

[For my December 2010 diary, go here.](#)

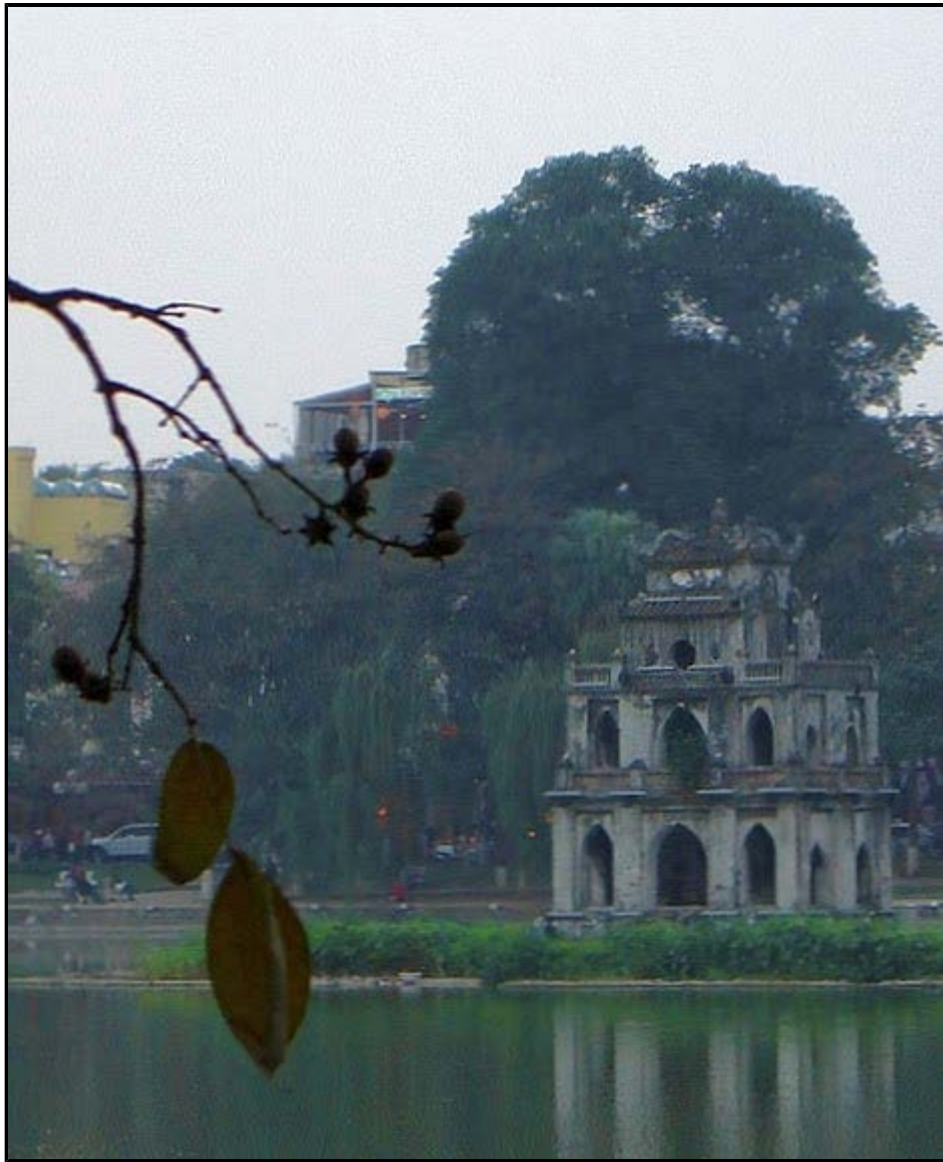
## Diary - January 2011

John Baez

January 1, 2011



January 3, 2011



The tower here sits on an island in Hồ Hoàn Kiếm, a lake just south of the old downtown. Hồ Hoàn Kiếm: means "Lake of the Restored Sword", and there's a story behind that.

In 1427, [Emperor Lê Lợi](#) fought off the Ming occupation of Vietnam with the help of a sword called [Heaven's Will](#), which had been found in the sea. According to legend, a giant turtle emerged from a lake after his victory and asked him to return his sword to its rightful owner: the Dragon King, who lived beneath the water. So, Lê Lợi drew his sword out of its scabbard and threw it to the turtle, who snatched it from the air with its teeth and descended back into the lake. For long after that, a flickering light was said to be seen from the murky depths.

The lake had been called Green Water Lake, but Lê Lợi named it Lake of the Restored Sword, and the tower in its midst is called Turtle Tower.

Here is a bridge across Hồ Hoàn Kiếm:



[For my February 2011 diary, go here.](#)

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*The world keeps ending but new people too dumb to know it keep showing up as if the fun's just started.* - John Updike

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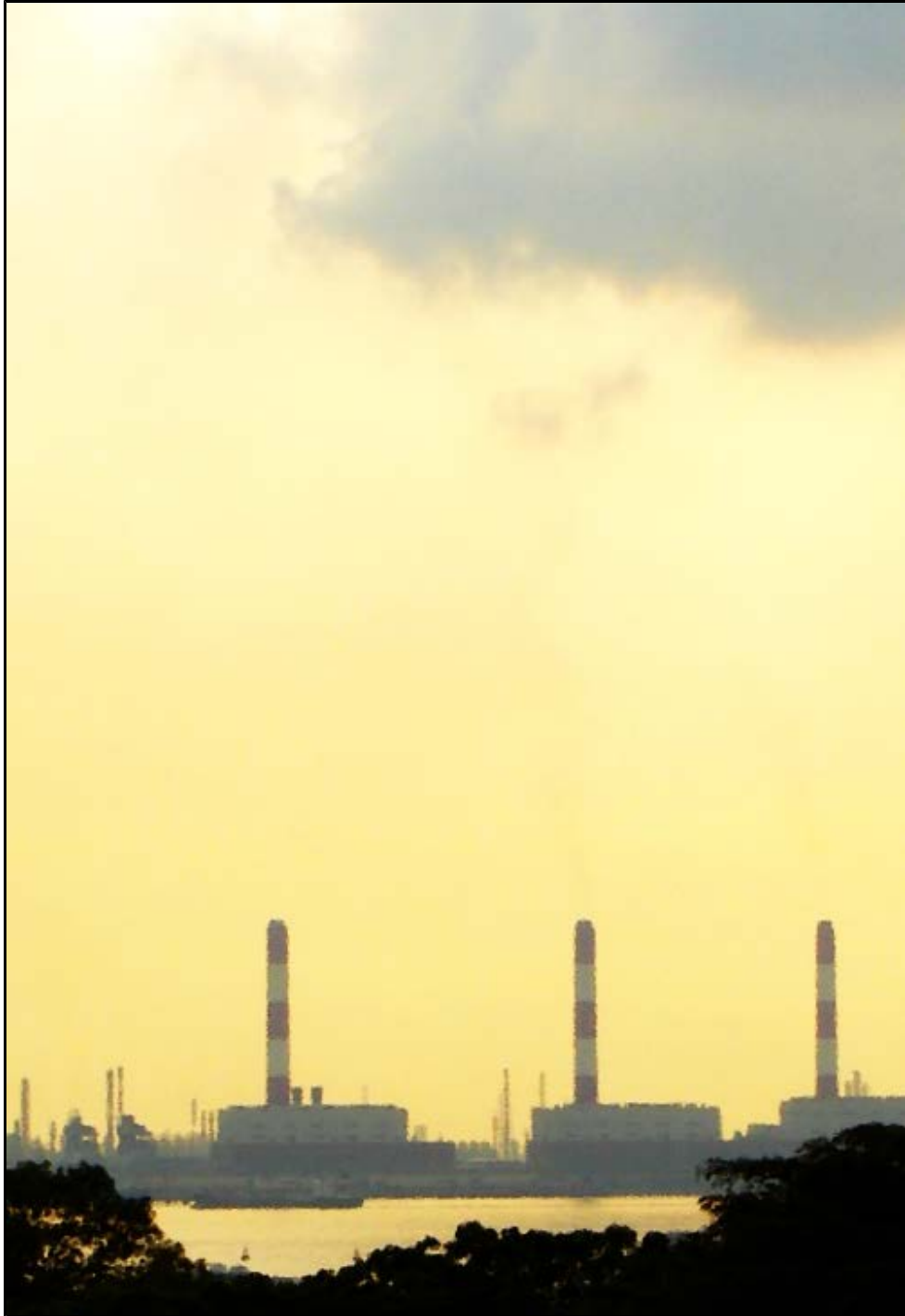
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## Diary - February 2011

John Baez

February 1, 2011



February 10, 2011

Amy Walker is fun. A lot of people have been watching her video "21 Accents":

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**February 17, 2011**

*It's like I'm falling out of bed  
From a long, weary dream*

So far this is my favorite song from Radiohead's new album, *The King of Limbs*. The smearing of the vocal line helps transform it into pure melody. And if you listen to it on good headphones, and focus deep into the background, you'll hear a wealth of nearly subliminal mutterings and other spooky stuff. It's easiest to catch these in the beginning, in the dark spaces between the drums, before the vocals kick in:



**February 18, 2011**

Lisa and I flew to Cambodia yesterday, and we'll spend a week visiting [Angkor Wat](#) and the many surrounding temples. Angkor Wat itself is so huge I couldn't capture the whole thing in a single picture! This aerial photo by Charles J. Sharp shows why:



The area inside the moat is about a square kilometer — and there's a wall surrounding the whole thing, almost invisible here, 4.5 meters high. This was all a city when the Khmer king [Suryavarman II](#) had it built in the early 12th century. Now it's reverted to jungle except for a small portion near the temple proper.

The climb to the top of the central tower of Angkor Wat is steep and intimidating, but worthwhile:



To get a better sense of the tower as it stands on the third level of the temple, just [teleport yourself there](#) and look around!

Once you get to the top of the tower, there's a lot to see. Here's the view to the west. See causeway road leading to the main gate? If you [teleport over there](#). Then you'll see how huge this place really is!

In the middle of the picture above there's a small building. This was once a library. In fact there are two, one to the north and one to the south of that road. Here's a pony standing in front of the southern one:



I suggest you [teleport into the southern library](#) and look around. Just like the temple complex itself, each library has four entrances: north, south, east and west. This had a cosmological significance to the Khmer. Angkor Wat was a microcosm of the world, with the central tower standing for mountain at the center of the world, Mount Mehru. Each library was a microcosm of this microcosm.

The Khmer were mainly Hindu, but Buddhism reached Angkor at the end of the 12th century, so we see its influence too. This was Mahayana Buddhism, not the Theravada Buddhism that's found in Southeast Asia today. I think this Buddhist statue is up in the central tower of Angkor Wat:





I believe this is the Buddhist teacher [Nāgārjuna](#), sitting on a seven-headed [nāga](#). In Cambodian legend, the nāga were a snake-like race of beings who possessed a large kingdom in the Pacific Ocean.

Going back down to the ground floor, you'll see many wonderful carvings.



The sculptors of this culture had a healthy fondness for the female form and weren't embarrassed about it. 'Devatas' like these stand in a dignified way, while the 'apsaras' dance. Counting both kinds, there are a total of 1796 in Angkor Wat!







In Hindu myth, [apsaras](#) are female celestial beings who fly around, dance, change their shape at will, and rule over the fortunes of gamblers. But now the security guards in Angkor are called the Apsara Authority.



I enjoyed the contradictory connotations built into this term: it's a bit like a Nymph Squad, or Dryad Brigade. Their main job is to keep people from looting the temples, which extend over an area far more vast than Angkor Wat itself. Unfortunately [some may be corrupt](#). That would not surprise me: the dark side of Cambodia today is the corruption of its

politics. It's much better than in the Khmer Rouge days, of course—after that, they had nowhere to go but up.



The perimeter of the Angkor Wat temple features seemingly endless walkways... but they're lined with bas-reliefs—about 600 meters worth! Mostly they tell stories from the great Hindu epics: the [Ramayana](#) and the [Mahabharata](#). But there's a section on the triumphs of [Suryavarman II](#), the Khmer king who ruled from 1113 to 1150 and had Angkor Wat built. And there's a section depicting heavens and hells. As in Dante, hell is more attention-grabbing: we see gluttons sawn in two, seducers torn apart by birds of prey and thrown into a lake of slimy pus, and so on.

I went to Angkor Wat on two separate days, because there's so much to take in... and even then, after several hours I was crying out for a bit of relief—any sort of relief except another bas relief!

I won't show you many of these bas-reliefs, but here's a tiny portion of an enormous one: the [Battle of Kurukshetra](#), the climax of the Mahabharata, where the [Pandavas](#) and [Kauravas](#) fight it out and the Pandavas triumph.



On this 49-meter-long wall, the rival armies march in from opposite ends in an orderly fashion, but action becomes utterly chaotic near the middle. So, it reads a bit like a story as you walk from end to middle.



After each day in Angkor I'd head for the nearby town, Siem Reap, for dinner. It's bustling, packed with markets and restaurants, and it lives off tourist dollars. Good food is cheap, beer is cheap, everything seems cheap. You can live like a king in this country, where the average per capita income is about \$700.



It can even make you feel a bit bad—and if you want to feel even worse, go visit the land mine museum! Under President Nixon, the United States dropped 2,756,941 tons of bombs on Cambodia in a ['secret war'](#). Secret from the Americans, that is

—not the people being bombed. It started on March 17, 1969, with a bombing raid called 'Operation Breakfast'. The next day, Nixon's aide Haldemann wrote:

Kissinger's 'Operation Breakfast' a great success. He came beaming in with the report, very productive.

Of course the history is complex: things were already bad in Cambodia... and in 1976 they got much worse when the [Khmer Rouge](#) took over, made 2.5 million people leave the capital and simply *walk out into the countryside*, murdered all the educated people and professionals they could find, forced everyone to become farmers... and wound up killing or starving about 4 million. Picking wild berries was seen as 'private enterprise' and punished by death.

In 1979 [the Vietnamese invaded](#) and put an end to that, pushing the Khmer Rouge into the mountains... and gradually, and very imperfectly, things have been getting a bit better since then.

So have another beer, buy some stuff in the markets, tip the driver well and go to bed.



**February 19, 2011**

Angkor Wat is huge, and beautiful, and famous. But a short drive up north there's [Angkor Thom](#), which is about 10 times bigger! I must have been too stunned to take any pictures as we rode into the main south entrance on our tuk tuk, or motor-driven rickshaw. Luckily, 'BluesyPete' made this photo available on WikiCommons:





Here's a tuk tuk in front of a huge gate with four heads of [Avalokiteśvara](#), flanked by rows of stone statues. Inside, there's a complex of temples in square 9 kilometers in area!

Let's start with the least impressive parts of Angkor Thom and work our way up, okay?



This is [Baphuon](#). Each king built his own temple, and this was built in the mid-11th century by Udayadityavarman II. Once it held a 70-meter long statue of a reclining Buddha. Now, alas, that's gone. But here's the interesting part. The French began reconstructing this temple in the 1960's by taking it apart into 300,000 sandstone blocks. Each block was carefully painted with a number so they knew where it belonged. But when the Khmer Rouge swept into power in 1975, all the records were destroyed! It became the world's biggest jigsaw puzzle. It's now close to finished — but, umm, 10,000 blocks are still lying around out back.

You can [teleport yourself to Baphuon](#) and look around. Check out the blocks still lying around, and also the royal pools!



Here's Lisa behind Baphuon, en route to the next temple. The luxuriant jungle of Cambodia had completely overgrown all the temples by the time the naturalist Henri Mouhot 'discovered' them in 1863. When we get to Ta Prohm, we'll see what these trees can do to stone buildings after a few centuries: that temple was left in its natural state, and it's my favorite. You may remember it from the movie *Tomb Raider*.

(I put 'discovered' in quotes because in fact some of the temples were still being used when Mouhot showed up!)

En route to the next temple, called Phimeanakas, we saw this wonderful thing that was too small to even be in the guide book. Oh, how I would have loved this as a kid! Ruined, half-sunken structures have always excited my curiosity.



And here's Phimeanakas, directly north of Baphuon. It's small as these temples go, but small can be good: if nobody else is there, you can pretend you're a brave jungle explorer discovering it for the first time. It's fun to stand on top of this and look down. Wanna try? Go [here](#). Unfortunately you'll meet a small pack of tourists, but that's very realistic.



Phimeanakas is an old temple, originally built by the king Rajendravarmān around 950. Legends say the tower was inhabited by a [nāga](#), or serpent, which would transform into a woman at night. The kings of Angkor had to make love with this serpent-woman every night, or disaster would befall the kingdom.

Here is one of the Khleangs, buildings across the way from Phimeanakas. Nobody knows what it was used for, though it makes a great place for kids to play:



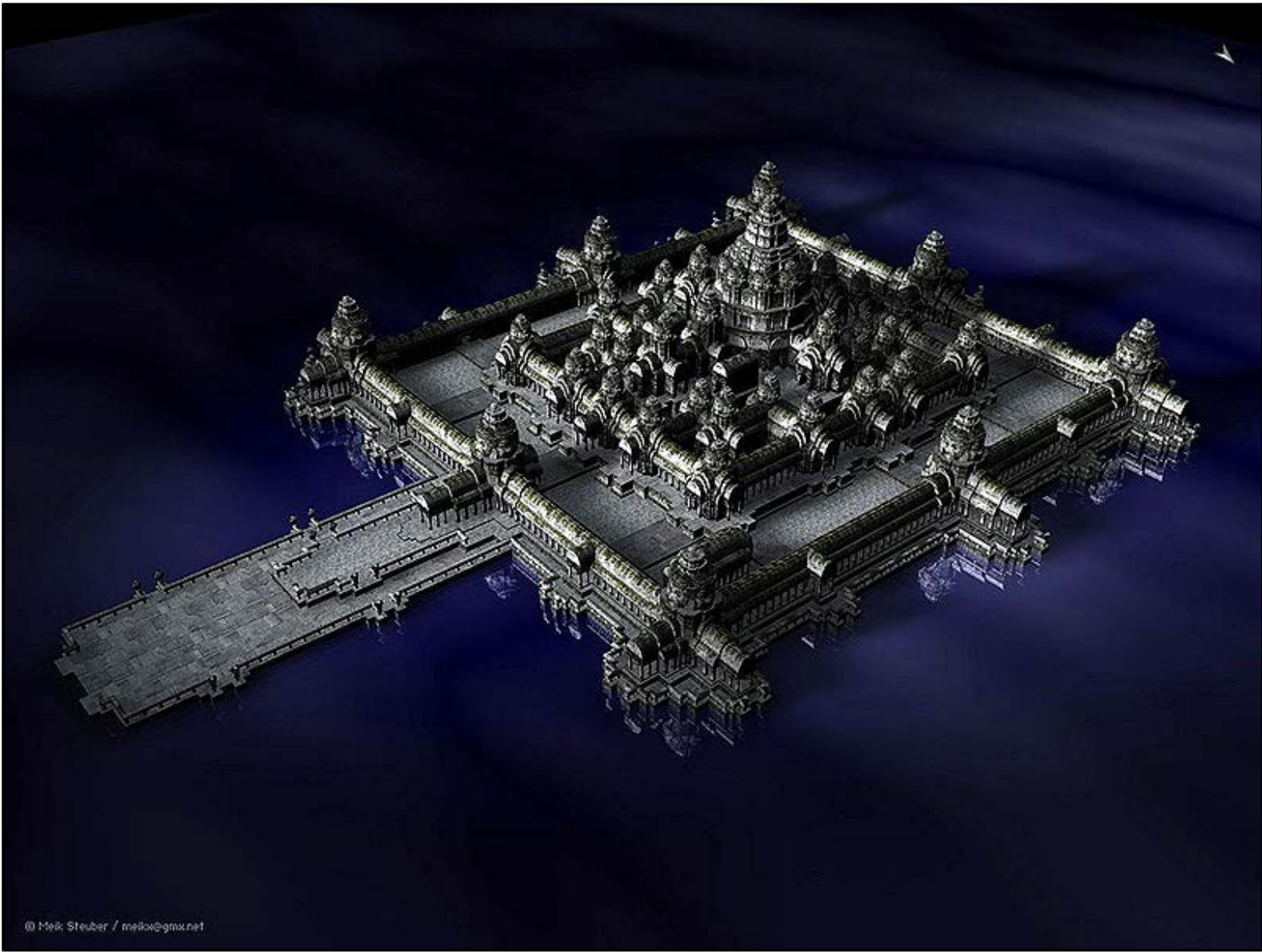
And a tiny bit south, here are some of the twelve Towers of Suor Prat. I just love their ramshackle condition and tall, skinny shape. Again, nobody knows what they were used for. You can see a statue of a nāga in front of the closest one here:





Okay: now for [Bayon](#), the biggest temple in Angkor Thom. It's impossible to convey the whole in a single photograph! My shots came out looking like random piles of stone unless I zoomed in on small details. Luckily Meik Steuber made this computer model available on Wikicommons — so let's start with that.





The symmetry is evident; what you can't see here is that all 49 towers are adorned with enormous stone faces of Avalokiteśvara, as we saw on the main front gate of Angkor Thom. In Mahanaya Buddhism, [Avalokiteśvara](#) represents compassion. As a ['bodhisatva'](#), he made a vow to postpone his own nirvāṇa until he has assisted every sentient being on Earth in achieving the same. [Nirvāṇa](#) literally means 'blowing out': blowing out the fires of craving and aversion, leaving 'consciousness without feature, without end, luminous all around'.

Each tower of Bayon has four faces of Avalokiteśvara carved in the stone:



Bayon was built by King Jayavarman VII, a Mahayana Buddhist king of the Khmer empire, with construction starting roughly around 1200 AD. This empire lasted from 802 to 1401, with the first king founding Angkor as its capital.

Henry Flower contributed this nice photo to Wikicommons.



From a distance the big temple of Bayon in Angkor Thom tends to look like a pile of rubble — I've worked hard to avoid showing you photos that convey this impression. But as you get closer you see the giant stone faces of Avalokiteśvara, and as you get closer still you see many delicate carvings. Here are some lively ['apsaras'](#): dancing celestial spirits.



Lisa found the bas reliefs at Angkor Wat a bit tiring because they're mostly battle scenes. Those at Bayon in Angkor Thom are far more diverse, including scenes of hunting, fishing, shopping, and household activities. These give us some rare glimpses of life in Cambodia back around 1200. No texts survive from this period, though there's a lot of writing carved into temple walls.



**February 20, 2011**

Angkor Wat and Bayon are huge temples built at the height of the Khmer empire, around 1100 AD. But the surrounding area is full of older temples, less grandiose but still charming. Here is [Preah Ko](#), 15 kilometers southeast of Angkor Wat. It was built by Indravarman I in 879 to honor members of his family.

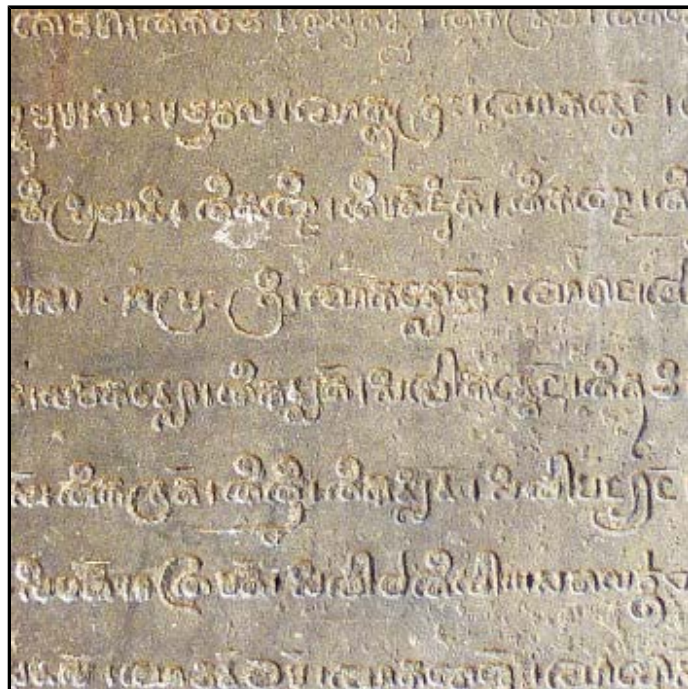






You can [teleport yourself](#) to Preah Ko and look around! There are actually six buildings here, not just three.

There are beautiful inscriptions on Preah Ko, written in Khmer script. This system of writing goes back at least to 611 AD, and it's still in use, though a couple of letters have been dropped. A lot of what we know about the history of the Khmer empire comes from inscriptions like these: as far as I know, no other texts survive.



Below you see Lisa walking the long, hot, dusty trail to [Bakong](#), near Preah Ko. There's something exciting about the



moment when you first catch sight of a temple like this. Before you know what it's really like, you can imagine anything.



Many temples around Ankor are modeled after [Mount Meru](#), the center of the universe in Hindu cosmology. Bakong is the very first of these 'temple mountains'. It was begun shortly after the founding of Cambodia in 802, and completed in 881 under King [Indravarman I](#).



I had trouble capturing its grandeur in a single photo — you have to walk around to appreciate the geometry. Luckily you can [teleport yourself](#) to the location shown above, and do just that!

It's work climbing up the 'temple mountain' of Bakong, but you're rewarded by a splendid view. [Go here](#) to look around. Can you spot the statue I've photographed below? This statue, and indeed the whole temple, is made of sandstone. Later temples, like Angkor Wat and Bayon, were built using blocks of an iron-rich clay called laterite. That's a better choice, because it's fairly soft when first cut out of the ground, but it hardens when exposed to air!



On our way out of Bakong we were serenaded by some musicians, and gave them some money:



Blind musicians are common in Cambodia. I was told blindness is caused by malaria, but now I don't see that listed as a side-effect. Anyway, malaria is common, and we took malarone during our visit, as well as using mosquito repellent. Since it was the dry season, we only got a few bites, but the malarone was reassuring.

After visiting Preah Ko and Bakong we headed south to [Kompong Phluk](#), a fishing village on the shores of a huge lake called the [Tonlé Sap](#). Since we visited during the dry season, you might not see why this house on the outskirts of town needs stilts! But when it rains, everything changes. Note the boat at front left.



In Kompong Phluk all the houses are on stilts, and everyone knows how to swim. The villagers raise fish in the Tonlé Sap, which is the largest freshwater lake in southeast Asia. During the dry season, from November to May, this lake drains into the Mekong River near Phnom Penh. But during the monsoons, water flows back from the Mekong into the lake, and it grows six-fold in area! Fish from this one lake provide Cambodians with 60% of their protein intake. We took a boat ride down this muddy river into the Tonlé Sap and saw the fish farms.



I don't know about you, but I need a map to feel I understand a place. Here's Cambodia, surrounded by Thailand, Laos and Vietnam — and with that big lake, the Tonlé Sap, at its heart. North of the lake is Angkor and the tourist town that supports it, Siem Reap. Water flows out of the lake into the Mekong River, which then goes past the capital, Phnom Penh.



February 21, 2011

[Ta Prohm](#) is the most romantic of the temples near Angkor Wat, because it's been left in its ruined state. You may have seen it in the movie *Tomb Raider*, if you weren't too busy ogling Angelina Jolie as Lara Croft. As we walked in through the sagging front gate, some kids rushed out to say hello — and ask for money.



Ta Prohm was built in the 12th and 13th centuries, about 100 years after Angkor Wat. It was set up as a Mahayana Buddhist monastery and university by the Cambodian king [Jayavarman VII](#). A large area — 1 kilometer by 650 meters — was

surrounded by a wall like the one we see here. This area, once a thriving city, is now a jungle. In the center is Ta Prohm.



After the fall of the Khmer empire in the 15th century, the temple of Ta Prohm was abandoned and neglected for centuries. It was later 'discovered' by the French explorer Henri Mouhot in 1860, though surely local residents knew about it already. The following year Mouhot died of malaria in Luang Prabang — a town in Laos that Lisa and I later visited ourselves.







In Mahayana Buddhism, [Prajñāpāramitā](#) means 'the perfection of wisdom'. It is often personified as a female figure, and Ta Prohm is dedicated to her. But King Jayavarman VII also constructed Ta Prohm in honor of his family... and they say the figures of Prajñāpāramitā are modelled on his mom! Prajñāpāramitā is also the name of a collection of writings, or sūtras, which were important in Buddhism starting around the first century BC. For example, the [Vajracchedika Prajñāpāramitā Sūtra](#) or "Diamond Cutter of Perfect Wisdom" says, among other things:

*All conditioned phenomena  
Are like dreams, illusions, bubbles, or shadows  
Like drops of dew, or flashes of lightning  
Thusly should they be contemplated.*





Here is a statue, I guess a Buddha, in the ruined main building of Ta Prohm:



But what everyone likes *most* about Ta Prohm is the *trees!* When the École Française d'Extrême-Orient started restoring the temples around Angkor Wat, they decided that Ta Prohm would be left largely as it had been found, as a "concession to the general taste for the picturesque." Very smart.

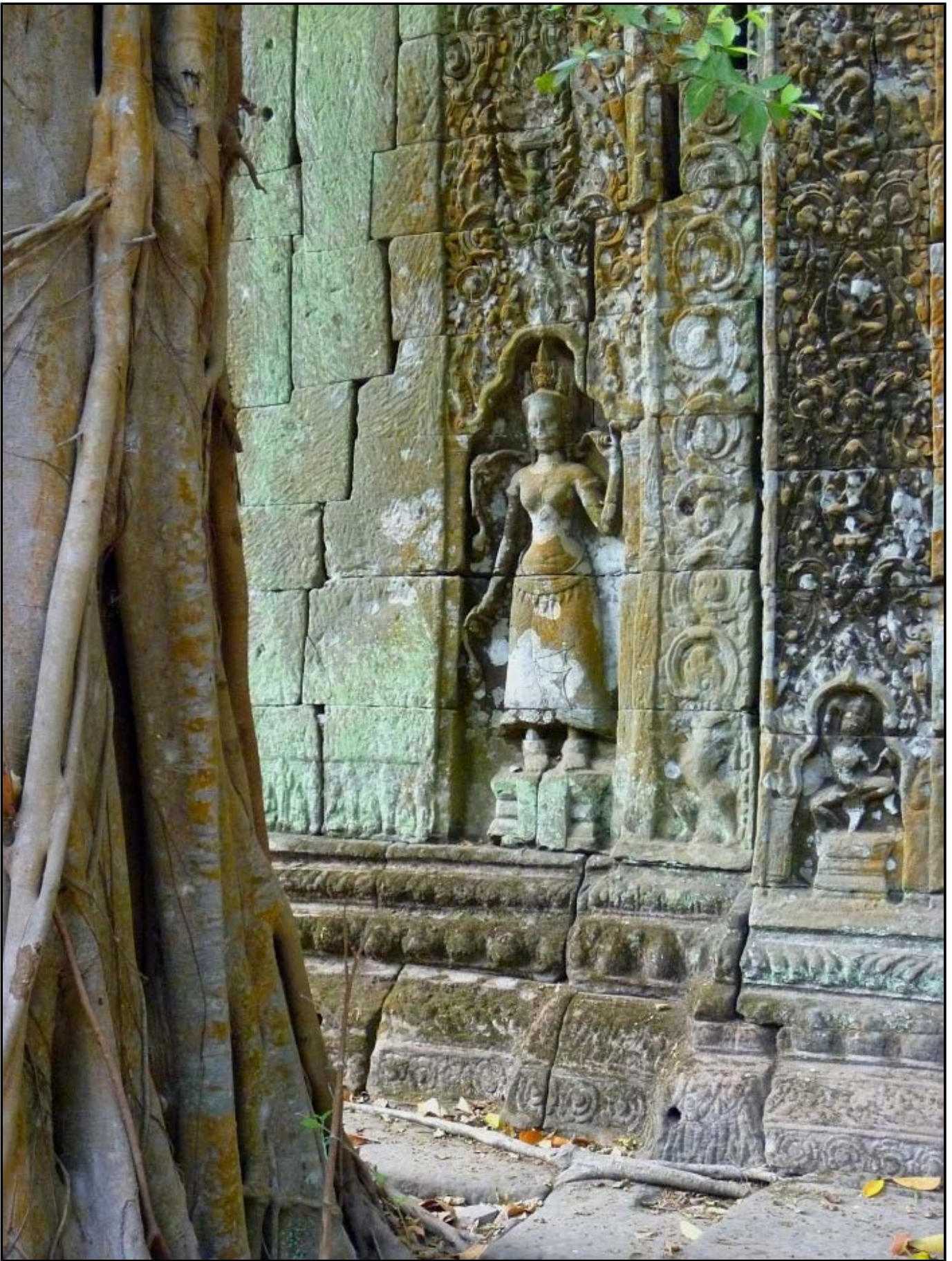


You can [teleport yourself there](#) and see what you think!

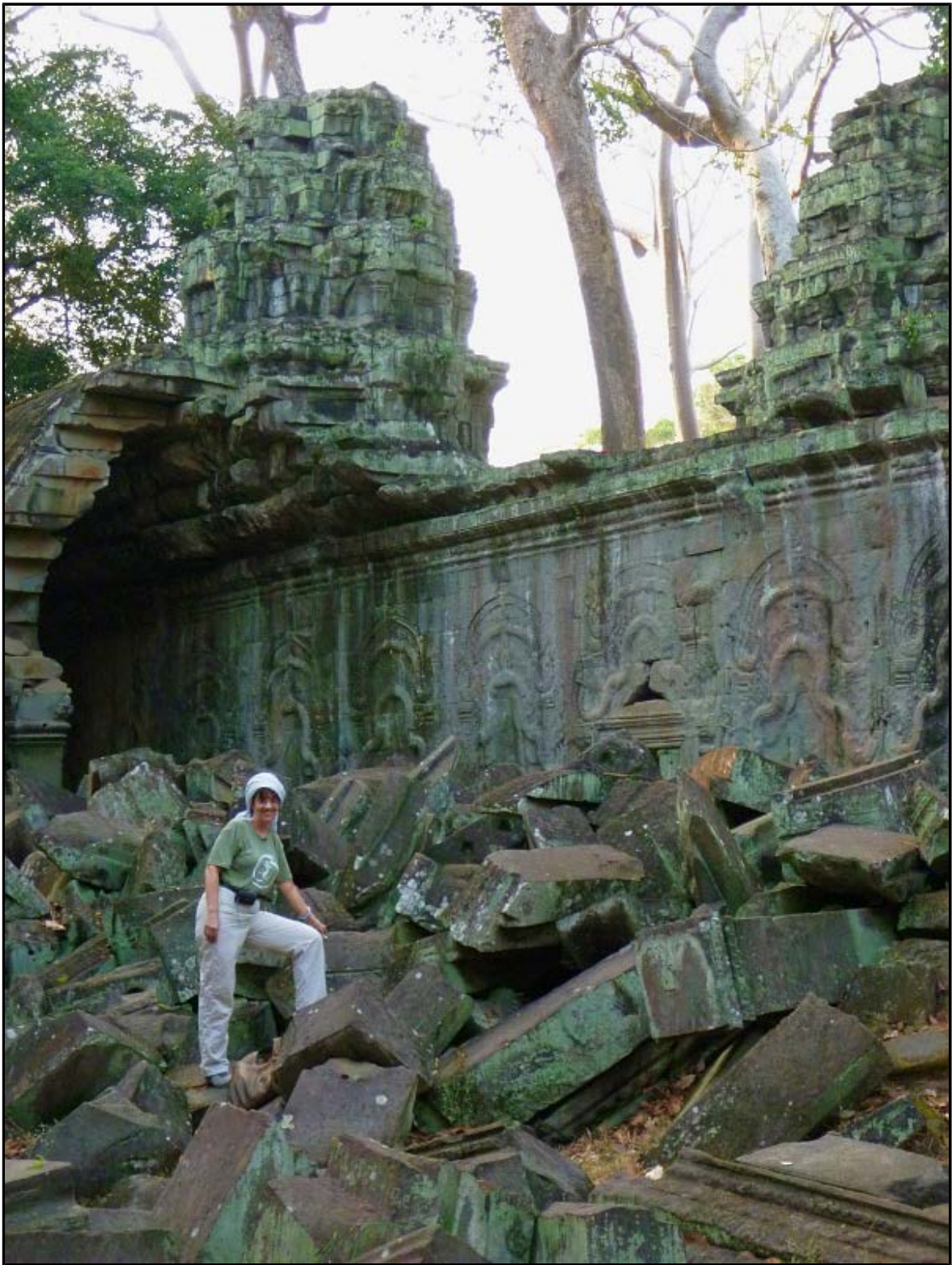
Two kinds of trees dominate Ta Prohm, but nobody can agree what they are: the big ones are either silk-cotton trees or thitpoks, and the small ones are either strangler figs or gold apples. The Angkor scholar Maurice Glaize wrote: "On every side, in fantastic over-scale, the trunks of the silk-cotton trees soar skywards under a shadowy green canopy, their long spreading skirts trailing the ground and their endless roots coiling more like reptiles than plants."



Below we see a tree — let's say it's a strangler fig, that sounds suitably ominous — in front of some wall carvings at Ta Prohm. Is the female figure at left Prajñāpāramitā? The small dancer at right is an apsara:



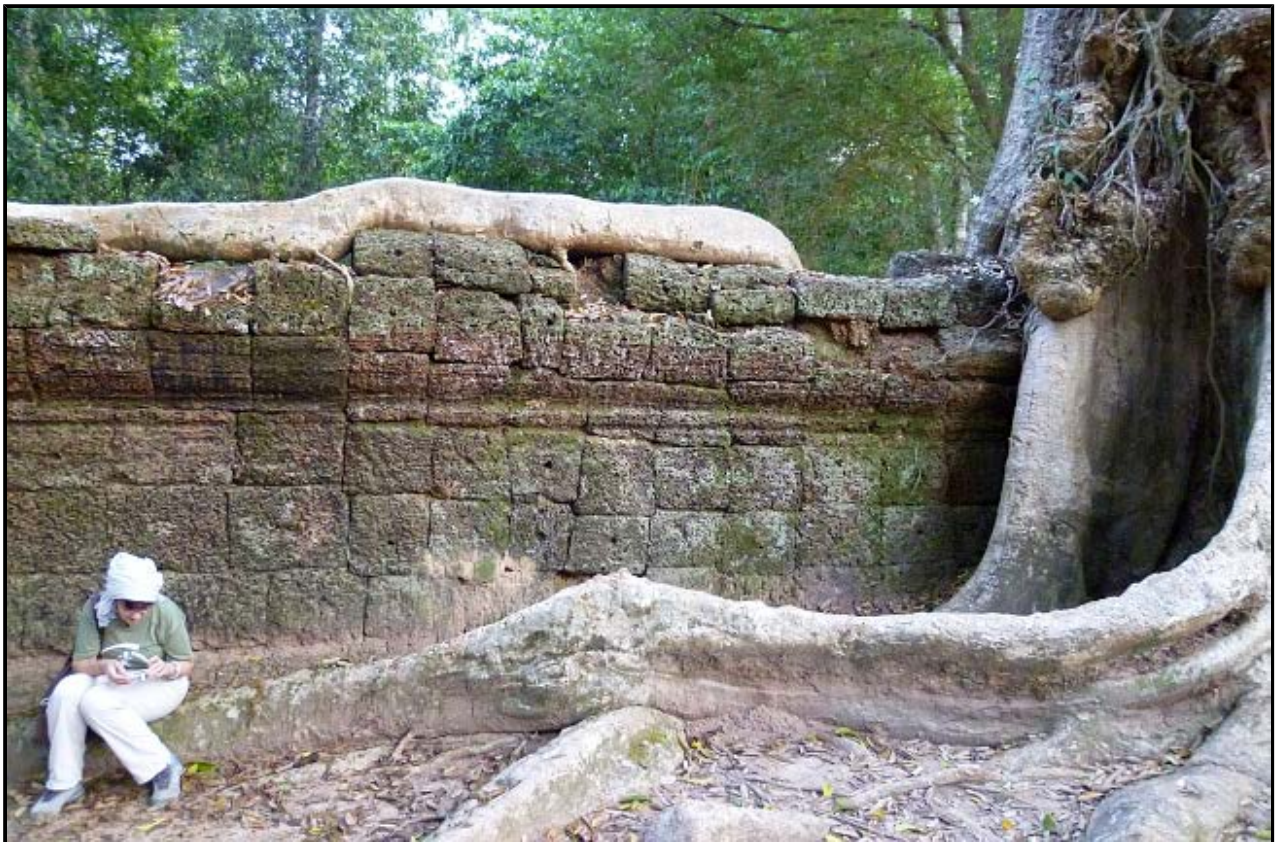
Over the centuries, the trees have knocked down enormous stone structures at Ta Prohm like children bored with their blocks.







While Lisa was fiddling with her camera, this strangler fig snuck up from behind and tried to grab her:



I had to fight it off with my bare hands. For another amazing view, go [here](#).



Our visit to Ta Prohm was cut short by sunset. Here is one last image of this magical place:



If you ever go to Angkor Wat, make sure to visit Ta Prohm!

**February 26, 2011**

If you like Sherlock Holmes stories, you should go back and read their predecessor, the first great detective novel in the English language:

- Wilkie Collins, [The Moonstone](#), 1868.

I bought as a used paperback but you can download it for free here in many different formats.

I just finished it — it's great fun! It features an innovative style where different characters tell different parts of the story. It also features a brilliant detective, many layers of mystery one wrapped inside another, and a romantic theme: the theft of a large diamond, the Moonstone, which had once graced a Hindu temple and now bears a curse. T. S. Eliot called it "the first, the longest, and the best of modern English detective novels." Dorothy Sayers, who I trust more on these matters, called it "probably the very finest detective story ever written". As the [Wikipedia article](#) points out, it introduced a shockingly large number of tricks that were later to become standard in the mystery genre:

- an English country house robbery
- an "inside job"
- red herrings
- a celebrated, skilled, professional investigator
- a bungling local constabulary
- a large number of false suspects
- the "least likely suspect"
- a "locked room" murder
- a reconstruction of the crime
- a final twist in the plot

[For my March 2011 diary, go here.](#)

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*Speaking as a servant, I am deeply indebted to you. Speaking as a man, I consider you to be a person whose head is full of maggots.* - Gabriel Betteredge, in *The Moonstone*

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## Diary - March 2011

John Baez

March 1, 2011



March 10, 2011

I love Beethoven's late quartets, profound and introspective explorations written after he was deaf. Of these, perhaps the most futuristic in conception (though not my personal favorite) is the [Grosse Fuge](#), or Grand Fugue, opus 133. It occupies a unique position in his work....

It was composed as the last movement of his String Quartet No. 13, opus 130. However, after the first performance of this quartet, the audience demanded encores of only two of the middle movements. Beethoven growled:

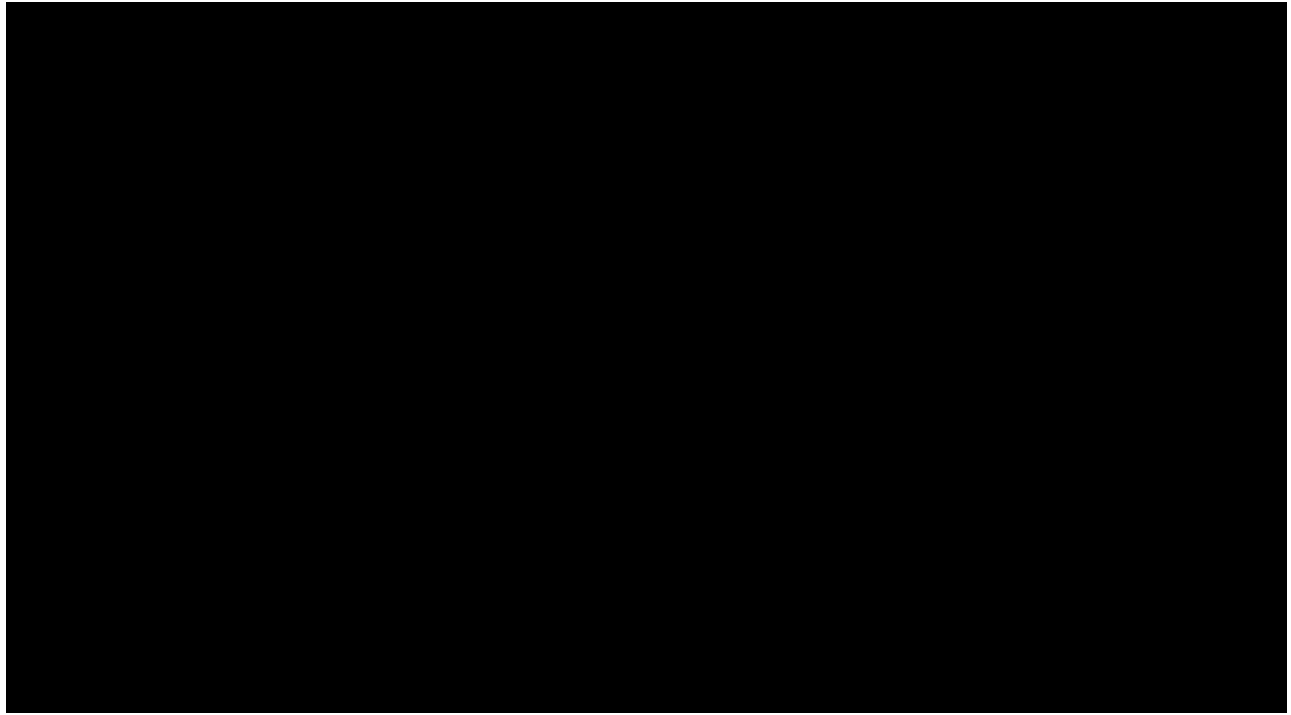
And why didn't they encore the Fugue? That alone should have been repeated! Cattle! Asses!

But audiences never warmed to the future. Later he bowed to his publisher's demand and removed it from the quartet, replacing it with a less challenging final movement. These days it is sometimes played as part of String Quartet No. 13, and sometimes on its own.

A century later, Joseph de Marliave said that "The attitude of mind in which most people listen to chamber music must undergo a radical change" in order to understand this piece. Still later, Stravinsky said that it is "an absolutely contemporary piece of music that will be contemporary forever".

This beautiful video lets you *see* the architecture of the *Grosse Fuge*:





**March 22, 2011**

After Lisa's class ended we caught a cab to the airport and flew to Hong Kong. We passed customs around 11:30 pm and took a taxi to Robert Black House, which is a kind of residential college for scholars at Hong Kong University. By the time we got there it was about 1 am and we were exhausted.

**March 23, 2011**



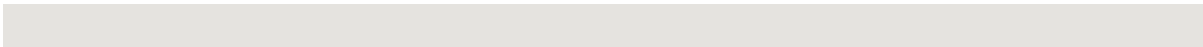
On Wednesday I got up bright and early, had breakfast with Lisa in Robert Black House, which looks like a kind of Chinese maze inside. Lisa took off for Chinese University to give a talk. Then I walked down to the Run Run Shaw Building housing the math department of Hong Kong University, and was shown my office. And, who who was there? None other than my old grad school pal [Mathai Varghese](#)! As usual, we started talking math... went down for tea... and then my host, Jiang-Hua Lu, showed up. I know her from the two years I took leave from UCR and taught at Wellesley College to be in Boston with Lisa. She was a Moore Instructor at MIT, and we took a course on quantum groups together, taught by David Kazhdan. Many good memories. Both these pals looked noticeably older than when I'd last seen them. I know I do too. Getting old.

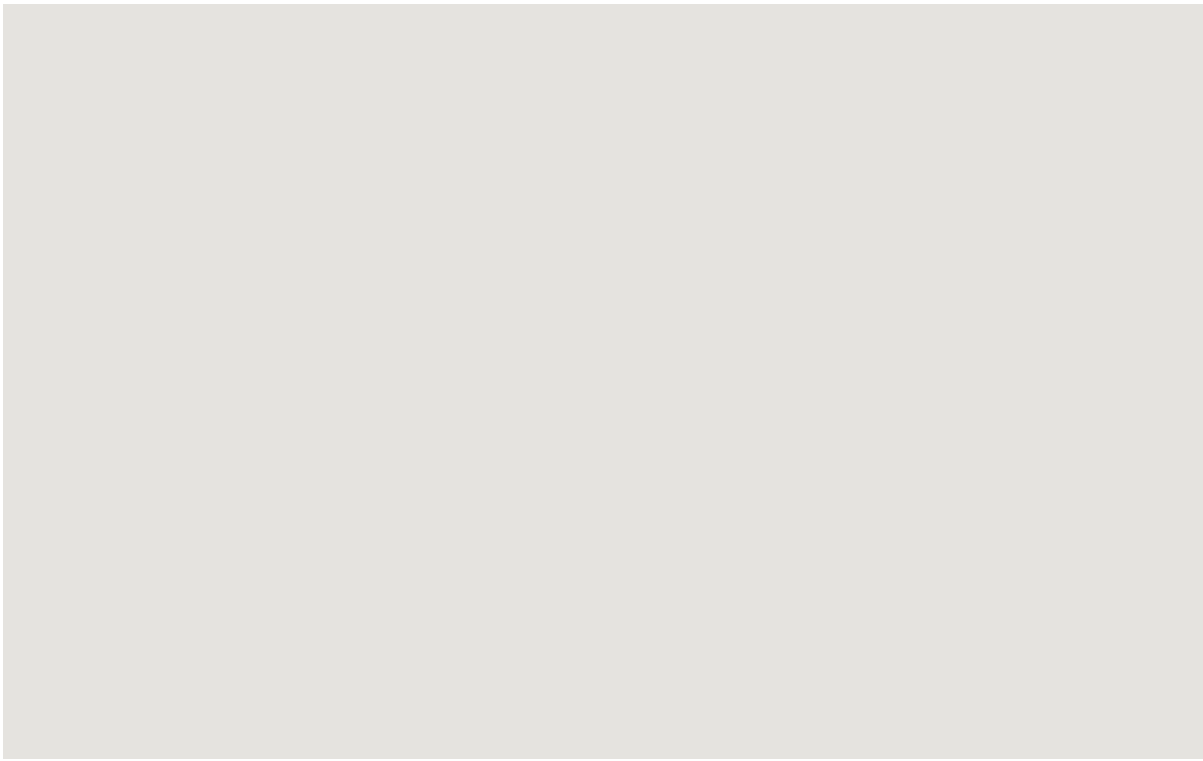
I gave a colloquium talk on [Energy and the Environment: What Mathematicians Can Do](#). It was my first try at what I hope is a talk I keep giving and keep improving. It went okay.

**March 24, 2011**

Lu drove me to the Chinese University of Hong Kong to talk to Conan Leung, and at 11 am I gave a talk at the [Institute of Mathematical Sciences](#) on the number 8, since Conan is interested in the octonions and  $G_2$  manifolds. Then we had lunch in Sha Tin, and later I met up with Lisa in Kowloon Tong, our old stomping ground.

Lisa and I had dinner at a truly great yet not astoundingly expensive Chinese restaurant back in Central. It's called Shui Hu Ju and it's on 68 Peel Street, a steep little street. It has wonderful old-fashioned Chinese decor and magnificent spicy Szechuan-style food. It's my favorite restaurant so far in Hong Kong: you feel like you're back in the Tang Dynasty as you sip your rice wine, but it's quite unpretentious. It looks like this:





[View Larger Map](#)

### **March 25, 2011**

On Friday I gave a talk as part of the [workshop on geometry and Lie groups](#) at Hong Kong U. I spoke about what my grad student John Huerta has been doing — he's finishing up a thesis on [Higher Gauge theory, Division Algebras and Superstrings](#). At the time he didn't have a job offer. Luckily Peter Bouwknegt was in the office and liked the talk. Later he offered John a postdoc at ANU! I was so happy. I guess it really pays to promote your students' work.

### **March 26, 2011**

Varghese Mathai, Peter Bouwknegt and David Vogan spoke at the workshop on geometry and Lie groups. Later Lisa hiked up from the campus into the peaks. The next day we walked around town and then flew back to Singapore.

The great thing about Hong Kong University is that a half-hour walk uphill to the peaks takes you to views like this:





while a half-hour walk downhill to Central gets you into some serious urban scenes like this:



(Click for bigger images.)

[For my April 2011 diary, go here.](#)

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*What does it mean, chaos  
gathered into a sudden bronze sweetness,  
an October flourish, and then that moment  
denied, turned acid, disassembling,  
questioned, rephrased?*

- Mark Doty, *Grosse Fuge*

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## Diary - April 2011

John Baez

April 1, 2011



April 15, 2011

This Sunday Lisa and I went downtown to [Geylang](#), an neighborhood of Singapore that I've been hankering to explore. Geylang is famous for preserving the old [shophouses](#) that used to be so characteristic of Singapore. Parts are a bit seedy: the western end is known as a [red light district](#), with the usual associated crime. But there are also a lot of [clan associations](#) and Buddhist temples.

We were lucky: it was some sort of Chinese holiday, and a clan association near Lorong Bachok had put on a puppet show! First we watched it from the front; then we walked around back and watched the folks doing the show, and

playing the accompanying music. It was great fun though I didn't understand a word of it.

Note the offering of fruit and incense, especially visible in the third photo. There were also some big trash cans full of burning incense, which made enough smoke that it was hard to take good photographs!















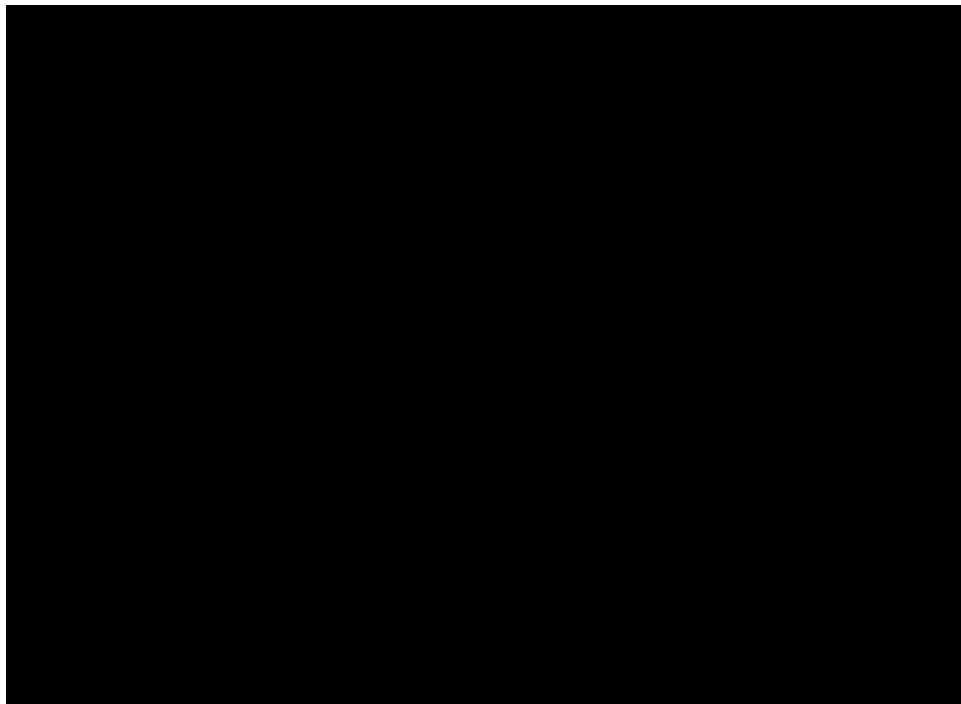
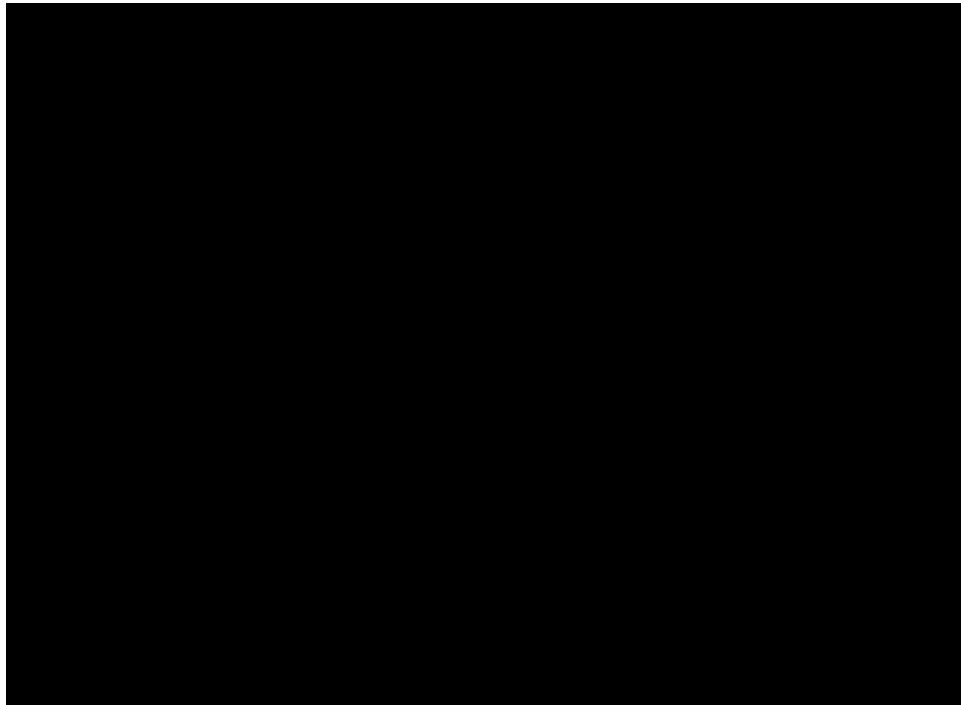
**April 19, 2011**

I used to spend a lot of time discussing physics with [Greg Weeks](#) on the newsgroup sci.physics.research. Recently he resurfaced in my life. It turns out he's a big Stravinsky fan. That's a good thing, because just now I happen to be trying to learn more about the later Stravinsky, having long since overdosed on the *Firebird*, *Petrushka* and *The Rite of Spring*. The last was my favorite piece of music for a while around the age of 17: the crashing, lurching rhythms of the finale seemed to "blast music into a wholly new realm of possibilities", as [Peter Gudmann](#) nicely puts it. It made the hair on the back of my neck stand on end!

Recently I'd been listening to Stravinsky's *Symphony in C*, *Concerto in D* and [Symphony of Psalms](#), trying to tell if I like

them or merely admire them. But Greg reminded me how great Stravinsky's 1957 ballet [Agon](#) is. "Agon" is Greek for "struggle", and this piece is a curious struggle of baroque and 12-tone styles. I like the massed trumpets and plucked string instruments (harp and mandolin). And I especially like the restless opening theme, which harks back to [Petrushka](#) somewhat.

Check it out:



Greg writes:

... let's see, what are my favorite pieces by Stravinsky, in chronological order:

the three early ballets

Les Noces (The Wedding)

Renard

L'histoire du Soldat (The Soldier's Tale)

Symphonies of Wind Instruments

Oedipus Rex (although I have trouble with operatic bellowing)

Apollo (especially the climax)

Symphony of Psalms

Dumbarton Oaks

Symphony in Three Movements

Mass

Cantata

Septet (inspired by the Schönberg Suite)

Agon

My special favorites are Les Noces, Mass, and Agon.

Greg thinks that Stravinsky was the last great composer and since then classical music has gone to hell. I think that classical music in its classical sense died with the end of "western civilization" and the rise of world culture, which is a much more complex and so far inchoate thing. Today an ambitious composer cannot safely neglect rock, rap, techno, ambient, jazz, bossa-nova, gamelan, qawawali, ragas and talas. And this makes it very difficult for music to be "classical" or perfect in any sense. It can still be exciting, though. That's what I think: we're in messy transitional phase, with one kind of music dying and another struggling to be born.

I may try to convince Greg that Steve Reich wrote some great music. I'm not sure it's classical, but it has some of the same purity, and I think some of it is great. I think that Reich's *Sextet* reminds me most of Stravinsky: it's the spiky chords and tense rhythms. Especially, say, the beginning of the 3rd movement here. That could not exist without *The Rite of Spring*... but it has some of the "combinatorial" feel of Bach.





By the way, the photography of this performance is really great!

**April 20, 2011**

Check out Brian Eno's new tune, "A Glitch in the System", from his forthcoming album [\*Drums Between the Bells\*](#)

The lyrics on this album are by the poet Rick Holland.

**April 22, 2011**

More on Stravinsky from Greg Weeks:

Stravinsky had greater periods and lesser periods. Let's review them.

A. 1910-1913: the three great ballets.

B. 1914-1921: a complete renunciation of the three great ballets. This is known as his "Russian" period and cannot be described in words. When you hear "Les Noces" and "Renard" you will know. But the period also contains minor *experimental* pieces that sound like nothing else on earth. And the period contains a peculiar strain of cosmopolitanism, in which he takes *existing* styles and makes them his own, somehow. A hybrid piece (and a masterwork) is "The Soldier's Tale".

C. 1922-1925: neo-classicism, phase 1. Here, the idea of taking existing styles and making them his own becomes his artistic credo. The risk here is that you can't really hear him making them his own at times. His music became diminished and uninteresting.

D. 1926-1933: neo-classicism, phase 2. Stravinsky continues with neo-classicism, but he breaks free of his

dogmatic fetters. A series of masterworks — all very different, of course -- ensues: Oedipus Rex, Apollo, The Fairy's Kiss (well, almost a masterwork), the Symphony of Psalms (which actually harks back to the Russian period), and Persephone (which must be heard conducted by Craft). This is a great period.

E. 1933-1951: neo-classism, phase 3. Stravinsky suffers an incredible insult in France in 1934. He loses his wife, mother, and daughter in 1939. Fascism rises and falls. Stravinsky flees to America in 1940, knowing no English, and in trouble financially. Musically, these were lean years. The only masterworks that come to mind are Dumbarton Oaks (a light masterwork), Symphony in Three Movements, Orpheus (so say some; I don't), and Mass. He finishes with a neo-Mozartian 3-act opera, The Rake's Progress. At this point, the young Turks who've adopted Webern as their master are laughing and hooting at Stravinsky premieres. (These radicals even denounced Schönberg as insufficiently radical. SCHÖNBERG IS DEAD, screamed Pierre Boulez. Schoenberg the man, incidentally, was still alive.)

F. 1951-1960: transition to serial music. Arnold Schoenberg dies. Rather than letting Igor solve the musical crisis of Western civilization, which might well have been impossible, Robert Craft gently led Igor into the land of serialism. (12-tone and serialism intersect. In Stravinsky's case, not all of his series were 12-tone.) A series of masterworks — or at least very ear-teasing pieces — emerges: Cantata, Septet, Canticum Sacrum, *Agon*, Threni, and Movements. I can't quite love the latter two, but I do like Movements, and I bet that I would like Threni if the voices were without vibrato, like a Gregorian chant.

G. 1961-1967: 100% 12 tone. (Not quite 100%. There are some very fine exceptions. However:.) A disaster. Horrible stuff from "A Sermon, a Narrative, and a Prayer" through Introitus. Of course, he was an established master, the subject of documentaries, apparently accepted by the young Turks, and so was happy. And as a final bloom of a dying tree, a near masterwork, Requiem Canticles. Robert Oppenheimer requested that it be played at his funeral.

H. 1968-1971: No more music. Stravinsky is frail and ill. He suffers from the fore-knowledge that he will never compose again. He fades until his death in 1971. During this entire period, Robert Craft maintains the fiction that Stravinsky is thriving by writing letters and reviews in his name. Much controversy eventually ensues.

**April 23, 2011**

I told Alex Hoffnung how I was trying to get mathematicians interested in saving the planet, and he decided that to do this I needed a cape. This was duly provided by his friend [John Vance](#):



[For my May 2011 diary, go here.](#)

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*This world, still blue, still turns.* - Brian Eno

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[For my April 2011 diary, go here.](#)

## Diary - May 2011

John Baez

May 1, 2011



May 21, 2011

An interesting essay about David Eagleman's studies of human time perception:

- Burkhard Bilger, [The Possibilian](#), *The New Yorker*, April 25, 2011.

"I was working with Larry Mullen, Jr., on one of the U2 albums," Eno told me. . "All That You Don't Leave Behind," or whatever it's called." Mullen was playing drums over a recording of the band and a click track — a computer-generated beat that was meant to keep all the overdubbed parts in synch. In this case, however, Mullen thought that the click track was slightly off: it was a fraction of a beat behind the rest of the band. "I said, 'No, that can't be so, Larry,'" Eno recalled. "We've all worked to that track, so it must be right." But he said, 'Sorry, I just can't play to it.'"

Eno eventually adjusted the click to Mullen's satisfaction, but he was just humoring him. It was only later, after the drummer had left, that Eno checked the original track again and realized that Mullen was right: the click was off by six milliseconds. "The thing is," Eno told me, "when we were adjusting it I once had it two milliseconds to the wrong side of the beat, and he said, 'No, you've got to come back a bit'. Which I think is absolutely staggering."

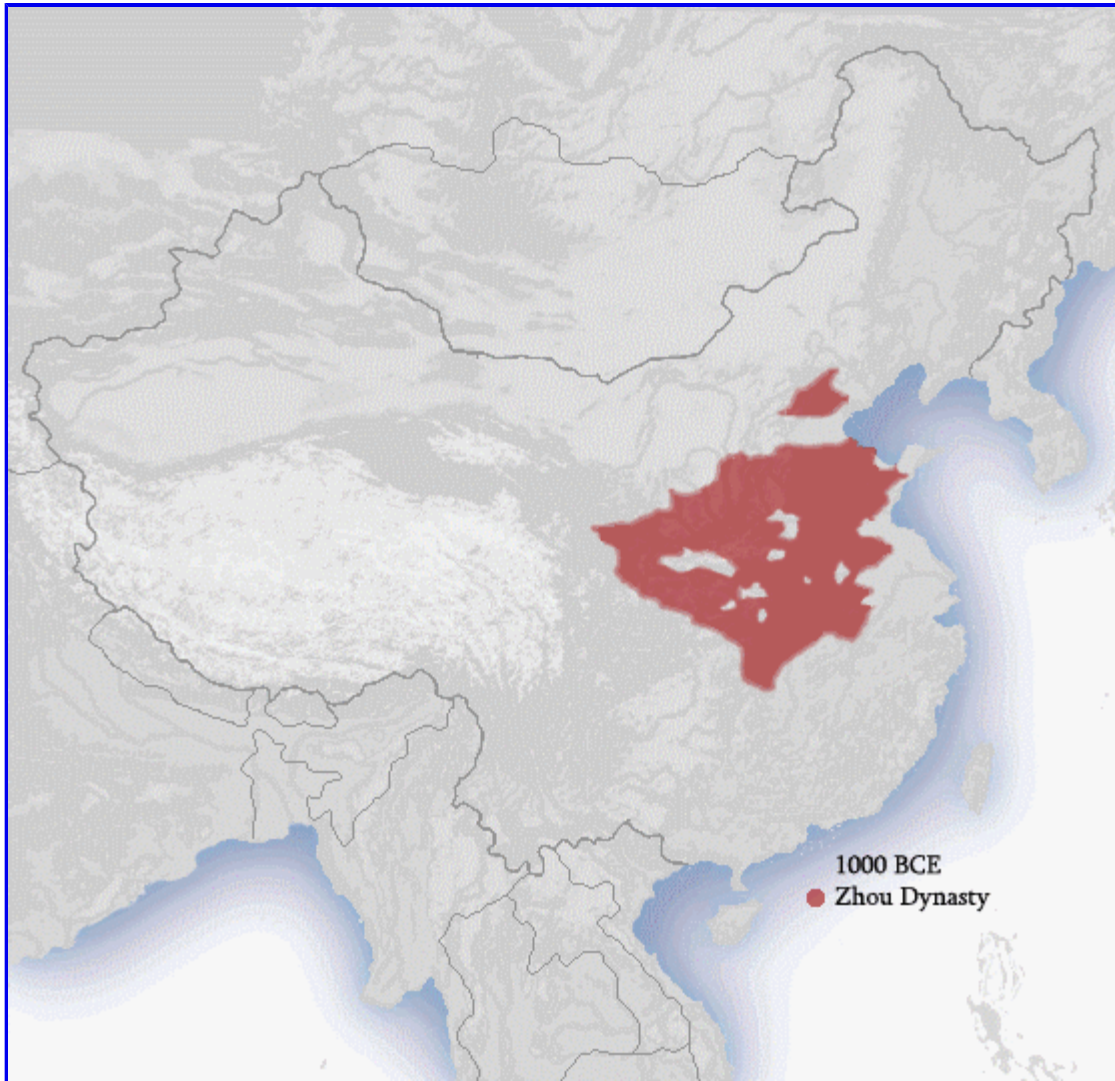
May 16, 2011

Today I set off on a long trip back to the University of California at Riverside, where three of my graduate students are finishing up and giving thesis defense talks this week. Meanwhile Lisa is going to Erlangen for a meeting of a consortium on [Fate, Freedom and Prognostication](#). Her flight took off around 6 pm, and mine around 9, so I decided to go to the airport with her. This was a somewhat bad decision because American Airlines, being short-staffed, didn't open its desk for check-in until shortly before the flight. Since I knew this was just the beginning of a ridiculously tiring flight, which would include a 6-hour layover in Tokyo, I decided to buy a big fat interesting book. I settled on this:



John Keay, *China: a History*, Harper, 2008, 578 pp.

Detailed but engagingly written, intelligent but not too scholarly, this is just the right thing for me now. I've been in China enough, and talked to Lisa about its history enough, that I can keep track of the the different dynasties and most of its different provinces: I know that Hubei is different from Hebei, and Shanxi is not the same as Shaanxi. I find myself drawn to the Tang and Song dynasties, and want to read more about them. Even the dreadful Ming holds a grisly morbid fascination for me.



**May 17, 2011**

I arrived in Riverside jet-lagged but unbowed. Because I hadn't carefully read the airplane ticket bought by a secretary at UCR, the long layover in Tokyo involved a train ride from Narita Airport to Haneda Aiport (which I'd never even heard about). This is presumably a trick played by the ever-avaricious American Airlines to save money and pass on costs to me—maybe by avoiding some fees at the larger and more famous airport? Luckily I knew I was in for this by the time I took my trip, so I was prepared. It went smoothly, and actually relieved a bit of the boredom of the layover.

Typically, the American Airlines flight leaving Haneda Airport was delayed by 3 hours. I read Chinese history.

In Riverside I went to my house, picked up my car and drove to the Mission Inn, where I'll stay for this trip. (My student Chris Rogers is renting my house, and I didn't want to bother him.)

**May 20, 2011**

All my students did well, and got their Ph.D's. We did one thesis defense a day for Wednesday, Thursday and Friday. First John Huerta talked about [division algebras, supersymmetry and higher gauge theory](#) on Wednesday. Then Chris Rogers talked about [higher symplectic geometry](#). The Christopher Walker talked about [A categorification of Hall algebras](#).

I took them all to dinner at the Mission Inn, along with Alissa Crans, a former student of mine who just got tenure at Loyola Marymount University, and Julie Bergner, who was on two of the thesis committees, and John Huerta's girlfriend. It was fun but I think we were all a bit tired: them from last-minute thesis work, me from jet-lag. So the revelry was low-key, and we quit at 9:30 pm.

And thus ends an era—the era of my work on categorification! Well, not quite: I still have papers to finish with Alex Hoffnung and Christopher Walker. But it marks a transition. It's very nice, actually. I feel freer now.

## May 22, 2011

I've been spending a lot of time talking to Jim Dolan, and I also checked out the house yesterday. The yard and garden are fine, I'm relieved to say. Our gardener, Robert Rodriguez, has been doing an excellent job of tending them.

I spent a bit of time this morning surfing the web. If you've enjoyed the music of the guitarist Michael Brook—I'm a fan of *Hybrid* (with Brian Eno), *Cobalt Blue* and *Night Song* (with Nusrat Fateh Ali Khan), you should try his extensive collection of [free music online](#). He wrote:

When initially constructed, the focus of this site was primarily as a way to interact and communicate with fans of my recorded music and concerts.

Ironically almost as soon as the site was redesigned in 2008, it became somewhat painfully apparent that trying to sell and promote recorded music wasn't really a viable business for me. Fortunately, I had already started a transition into film scoring and that is now the main thing that I do.

So, now he's giving away music for free and making money through film scores!

Next I'll go visit my friends Chris Lee and Meenakshi Roy in Los Angeles for a couple of days...

## May 26, 2011

I had some great conversations with Chris and his postdoc Marc Harper, a tiny portion of which I later recorded [on my blog](#). I survived the flight from Los Angeles back to Singapore, which was just as convoluted and tiresome as the flight there: another train trip, luckily no flight delays, but somehow depressing to leave on the 24th and arrive on the 26th. Luckily I had my history of China to keep me company. I'm now up to the Yuan dynasty.

I arrived in Singapore at 6 am; Lisa showed up around noon.

## May 29, 2011

A somewhat lazy day. After a nice swim, I fixed up the webpage listing the [papers and theses](#) of all my students, which was a good way to remove material about them from my main webpage and convince myself that yes, John, Chris and Christopher really were done. I updated my [vita](#), and some more stuff like that. Then I created a bunch of webpages based on my blog entries about [information geometry](#). While listening to music, all this is a bit like knitting or cleaning out the closets. I seemed to need a low-energy day like this.

Here's a great photo of zodiacal light versus the Milky Way, taken in Tenerife by Daniel Lopez:



[For my June 2011 diary, go here.](#)

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*For Hillman, "soul" is about multiplicity and ambiguity, and about being polytheistic; it belongs to the night-world of dreams where the lines across the phenomenal field are not so clearly drawn. Soul **pathologizes**: "it gets us into trouble," as Moore writes, "it interferes with the smooth running of life, it obstructs attempts to understand, and it seems to make relationships impossible." While spirit seeks unity and harmony, soul is in the vales, the depths. - Brent Dean Robbins*

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## Diary - June 2011

John Baez

June 1, 2011



June 2, 2011



*Clouds*

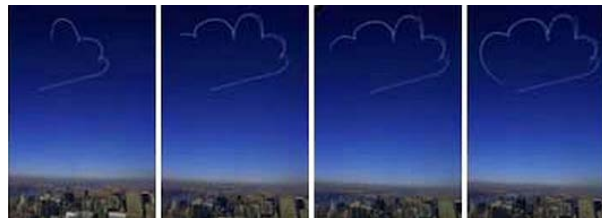
by [Vik Muniz](#)

Photo by Charlie Samuels/Creative Time

This piece of art was created by a sky-writing airplane over New York City. It's a joke, but there's also something thought-provoking about it. Art creates simplified representations of reality. We're willing to accept these in certain contexts. For example, this kind of drawing of a cloud is utterly standard in cartoons: we don't question it there. But putting these representations back into reality lets us see how different they are from the things they represent.

But the really good part is that this way of drawing a cloud on the sky uses a kind of cloud. A strange-shaped, artificial cloud, but still: water vapor in the air.

It's also nice to see the process of skywriting which "draws" the cloud. It's a lot like drawing!



But Vik Muniz shouldn't have called this piece "Clouds". It should be called "Cloud Drawing".

On the other hand, [Berndnaut Smilde](#) makes art using *indoor* clouds that look like normal clouds. They only last a short while.



### June 3, 2011

When Karen Butler reawakened after anesthesia, she discovered something strange had happened: she had acquired a foreign accent!

- Jane Greenhalgh, [A curious case of foreign accent syndrome](#), *Morning Edition*, National Public Radio, June 1, 2011.

### June 7, 2011

This article is a bit too heavy on the *bad* sides of mind-machine melding, but certainly interesting:

- Sue Halpern, [Mind Control & the Internet](#), *The New York Review of Books*, June 23, 2011.

A couple of quotes:

Early this April, when researchers at Washington University in St. Louis reported that a woman with a host of electrodes temporarily positioned over the speech center of her brain was able to move a computer cursor on a screen simply by thinking but not pronouncing certain sounds, it seemed like the Singularity—the long-standing science fiction dream of melding man and machine to create a better species—might have arrived. At Brown University around the same time, scientists successfully tested a different kind of brain.computer interface (BCI) called BrainGate, which allowed a paralyzed woman to move a cursor, again just by thinking. Meanwhile, at USC, a team of biomedical engineers announced that they had successfully used carbon nanotubes to build a functioning synapse—the junction at which signals pass from one nerve cell to another—which marked the first step in their long march to construct a synthetic brain. On the same campus, Dr. Theodore Berger, who has been on his own path to make a neural prosthetic for more than three decades, has begun to implant a device into rats that bypasses a damaged hippocampus in the brain and works in its place.

Also:

Another branch of DARPA is pouring millions of dollars into the development of a battlefield 'thought helmet' that will let soldiers in the field communicate wordlessly by translating brain waves, which will be 'read' by sensors embedded in the helmet and arrayed around the scalp, into audible radio messages. (One researcher called it a 'radio without a microphone'). As early as 2000, Sony began work on a patented way to beam video games directly into the brain using ultrasound pulses to modify and create sensory images for an immersive, thoroughly inescapable gaming experience. More recently, computer scientists at the Freie Universität in Berlin got a jump on Stuart Wolf's vision of a car operated solely by thought. Using commercially available electroencephalogram (EEG) sensors to first decode the brain wave patterns for 'right,' 'left,' 'brake,' and 'accelerate,' they then were able to connect those sensors to a computer-controlled vehicle, so that a driver "was able to control the car with no problem — there was only a slight delay between the envisaged commands and the response of the car," according to one of the lead researchers.

Moreover, a group at the University of Southampton in England has developed a BCI—a brain-computer interface—that enables people to communicate with each other brain to brain without thought or, as the developers call it, B2B, again with a kind of EEG cap that lets one person think of 'left' (as represented by a zero) or 'right' (represented by a one), send one of those digits to a second person, also wired with electrodes that are connected as well to a computer that receives the digit, and, once it is understood, allows the second person to flash the digit back to the sender by way of a light-emitting diode (LED), which is 'read' by that person's visual cortex. It's not quite the soundless, wordless, almost thoughtless integration of our thoughts, B2B, but it's a fourth or fifth step toward a future that is becoming increasingly visible.

## June 10, 2011

If you want to learn lots of ways that evolution is more complicated and interesting than you learned in school, this book is great:

- Massimo Pigliucci and Gerd B. Müller, *Evolution: The Extended Synthesis*, MIT Press, Cambridge, 2010.

Epigenetics, the evolution of evolvability, group selection, dynamical patterning modules... it's all here. I want to write about this on my blog, but I need to return it to the library before heading off for Zürich the day after tomorrow. So, this diary entry is a reminder to myself.

## June 18, 2011

I'm angry that Obama is continuing the erosion of the US Constitution by claiming that wars aren't really wars and thus don't need congressional approval:

### [2 Top Lawyers Lost to Obama in Libya War Policy Debate](#)

**Charlie Savage**

*New York Times*

June 17, 2011

WASHINGTON — President Obama rejected the views of top lawyers at the Pentagon and the Justice Department when he decided that he had the legal authority to continue American military participation in the air war in Libya without Congressional authorization, according to officials familiar with internal administration deliberations.

Jeh C. Johnson, the Pentagon general counsel, and Caroline D. Krass, the acting head of the Justice Department's Office of Legal Counsel, had told the White House that they believed that the United States military's activities in the NATO-led air war amounted to "hostilities". Under the War Powers Resolution,

that would have required Mr. Obama to terminate or scale back the mission after May 20.

But Mr. Obama decided instead to adopt the legal analysis of several other senior members of his legal team—including the White House counsel, Robert Bauer, and the State Department legal adviser, Harold H. Koh—who argued that the United States military's activities fell short of "hostilities". Under that view, Mr. Obama needed no permission from Congress to continue the mission unchanged.

**June 19, 2011**



This cool-looking house in Wales was built to have minimum environmental impact on the woodland. Click to enlarge; for more details, try:

- Simon Dale, [A low impact woodland home](#).

**[For my July 2011 diary, go here.](#)**

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*Sometimes we see a cloud that's dragonish;  
A vapour sometime like a bear or lion,  
A tower'd citadel, a pendent rock,  
A forked mountain, or blue promontory  
With trees upon't, that nod unto the world,  
And mock our eyes with air. - Shakespeare*

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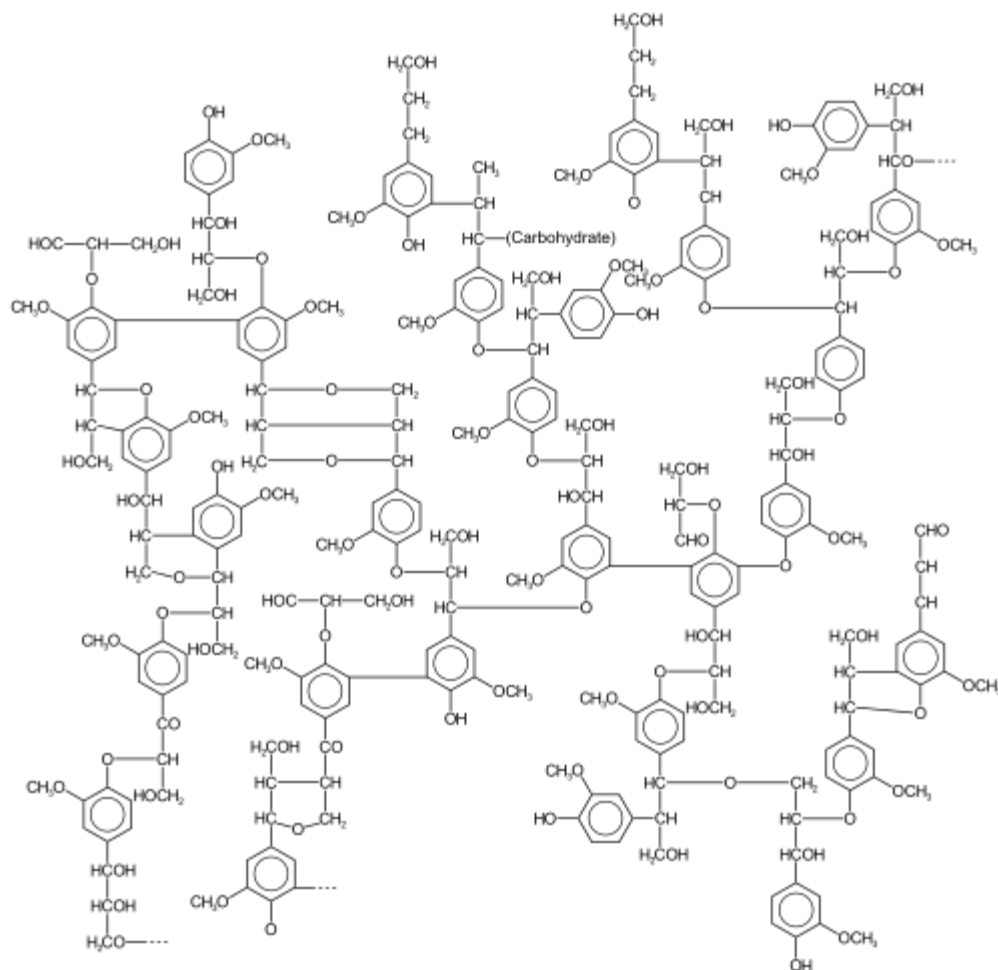


[For my June 2011 diary, go here.](#)

## Diary - July 2011

John Baez

July 3, 2011



July 3, 2011

Lisa and I flew from Erlangen to Montreal, where we'll spend a while visiting her mom, her brother, and his son.

July 4, 2011



I'm really getting into Eno's new album *[Drums Between the Bells](#)*, which features poetry by Rick Holland. There's a difference between poetry and song lyrics. In a song, the music carries the lyrics along with it. In poetry, the words should be able to stand on their own, enduring our intense gaze. Setting poetry to music almost requires that the music move to the background. And this is what Eno does in some pieces, like "The Real", a philosophical reflection where the music flows slowly as glass:

### **The Real**

the flourish

seeing the real in things

really seeing the real

describing the exact actuality

of what it is you see

or what it is you seem to see

you really seem to see the real

the exact and actual reality

of the real in things you seem to see

the real thing

and no other voice or paint in this

but just the thing, you see

the thing you see

is the real in things

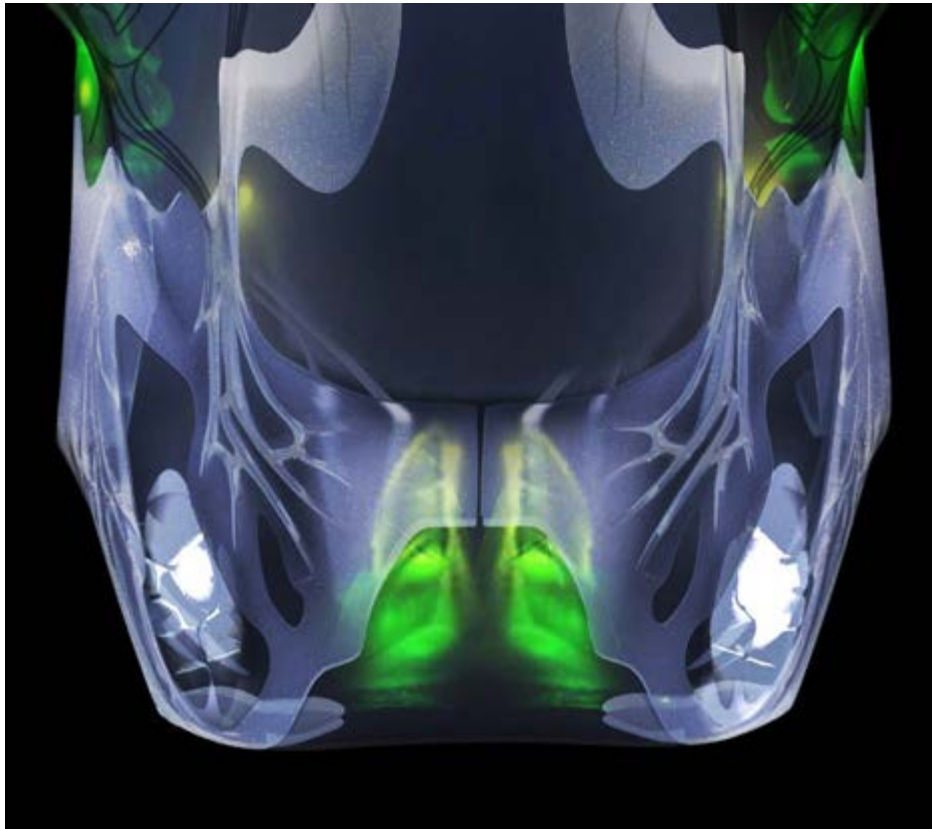
what you see is what seems  
the reels of this seem to mean the real in things  
while real runs out and seems to reach the real  
as it runs  
no dry run  
the real is done

Other pieces have much more of a rhythmic thrust, like "The Airman", which ends with the hauntingly repeated phrase "where we are":

### **The Airman**

i will see what the airman saw  
and higher, the view of the astronaut  
and higher, the tick of the satellite  
and higher, where height morphs to night  
and quantum lays out just as massive  
and unknown as the small it contains.  
ground fears play out on a surface  
one giant map of free states  
or a global ball of electric  
as data streams over state lines  
sat deep in this cannonball universe  
sat deep in this one ward of stars  
the higher we climb from our surface  
the clearer we see (where we are)

**July 10, 2011**



Would you like [a car with bones](#) — a car that is grown rather than manufactured?

**July 17, 2011**

Back from Montreal! After a grueling flight via Frankfurt, Lisa and I showed up in Singapore at 6:30 am today.

I've been using Google Plus lately, and while some people use it for chitchat, [Ruchira Datta](#) is a pretty reliable source of nontrivial news links. The concept car above is one of the goofier examples. Here's something more serious:

- Gary Taubes, [Is sugar toxic?](#), *New York Times*, 13 April 2011.

Since I'm battling a pre-diabetic condition myself, this sort of news touches on matters of life and death for me. The actual substantive part of the article starts fairly far down, somewhere around here:

When Glinsmann and his F.D.A. co-authors decided no conclusive evidence demonstrated harm at the levels of sugar then being consumed, they estimated those levels at 40 pounds per person per year beyond what we might get naturally in fruits and vegetables — 40 pounds per person per year of "added sugars" as nutritionists now call them. This is 200 calories per day of sugar, which is less than the amount in a can and a half of Coca-Cola or two cups of apple juice. If that's indeed all we consume, most nutritionists today would be delighted, including Lustig.

But 40 pounds per year happened to be 35 pounds less than what Department of Agriculture analysts said we were consuming at the time — 75 pounds per person per year — and the U.S.D.A. estimates are typically considered to be the most reliable. By the early 2000s, according to the U.S.D.A., we had increased our consumption to more than 90 pounds per person per year. That this increase happened to coincide with the current epidemics of obesity and diabetes is one reason that it's tempting to blame sugars — sucrose and high-fructose corn syrup — for the problem. In 1980, roughly one in seven Americans was obese, and almost six million were diabetic, and the obesity rates, at least, hadn't changed significantly in the 20 years previously. By the early 2000s, when sugar consumption peaked, one in every three Americans was obese, and 14 million were diabetic.

This correlation between sugar consumption and diabetes is what defense attorneys call circumstantial evidence. It's more compelling than it otherwise might be, though, because the last time sugar consumption jumped markedly in this country, it was also associated with a diabetes epidemic.

[For my August 2011 diary, go here.](#)

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*Sometimes we see a cloud that's dragonish;  
A vapour sometime like a bear or lion,  
A tower'd citadel, a pendent rock,  
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With trees upon't, that nod unto the world,  
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## Diary - August 2011

John Baez

August 1, 2011



It looks like a science fiction landscape, but it's a [sea stack](#) in New Zealand, with Mount Taranaki is in the background. A "sea stack" forms when a cliff by the sea erodes, leaving a column of rock.

Thanks to some help from people on Google+, I eventually discovered that this sea stack was one of the [Three Sisters](#) on the Three Sisters beach, which is part of the Tongaporutu coastline in New Zealand. Sometime in September 2003, the "Little Sister" was [knocked down by a storm](#), leaving two.

August 2, 2011

Lisa and I took the train up from Beijing to Changchun along with some other mathematicians heading for [Higher Structures in China II](#) at [Jilin University](#). The train ride took 6 hours and 20 minutes, going through rural northern landscapes I'd never seen before. Lots of corn fields! We wondered what they did with all that corn until we happened to read a story about two big competing plants that make corn starch up in Changchun.

We were greeted by Yunh Sheng. He took us out to a Korean restaurant that serves dog. Everyone in our party was eyeing me expectantly as I took the first bite. I wowed them all by saying "Woof!" It tasted sort of like pork.

### August 3, 2011

From the 3rd to 6th we went on an excursion to [Baekdu Mountain](#), tallest of the [Changbai Mountains](#). Most of the westerners in the party were sick some of the time. I only came down with something near the end of the trip.

### August 11, 2011

Some of us went to a show of *er ren zhuan*, a traditional entertainment in rural northern China. In the old days a couple would sing and dance using folded fans or red square handkerchiefs. Now it's gone modern. The dude here started with a smartass standup comedy act. Then his partner, dressed in some weird mix of traditional costume and white leather boots, swooped onstage and belted out a tune.



The last of the show featured an older couple. First the man came out and played a traditional trumpet-like instrument. Then he played it with two lit cigarettes stuffed up his nostrils. Then he swallowed one and continued to play... and then he pulled that cigarette, still lit, out of his mouth.



For some reason he had his forelocks shaped into little horns.

Then his wife came on stage and joked that while she was older than the other women we'd seen, she was still sexy. She flaunted a bit of skin near her waist to prove it. Then she wowed us with some cartwheels! And to wrap up the show, she threw on a blue wig with red devil horns and sang a song.





**August 12, 2011**

Cultural Square in Changchun, a northern city of 7.5 million, turns into a kind of fair on a summer night. Two guys were doing calligraphy with water on the sidewalk using sponge-tipped poles: write two verses and by then the first has evaporated so you can keep on writing. Fancy roller skating seems to be in vogue. So are kites with LEDs on them, a lot like here in Singapore.

But what really grabbed my attention is that girls age 10-18 are wearing flat plastic "hair bows" that light up in garish colors. It's not a real hair bow, more like a clip-on picture of a hair bow — so fake they make you look like a cartoon character! It's pretty hilarious.

**August 13, 2011**

I'm back in Singapore now. Here's some news about China, mostly from the 2 August 2011 edition of *China Daily*, the government's official English newspaper. As you'll see, they're pretty concerned about environmental problems.

The Chinese have fallen in love with cars. Though less than 6% of Chinese own cars so far, that's already [75 million cars](#), a market exceeded only by the US.

The price of real estate in China is shooting up---but as car ownership soars, you'll have to pay a lot more if you want to buy a *parking lot* for your apartment. The old apartments don't have them. In Beijing the average price of a parking lot is 140,000 yuan, which is about \$22,000. In Shanghai it's 150,000 yuan. But in fancy neighborhoods the price can be much higher: for example, up to 800,000 yuan in Beijing!

For comparison, the [average salary in Beijing](#) was 36,000 yuan in 2007---and the median is probably much lower, since there are lots of poor people and just a few rich ones. On top of that, I bet this figure doesn't include the many

undocumented people who have come from the countryside to work in Beijing. The big cities in China are much richer than the rest of the country: the average salary throughout the country was 11,000 yuan, and the average rural wage was just 3,600 yuan. This disparity is causing young people to flood into the cities, leaving behind villages mostly full of old folks.

Thanks to intensive use of coal, increasing car ownership and often-ignored regulations, air quality is bad in most Chinese cities. In Changchun, a typical summer day resembles the very worst days in Los Angeles, where the air is yellowish-grey except for a small blue region directly overhead.

In a campaign to improve the air quality in Beijing, drivers are getting subsidized to turn in cars made in 1995 or earlier. As usual, it's the old clunkers that stink the worst: 27% of the cars in Beijing are over 8 years old, but they make 60% of the air pollution. The government is hoping to eliminate 400,000 old cars and cut the emission of nitrogen oxide by more than 10,000 tonnes per year by 2015.

But this policy is also supposed to stoke the market for new automobiles. That's a bit strange, since Beijing is a huge city with massive traffic jams---some say the worst in the world! As a result, the government has taken strong steps to *limit* car sales in Beijing.



In Beijing, if you want to buy a car, you have to enter a lottery to get a license plate! Car sales have been capped at 240,000 this year, and for the first lottery people's chances of winning were just one in ten:

- Louisa Lim, [License plate lottery meant to curb Beijing traffic](#), *Morning Edition*, 26 January 2011.

Why is the government trying to stoke new car sales in Beijing while simultaneously trying to limit them? Maybe it's just a rhetorical move to placate the car dealers, who hate the lottery system. Or maybe it's because the government makes money from selling cars: it's a state-controlled industry.

On another front, since July there has been a drought in the provinces of [Gansu](#), [Guizhou](#) and [Hunan](#), the [Inner Mongolia](#) autonomous region, and the [Ningxia Hui autonomous region](#), which is home to many non-Han ethnic groups including the [Hui](#). It's caused water shortages for 4.3 million people. In some villages all the crops have died. Drought relief agencies are sending out more water pumps and delivering drinking water.

In [Gansu](#) province, at least, the current drought is part of a bigger desertification process.



Once they grew rice in Gansu, but then they moved to wheat:

- Tu Xin-Yi, [Drought in Gansu](#), *Tzu Chi*, 5 January 2011.

China is among the nations that are experiencing severe desertification. One of the hardest hit areas is Gansu Province, deep in the nation's heartland. The province, which includes parts of the Gobi, Badain Jaran, and Tengger Deserts, is suffering moisture drawdown year after year. As water goes up into the air, so does irrigation and agriculture. People can hardly make a living from the arid land.

But the land was once quite rich and hospitable to agriculture, a far cry from what greets the eye today. Ruoli, in central Gansu, epitomizes the big dry-up. The area used to be verdant farmland where, with abundant rainfall, all kinds of plants grew lush and dense; but now the land is dry and yields next to nothing. All this dramatic change has come about in just 50 years. lightning-fast, a mere blink of an eye in geological terms.

Rapid desertification is forcing many parties, including the government, to take action. Some residents have moved away to seek better livelihoods elsewhere, and the government offers incentives for people to relocate to the lowlands Tzu Chi built a new village to accommodate some of these migrants.

[Tzu Chi](#) is a Buddhist organization with a strong interest in [climate change](#). The dramatic change they speak of seems to be part of a longer-term drying trend in this region. Here is one of a series of watchtowers near [Dunhuang](#), once a thriving city at the eastern end of the Silk Road. I don't think this area was such a desert back then:



Meanwhile, down in southern China, the [Guanxi Zhuang autonomous region](#) is seeing its worst electricity shortage in the last 2 decades, with 30% of the demand for electric power unmet, and rolling blackouts. They blame the situation on a shortage of coal and the fact that the local river isn't deep enough to provide hydropower.



On the bright side, China is investing a lot in wind power. Their response to the financial crisis of 2009 included \$220 billion investment in renewable energy. Baoding province is now one of the world's [centers for producing wind turbines](#), and by 2020 China plans to have 100 gigawatts of peak wind power online.

That's pretty good! Remember our discussion of [Pacala and Socolow's stabilization wedges](#)? The world needs to reduce carbon emissions by roughly 10 gigatonnes per year by about 2050 to stay out of trouble. Pacala and Socolow call each 1-gigatonne slice of this carbon pie a 'wedge'. We could reduce carbon emissions by one 'wedge' by switching 700 gigawatts of coal power to 2000 gigawatts of peak wind power. Why 700 of coal for 2000 of wind? Because unfortunately most of the time wind power doesn't work at peak efficiency!

So, the Chinese plan to do 1/20 of a wedge of wind power by 2020. Multiply that effort by a factor of 200 worldwide by 2050, and we'll be in okay shape. That's quite a challenge! Of course we won't do it all with wind.

And while the US and Europe are worried about excessive government and private debt, China is struggling to figure out how to manage its vast savings. China has a \$3.2 trillion foreign reserve, which is 30% of the world's total. The fraction invested in the US dollars has dropped from 71% in 1999 to 61% in 2010, but that's still a lot of money, so any talk of the US defaulting, or a drop in the dollar, makes the Chinese government very nervous. This article goes into a bit more detail:

- Zhang Monan, [Dollar depreciation dilemma](#), *China Daily*, 2 August 2011.

In a move to keep the value of their foreign reserves and improve their ratio of return, an increasing number of countries have set up sovereign wealth funds in recent years, especially since the onset of the global financial

crisis. So far, nearly 30 countries or regions have established sovereign wealth funds and the total assets at their disposal amounted to \$3.98 trillion in early 2011.

Compared to its mammoth official foreign reserve, China has made much slower progress than many countries in the expansion of its sovereign wealth funds, especially in its stock investments. Currently, China has only three main sovereign wealth funds: One with assets of \$347.1 billion is managed by the Hong Kong-based SAFE Investment Co Ltd; the second, with assets of \$288.8 billion, is managed by the China Investment Corporation, a wholly State-owned enterprise engaging in foreign assets investment; the third fund of \$146.5 billion is managed by the National Social Security Fund.

From the perspective of its investment structure, China's sovereign wealth funds have long attached excessive importance to mobility and security. For example, the China Investment Corporation has invested 87.4 percent of its funds in cash assets and only 3.2 percent in stocks, in sharp contrast to the global average of 45 percent in stock investments.

What's interesting to me is that on the one hand we have these big problems, like global warming, and on the other hand these people with tons of money struggling to find good ways to invest it. Is there a way to make each of these problems the solution to the other?

[For my September 2011 diary, go here.](#)

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[For my August 2011 diary, go here.](#)

## Diary - September 2011

John Baez

September 1, 2011



My [August 2011](#) diary started with a photo of a "sea" stack". One of the most unearthly sea stacks in the world is the [Old Man of Hoy](#), on the western shore of the island of Hoy, one of the Orkney Islands in Scotland. It's 137 meters high and consists of red sandstone on a base of basalt. It's less than 400 years old, and it may not last much longer! This photo is from the [Hemlington Nautical History Society's webpage](#).



This is an almost nightmarish view of the Old Man of Hoy, uploaded to Flickr by [Mike Martin](#), who wrote:

It was fairly unique conditions; I scrambled down there during a hailstorm on the off chance it would pass, and it did about 5 minutes before the sun went down. I think the wet rock and low sun combined to really bring out the red in the sandstone. I also forgot the quick release for my tripod so I had to balance the camera on a rock for the 4 second exposure. I took photos until another hailstorm hit then had to find my way back to Rackwick in the dark whilst being pelted by hail with no headtorch!

### **September 17, 2011**

Today Lisa and I flew to Lombok, the island due east of Bali. We'd chosen to stay at Hotel Sunset on the coast south of Senggigi. It was a great place. By the time we got there, we didn't have time for much more than dinner. We went to a small restaurant named Bamboo on the road up to Senggigi. There we met a fellow named Han who offered to show us around for a reasonable fee.

### **September 18, 2011**

We took Han up on his offer, so we drove around in an SUV with him and a driver. I don't like SUV's, but that's what all these tour guides use.

Today we went to a small town near Mataram where they do weaving. As we drove there and back, we saw four wedding processions — it's Sunday, and that's when people have them. These processions cap off what sounds like a long and complicated process. First the man and woman agree to get married. Then the man 'steals' the woman from her family... they sneak off. Then he agrees to pay the price demanded by her family - though if my understanding of local

culture is any guide, some bargaining might be involved. A well-educated woman can cost a lot, because high school and college are not free here, and the woman's family wants to recoup the money they spent on raising her. Younger, less-educated wives are cheaper.

The grim, ashen-faced fellow at left is the groom. He was on the verge of tears. We never found out why.



On Google+, "finch wench" asked:

Is the demand for the more mature educated woman higher than for the younger "investments?"



I answered:

Good question! I don't really know. Our guide told us that most couples marry at the age of 20-23, and do this in order to "have fun": in the villages, at least, premarital sex is a serious no-no. This doesn't suggest a high overall demand for more mature, educated women. But there must be lots of different social strata with different habits. For example, only 15% of the people in Lombok are Balinese, but they're very wealthy and powerful: the Balinese invaded Lombok some centuries ago and though they've been pushed back by the native Sasaks, they're still play an important role.

(The Balinese are Hindu, the Sasaks are Muslim. I'm sort of bummed that I missed going to the only temple in the world where Hindus and Muslims both worship! That would have been interesting.)



In a wedding procession on Lombok, the bride's family officially 'meets' the groom's family — though they've actually spent the previous evening partying together. So it actually starts as two separate processions, walking toward each other down the street. And each one has a band! Above you can see two guys playing electric guitar — but at left, hard to see, there's a guy playing keyboard. There's also a singer, not shown here — and in front of the whole crew, kids gyrate wildly to the deafening music.

All this is a substitute for the more traditional gamelan. We saw one of those at the wedding procession of a more wealthy couple.

On Google+, Harrison Brown asked:

Is there any attempt by these bands to imitate the traditional gamelan sound? Or is the music they play more Western-influenced?

I answered:

These bands don't seem to be imitating gamelan music at all. Different bands I heard played in different styles. This particular one sounded a bit like Indian pop music to my uneducated ear. However, there are many styles of Indonesian pop music, as you'd expect from an ethnically diverse country with hundreds or

even thousands of islands... and I'm sure they were playing one of these styles.

Later our guide took us to Mataram, the capital of Lombok, and we bought a pirated DVD containing 13 CD's worth of Sundanese gamelan music for the equivalent of \$1.20. I love this Sundanese stuff.

Our guide had a DVD of "pop Sunda", which is strongly gamelan-influenced music played on modern instruments — somewhat cheesy synthesizers and drum machines, but still fascinating. I was unable to copy it, but now I'm in Ubud and I'll try to buy some CD's of this.



Here's the singer of that band, surrounded by a scrum of motor scooters. On Sundays, these wedding processions bring traffic to a halt in small towns all over Lombok. Even though our driver had been a cabbie in Malaysia — which sounds like the ultimate qualification for fighting through crowds — he gave up and pulled over. So we hopped out and photographed these scenes.



Here's the keyboard player for that wedding procession band. What's cool is that the synthesizer is connected to a sound board and bank of speakers... all on a wheeled cart! The band has its name emblazoned on the front of the cart.

This appears to be typical gear for weddings here on Lombok.

**September 19, 2011**

Today Han took us up Senaru, a town on the northern slope of the big volcano called Gunung Rinjani that dominates the island of Lombok.

As we began our drive north along the coast, I couldn't help noting that while the ocean is beautifully blue and the palms make the place look like a tropical paradise:





... the land is actually quite dry at this time of year — as witnessed by the dry grass here. It's less lush than Bali. The cattle are thin now, grazing on what little they can find. But later in the autumn the rains come, and — according to Han — the grassy hillsides spring to life!

From Senaru we hiked to two waterfalls in Gunung Rinjani National Park. The first one bursts spectacularly out of the jungle foliage:



It's called Sendang Gila, and it's a popular tourist attraction because it's only a 20 minute walk from Senaru. Not too crowded today, though.

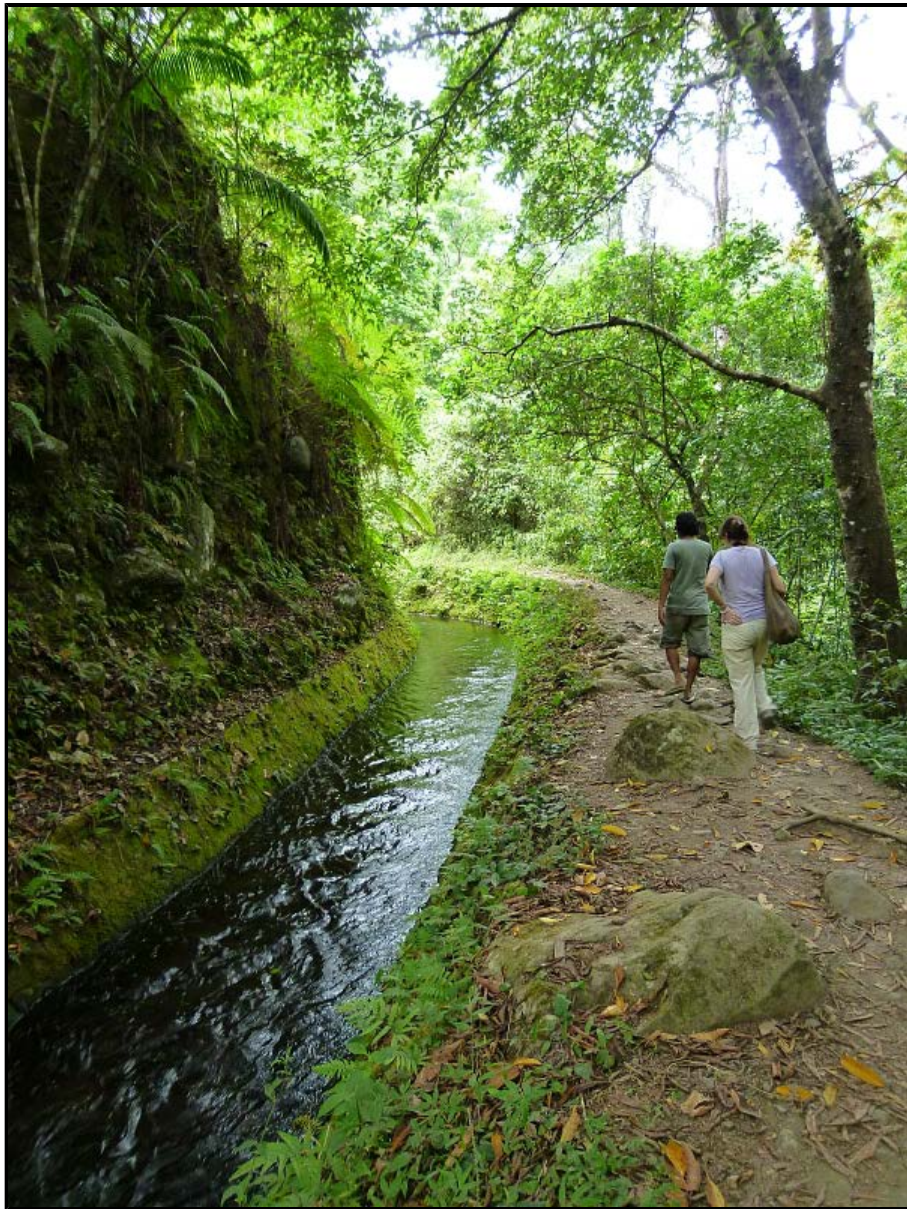
Getting to the second waterfall was considerably more work. After a bit of steep hiking we had to cross the Bridge of Horrors, shown here:



Well, that's just my own name for it, because I have a bit of acrophobia. It has a railing on one side but not the other — and it has large holes, which reveal its true purpose: it's an aqueduct! The canal I showed you earlier flows through this bridge across the deadly, fearful chasm below.

After gazing dizzily downwards for a minute — it's really further down than it looks here — I got a mental grip on myself, repeated the mantra *don't look down*, and crossed with no problem.

Then we walked along a canal — one of many that carries cold, clear water down from the volcano's jungle-covered slopes to the complex irrigation system that waters the terraced farms of Lombok:



It should remind you of the irrigation system on Bali, which I showed you in ["week303"](#). The Dutch built the stuff made of concrete:





Here's the second waterfall we saw:



It's called Tiu Kelep. After crossing the Bridge of Horrors, it took about 45 minutes to get there. Towards the end we needed to walk through the stream. The most exciting moment was when I slipped, reached out to a large rock to steady myself, and then noticed this rock was covered with insects of a kind I'd never seen before... ants, probably, but red and white, and strangely fuzzy. They sensed my hand and mounted a massive swarming attack. A real Indiana Jones moment.

Little things like this make reaching the final goal that much more delightful.



Here are some more 'artistic' shots of Tiu Kelep. It's wonderful how this one particular plant thrives under these stressful conditions. Do you know what it's called?





**September 21, 2011**

Today Lisa and I went on one last walk along the beach in Lombok before taking the ferry to Bali. She took this photo of Pura Batubalong, a small Hindu temple on the coast south of our hotel. It was full of statues, seemingly carved from the volcanic rock available right here:



**September 24, 2011**

Bali has a long tradition of art, and hordes of people making sculptures. The streets are lined with statues, even in out-of-the-way corners. For example, [last year](#) I saw these guys near the side of a trail leading into Ubud:





The stores are full of sculptures, masks and woodwork, and you can buy good stuff dirt cheap — especially since 2005, when the second Bali bombing crushed the tourist industry that was just beginning to creep back after the first.

Here's a statue in a restaurant called Bumbu Bali, on Monkey Forest Road in Ubud. It depicts Saraswati, the goddess of knowledge, the arts, and music. She's often depicted standing on a swan, and with four hands holding a book, a rosary of crystals, a pot of sacred water, and a vina - a musical instrument like a guitar. You can see some but not all of that here.



Here's a statue we saw during our last visit to Ubud:



This one was at a Hindu temple in the Sacred Monkey Forest. Besides the long tongue and screaming victim, note the little hand-made tray of offerings at left. Such offerings, in many beautiful variations, can be seen in front of almost every shop or home. People, mainly women, lay them out several times a day. Over on Google+, Nithyanand Rao wrote:

I think this is the demon-king [Hiranyakashipu](#) being slain by Narasimha, one of the incarnations of Vishnu. Looks like it anyway.

Sergey Ten replied:

Wow, really different form of culture language — the humanoid "victim" is actually a "demonic" (more like a Greek titan) *asur* (bad guy), while the animalistic giant is an avatar of Vishnu (good guy)!

Here's an impressive statue of Hanuman at the Pura Dalem Agung Padangtegal, or Padangtegal Great Temple of Death — a larger temple in the Monkey Forest:





Compare it to this Hanuman mask we bought this year in the town of Mas, close to Ubud, from a woodworker named Ary Puja:



We'd visited Ary Puja [last year](#) and bought a sandalwood Buddha and a mask of Barong, which we have over our kitchen door. Barong is scary-looking but good, the King of Spirits in Balinese mythology. Hanuman looks a bit scary as well!

If you visit Bali, please buy some masks or sculpture! You can get great deals if you bargain, and the woodworkers have been suffering ever since the Bali bombings. Ary Puja's house is packed with masks and statues, but nobody had bought anything for a month when we came this time.

[For my October 2011 diary, go here.](#)

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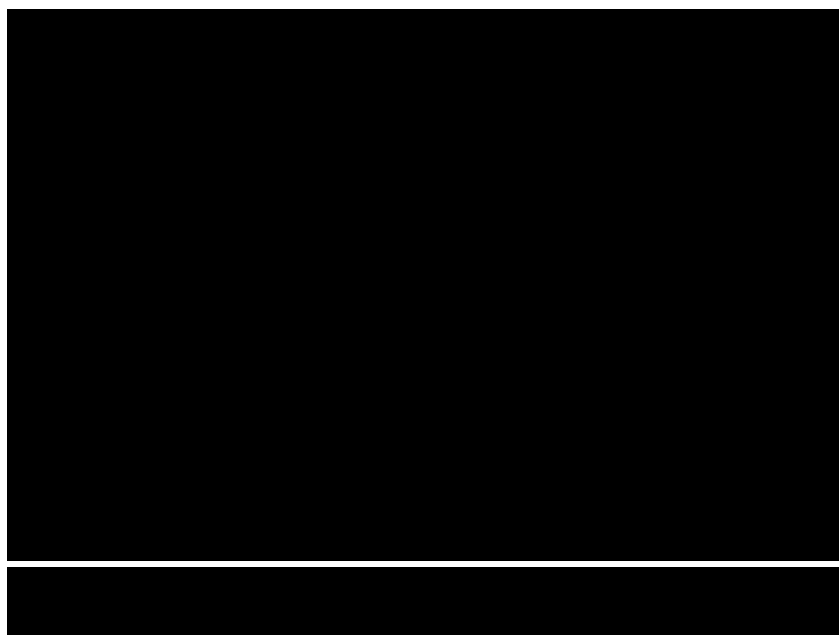
## Diary - October 2011

John Baez



An Arctic [fogbow](#) photographed by [Sam Dobson](#).

October 1, 2011



One day a friend took me down to the basement and said "listen to this". I sat down on the couch and he put on a record that would change my life: Brian Eno's *Before and After Science*. As I listened to the first song, I started feeling as if some sort of weight was pushing me down. The ever-burgeoning layers of texture, the insistence of the repetition, Eno's smeared-out vocal lines floating over the thick percussion, and the enigmatic lyrics all combined to convey the sense of sailing in a small craft through seas alien and dense:

*It will shine and it will shudder as I guide it with my rudder on its metal ways.  
It will cut the night before it as it leaves the day that saw it on its metal ways.  
Nobody passes us in the deep quiet of the dark sky.  
Nobody sees us alone out here among the stars.*

Most rock music I'd heard was full of teenage hormones and ego. While still kick-ass, this was different... somehow *empty*.

*Through no fault of our designing we are lost among the windings of these metal ways.  
Back to silence, back to minus, with the purple sky behind us in these metal waves.  
Nobody hears us when we're alone in the blue future.  
No one receiving the radio's splintered waves.*

His voice was so smooth, I could never tell when he was saying "metal days", "metal waves", or "metal ways"... but what mattered most was not the lyrics but the timbre of the instruments: almost none were like anything I'd ever heard. What in the world are those pulses that come floating by like a flock of sea birds starting around 1:26? Or that hyperactive glassy percussion that kicks in at 2:06? (If you listen carefully, you'll hear that both these elements are foreshadowed, so they don't really appear 'out of nowhere' - everything *flows*.)

In the years to come, I spent a lot of time trying to figure out this album, and the work of Eno and his many collaborators. I think I'll go through a few of my favorites here.

By the way, please ignore the rather silly graphics in this video... and I'm sorry for how it ends abruptly slightly before the song is done! [This alternative](#) has great advantages, not least being those of nostalgia, but the sound quality isn't quite as good.

**October 2, 2011**



Around the era of *Before and After Science* and *Low*, and continuing on into *Heroes*, Eno liked to split albums into a frenetic first side and a much quieter second side. But on *Before and After Science* my favorite quiet track is on the first

side.

It's full of subtle details, and the details are what matter. If you don't know by heart the little "pop" at 0:48 followed by the even littler, cuter "pop" at 0:50, the echoed flanged bass starting at 1:22, or the various sighing metallic sounds and lone piano notes, you haven't really learned this piece. It's like a small, enigmatic, carefully crafted world.

(The funny little guitar strum in the background at 2:02 foreshadows the next piece, the manic "King's Lead Hat". At this stage in his career, Eno was very meticulous about how pieces ended, since he wanted each to lead naturally to the next.)

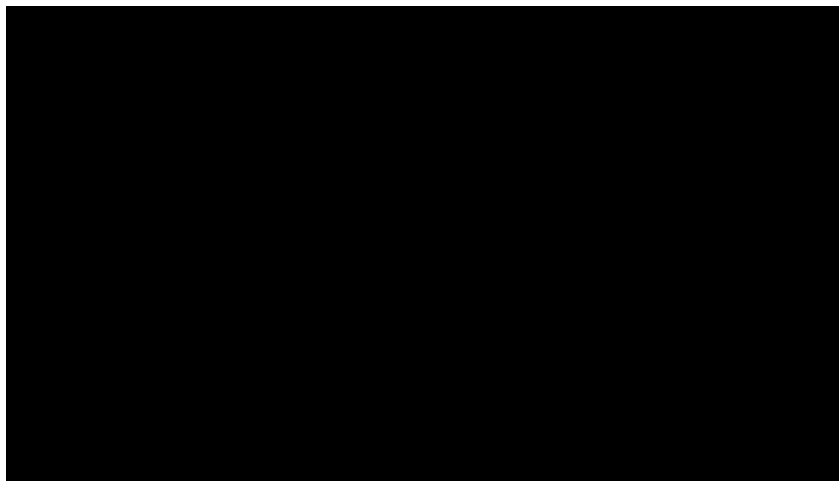
**October 3, 2011**



A while after listening to *Before and After Science*, I was in a record store and saw Bowie's *Low* for \$4.99. It was a 'cutout' — a remaindered LP with a notch cut out of it. Since I was in high school, on a limited budget, that's all I could afford... and I saw Eno was listed as the producer.

Amazing! The first side was cold, alienated rock like this song here, with drums and bass pushed up to the front - revolutionary at the time. The second side, ambient. Bowie and Eno were holed up in Berlin at the time, going crazy, trying new things. The cover is from *The Man Who Fell to Earth*, a truly disturbing SF movie.

**October 4, 2011**





While the first side of *Low* is still recognizably rock, full of Bowie's dark despair, the second sails off into new waters, with brooding but delicate pieces graced now and then with vocals that are more like instrumentals. It starts with "Warszawa", which evokes the desolation which Bowie felt on a 1973 visit to that city. The mysterious lyrics and the piece of melody in the middle part of the song are based on a recording of a Polish folk choir. But the composition owes a lot to Eno: Bowie told him "Look Brian, I want you to compose a really slow piece of music, but I want a very emotive, almost religious feel to it" — and Eno went to work.

According to [Jonathan Greatorex](#):

In Eno's spontaneous, yet slow way, he began by preparing methodical 'accidents' to happen. Initially he suggested laying down a track of finger-clicks on a blank piece of tape. Each of these clicks, four hundred and thirty in all, was allocated a dot and a number on a piece of paper. The next step was to pick out selections of dots, completely at random, from the 430. Back in the studio, Eno played chords as he hit any of the selected numbers. Bowie did likewise with his areas. Once this had been done, the initial clicks were removed, and the segments between the bars were infilled... using conventional methods. Bowie's 'words' were finally added..."

Given this, it's amazing how organic and natural the piece sounds. But Eno likes to push great musicians off balance and then let them recover with all the skills they can muster. "Infilling using conventional methods" is a rather dry way of putting this. The result is often good music *utterly unlike the musicians would have dreamt up on their own* — music that seems to have fallen to Earth from another planet. That's certainly true here.

**October 7, 2011**



After being blown away by *Before and After Science*, my friend David Michael and I got Eno's previous one, *Another Green World*. It's a calmer, more meditative affair - except for the first track, which is my favorite. "Sky Saw" is a *blast of energy*... but the lyrics show this isn't the energy that comes from teenage testosterone. Instead, self-referentially, they describe Eno's *attitude to lyrics*:

*All the clouds turn to words.*

*All the words float in sequence.  
No one knows what they mean.  
Everyone just ignores them.*

Lyrics, he has said, are just a trick to get people to pay more attention to music.

The electric guitar comes in two flavors, both unique: a bracingly metallic repeated 4-note theme, and a swirlingly hectic solo. Both, I believe, are examples of Eno's "snake guitar". The repeated upward-sliding sound starting at 2:02 is John Cale on viola. Cale also creates the cloud of high-pitched string sounds that kicks in at 2:53. The percussion by Phil Collins, the fretless bass by Percy Jones, and the electric piano (by Eno?) give the piece a bit of a cool jazz feel... but this ain't the cool jazz my daddy liked!

You'll note that the comprehensible lyrics sit atop a more impenetrable cloud of words, adding to the sense that *too much information* is streaming in. According to a source I don't trust, this word cloud says:

*mau mau starter ching ching dad da  
daughter daughter dumpling data  
pack and pick the ping pong starter  
carter carter go get carter  
perigeeeeeeeeee  
open stick and delphic doldrums  
open click and quantum data*

Whatever: it's not about meaning, it's about feeling.

**October 8, 2011**



Here's one of the most peppy songs on the second side of *Another Green World*. It's a journey, a long hike with a friend through moors and briars, leading up to a storm in the desert where

*we saw St. Elmo's fire  
splitting ions in the ether*

St. Elmo's fire, named after the patron saint of sailors, happens when a luminous plasma is created by a electrical discharge from a grounded object... for example a ship's mast. To depict this, Eno brought in the guitar virtuoso Robert

Fripp. Before recording his solo, Eno asked Fripp to visualize a Wimshurst machine, which — according to Eno — is "a device for generating very high voltages which then leap between the two poles, very fast and unpredictable". And that's what the solo sounds like!

The only other musician on this piece is Eno, who played organ, piano, Yamaha bass pedal, the beautiful simple washes of "desert guitar," and synthetic percussion — most notably the clicking sounds like wood blocks.

**October 31, 2011**



In high school, after listening to Eno's *Before and After Science* and *Another Green World*, I had nowhere to go but back to his 1974 album, *Taking Tiger Mountain (By Strategy)*. This is altogether more goofy than those others — but in a sublime and profoundly inventive way. Each song is utterly different from the rest.

"Third Uncle" has often been called a predecessor to punk. In one way that doesn't make sense at all, because Phil Manzanera's guitar work and Robert Wyatt's drums are quite virtuosic... but there's something about its savage intensity that makes people say it: back in '74, there wasn't much music like this. The title makes some of the lyrics jump out at you, and they seem very nasty:

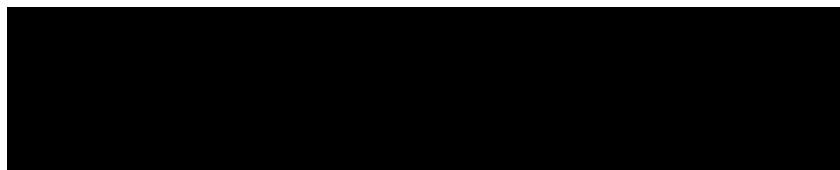
*Burn my uncle  
Burn his books*

But if you listen to the lyrics as a whole, you'll see that surrealism is the order of the day here. Crucially, Eno *doesn't sound angry*: he's energetic but oddly detached.

By the way, at the very beginning, along with the pulsing bass, there's a faint high-pitched echo. If you can't hear it, you don't have your speakers turned up high enough!

If you like this song, but haven't heard the live version by Eno's band 801, you should also check out that.

**October 31, 2011**







Where are we here? Some sort of imaginary China? *Taking Tiger Mountain (by Strategy)*, was, after all, the title of a Maoist revolutionary opera. Brian Eno blithely sings:

*In the haze of the morning, China sits on eternity  
And the opium farmers sell dreams to obscure fraternities*

But it's a strange place: chattering guitars, a wailing solo by Ray Manzanera played over... yes, a mass of typewriters... and at the end, the song comes to a screeching halt, like a train that's put on the brakes. (Note how the final meltdown is subtly foreshadowed at 4:04). Somehow it all makes sense, but only if you leave the realm of ordinary logic.

Diehard Eno fans will want to see this little known *video* he made for this song:



It features himself, punk rocker [Judy Nylon](#), and Polly Eltes, who was a guest vocalist on "Mother Whale Eyeless", another song on this album. The song "Back in Judy's Jungle" was indeed named after this Judy. She was also the one who led Eno to invent ambient music. On the back cover of his first ambient album, he wrote:

My friend Judy Nylon visited me and brought me a record of 18th century harp music. After she had gone, and with some considerable difficulty, I put on the record. Having laid down, I realized that the amplifier was set at an extremely low level, and that one channel of the stereo had failed completely. Since I hadn't the energy to get up and improve matters, the record played on almost inaudibly. This presented what was for me a new way of hearing music — as part of the ambience of the environment just as the color of the light and the sound of the rain were parts of that ambience.

With a punky name like Judy Nylon I wouldn't have expected her to like 18th century harp music... but it goes to show, don't expect people to fit into little boxes!

[For my November 2011 diary, go here.](#)

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*Spider and I  
Sit watching the sky  
On our world without sound.  
We knit a web  
to catch one tiny fly  
For our world without sound.  
We sleep in the mornings,  
We dream of a ship that sails away,  
A thousand miles away. - Brian Eno*

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## Diary - November 2011

John Baez

November 4, 2011



Morgan Abbou explains:

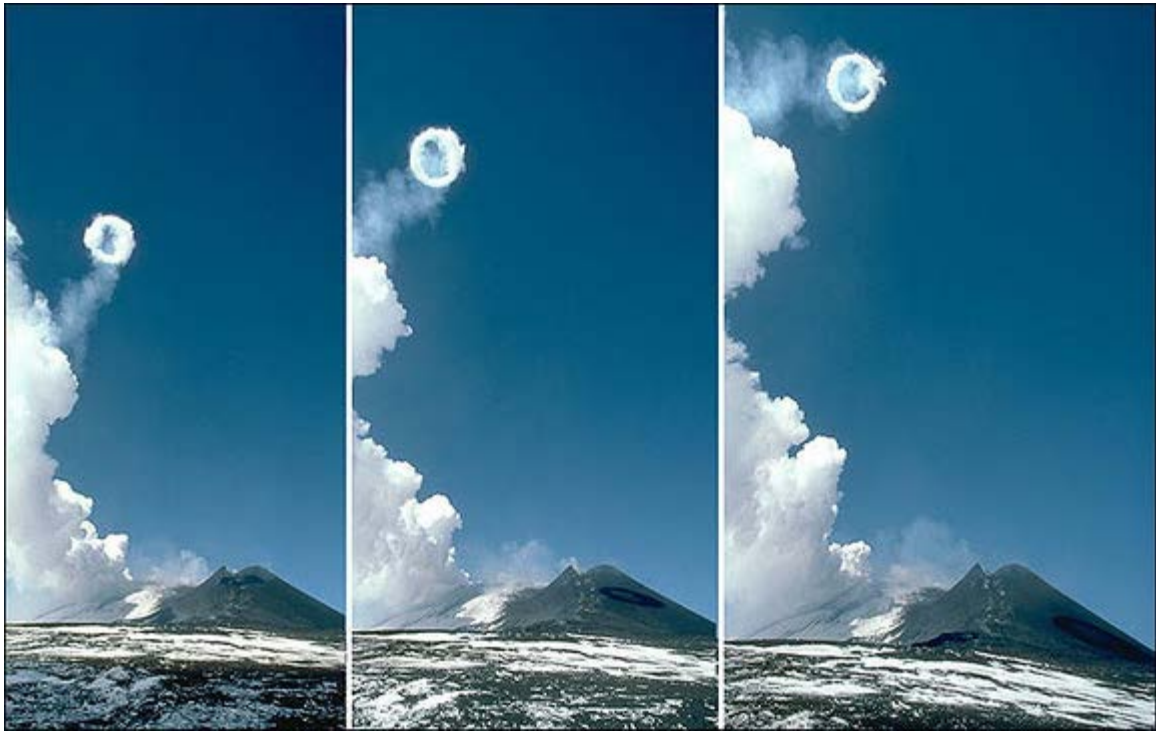
Volcanic lightning photograph by Francisco Negroni. In a scene no human could have witnessed, an apocalyptic agglomeration of lightning bolts illuminates an ash cloud above Chile's Puyehue volcano in June 2011. The minutes-long exposure shows individual bolts as if they'd all occurred at the same moment and, due to the Earth's rotation, renders stars (left) as streaks. Lightning to the right of the ash cloud appears to have illuminated nearby clouds, hence the apparent absence of stars on that side of the picture. After an ominous series of earthquakes on the previous day, the volcano erupted that afternoon, convincing authorities to evacuate some 3,500 area residents. Eruptions over the course of the weekend resulted in heavy ashfalls, including in Argentine towns 60 miles (a hundred kilometers) away.

Here's another shot of the same volcano:



And here's Mount Etna blowing out a smoke ring in [March of 2000](#):

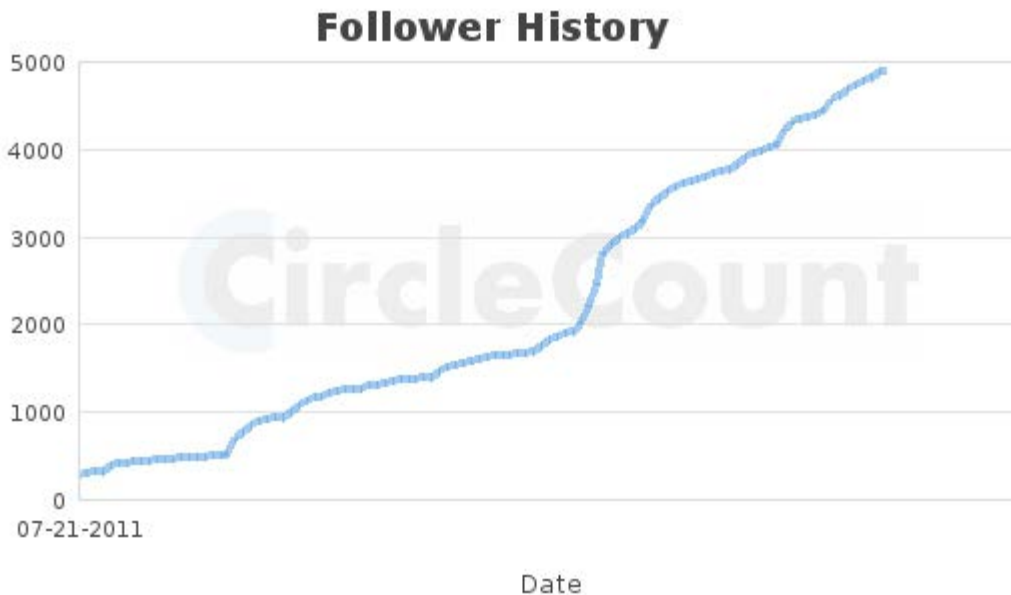




By its shadow, the ring was estimated to be 200 meters in diameter!

### November 5, 2011

I've been spending less time on this diary and lots of time sharing similar tidbits of information on Google+. The quick feedback from other people is addictive, and lots of people seem to be paying (at least a little) attention. Here's the number of people who have me in their circles, from when I started to today:



According to the [CircleCount](#) website, I have 4872 people following me today, putting me at the 3,271st most popular of 5,660,375 people on Google+ that they've indexed.

Now, on with some of my favorite music! I'm posting these items on Google+, but copying them here...

### November 6, 2011



Going further back into Eno's catalog, my friends and I got Eno's first solo album, *Here Come the Warm Jets*.

From the title, you might think "Baby's on Fire" is a typical rock song about passionate lust, but no! Amid a strange chirping of synthesizers and moaning of guitar, Eno launches into his tale in a rather unfriendly and whiny voice, and you soon realize he means it quite literally:

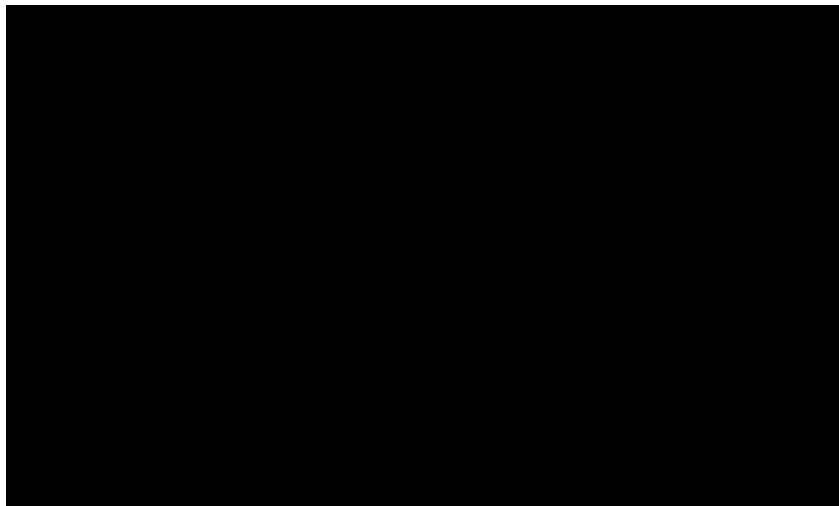
*Baby's on fire  
better throw her in the water*

Thus begins the fiery theme we hear later in songs like "Third Uncle" - remember *burn my uncle, burn his books?* - and "Burning Airlines Give You So Much More". Soon Robert Fripp enters with the incendiary guitar work that's the real point of this song. He builds up a lot of tension atop the rather static background, dominated by those endlessly chirping synths and repetitive high-hat cymbal. Then Eno returns and leaves us with a warning:

*Her temperature's rising  
but any idiot would know that*

and the song screeches to a halt, like a train slamming on the brakes and shooting out sparks. (If you've been paying attention, that should remind you of "China My China".)

If you like this song and have never heard the live version by his band 801, try this:



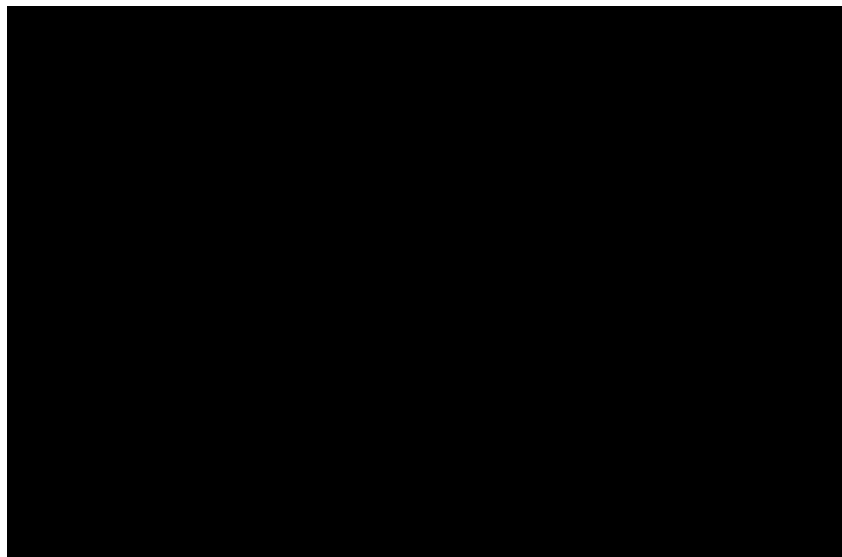


It has Manzanera rather than Fripp on guitar. Eno became famous for avoiding live performances and staying in the studio, but 801 could really rock, and their 1976 album *801 Live* is definitely worthwhile. According to [Wikipedia](#), it

... set new standards for live recordings because it was one of the first live LPs in which all outputs from the vocal microphones, guitar amps and others instruments (except the drums) were fed directly to the mobile studio mixing desk, rather than being recorded via microphones and/or signals fed out the front-of-house PA mixer.

Note also how the applause at the end is fed through a phase-shifter!

Why 801? Well, the line "we are the 801" appears in the song "The True Wheel" on *Taking Tiger Mountain (By Strategy)*, but you also can't help noticing that in British English, you might say it like this: **Eight Nought One**.



"Dead Finks Don't Talk" is another song from the same album. It's one of Eno's silliest, but a universe without it would be missing something crucial: as soon as I heard it, I realized that.

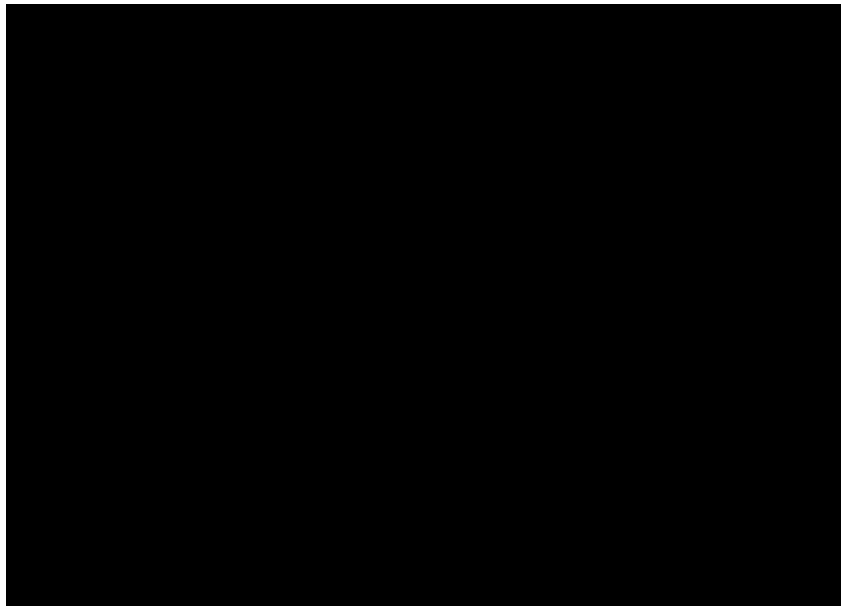
*Here Come the Warm Jets* was recorded in twelve days at Majestic Studios in London, most of it during September 1973. Besides Eno, sixteen musicians played on the album, including John Wetton and Robert Fripp of King Crimson, Simon King from Hawkwind, Bill MacCormick of Matching Mole, Paul Rudolph of Pink Fairies, Chris Spedding on guitar, and everyone in Eno's earlier band Roxy Music *except* vocalist Bryan Ferry, whose florid style Eno mimics here when he sings:

*as you make your way up there...*

Eno selected them on the basis that he thought they were incompatible with each other musically. He said he "got them together merely because I wanted to see what happens when you combine different identities like that and allow them to compete.... [The situation] is organized with the knowledge that there might be accidents, accidents which will be more interesting than what I had intended." He directed the musicians with the help of body language and dancing.

**November 6, 2011**





Returning to the 'present' in my tale — 1979, my last year of high school — another album that made a huge impact was *Fear of Music* by Talking Heads.

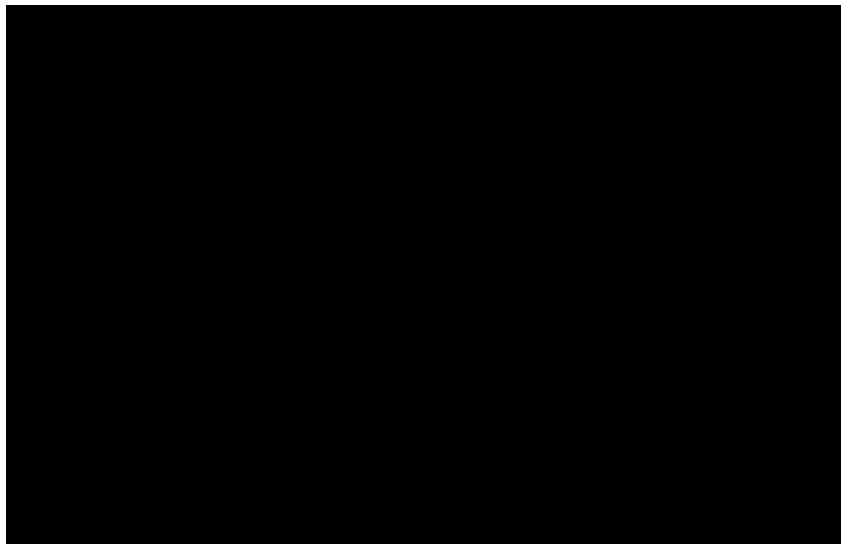
Already from the title and the cover — textured like a manhole cover — it was clear that this was some strange new kind of music. On many songs, like this, David Byrne's voice quivers with an emotion we hadn't heard much in rock before: nervous fear, verging on paranoid breakdown!

*I know the animals... are laughing at us.  
They don't even know... what a **joke** is!  
I won't follow... animals' advice.  
I don't care... if they're laughing at us.*

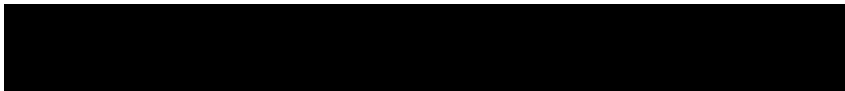
It's funny, of course — but he sounds like he really means it.

The music is tight, disciplined, metallic. Avoiding traditional forms, the songs come in blocks of solid contrasting texture, cutting from one to another abruptly. This one comes in two completely different parts, each with a tricky rhythmic structure — so tricky, in fact, that they hardly ever played this one live.

Robert Christgau, writing in *The Village Voice*, praised this album's "gritty weirdness", but claimed that "a little sweetening might help". In fact the uncompromising nature of *Fear of Music* the lack of "sweetening", is what makes it great.







Many rock songs glamorize psychedelic drugs, but rather fewer try hard to realistically portray their effect. On *Fear of Music*, the Talking Heads take a stab at it — and Byrne being the nervous fellow he was, it shouldn't be surprising that it's a bad trip. But a great song!

Here the sonic wizardry of Brian Eno, the producer of this album, comes in handy. The song starts with a faint haze of bird songs echoing off the hard walls of a zoo — at least that's what it sounds like. That pulls your attention in. Then comes a heavy bass melody by Tina Weymouth — the melody that really defines the song — along with drums by Chris Frantz, some eerie whooshing sounds, and a little guitar lick by Byrne, consisting of a note repeated 5 times. All this then repeats, with a little development... and amazingly, it carries us almost one minute through this song. Then at 0:57 there's a dramatic transformation: the music switches from "heavy" to "spacy", with synthesizers, probably played by Jerry Harrison, and heavily processed voices floating in a spacious blur: lots of echo to make the space seem big. The bass line continues unperturbed; in fact, if you analyze this song you'll see it's basically a blues, despite all the unusual features!

Then at 1:18 we go back to the "heavy" section, the space collapsing back down to claustrophobic tightness. The singing starts at 1:21 with Byrne rapidly exhaling... then anxiously proclaiming:

*and all I see  
is little dots*

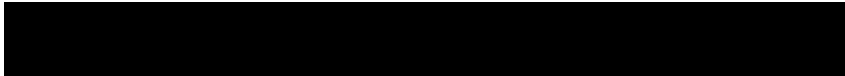
The last word is echoed 5 times (no coincidence, that number), with each echo just as loud as the original: one of many disorienting effects on this track.

I won't go on in such detail, though it'd be fun (for me at least). I'll just point out the scary backwards echo at 3:00, which seems to jump out of the speakers... the way the reverb on Byrne's voice completely drops out at 3:42, making him seem much closer all of a sudden as he lets out a little apologetic laugh... the odd vocal sounds that kick in at 3:56... and the crazy, fractured guitar solo — probably chopped to pieces by splicing bits of tape — that ends the song in one of those marvelous fades that leave you cranking up the volume to hear every last bit. (At end, you'll hear those birds again.)

In short it's a meticulously composed piece, and it's that blend of craft and craziness that makes *Fear of Music* so fun.

**November 7, 2011**





How should a song end? Only with recorded music did *gradually fading out while repeating* become popular. Music theorist Richard Middleton wrote:

At the meta-song level, the prevalence of pre-taped sequences (for shops, pubs, parties, concert intervals, aircraft headsets) emphasizes the importance of flow. The effect on radio pop programme form is a stress on continuity achieved through the use of fades, voice-over links, twin-turntable mixing and connecting jingles.

This song "Cities" does something rarer: it fades in, with siren-like sounds mixed with a driving beat conveying the hectic rush of city life. It also fades out at the end, with Byrne repeating:

*got to find a city, find myself a city to live in*

in ever more crazed ways. A good fade-out makes you want to hear every last little bit, and this one rewards you if you do: by the end, Byrne's gibbering madness completely belies his earlier observation:

*I've got it figured out*

The song is remarkably homogeneous throughout, and instead of the guitar carrying the main melody, it's a repetitive bass line by Tina Weymouth that does the job! Byrne's guitar provides percussion instead, mimicking the rhythm of his vocal lines — with the exception of a short solo starting at 1:43. And Eno and Harrison add dashes of color here and there to keep things exciting... for example, complicated little metallic clanking patterns in the background, noticeable especially around 2:37. These layers of subtlety help make the song fun to listen to over and over.

Finally, a puzzle: why does Byrne say this?

*Did I forget to mention, forget to mention Memphis Home of Elvis and the ancient Greeks*

There's an easy part to this question, and a hard part.

**November 8, 2011**



This is a live version of the Talking Heads song "Cities" from 1980, one year after *Fear of Music* came out. It's from the

concert tour for their next album, *Remain in Light*. So, besides the basic band, the lineup includes Adrian Belew on guitar, Dolette McDonald on vocals, Steve Scales on percussion, Burnie Worrell on keyboards, and Busta Jones on bass. Some of these musicians can be heard on *Remain in Light*; others appear on the Heads' next album *Speaking in Tongues*, or the intervening solo projects: David Byrne's *The Catherine Wheel*, Jerry Harrison's *The Red and the Black*, and Chris Frantz and Tina Weymouth's *Tom Tom Club*.

In this later era, the Heads' music became less paranoid, more ecstatic. You can see the extra band members are having lots of fun. Adrian Belew, in particular, is a happy hambone. See him wave to the crowd right before the song starts?

The camera work in this video is inane — for example, watch how it lingers on Tina's legs starting at 4:53. Someone on Google+ suggests that this was because it was made for an Italian TV show. For a version with better camera work but worse sound, try their show in Germany:



And from the same show in Rome, here's the song "Drugs":

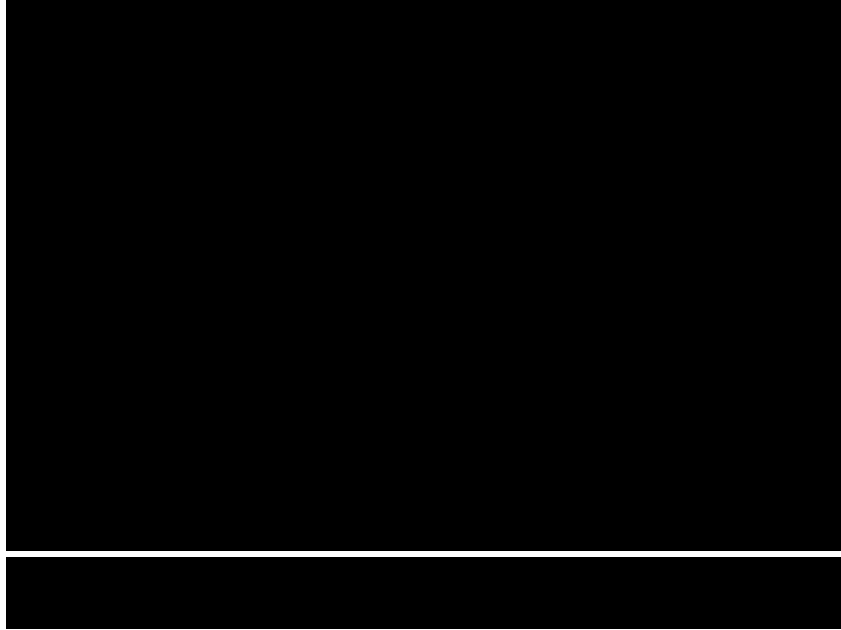


Here you can really see Belew's guitar abilities put into play - he makes plenty of psychedelic sounds to make up for the missing studio effects, and throws some great middle-eastern melodies into his final solo.

However, the wonderfully ominous feel of the original is gone. For one thing, the tempo has been sped up. For another, it's been given a more funky vibe, thanks in part to Busta Jones on bass and Steve Scales on percussion. So, while it's great fun, it's really a different song. It doesn't mess with your mind in the same carefully crafted way.

By the way, you can get very nicely recorded versions of the songs on this tour on the live album *The Name of This Band is Talking Heads*.

**November 9, 2011**



The first track on *Fear of Music* is different from the rest! It's the only really happy song on the album, and it points to the future of the Talking Heads, where their nervous energy got transformed into ecstatic dance. Later, Jerry Harrison said:

We also knew that our next album would be a further exploration of what we had begun with "I Zimbra".

So here it goes! First a high-pitched guitar picking out a light repetitive melody atop cymbals and two conga tracks — one for each ear! Then the bass enters along with a new guitar, and that high-pitched guitar drops out. Then another guitar comes in, building up the energy. The patterns change a bit when the lyrics arrive, sung en masse by Byrne, Harrison, Weymouth and a guest vocalist:

*Gadji beri bimba glandridi  
Lauli lonni cadori gadjam  
A bim beri glassala glandride  
E glassala tuffm i zimbra*

*Bim blassa galassasa zimbrabim  
Blassa glallassasa zimbrabim*

*A bim beri glassala grandrid  
E glassala tuffm i zimbra*

Then comes a break at 1:19: space opens up, that little high-pitched guitar melody returns at 1:37, and things build up much as they did at the song's beginning...

... but this time, the guitar of Robert Fripp enters, with an almost accordion-like timbre, playing a devilishly slippery melody in 8/4 time! No live version pleases me as much as this recorded version, because no guitarist can play like

Fripp.

Then the chorus returns, just like the beginning, but now atop Fripp's guitar:

*Gadji beri bimba glandridi  
Lauli lonni cadora gadjam  
A bim beri glassasa glandrid  
E glassala tuffm i zimbra*

Then that little high-pitched guitar melody... the same build-up.... but now a return of Fripp.... all building up to a graceful climax and a sudden end.

The lyrics were based on a poem by the Hugo Ball, one of the founders of Dadaism, who started the Cabaret Voltaire in Zurich in 1916 — an artistic nightclub where Kandinsky, Klee, de Chirico, and Max Ernst hung out.

The song also features the Egyptian musician Hossam Ramzy on surdo (a kind of bass drum), Abdou M'Boup on djembe and talking drum, and Assane Thiam playing some other percussion... but my ears can't pick them out; maybe I'm mixing them up with the congas.

And guess who's playing those congas? The German punk singer Ari Up, and... Gene Wilder!

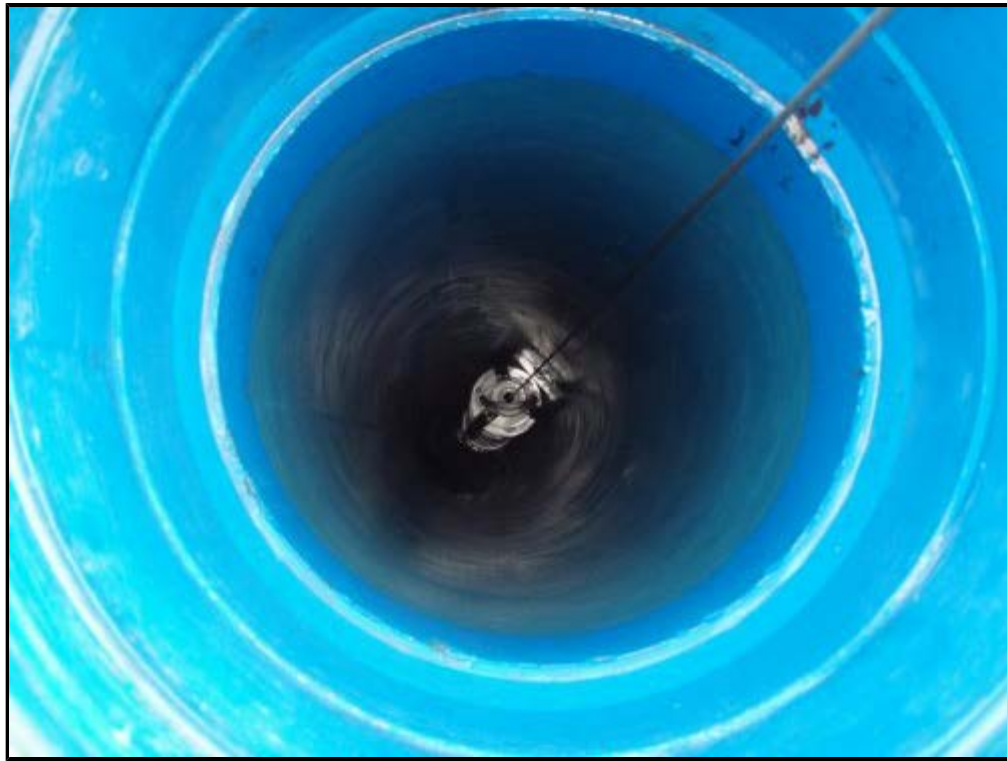
By the way, after you listen to this while reading the lyrics and my description, you can have some more fun listening to it while focusing your full attention on the bass. You'll see how disciplined Tina Weymouth is: not a virtuoso, but every note just right, and no pointless screwing around. Rock solid. That's what makes you want to dance.

This live performance of "I Zimbra" by David Byrne is definitely worth a listen:



I don't like how the music drops to a crawl at 2:09 — I think of this song as a single energetic blast — but it's nice to see that 19 years later, he could still belt out those lyrics!

**November 14, 2011**



Back in 2007 I found myself mysteriously intrigued by images of ice and the idea of *coldness*, both literal and metaphorical. I felt the need to make some art and music on these themes. So, I made an album called [\*Glacial\*](#). After a while, just as mysteriously, this desire left.

The pieces on *Glacial* are in a Dorian mode. Just as an upside-down smile is a frown, turning the major scale upside down gives a minor scale. But when you turn the Dorian mode upside down, you get the Dorian mode again. This may account for its emotionally neutral quality — a quality I used to convey the cold indifference of a glacial landscape.

Kangerdlugssuaq is the largest glacier on the east coast of the Greenland ice sheet. "Kangerdlugssuaq" is also the title of the first piece on my album. You can hear or download it by clicking on this picture:



"Sermersuaq" digs deeper into this glacial theme. To create it, I took some fragments of sound that didn't find their way into the first piece, and expanded them to form a piece that sounds like it was taped in an ice cave as massive floes were grinding against each other. You can listen to it here:



In real life, Sermersuaq is in northwestern Greenland. Stretching 90 kilometers across, it's the Northern Hemisphere's widest tidewater glacier: a glacier that begins on land, but terminates in water.

This piece was influenced by Thomas Köner's chilly, minimalist *Permafrost*. The pieces on that album have frigid titles like "Nival", "Serac", and "Firn" (all snow and ice formations)... and they're scarily empty, like an Arctic landscape. I'm happy to report that it's now available on [SoundCloud](#).

The third and final piece on *Glacial* is called "pujuq kanirnartuq":



It's even colder and darker: an icy mist at twilight. Best listened to on speakers with powerful bass.

You may have heard the Eskimo have a hundred words for snow. That's a bit misleading — more on that later — and they don't like being called "Eskimo" either. But unsurprisingly, the Inuit *do* have quite a few words for phenomena involving ice, snow and the like, and *pujuq kanirnartuq* is the term for "frozen mist" in the language Kalaallisut, also known as West Greenlandic.

Here's a word list taken from [Fortescue's text on Kalaallisut](#):

- 'sea-ice' — *siku* (in plural = drift ice)
- 'pack-ice/large expanses of ice in motion' — *sikursuit*, pl. (compacted drift ice/ice field = *sikut iqimaniri*)
- 'new ice' — *sikuliaq/sikurlaaq* (solid ice cover = *nutaaq*)
- 'thin ice' — *sikuaq* (in plural = thin ice floes)
- 'rotten (melting) ice floe' — *sikurluk*
- 'iceberg' — *iluliaq* (*ilulisap itsirnga* = part of iceberg below waterline)
- '(piece of) fresh-water ice' — *nilak*
- 'lumps of ice stranded on the beach' — *issinnirit*, pl.
- 'glacier' (also ice forming on objects) — *sirmiq* (*sirmirsuaq* = inland ice)
- 'snow blown in (e.g. doorway)' — *sullarniq*
- 'rime/hoar-frost' — *qaqurnak/kanirniq/kaniq*
- 'frost (on inner surface of e.g. window)' — *iluq*
- 'icy mist' — *pujurak/pujuq kanirnartuq*
- 'hail' — *nataqqurnat*
- 'snow (on ground)' — *aput* (*aput sisurtuq* = avalanche)
- 'slush (on ground)' — *aput masannartuq*
- 'snow in air/falling' — *qaniit* (*qanik* = snowflake)
- 'air thick with snow' — *nittaalaq* (*nittaallat*, pl. = snowflakes; *nittaalaq nalliuttiqattaartuq* = flurries)
- 'hard grains of snow' — *nittaalaaqqat*, pl.
- 'feathery clumps of falling snow' — *qanipalaat*
- 'new fallen snow' — *apirlaat*
- 'snow crust' — *pukak*
- 'snowy weather' — *qannirsuq/nittaatsuq*
- 'snowstorm' — *pirsuq/pirsirsursuaq*
- 'large ice floe' — *iluitsuq*
- 'snowdrift' — *apusiniq*
- 'ice floe' — *puttaa*
- 'hummocked ice/pressure ridges in pack ice' — *maniillat/ingunirit*, pl.
- 'drifting lump of ice' — *kassuq* (dirty lump of glacier-calved ice = *anarluk*)
- 'ice-foot (left adhering to shore)' — *qaannuq*
- 'icicle' — *kusugaq*
- 'opening in sea ice imarnirsaq/ammaniq (open water amidst ice = *imaviaq*)
- 'lead (navigable fissure) in sea ice' — *quppaq*
- 'rotten snow/slush on sea' — *qinuq*
- 'wet snow falling' — *imalik*
- 'rotten ice with streams forming' — *aakkarniq*
- 'snow patch (on mountain, etc.)' — *aputitaq*
- 'wet snow on top of ice' — *putsinniq/puvvinniq*
- 'smooth stretch of ice' — *manirak* (stretch of snow-free ice = *quasaliaq*)
- 'lump of old ice frozen into new ice' — *tuaq*
- 'new ice formed in crack in old ice' — *nutarniq*
- 'bits of floating ice' — *naggutit*, pl.
- 'hard snow' — *mangiggal/mangikaajaaq*
- 'small ice floe (not large enough to stand on)' — *masaaraq*
- 'ice swelling over partially frozen river, etc. from water seeping up to the surface' — *siirsinniq*
- 'piled-up ice-floes frozen together' — *tiggunnirit*
- 'mountain peak sticking up through inland ice' — *nunataq*
- 'calved ice (from end of glacier)' — *uukkarnit*
- 'edge of the (sea) ice' — *sinaaq*

**November 15, 2011**

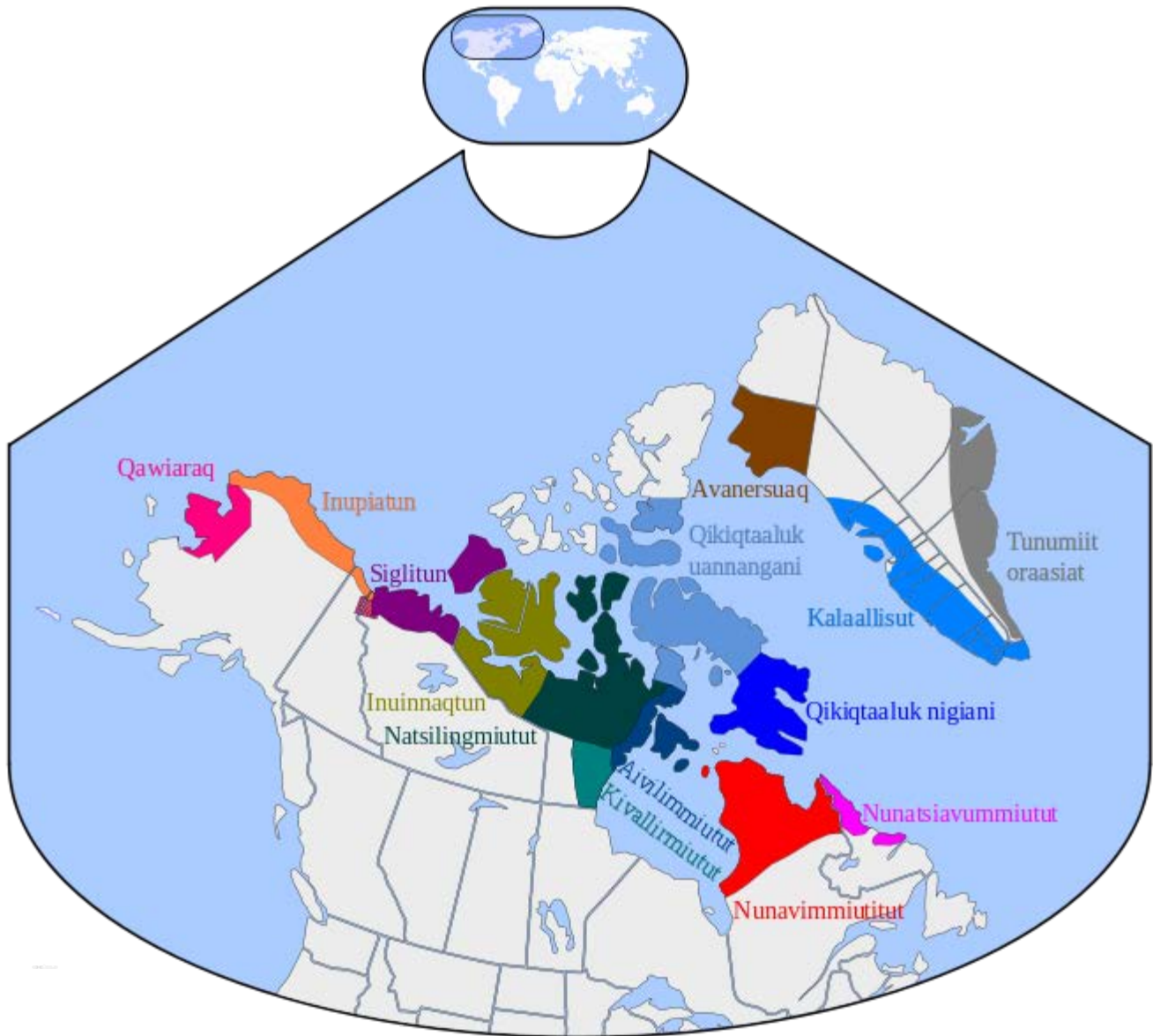
You've probably heard that the Eskimos have lots of words for snow — and maybe you've heard other people say no,



that's not true. But the whole dispute seems a bit silly when you find out that the Eskimo — or more precisely, the speakers of West Greenlandic — have a word for "once again they tried to build a giant radio station, but it was apparently only on the drawing board." It's

**nalunaarasuartaatilioqateeraliorfinnialikkersaatiginialikkersaatilillaranatagoorunarsuarooq.**

West [Greenlandic](#) is also known as Kalaallisut: it's the main [Inuit](#) language spoken in Greenland:



Inuit Languages

I know practically nothing about the Inuit languages, but I enjoyed this piece:

- Mick Mallon, [Inuktitut Linguistics for Technocrats](#), Ittukuluuk Language Programs, Iqaluit, 2000.

It's about [Inuktitut](#), the name for some members of this language group spoken in Eastern Canada. It's pretty technical, so let me just give you a taste.

Verbs can be singular, dual, or plural:

takujunga — I see

takjuguk — we two see

takjugut — we several see

Instead of using words like "because", "if" or "whether" they use different verb endings:

takugama — because I see

takugunnuk — if we two see

takungmangaatta — whether we several see

They can also attach the object of the verb:

takujagit — I see you

takujara — I see him

takugakku — because I see him

But there are also suffixes that turn verbs to nouns, and suffixes that turn nouns to verbs... and you can use both in a single complicated word! There are ways to indicate whether something is stationary or moving, expected or unexpected:

tavva! — Here it is! (stationary and expected)

avva! — There it is over there! (mobile and unexpected)

There are ways to add spatial information:

tavvani — at this (expected) spot

maangat — from this (unexpected) area

tappaunga — to that (expected) area up there

kanuuna — through that (unexpected) spot down there

And all this is just scratching the surface! So in a typical written text, only a minority of words are ever repeated.

[For my December 2011 diary, go here.](#)

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[For my November 2011 diary, go here.](#)

## Diary - December 2011

John Baez

December 1, 2011



More [sea stacks](#)! These are the Needles, made of chalk, rising out of the sea near the western tip of the Isle of Wight in England. A lighthouse stands at right. The Needles got their name from a needle-shaped pillar called Lot's Wife that was part of this formation until it collapsed in a storm in 1764. And they got their pointed shape because these strata of chalk were so heavily folded during the Alpine Orogeny that they're almost vertical!

They're famous, but I first learned about the Needles from Rupert Wood, who mentioned them when we were talking about Durdle Door. He wrote: "The geology of this bit of the UK is pretty crazy. Go west a bit and you encounter Chesil Beach - an offshore shingle beach that stretches for 29km: [http://en.wikipedia.org/wiki/Chesil\\_Beach](http://en.wikipedia.org/wiki/Chesil_Beach). Go east and, past the Old Harry sea stacks, skip across the idyllic Bournemouth Bay and you have the iconic Needles, the chalk sea stack denoting the western tip of the Isle of Wight."

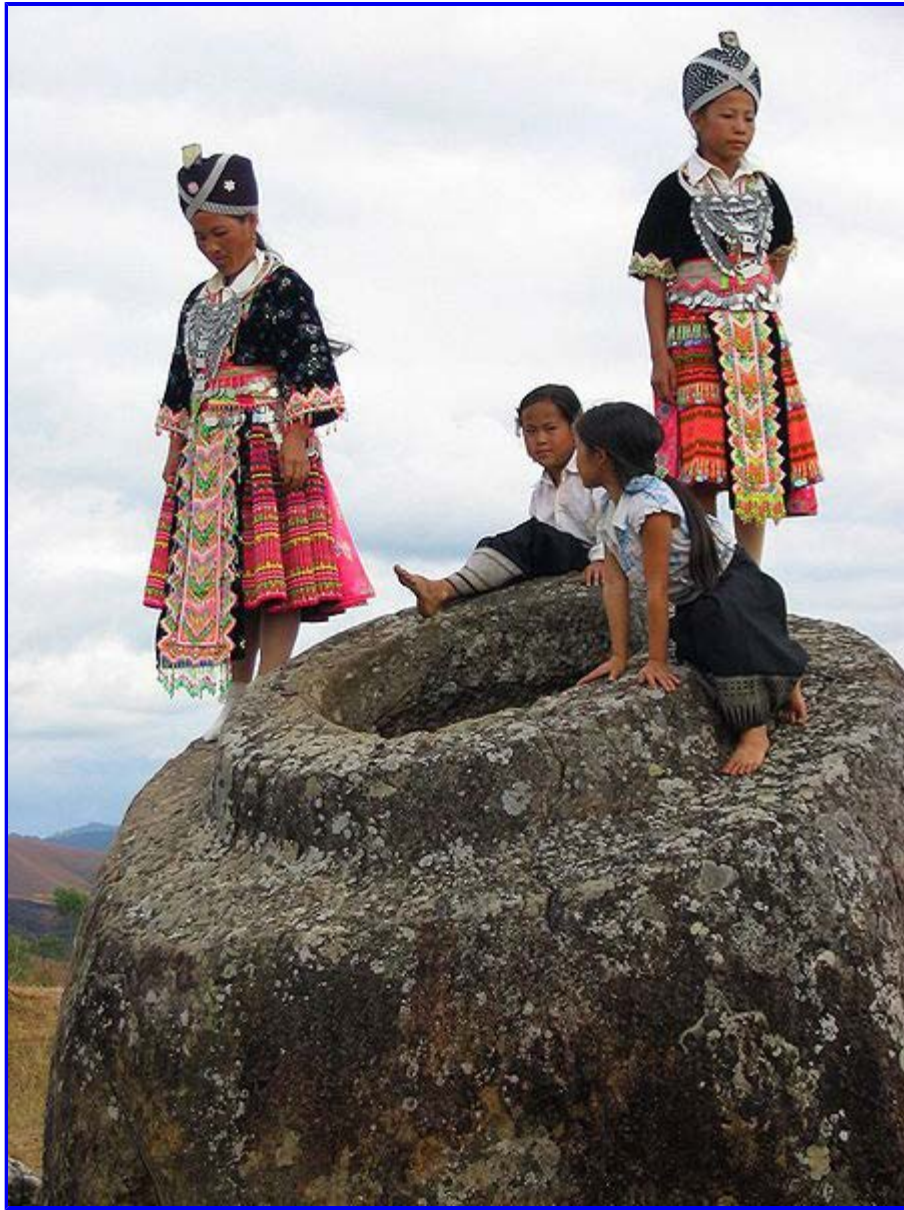
Kevin Clift wrote: "The Needles used to be well known in America. For transatlantic travelers they were once the logical equivalent of The Statue of Liberty at the opposite end of the journey. Most liner travel from Northern Europe to the USA was from [Southampton](#). (Some journeys were only one way - the Titanic sailed from Southampton.)"

This nice photo was taken by Andy Wilson, and it appears on [Panoramio](#).

**December 23, 2011**

In just two days I'll be in Sathalanalat Paxathipatai Paxaxon Lao, also known as the Lao People's Democratic Republic, or simply [Laos](#).

One of the cool things in Laos that I will *not* see is the [Plain of Jars](#): an area littered with thousands of enormous stone jars dating back to the Iron Age. Nobody knows what they were for! One theory is that they were used for burials. Local legends claim a race of giants lived there.



**December 24, 2011**

Today Lisa and I flew to Bangkok together with [Prasenjit Duara](#) and his wife and daughter. We'll spend the night here at the Convenient Grand Hotel and then continue to Laos tomorrow.

Here's a statue of Vishnu in the Bangkok airport. I like the contrast of mythic and high-tech:



He's prancing atop a famous scene from Hindu mythology: the [Churning of the Ocean of Milk](#), in which the demigods ([devas](#)) and demons ([asuras](#)) pulled back and forth on a giant snake (the king of [nāgas](#)), who was wrapped around a mountain, which rotated and churned the the Milky Way, creating the nectar of immortality — which only the devas wound up getting, thanks to a sneaky trick.

There's also a great bas-relief of this scene in Angkor Wat, which you can see [here](#).

In Hindu cosmology, the Milky Way, or 'Ocean of Milk', is the fifth of 7 oceans that 'surround directional space and separate it from non-directional space'. I don't know what that means, but it sure sounds cool! I think some crackpot physicists are actually trying to write new myths.

**December 25, 2011**



at the nearby Wat Xieng Thong.



Walking out of the hotel we saw some rice cakes drying outdoors in a nearby alley:



We never saw these served anywhere — but sticky rice called *khao niao* was omnipresent, usually served in a special basket with the lid attached to the body by strings:



The rice is cooked a long time so the starch dissolves a bit, making it very sticky — but it's fairly dry, not mushy, so people can easily eat it with their hands (or more precisely, their right hand).

Wat Xieng Thong, built around 1550, dominates the tip of the peninsula on which Luang Prabang is built. It has a long stairway leading down to the Mekong, and it was considered the entrance to the city.





This is just one of many buildings there, but it's the most important: it's the *sim*, or assembly hall. The pointy spire, gold trim and overlapping roof layers are distinctively Lao.

Here's a closeup of the front wall of the *sim* at Wat Xieng Thong. Patterns are drawn in gold paint using stencils:



Here's a detail from inside the assembly hall at Wat Xieng Thong:



Thanks to Denise Heywood's excellent book *Ancient Luang Prabang*, I learned this is a [kinnara](#). Renowned for its dance, song and poetry, it's a symbol of feminine beauty, grace and accomplishment. But there's also a male version, called a *kinnara*. These creatures are popular throughout southeast Asia wherever Buddhist or Hindu mythology holds sway — from Indonesia through the Khmer Empire (though I missed them at Angkor) all the way across India and on up into Tibet!

In the *Mahabharata*, the kinnari and kinnara say:

*We are everlasting lover and beloved. We never separate. We are eternally husband and wife; never do we become mother and father. No offspring is seen in our lap. We are lover and beloved ever-embracing. In between us we do not permit any third creature demanding affection. Our life is a life of perpetual pleasure.*

In Burma, Buddhists believe that out of the 136 past animal lives of Buddha, 4 were spent as kinnara.

Here's a detail from the Chapelle Rouge at Wat Xieng Thong:



This goes back all the way to... 1960. But in fact all the *wat* in Laos are continually renewed and rebuilt, somewhat to the annoyance of western romantics who love a good ruin.

This looks like a mammoth artichoke — but no! It's a statue of a lotus bud outside the *sim* of Wat Xieng Thong:



The lotus plays a big role in Hindu and Buddhist symbolism. It represents the "blossoming of purity in blissful liberation from the muddy waters of attachment and desire".

**December 26, 2011**

Laos is a landlocked, hilly country where until recently river transportation was more important than the rugged unpaved roads. The mighty Mekong reigns supreme, and it goes through the capital Vientiane but also the historically important city of Luang Prabang, which sits where the smaller Nam Khan River flows into this giant.



Know this flower? It's also big in Southern California. But it's not really a flower! It's called a bougainvillea — and those purple things are actually leaves, or more precisely, [bracts](#)! They get nice and colorful when the soil gets dry — and the dry season in Laos runs from November to May, so it's delightfully cool and dry here now. May to July is the monsoon, with heavy rains.

Oddly this weather pattern is the opposite of Singapore, where the heaviest rains start in November (but it's hot and rainy year-round). I haven't figured out much about southeast Asia yet — not even the weather! But my trip to Laos is helping me fill in some of the puzzle.



The people of Laos are famous for their laid-back, friendly attitude. Strong emotions and stress are avoided, and success is often attributed to karma rather than hard work. Some of this comes from Theravada Buddhism, which emphasizes suffering, impermanence and the illusory quality of everything. The cure for all this is nirvāna, the 'blowing out' of the fires of craving. While all this may seem esoteric, it's probably not, especially here in Luang Prabang — the country's religious center, with over 47 *wat*, or temples.

The flip side of this disinterest in reality may be that Laos is one of the poorest countries on earth, with more than 75% of the people living on less than \$2 a day. Free education is provided up to 5th grade, but only the larger villages have high schools. Many boys who want further education become monks, often just temporarily as 'novitiates'. (Some girls become nuns, but so far my impression of Theravadan Buddhism as practiced in southeast Asia is that it's very sexist.) I saw a bunch of novitiates in a physics class learning how to solve harmonic oscillator problems in a *wat* near the hill at the center of town. I can't read Lao, but  $1/2\pi$  times the square root of  $k/m$  means the same thing worldwide!

Here's something you never see in the US!



In tourist havens like Luang Prabang, shops supply almost any good you'd want, and small businesses seem to be doing well, but ownership of land is not allowed, and Laos is a one-party state, with many of the problems that usually entails. All newspapers in Laos are published by the government — but even more oddly, I've never actually seen one in the stores here! Nor have we seen a store selling books in the Lao language. I've also heard of big military processions in Laos that nobody bothers to attend. More examples of the uniquely laid-back nature of the Lao?

An acquaintance asked novitiates at a monastery here if they knew Osama bin Laden had been killed, and they didn't know anything about the whole business. Their physics textbook was, I believe, written in Thai — although I didn't carefully check. Luckily, the languages are so similar that the Lao monks can understand spoken or written Thai. Thai TV channels flood into Laos, and are widely watched.

Laos is not only poorer than Vietnam and Cambodia, it also has a weaker national identity. About 60% of the people are ethnically Lao, mostly in the lowlands. About 30% are Mon and Khmer people, related to the Burmese and Cambodians respectively, mainly living in the southern and central mountains. And about 10% are a mix of Hmong, Yao, Dao, Shan, and several Tibeto-Burman tribes, who have mostly been pushed up into the higher northern mountains.

Western technology and global politics must have come as a big shock to these folks when the French took over in 1893 — not to mention when the US started bombing Laos in 1964. *We dropped an average of one B-52 bombload on them every 8 minutes, 24 hours a day, for a whole decade.* The goal of this so-called 'Secret War' was to harass the communist North Vietnamese in Laos. It's the most heavily bombed country in the world.

The Hmong are famous for supporting the US in this conflict, and they've had a rough time in Vietnam and Laos ever since. The day after Christmas, we met a guy who'd gone to a Hmong festival on the outskirts of Luang Prabang the previous night. He said it would still be going on, and was worth checking out. He said to get a tuk-tuk driver and bargain him down to 30,000 kip (about \$3.70) for a one-way ride. We wound up hiring a tuk-tuk driver for a round trip

for 70,000 kip.



We were told we'd see people wearing traditional Hmong garb; instead, masses of kids in Western dress were playing various games. A popular one lets you pay to get three tries throwing darts at balloons. If you pop all three, you get a stuffed animal. The average age in Laos is a bit over 19 — and here that was very clear.

**December 27, 2011**





I saw this painting on a wall near Wat Pa Khe, a Buddhist temple at the foot of the big hill called Phu Si in Luang Prabang — the same temple where I saw monks learning about harmonic oscillators.

The country of Laos traces its roots back to the kingdom of [Lan Xang](#), which means Land of a Million Elephants. This romantic name refers to the formidable army led by a prince from Angkor, who invaded in 1354 and later set up his capital at Luang Prabang. Elephants were used roughly as tanks are now. There are now about [2000 elephants in Laos](#), 800 in the wild and the rest domesticated, often used for labor. That doesn't sounds like many, but Laos is the country with the sixth biggest population of Asian elephants.

You can ride an elephant in village near Luang Prabang, and even learn a bit about how to be a 'mahout', or elephant handler — but I didn't do it.

Here's what southeast Asia was like around 1400 AD:



In green you can see [Lan Xang](#) and its capital Luang Prabang. To the south in red we see the [Khmer Empire](#), whose capital was Angkor. East of that, in yellow, is the kingdom of [Champa](#). When I visited Vietnam, I saw some great Hindu sculptures from there! To the west, in indigo, is the kingdom of [Ayutthaya](#), also known as Siam. North of that, in orange, is the kingdom of [Sukhothai](#), which I know nothing about! There are also others.

I'm just starting to get a sense of how these places fit together, and how Sanskrit, Hinduism, and Buddhism spread over

the whole region. At first it all seemed like a hopeless blur. Now I know just enough to start getting curious.

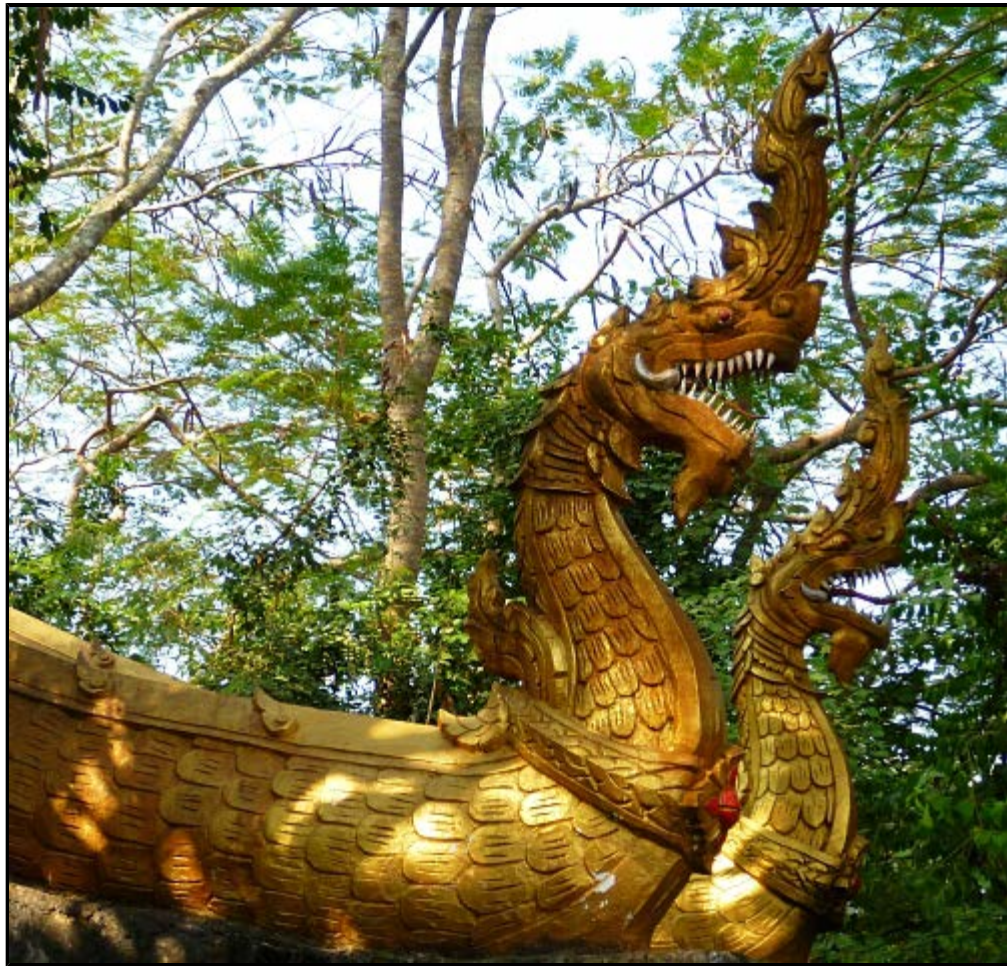
**December 28, 2011**



Almost everyone who visits Laos falls in love with the *wat*, or temples — they seem to be built for flight, like wings or missiles. The orange robes of the monks are also incredibly eye-catching and charismatic. But beneath these very visible signs of Theravada Buddhism, there's a layer of animism that pervades Lao culture. This was hard for a casual visitor like me to detect, except in the little 'spirit huts' that dot the landscape. But according to [Wikipedia](#):

Despite the importance of Buddhism to Lao Loum and some Lao Theung groups, animist beliefs are widespread among all segments of the Lao population. The belief in *phi* (spirits) colors the relationships of many Lao with nature and community and provides one explanation for illness and disease. Belief in *phi* is blended with Buddhism, particularly at the village level, and some monks are respected as having particular abilities to exorcise malevolent spirits from a sick person or to keep them out of a house. Many *wat* have a small spirit hut built in one corner of the grounds that is associated with the *phi khoun wat*, the beneficent spirit of the monastery.

*Phi* are ubiquitous and diverse. Some are connected with the universal elements — earth, heaven, fire, and water. Many Lao Loum also believe that they are being protected by *khwan* (thirty-two spirits). Illness occurs when one or more of these spirits leaves the body; this condition may be reversed by the *soukhwan* — more commonly called the *baci* — a ceremony that calls all thirty-two *khwan* back to bestow health, prosperity, and well-being on the affected participants. Cotton strings are tied around the wrists of the participants to keep the spirits in place.



Here are two nāga statues on top of Phu Si, the big hill that dominates Luang Prabang. Snake-like river spirits called nāga seem to be important in all the lands of southeast Asia that have been touched by Hinduism. I've already shown you some images of them from Cambodia, and they seem even more popular in Laos. People along the Mekong river seem to really believe in them! Quoting [Wikipedia](#):

The legend of the Nāga is a strong and sacred belief held by Thai and Lao people living along the Mekong River. Many pay their respects to the river because they believe the Nāga still rule in it, and locals hold an annual sacrifice for the Nāga. Each ceremony depends on how each village earns its living from the Mekong River — for instance, through fishing or transport. Local residents believe that the Nāga can protect them from danger, so they are likely to make a sacrifice to Nāga before taking a boat trip along the Mekong River.

Also, every year on the night of 15th day of 11th month in the Lao lunar calendar at the end of Vassa, an unusual phenomenon occurs in the area of the Mekong River stretching over 20 kilometres between Pak-Ngeum and Phonphisai districts in Nong Khai province, Thailand. Fireballs appear to rise from the river into the nighttime sky. Local villagers believe that Nāga under Mekong River shoot the fireballs into the air to celebrate the end of Vassa, because Nāga meditate during this time.

A photograph on display in bars, restaurants, guesthouses, and markets around Thailand captioned *Queen of Nagas seized by American Army at Mekhong River, Laos Military Base on June 27, 1973 with the length of 7.80 meters* is a hoax. The photograph is actually that taken by USN LT DeeDee Van Wormer, of an oarfish found in late 1996 by US Navy SEAL trainees on the coast of Coronado, California.

[For my January 2012 diary, go here.](#)

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