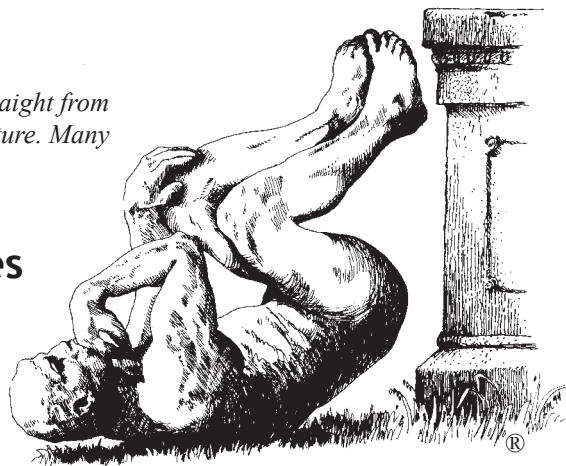# Contents

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 2008 Ig Nobel Prizes

Improbable Research Reviews*

News & Notes

On the Front Cover

Dr. Deborah Anderson, co-winner of the 2008 Ig Nobel Prize in Medicine, delivers her acceptance speech. Dr. Anderson and her team discovered that Coca-Cola is an effective spermicide. They shared the prize with a group of doctors who discovered that it is not. Photo: Kees Moeliker / Improbable Research.
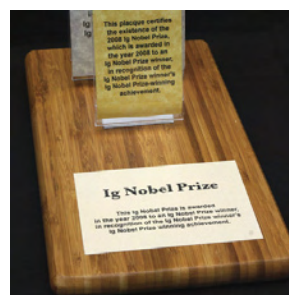
On the Back Cover

The 2008 Ig Nobel Prize. Hand-built by Eric Workman, made of exceedingly cheap materials, the prize reflects the theme of the year's Ig Nobel Prize Ceremony. This year's theme is Redundancy. Photo: Eric Workman / Improbable Research.

Coming Events

Science Friday (NPR) Ig Nobel radio broadcast — November 28, 2008

AAAS Annual Meeting, Chicago, Illinois, USA — February 13, 2009

Ig Nobel Tour of the UK — March 6–15, 2009

SciFest Africa, Grahamstown, Eastern Cape, South Africa — March 25–26, 2009

(see WWW.IMPROBABLE.COM for details of these and other events)

Libretto: "Redundancy, Again"

A mini-opera in three acts

Music by Stephen Foster, Charles B. Ward and Samuel A. Ward
Words by Marc Abrahams

Original Cast

Opera Conductor: David Stockton
Pianist: Branden Grimmett
Tweedle: Maria Ferrante
Dee: Ben Sears
Guards: Roberta Gilbert and Robert Canterbury
Employees: the other scientists and other Ig Nobel
      Prize winners
Consultants: Nobel Laureate William Lipscomb,
      Benoit Mandelbrot (creator of the concept
      of fractals)
Flutist: Laura Hamel
Accordianist: Thomas Michel
The Ig Fife and Drum and Drum and Bugle and
      Bugle and Bugle and Accordion Corps
Costumes by Robert Canterbury.

Photo: Alexey Eliseev.

ACT 1—"Keep it simple just in time"

NARRATOR [SPOKEN]: Tonight's opera is about two business partners—identical twins named Tweedle and Dee. Not that it matters, but Tweedle and Dee sell trimming equipment to hedge funds. To survive in the global economy, Tweedle and Dee want to be as efficient as possible. So to be as efficient as possible—to maximize efficiency, and do it efficiently—they decide to... eliminate redundancy! They are going to fire everyone whose job in anyway overlaps anyone else's job. Let's join Tweedle and Dee as they celebrate this by announcing it to everybody in their company:

[MUSIC: "I Dream of Jeannie with the Light Brown Hair," Stephen Foster]

[TWEEDLE and DEE sing this, alternating verses]

> Just keep it simple. Simply take our advice.
> No duplication. Never do things twice.
> Yes, keep it simple. Simply take our advice.
> Do not duplicate. No, do not do things twice.
>
> Two times is too many, and three is even worse.
> Fortune favors those who don't needlessly rehearse.
> Just once. Just once is all that you'll ever need.
> Once you understand that, you're at-least-twice-as-likely-to-succeed.

[NOTE THE INTENTIONAL AWKWARD-EXTRA-SYLLABLES-AT-THE-END!]

> But wait!!! Do nothing if it's not just-in-time.
> "Wait—*[BE SILENT FOR A BEAT]*—then hurry!" That's our paradigm!
> Yes, wait!!! Do nothing if it's not just-in-time.
> "Wait—*[BE SILENT FOR A BEAT]*—then hurry!" Yes, that's our paradigm!

When you do things early, you then have time to waste.
That's why you should wait—*[BE SILENT FOR A BEAT]*—then do those things in haste.
Please be efficient. That is what you must be.
If you are efficient, you have efficiency.

Become efficient: Don't waste time watching clocks.
Old ways are wasteful. Don't be orthodox.
Consult a clock, but never just on a hunch. *[LOOKS AT WATCH, AND PERKS UP]*
Oh now, look at that!!! Hey, it's time now for lunch!!!

So much of the time, any clock is just a frill.
Simply voyeurism, a momentary thrill.
The time one spends in staring down at one's watch
Is no more productive than the-time-spent-looking-at-one's-crotch.

[NOTE THE INTENTIONAL AWKWARD-EXTRA-SYLLABLES-AT-THE-END!]

Avoid redundancy. No need to repeat.
Say what needs saying. Keep it short and sweet.
Avoid redundancy. No need to repeat.
Just say what you must. Keep it short. Keep it sweet.

Never be redundant. Do not redundant be!
No, don't be redundant! No! No redundancy!
Don't be redundant. Promise me!!! Promise me!!!
No, don't be redundant! No! Never be redundant!

*[NOTE THE INTENTIONAL AWKWARD-EXTRA-SYLLABLE-
-AND INTENTIONAL-LACK-OF-RHYME-AT-THE-END!]*

ACT 2—"Redundancy"

NARRATOR [SPOKEN]: When last we saw Tweedle and Dee, they fired everyone who was redundant. (Please note that to anyone who speaks British English, that statement is itself redundant. If you're not British, you may disagree. Whatever...) Now it's a month later. A minor problem keeps cropping up. Now whenever even one employee quits, the entire operation grinds to a halt—because no one knows anyone else's job. Let's join Tweedle and Dee as try to solve this vexatious problem.

[MUSIC: "The Band Played On," by Charles B. Ward]

[TWEEDLE and DEE sing this, alternating verses]

Photo: David Holzman.

On Monday our receptionist
Resigned. He lives alone.
Now nobody knows how to work the phone.
On Tuesday our top techie
Took a trip to watch a whale.
Now none of us can access our email.
The next day Dave the doorman
Drove down to see the shore.
Now no one knows how to unlock the door.
Whenever someone quits, or just stays home to weep and sob,
We're stuck 'cause no one knows each other's job.

Soooo, mayyyyy-beeee...

[CHORUS]
Here's what we need
If we are to succeed—
It's redundancy!
Things would work out swell
If all our personnel
Had redundancy.
Duplication feels clannish,
But when someone vanish-
-es, just that ONE person's not there!
That's better—NOT worse'n—
An absence of person.
Redundancy!

Soooo... youuuu... meeeean...

[CHORUS]
Each of us blows
Through a two-sided nose.
That's redundancy.
Most medical probes
Prove our brains have two lobes.
That's redundancy.
*And if I should propose that *I KNOW* what *YOU KNOW*,*
*And if you made me *SHOW* that I know...*
*Well, then we'd *BOTH* know that *I* know what *YOU* know.*
That's redundancy.

Thaaaat's... suuuu-btlllle...

[REPEAT THE CHORUS TOGETHER, AND FASTER]

Photo: Kees Moeliker.

ACT 3—"Redundancy, Again"

NARRATOR [SPOKEN]: Tweedle and Dee hired two sets of consultants. One set of consultants recommended that the company be very sure to have, yes, redundancy again. The second set of consultants recommended the same thing. Let's join Tweedle and Dee and all the consultants—played here by the Nobel Laureates—as they celebrate their brilliant work, again and again. Yes, let's join Tweedle and Dee and all the consultants—played here by the Nobel Laureates—as they celebrate their brilliant work, again and again.

[MUSIC: "America the Beautiful" by Samuel A. Ward]

[TWEEDLE and DEE sing this, alternating verses]

Contingencies! Contingencies!
I planned out each detail.
Anticipate-
-ed, calculate-
ed so it could not fail.

[CHORUS]
Efficiency! Efficiency!
I always would demand
That ev'ry day
In ev'ry way
Things always go as planned.

Inexplicably! Inexplicably!
We had some little hitch.
Some bottleneck
Some iperfec-
-shun. Oh, some tiny glitch...

[CHORUS]
Catastrophe! Catastrophe!
Despite a wonderful-amazing-brilliant start,
[NOTE THE INTENTIONAL AWKWARD-EXTRA-SYLLABLES]
Some little ding
Doomed everything.
The whole thing fell apart.

Capriciousness! Capriciousness!
That's how the whole world works!
You can't coerce
The universe.
It's got its little quirks.

[CHORUS]
Redundancy! Redundancy!
This word you may perchance
Have learned in school,
Or 'cause you're cool,
Or just by happenstance.

Redundancy! Redundancy!
Redundancy's our friend.
Those extra bits
Have benefits
Upon which we depend.

[CHORUS]
Redundancy! Redundancy!
Redundancy again!
Don't count on luck,
Or you'll get stuck!
Redundancy again!

TWEEDLE or DEE: *[SPOKEN]* One more time!

[CHORUS]
Redundancy! Redundancy!
Redundancy again!
Don't count on luck,
Or you'll get stuck!
Redundancy again!

TWEEDLE or DEE: *[SPOKEN]* No more times!
DEE or TWEEDLE: *[SPOKEN]* No more times!

Photo: Kees Moeliker.