

# **Emotional and Behavioral Responses to Terrorism Threats**

---

**David J. Weiss**

**California State University, Los Angeles**

**Richard John**

**University of Southern California**

**Heather Rosoff**

**University of Southern California**

**Marcel Hovsepian**

**University of Southern California**

---

# Are You Terror - ized?

- **There have been no successful terrorist attacks on U. S. soil for several years, but many Americans remain concerned with and inconvenienced by the prospects of further incidents.**
  - **DHS supports research to examine the extent to which people are affected by the ongoing threat. In this pilot study, we look at how people react to a hypothetical dirty bomb incident. Our version of people is USC students fulfilling a class assignment using the Internet. We will soon be adding terrorism survivors from Spain to our subject pool.**
-

---

# Dirty Bomb

- **We chose a dirty bomb because it would be a “good” option for a terrorist group; relatively easy to make once you acquire the radioactive material, easy to plant, long-lasting effect.**
  - **Our scenarios featured the bomb being set off in one of several public venues in the Los Angeles area.**
  - **We manipulated government response and public reaction to this event.**
-

---

# The Basic Incident

- **“Terrorists used a radioactive dirty bomb to attack the Rose Bowl in Pasadena just minutes after USC’s football game began. The explosion produced a mushroom-like cloud of radioactive material. The cloud blew southwest of the stadium through Alhambra and towards downtown Los Angeles. It extended as far southwest as USC (over 10 miles from the Rose Bowl) before dissipating. Hazardous materials specialists estimated that fans were exposed to radiation levels that will mostly likely result in radiation sickness and possibly death to those with weakened immune systems.”**
-

---

# Government Response Level 1: Evacuate

**“The government advised that the Rose Bowl and the area within a half-mile of the stadium be evacuated immediately. They asked all other persons in the vicinity of the radioactive cloud to seek shelter until given further instructions.”**

---

---

# Government Response Level 2: Do Nothing

- **“A government advisory was released stating that they were investigating the explosion and that updates would be provided as additional information was received. In the meantime, they were requesting that everyone continue their business as usual and remain calm.”**
-

---

# Public Reaction Level 1:

## Panic

- **“Terrified by the smoky cloud forming above their heads, the 80,000 fans raced out of the stadium. Thousands were trampled and many fights broke out. The rush to evacuate created mass congestion at all major exits.”**
-

---

## Public Reaction Level 2:

### Calm

- **“The 80,000 fans were instructed to evacuate immediately. While anxious to exit the premises, they complied with instructions calmly and with no major problems.”**

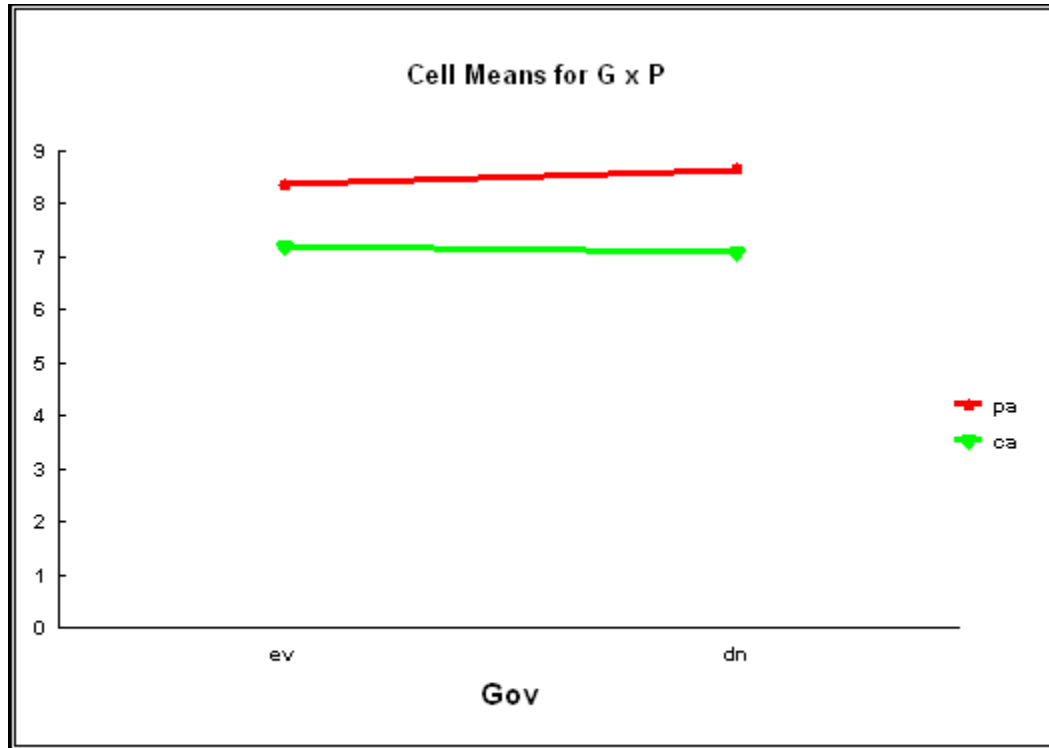


---

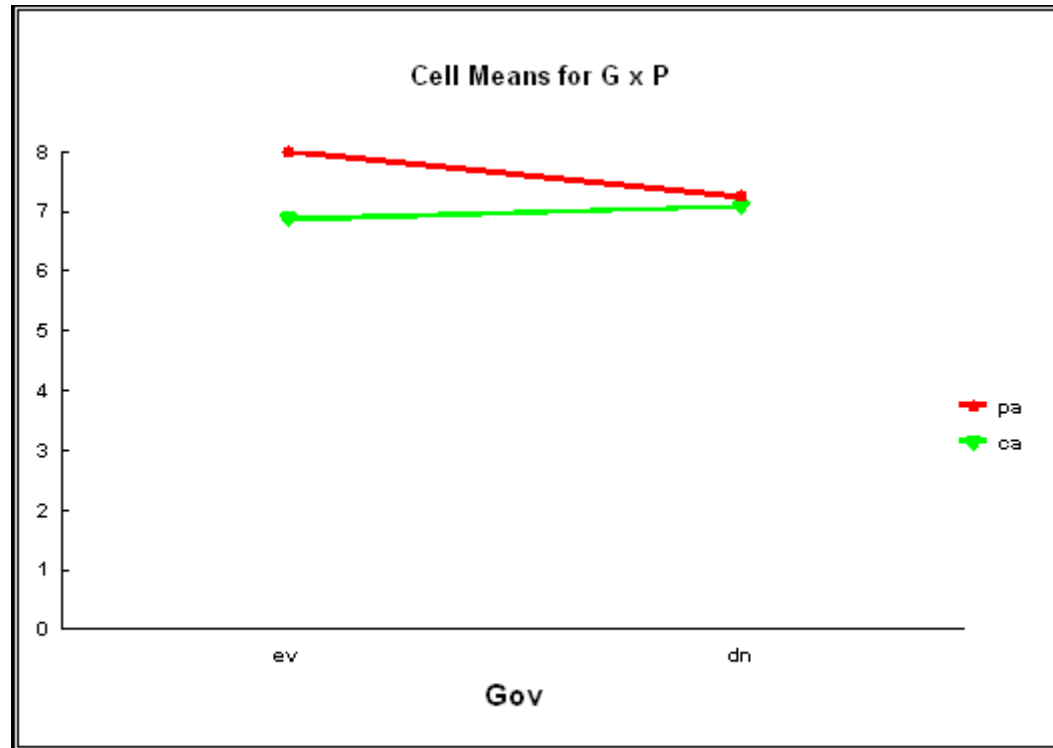
# Results

- **Each data point in the 2x2 graph represents the mean response from 25 different undergraduate students (independent groups design, 200 students altogether).**
  - **We also did a repeated measures design wherein 100 students responded to all four scenarios. Patterns of means were largely the same for both designs.**
  - **ANOVA found the effects of the manipulated factors to be significant only with the more powerful repeated measures design.**
-

# How worried are you about your safety?



# To what extent are you at risk?



---

# Overview of Quantitative Results

- **Students expressed a fairly high degree of worry/sense of risk (means were 7-9 on 10 point scale)**
  - **These government responses did not have differential effects**
  - **When the public exhibited panic, respondents were more worried than when the public remained calm**
  - **Conclusion: What other people did serves as a cue to one's emotional response**
-

---

# Projected Behavior

- **You have tickets to an event at the Staples Center scheduled the week following the terrorist attack described here. What would you do as a result of learning about the attack?**
  - **Multiple-choice response option**
  - **Open-ended response option (can type anything)**
-

---

# Nominal Data

- **While degree of concern can be expressed numerically, projected actions are inherently nominal. So I can't show you a graph connecting the responses to the manipulated factors (government response and public reaction).**
-

---

# Attitude vs. Action

- **But I can tell you whether the projected behaviors were influenced by those factors.**
  - **They were not. The most common response was to go to the game, doing nothing different. Actions seem to be constrained by a dearth of reasonable choices (“What can I do?”) Studies of the disparity between attitude and action have a long history (LaPiere, 1934).**
-

---

# A New Analytic Method

- **How do I know? I used a newly developed analytic technique called Nanova (Nominal Analysis of Variance)**
  - **Nanova extracts variability according to whether a pair of responses matches or does not. That variability is attributed to sources in a factorial design. A Nanova table has a format like that of an Anova table.**
-

---

# More About Nanova

- Unlike  $\chi^2$  -based techniques for handling nominal data (including loglinear and multinomial logit analyses), Nanova can be employed with small samples and with sparse data sets. Nanova distinguishes between independent variables and the dependent variable. It can be used for independent groups, repeated measures, and mixed designs.
  - For more information and to download the Windows NANOVA program, see [www.davidjweiss.com](http://www.davidjweiss.com)
-

---

# Choosing an Action

- **People are very familiar with choosing among alternative actions**
  - **They are less familiar with reporting a number that conveys strength of feeling**
  - **Researchers force respondents to provide numbers because we have well-developed, powerful tools for analyzing numerical data**
-