# Emotion and Global Consciousness

**A study of basic emotions evoked or embodied
In major events correlated with GCP/EGG data**

**Prepared for a presentation to the
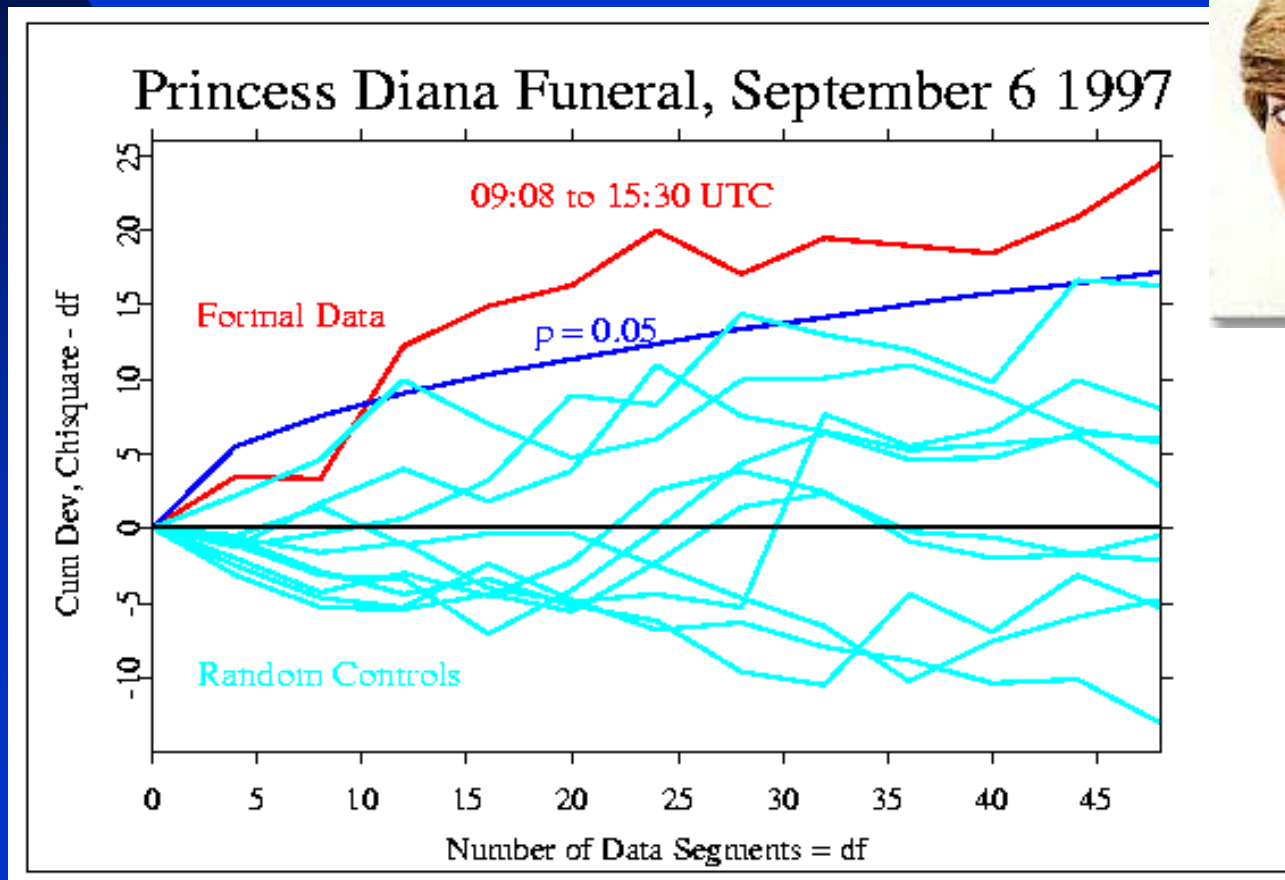Bial Symposium on Emotions**

Roger Nelson

**Global Consciousness Project
http://noosphere.princeton.edu**

A prototype global event, November 1995
Assassination of Yitzhak Rabin
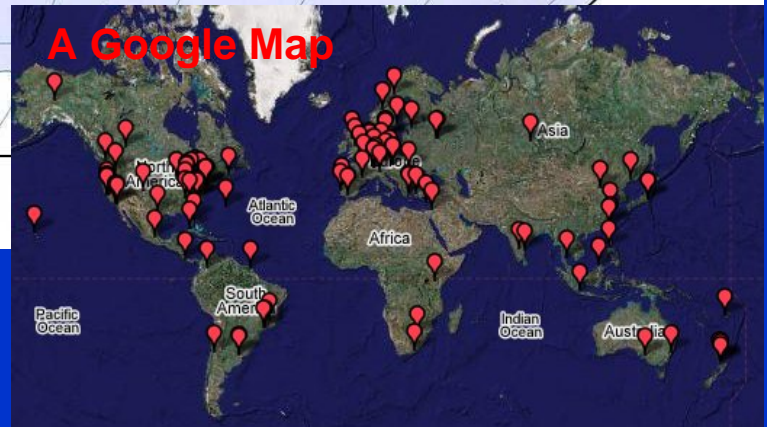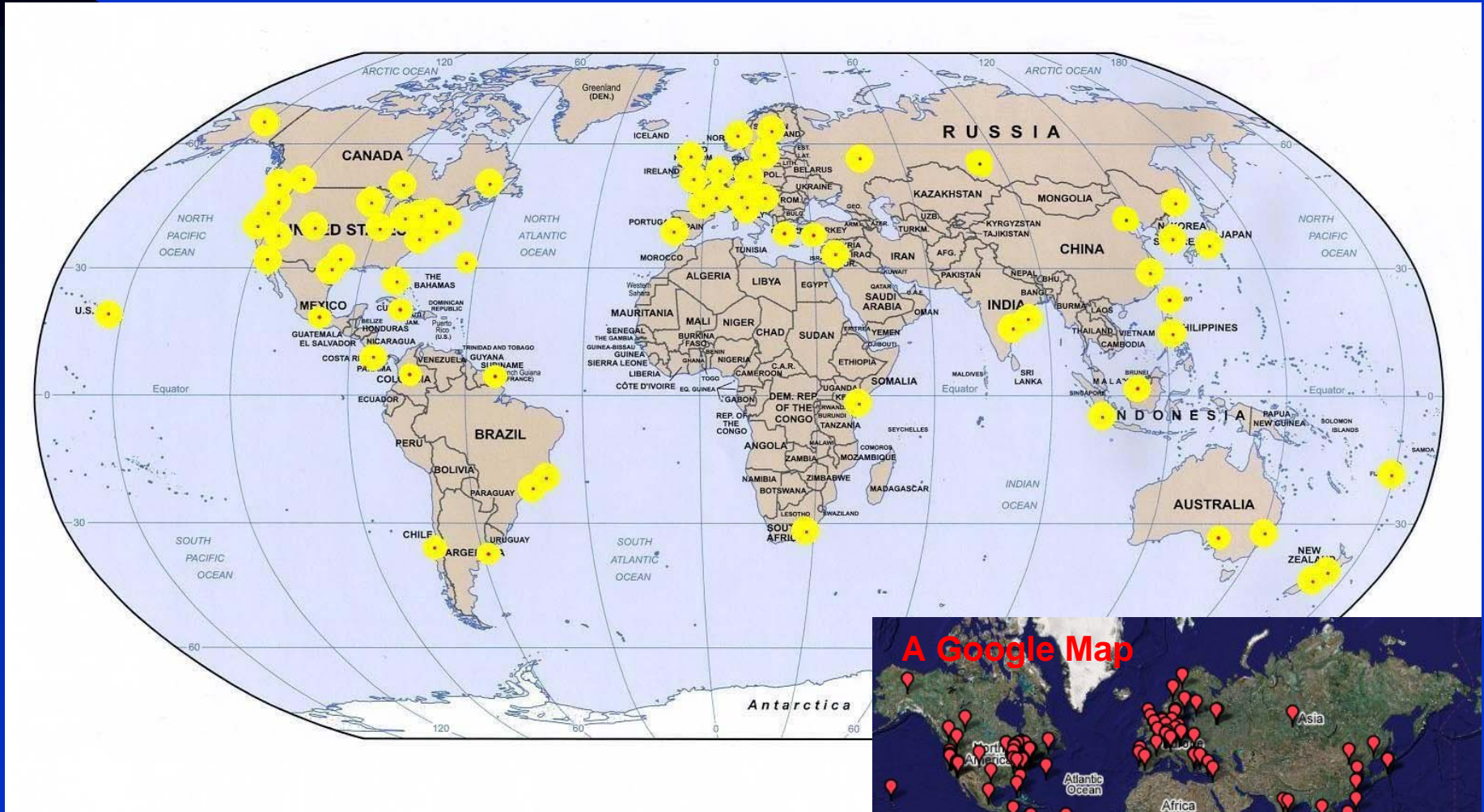## Surprise, Fear, Sadness

Prototype Global Event: Rabin Assassination, 1995
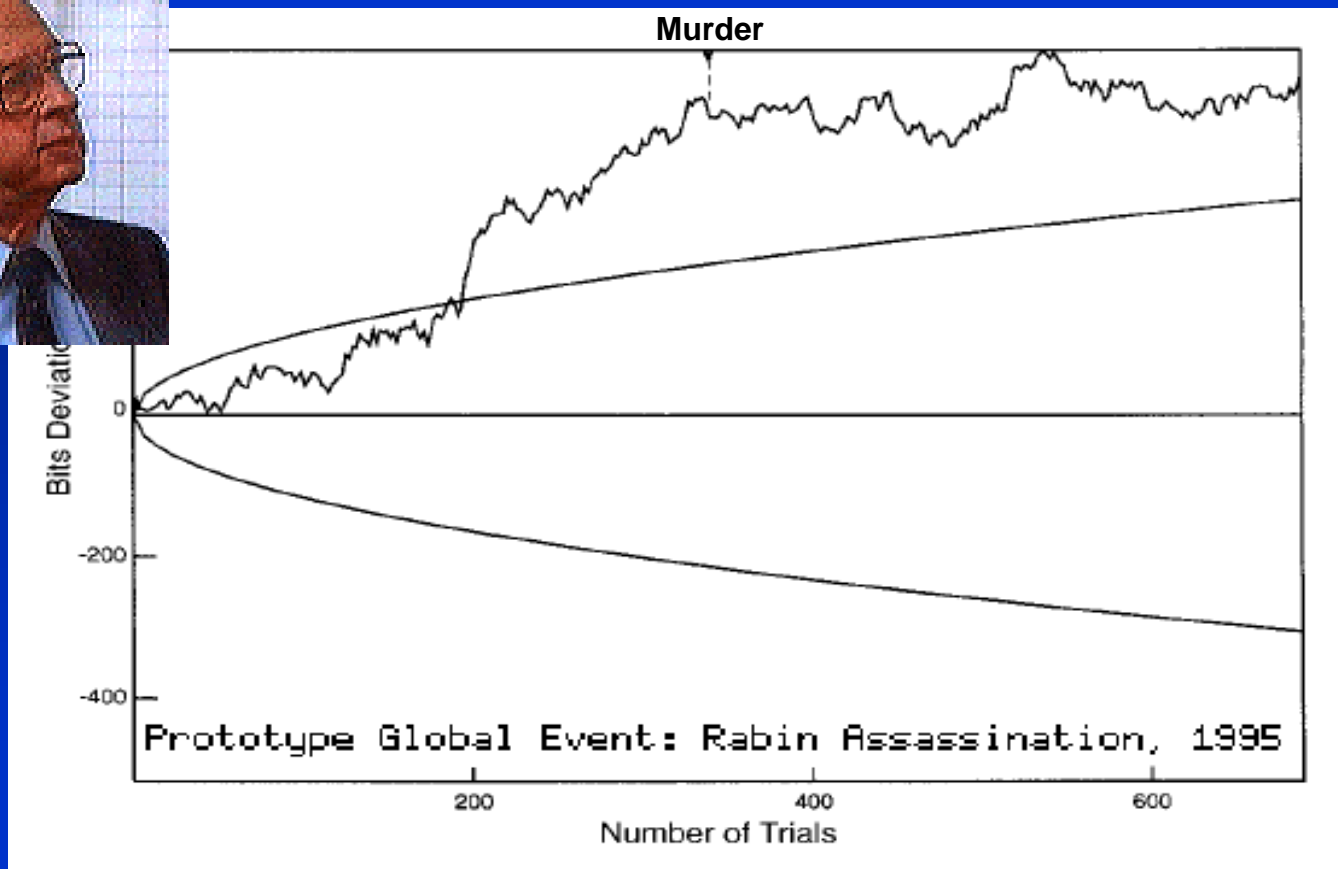
Princess Diana's Funeral
Sadness, Compassion, Love
Multi-REG data, 12 independent data streams

Expectation is level trend

Princess Diana Funeral, September 6 1997

09:08 to 15:30 UTC

Formal Data

p = 0.05

Random Controls

Cum Dev, Chisquare - df

Number of Data Segments = df

A World Spanning Network of About 60 Eggs

A Google Map

http://noosphere.princeton.edu/egghosts/

The World Trade Center
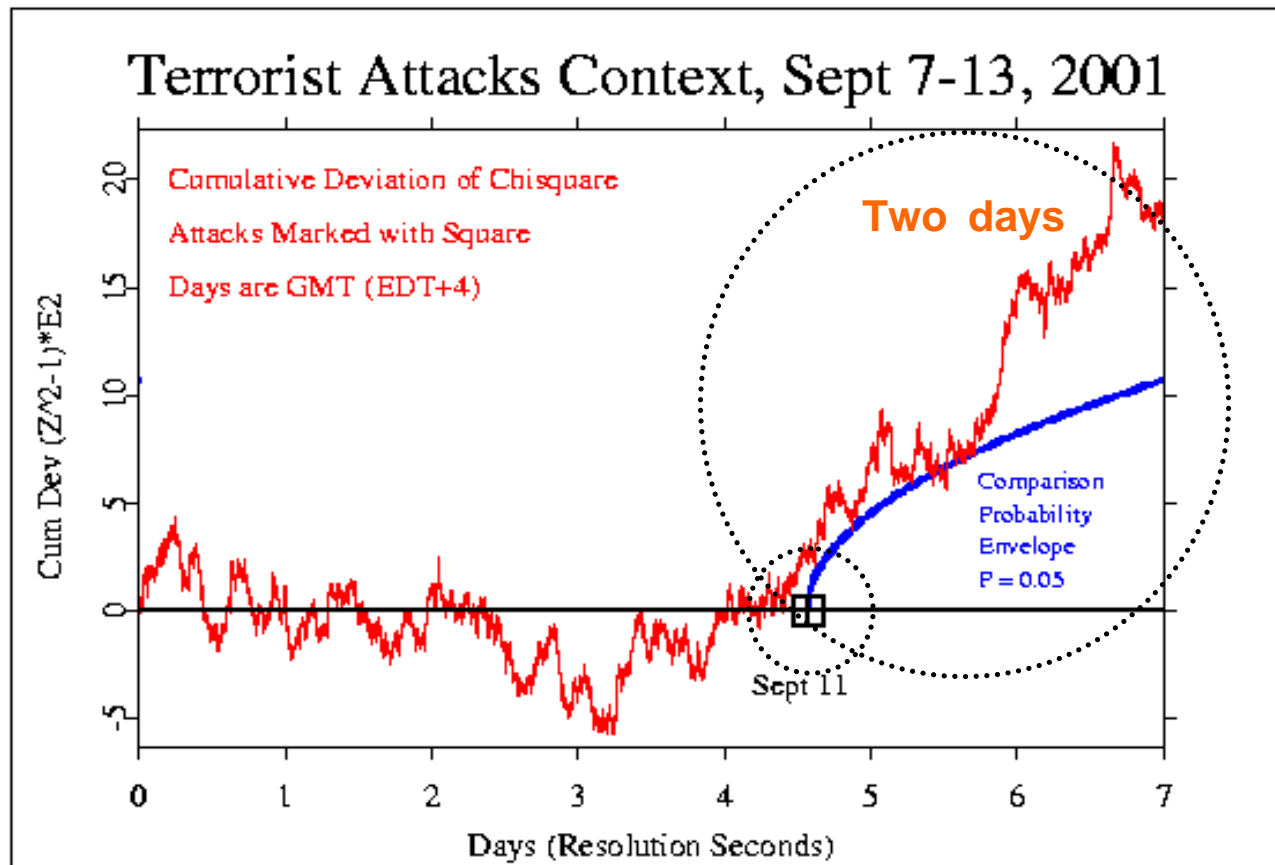
September 11 2001

The GCP network Then had 37 REGs Around the world

Tamara Beckwith

September 11 2001
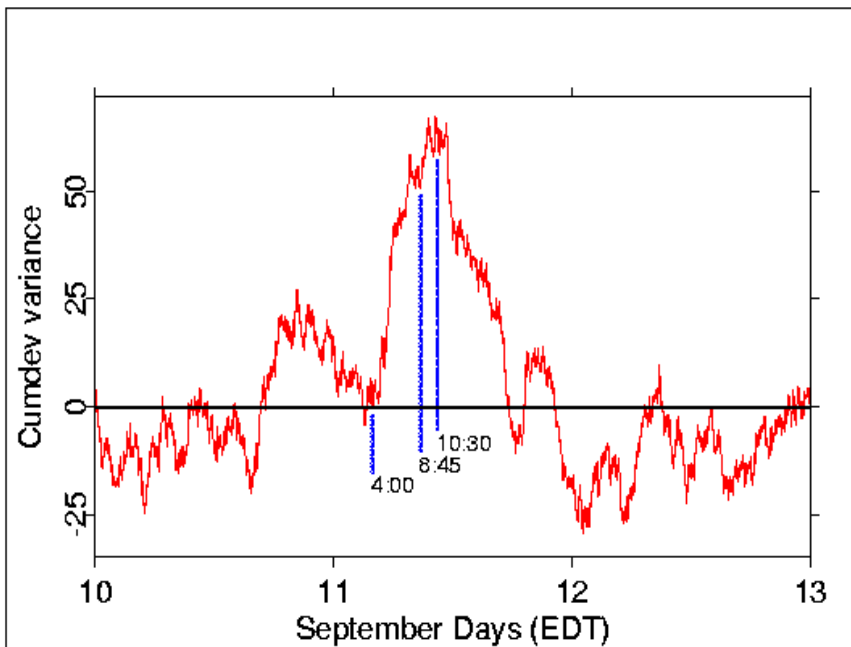# Destruction of the World Trade Towers
A 50-hour trend followed the attacks

Other Views of September 11 2001

These are pictures of the variability among the eggs
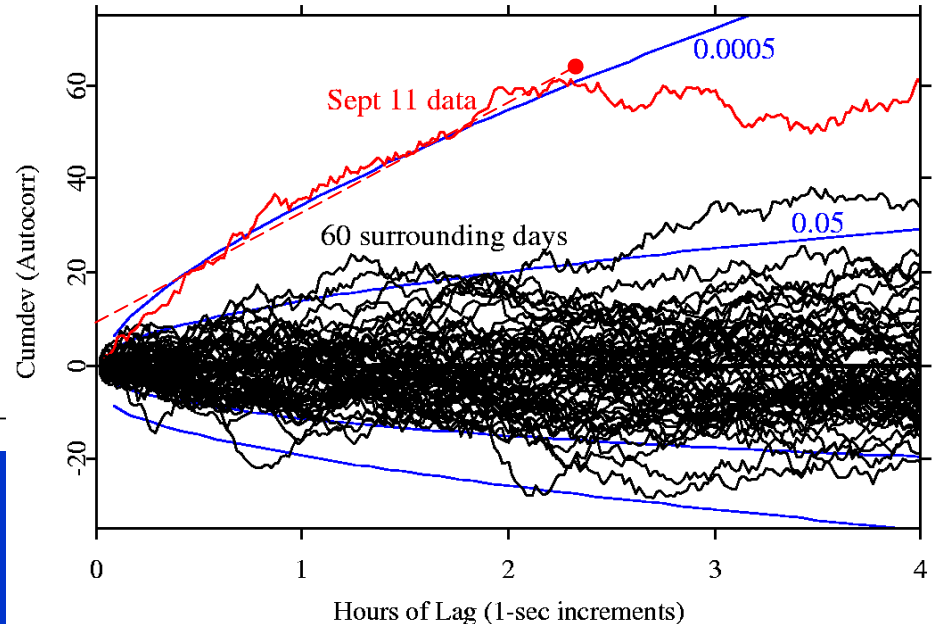## They should look like a "random walk" on 9/11, but …

Variance began changing at 04:00

**9/11 was unique
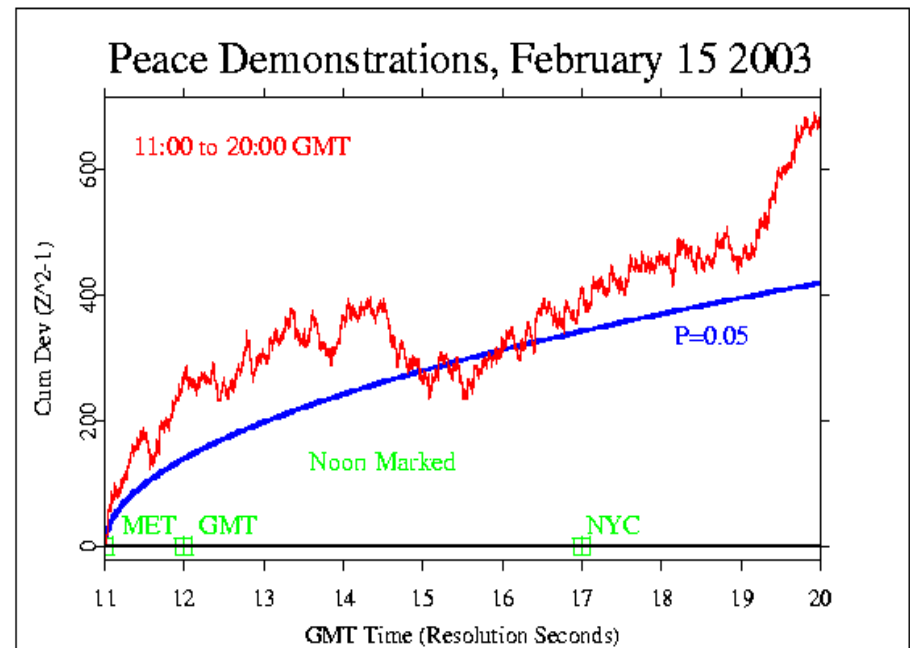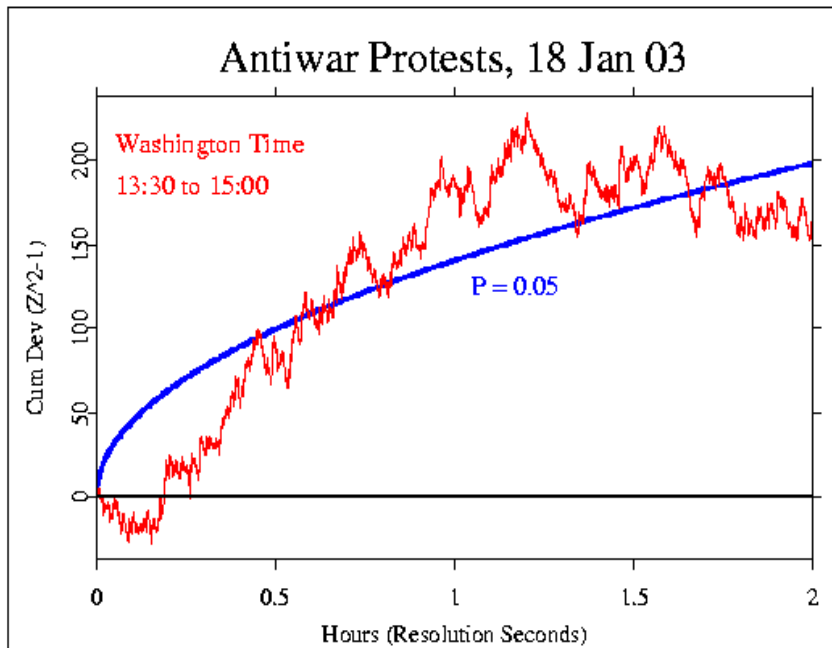in 3 years of data**

*The autocorrelation says
this event was extraordinary*

Autocorrelation, Inter-Egg Variance

Consciousness Fields?

Compassion may be a primary source

Antiwar Protests, 18 Jan 03

Washington Time
13:30 to 15:00

P = 0.05

Cum Dev (Z^2-1)

Hours (Resolution Seconds)

Peace Demonstrations, February 15 2003

11:00 to 20:00 GMT

P=0.05

Noon Marked

MET GMT   NYC

Cum Dev (Z^2-1)

GMT Time (Resolution Seconds)

Positive intent and compassion
An organizing field of consciousness?

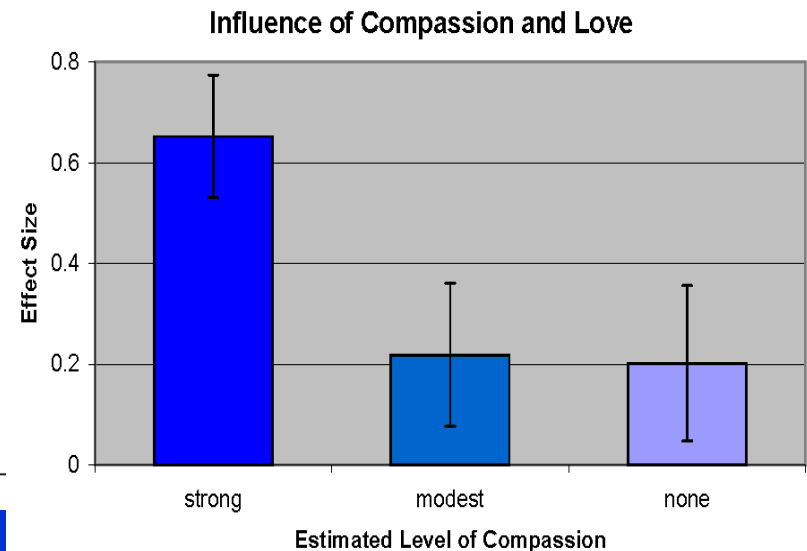## Organizing Global Peace and Harmony

Formal Data $p = 0.0035$

$p = 0.01$

$p = 0.05$

Control Data

Cum Dev, Chisquare - df

Number of Events
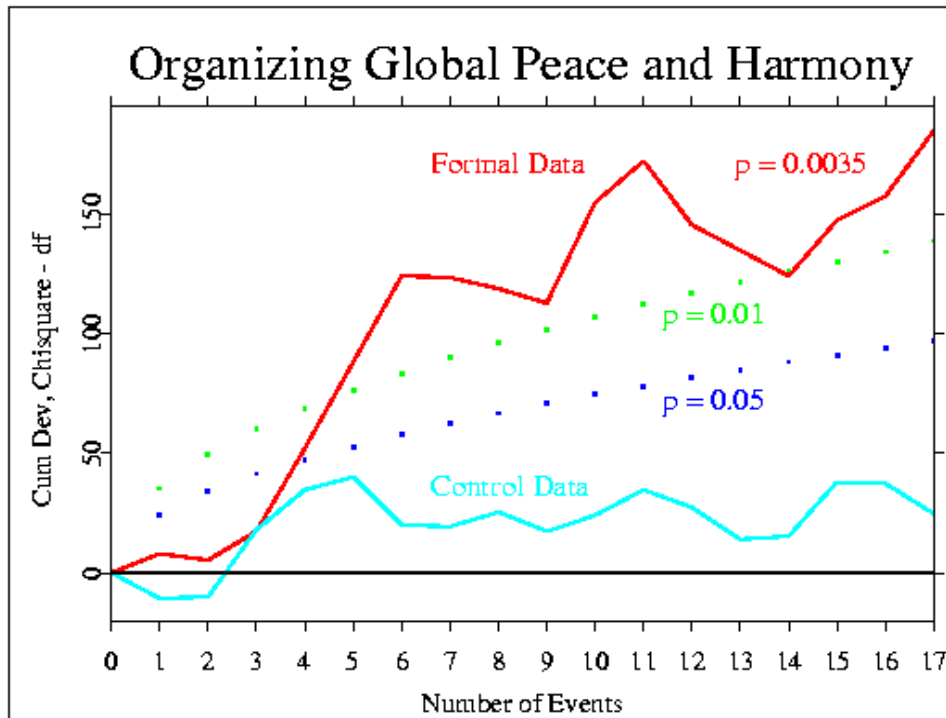
2004 analysis based on Jaan Suurkula hypothesis

Influence of Compassion and Love

Effect Size

strong   modest   none

Estimated Level of Compassion

**Compassion seems inherent
in efforts to build or restore
the social fabric**

Meditations, Prayer Vigils, Ceremonies

**Compassion implies Interaction,
Interdependence, Respect, Love**

**It is a necessary and possibly sufficient
Substrate for shared consciousness**
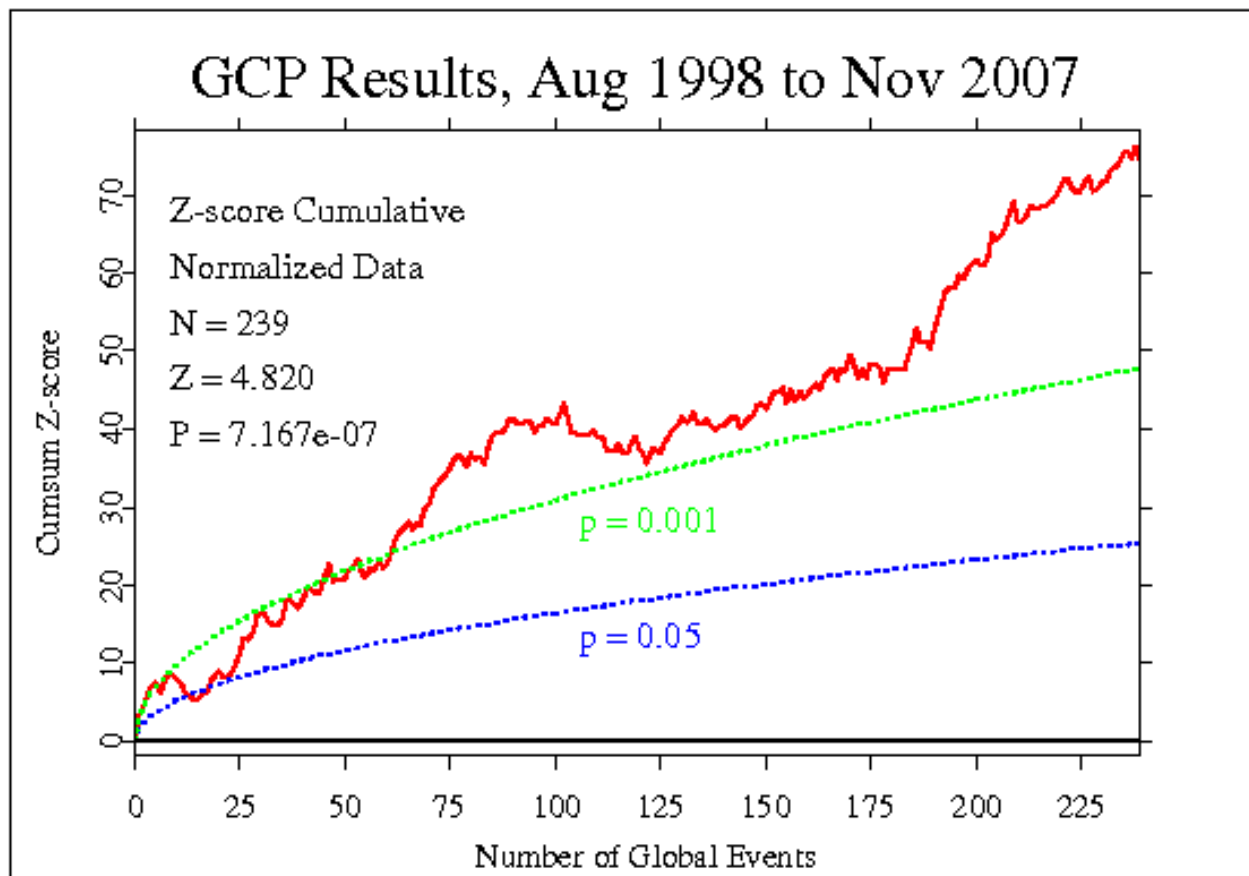
Querying the GCP Results

First, we look at overall findings
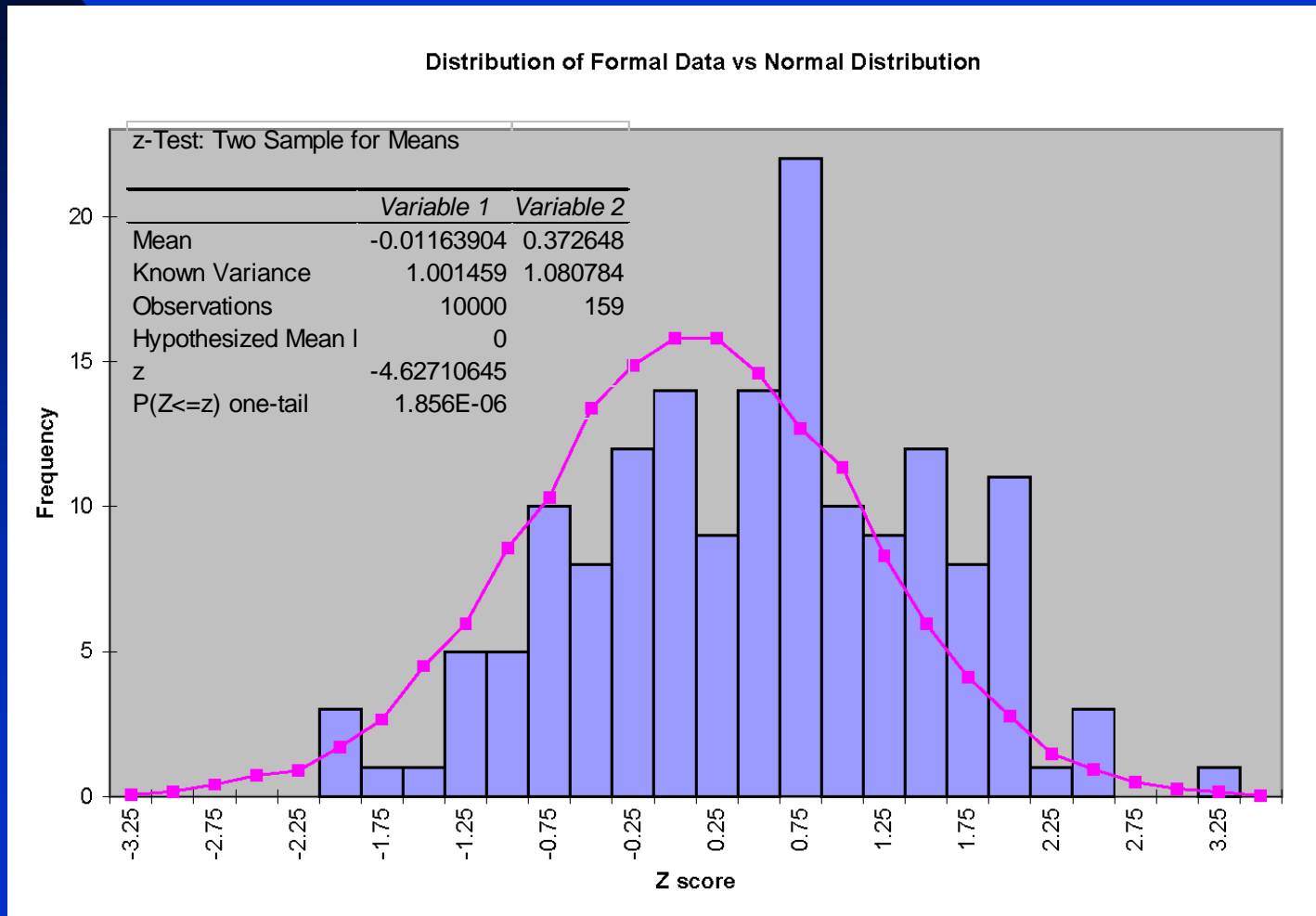
Second, general categorizations

Specific questions about emotions

Overarching implications and conclusions

Current result: formal database, 9 years
239 rigorously defined global events
# Odds: Million to 1 against chance

GCP Results, Aug 1998 to Nov 2007

Z-score Cumulative
Normalized Data
N = 239
Z = 4.820
P = 7.167e-07

p = 0.001

p = 0.05

Cumsum Z-score

Number of Global Events

Distribution of Event Z-scores:
Roughly normal, shifted by __0.37__ std dev
(Small effect implies potential small sample issues)

Distribution of Formal Data vs Normal Distribution

z-Test: Two Sample for Means

|	Variable 1	Variable 2
Mean	-0.01163904	0.372648
Known Variance	1.001459	1.080784
Observations	10000	159
Hypothesized Mean I	0	
z	-4.62710645	
P(Z<=z) one-tail	1.856E-06	

Frequency

Z score

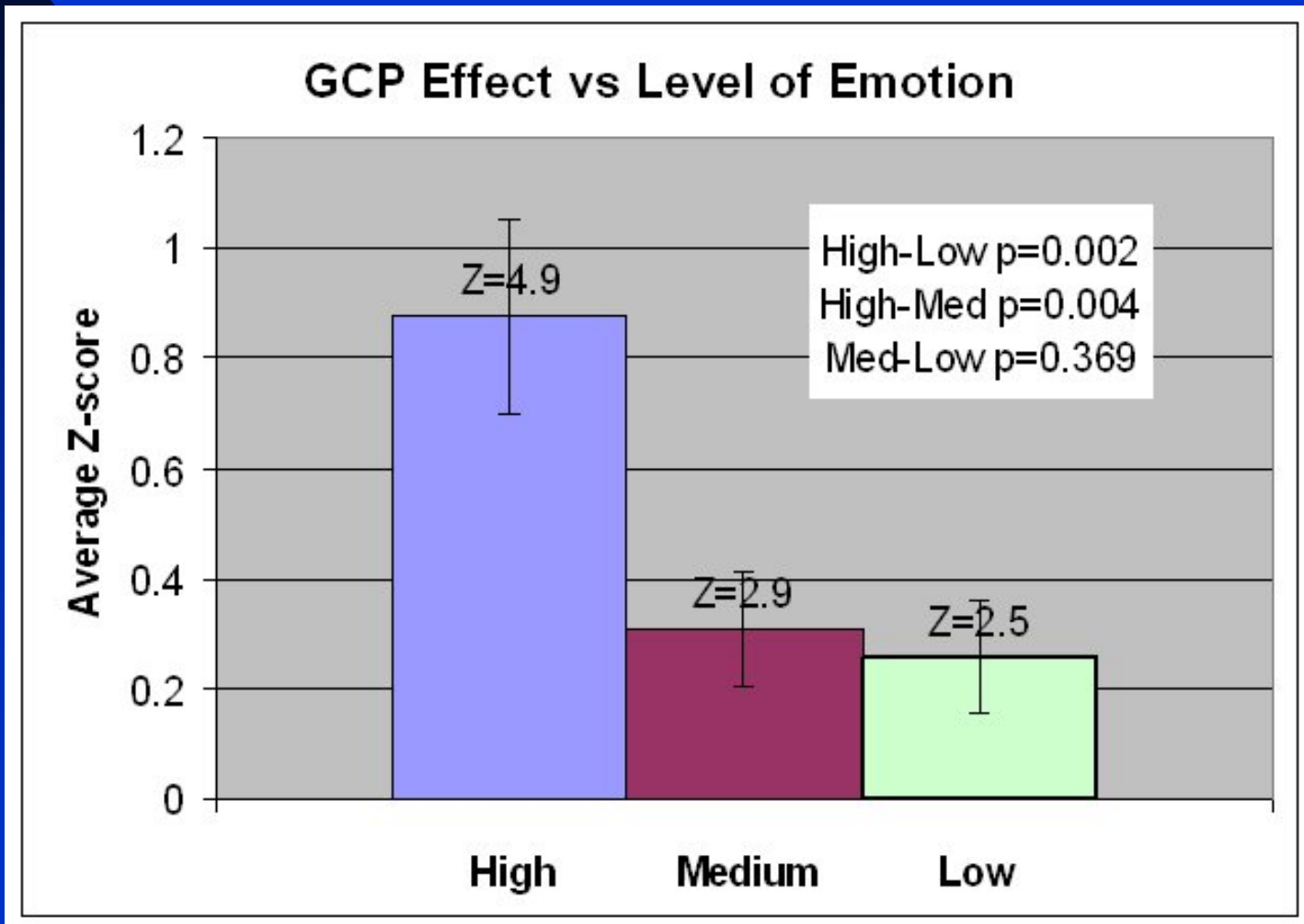**Effects by GCP event categories
2007 update generally similar to 2004
(More categories are significant – N is greater)**
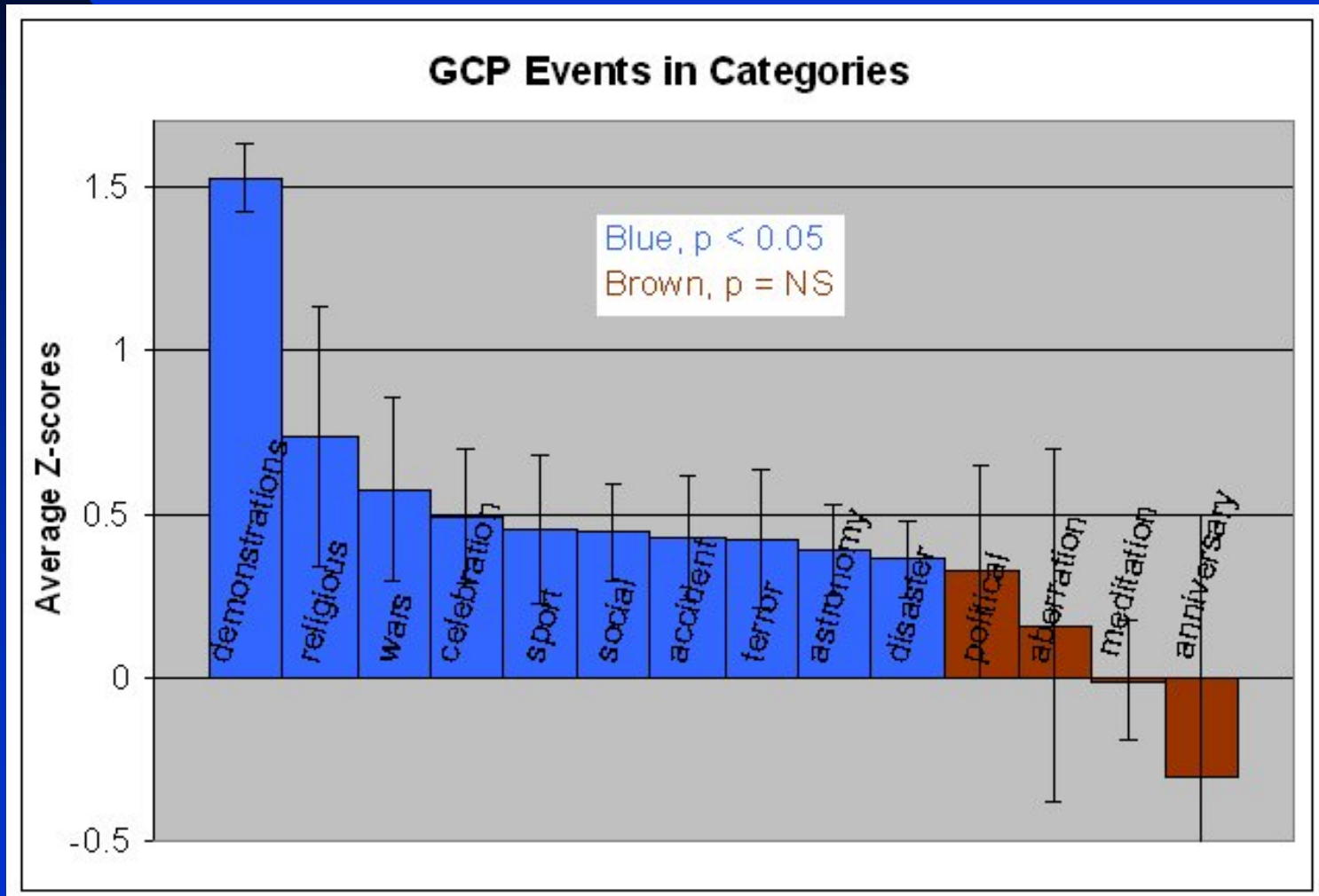
William James' Four Basic Emotions Derived from "Bodily Involvement"

GCP Effect Size vs Basic Emotions

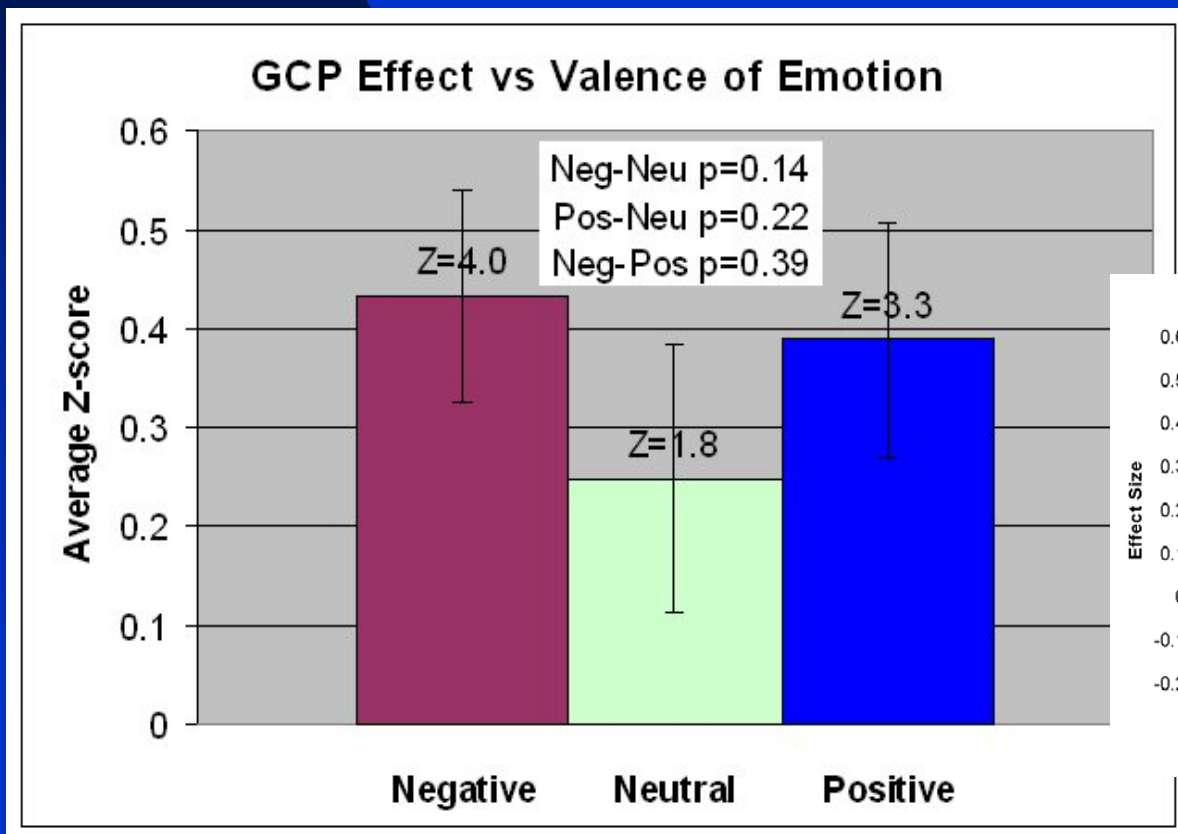Fear = 4.54 Sigma
Love = 3.66 Sigma
Others nonsignificant
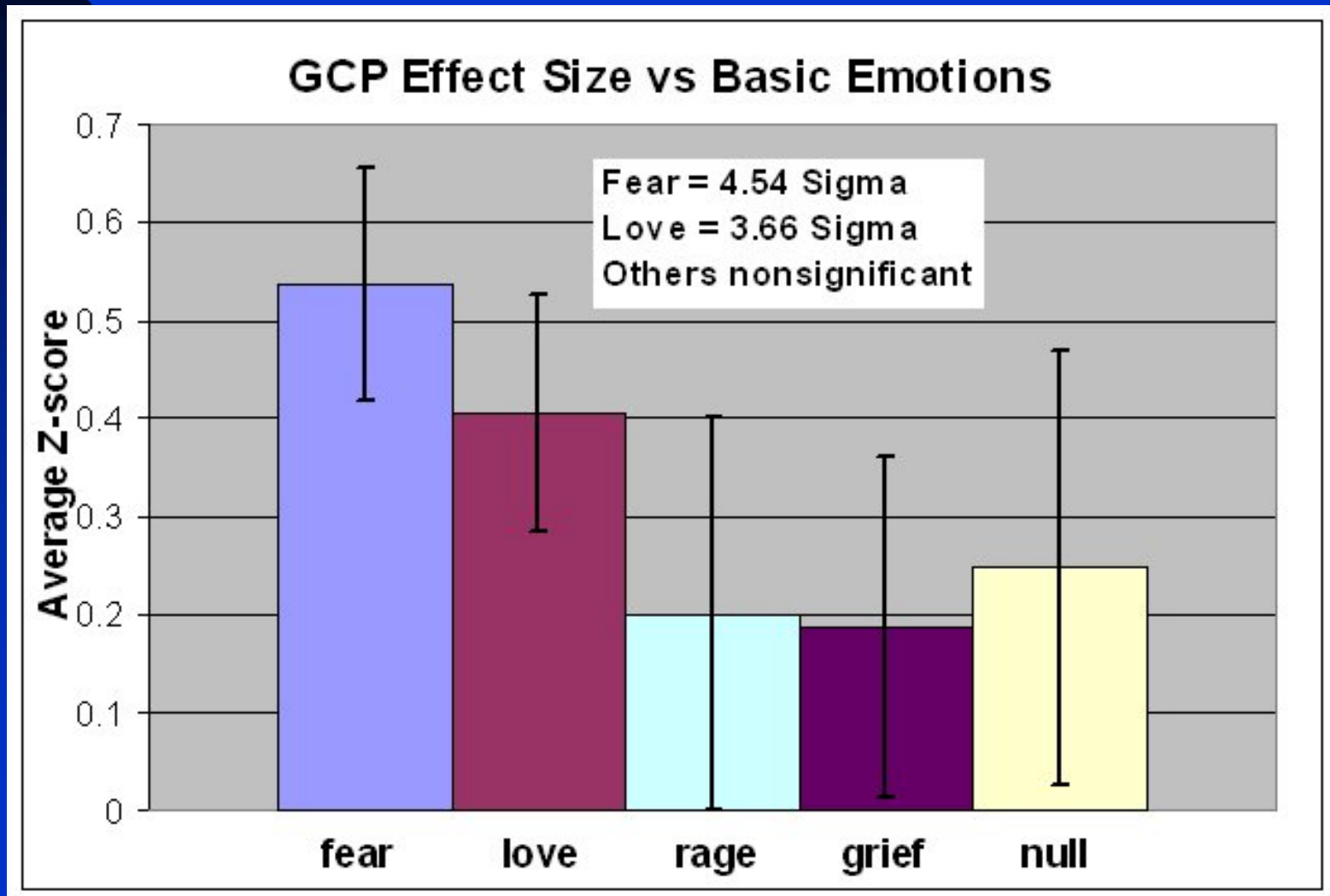
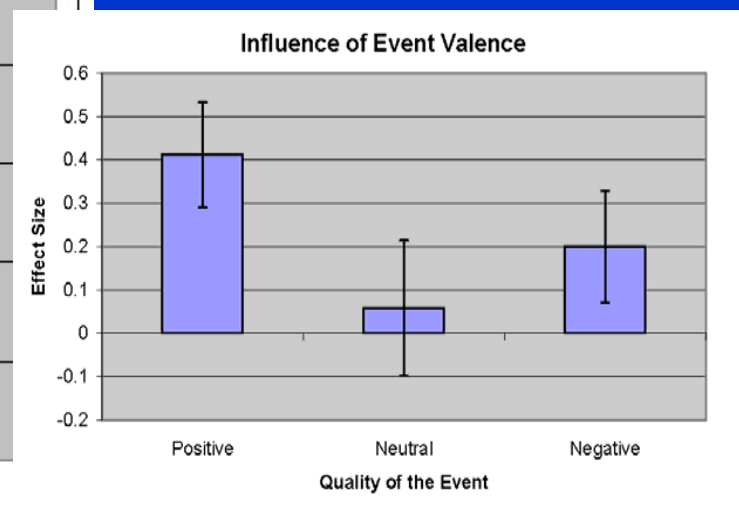# Level of emotion relatively easy To assign -- highly significant factor

VALENCE: Both positive and negative events Have larger effects than neutral events (But differences are not significant)
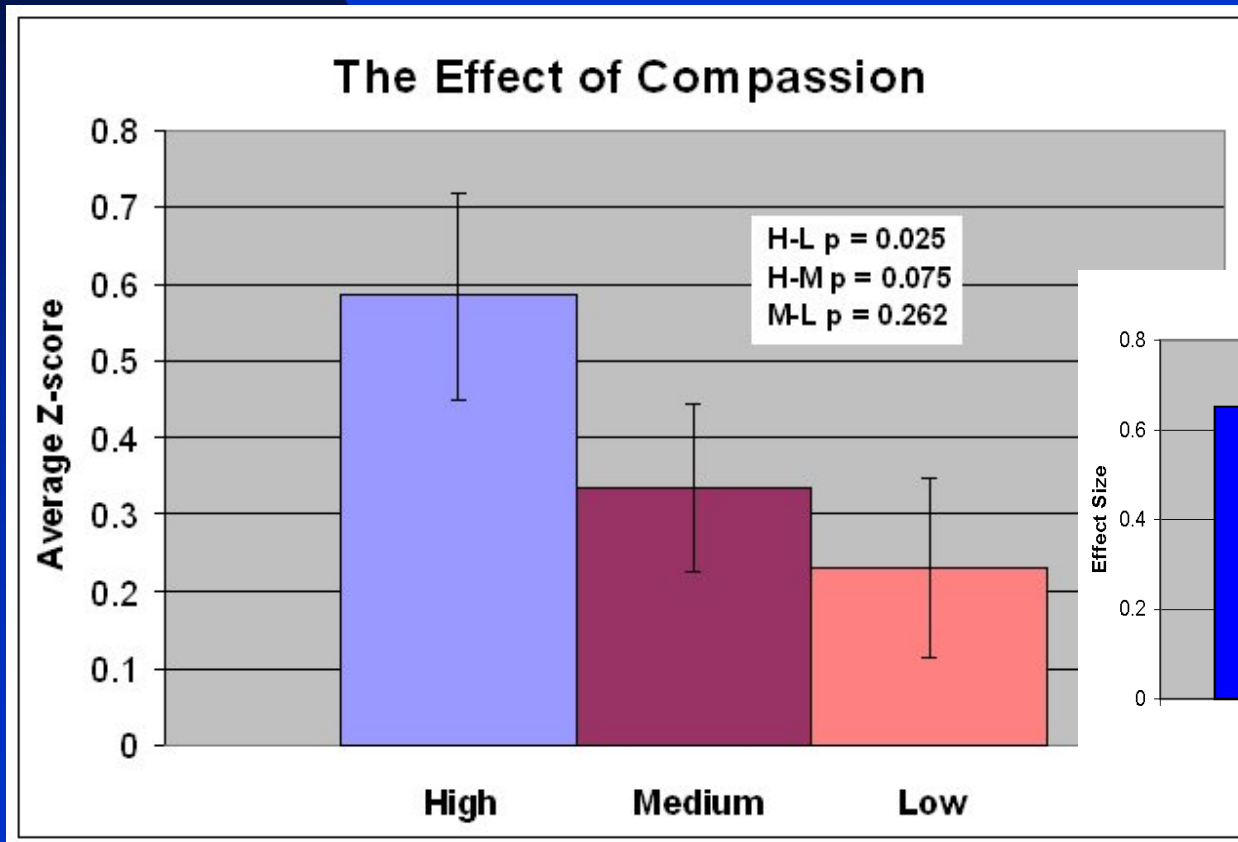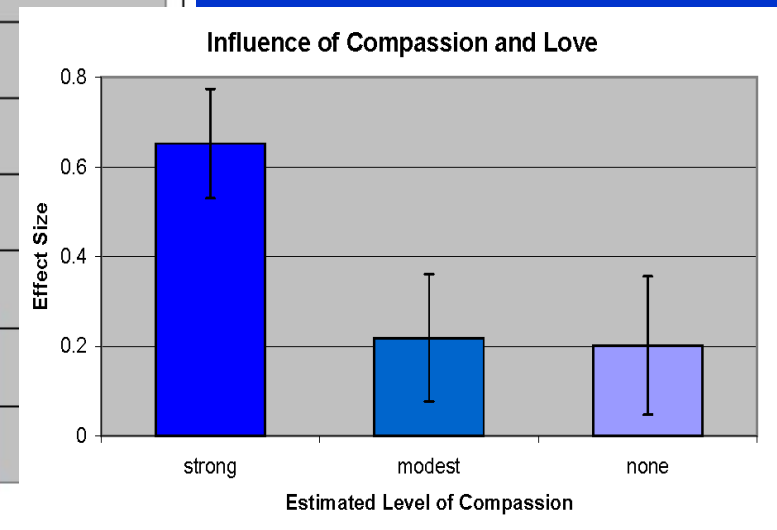
2007

2004

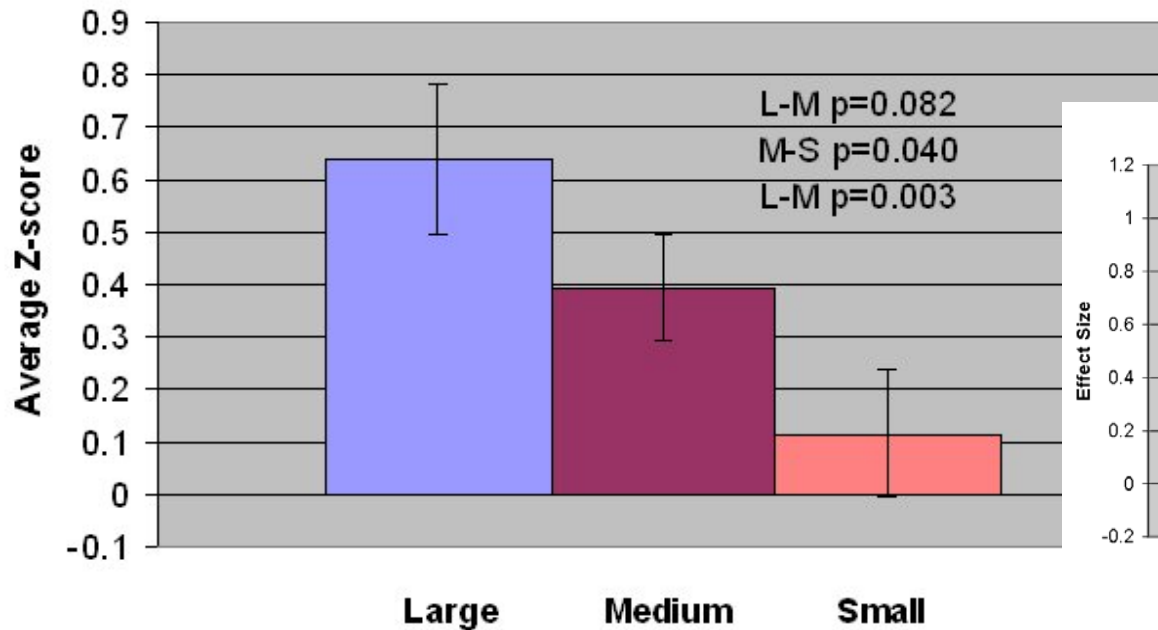COMPASSION: Events that evoke or Comprise compassion or love Have larger effects

(*Hypothesis proposed by Jaan Suurkula*)

NUMBER of people paying attention has a substantial effect on the network
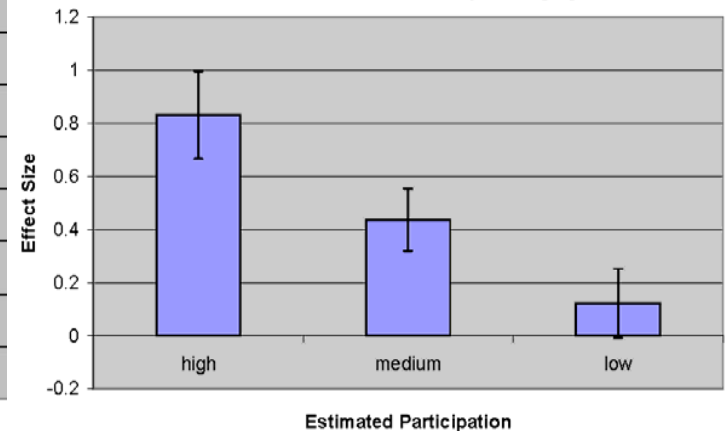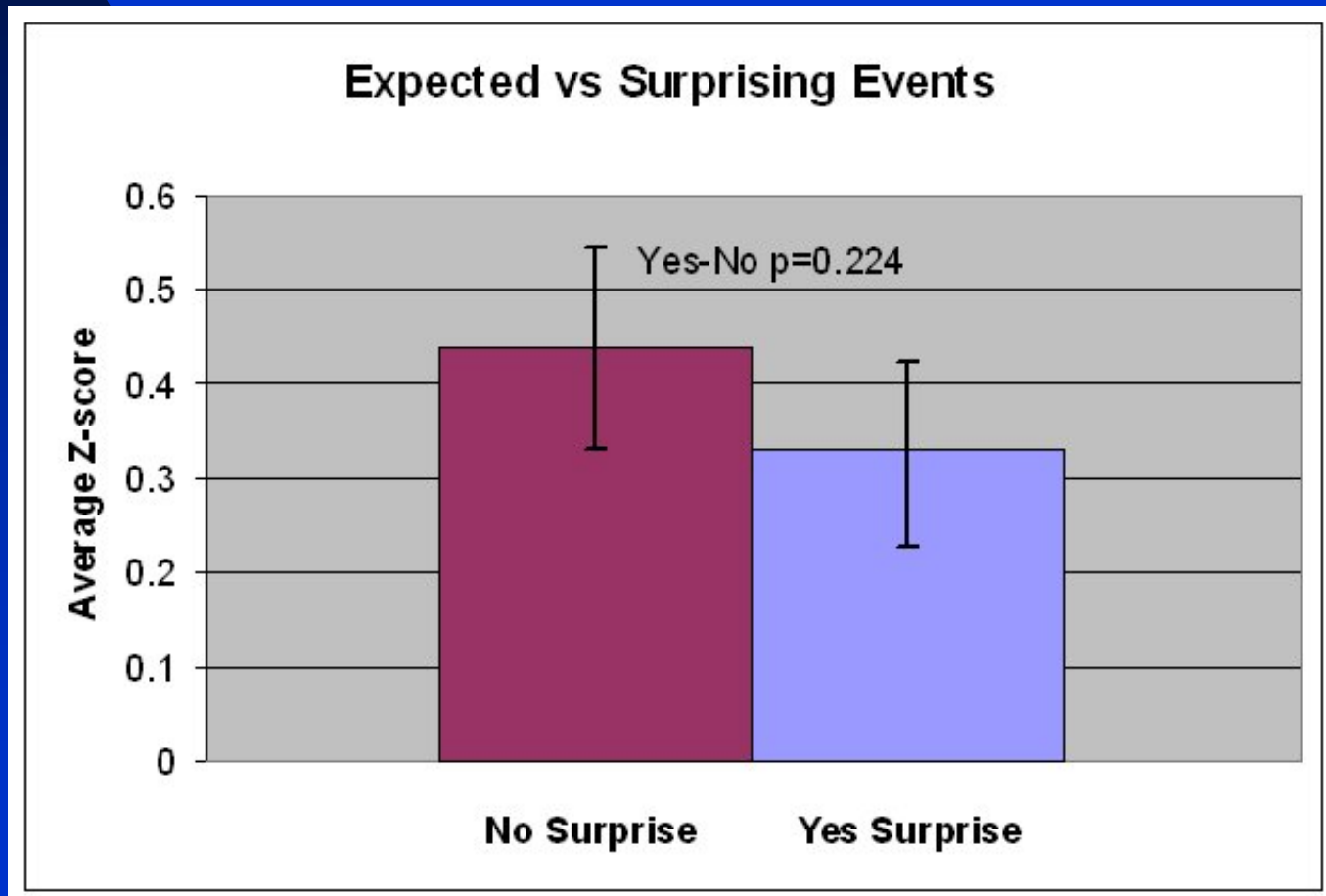# Significant but may be confounded
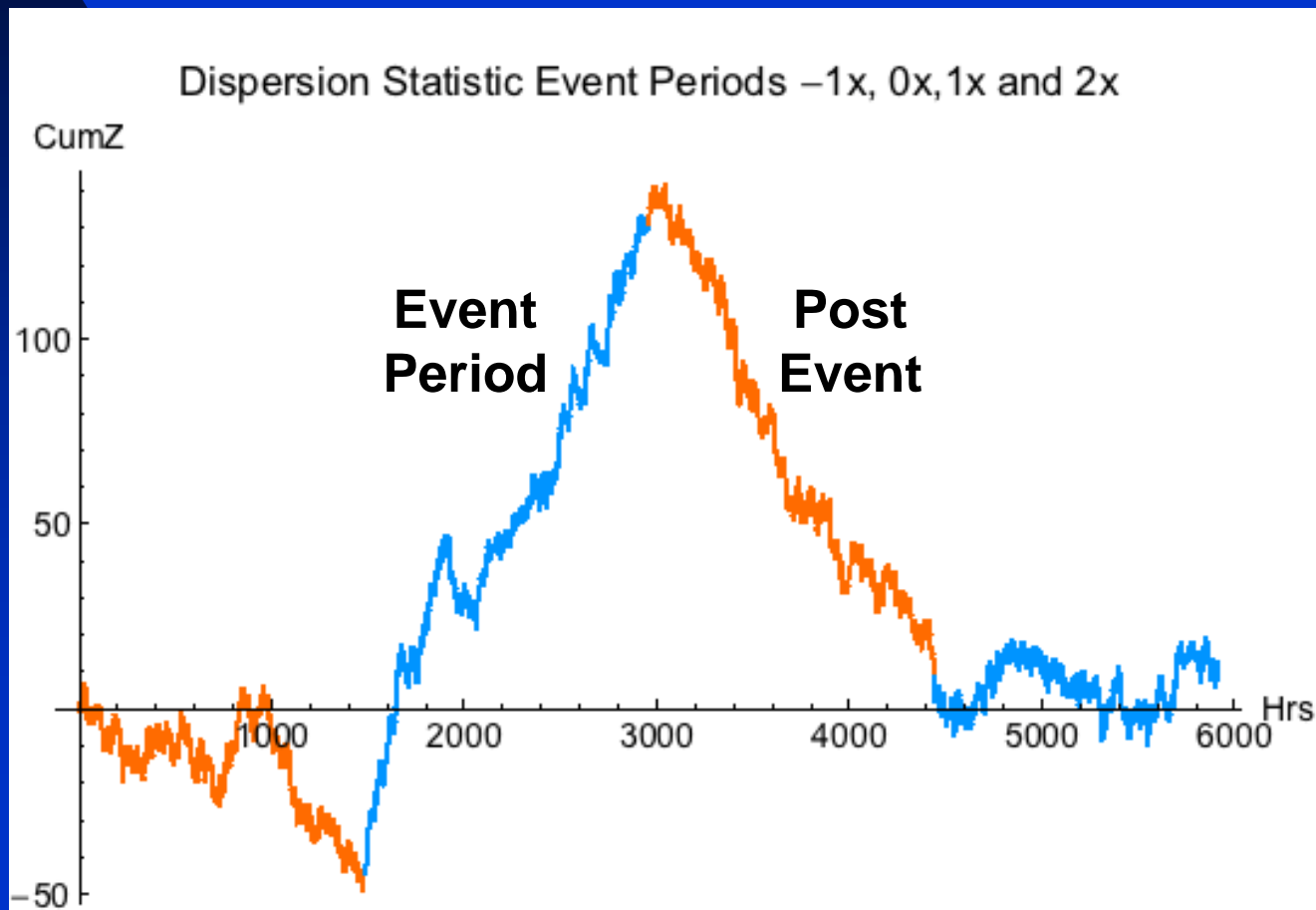
Surprise is listed by some researchers As an emotion, but it does not have A big effect in GCP formal events
(note possible confounds with some emotions)

A reversal of trend
After the defined event:
Probably Changing Emotions

Dispersion Statistic Event Periods −1x, 0x, 1x and 2x
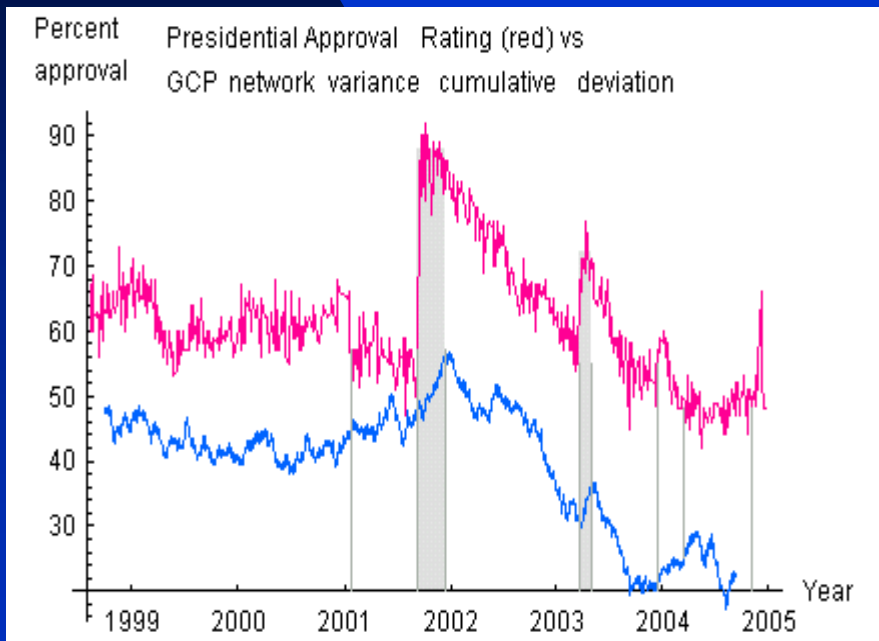
Analysis by Peter Bancel

Emotion on a grand, global scale?

Long-term negative trend in primary measure
Are we meditative, or depressed?
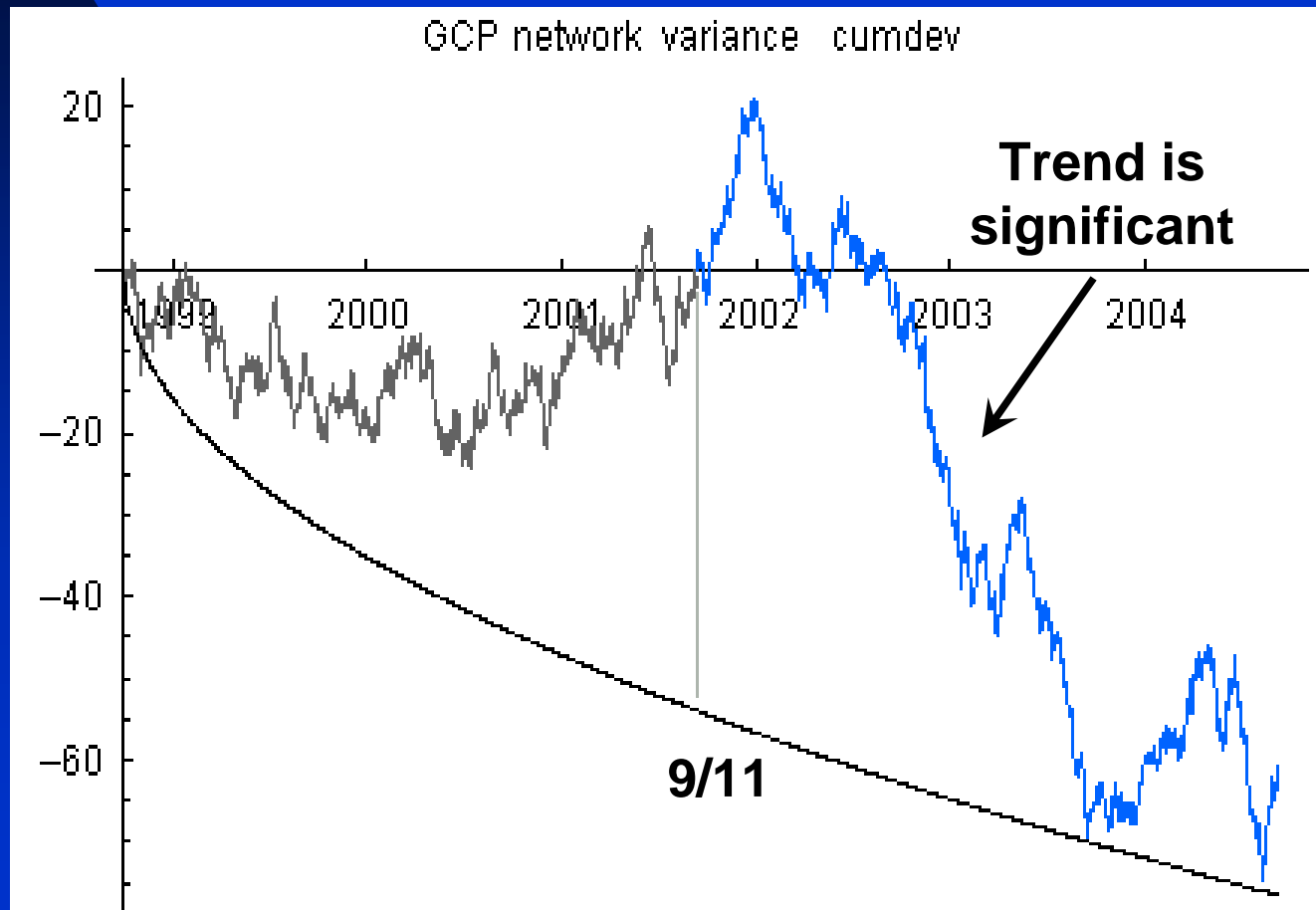
Analysis by Peter Bancel

What might explain the long-term trend?
Correlation with a sociological measure
Presidential Approval Rating vs NetVar

Percent approval — Presidential Approval Rating (red) vs GCP network variance cumulative deviation

We see similar spikes and trends

Analysis by Peter Bancel

**Model Fit &
Update to 2007**

Presidential Approval: Fit to Netvar

**GCP Data: Brown
Polling Data: Blue**
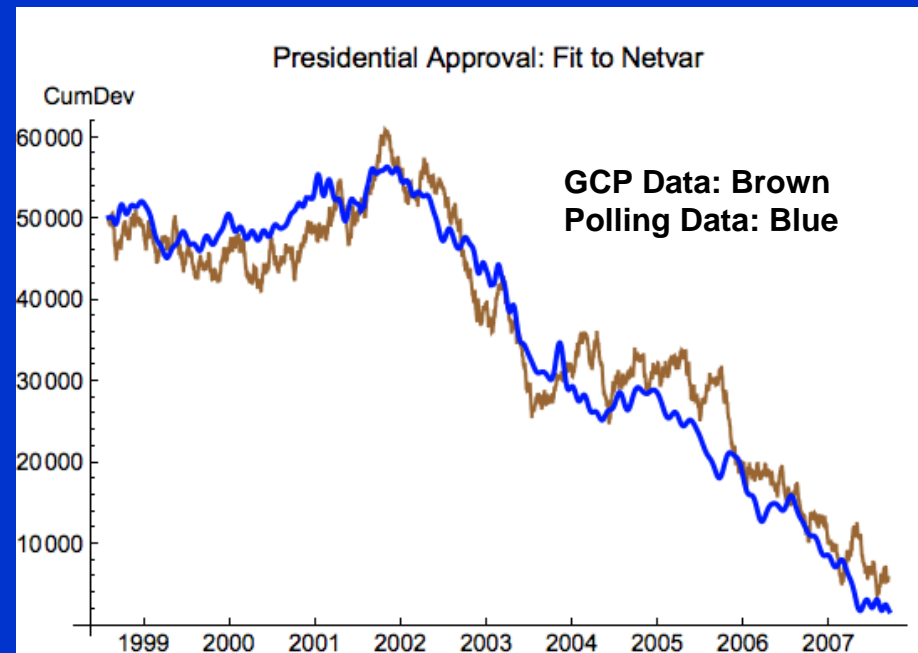
How could these trend Correlations come about?

Maybe the EGGs reflect our long-term
Emotional state. We're conscious it
Is not a happy time in the world.

We have much to do.

"The Age of Nations is past. The task before us now, if we would not perish, is to build the Earth."

- - **Père Teilhard de Chardin**

Can the flap of a butterfly's wings …

GCP/EGG Project
The people who make it go

International collaboration of about 100 Scientists, Artists, Friends, …

Richard Adams, USA, general support
Brad Anderson, USA, widget programming
Peter Bancel, Paris, professional analysis, collaboration
Paul Bethke, USA, windows programming, network
Dick Bierman, Netherlands, design and realtime display
Taylor Jackson, Canada, realtime display maintenance
Greg Nelson, USA, program architecture, general support
Dean Radin, USA, design and independent analysis
Fernando Rodríguez, Spain, egghosts google map
Leane Roffey, USA, music, outreach, general support
Jaroen Ruuward, Netherlands, realtime programming
Dick Shoup, USA, independent analysis
Nishith Singh, India, realtime programming
Mahadeva Srinivasan, India, general support
William Treurniet, Canada, egganalysis programming
John Walker, Switzerland, programming, general support
… And all the EGG hosts around the world