

THE
Ostrich
Paradox

Robert Meyer

Ecker Professor of Marketing

**Co-director, Wharton Center for Risk Management and
Decision Processes**

The Wharton School, University of Pennsylvania



Calverton Airport, LI, Dec. 2012

EYE-YI!

WATCH

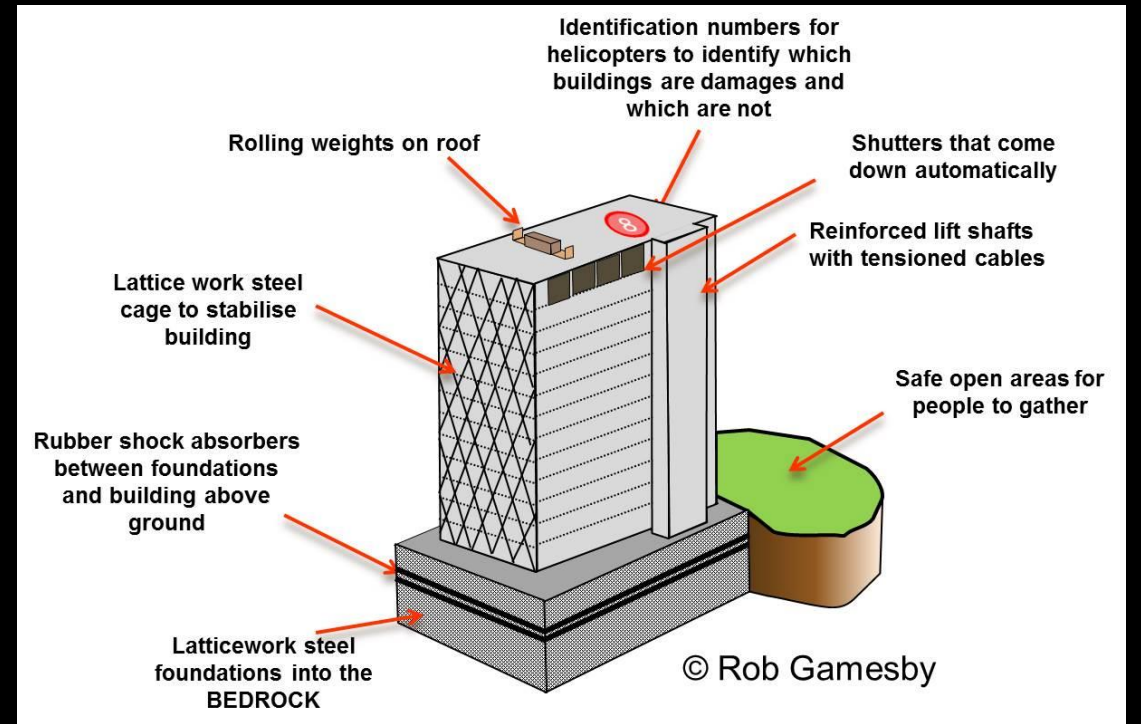
IT, N.Y.

**'Cane expected
to deal a blow**

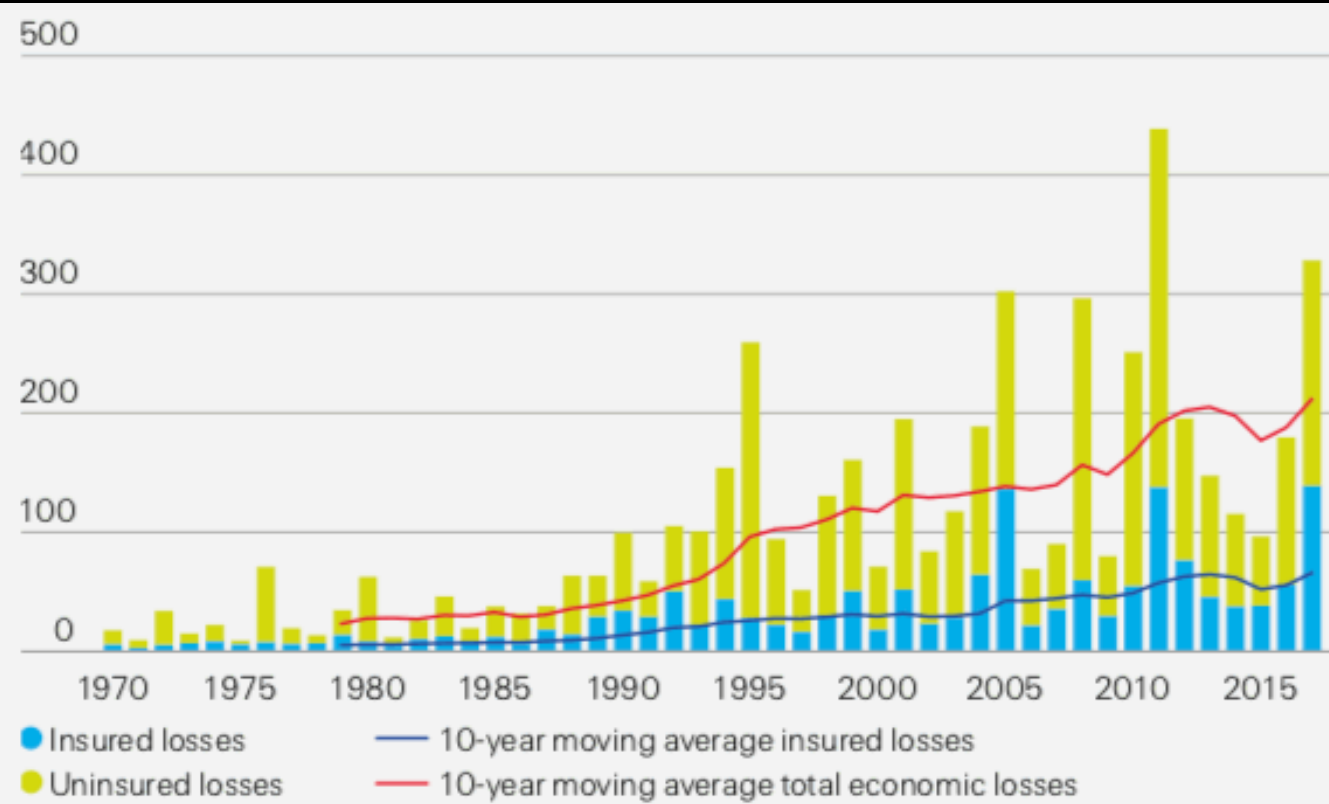


Why this matters









Source: Swiss Re Institute

Why preparedness has not improved:

Most modern philosophies for risk management assume that people are, at their core, rational in how they make decisions in the face of risk. Given complete information about a prospective risk, people will:

- a. Understand its personal consequences;
- b. Undertake appropriate preventive action

Why preparedness has not improved:

Unfortunately, this assumption is rarely true. If we want to improve preparedness, we first need to understand how people *actually* think about risk, and then design risk-management schemes that acknowledge and conform to these cognitive limitations, NOT compete with them

Today

- A brief (but necessary) primer on disaster psychology
- A new approach to assessing and designing preparedness plans---the behavioral risk audit

How we think: a confluence of two systems

System 1:
Fast,
Automated,
Reflexive.

**Requires
Training**



System 2:
Slower,
Deliberative

**Requires
Accurate
“Mental
Models”**



BEVERLY HILLS COUNTRY CLUB

KY. ROUTE 27—10 MINUTES SOUTH OF CINCINNATI

John Davidson



PROGRAM PRICE: \$2.00

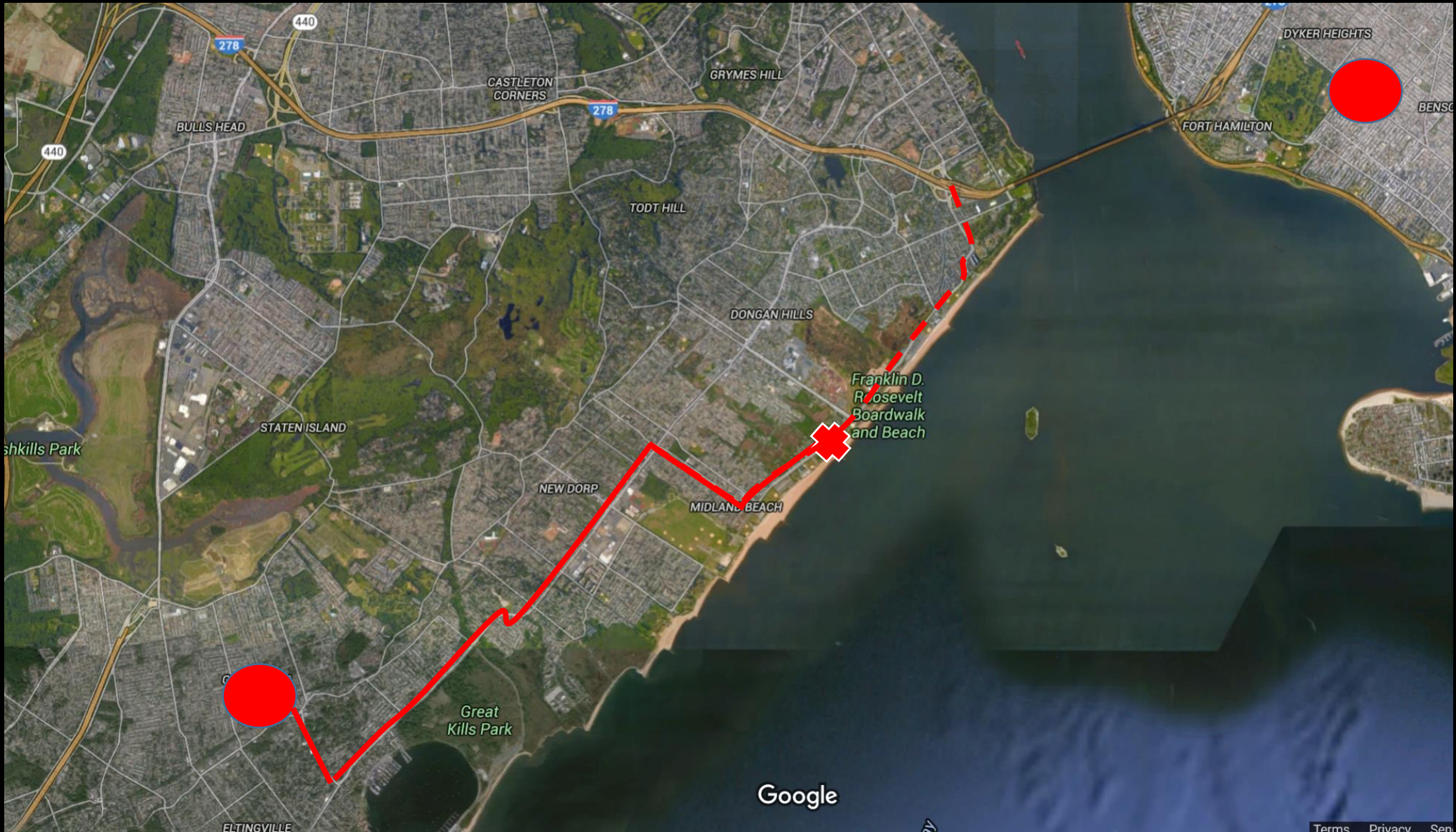












Google







Pierre-Cedric Bonin

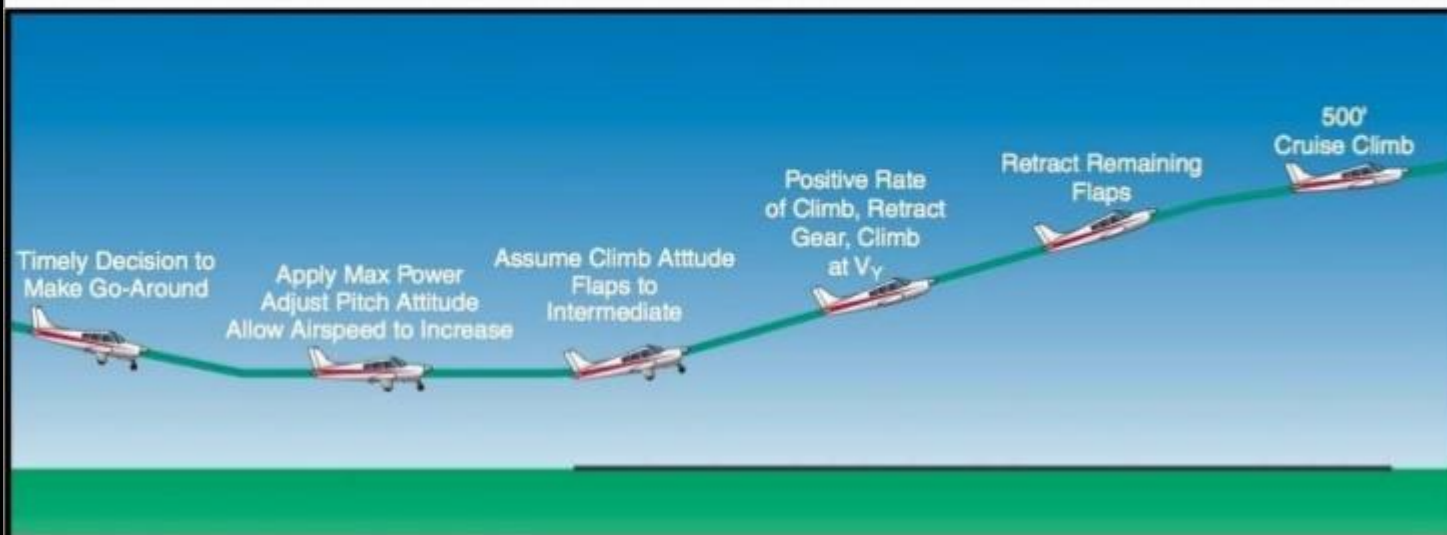






Missed approach (Go around)

- Procedure



How might we better prevent such disasters?

- Predicting hazardous event and having tools to mitigate losses is only half the solution. Predicting how people will *respond to these predictions and use these tools* is, in many cases, even more important.

The Key

- Because of the rarity of extreme events, it will be fruitless to try to correct biases. The best risk-management strategies will be those that acknowledge biases and design systems that are resilient to them.



The Behavioral Risk Audit

Bias	Manifestation	Consequence	Remedy

The Core biases

- Optimism
- Myopia
- Amnesia
- Herding
- Inertia
- Simplification

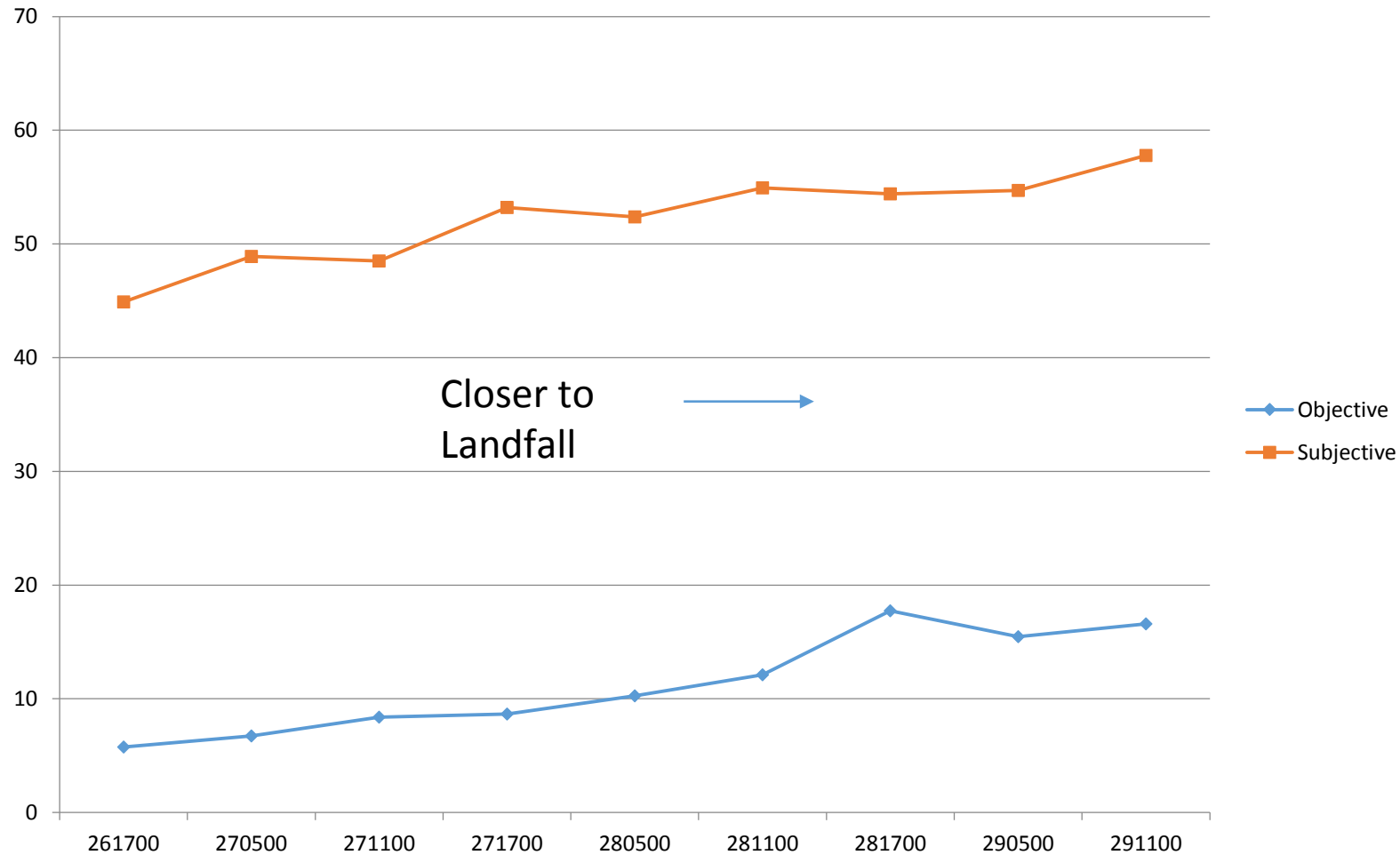


Example 1: Excessive Optimism

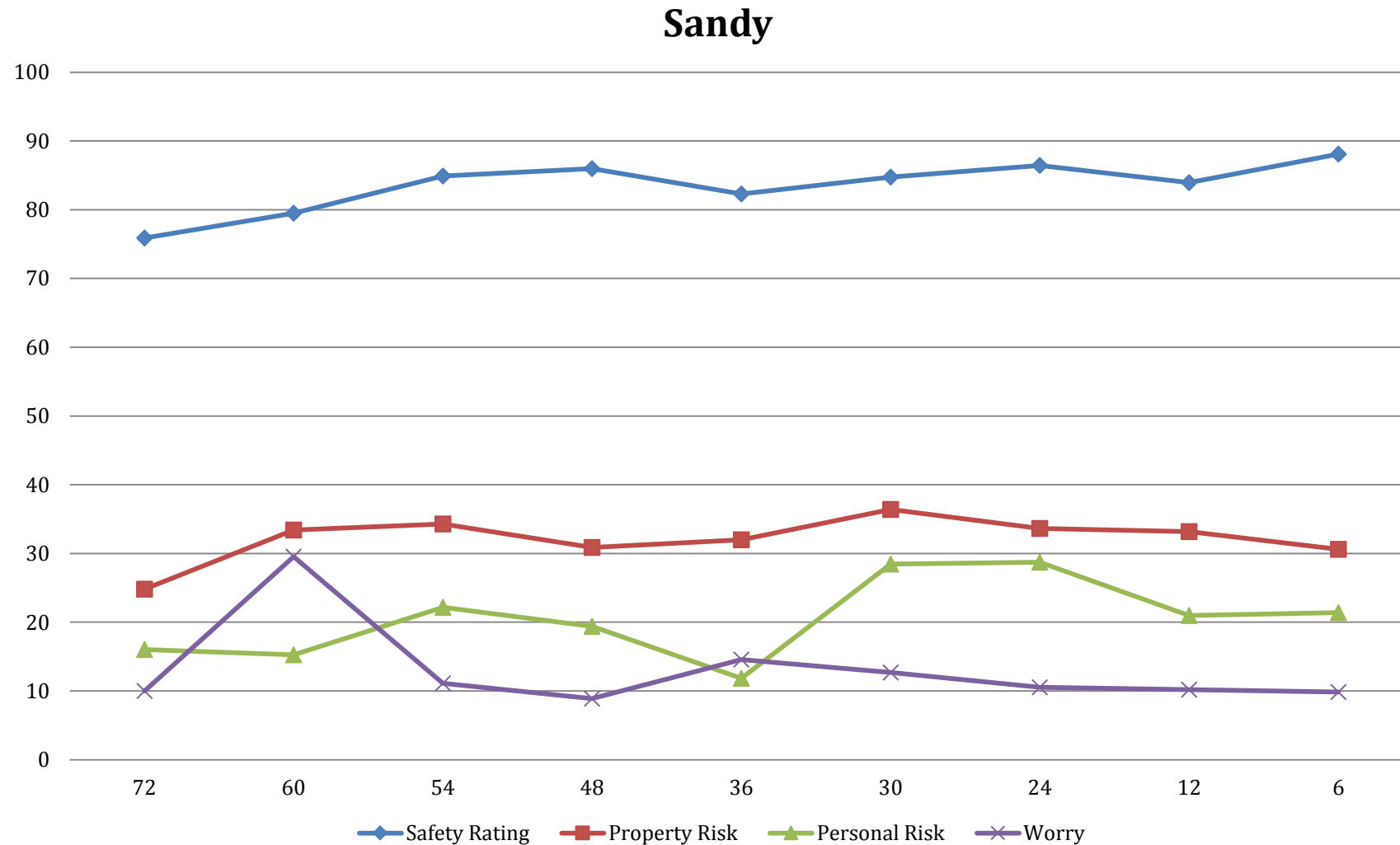
- Disasters are unlikely
- Disasters ARE likely---but they won't happen to me
- My preparations will be enough
- I have enough time to prepare



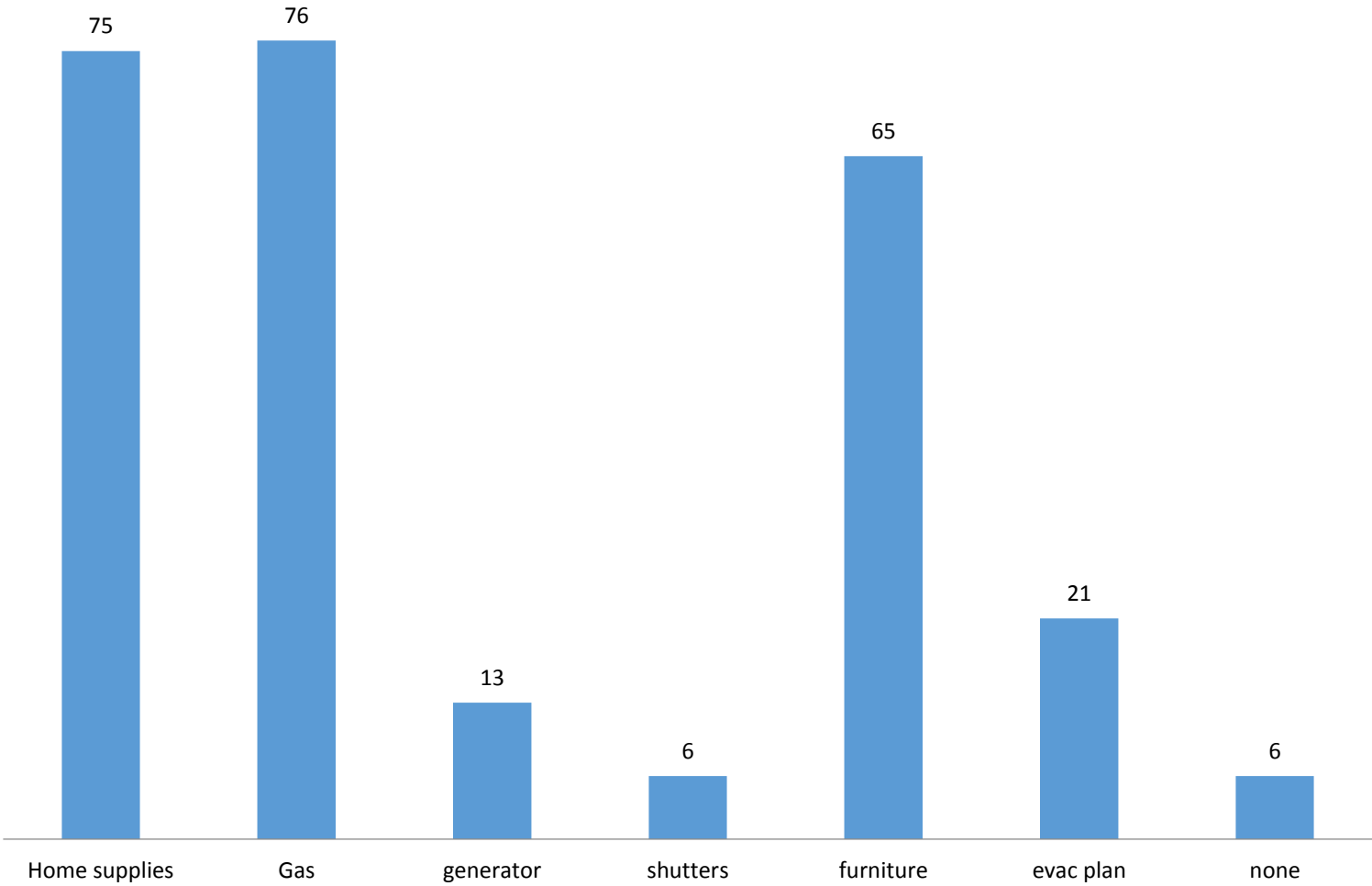
The “it won’t happen to me” bias: Perceived versus actual probabilities of hurricane-force winds, Hurricane Sandy



...yet few were particularly worried about it

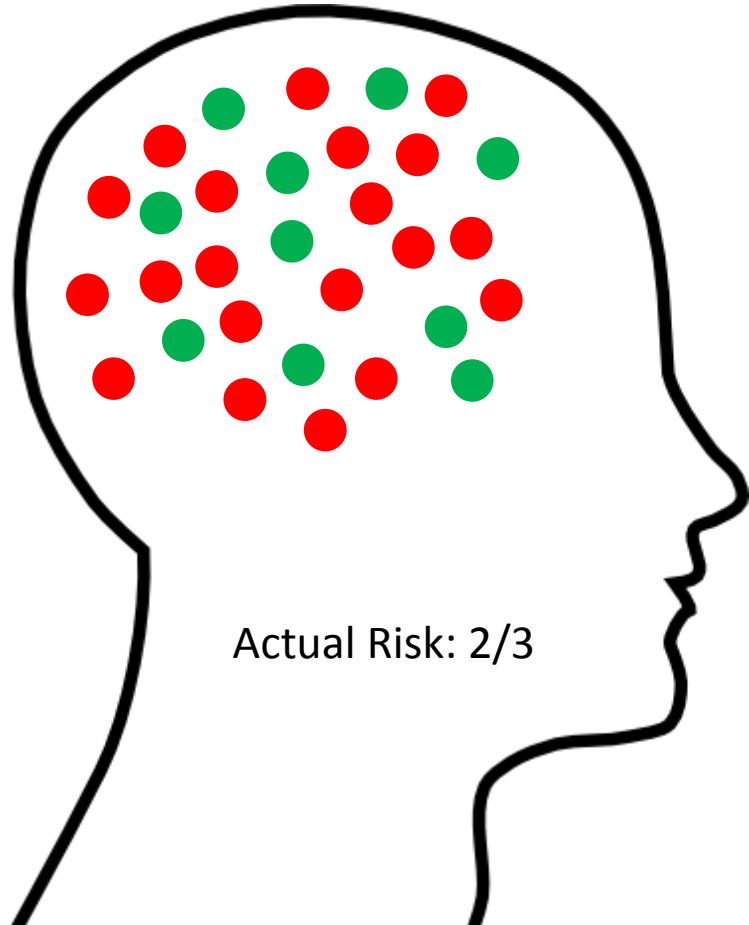


The consequence: lots of light-weight preparation



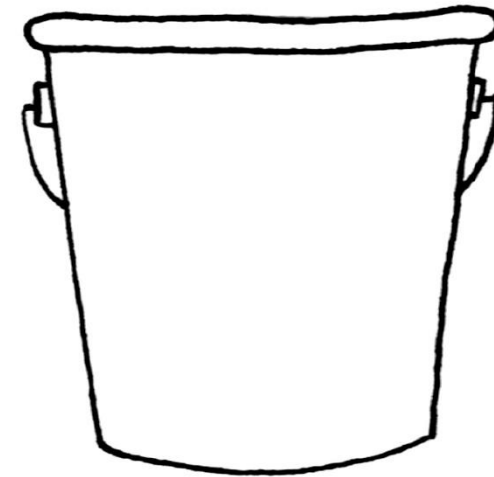
How we think of likelihood

- Way the disaster could occur
- Way the disaster could NOT occur



Actual Risk: 2/3

“Are you worried?”



Perceived Risk:
1/10

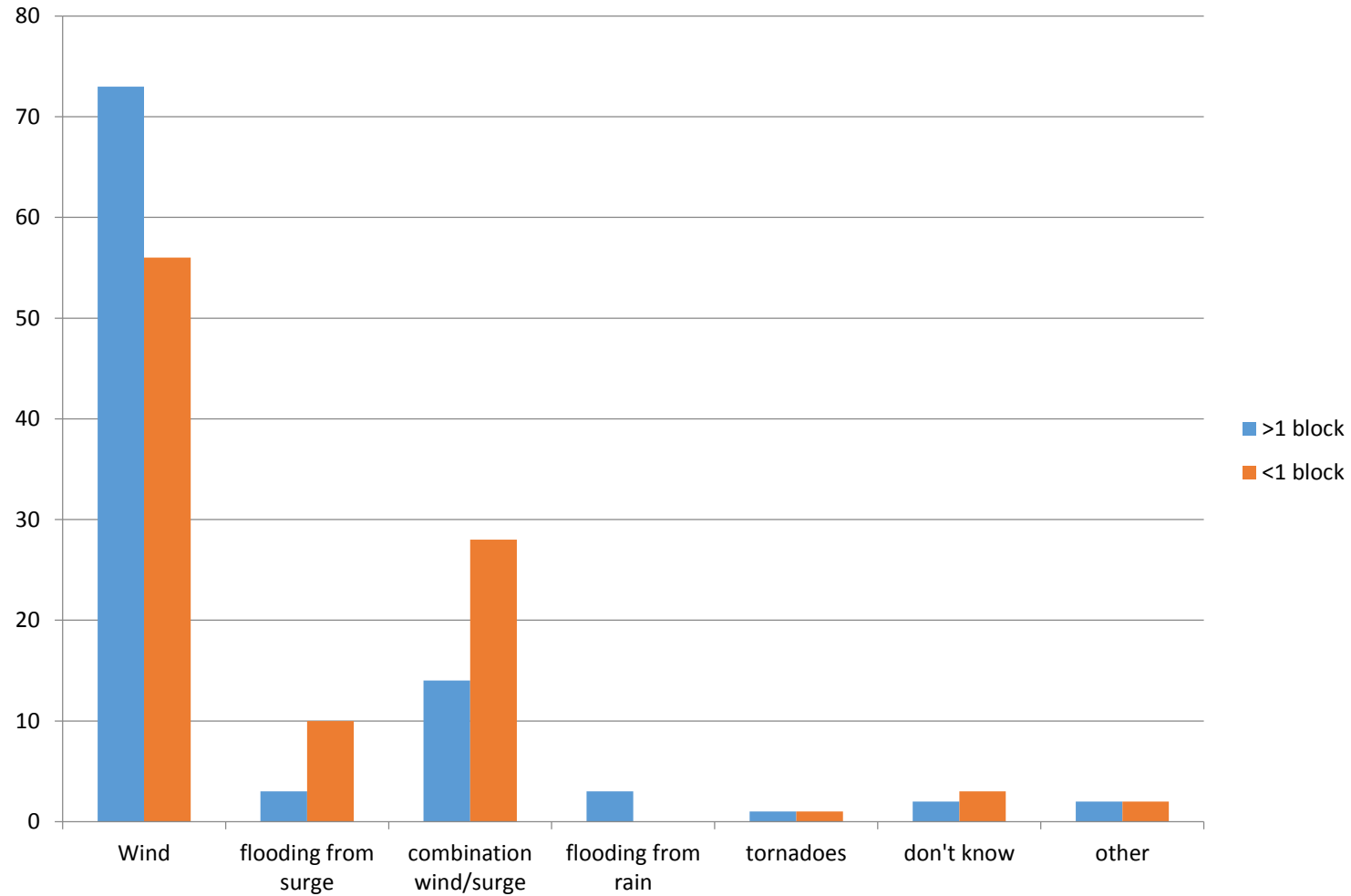
“No, not all all!”

Why so many people lost their cars in Sandy



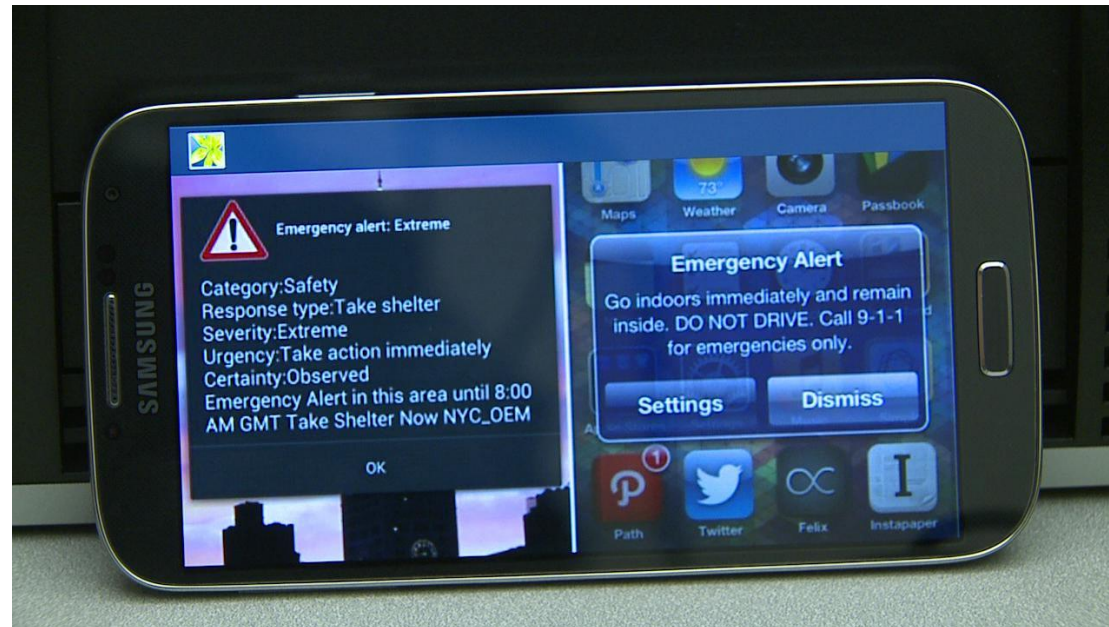
Why so many people lost their cars in Sandy

Perceptions of greatest Storm Risk, Coastal Residents, 1-2 days before landfall



Remedy: nudge the mental sampling

- Geo-targeting warnings
- Describe likely specific effects and actions
- Use vivid imagery

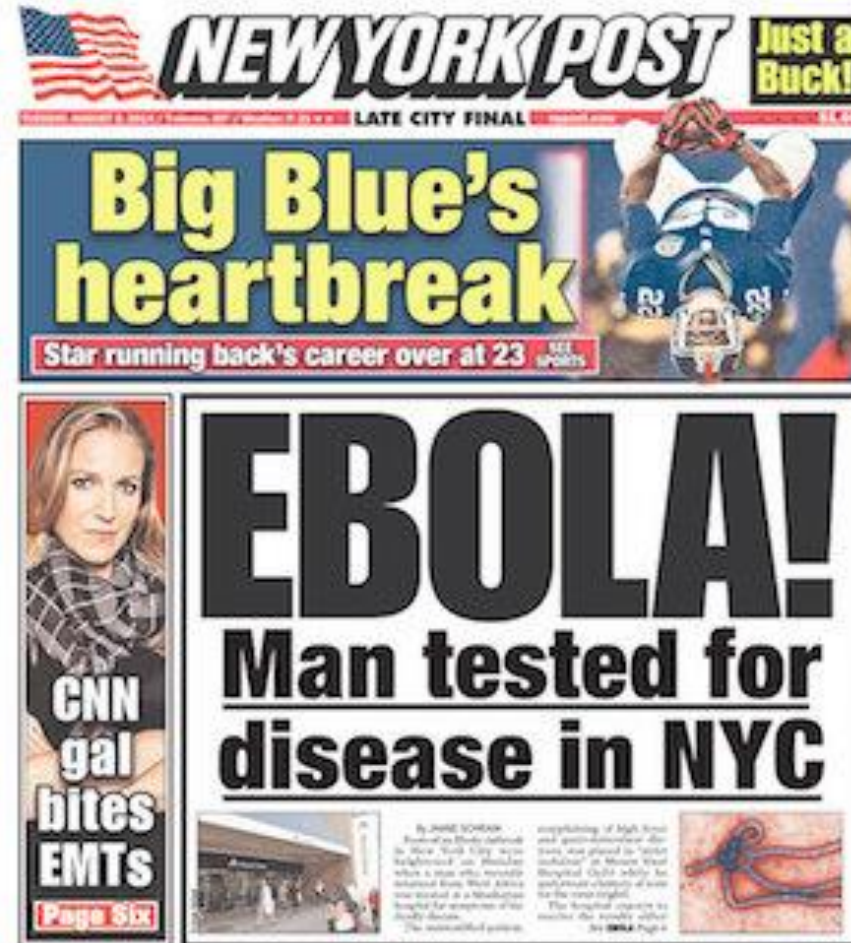


...Scare tactics can sometimes work



Lot # 1553

...But sometimes backfire



Example 2: Simplification

- The “single action” bias



HURRICANE PREPAREDNESS CHECKLIST

HURRICANE SURVIVAL MATERIALS

- Water (7 gallons per person)
- Nonperishable foods; canned meat, fish, fruit and vegetables
- Bread in moisture-proof packaging, cookies, candy, dried fruit
- Canned soups, juices, milk
- Powdered or evaporated milk
- Cereal bars, peanut butter
- Instant coffee and tea
- Pet Food, Pet Meds, Leashes, Carriers, etc.
- Flashlights and spare batteries*
- Weather Radio
- Battery-operated TV/radio/ alarm clock
- Portable cooler and ice
- Waterproof lighter & Butane lighter

COOKING EQUIPMENT

- Sterno Fuel
- Portable camp stove or grill, and an extra propane tank
- Charcoal, lighter fluid
- Manual can opener
- Paper plates and cups
- Plastic eating utensils
- Napkins and paper towels
- Aluminum foil
- Oven mitts

DOCUMENTS

- Photocopies of prescriptions
- Photo identification
- Proof of occupancy of Residence (utility bills)
- Medical history and information
- Water and fireproof container for document storage
- Backup disks of your home computer files
- Camera and film

BABIES

- Disposable diapers/wipes
- Formula, food and medication

MEDICAL EMERGENCY SUPPLIES

- First Aid Kit including pain meds, antibiotic cream, antacids
- Prescriptions (one month's supply)
- Mosquito Repellent
- Sunscreen
- Mosquito netting
- Fire extinguisher
- Cash
- Bleach or water purification tablets

PERSONAL SUPPLIES

- Toilet paper
- Entertainment: books, magazines, cards, etc.
- Soap and detergent
- Toiletries
- Bedding: pillows, blankets, sleeping bag
- Change of clothing
- Rain gear and work gloves
- Extra glasses or contact lenses
- Extra sets of keys
- Ice Chest

OTHER NECESSITIES

- Tools: hammer, wrenches, screwdrivers, nails, saw
- Lumber
- Rope
- Trash bags
- Cleaning supplies
- Plastic drop cloth
- Masking or duct tape
- Outdoor extension cords

Compliments of



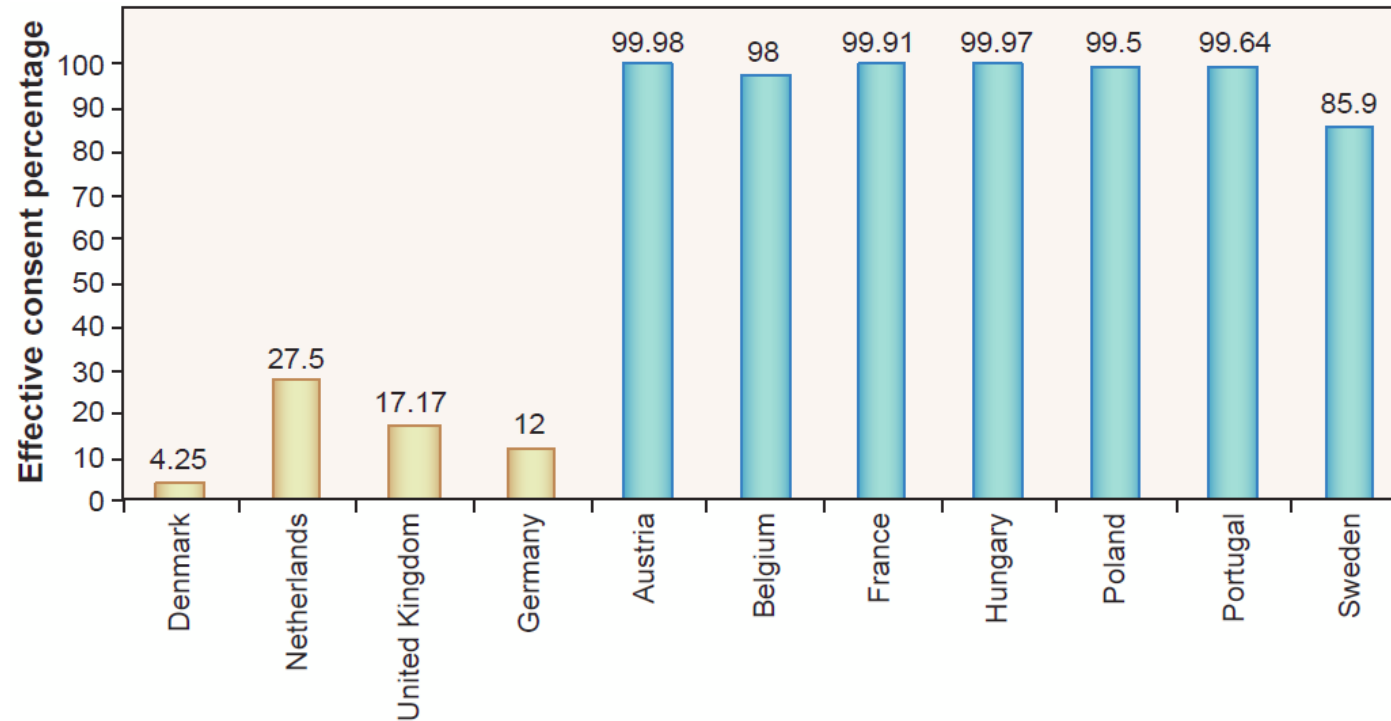
910.202.2546

www.thecameronteam.net

* If the electricity is off, use flashlights ONLY. Candles and oil lamps may cause a fire.
Fire crews WILL NOT respond during a hurricane!

Example 2: Inertia

A common decision heuristic: when in doubt, choose the default or status quo



Effective consent rates, by country. Explicit consent (opt-in, gold) and presumed consent (opt-out, blue).

Making Safety the Default

- Provide residents with “free” annual preparedness kits paid for with local taxes that they can opt-out of for a refund
- Make flood insurance opt-out rather than opt-in in high-risk areas (e.g., part of property taxes for which you can request a refund)
- Health club model: design long-term insurance policies where renewal is automatic and committed to ex-ante; des)

Behavioral Risk Audit: Flood Preparedness

Bias	Manifestation	Consequence	Remedy
Optimism	Belief that probability of a flood is remote	Tendency to see flood insurance as too expensive	Hope-specific assessment of risk and annualized expected losses
Myopia	Tendency to see better immediate uses for premium money	Procrastination of purchasing policies	Time-sensitive promotions on policies; e.g., early-purchase discounts
Amnesia	Poor memory for past floods	Failure to renew flood policy	Long-term policies where renewal is automatic
Herding	Tendency to base insurance decision on whether neighbors have policies	Imitation of community reluctance to adopt policies	Communication programs that emphasize social norms of safety

Conclusions

- All signs suggest that we are in for some rough sledding ahead, hence preparedness and resilience are no longer back-burner issues.
- Meeting this challenge will require a fundamental change in the mindset of how we think about strategies for risk management. Good engineering and information is not enough; we need to develop strategies that take into account the psychology of how people utilize and process these inputs



THE
Ostrich
Paradox

**WHY WE UNDERPREPARE
FOR DISASTERS**

Robert Meyer and Howard Kunreuther



Thank you!