

# Contents

The features marked with a star (\*) are based entirely on material taken straight from standard research (and other Official and Therefore Always Correct) literature. Many of the other articles are genuine, too, but we don't know which ones.



## Special Section: The 2009 Ig Nobel Prizes

- 6 The 2009 Ig Nobel Prize Ceremony\*—*Stephen Drew*
- 10 The 2009 Ig Nobel Prize Winners\*
- 13 The Acceptance Speeches\*
- 17 The Keynote Address\*
- 18 The 24/7 Lectures\*
- 20 The Hundred Trillion Dollar Book\*—*Alice Shirrell Kaswell*
- 21 LIBRETTO: The Big Bank Opera—*L. van. Beethoven, G. Rossini, M. Abrahams*

## Improbable Research

- 25 Hand Sanitizing: An Informal Look\*  
—*John Trinkaus*

## Improbable Research Reviews\*

- 4 Improbable Research Review\*—*Dirk Manley*
- 5 Improbable Medical Review\*—*Bertha Vanatian*
- 26 May We Recommend\*—*Stephen Drew*

## News & Notes

- 2 AIR Vents (letters from our readers)
- 16 CARTOON: “Antibiotic Resistance”—*Nick Kim*
- 20 AIR Books
- 19 Teachers’ Guide
- 25 Back Issues
- 4 Editorial Board
- 26 HMO-NO News: Tough Love!
- 28 XKCD: “String Theory”—*Randall Munroe*
- IBC Unclassified Ads



## On the Front Cover

Javier Morales (standing) and Miquel Apátiga (kneeling), co-discoverers of a way to convert tequila into diamonds, finish up their acceptance speech, with encouragement of a sort for eight-year-old Miss Sweetie Poo. Photo: Eric Workman.



## On the Back Cover

Maria Ferrante and Ben Sears play their roles as hyper-ambitious young bankers in the premier of “The Big Bank Opera,” a part of the 2009 Ig Nobel Prize ceremony. Photo: Alexey Eliseev.

## Coming Events

- |                    |                                |
|--------------------|--------------------------------|
| February 19, 2010  | AAAS Annual Meeting, San Diego |
| March 2010         | Ig Nobel Tour of the UK        |
| April/May 2010     | Ig Nobel Europe Tour           |
| September 30, 2010 | Ig Nobel Prize Ceremony        |
| October 2, 2010    | Ig Informal Lectures           |

See [WWW.IMPROBABLE.COM](http://WWW.IMPROBABLE.COM) for details of these and other events.

## Every Day

Read something new and improbable every day on the Improbable Research blog, on our web site:  
[WWW.IMPROBABLE.COM](http://WWW.IMPROBABLE.COM)

# LIBRETTO: The Big Bank Opera

*Music: Ludvig van Beethoven and Gioachino Rossini*  
*Words: Marc Abrahams*

The Big Bank Opera premiered as part of the 19<sup>th</sup> First Annual Ig Nobel Prize Ceremony, at Sanders Theater, Harvard University, Cambridge, Massachusetts, on October 1, 2009. Video of the performance can be seen at [www.improbable.com](http://www.improbable.com).

## Original Cast

*Conductor (and bartender):* David Stockton

*Pianist:* Brenden Grimmett

*Narrator:* Karen Hopkin

*She:* Maria Ferrante

*He:* Ben Sears:

*Waitress:* Roberta Gilbert

*Barfly:* Marc Andelman

*Scientists in the bar:* Benoit Mandelbrot, Stephen Wolfram, Wade Adams, John Barrett, and Nobel laureates Rich Roberts, Wolfgang Ketterle, Dudley Herschbach, Paul Krugman, Roy Glauber, Frank Wilczek, Martin Chalfie, Orhan Pamuk, and William Lipscomb.

## ACT 1. “Two Bankers Meet in a Bar...”

NARRATOR [holding a nice, half-filled cocktail glass]:  
Tonight’s opera takes place in a swanky bar on Wall Street. It begins a few years ago— before things really began to boom.

Two ambitious young bankers are sitting next to each other at the bar. They get talking. At first it’s all business. A few drinks from now, their talk will naturally turns to true love—to the thing they both truly love: how to dominate the financial world. Let’s all belly up to the bar, and watch these two young bankers impress each other.

*[SHE and HE are two bankers seated at a bar. They hold half-filled cocktail glasses, and try very hard to impress each other in sophisticated bankerly fashion. During the song their interest in each other grows into deep, bankerly fascination.]*

*[MUSIC: “Für Elise”, Ludvig van Beethoven]*

HE: I say only big banks are robust.  
A bank that’s small  
Gets ground to dust.  
To survive, a small bank must adjust...  
SHE: It must, it must!  
HE: ...Or else go bust.



*Photo: David Holzman.*

SHE: I say small-bank BANKERS all lack lust.  
They all think small.  
They get all fussed.  
If they want to join the upper crust...  
HE: Why then they must?...  
SHE: ...Get their hair [SPOKEN: uh...] mussed.  
  
You say “Think Big!”  
They get nonplussed...  
HE: They call you “pig!”  
BOTH: They are disgust.... / ...ing.  
  
HE: Banks need bigger banks to adulate —  
Firms that start small,  
Then dominate!  
Titans of finance make their OWN fate!  
SHE: They do not wait—  
HE: They innovate!  
  
Don’t give an inch!  
Don’t pay much tax!  
SHE: Like Merrill Lynch!  
BOTH: Like Goldman Sachs!  
...yeeeee!  
  
SHE: Lehman Brothers — THAT’s my kind of bank!  
Oh, IT’s not small!  
Oh, IT’s got swank!  
It made other bankers walk the plank!  
HE: And their banks sank —  
SHE: Went down the tank!  
  
HE: You see — to me, it’s the people!  
BOTH: Oh, it’s really all about the people!  
SHE: I don’t want to know  
About their birth —  
Just their cash flow,  
And net worth.  
  
HE: If you took the country of Iceland —  
Which is quite small,  
SHE: And slightly bland —  
HE: And if you give its bankers a free hand.  
They’d prosper, and  
SHE: Be rich and tanned!

*Libretto continued >*



Photo: Eric Workman.

HE: New bankers dare  
To make new rules

SHE: And to prepare

BOTH (excited): New  
banking tools!!

SHE: Some special purpose  
high-yield instrument  
Would overall,  
I'm confident,  
Be the safest way to  
circumvent  
Rules that are meant

HE: To be... well... bent.

BOTH (looking deep in each  
other's eyes):  
Risk, debt, and  
complexity...  
Look in my eyes —  
that's what you will see.  
Risk, betting, and abs of  
steel...  
Check out my gut —  
that's what you'll feel.

SHE: Ah!

HE: Ah!

SHE: Ah!

HE: I... like meeting people I've just met,  
Be they a blonde

SHE: or a brunette.

HE: Long as they know how to leverage debt,  
They see that banking is no sweat.

Let's run amok!  
Let's go in hock  
To buy some stock  
In Northern Rock.

SHE: I LOVE meeting people I've just met,  
If they know how to leverage debt,  
Then I know they are a prudent bet.  
With them... rien je ne regrette!

## Act 2. "How to Solve The World's Biggest Problem"

NARRATOR: It's later that same night. Our two ambitious young bankers are still in the swanky bar on Wall Street. They have identified The World's Biggest Problem. The World's Biggest Problem, you see, is that... banks are treated like children. The problem has an OBVIOUS solution: children MUST be allowed to grow up. One of the bankers has just gone to the men's room. Let's watch now as he returns to the bar, and tells us exactly how to solve... the world's biggest problem.

[MUSIC: "Largo al factotum," from "Barber of Seville"]

Robert Rubin! Al Greenspan! Larry Summers!  
Senator Gramm!

Treating a bank like a child does a bank no good!  
They've got to let a bank grow up into adulthood.  
They treat every poor bank  
Like it's a baby, a poor reckless child—  
As if banks could... somehow go wild, somehow  
go wild!

So, we will figure out  
How to get round the gripers—  
Gripers who keep the banks stifled in diapers.  
They would shrink every bank down to a mere stub—  
So small that it could drown in a bathtub.  
La la la la la la la la la!

Regulate lending!  
Also stock vending!  
Regulate everything and everyone.  
With childish rules and childish guidelines  
Smother the profit and smother the fun.  
La la la la la la la la la!  
Selling securities? No, it's too risky!  
No, it's too risky! Securities? No!  
No, no, it's too risky! No, no, it's too risky!  
No, it's too risky! Securities? No!

Why don't they trust banks?  
Why be so fearful?  
Why be so whiny? Banks are so tiny.  
Why be so whiny? La la la la la la. Banks are so tiny. La la la  
la la la.

Each bank is a baby, an innocent child, an innocent child.  
Yet they say banks could... somehow go wild, somehow  
go wild!

Off with the diapers! No more ass-wipers!  
No mere critiquing—let's do some tweaking!  
Think of a mortgage—let's make it sub-prime.  
Now value it.  
Triple-A rate it!  
If we can gilt-edge it, and if we can hedge it,  
And securitize it, and evangelize it.  
It's so very simple! We just need to figure out,  
Just need to figure out, just...

Figure out! Figure out!  
Figure out! Figure out! Figure out! Figure out! Figure out!  
Figure out! Figure out!  
I see a way! I think I see a way.  
It's easy! So very easy!  
Just change some rules! Just change some rules! Just change  
some rules!  
It will be easy! It will be easy! It will be easy! Just change  
some rules!

Figure out... a way! Hey, Figure out .. a way!  
Figure out means! Figure out ends!  
Figure out means! Figure out ends!  
Figure on friends! Figure on friends!  
Figure on friends! Figure on friends!

Figure out how to get who we will need to get  
To remove the diapers from ev'ry bank—  
from ev'ry bank, from ev'ry bank, from ev'ry  
bank, from ev'ry bank!

Soon we will figure who we will need to get.  
Soon we will figure who we will need to get.  
Who can make changes, who can make changes  
Who can make changes to the right rules.  
Soon we will figure who we will need to get.  
Soon we will figure who we will need to get.  
Who can make changes, who can make changes  
Who can make changes to the right rules.  
We'll remove the diapers from all the banks!  
We'll remove the diapers from all the banks!  
From the banks, from all the banks, from all the banks!

### ACT 3. “Big Bank Theory”

NARRATOR: Several years have gone by since we saw our young bankers. Several GOOD years. Like all young bankers, these two became wildly successful. Their love—of banking—has paid dividends, which they used to purchase stock, which they swapped for a bundle of derivatives...

And then suddenly it all went bad. The banking industry collapsed in a giant implosion. Let's listen as one of our no-longer-quite-so-young bankers explains, for the crowd in the bar, the whole history of big banks—where they came from, how they got big, and what happened to them. Here, ladies and gentleman, is the complete story of... the Big Bank Theory.

[MUSIC: “Una voce poco fa” from Barber of Seville]

This is how it all began.  
There was nothing.  
A few people, very few.  
There was no money, No, not a sou.  
No—no dollars, no gold doubloons.  
No cheap wampum, and no silver spoons.  
Without money, there were no shops,  
And no credit default swaps.

Then there came a big boom.  
Pop! Pop! Population boom!  
Pe! Pe! People ev'rywhere!  
There was money ev'rywhere!  
The first law of money  
Is that money attracts money!  
The first law of money  
Is that money attracts money!



Photo: David Holzman.

Money massed into big clumps—  
Big swirling clumps,  
Money coalescing,  
Coalescing.  
These clumps became big banks.  
That's nature's way.

The big banks grew and grew,  
Then took their revenue  
And shot it high into the sky—  
Shot money way up high.  
The money filled the sky!  
Then money rained back down to earth!

The money rained to earth,  
Boosting the banks' net worth.  
It was a time  
Of joy and mirth!

The money rained to earth,  
Boosting the big banks' worth.  
It was a time  
Of joy and mirth!

They grew inventive then.  
Shot money higher,  
Higher than high!  
Higher!

Shot money into space!  
Banks got into a race  
To shoot their money into space.  
They aimed it not to mere—  
—ly leave the atmosphere.  
They shot some money to the moon.

What could be stupider?  
Money to Jupiter.  
They sent some to  
Uranus, too!

Ten trillion bankrolls  
Tossed into big black holes.

Those effing morons!  
The money's gone! All gone!

Libretto continued >

## ACT 4. “To Boldly Go”

NARRATOR: It’s time for the thrilling conclusion to our opera. All the big banks have collapsed (with the notable exception of one commendably well-run bank that came through the crisis just fine, and is generously providing the funding for tonight’s performance of this opera).

Our two bankers—now former bankers—are back in their favorite bar. They are surrounded by the many now-unemployed scientists who once helped the banks build the technology that shot all the money off into space.

Now it’s so-called happy hour! It’s time to sing about a new beginning. So raise your glasses on high, if you’re wearing glasses. Let’s drink in the, uh, spectacle.

[MUSIC: Barber of Seville overture]

SHE: Where is the money?  
Where’s the money?  
Somebody spent it. Or sent it to who knows where.  
I know we had it. Too bad it—’s no longer there.

BOTH: I guess that means that now you’re not a billionaire.

SHE: [SOFTLY] No... That isn’t fair...

HE: [SOFTLY] No. That isn’t fair...

BOTH: That isn’t fair. That isn’t, isn’t, isn’t, isn’t, isn’t fair!

HE: I miss the money.  
I miss the money.  
I miss the owning, the loaning, the value thrills,  
The thousand dollar bills, the couple extra mils.

BOTH: Oh, no—that isn’t, isn’t, isn’t, isn’t. isn’t, isn’t,  
isn’t, isn’t fair!

SHE: Banking’s too risky...

HE: I thought a bank that loses money was aberrant...

SHE: Banking’s too risky...

HE: And now they tell me that the risk might be inherent.

SHE: What’ll we do, what can we do that’s sa—a—fer?  
Safer with no risk?

HE: What would be safer?

SHE: Is there an industry that’s rid itself of ri—isk?

Which could it be?  
Which in—dus—try is sa—fer?  
Safer with no risk?

BOTH: What business—  
What business isn’t risky?

What business—  
What business isn’t risky?

SHE: Investment banking?

HE: RISKY!

SHE: Commercial banking?

HE: RISKY!

SHE: Banking, banking—really, really, really, really,  
really RISKY!

SHE: Consumer banking?

HE: RISKY!

SHE: And mortgage banking?

HE: RISKY!  
Really, really, really, really, really, really,  
really RISKY!

Banking, banking, banking’s  
RISKY!  
Really, really, really, really, really, really,  
really RISKY!

Too, too risky for endurance!  
Ban—king’s ris—ky!  
It’s—too risk—y for en—du—rance!

SHE: Try insurance!

HE: Banking’s risky! Banking’s risky!

SHE: Try insurance! Try insurance!

BOTH: It’s not risky, it’s not risky, it’s not risky,  
Noooooooooooo! It’s risk-free!



Photo: Richard Baguley.