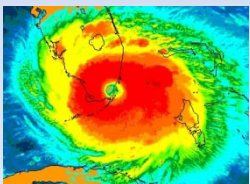


# Communicating Risk & The Probabilistic Paradox

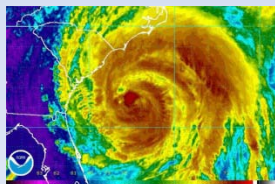
66<sup>th</sup> Interdepartmental Hurricane Conference  
March 5, 2012

**Bryan Norcross**

Hurricane Specialist & Director of Weather Presentation  
The Weather Channel - Atlanta, GA



ANDREW

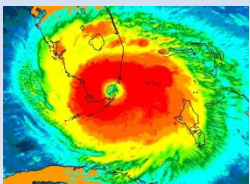


IRENE

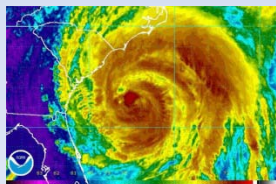
The  
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# Rule of Communicating Risk

If the RISK is **unusually** HIGH, the  
MESSAGE must be **unusual**.



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# Hurricane Andrew

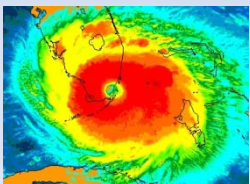


Wednesday, August 19, 1992

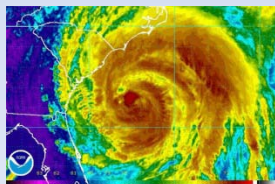
5 days out:

“IF Andrew stays together, we’ll have to watch it.”

(It will be an **unusual** threat.)



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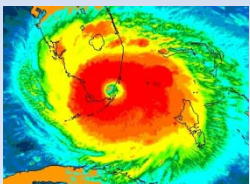
# Hurricane Andrew



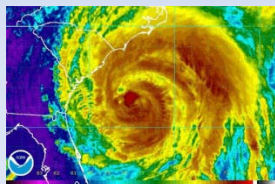
Wednesday, August 19, 1992

**5 days out:**

**Highlighting the potential threat in the weekend forecast.**



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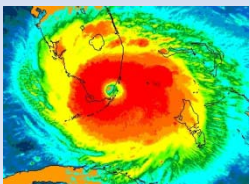
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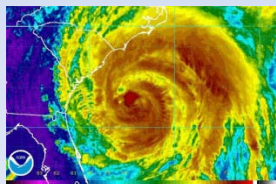
# Andrew Becomes **Unusual** Risk

Friday, August 21, 1992

1. The atmospheric pattern and computer models (such as they were) indicated a high likelihood the storm would affect **highly populated** areas
2. No Hurricane in **27 years** with dramatic construction during the intervening years
3. Preparation would be required over a **weekend**



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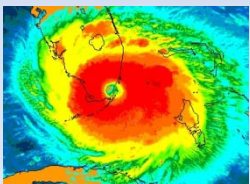
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# Andrew Becomes Unusual Risk

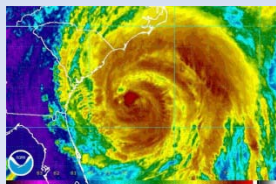
Friday, August 21, 1992

## 62 Hours Before Landfall:

Decision to change programming on WTVJ to indicate an **unusual** risk to South Florida.



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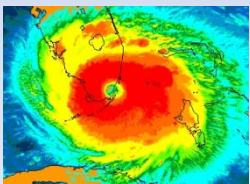
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# Irene Becomes Unusual Risk

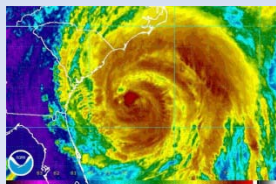
Monday, August 22, 1992

## 150 Hours Before Landfall:

Decision to make recognize an **unusually** high threat to the northeastern U.S.



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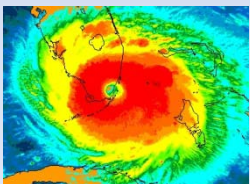


IRENE

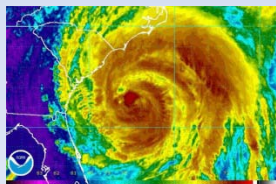
# Irene – High Risk Factors

Monday, August 22, 2011

1. GFS and ECMWF forecast on the **1821 track** – a well documented storm
2. **Unusual** coastal track appeared credible
3. The pattern indicated that an effect on the **most densely populated** land areas was likely
4. Had been **decades** since a significant northeast U.S. hurricane hit



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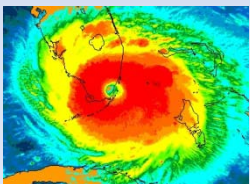


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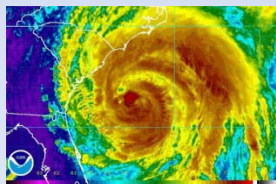


# Risk Communication

Do we have sufficient **UNUSUAL** communication levers to pull which explicitly and implicitly signal and **UNUSUAL** threat?



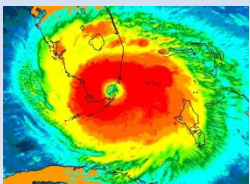
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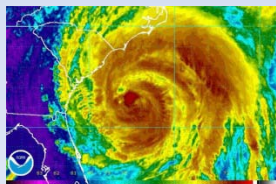
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# The Probabilistic Paradox

**Daily Weather Forecast**  
**VS.**  
**Extreme Event Forecast**



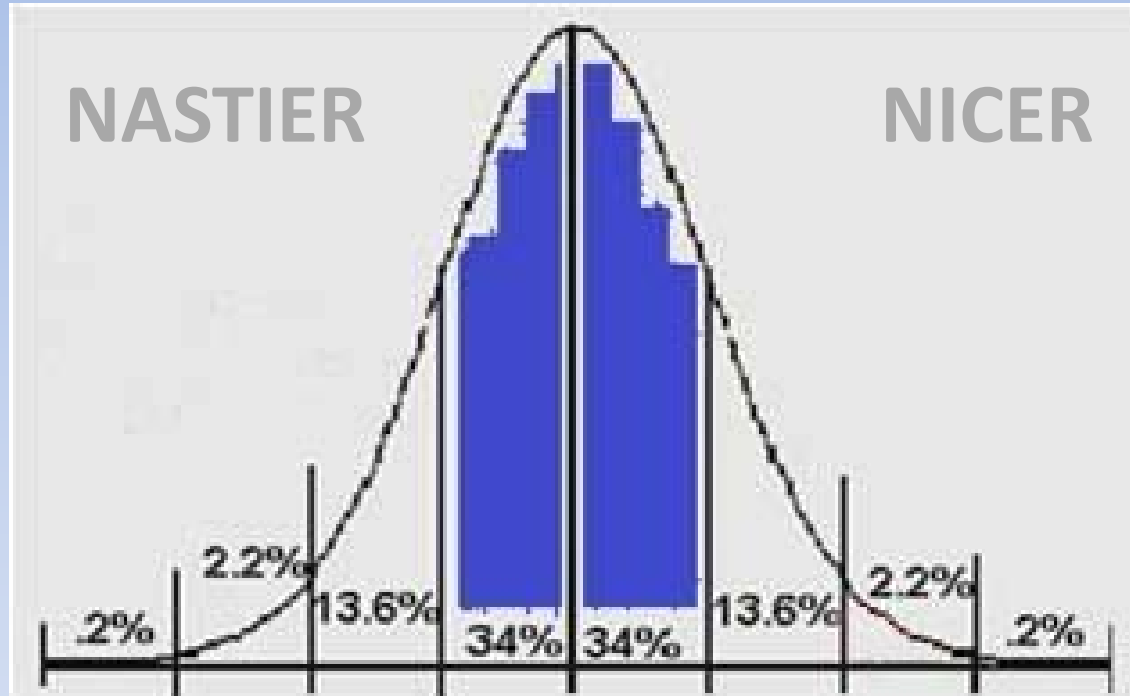
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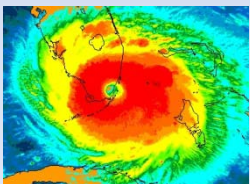
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# Daily Weather Forecast

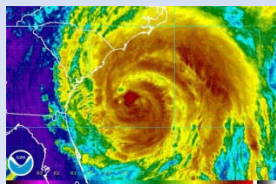
Forecast: **50° & 70% POP**



**+ or - 3°  
& 30% POP**



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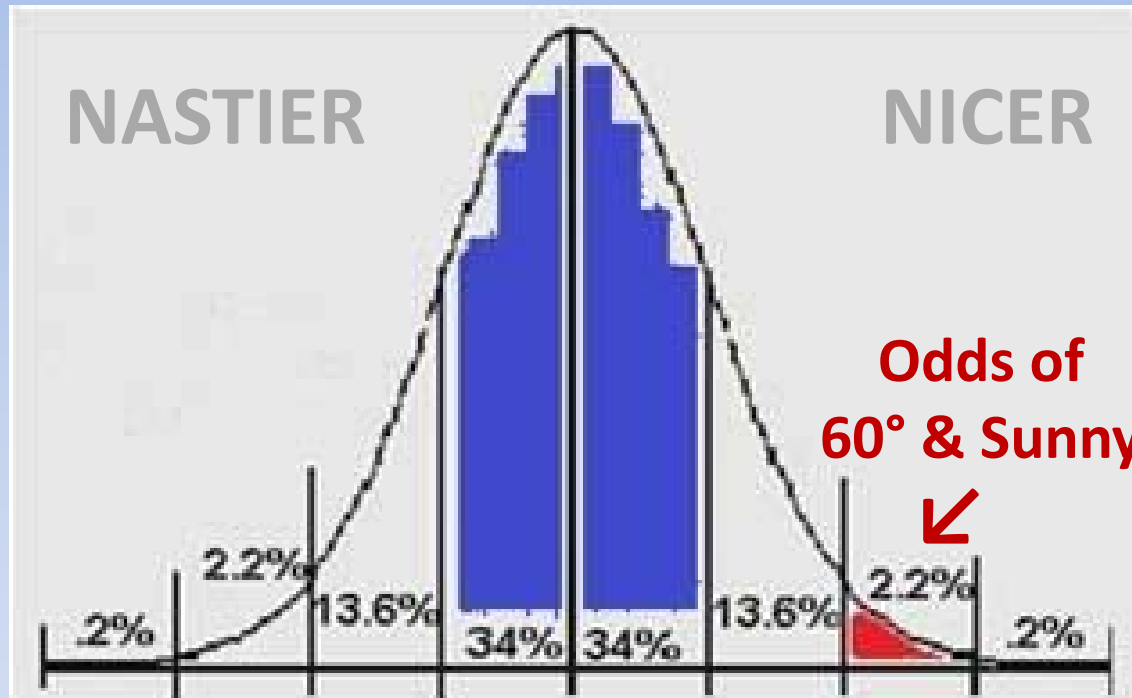


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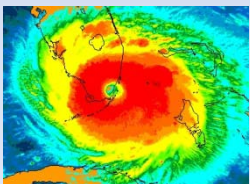


# Daily Weather Forecast

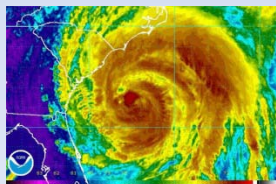
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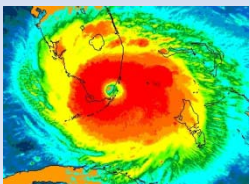
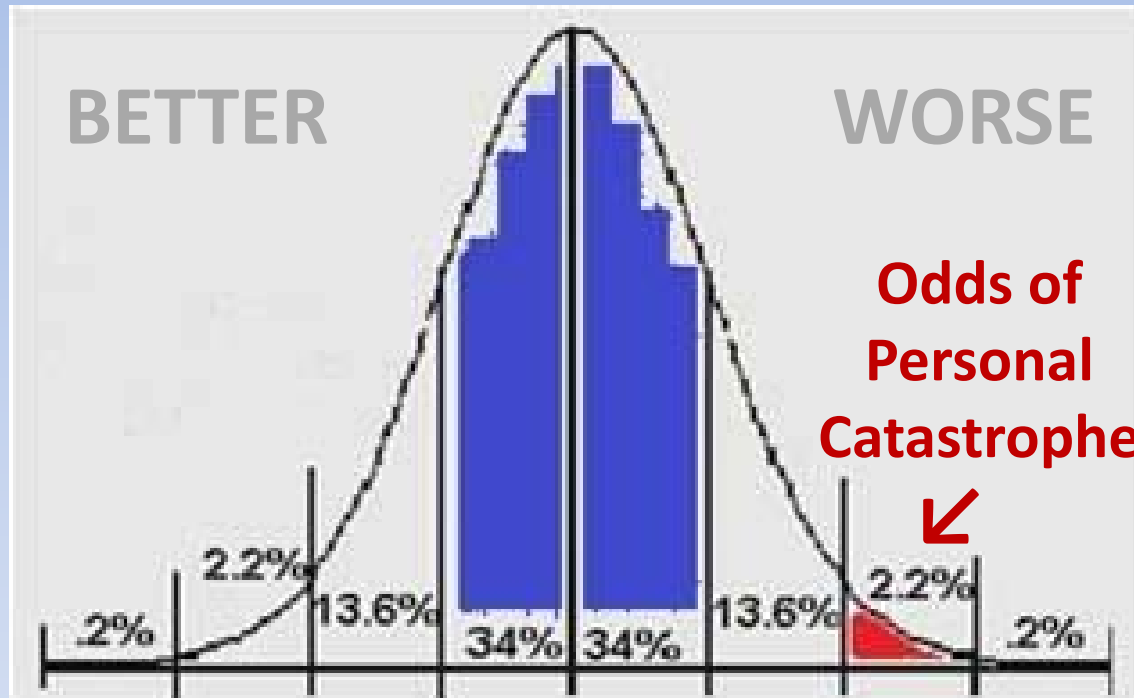
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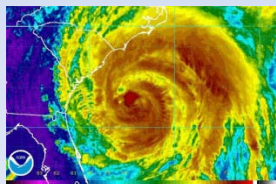
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# Extreme Event Forecast

## Odds of Effect on Your Family



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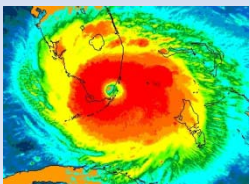
# Daily Weather Forecast

Intrinsically probabilistic communications adequate to get the proper understanding and response.

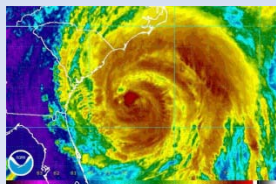
# Extreme Event Forecast

Probabilistic communications does NOT provide members of the public sufficient knowledge to make go/no-go decision to take action.

**Who makes the deterministic call?**



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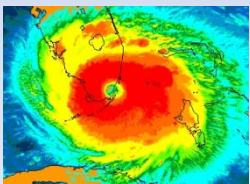
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# Thank you.

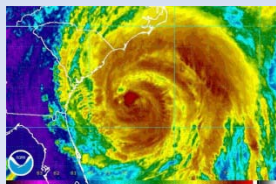
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