



# Who is Prize-d in Cognitive and Developmental Psychology ?

Virginia Valian – Hunter College & CUNY Grad Ctr

Sabrica Barnett – CUNY Grad Ctr

Shaun Wiley – CUNY Grad Ctr



---

# Acknowledgments

- NSF SBE-0123609
- Judith Kroll – WICS & Penn State
- Annemarie Nicols-Grinenko
- Suparna Rajaram – WICS & Stony Brook



# Question 1

- Why do women in psychology have a small percentage of awards?
  - Hypothesis 1: sex differences in productivity (quantity or quality or both)
  - Hypothesis 2: sex differences in return on productivity
  - Hypothesis 3: sex differences in initial sorting



## Question 2

- What predicts awards?
  - Hypothesis 1: quantity
  - Hypothesis 2:  $h$  – combination of quantity and citations
  - Hypothesis 3: how often most highly cited publication is cited



---

# Method

- Contacted via email 228 cognitive and developmental psychologists
  - From Very High or High Research institutions
  - With fellow status in Association for Psychological Science or National Academy of Sciences
- 49 % response rate (n = 112)
  - 56 % of females responded
  - 46 % of males responded



# Sample characteristics

- Sex: 50 female; 62 male
- PhD: M = 1976 (1961 – 1994)
- Status: Full Professors (42 Distinguished)
- Affiliation: Very High Research (n=43) or High Research (n=6) schools



# Predictor Variables

- Year of PhD (used as covariate)
- Total publications
- *h*
- Highest citations for single publication



## Awards Score

- Contacted 34 psychologists, of whom 20 responded (59%)
- Psychologists rated prestige of awards on 7-point scale
- Scale converted to point system
  - NAS = 5 (M = 6.9, n = 20)
  - APS = 2 (M = 3.35, n = 17)
- Awards score equals total awards x perceived prestige rating





# Question 1

- Why do women in psychology have a small percentage of award?
- *Hypothesis 1: sex differences in productivity*
  - No: women = men in total publications (124 vs 162)
  - No: women = men in  $h$  (23 vs 25)
  - No: women = men in high cites (387 vs 480)



## Question 1, cont'd

- Why do women in psychology have a small percentage of awards?
  - *Hypothesis 2: sex differences in return on productivity*
  - No: women = men in award scores (11 vs 10)



## Question 1, cont'd

- Why do women in psychology have a small percentage of awards?
  - *Hypothesis 3: sex differences in initial sorting*
  - Likely: higher percentage of women than of men at teaching-intensive institutions



## Question 2

- What predicts awards?
  - Hypothesis 1: quantity – yes, but only when considered alone
  - Hypothesis 2:  $h$  – yes, but not when considered with high cites
  - Hypothesis 3: high cites – yes, even when considered with total pubs and  $h$

## Predicting awards: $R^2 = .49^*$

|   | <b>B</b>     | <b><math>\beta</math></b> |
|---|--------------|---------------------------|
| <b>PhD year</b>                                 | <b>-.26*</b> | <b>-.27*</b>              |
| <b>Total pubs</b>                               | <b>.01</b>   | <b>.17</b>                |
| <b><i>h</i></b>                                 | <b>-.01</b>  | <b>-.01</b>               |
| <b>Highest cites for<br/>single publication</b> | <b>.01*</b>  | <b>.47*</b>               |

\*  $\leq 0.001$



## Summary

- Women and men in cognitive and developmental psychology who are employed at Very High or High Research institutions and who have fellow status in the APS do not differ in
  - number of total publications
  - $h$
  - highest citation for a single publication
  - awards



# Conclusions

- Awards can be predicted
  - $h$  has limited predictive value
  - Strongest predictor is number of citations of most highly cited publication;  $M = 440$
  - Once high cites are included, no variable other than year of PhD contributes significantly to accounting for the variance in awards

## Yet women and men differ in awards overall

- APA Distinguished Scientific Career Contributions from 1956-2006
  - M awards to women = 9 % (range 0 % to 66 %)
- APS Invited Address speakers from 1989 to 2008
  - M invited speakers = 18 % (range 12 % to 47 %)
- No improvement over time





# Why?

- Hypothesis: initial sorting of women into teaching-intensive schools results in lower productivity and lower opportunity for high cites (Allison & Long, 1990; Xie & Shauman, 2003)
- Comparison of annual publication rates
  - M at research universities = 2.12
  - M at doctoral/elite lib arts = .91
  - M at MA and strong 4-year schools = .29



---

# Recommendation

- Aim for a best seller: has an independent effect above and beyond total publications and  $h$
- Reason: a best seller makes one's name more widely known and cognitively available



# Data on key variables

|                     | <b>Women</b> |      | <b>Men</b> |       |
|---------------------|--------------|------|------------|-------|
|                     | Mean         | SD   | Mean       | SD    |
| <b>PhD year</b>     | 1976         | 8.61 | 1975       | 8.14  |
| <b>Total pubs</b>   | 124          | 98.7 | 162        | 180.6 |
| <b><i>h</i></b>     | 22.52        | 9.56 | 25.39      | 10.58 |
| <b>Highest cite</b> | 387.3        | 500  | 479.85     | 417.5 |
| <b>Awards score</b> | 10.69        | 8.31 | 10.08      | 8.11  |



## Data on key variables

|                     | <b>Women</b> |      | <b>Men</b> |       |
|---------------------|--------------|------|------------|-------|
|                     | Mean         | SD   | Mean       | SD    |
| <b>PhD year</b>     | 1976         | 8.61 | 1975       | 8.14  |
| <b>Total pubs</b>   | 124          | 98.7 | 162        | 180.6 |
| <b><i>h</i></b>     | 22.52        | 9.56 | 25.39      | 10.58 |
| <b>Highest cite</b> | 387.3        | 500  | 479.85     | 417.5 |