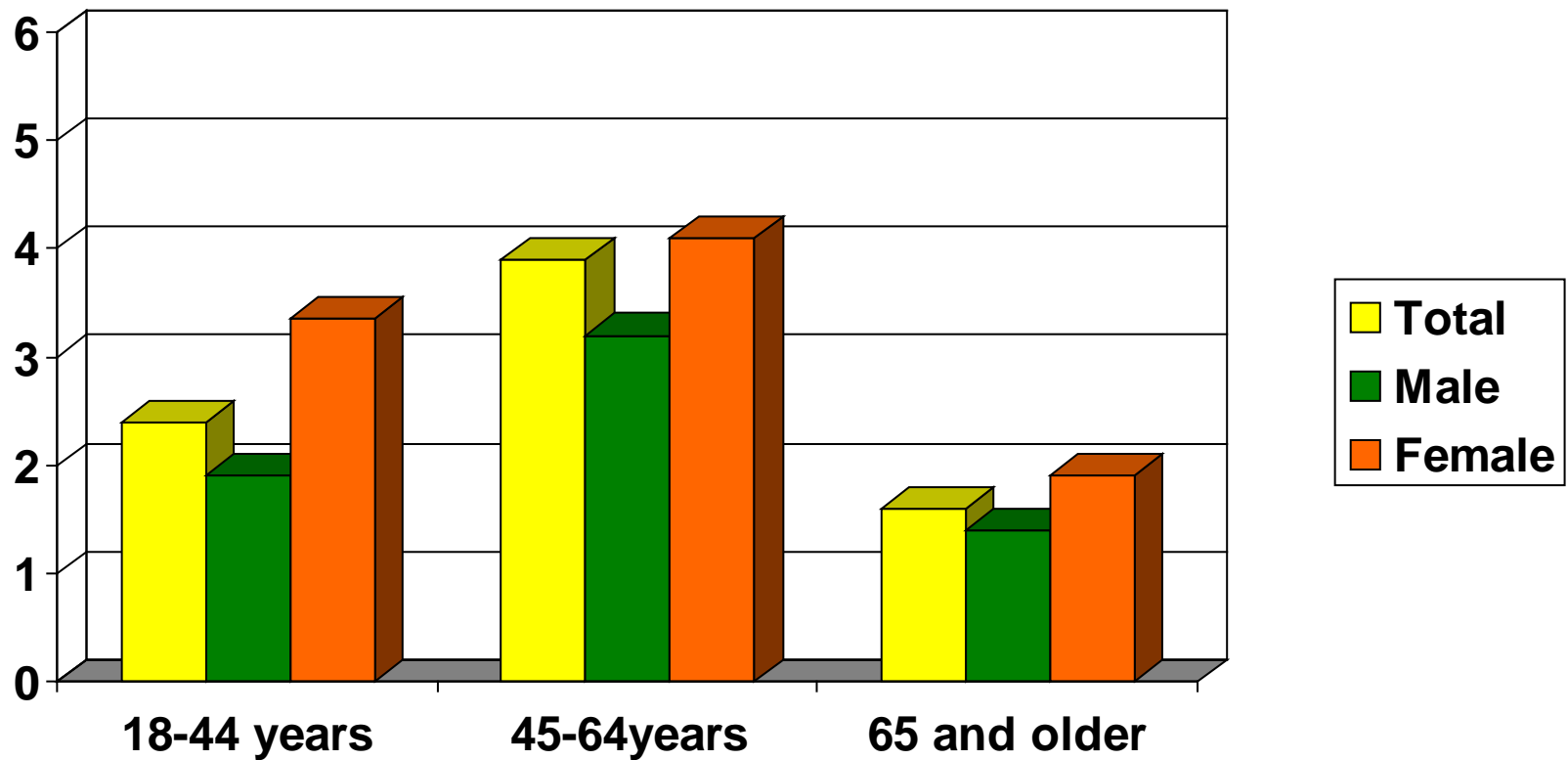


# Shifting Temporal Horizons Influence Motivation Across Adulthood

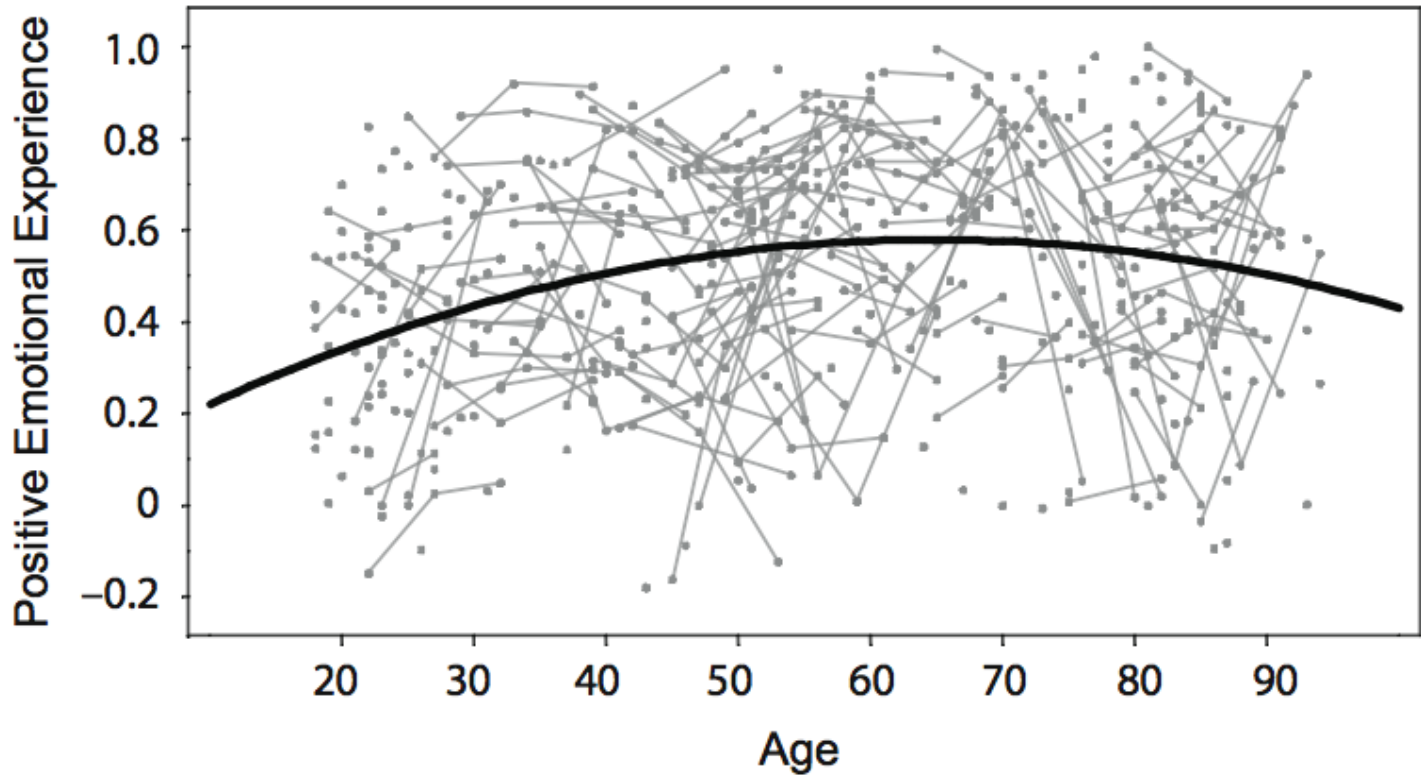
Laura L. Carstensen  
Stanford University



# National Health Interview Survey: Percent reporting Serious Psychological Distress



Centers for Disease Control and Prevention, 2003



Carstensen, Turan, Scheibe, Ram, Ersner-Hershfield, Samanez-Larkin, Brooks, & Nesselroade Psychology and Aging (2010)

# Socioemotional Selectivity Theory

Carstensen, 1993; Carstensen et al., 1999; Carstensen, 2006)

- Humans are uniquely able to monitor time – including lifetime -- and do so at both conscious and subconscious levels.
- Goals are always set in temporal contexts.
- Because chronological age is associated with time left in life, goals change across the life span.





- Expand horizons
- Acquire knowledge
- Meet new people
- Take chances



- Live in the moment
- Know what's important
- Invest in sure things
- Deepen relationships
- Savor life

## Time horizons influence preferences

- When time horizons are manipulated experimentally, preferences change systematically. Younger people show preferences similar to the old when time horizons are shortened and older people show preferences similar to the young when time horizons are expanded. (Fredrickson & Carstensen, 1990; Fung, Carstensen & Lutz, 1999; Fung, Lai & Ng, 2001)
- When natural occurrences, such as personal illnesses, epidemics, political upheavals, or terrorism prime endings, preferences of the young come to resemble those of the old (Carstensen & Fredrickson, 1998; Fung et al. 1999; Fung & Carstensen, 2006)

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Capture those special moments.



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**Success is within reach.  
Don't let time pass you by.**



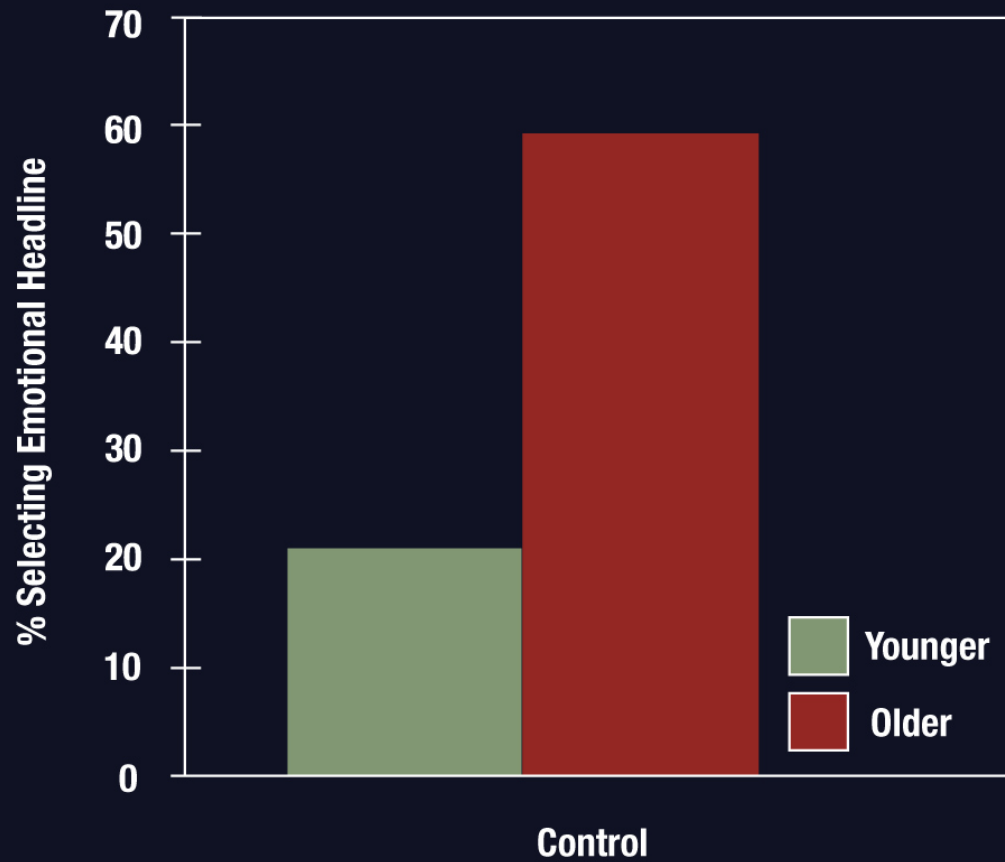
**LESTER WATCHES**  
STANFORD, CALIFORNIA

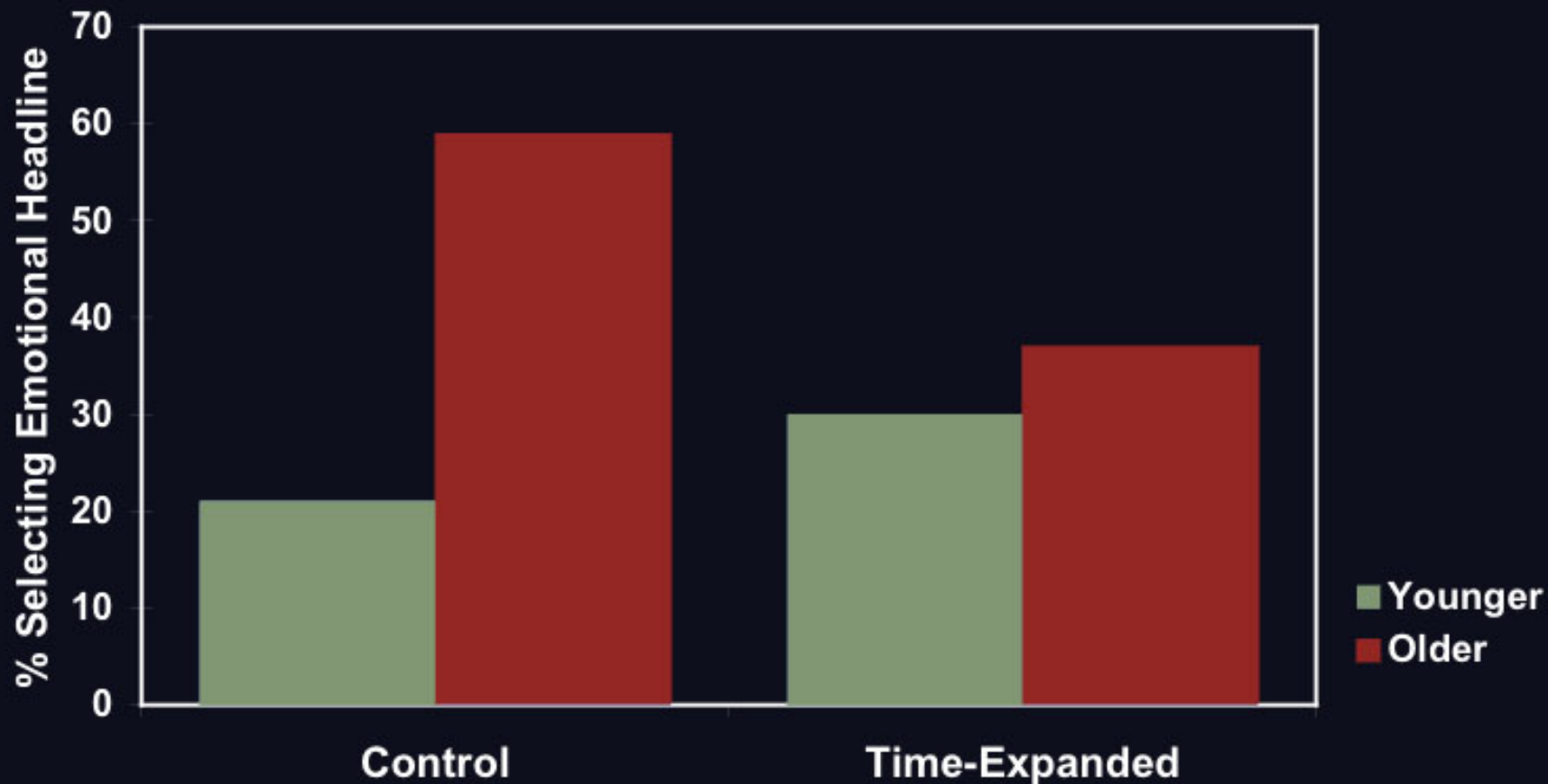
**Take time for the ones you love.  
Don't let time pass you by.**

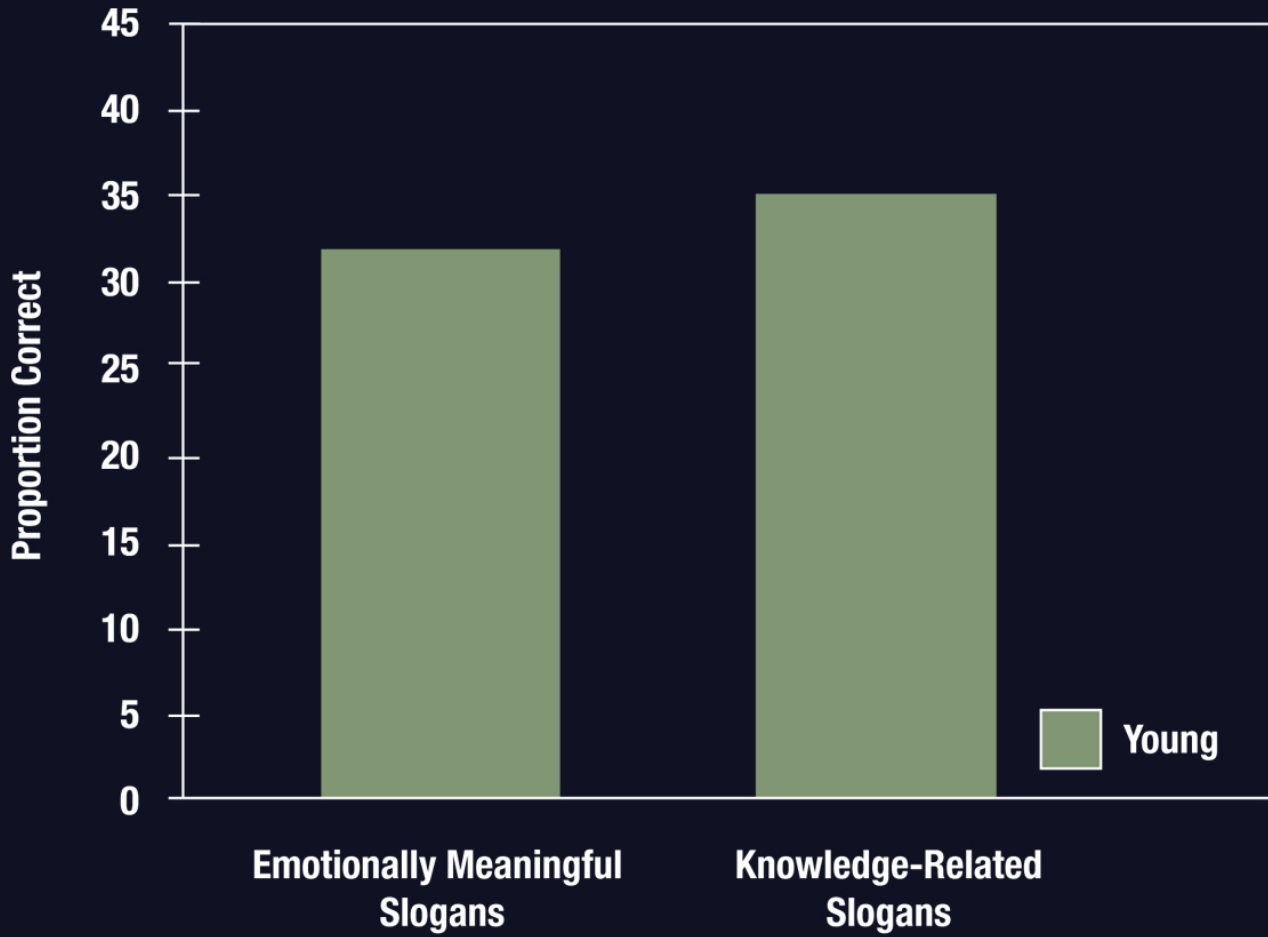


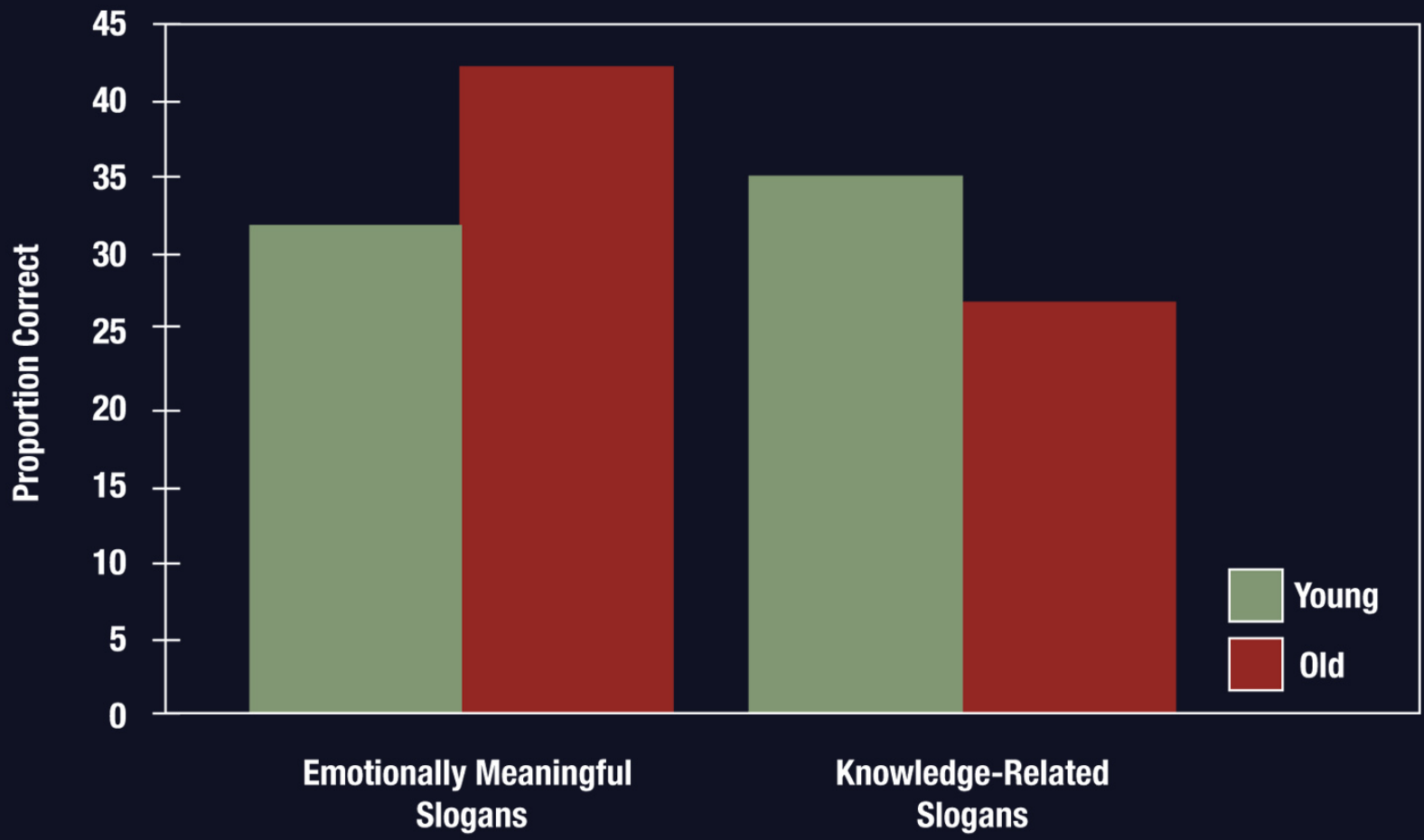
**LESTER WATCHES**  
STANFORD, CALIFORNIA

## Preferences for Emotional Ads by Age





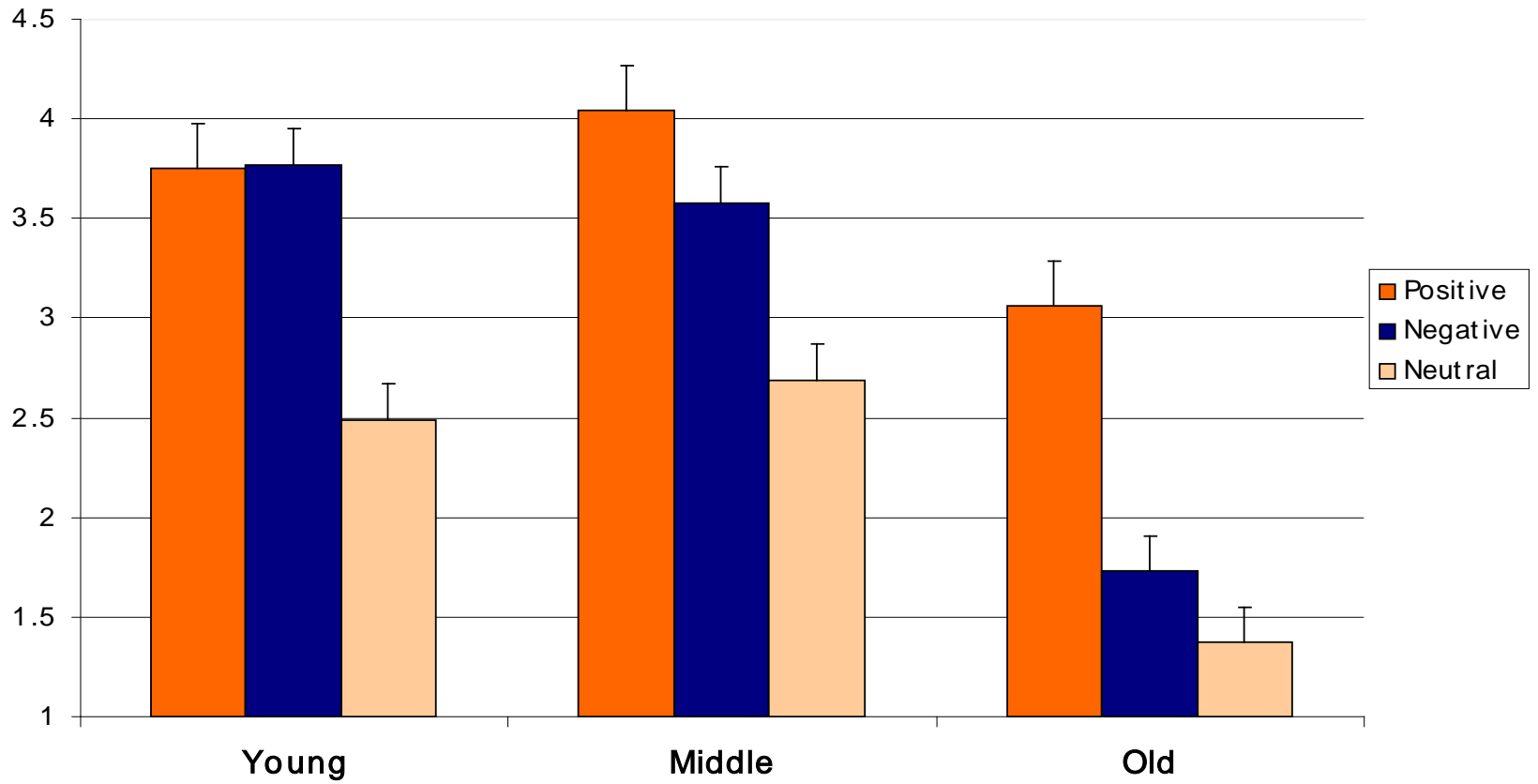




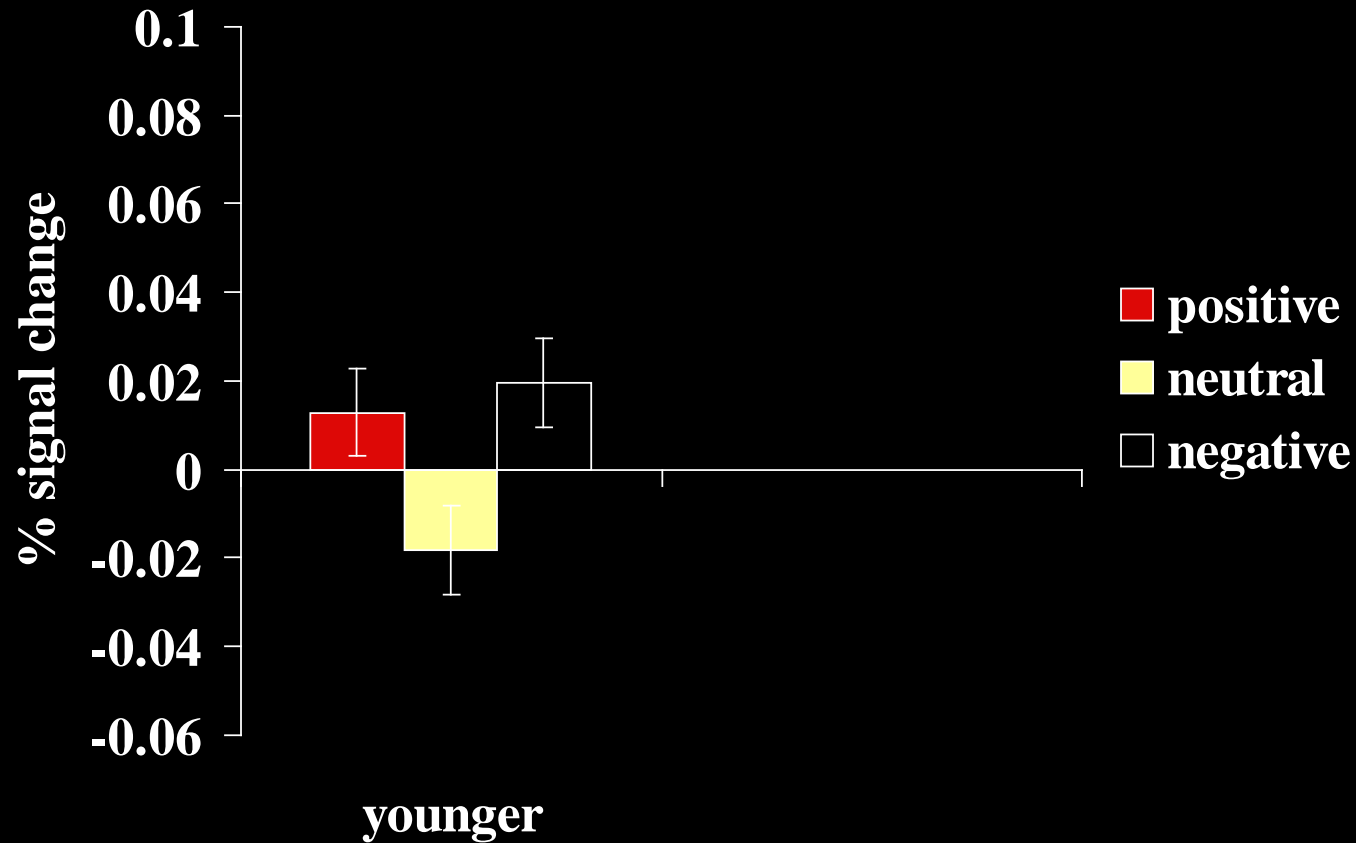
In subsequent studies we identified a relative preference among older people for positive information over negative. We postulate that there is a developmental shift in motivation across adulthood in which a preference for negative information becomes a preference for positive information (Charles, Mather & Carstensen, 2003; Mather & Carstensen, 2003; Mather & Carstensen, 2005; Carstensen, Mikels & Mather, 2006; Lockenhoff & Carstensen, 2008). We call this shift the “positivity effect.”





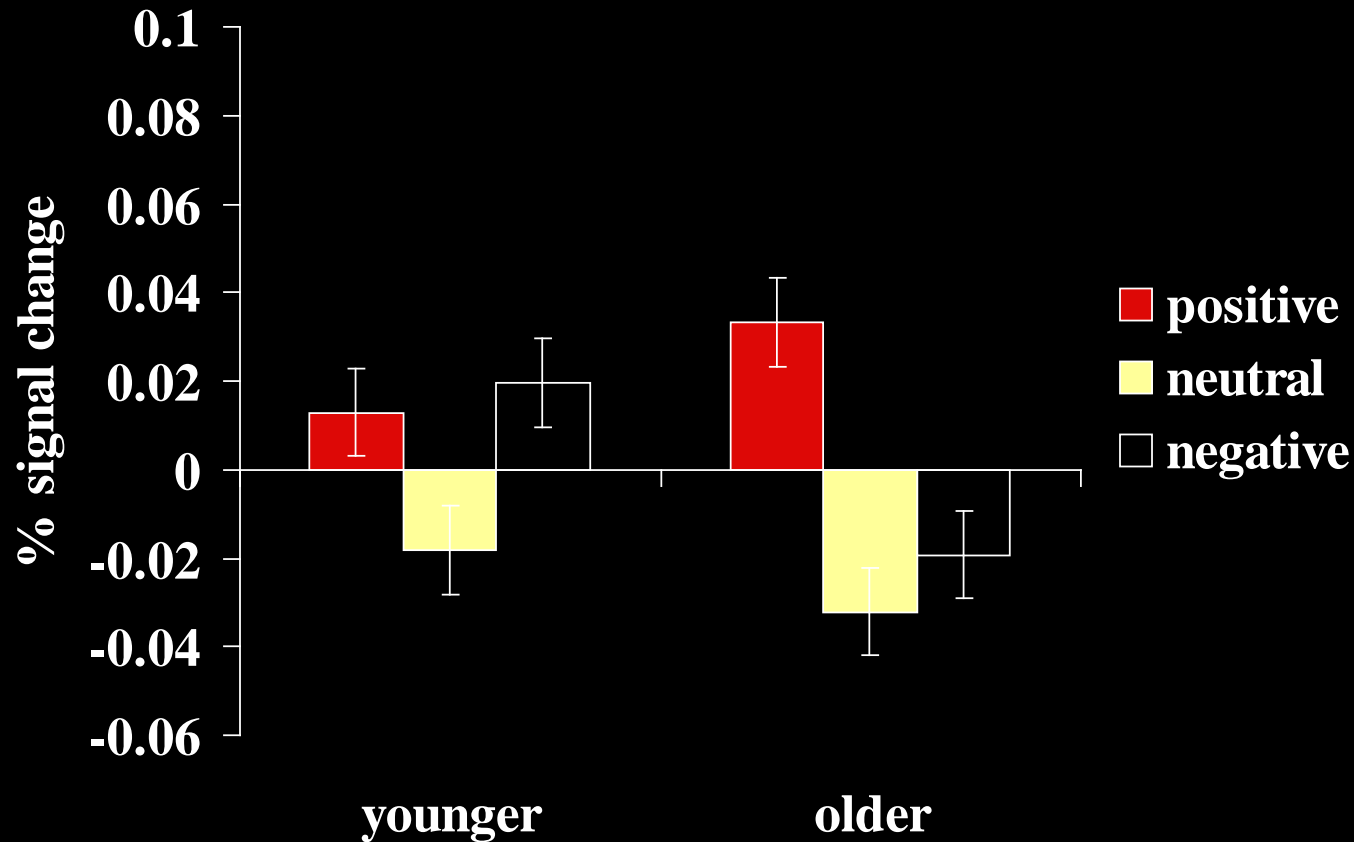


# Amygdala activity

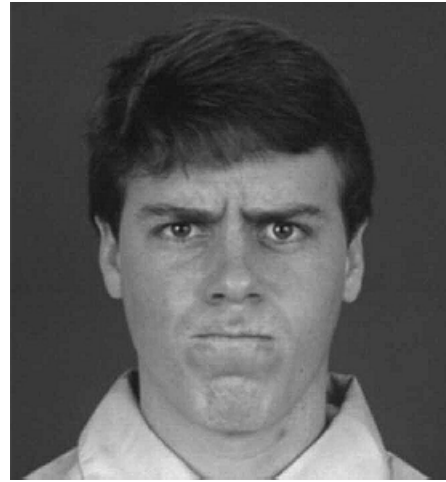
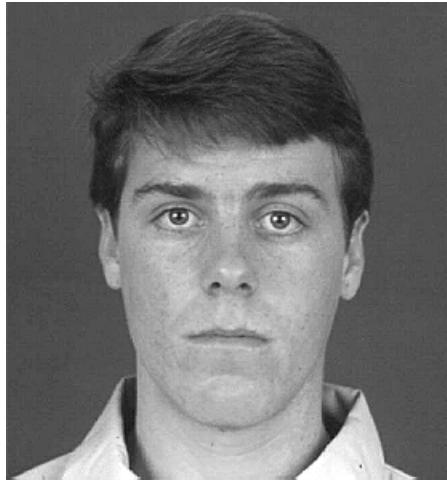


Mather, Canli, English, Whitfield, Wais, Ochsner,  
Gabrieli & Carstensen, Psychological Science, 2004

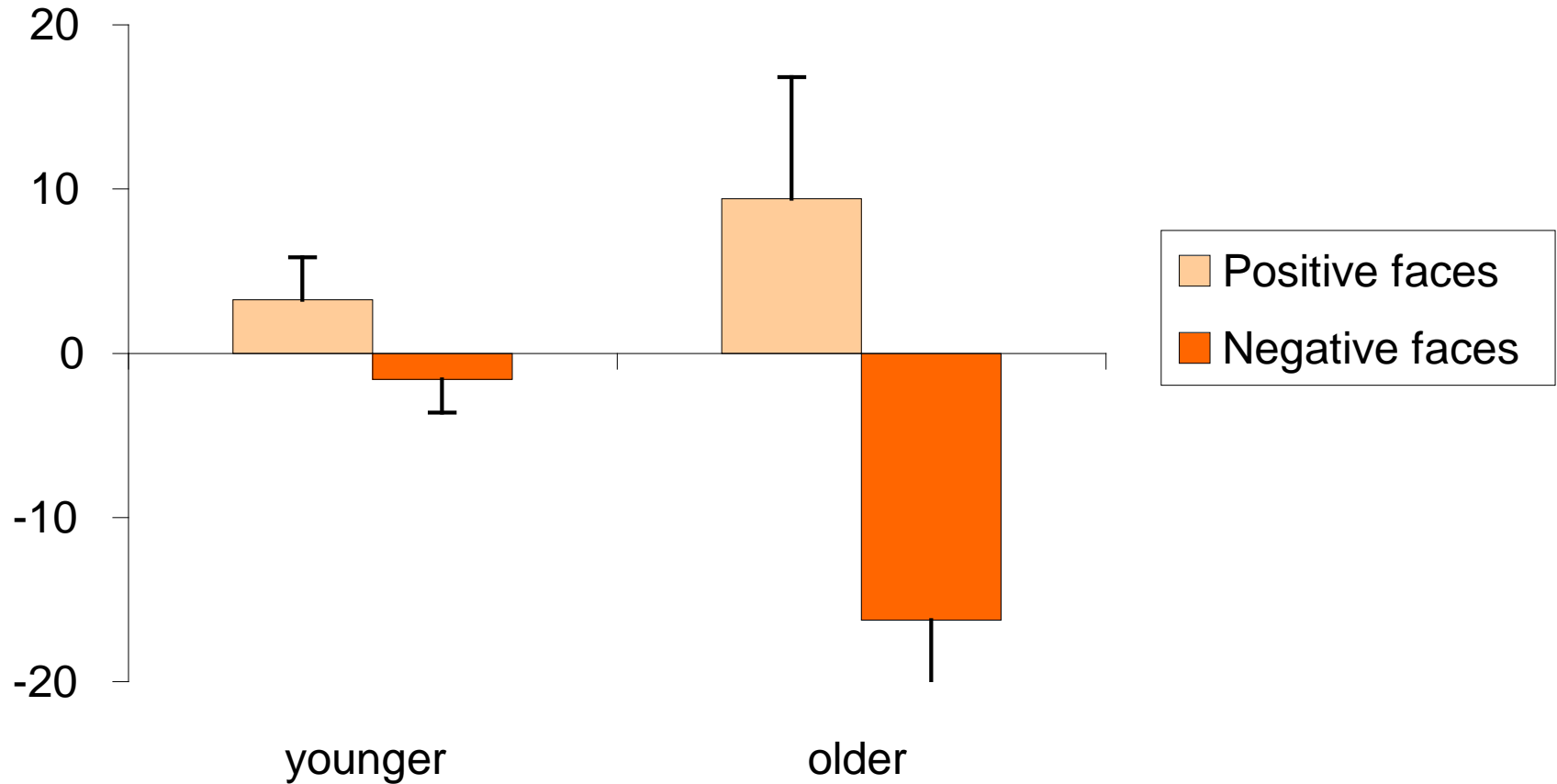
# Amygdala Activity

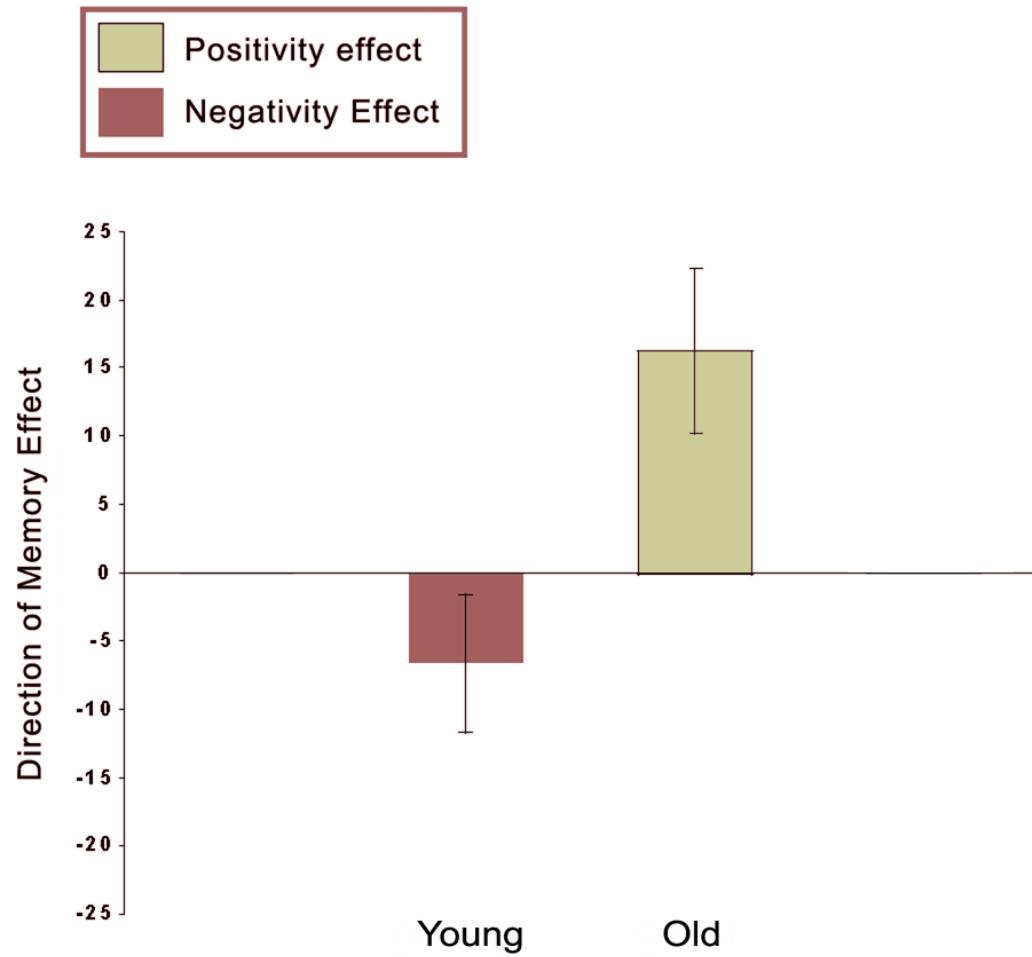


Mather, Canli, English, Whitfield, Wais, Ochsner, Gabrieli & Carstensen, Psychological Science, 2004



# Attentional bias scores





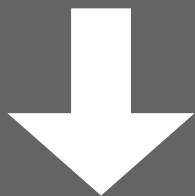


What are the costs and benefits associated with the positivity effect?



Does the positivity effect influence **anticipatory responses** to monetary gains and losses?





Cue

Delay

Target

Delay

Feedback

Delay

Win  
\$5.00

X



X

Hit!  
+\$5.00

X

2s

~2s

~2s

2s

2s

2s

~2s

~2s

2s

2s

Lose  
\$5.00

X



X

Miss!  
-\$5.00

X

Cue

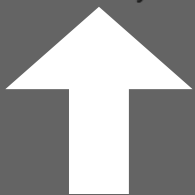
Delay

Target

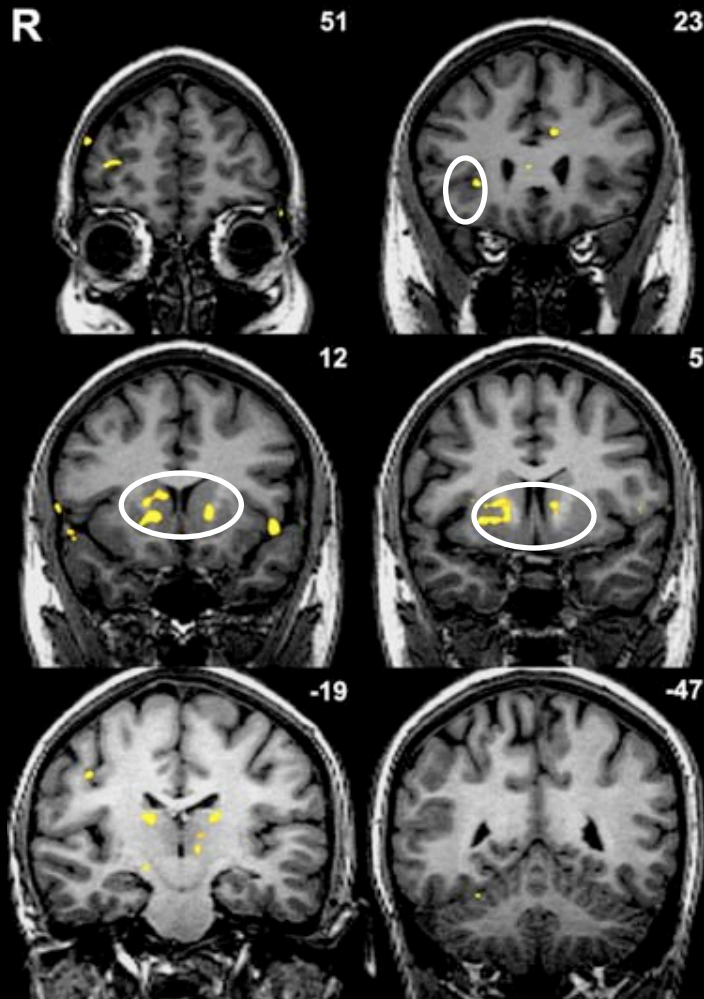
Delay

Feedback

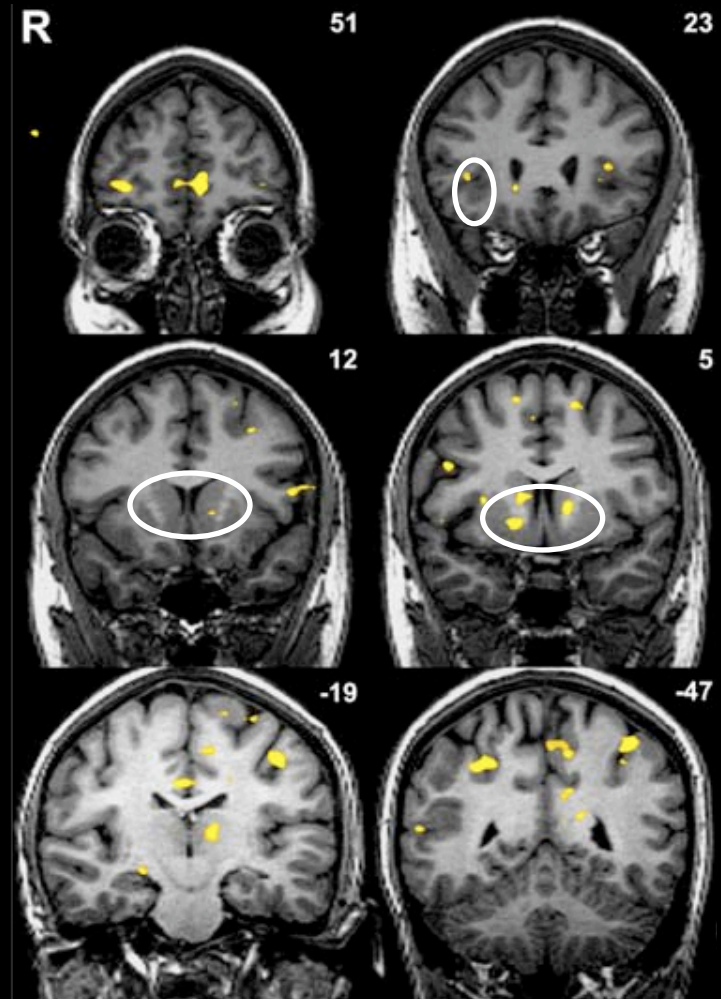
Delay



# Gain Anticipation

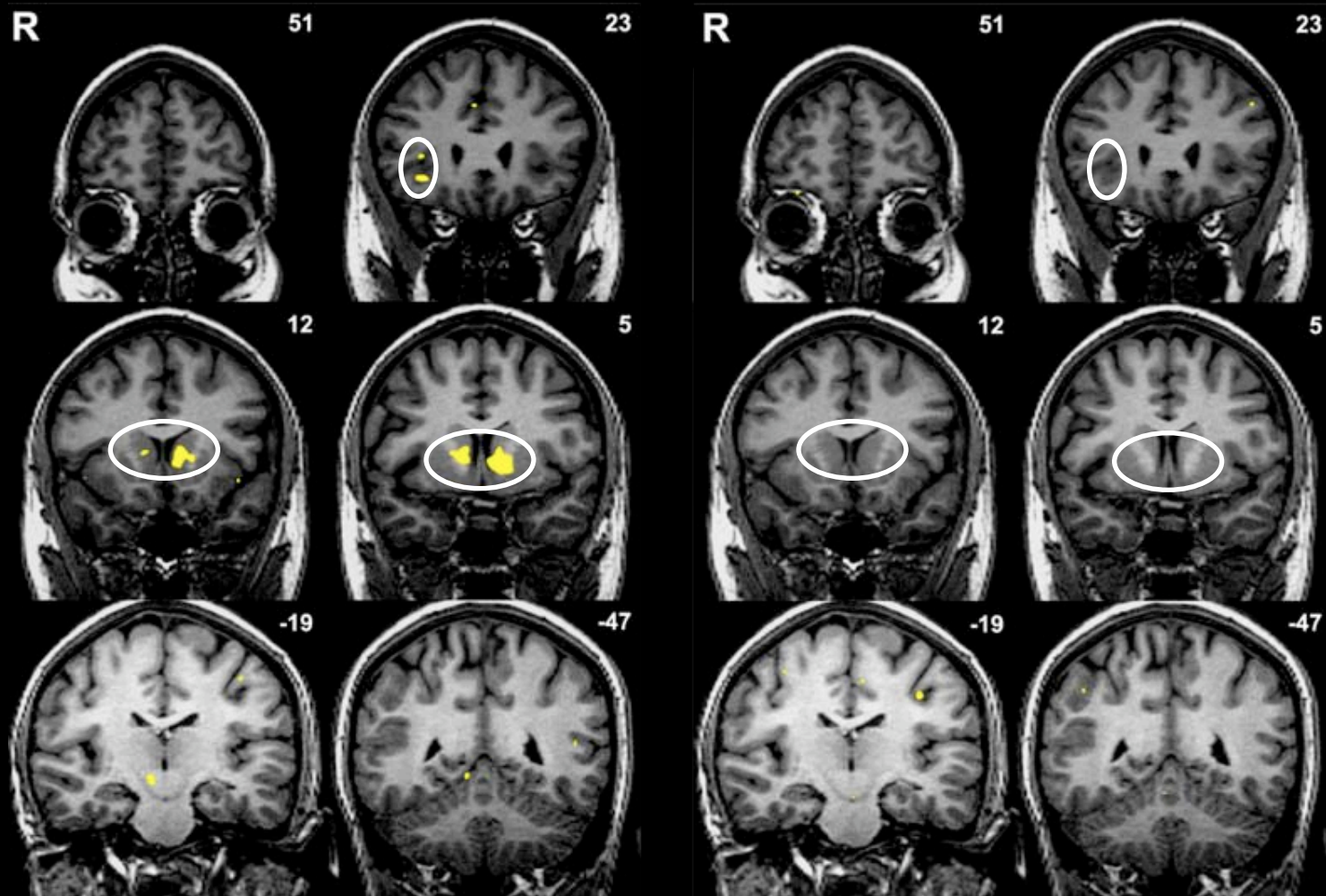


Younger



Older

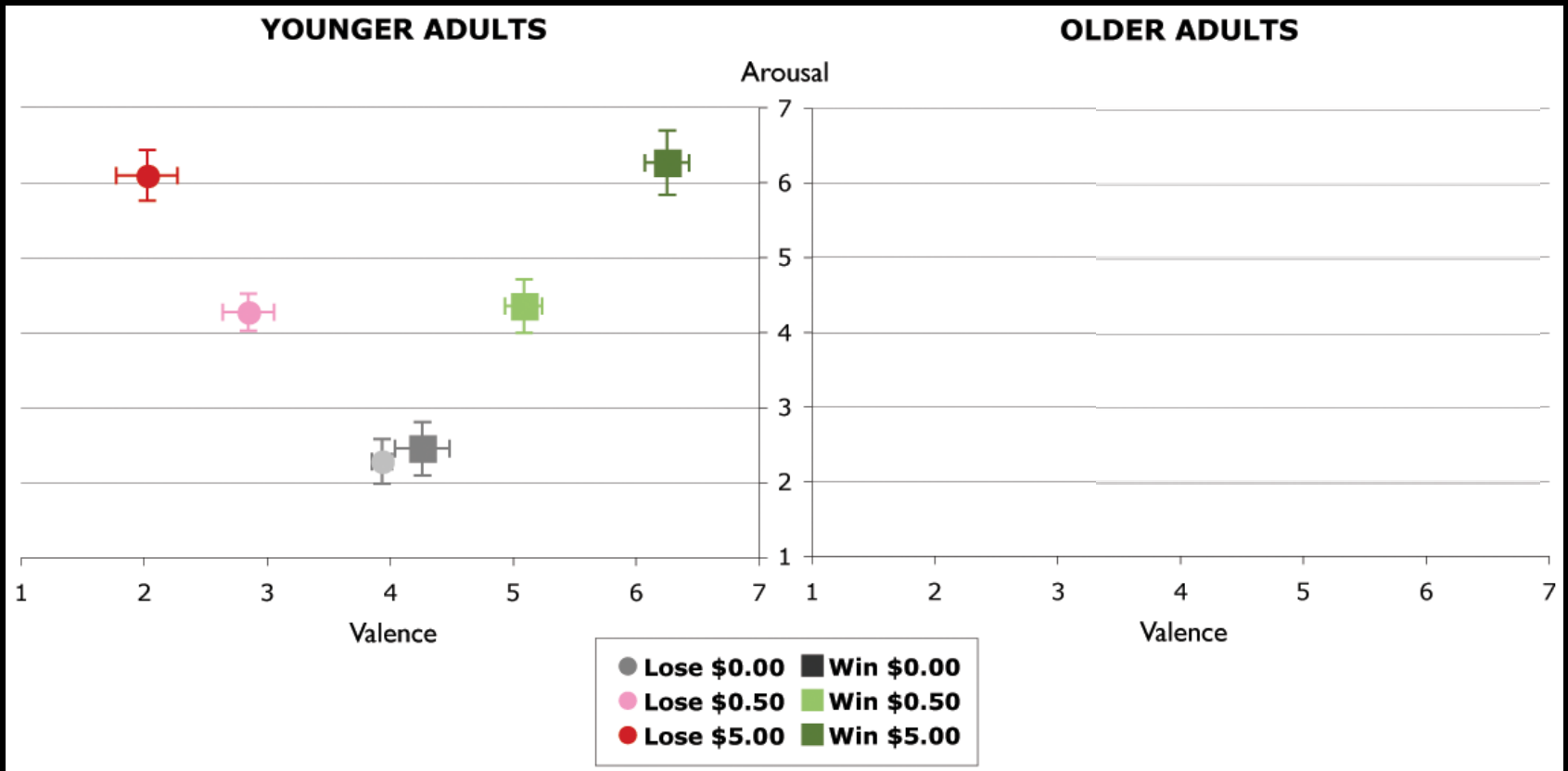
# Loss Anticipation



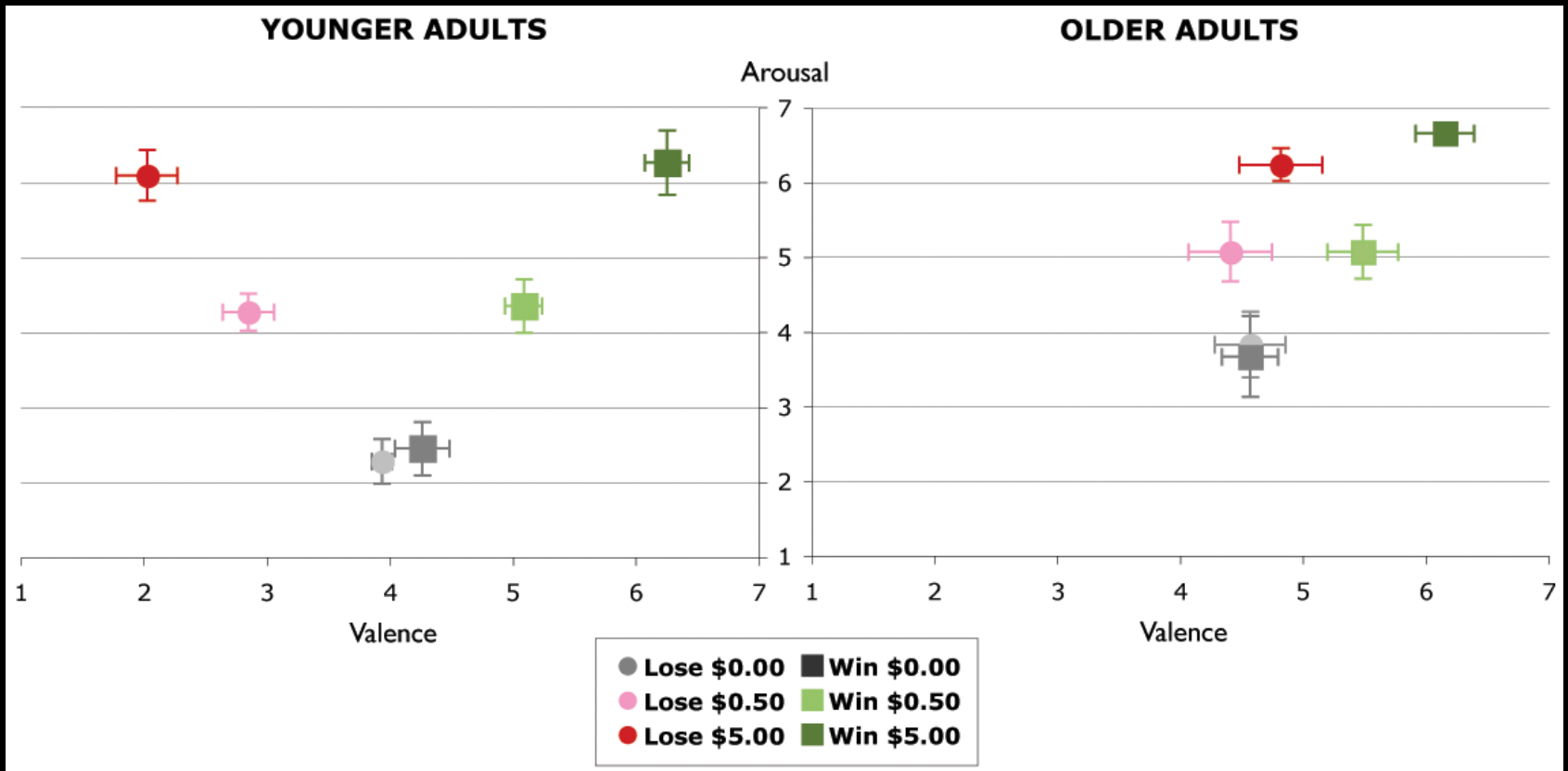
Younger

Older

# Cue Ratings

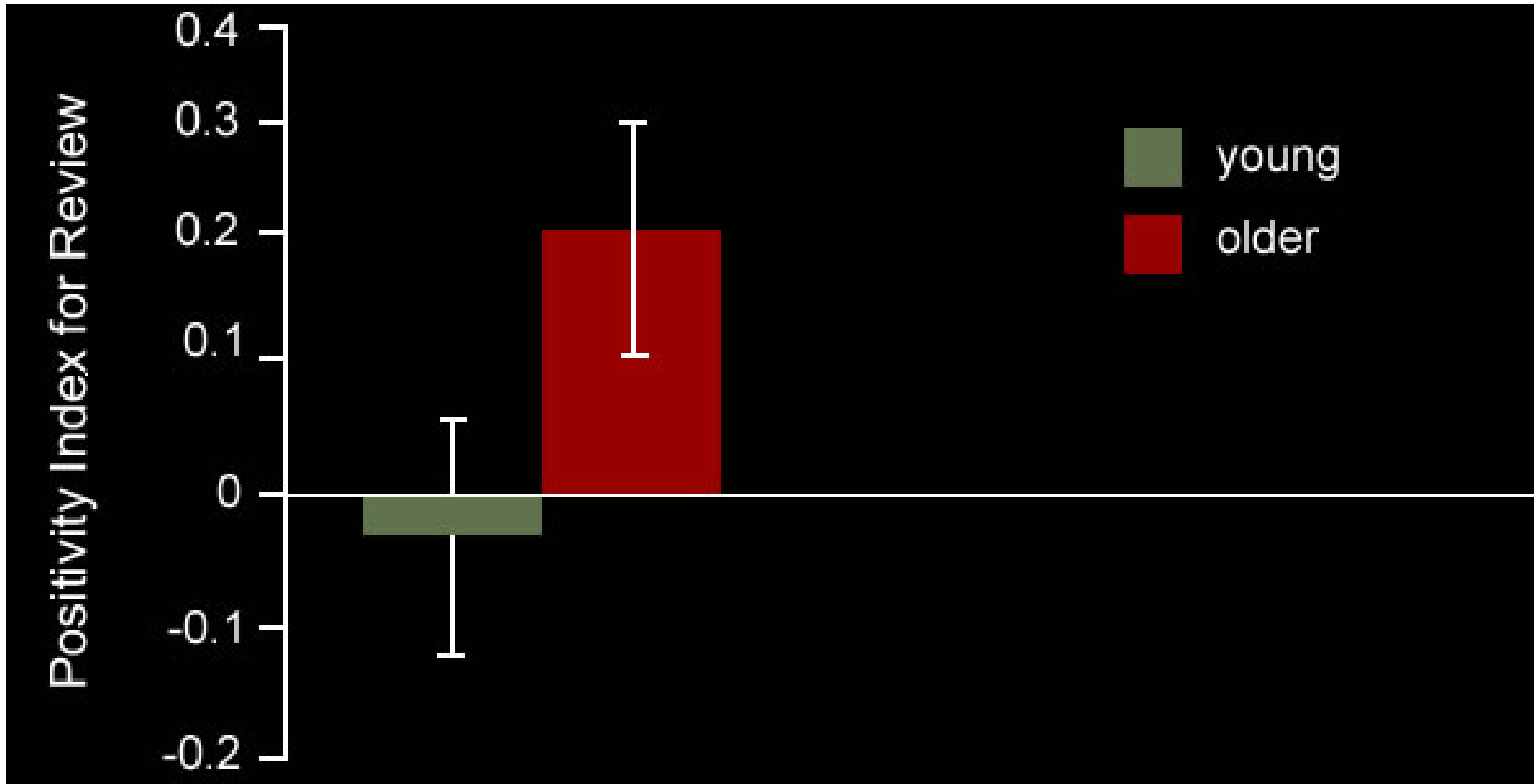


# Cue Ratings



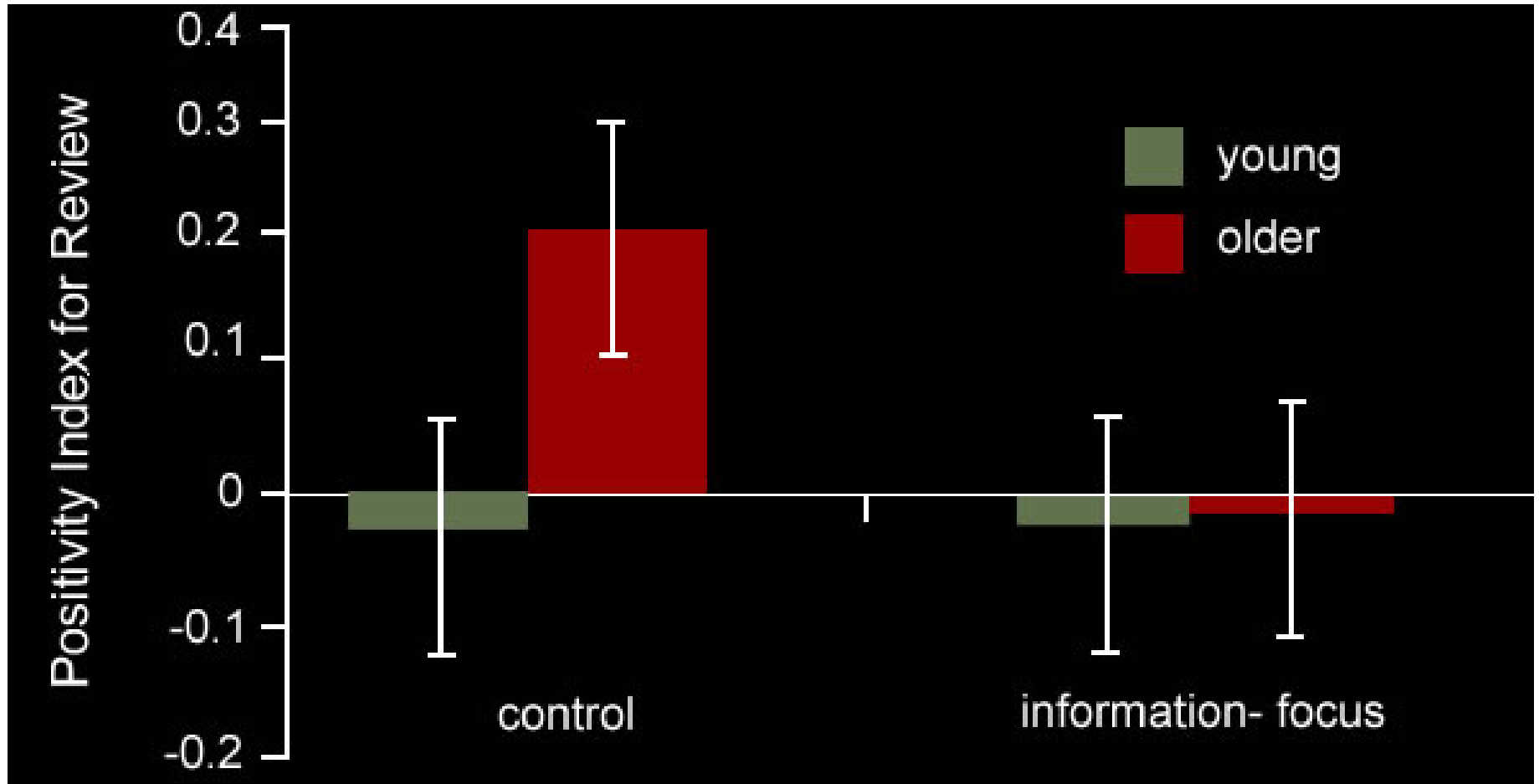
	Preventative Care	After- hours Care	Prescription Drugs	Appointment Availability	Consumer Satisfaction
Plan A	Dark Gray	White	White	Dark Gray	Light Gray
Plan B	White	Dark Gray	Dark Gray	White	Light Gray
Plan C	White	Dark Gray	Dark Gray	White	Light Gray
Plan D	Dark Gray	White	White	Dark Gray	Light Gray

Löckenhoff & Carstensen, Psychology and Aging, 2007



Löckenhoff & Carstensen, Psychology and Aging, 2007





Löckenhoff & Carstensen, Psychology and Aging, 2007

- If older adults focus on their feelings versus the information when making decisions, will they make better choices?

HealthNow: dental care  
is fully covered

... query

HealthNow: routine  
exams are not covered

... query

CareNet: prescription  
drugs are fully covered

... query

CareNet: physical  
therapy is covered

... query

Time

Choice

HealthNow: dental care is fully covered

... query

HealthNow: routine exams are not covered

... query

CareNet: prescription drugs are fully covered

... query

CareNet: physical therapy is covered

... query

Time

Choice

HealthNow: dental care is fully covered

... query

HealthNow: routine exams are not covered

... query

CareNet: prescription drugs are fully covered

... query

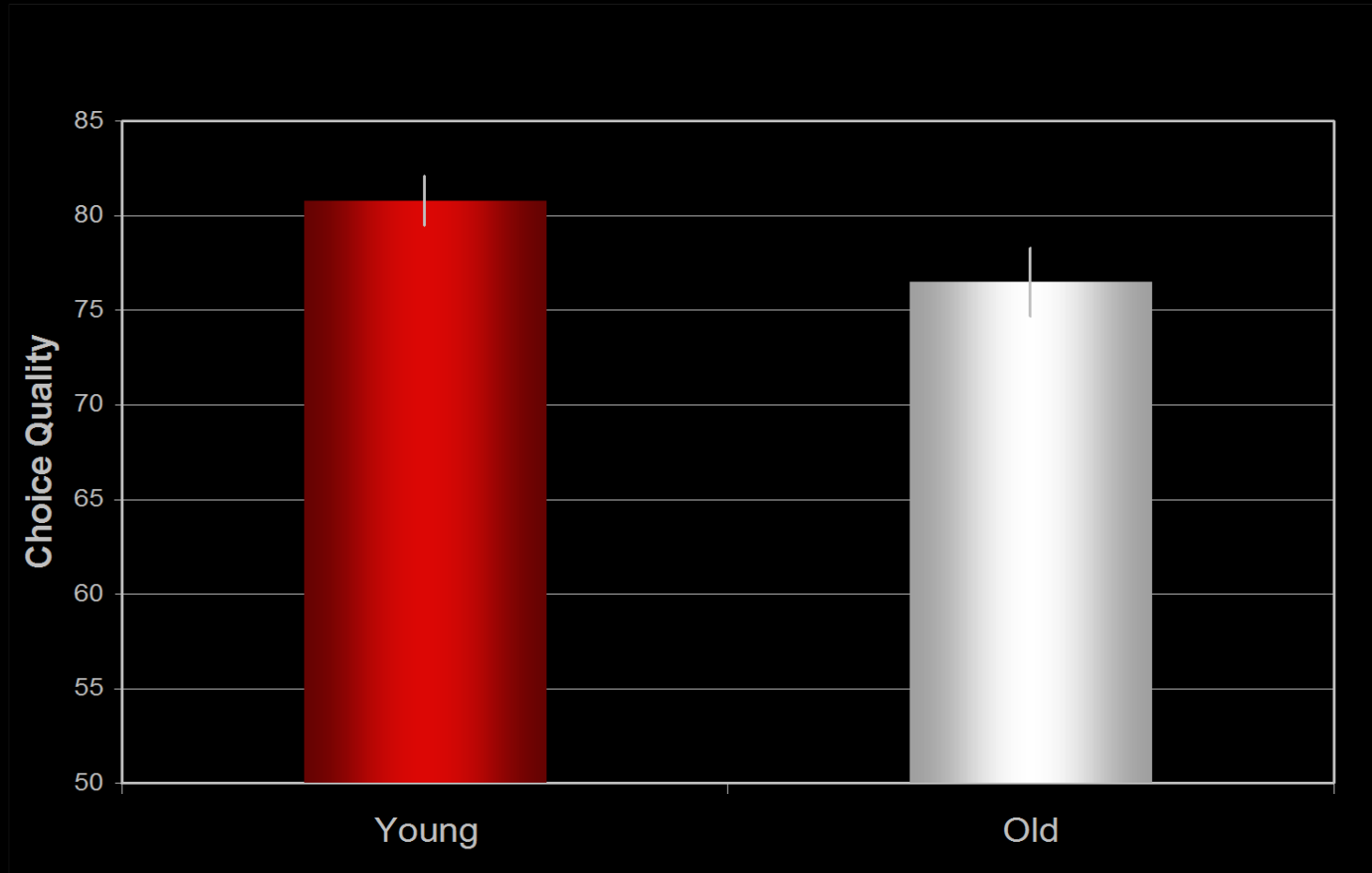
CareNet: physical therapy is covered

... query

Time

Choice

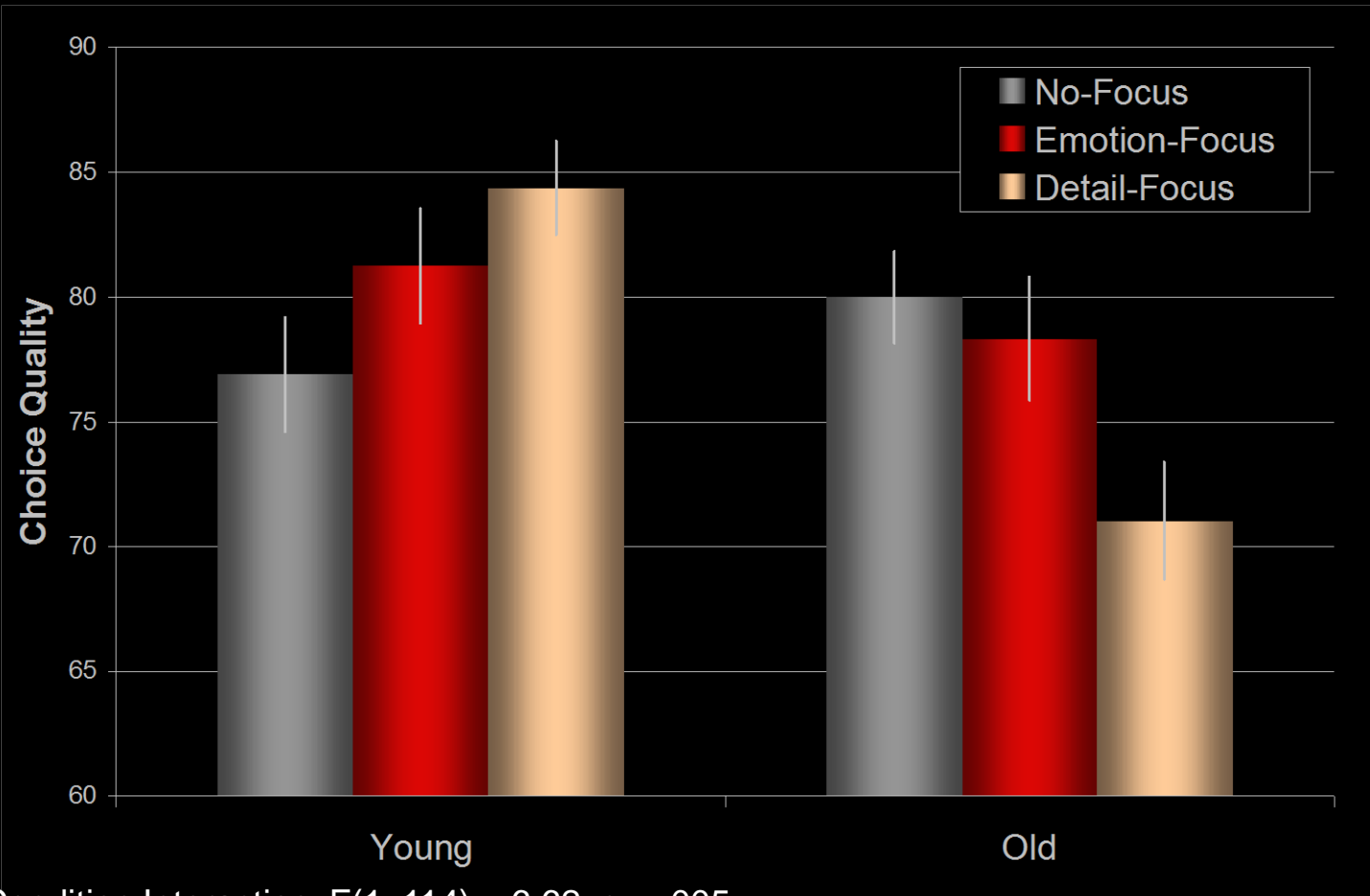
# Choice Quality



- Main Effect of Age:  $F(1, 114) = 5.49, p < .05$

Mikels, Lockenhoff, Maglio, Goldstein, Garber & Carstensen, *Journal of Experimental Psychology*, 2010

# Choice Quality



■ Age by Condition Interaction:  $F(1, 114) = 6.62, p < .005$

Mikels, Lockenhoff, Maglio, Goldstein, Garber & Carstensen, Journal of Experimental Psychology, 2010

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