

Science Writing in the 21st Century: Challenges, Opportunities, and New Frontiers

Estonian Science Communication Conference

Start of career



1994



1995

On the beat

PalmBeachPost.com FOLLOW TODAY'S LAUNCH: Check for updates on Endeavour's journey to the international space station.

Who needs a yard? Get tips on growing a garden in a pot
FLORIDA HOME
 In Florida Home: Neighborhoods
 NEIGHBORHOOD OF THE WEEK
 Winston Trails near Lake Worth

GAME 7 GLORY
PENGUINS HOIST CUP
 Pittsburgh dethrones Detroit 2-1
 for its first NHL title in 17 years.
 In Sports

'Hot grandma,' 84, is new face of V8
 Meet the West Palm widow
 who's a trick water skier
 In Action

The Palm Beach Post

Saturday, June 13, 2009 The Home Page of Paradise First edition | 75 cents

TV SHIFTS TO ALL-DIGITAL BROADCASTING

Rabbit ears to gather dust bunnies

By CHARLES RASBY
 Palm Beach Post Staff Writer

It is perhaps the last symbol of America's analog age: a V-shaped thingamajig that once helped bring the wonderment of television into millions of American homes.

But as of Friday, the rabbit-ear antenna seemingly took its place atop the trash heap of history, joining such antiquated tools of "modernity" living as the rotary phone and eight-track player.

Signaling the end of an era
Oh, Say Can You See? One Fox affiliate signed off with the Star-Spangled Banner, followed by a test signal.

Get TV back at a discount: The Commerce Department reported a last-minute rush of 300,000 requests for \$40 converter teleconverters. The limit is two per household. It takes nine business days to get a coupon to your mailbox. To request one or get technical help, call (888) CALL FCC.

See ANTENNA, 5A ▶

SWINE FLU

Sickness strikes Gardens Scouts

Officials believe as many as 21 boys and adults had infections during the troop's North Carolina camping trip.

By ANDREW MARRA
 Palm Beach Post Staff Writer

PALM BEACH GARDENS — The Boy Scouts from Troop 150 were supposed to spend this week working on merit badges and polishing their camping skills after making the trek to a Scout camp in western North Carolina.

But one by one they began getting fevers, coughs and rashes. When two Scouts tested positive for swine flu, they ended up in quarantine.

Health officials believe as many as 21 Scouts and adult volunteers from the Palm Beach Gardens troop were infected with swine flu. Some are recovering at home in Palm Beach County while others are being treated at Camp Daniel Boone in Haywood County, N.C.

"They're all in good shape now," said a Boy Scout leader who asked not to be named.

See SCOUTS, 4A ▶

Cure for boredom? Detained in China, siblings play games

By ANDREW MARRA
 Palm Beach Post Staff Writer

To make the severely minutes pass faster, the quarantined North Palm Beach teens sometimes kick around Hacky Sacks in their gun-guarded Beijing hotel. But not for too long.

There are mandatory temperature checks twice a day. If their bodies get too warm, they could be whisked to the hospital.

They invent games such as "Guess the Expression." E. Deane's challenging proposition behind the masks they're required to wear when they leave their rooms.

They descend to the lobby each night to greet the ambulances that bring new arrivals. The hotel is filling fast with people like them — tourists of all ages who the Chinese government fears may have been exposed to swine flu.

"We're all really, really bored," said SIBLING, 4A ▶

Follow the Doanes' ordeal
 Read the North Palm teens' blog entries.
PalmBeachPost.com/swineflu

JUMPIN' GEORGE!

Former President Bush celebrates his 85th birthday in high-flying style.



Staff Sgt. JOE FINE, Mickey Gardens Air Guard/The Associated Press
 Former President George H. W. Bush (front) free-falls in a tandem sky dive Friday over Kennebunkport, Maine, with Sgt. 1st Class Michael Clifton of the Army Golden Knights. Bush jumped from 10,500 feet to mark his 85th birthday. "It's a great, exhilarating feeling," he said later.

KENNEBUNKPORT, Maine — Just because you're an old guy, you don't have to sit around drooling in the corner. Get out and do something. Get out and enjoy life. And so he did. Former President George H. W. Bush marked his 85th birthday Friday the way he did his 75th and 80th birthdays. He leaped from a plane, free falling at more than 300 mph before parachuting safely to a spot near his oceanfront home. Bush made the tandem leap with a member of the Army's Golden Knights. His wife Barbara, five children, 14 grandchildren, two brothers and a sister were there. Bush said he plans to jump again for his 90th birthday. "I don't feel a day over 84," he said after being removed from his harness.



AP Photo/Chris Wedel
 Former President George W. Bush (left) and former Florida Gov. Jeb Bush flank their dad Friday after his safe parachute landing on a beach near his Kennebunkport, Maine, home.

Election chaos in Iran
 Both sides claim victory; challenger Mousavi warns of possible fraud. **Story, 2A**

MARLINS BLUE JAYS	
	7 3
DOUG ADAM 2B	HORVATH 2B
BRUNNER 3B	LOVRY 2B
CLAYTON 1B	PEOPLE 3B
OSWALD 1B	SCOTT 3B
CHAPMAN 2B	SMITH 2B
OSWALD 1B	SMITH 2B
OSWALD 1B	SMITH 2B
OSWALD 1B	SMITH 2B
OSWALD 1B	SMITH 2B

Medical identity theft can result in coverage, credit complications

By RAJLISA KENNEDY
 The New York Times

Brandon Sharp, 32, a manager at an oil and gas company in Houston, has never had any real health problems and, kooky, he has never set foot in an emergency room. So imagine his surprise a few years ago when he learned he owed thousands of dollars worth of emergency-service medical bills.

Sharp, as it turned out, was a victim of a fast-growing crime known as medical identity theft. The last time federal data on the crime was collected for a 2007 report, more than 250,000 Americans a year were victims of medical identity theft. That he had several collection notices under his name for emergency room visits throughout the country.

See ID THEFT, 15A ▶

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Newsweek

September 11, 2002 \$3.95

AMERICA A Year After

The three firefighters who hoisted the flag on 9/11 in this historic photo reunited in New York City last week.

THE NEW YORK TIMES'S LONELY WAR

In 2003, even small daily papers rushed to send embeds to Iraq, the "starter war" that could make a rookie reporter's reputation. Today, *The New York Times* is the only U.S. news organization that hasn't significantly cut back its presence, spending more than \$3 million a year to maintain a heavily fortified Baghdad bureau. Talking to John F. Burns, Dexter Filkins, Alissa J. Rubin, and other *Times* correspondents, SETH MNOOKIN explores the day-to-day toll—the infighting, isolation, and near-death experiences—of covering the most important story no one wants to read.

The New York Times
 DECEMBER 2004

1998

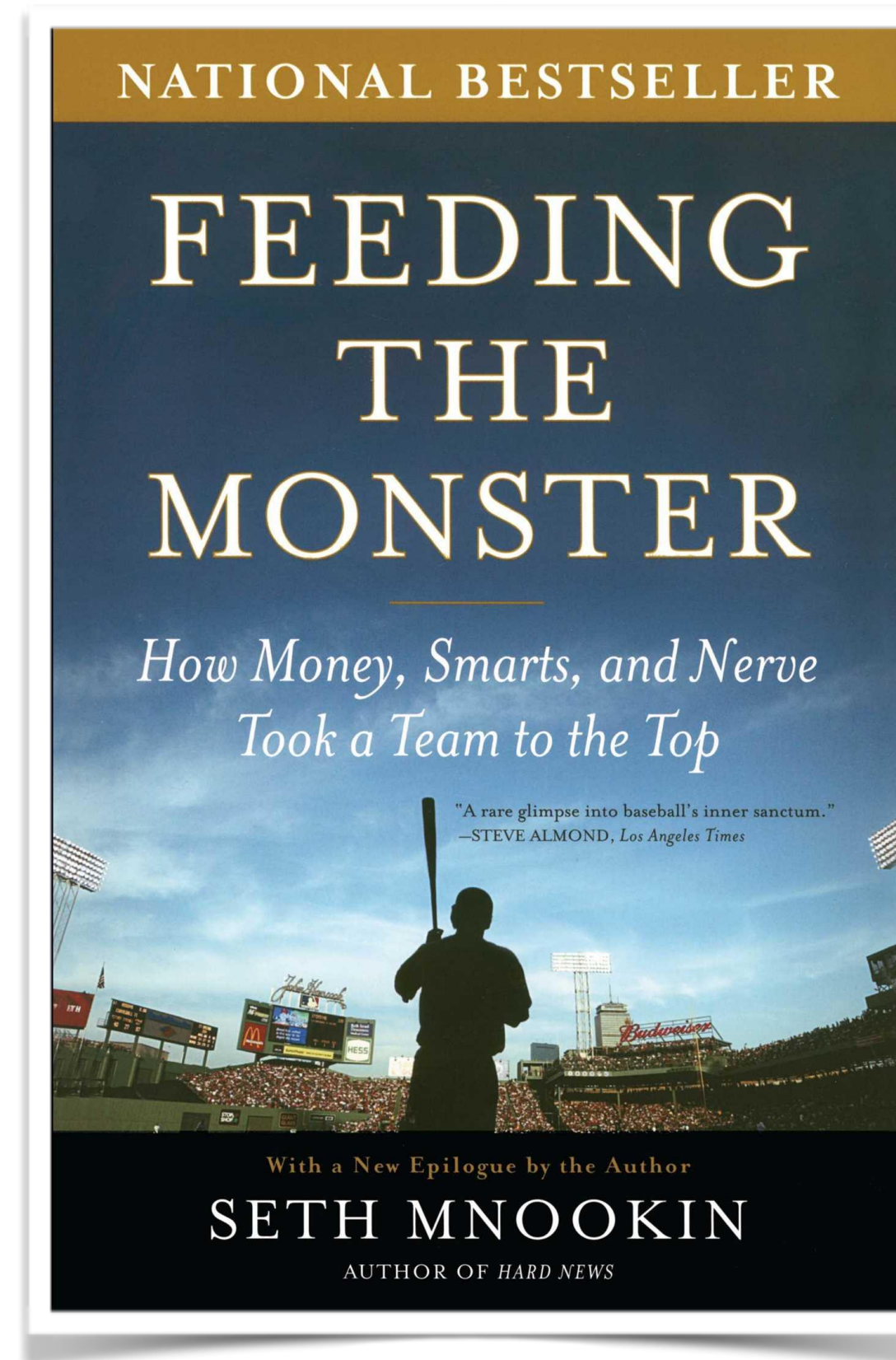
2002

2004

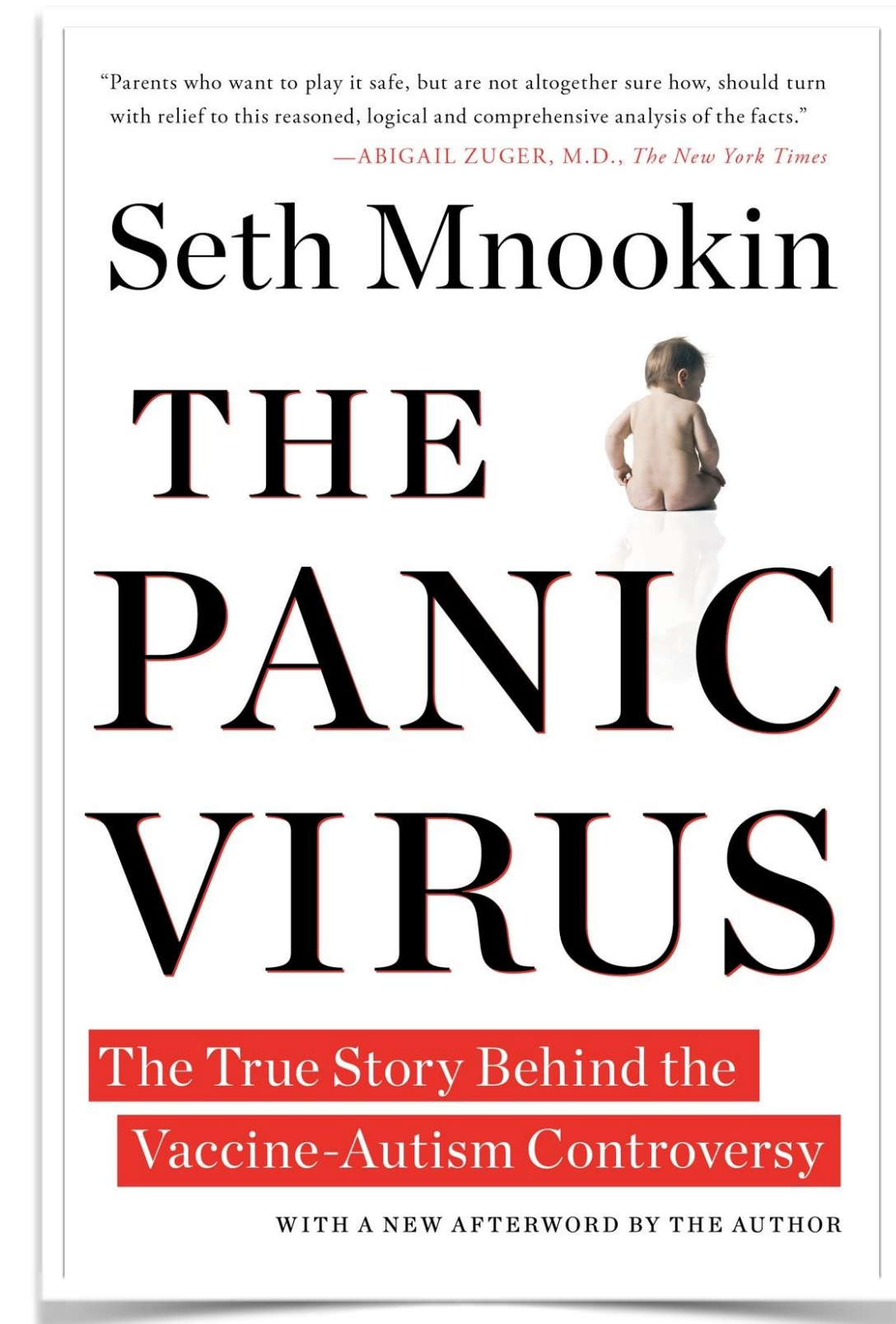
Books



2004



2006



2011

MIT



- Professor of Science Writing
- Chair of Comparative Media Studies/Writing

A screenshot of the MIT Graduate Program in Science Writing website. The page features a navigation bar at the top with links for HOME, ABOUT US, OUR PROGRAM, PEOPLE, APPLY, NEWS & EVENTS, and CLIPS & STORIES. The main content area is titled "MIT Graduate Program in SCIENCE WRITING" and includes a sub-header: "The MIT Graduate Program in Science Writing (GPSW) is one of the world's premier master's programs in science journalism and communication." Below this, there is a paragraph of text describing the program's focus on introducing students to science communication in a broad range of media. The page is decorated with a large, colorful illustration of a woman's profile surrounded by various flowers and butterflies. At the bottom, there are four small, colorful boxes with icons and text: "OUR PROGRAM: What is science writing?", "NEWS & EVENTS: Camille Carlisle, '10, Wins the Jonathan Eberhart Planetary Science Journalism Award", "CLIPS & STORIES: Read the latest from our students and alumni", and "NEWS & EVENTS: Ashley Jean Yeager's Debut Book Shines Stellar Light on Dark Matter Pioneer".

- Director, Graduate Program in Science Writing

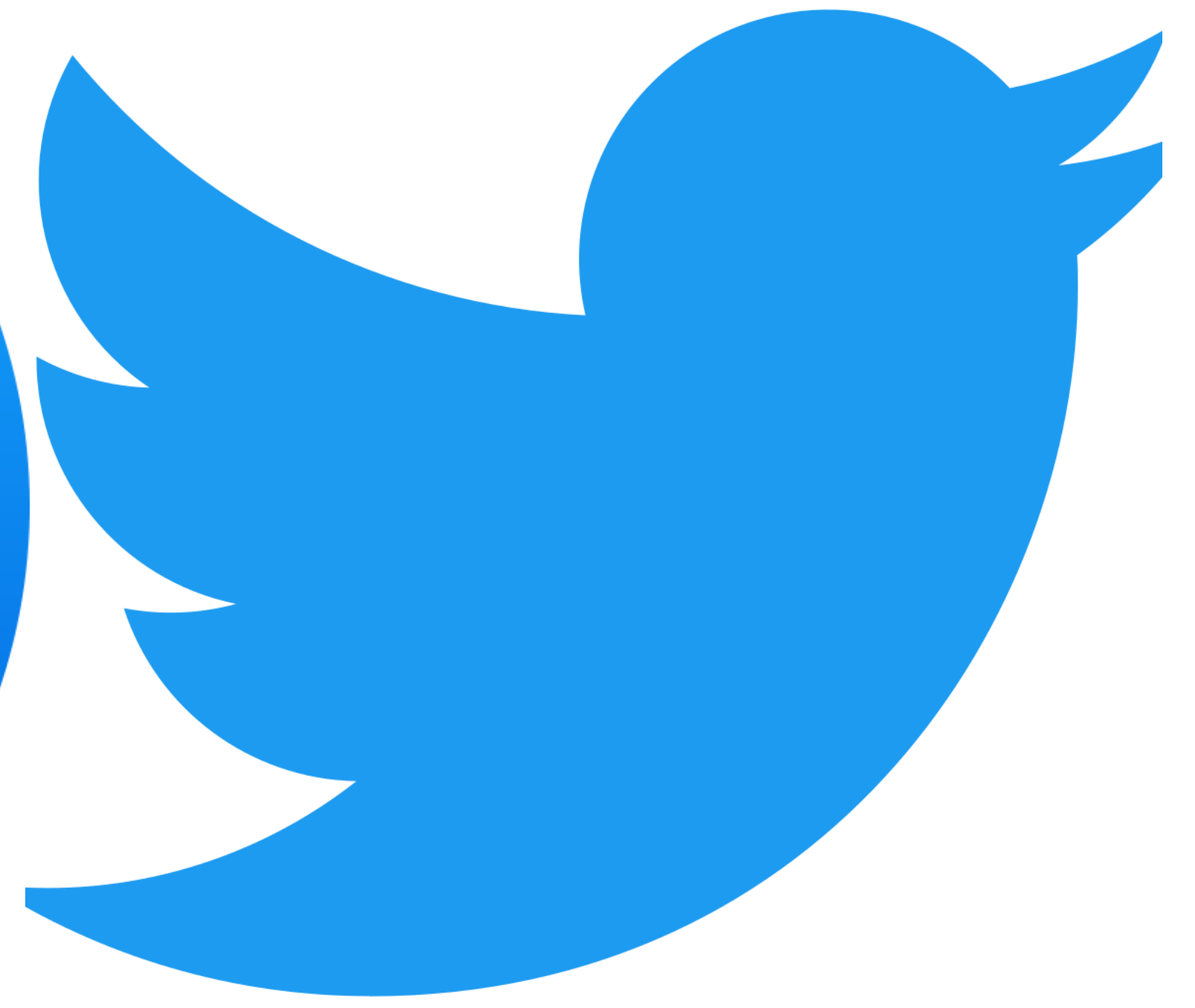
Explosion of new platforms



Google (1998)



Facebook (2004)



Twitter (2006)

New ways to consume content



2001



2007



2010

Challenges

Changes in the media landscape

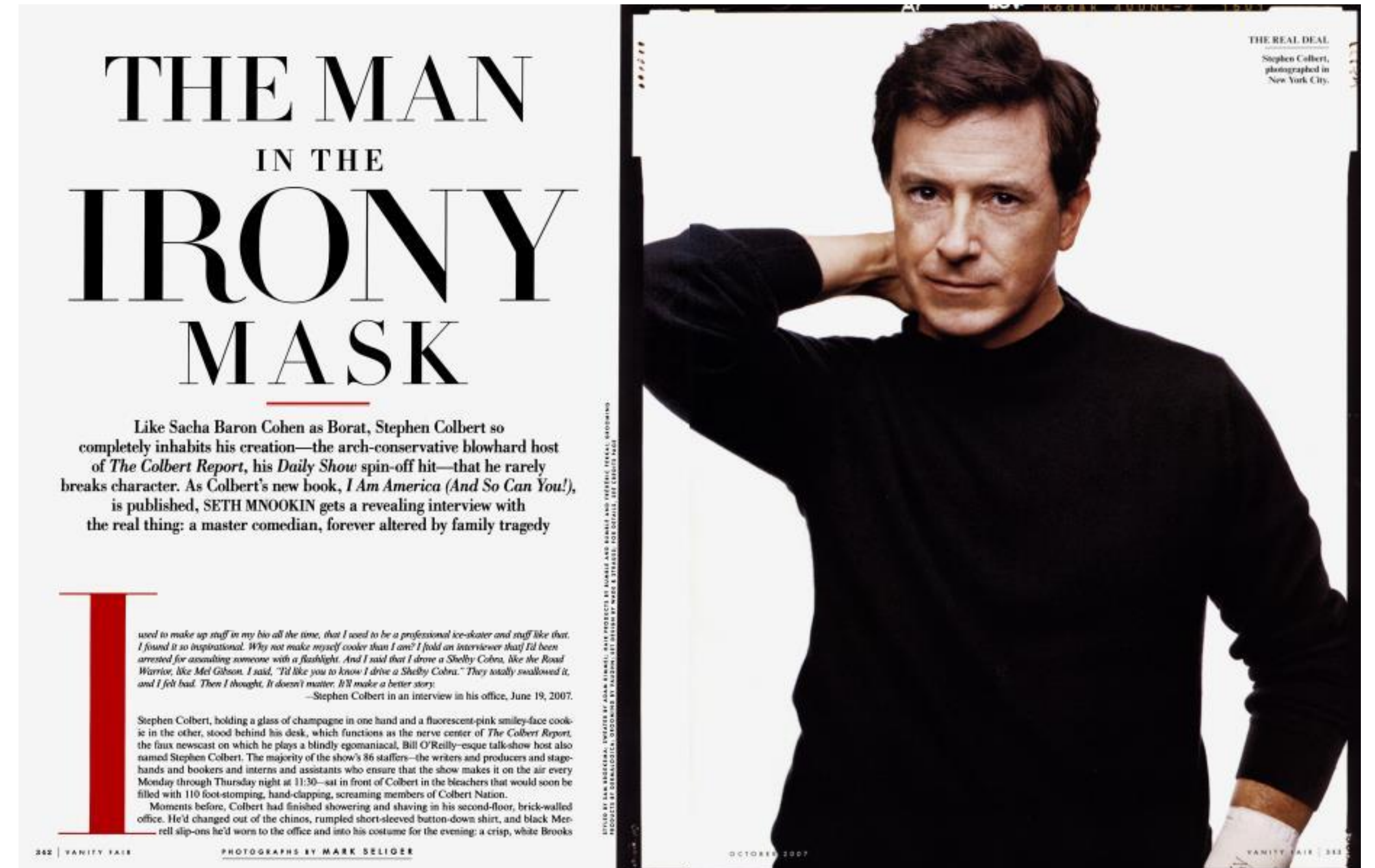
Seismic shifts affecting every level of journalism

- 1990s: layoffs due to loss of newspaper classified advertising
- 2000s: Lower salaries as independent companies bought up by multinational conglomerates
- 2000s: spread of misinformation (birther movement)
- 2010s: both online and virtual harassment
- 2020s: physical threats

“Truthiness”

The devaluation of expertise

- Valuing those who “know with your heart” as opposed to those who “think with their head.”
- Wikiality — a reality where, if enough people agree with a notion, it becomes the truth



The nature of “truth”

Reason	Emotion
Examine evidence	Rely on intuition
Talk to experts	Talk to peers
Rational conclusions	Go with gut

Don't try to impress your peers or sources



Dr. Anthony Fauci



2024 Nobel laureates:

MIT professors Daron Acemoglu and Simon Johnson

“Allele” vs “gene”

“One of a Kind” - *The New Yorker*, July 14, 2014

- “A pair or series of alternate forms of a gene that can occupy the same locus on a particular chromosome and control the same characteristic”
- “One of two or more alternative forms of a gene that arise by mutation and are found at the same place on a chromosome”
- Editor: “Are you writing for your sources? Or for readers?”

MEDICAL DISPATCH

ONE OF A KIND

What do you do if your child has a condition that is new to science?

BY SETH MNOOKIN

Matt Might and Cristina Casanova met in the spring of 2002, as twenty-year-old undergraduates at the Georgia Institute of Technology. Cristina was an industrial-design major with an interest in philosophy; Matt was a shy computer geek obsessed with “Star Trek.” At first, Cristina took no notice of him, but the two soon became friends, and that fall

worry. Matt and Cristina described Bertrand to friends as being “jiggly”; his body appeared always to be in motion, as if he were lying on a bed of Jell-O. He also seemed to be in near-constant distress, and Matt’s efforts to comfort him “just enraged him,” Matt says. “I felt like a failure as a father.” When the Might’s raised their concerns with Bertrand’s

City, and the first available appointment fell on the same day as a mandatory faculty retreat. That afternoon, when Matt was able to check his phone, he saw that Cristina had left several messages. “I didn’t listen to them,” he told me in an e-mail. “I didn’t have to. The number of them told me this was really bad.”

Bertrand had brain damage—or, at least, that was the diagnosis until an MRI revealed that his brain was perfectly normal. After a new round of lab work was done, Bertrand’s doctors concluded that he likely had a rare, inherited movement disorder called ataxia-telangiectasia. A subsequent genetic screen ruled out that diagnosis. When Bertrand was fifteen months old, the Might’s were told that urine screening suggested that



Until recently, Bertrand Might was the only known patient with a certain genetic disorder. His parents began searching for others.

they began dating. Within a year, they were married.

The couple had their first child, a son, on December 9, 2007, not long after Matt completed his Ph.D. in computer science and Cristina earned her M.B.A. They named him Bertrand, in honor of the British philosopher and mathematician Bertrand Russell. After a few blissful weeks, the new parents began to

doctor, they were assured that his development was within normal variations. Not until Bertrand’s six-month checkup did his pediatrician agree that there was cause for concern.

By then, Matt had a new job, as an assistant professor at the University of Utah’s School of Computing. It took two months to get Bertrand on the schedule of a developmental specialist in Salt Lake

he suffered from one of a suite of rare, often fatal diseases known as inborn errors of metabolism. During the next three months, additional tests ruled out most of those ailments as well.

As Matt tried to get a foothold in his new job, Cristina struggled to care for a wheelchair-bound child whose condition seemed to worsen by the day. When Bertrand was hospitalized, she would stay by

Define your audience

Speak “to” them, not “at” them

- Max (age 14), Eliza (age 12), and Otis (age 14 in dog years)
- How can I explain what I’m trying to say in language they can understand?
- What type of examples will engage them?
- What will empower their curiosity?



Ways to test new scientific theories

Explain to audience the shortcomings of a case series

- **BEST:** Randomized clinical trial: engineer the test population; can control for mitigating factors; can be double-blinded
- **SECOND-BEST OPTION:** Case control study: Researchers analyze a group that has been naturally subjected to the issue under examination
- **LEAST CONVINCING:** Case series: Oftentimes just an interesting phenomenon that a researcher happened to notice

Studies on gender

Alien sent to Earth to learn about human offspring

- **Case series:** First couple he meets: Alexander Baldwin and Carolyn Newcomb of New York
- **Case-control study:** The offspring of US presidents over a 24-year period (1992-2016)

Case series: Children born in NY in 20th century



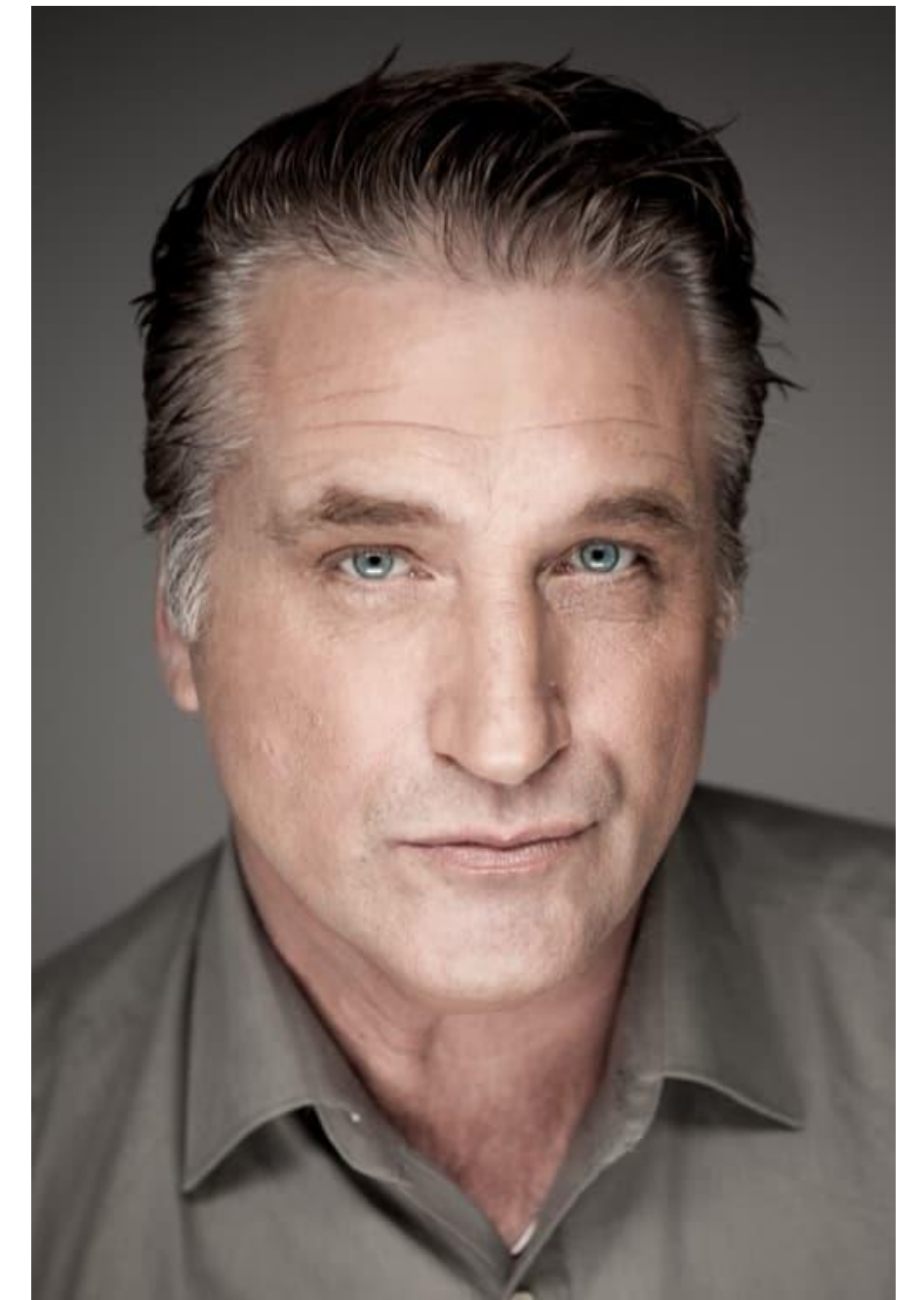
Billy Baldwin



Stephen Baldwin



Alec Baldwin



Daniel Baldwin

Case series: Children of US Presidents



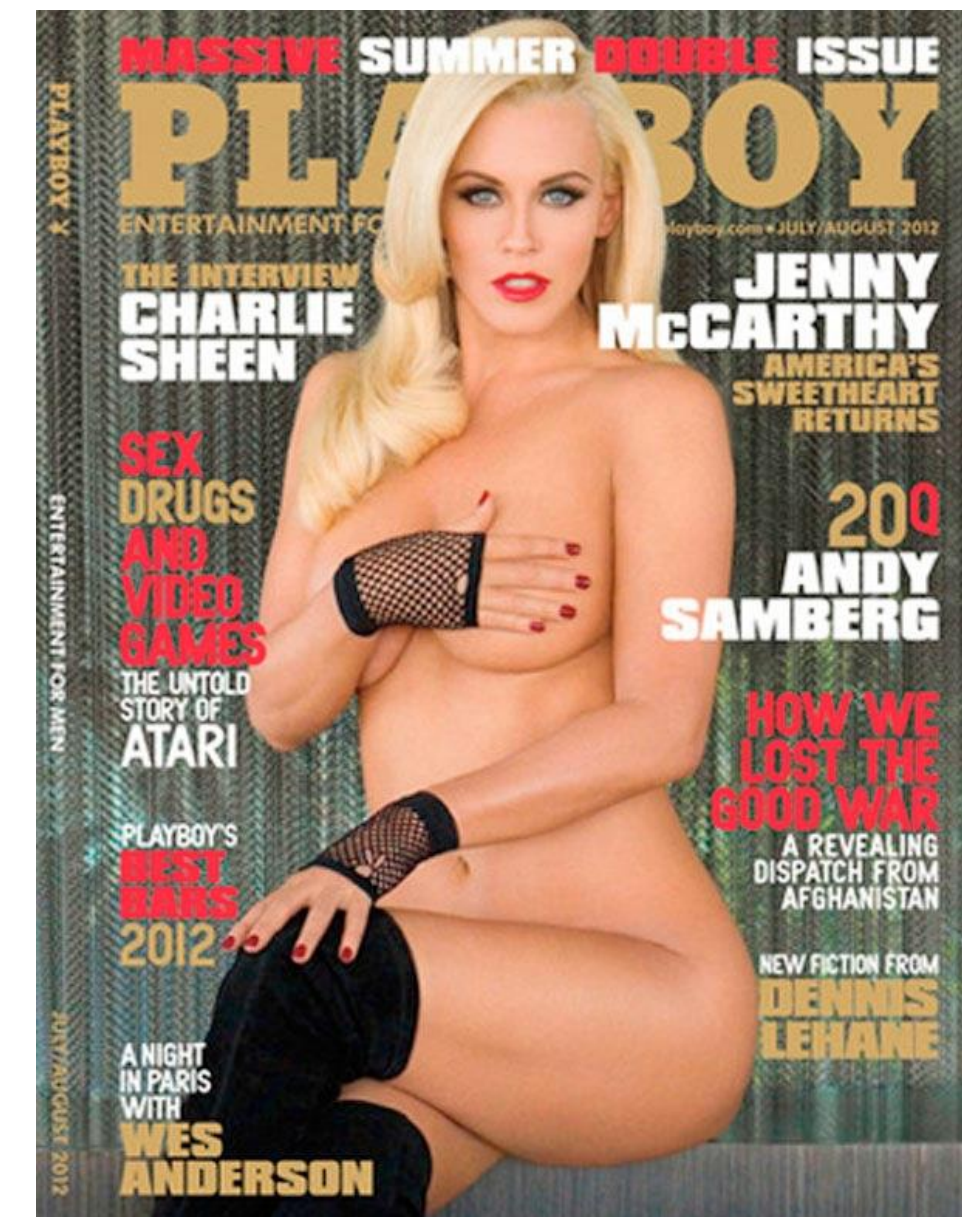
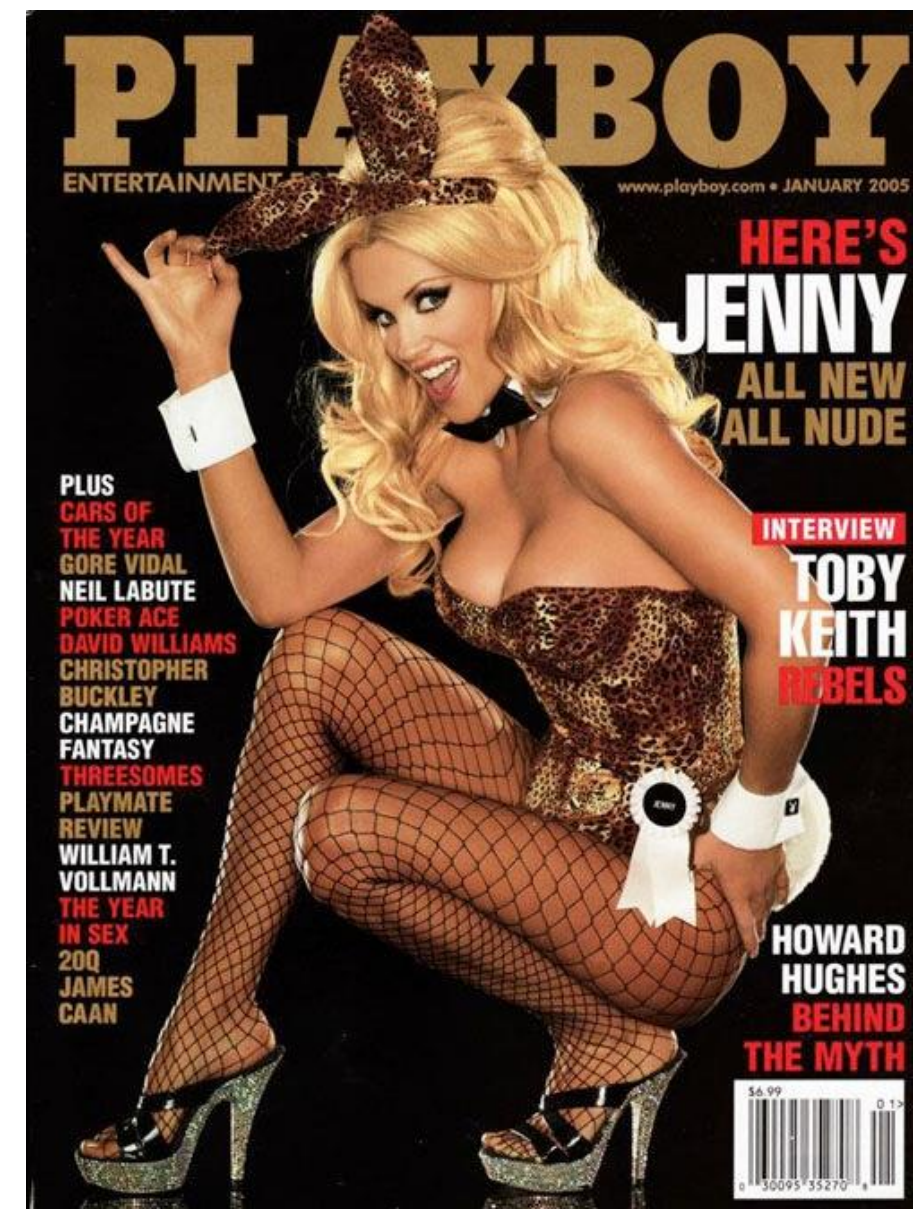
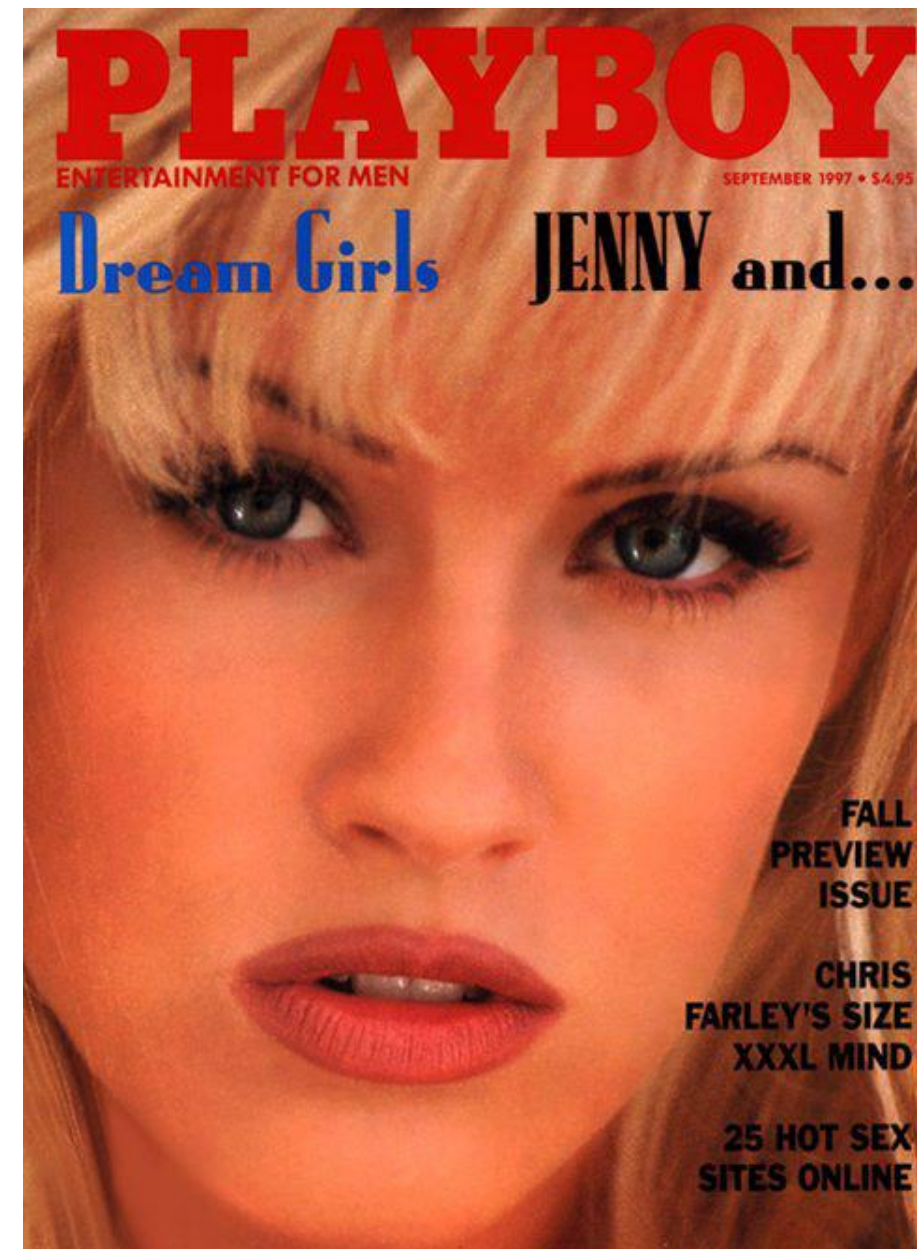
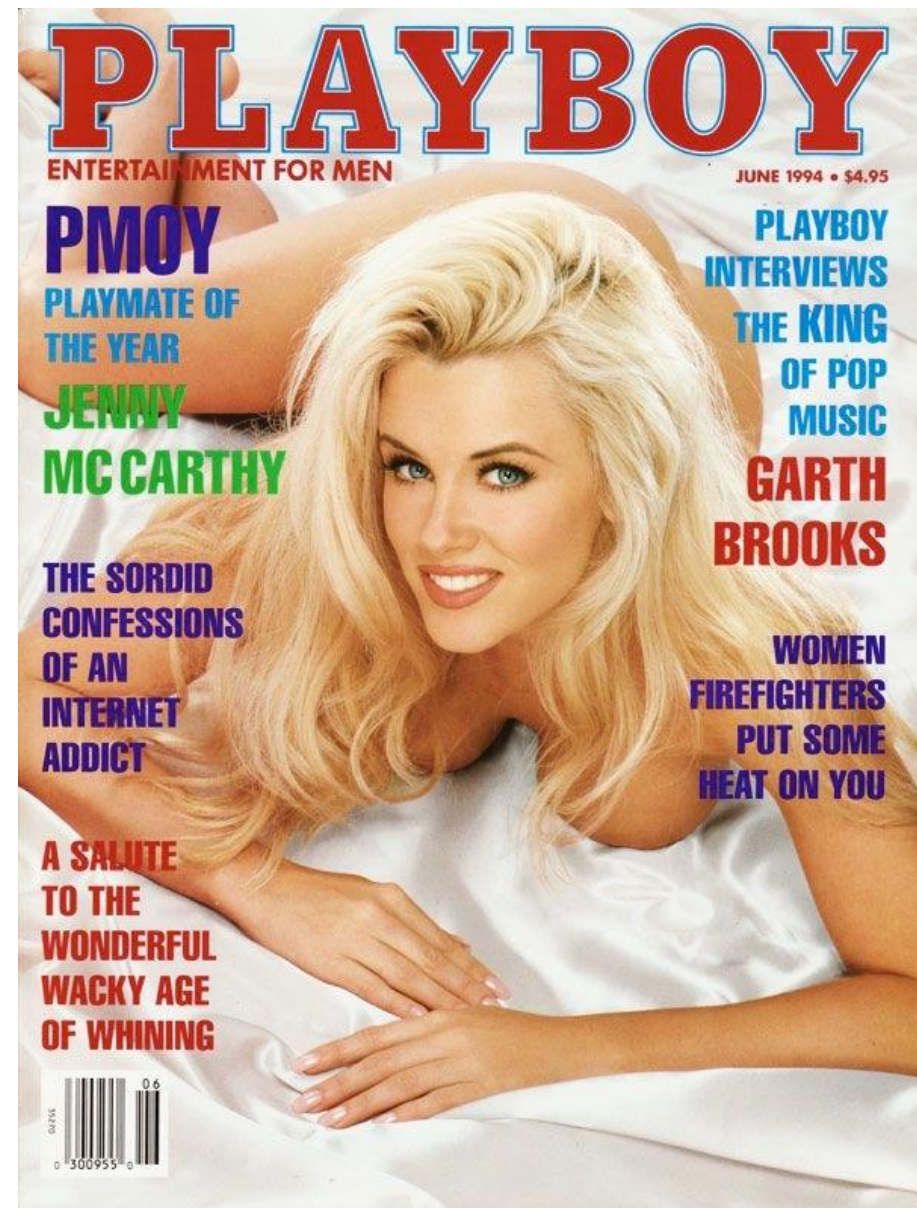
Jenna and Barbara Bush

Chelsea Clinton



Sasha and Malia Obama

Attract, don't attack





Opportunities

- Loss of traditional gatekeepers; exponentially more outlets and opportunities
- Lack of volume control on the Internet; new opportunities to break through
- Breakdown of “typical” career paths; can work on impactful stories

For medical professionals

Relate on a human level

- Avoid speaking (or writing) abstractly
- Tie what you're saying to current events or real-life examples
- Don't treat saying "I don't know" as if it's kryptonite
- Share your own experiences

For practicing scientists

If you see something, say something

- As (relatively) highly-paid specialized reporters are losing their jobs, fewer outlets have on-staff science writers.
- General assignment reporter may be given press release and told to write up a story for the next day's paper.
- If there's a story — in print, on TV, on the radio — that gets things wrong, contact the reporter.
- Conversation can be on background — but make clear you can be a resource in the future.

The “wow” factor

Principles of storytelling

- If you were drinking with a friend, what would be the first thing you’d tell him?
- How does that thing relate to what you’re trying to convey?
- What’s the connection between them?
- Every transition, every new paragraph, every section break is a chance for your reader/viewer/listener to shift their attention somewhere else
- ~~“Too much of everything is just enough”~~
- Better to leave them wanting more than feeling like there’s too much

Estonian Biobank



Dr. Lili Milani
Head of Estonian Biobank



Dr. Mait Metspalu
Director, University of Tartu Institute of Genomics

Estonian biobank

University of Tartu

- > 200,000 individual samples
- ~ 20% of entire Estonian population
- > 830 papers published based on Estonian biobank data
- Groundbreaking and revolutionary approaches to personalized medicine



New Frontiers

The GPSW

1-year Masters in Science Writing

- News-writing
- Investigative journalism
- Data journalism
- Podcasting
- Documentary
- Short-form (Tik-Tok) videos
- Essay
- The Lab Experience



- We want our students to be able to walk into any newsroom and get any assignment
- They won't be experts in everything — but they'll know the vocabulary and will be able to be an important part of a team
- Fully-funded: All tuition, fees, and living expenses are paid for
- Our goal: Leave the program with more money than when they entered
- Funding available to domestic and international students

Thank you!

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