haram al-Sharif (The Noble Sanctuary) to Muslims forms a platform that seems suspended in the air: its walls, sometimes rising up 40 metres, tower above the entire Old City and far beyond.

The approaching tourist, pilgrim or worshipper is confronted by these colossal walls of hewn stone blocks up to 10 metres long. They were built under Herod the Great. Recognized by the Romans as king of the Jews, he rebuilt the top of the Jewish temple from 19 B.C. and completed most of the reconstruction by around 9 A.D.

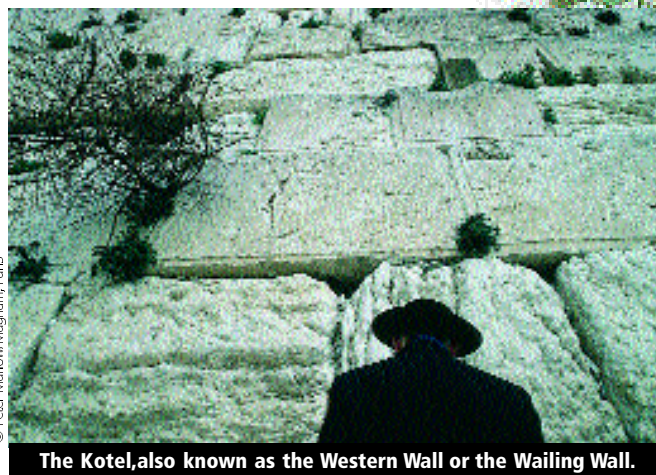
Detailed descriptions have survived which talk of the temple's size and splendour—50 metres long, wide and high,

This article is based on the work of Oleg Grabar, an Islamic art expert who is professor emeritus at the Institute for Advanced Studies at Princeton University (U.S.), and of Ernest-Marie Laperrousaz, honorary professor in the religious studies department of the École Pratique des Hautes Études in Paris and author of a 1999 book about the temples of Jerusalem.



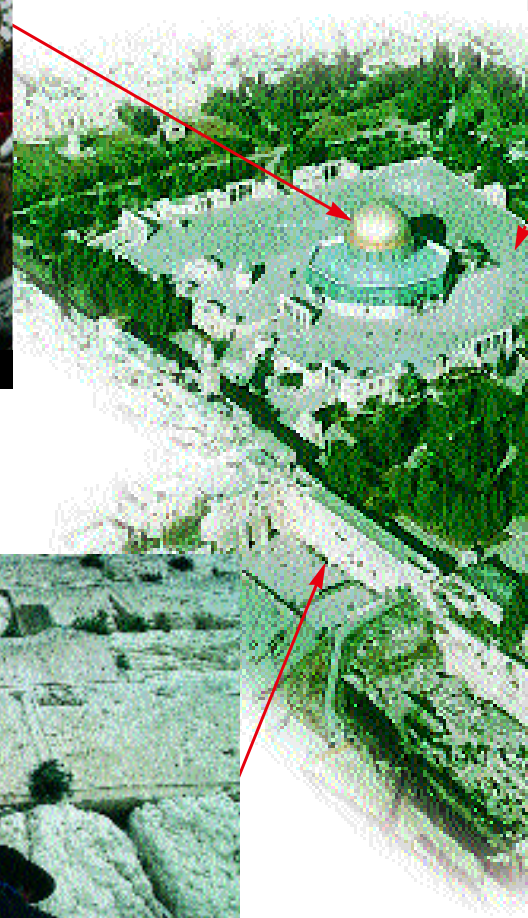
Inside the Dome of the Rock.

© Geostock/Photo, Paris



The Kotel, also known as the Western Wall or the Wailing Wall.

© Peter Marlow/Magnum, Paris



on an esplanade bordered by hundreds of white marble columns, some of them 30 metres high. Giant doors and stairways led out onto the square itself. But after a fire started by the legions of the Roman emperor Titus in 70 A.D., what remains of this building besides religious beliefs, myths and even ideology, all of them stronger and more powerful than before? No trace of the Temple has been found. From Herod's building, only a few large gateways and most of the walls have survived.

One part of the walls, on the west

side, was called the Wailing Wall by Christians in the Middle Ages. The Jews simply refer to it as the Western Wall (the Kotel), the place where they came to pray and mourn. For centuries they have considered it the holiest place of Judaism. Some say it was built on the foundations of the wall around the first Jewish Temple. Archaeologists, however, think the only remains of this earlier wall are actually part of the present eastern wall.

"And behold, I propose to build a house for the name of the Lord my God, as the Lord spoke to my father David,

saying 'Your son, whom I will set on your throne in your place, he shall build the house for My name.'"

Thus spoke Solomon, son of King David, who united the 12 tribes of Israel into a kingdom with Jerusalem as the capital. Solomon bought a hill called Mount Moriah and it was there, more than 3,000 years ago, that he built the first Jewish temple, between 960 and 953 B.C. Its dimensions might have been modest—only about 30 metres by 10 wide and 15 metres high—but literary sources praise the splendour of its interior decorations made of gold, silver, bronze and Lebanese cedarwood.

An eternal Covenant and rules to respect

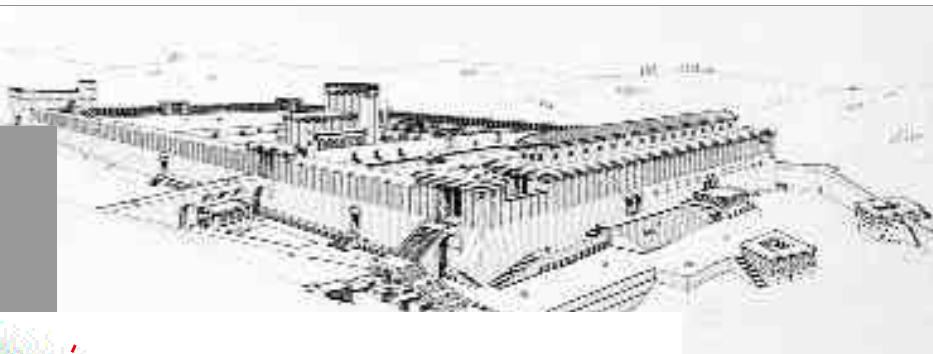
Above all else, it housed at its centre the Ark of the Covenant, placed inside the Holy of Holies whose sole entrance was a door that from the 6th century B.C. only the high priest could pass through. It was the home of the Eternal.

The Ark enclosed the two blocks of stone—the Tablets of the Law—which Moses received from God on Mount Sinai. These sealed the Covenant between a "chosen people" and the single God of the Israelites, whom they later proclaimed the sole God of all humanity. Monotheism was born.

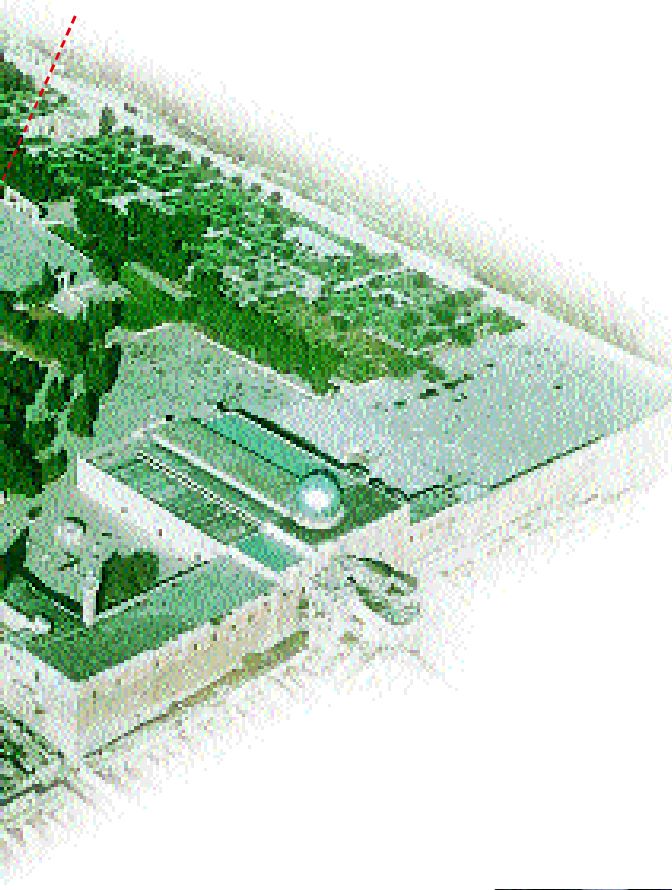
The Covenant was a contract. God ordered the faithful: "You shall have no other gods before me" and "you shall not make graven images," and laid down the main moral and liturgical rules. If they respected God's law, the faithful would not only become "a great nation" living in happiness and prosperity, but God would also give them a land of their own.

Because the Covenant was eternal, they would own the land for eternity. If they carried out their divine obligations, they could live there. If they did not, God who gave the land could take it back and relinquish his people to the miseries of exile. But an eventual return was promised: "if you return to Me, and keep My commandments and do them, though some of you were cast out to the farthest part of the heavens, yet I will gather them from there, and bring them to the place which I have chosen as a dwelling for My name."

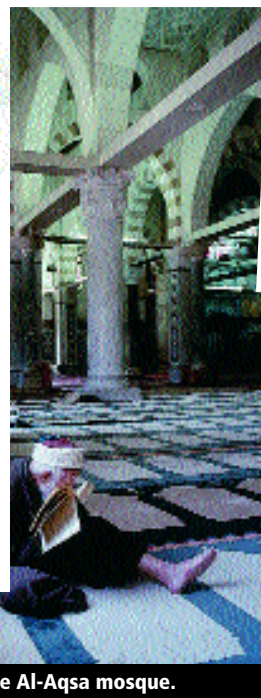
Exiles there were. Israelites from the northern kingdom of Samaria were exiled in Assyria seven centuries before Christ. Jews from Judea were exiled in Babylon after the destruction of the First Temple by Nebuchadnezzar in 587 B.C. And after the destruction of the Second Temple by



Architect Leen Ritmeyer, 1977.



Aerial view of Temple Mount/Haram al-Sharif from the southwest.



Inside the Al-Aqsa mosque.

the Romans in 70 A.D., Jews were exiled for nearly 2,000 years. During all this time, religious Jews implored God, three times a day, 365 days a year, to restore the Temple and thus the Covenant between God, them and their land, at the centre of which was Temple Mount.

"If I forget you, O Jerusalem, Let my right hand forget its skill! If I do not remember you, Let my tongue cling to the roof of my mouth" (Psalm 137). These words are recited at every Jewish marriage.

Where exactly was the First Temple? Historians and archaeologists generally agree it was on Mount Moriah. The Altar of Holocausts was probably at the very top, in line with the rules of the time about choosing the site of a shrine and erecting it. There is a rock on the Mount that the Torah—the first five books of the Bible—says was the rock where Abraham proved, 1,000 years before it was written, that he worshipped God to the point of being ready to sacrifice his son Isaac. The first Covenant was made.

Abraham—or Ibrahim in the Koran—is usually considered the ancestor of both Jews and Arabs. More than 2,000 years later, it was from this same rock, according

to Muslim tradition, that the Prophet Mohamed, arriving from Mecca after a mystical night journey, ascended to heaven. The faithful can see the supposed venerated footprint of the Prophet.

In 638, Caliph Umar conquered Jerusalem. The esplanade the Arabs discovered was by now a wasteland littered with ruins and had not been used for

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religious purposes for centuries, as if to signify that the city had lost its Jewish character. Written sources say that the esplanade was even used as a rubbish dump after serving as the site of a Roman temple.

Later writings described how Umar

cleaned up the esplanade and the rock. Since then, because more remains have been found, speculation has given way to certainty. Construction work and what one would call today restoration were done to make the esplanade a religious and social centre for the new Muslim community. It was enlarged over several centuries.

The Haram takes its present-day shape

The southern and eastern walls were partly rebuilt. The two present-day platforms on the esplanade were laid out. It was probably on the southernmost of the two that the first mosque—in fact just a shelter to keep the sun off worshippers—was built, the Al-Aqsa mosque ("the furthest mosque" in Arabic). On the other higher platform, the Dome of the Rock was built soon afterwards, around the turn of the 7th and 8th centuries. Ever since then, its dome, atop an octagonal building which Suleyman the Magnificent later adorned with coloured tiles that are still there, has towered over the Haram and nearly all of the city and its suburbs. The Al-Aqsa mosque was then rebuilt several times.

UNESCO AND JERUSALEM'S OLD CITY

UNESCO has regularly been asked since 1967, chiefly by Arab countries, to help "preserve the cultural heritage of East Jerusalem," which includes the Old City and the Temple Mount, the Haram. At UNESCO's general conference in fall 1999, they reiterated a request that "no measure and no action likely to modify the religious, cultural, historical and demographic character of the city or the overall balance of the site be taken."

This appeal was mainly based on the fact that the United Nations considers Jerusalem to be "an occupied city." Those seeking UNESCO's help cite the 1954 Hague Convention for the Protection of Cultural Property in the Event of Armed Conflict and the 1972 Convention for the Protection of the World Cultural and Natural Heritage. Jerusalem has been a UNESCO World Heritage site since 1981 and on the List of World Heritage in Danger since 1982. The 1972 Convention requires the country responsible for a site to ensure it is not damaged or altered. The Arab countries are mainly concerned about the measures taken by the Israeli authorities in the Old City, especially those involving population changes and archaeological digs. "In the Middle East conflict, each side establishes its legitimacy by digging into the ground," wrote Jacques Tarnero, of the Paris-based Interdisciplinary Research Centre on Jews and Diasporas. "Symbolic and archaeological strata signal the precedence of

one side over the other."

The Israelis want excavations to help reconstruct the history of their holy places. In principle, they cannot undertake them because a 1956 New Delhi recommendation by UNESCO forbids an occupying power from doing this kind of work. The Muslim authorities fear Israeli excavations will undermine the foundations of the esplanade and cause the mosques to collapse.

Israel rejects these criticisms, and says they have more to do with politics than preserving heritage. The current Israeli ambassador to UNESCO says that in current negotiations on the matter, "any move... by an outside body, especially an international organization like UNESCO, would create ill feeling and be considered an unwelcome interference." UNESCO decisions on the issue are based on the opinions of experts. The next such mission to Israel, to be led by Professor Oleg Grabar, is awaiting the green light from Israeli authorities. ■

The Crusaders (1099-1187) took over the entire esplanade but did not permanently alter it. When Saladin recaptured Jerusalem from them, he removed all trace of their presence and restored the buildings to their previous state. It was his dynasty, the Ayyubids, and then above all the Mamluks, rulers from the 13th century to the beginning of the 16th, who transformed the Haram into what it is today.

They increased the number of places for prayer and built religious schools (*madrasas*), along with libraries, retirement homes and hostels for pilgrims. The Haram now had both religious and secular buildings, which jutted out over the edge of the walls.

The Koran makes no clear reference to Jerusalem as a holy place. At the outset, Muslims were to face towards the city when they begin to pray. But right from the start, the mosque the Koran calls "the furthest sanctuary," where it says the Prophet went after his celestial journey from Mecca, was associated with the holy places that were developing in Jerusalem.

Then, probably from the 8th century, the stories of the mystical journey and of Mohamed's ascent merged and a very powerful emotional, intellectual, religious and personal link grew between al-Quds ("the holy"), which is the Arabic name for Jerusalem, and the Muslims.

3,000 years of demolition, rebuilding and restoration

It became the third holiest city of Islam, after Mecca and Medina in Saudi Arabia, and a very important place of pilgrimage. Some Muslims believe that the Kaaba, the construction that stands in the centre of the mosque in Mecca and which contains the Black Stone attributed to Ibrahim, will be transported at the end of time to stand near the Dome of the Rock. There, all Muslims will face God on Judgment Day.

The Haram, the Temple Mount, has seen never-ending construction, demolition, rebuilding and restoration for nearly 3,000 years now. The same stones have perhaps been used in the same places to build temples both to pagan gods and to the one God of the world's three monotheistic religions.

Over the centuries, the various masters of the city, because they were always both religious and secular, erased all trace of their conquered predecessors and used new monumental buildings to flaunt their power on the esplanade overlooking the entire city.

This Jerusalem, around which exiled Jews built their identity, was a celestial one. "Somewhere between heaven and earth, often closer to heaven than earth, Zion [a hill near Temple Mount] beckoned and gave meaning to the lives" of these exiles, say Jean-Christophe Attias and Esther Benbassa, authors of a recent article in the French magazine *Notre Histoire*.

From the end of the 19th century, the Zionist movement, although mostly composed of secular Jews, "made the ancient myths relevant to the present day" and "took possession of the holiness of the land," according to Attias and Benbassa. Jerusalem was seen as both a physical and a celestial place, as a promised land and a national territory.

Compromise vs coexistence: resolving religious conflict

In 1980, the Israeli parliament decreed that "all of reunified Jerusalem is the capital of Israel." At the same time, nationalism was rising among the Palestinians, partly in response to the Israeli move, and one of their principal goals became the proclamation of Jerusalem as the capital of a future

Can the two sides share these strata of historically interwoven masonry steeped in such passionate emotion?

Palestinian state. The Umma, the worldwide Muslim community, insisted that the Haram was inalienable.

Temple Mount or the Haram: today this site is doubly sacred to the faithful and to many non-religious people, and sometimes exploited by two nationalist currents. Will there be a conclusion where one side wins all and the other agrees to lose everything? Can the two sides share these strata of historically interwoven masonry steeped in such passionate emotion? Shimon Peres, who as Israeli foreign minister was one of the architects of the Oslo Accords, is fond of pointing out that political conflicts can be solved by compromise, but religious ones can only be settled through coexistence. ■

Landmarks

■ circa 2000 B.C.: according to the Bible, Abraham leaves on God's orders to the Promised Land chosen for him, which stretches between the Dead Sea and the Mediterranean. This same biblical source states that Abraham was ready to sacrifice his son Isaac to God from the rock at the summit of what will become known as Temple Mount or Haram al-Sharif.

■ circa 1200 B.C.: Moses receives the Tablets of the Law from God on Mount Sinai.

■ circa 953 B.C.: the construction of the First Temple is completed under the reign of King Solomon.

■ circa 587 B.C.: destruction of the First Temple by Nebuchadnezzar.

■ 515 B.C.: the construction of the Second Temple is completed.

■ from 19 B.C. to A.D. 64: reconstruction of the Second Temple under King Herod the Great. The size of the working site led some to believe that he had in fact built a Third Temple.

■ 70: destruction of the Second Temple.

■ 132-134: theories point to the construction of a new Temple, which would have been the fourth one.

■ 632: death of the Prophet Mohamed. According to Muslim belief, he rose to the sky from the rock on the esplanade following a mystical night journey from Mecca.

■ 638: Caliph Umar seizes Jerusalem and builds a first mosque there.

■ 691-92: construction of the Dome of the Rock.

■ 1099-1187: the Crusaders occupy Jerusalem.

■ 1187-beginning of the 16th century: the Ayyubid dynasty and to a greater extent the Mamluks (from 1250) give the Esplanade, in particular the Al-Aqsa Mosque, its current features.

■ 1917: beginning of the British mandate over Jerusalem.

■ 1948: following the first Arab-Israeli war, West Jerusalem is annexed by Israel and East Jerusalem, which is home to the Old City, comes under Jordanian administration.

■ 1967: Israel seizes East Jerusalem.

■ According to the Jewish religion, the Third Temple will be constructed once the Messiah arrives.

When computers chip away at our memories

Galloping advances in information technology promise to give us instant access to all the world's knowledge. But how will human memory fare against the rise of the super-machine?

IVAN BRISCOE

UNESCO COURIER JOURNALIST

If the architects of technology's next great leap forward are to be believed, all knowledge may soon be shrunk to vanishing point. Nanotechnology, or computing carried out at the scale of atoms, is their byword for the future. With its awesome potential, scientists at IBM have recently argued, around 11 million 400-page volumes—the entire contents, say, of France's National Library—could be stored and primed for instant viewing on a device the size of a human palm.

The ink may still be fresh on these blueprints, but the elixir of portable omniscience no longer seems so far away. Seemingly cast-iron laws of ever increasing computer power, along with the rise of powerful new technologies, appear to point to a horizon where all that can be known and remembered can be transferred to machines with which human beings then interact at will. And it is a future that for some is already spelling big trouble for the brain.

Surveys point to yawning gaps in general knowledge

"Computers not only distract us from contemplation of deeper values; they discourage us from contemplation itself," declares Stephen Bertman, a classics professor at Canada's University of Windsor, and author of the recent book *Cultural Amnesia*. In his opinion, society's love affair with fast and far-reaching machines—online computers, palm-tops and mobile phones, all just for starters—leads inexorably to memory loss rather than gain.

As surveys repeatedly show, knowledge of history, literature, geography and even current affairs seem to be on a steep decline: 60 percent of adult Americans cannot recall the name of the president who ordered the dropping of the first atomic bomb, just as 77 percent of young Britons are perplexed by the words Magna

Carta. The day of the nano-shrunk library could soon come, but will any of its users be able to remember a single line of poetry?

The connection between these yawning gaps in general knowledge and information technology is by no means established, but a host of thinkers in different fields are sure the issue is one that will shortly become all too pertinent. "External support for our memory has a direct effect on our memory," argues Jean-Gabriel Ganascia, a leading neuroscientist based in Paris' Pierre et Marie Curie University. "At the same time as it helps us and extends our physical capabilities, it diminishes our individual faculties. This is a vital question, one which

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has been around for a long time. Even Plato speaks in the *Phaedrus* of writing being both a good and an evil for our memory."

Good or evil, writing has nevertheless formed one of the main tools in the evolution of human memory. Indeed it is civilization's unrelenting hunger for placing memory in external stores—cave-paintings, then manuscripts, libraries, printed works and finally computers—that has supported the entire march of the species. As the Canadian

neuropsychologist Merlin Donald has observed, each of these new technologies has helped humans "off-load" their memories. Pre-literate societies, for instance, depended on oral tradition for their expertise—a practice undermined by the flaws of overworked brains, though fertile ground for epic poetry. Through the written word, memories were freed from the head: knowledge could be stored for retrieval in books, and then recrafted into the sort of novel and complex codes on which modern society is founded: "examples might include the servicing manuals for a rocket engine, the equations proving the Pythagorean theorem, a corporate income tax handbook, or the libretto and score for *Eugene Onegin*," states Donald.

Becoming good memory managers

The benefits of storing memory outside the brain are unquestionable, but the invention of printing over 500 years ago followed by the post-war onset of computing have added a new note to the process: that of thundering acceleration. One simple equation has come to embody this. Known as Moore's Law after its inventor Gordon Moore, the co-founder of Intel, it stipulates that computing power—defined in terms of capacity and speed per unit cost—doubles every two years. The trend has held for the last 40 years. Should it continue as expected to around 2020, a personal computer by that year will have exactly the same processing power as a single human brain. Add the promised marvels of nanotechnology, optical and quantum computing, and machines might reach utterly daunting proportions. "One penny's worth of computing circa 2099 will have a billion times greater computing capacity than all humans on Earth," breezily announces Ray Kurzweil, an American supremo of artificial intelligence, in his book *The Age of Spiritual Machines*.

Kurzweil may well be too confident in his predictions, but the quandary remains: if computers become so quick, so mighty,



© Adam Naciri/AP/Boomerang, Paris

Virtual competition: Garry Kasparov on his way to losing against Deep Blue, IBM's chess playing computer .

so cheap, then where will the relatively impoverished human mind fit in? Three years ago, IBM's Deep Blue computer beat the world's finest flesh-and-blood chess player, Garry Kasparov, over the course of six games. If human functions ultimately resemble moves of chess, then must the brain and its stores submit to the superior wisdom of the microchip?

For many cognitive scientists, relations between mind and machine are already undergoing drastic reconfiguration. "Distributed intelligence" is the new maxim, encapsulating all systems in which individuals and computers mesh to carry out a collective task, whether it be landing an aircraft or tracking share prices. The Internet is so far the crowning glory—a system that in principle might combine individual users into a potent "group mind." For Norman Johnson from the Symbiotic Intelligence Project at the Los Alamos Laboratory, New Mexico, the collective power unleashed by such a system could solve problems far beyond any individual's capacity.

All of this may sound abstract, but the effects on memory are being felt now. Facts and figures no longer take pride of place in school curricula. Within the past two years, South Korea, Singapore and Hong Kong—havens of rote learning—

have debated plans to axe huge swathes of standard classroom study. Experts in education stress that students must learn to be adaptable, skilled in manipulating symbols, able to respond to new situations; in short, ready to deal with the new economy, a realm where the computer is king.

"We will need a lot of new skills," declares the neuro-psychologist Donald. "We have to become good memory managers—we've moved away from managing a lot in our heads to managing memory devices. We have to devote more space to this executive control and less to rote memory storage."

Nurturing imaginative thinking at school

As he acknowledges, the result is an inevitable reduction in "individual presence." It is a form of mental life that has unsurprisingly earned bitter recriminations. Earlier this year the Alliance for Childhood joined the fray by publishing a report entitled *Fool's Gold* attacking the numbing effects of computers at school, above all primary school: "A heavy diet of ready-made computer images and programmed toys appears to stunt imaginative thinking. Teachers report that children in our

electronic society are becoming alarmingly deficient in generating their own ideas and images."

While proponents of the electronic future insist on the liberating, elevating potential of machines—Kurzweil even suggests that we could "port" our minds onto super-powered computers for an intellectually and sensually richer life—suspicion continues to fester. As Ganascia observes, human memory is much more than simple information processing. There are, for instance, at least five systems of human memory, making up an inordinately rich web of self-reflexive, interweaving recollection that no computer has even come close to imitating. But if memory is increasingly stored in machines that we then manage for our learning, work and leisure, then how will these systems in the brain fare? And how will imagination, intelligence and understanding—all of which depend on an efficiently functioning memory—be affected? The simple answer is: we still do not know.

Yet one image stalks the debate. It is not the old science fiction fear of a malevolent computer (the HAL of *2001: A Space Odyssey* perhaps), but of a citizen without a personal memory to speak of. Bertman, for one, is convinced that



A model of Lucy (left) and her mate. With 40 percent of her skeleton remaining, Lucy gives us a glimpse of one of our oldest upright ancestors, *A. afarensis*, dating back over three million years.

© J. Beckett/C. Chesak/The American Museum of Natural History, Library Services, Image #52762

Ian Tattersall: the humans we left behind

A world renowned paleoanthropologist cuts down old notions of our family tree to reveal a host of unknown ancestors: extinct human species

Like most people, I was taught to think of human evolution as a linear chain, with a "missing link" connecting apes and a series of prototype humans in a process of perfection reaching the pinnacle that we occupy today. This is the traditional view of paleoanthropologists, veritable human fossil hunters who try to piece together our history. But the field is now increasingly divided and you are seen as the leader of a new and growing camp. Please explain.

This notion of human evolution as being a linear trudge from primitivism to perfection is totally wrong. I came to paleoanthropology from the study of lemurs [monkey-like primates] in Madagascar where you have a huge diversity of animals. You cannot help asking, "How did these creatures become so diverse?" Yet this question is not asked in paleoanthropology because there is only one species of humans today. Somehow we believe it is normal and natural for us to be alone in the world. Yet in fact, if you look at the fossil record, you find that this is totally unusual—this may be the first time that we have ever had just one species of humans in the world.

We have a history of diversity and competition among human species which began some five million years ago and came to an end with the emergence of modern humans. Two million years ago, for example, there were at least four human species on the same landscape. Maybe they got along by basically ignoring each other or even having peaceful interactions. We don't know.

In any event, we are now the sole surviving twig on a big branching bush produced by this process of evolutionary experimentation. We're *not* the pinnacle of a ladder that our ancestors laboriously climbed.

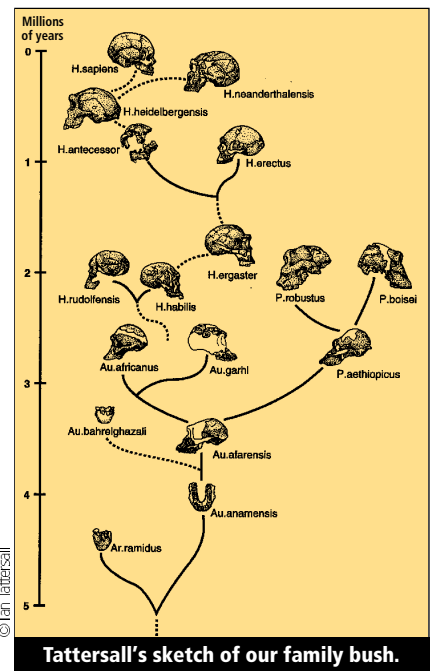
How do your views on human evolution differ from traditional Darwinian notions?

According to Darwin, you have legions of organisms that over time evolve themselves into a new species. It's like a fine-tuning process, guided by natural selection, in which the individuals best-adapted to their environment reproduce and pass on their "favourable" characteristics, so that each generation improves upon its predecessor.

So we tend to think of evolution in terms of characteristics, rather than species. For example, we speak of the "evolution of upright walking" or the "evolution of the hand," often without realizing that legs and hands can only be part of the story. The reality is that natural selection is a blind mechanism which can vote up or down only on entire organisms, warts and all. Individual organisms are mindbogglingly complex and integrated mechanisms: they succeed or fail as the sum of their parts, not because of a particular characteristic

It's the same with populations and species. Species are out there competing with others in a real world of limited resources. What's more, the ecologies of which they form a part have an alarming tendency to change abruptly. If your habitat is covered by an ice sheet, it's pretty irrelevant how well you are adapted to the meadows and forests now buried beneath the ice.

Finally in the Darwinian notion you have a slow accumulation of changes over generations leading to the creation of a new species [when individuals of the same lineage can no longer reproduce]. However a population will change morphologically [biologically] with time





Neanderthals have been known for 150 years now. What can we possibly find that nobody has noticed before?

but this doesn't necessarily lead to the creation of a new species. For meaningful genetic changes to take hold, the population must be small. [The larger the population, the more difficult it is for major genetic changes to spread.]

So why haven't we seen this diversity in the fossil record? According to traditional readings, there are about six or seven species of humans. Yet you argue that there are at least 17 and probably more.

Paleoanthropologists have basically not paid enough attention to morphology when comparing fossils and tend to overlook differences in the shape of the skull, for example, the jaw or the spine. They seem to think that once they have measured the age and the brain size of the fossil, they can shoehorn it into a particular species. It is very clear that over the long haul, the brain size of hominids has increased. However, this "trend" has distracted attention away from diversity and led scientists to focus on continuity, thereby reinforcing the notion that our evolutionary history has been one of a slow, single-minded progress from primitiveness to perfection.

In addition, paleoanthropology has been practiced largely by people who come from a human anatomical background. So many don't know what the rest of the living world is like.

You've spent the past seven years travelling around the world with a colleague, Jeffrey Schwartz, to study every major human fossil ever found. Why?

We started out looking at the Neanderthals, thinking "My God, the Neanderthals have been known for 150 years now. What can we possibly find that nobody has noticed before?" And the very first one we picked up we saw some structures inside the nasal cavity that had never been noticed before. By extracting more information out of the record, we hope to get a better idea of the diversity that exists out there.

I don't think anyone has ever seen the entire fossil record. How did you get past the politics in the field to gain access?

It is very difficult, especially for more recently discovered fossils. They are

often very personal discoveries and there is a tendency to say, "How can *you* make comments about a fossil *I* found?" Also, most human fossils are found in the Third World and are sometimes seen as bargaining chips for extracting money from Westerners. There can be a tremendous amount of commissions, bureaux and administrative hoops to jump through before you can get access to the fossils. But I have been very impressed by the ways in which our colleagues have helped us. The whole process could have been a lot more gruesome and a lot more



expensive.

There's a pile on your desk of about 2,000 pages describing the fossils which, along with photos, will be published in a three-

volume set beginning this March. The photos alone will mark a major step in the field because most PhD students never even see the fossils they study. Why is it so important just to describe, let alone analyze, fossils that have been known for over a century?

One of the big problems has been that everyone describes fossils differently. They use different terminologies that are all based on *Homo sapiens* and are not necessarily appropriate for other kinds of fossil hominids. By using *Homo sapiens* as a kind of reference point or template, the existing body of literature tends to distort the fossil record. We're describing everything the same way so that even if you haven't seen the original fossils, you can consult and compare these descriptions and come to your own conclusions. For the first time, hundreds of fossils will be compatibly described.

By studying lemurs, you may have developed the critical eye needed to recognize diversity in human fossils. But can you hold up the skull of one of our ancestors, say a Neanderthal, and really maintain the same detachment as when looking at a monkey's skull?

I don't think that you should look at a human fossil with a different eye than you would use for any other fossil. They are both documents of species that have now vanished. They are part of the world's history of diversity. Besides if you study hundreds of fossils, you don't have time to ponder the existential aspects of being human.

Some might argue that this detachment is your weakness. By focusing solely on biological differences between fossils, you pigeonhole them into narrow categories that ignore other factors, namely culture.

I don't think that we're excluding anything. But if you don't start with morphology, you're going to be misled all the way down the line. Once you have a systematic structure into which to place your species, then you can mix in everything else—like the tools that they used or their settlement patterns

Do you ever find it surreal to try to piece together such a vast history with such meagre clues—bits of jaw here, some brain case fragments there? It must take a solid

© Jeffrey H. Schwartz, Pittsburgh



If you really want to understand human nature, don't look to the past, look to how people are in the present

complex—or perhaps screwed up—at least partly because of the way in which our brains were built up over the ages, structure on structure. While the old notion of an inherent conflict between older and newer brain structures and functions seems oversimplified, it is self-evident that it is in our controlling organ, the brain, that we must search for the keys to the contradictions that we all exhibit, every day.

Hold on. I thought you just rejected the evolutionary biologists' penchant for looking to biology to explain our behaviour.

In my book *Becoming Human*, I write that it may seem odd to devote hundreds and hundreds of pages to ways of looking at the fossil record and then conclude that you cannot learn much from it about how people behave today. If you really want to understand what humans are, don't look to the past, look to how people are in the present.

Not only do we look to the past to understand the present but we project the present on interpretations of the past. For example, the Neanderthals are veritable icons, yet they were just one

actor on a huge stage. How do you explain this emotional attachment?

Neanderthals were very happy living in Europe for 200,000 years and suddenly modern *Homo sapiens* show up and BOOM! They're gone. So to make it more palatable, some people have been suggesting, "Well, maybe they were just genetically swamped by hordes of invading modern humans." I don't think that can possibly have been the case. Neanderthals and modern *Homo sapiens* are just too different to have interbred successfully. But if it makes people feel better about poor old Neanderthal being genetically swamped than physically annihilated, then so be it.

One thing truly sets us apart from every other species: consciousness. Human consciousness has been described as a kind of inner eye, which allows the brain to observe itself at work and therefore permits us to have the complex interpersonal relationships that far exceed those of any other animal. Modern human anatomy goes back over 100,000 years but it wasn't until maybe 40,000 years ago that modern cognition suddenly burst on the scene, as evidenced by the cave art of the Cro-Magnon, for example, in Europe. What triggered this cognitive explosion?

It is impossible to be sure what

this innovation might have been, but the best current bet is that it was the invention of language. For language is not simply the medium by which we express our ideas and experiences to each other. Rather it is fundamental to the thought process itself. It involves categorizing and naming objects and sensations in the outer and inner worlds and making associations between resulting mental symbols. It is impossible for us to conceive of thought (as we know it) in the absence of language, and it is the ability to form mental symbols that is the fount of our creativity, for only once we create such symbols can we recombine them and ask questions like "What if...?"

Why haven't other species developed spoken language?

Many species have very complex vocal, gestural and scent-based systems of communication but even in the great apes, vocalizations seem limited to expressing emotional states. We have managed to separate vocal sounds from emotion, and instead to attach them to symbols that we form in our minds. As far as we know, this is a unique ability that was only relatively recently acquired. In fact, if we were to set the evolutionary clock back only a few hundred thousand years and run the whole process all over

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I've never had a more profound or powerful experience. It is such extraordinary art in such an extraordinary environment—the age is only a secondary part of that experience. This symbolic activity appeared so suddenly: art and carving, engraving, notation music, people decorating their bodies and burying each other in elaborate styles and so on.

You've maintained that this kind of symbolic activity was for the most part reserved to Europe. Perhaps it was occurring elsewhere in Africa or Asia but just slipped through the cracks of a sparse fossil record? You could be accused of Eurocentrism.

We have some early hints in Africa of humans transporting exotic materials over long distances, some traces of flint mining and 50,000-year-old ostrich eggshell beads and so on. People may have even been navigating to Australia 60,000 years ago. These are all things that probably required the same kind of cognitive apparatus that produced Lascaux. But the record is tantalizingly poor.

This isn't to suggest that any of this cognition and creativity originated in Europe. Apparently the first Cro-Magnon brought these capacities with them but from where we don't know. It may well have begun in Africa. But right now, the best record that we have is in Europe. And that's why it attracts so much attention. Hopefully, we'll be learning more from other parts of the world as we make more discoveries.

You've suggested that the art at Lascaux reflected a body of mythology, a view of the world and humanity's place in it. Do you think this thirst or quest to understand our origins is a distinctly human trait?

Oh yes. This intense curiosity about our origins, this intense need to know "why" is a profound part of us. I think the bottom line is that the ability and desire to ask these questions are deeply embedded in the human psyche. We are trying to satisfy this curiosity when we study human evolution. Indeed we may not be learning nearly as much about ourselves as we think we are.

For many people, the ultimate question is whether primitive man was more noble or "better off" than civilized man. In your opinion, did a state of grace, so to speak, exist before or after the advent of civilization as we know it?

(Burst of laughter) First, a state of grace is a concept which humans devise while knowing that it doesn't exist. Most

of us are in states of disgrace and always shall be.

Second, ethics are all products of the human mind. We cannot derive any concepts of morality or of natural law from contemplating nature. The reason why is that nature is indifferent to individual suffering or success and to call such indifference amoral would be to anthropomorphize.



En haut, un crâne d'Homo sapiens trouvé en Afrique du Sud et vieux d'environ 100 000 ans. En bas, un crâne daté d'environ un million d'années et qui reste à classer.

Human evolution has come to a standstill, you say. We haven't really changed since acquiring cognition and we cannot expect any major innovations in the future. What is holding us back?

You've got to have small populations in order to get meaningful genetic innovations. The population is getting larger all the time, individuals are infinitely more mobile now and the prospect of isolation of populations is lower than it ever has been. We can imagine some sci-fi scenarios of isolated space colonies but they would inevitably be sustained by a lifeline from Earth. Or

we can imagine genetic engineering. However, artificially produced genotypes could only be sustained by sequestering "engineered" individuals which I doubt and hope would never be deemed permissible. But if it was, these genetic innovations would remain only among these small "laboratory" populations.

So to hope that a bit more evolutionary fine-tuning will solve our problems is foolish optimism. We have to cope with ourselves as we currently cope with the world and the problems that we cause in it. We have reached a pinnacle in the sense that Homo sapiens is truly something unique. Whether you think it is superior or not is up to you. I suspect that if other species were capable of contemplating this question, they would not conclude that we represent a pinnacle.

In the world's richest, most industrialized country, the United States, a debate rages over the teaching of human evolution in highschools. The "creationist" movement wants to impose Biblical scriptures in the classroom. Has this movement hampered your work? The Internet has a long list of sites in which creationists not only attack your work but also pray for your soul.

It's absolutely appalling. This is the only country where this is happening. It's due to a certain group of fundamentalist Protestants who seem to feel that human beings need the word of God in order to behave properly. They're threatened, insecure and looking for a scapegoat.

I get an occasional letter from creationists who are very concerned about my soul and insist that I follow the "true path." But I've never received any threats or felt any restrictions in my work.

For a man who studies dead people, you seem to go out on a limb politically. You cannot avoid the ire of the creationists but you have gone a step further by writing that attempts to limit women's reproductive rights are "the ultimate example of human hubris" at a time when global human population growth is causing ecological havoc. Why go so far?

I just draw conclusions on the basis of what I see around me in the world as a human being, not as a paleoanthropologist. I'm concerned about this emphasis on the quantity of life because it's ultimately going to have a deleterious effect on its quality. There are three times as many people in the world as there were when I was born. But it cannot go on indefinitely... ■

INTERVIEW BY AMY OTCHET

UNESCO COURIER JOURNALIST.

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