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# Iconoclasm

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Recognize them?



When I was a kid, the formula was simple:

- get good grades
- go to college
- pursue a profession: doctor, lawyer, accountant, executive, engineer, etc
- salaries of \$70k/yr plus benefits, maybe more

In fact, "the system" encourages this:

- PSAT, SAT, GMAT, LSAT, MCAT, Wonderlic, *lots* of tests to prove my analytical thinking
- we even had tests that were designed to tell me *which* fields I should go into

But the formula is changing

India produces 350,000 engineering grads each year. China produces nearly as many engineering grads as the US.

Egypt, Brazil, Poland, other countries are following suit.

They get paid a *lot* less (US\$15k/yr or less)

Recognize him?



John Henry was a "steel-driving man", "born with a hammer in his hand"

When a man came by with a steam-powered drill, John Henry challenged the drill to a race

"John Henry said I feed four little brothers, and my baby sister's walking on her knees, did the Lord say that machines ought to take the place of living, and what's a substitute for bread and beans, I ain't seen it, do engines get rewarded for their steam" (*The Legend of John Henry*, by Johnny Cash)

He won... and died

Recognize him?



Garry Kasparov is "the finest chess player of his generation, perhaps the greatest of all time"

He won his first world championship in 1985

For the next decade, he never lost a match

Until he lost to a computer (Deep Blue) in 1997

(But at least he didn't die)



Automation (that is, software) threatens  
programmers more than all the other  
outsourcing sources ever could

It allows the unskilled to do the work that used to  
remain the sole province of the skilled (us)

(If it makes you feel any better, doctors, lawyers,  
accountants and engineers are in just as  
much deep doo-doo)

So how do we stop this?

We can't



We can only evolve



Recognize him?



Anybody can be him

Anybody can have an idea that can make (or  
save) the company a million dollars

Anybody can design the next iPod

Anybody can suggest the perfect solution for the  
project that makes everything just *flow*

i \* con \* o \* clast n

*A person who does something that others say  
can't be done*

In 725 AD, Leo III tore down the golden icon of Christ over his throne as an act of defiance against the Church, to consolidate his power

He was the first iconoclast: "destroyer of icons"

Since that time, certain individuals have seen differently, and refused to accept *status quo*

By doing so, they made the world better



## Iconoclasts:

- Florence Nightingale
- Jackie Robinson
- Walt Disney
- Ray Kroc
- David Dreman
- Howard Armstrong
- Branch Rickey
- Dixie Chicks
- Martin Luther King, Jr.
- Solomon Asch

Others have accomplished more localized, modest goals, but iconoclastic nonetheless:

- Alan Kay
  - Smalltalk
- Linus Torvalds
  - Linux
- Dave Thomas
  - Naked Objects, Ruby, Pragmatic Publishers
- Edward Dijkstra
  - "goto considered harmful"
- Robin Milner
  - ML

This, then, is your goal:

*become an iconoclast*

Iconoclasm consists of three things:

- seeing differently
- overcoming fear
- exercising social intelligence

The brain is a highly energy-constrained device

It operates on about 40 watts of power

To maximize its efficiency, it takes shortcuts

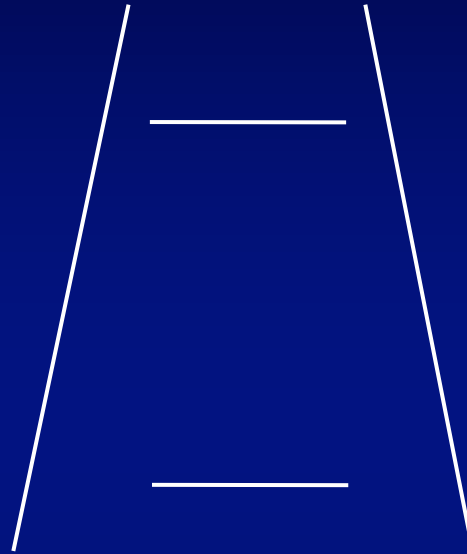
What do you see here?



The brain is taking shortcuts, via a form of  
pattern recognition

*Perception is a matter of the brain, not the eyes*

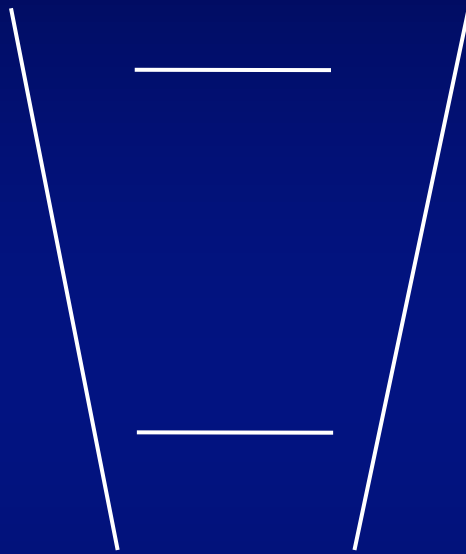
Which line is longer?



More importantly, why does your brain *intuitively* respond with the wrong information?



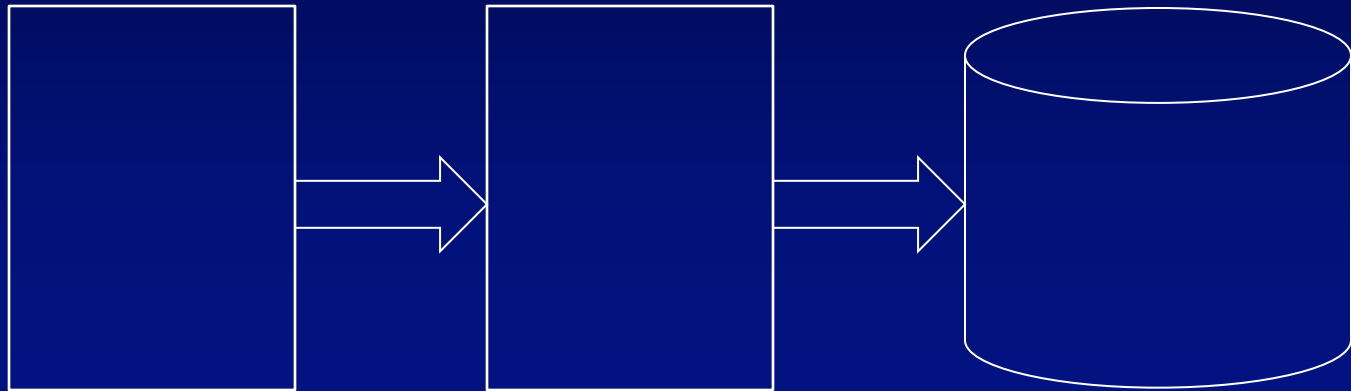
What if we reverse the picture?



The most likely way we perceive something will be in a manner consistent with your past experience

In the lines diagram, the commonality of vertical perspective leads your brain to interpret it incorrectly

When I show you this picture, what do you see?



Do you recognize this man?



How about his glass?



Dale Chihuly is quite possibly the most  
successful businessman-artist in history

He manages a studio of ~100 people

He is one of the few American artists to have a  
solo show at the Louvre

His pieces go from \$25k to over \$1million

All because he lost an eye

Do you recognize this woman?



Florence Nightingale, literally, saved your life

In 1854, Nightingale observed that more soldiers were dying of disease than battle

She presented a pie chart to Queen Victoria depicting the numerical differences

This forced the military and medical community to see medical care facilities in a new light



Iconoclasts see things differently

To do that, you must *change your perception*

*... but that's not enough*

Do you recognize this group?



In March 2003, an entirely new iconoclast was born, almost entirely by accident:

During a concert in London, Natalie Maines, lead singer of the Dixie Chicks, tossed off this single sentence during a break in the music:

*"We're ashamed  
the President of the United States  
is from Texas"*

Maines received death threats, including one that couldn't have been plainer: "You will be shot dead at your show in Dallas."

She was forced to get round-the-clock protection for her and her family

A radio station van driver driving down the freeway had a shotgun pointed at him...

... because the Dixie Chicks portrait was painted on the side of the van

Maines never recanted

Their next album, three years later (2006),  
floundered on the *Billboard* charts... radio  
stations refused to play their music, still...

... even though that album was the #1 download  
on iTunes

Consider this problem:

Two urns in front of you

Left-hand urn contains 9 black & 9 white marbles

Right-hand urn contains 18 marbles of unknown proportions (black/white)



Your objective: Draw a **black** marble from an urn

Which urn do you choose?





Your objective: Draw a **white** marble from an urn

Which urn do you choose?



This is known as the *Ellsberg Paradox*

If the left-hand urn is better for pulling a black marble, why would you choose it when trying to pull a white marble? Logically, the other (unknown) urn is the better choice

According to the psychologists, this is caused by *your fear of the unknown...*

also known as *ambiguity aversion...*

... that leads to a bad (or irrational) choice

Do you recognize this craft?



How about now?



In 1986, the *Challenger* was destroyed during launch because of a faulty O-ring design that could not handle the freezing temperatures of the previous night

Subsequent investigation found "The failure... probably began with the faulty design of its joint and increased as both NASA and contractor management first failed to recognize it as a problem, then failed to fix it, and finally treated it as an acceptable flight risk."

The failure at NASA is a repeatable one

Your company probably participates in the same kind of dynamic without realizing it

In the 1950s, Solomon Asche conducted an experiment with 12 people:

"Which line matches the length of the left line?"



Recognize *the law of large numbers*?

"The average guess of a group of individuals is better than any one individual's, and often better than the best individual's, guess."

It's biologically wired into us: *follow the herd*

And that's not always a bad thing!



Fear can drive bad decision-making

Thus, we should avoid emotional decisions,  
right?



Scientists have discovered that we *cannot* make a decision without the use of emotion

It is literally the emotional centers of the brain that make the decision, not the analytical

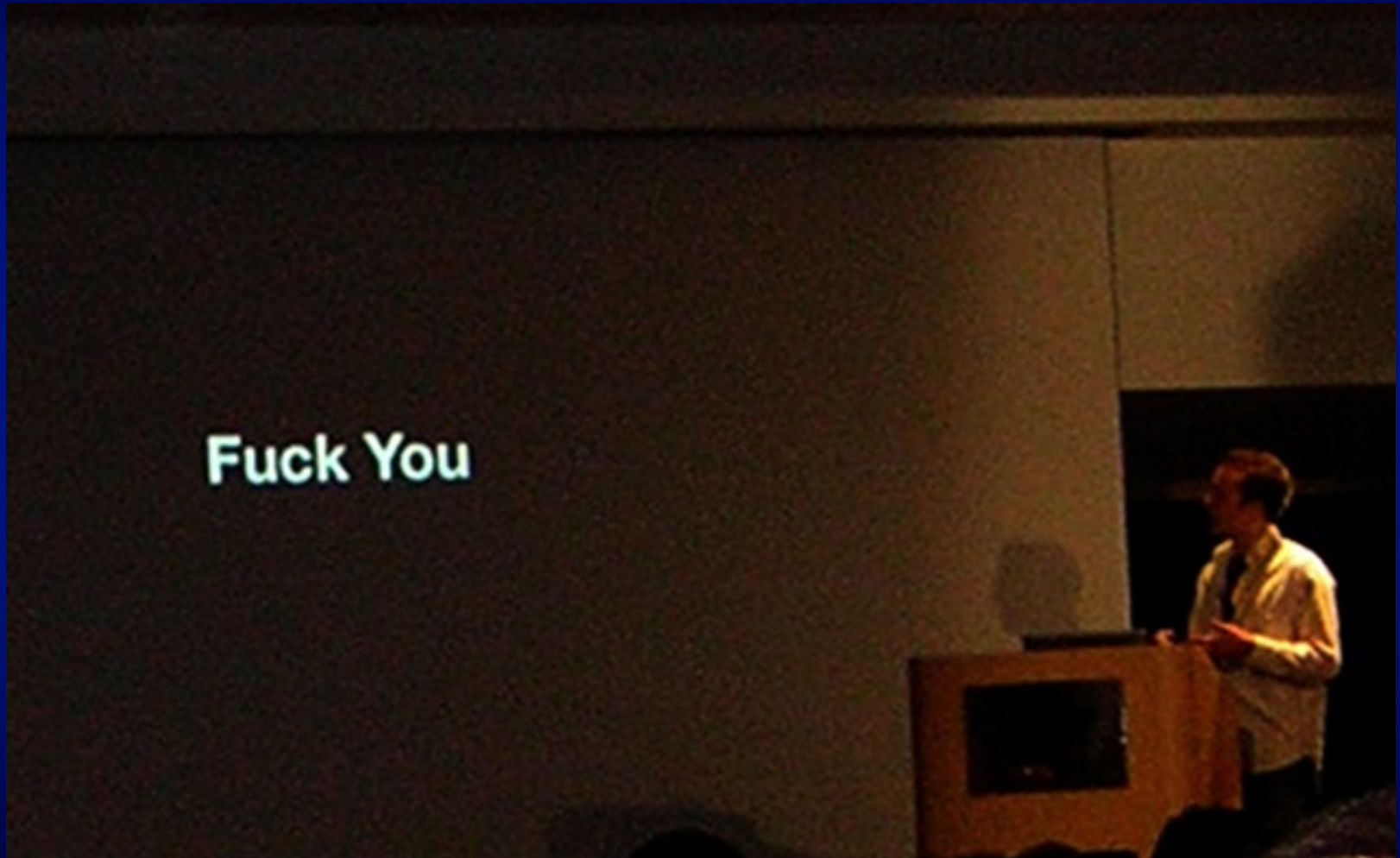
And, in fact, the emotional centers can often be more right than the analytical—the brain can subconsciously pick up on cues that we don't even recognize consciously

The iconoclast feels fear, like anyone else. They simply *refuse to allow fear to dominate their actions or responses.*

*"One who fears the future, who fears failure, limits his activities. Failure is only the opportunity to more intelligently begin again. There is no disgrace in honest failure; there is disgrace in fearing to fail."*

*—Henry Ford*

Recognize him?



David Hanimeier Hansson created Rails

Ruby-on-Rails opined a number of ideas  
contradictory to the manner of the status quo  
of the time:

- convention over configuration
- dynamic type systems
- scripting languages

He has been criticized, ostracized, and ridiculed,  
not for the thing he created, but for his actions  
and conduct thereafter

Do you know who this is?



Edwin Howard Armstrong invented, among other things, what we call FM radio

He shared it with his friend, David Sarnoff, president of RCA ...

... who was heavily invested in AM technology...

... and promptly set his engineers to work seeking to discredit Armstrong's work

Anderson died on the 40th anniversary of his  
discovery

He committed suicide

He died alone, unrewarded and unrecognized



This is the fate of the iconoclast who fails to recognize the importance of the third component of iconoclasm:

### *Social intelligence*

Because, right or wrong, if you can't convince anybody of the power of your vision, you may as well not have it

Unless you're willing to wait for its success until after your death, of course...

## A tale of two painters



Pablo Picasso's estate: \$750million (1973)

Produced 13,000+ paintings, 300+ sculptures

People respected, admired and adored Picasso;  
many, in fact, were lovers

Van Gogh died penniless and alone, 900  
paintings to his name

For an iconoclast, connecting with other people depends on two key aspects of social intelligence:

- *Familiarity*—productivity and exposure
- *Reputation*—shrink worlds

**Familiarity** requires *both* name and face recognition; just one or the other doesn't work

How many of you recognize him?

How many of you can name him?

The brain likes familiarity...

(it quiets the amygdala)

... so strive to be familiar



**Reputation** isn't just what people are saying about you in high school

It's about *shadow networks*—an underlying network of "who knows whom"

Your reputation—particularly that for a fair deal—will have huge impact on how people see you

The combination (familiarity + reputation) is how you connect with people... and convince them

Iconoclasm is just one way to weather the coming "perennial gale of creative destruction"

Iconoclasts:

- see differently
- face down fears
- use social intelligence



Now get out of here ...

Be an iconoclast ...

*(even if it's just a small one)*

... and you will never lack for a job

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