Priming Effects Rely on Strong Concept Associations

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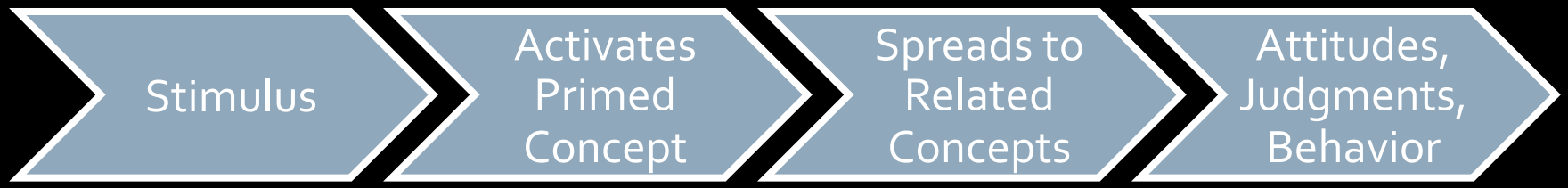
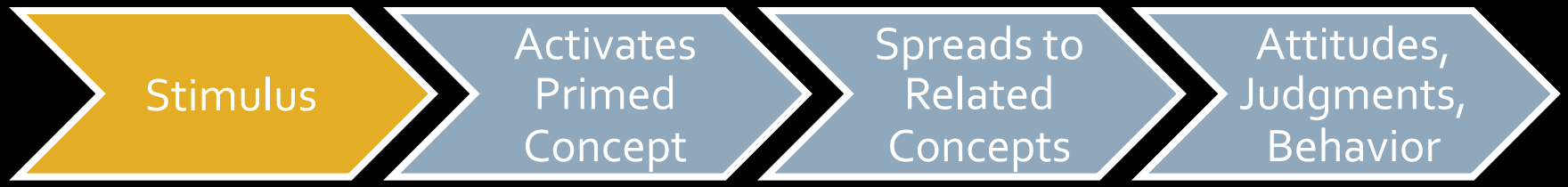

Stimulus
Activates Primed Concept
Spreads to Related Concepts
Attitudes, Judgments, Behavior



us bingo sing play let

from are Florida oranges temperature

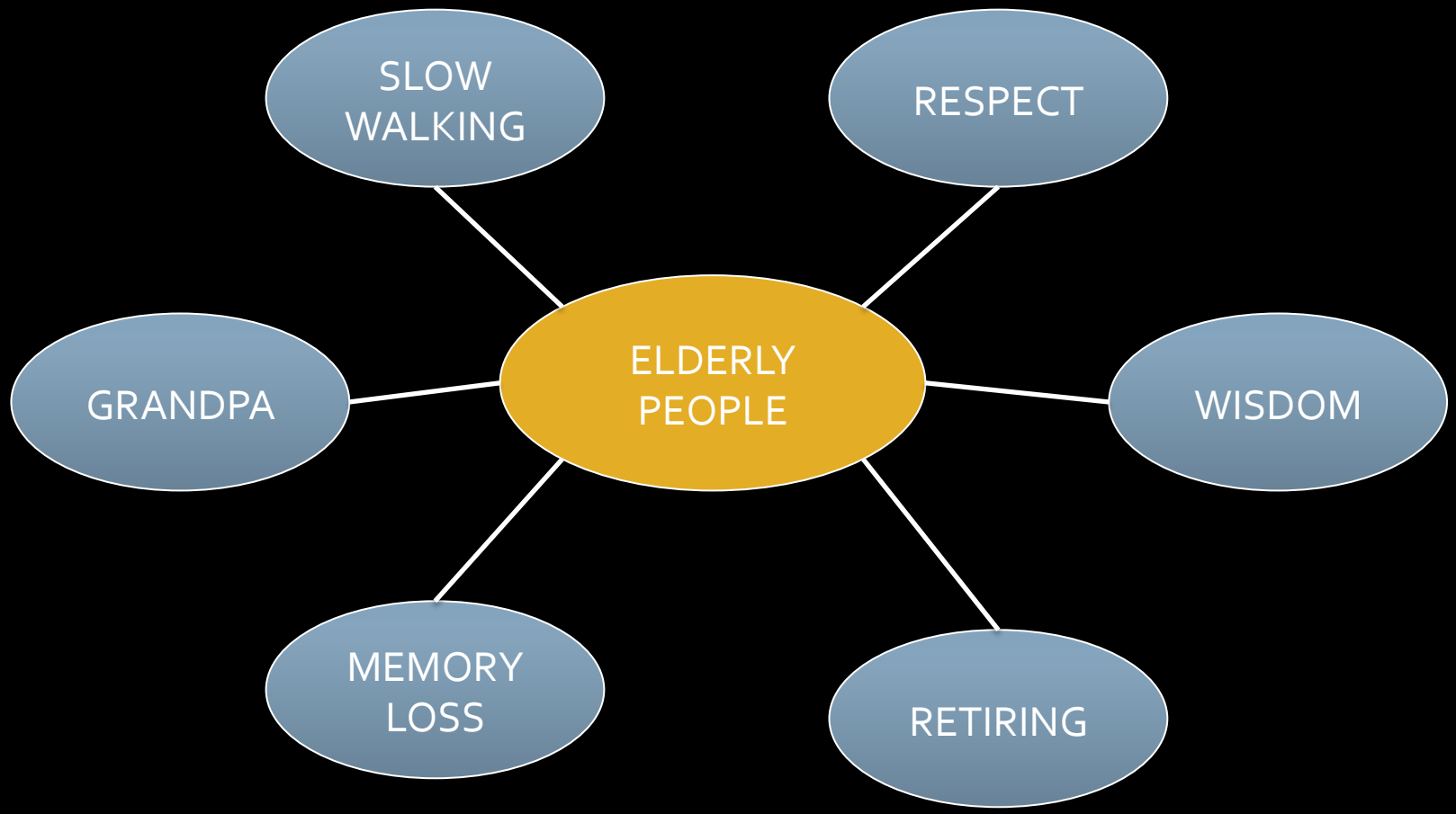
ball the throw toss silently

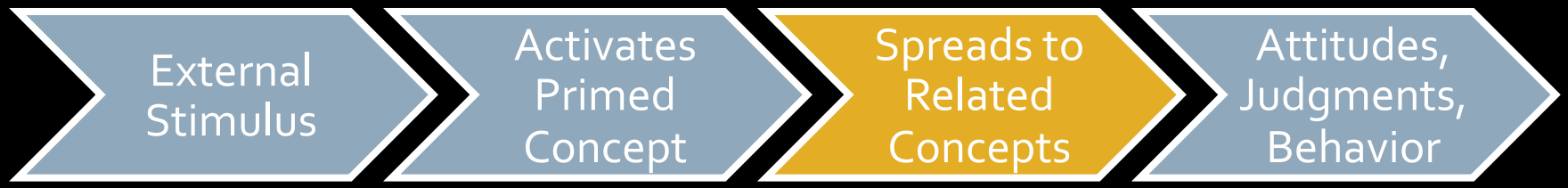
shoes give replace old the

sky the seamless grey is

should now withdraw forgetful we

External Stimulus
Activates Primed Concept
Spreads to Related Concepts
Attitudes, Judgments, Behavior


SLOW WALKING
RESPECT
GRANDPA
ELDERLY PEOPLE
WISDOM
MEMORY LOSS
RETIRING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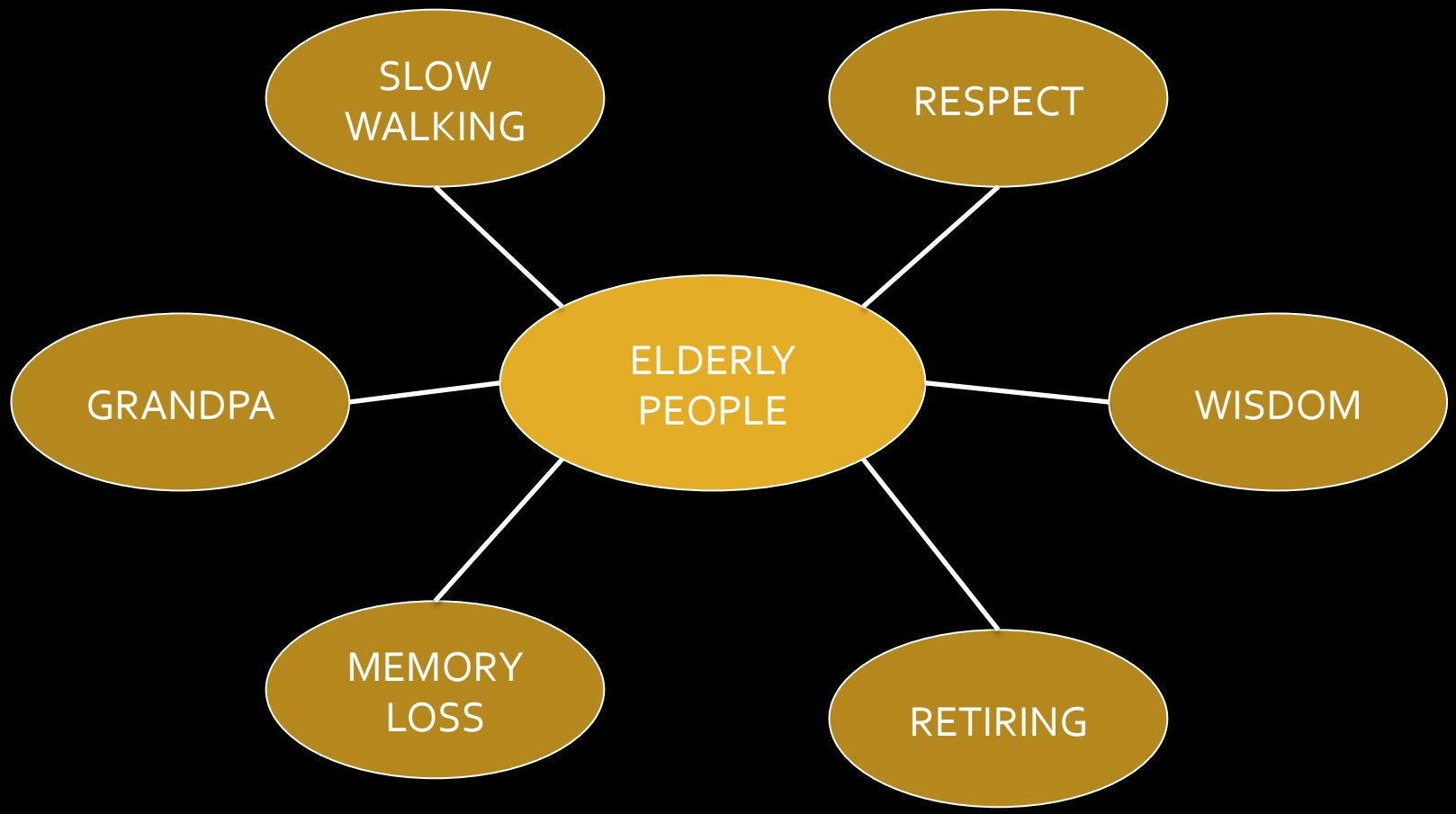
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External Stimulus → Activates Primed Concept → Spreads to Related Concepts → Attitudes, Judgments, Behavior

(Bargh, Chen, & Burrows, 1996)

Failures to Replicate Priming Studies

- Elderly priming
  - Doyen et al., 2012
  - Pashler et al., 2011

- Other effects
  - Klein et al., 2014
  - Earp et al., 2014
  - Fayard et al., 2009

When Will Priming Effects Occur?

- Situated Inference Model (Loersch & Payne, 2011, 2014)
  - Distinctiveness of primes
  - Salience/Blatantness of primes
  - Distinctiveness/Ambiguity of judgment/behavior
  - Cognitive load
  - Complex tasks

- Active Self Account (Wheeler, DeMarree, & Petty, 2007, 2014)
  - Private self-consciousness
  - Self-monitoring
  - Inconsistent self-concept
  - Perspective-taking

A Simpler Answer

Priming should occur if and only if the concepts being studied are associated.

Hypotheses

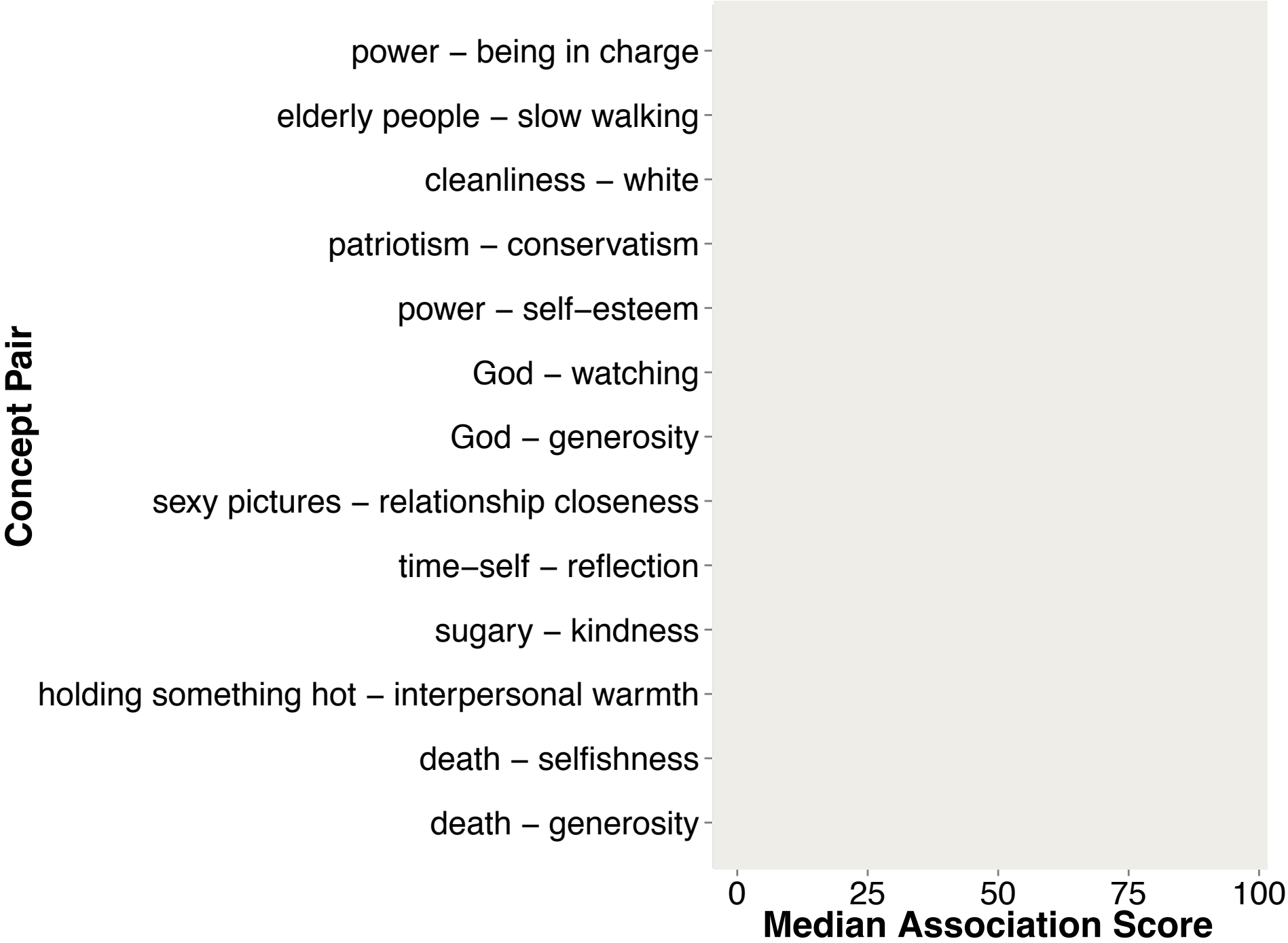
1. **Population Level:** Strongly but not weakly associated concept pairs will produce priming effects.

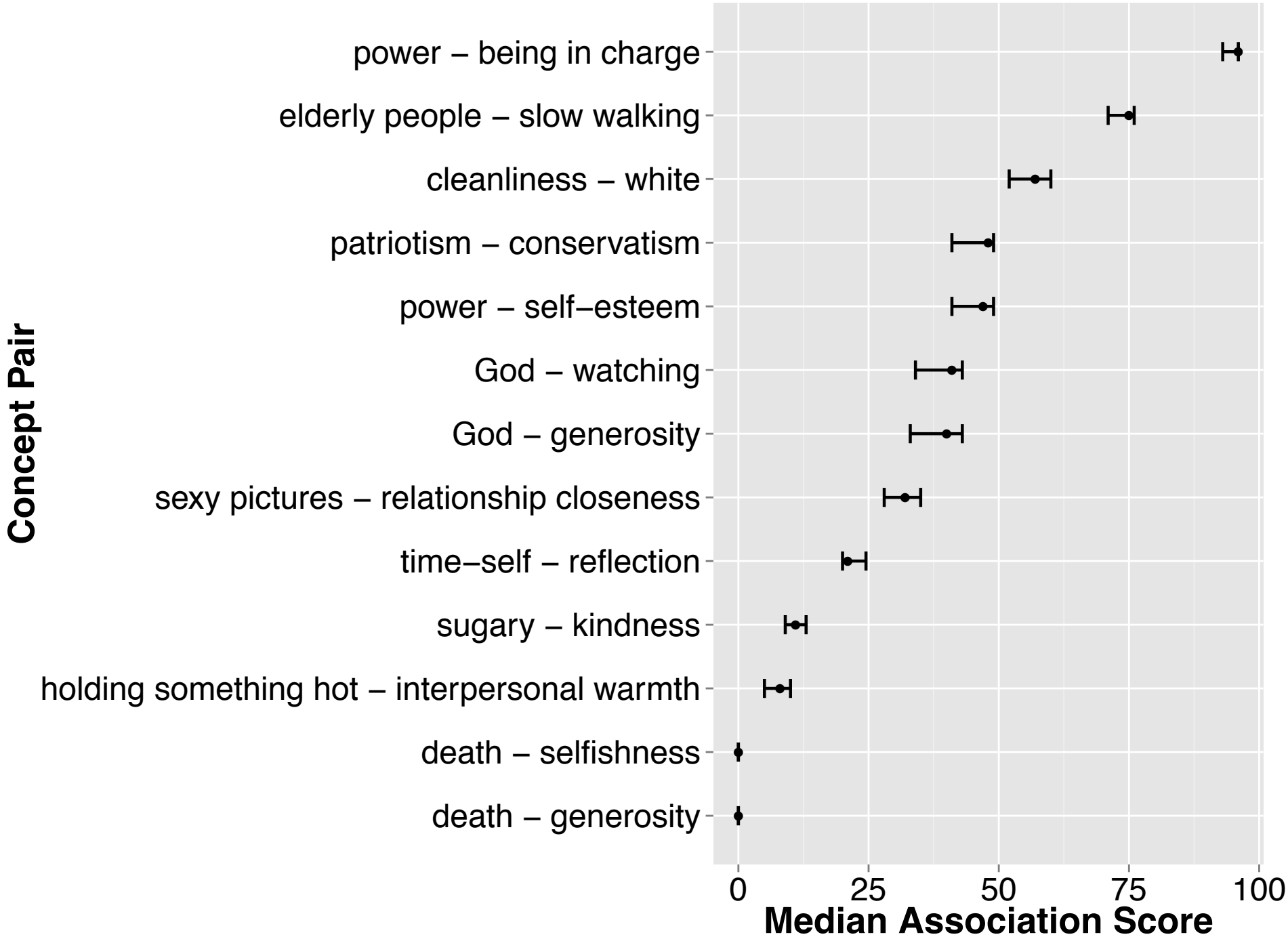
2. **Individual Level:** Priming effects will be stronger for those who associate a concept pair more strongly.

Study 1:	Measure concept associations in relevant population Explore predictors of concept association strength
Study 2:	Test priming effect for **strongly related** concept pair
Study 3:	Test priming effect of **moderately related** concept pair Test individual difference moderator of priming
Study 4:	Test priming effect of **weakly related** concept pair

Study 1

- Measure concept associations
- 752 Mechanical Turk Workers


power – being in charge
elderly people – slow walking
cleanliness – white
patriotism – conservatism
power – self–esteem
God – watching
God – generosity
sexy pictures – relationship closeness
time–self – reflection
sugary – kindness
holding something hot – interpersonal warmth
death – selfishness
death – generosity
Concept Pair
0
25
50
75
100
Median Association Score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Median Association Score

Study 1: Conclusions

- The strength of concept associations from the priming literature varies greatly
- Can this be used to predict the presence or absence of priming effects?

Study 2: Priming a Strong Association

- Concept pair:

  POWER – BEING IN CHARGE

- *Median* = 96

- 1470 Mechanical Turk Workers

- 2 priming methods:
  - Implicit
  - Explicit

Study 2: Implicit Priming

- Unscramble 16 sentences
- 8 sentences contain words relating to:
  - **Low Power**
  - **High Power**

Low Power	High Power
complied we her the with	influenced we woman the with
were also we dependent had	were also we independent had
called subordinate the he waved	called authority the him waved

(Smith & Trope, 2006)

Study 2: Explicit Priming

Please recall a particular incident in which:

- Low Power: someone else had power over you. . . .
- High Power: you had power over another individual or individuals. . . .

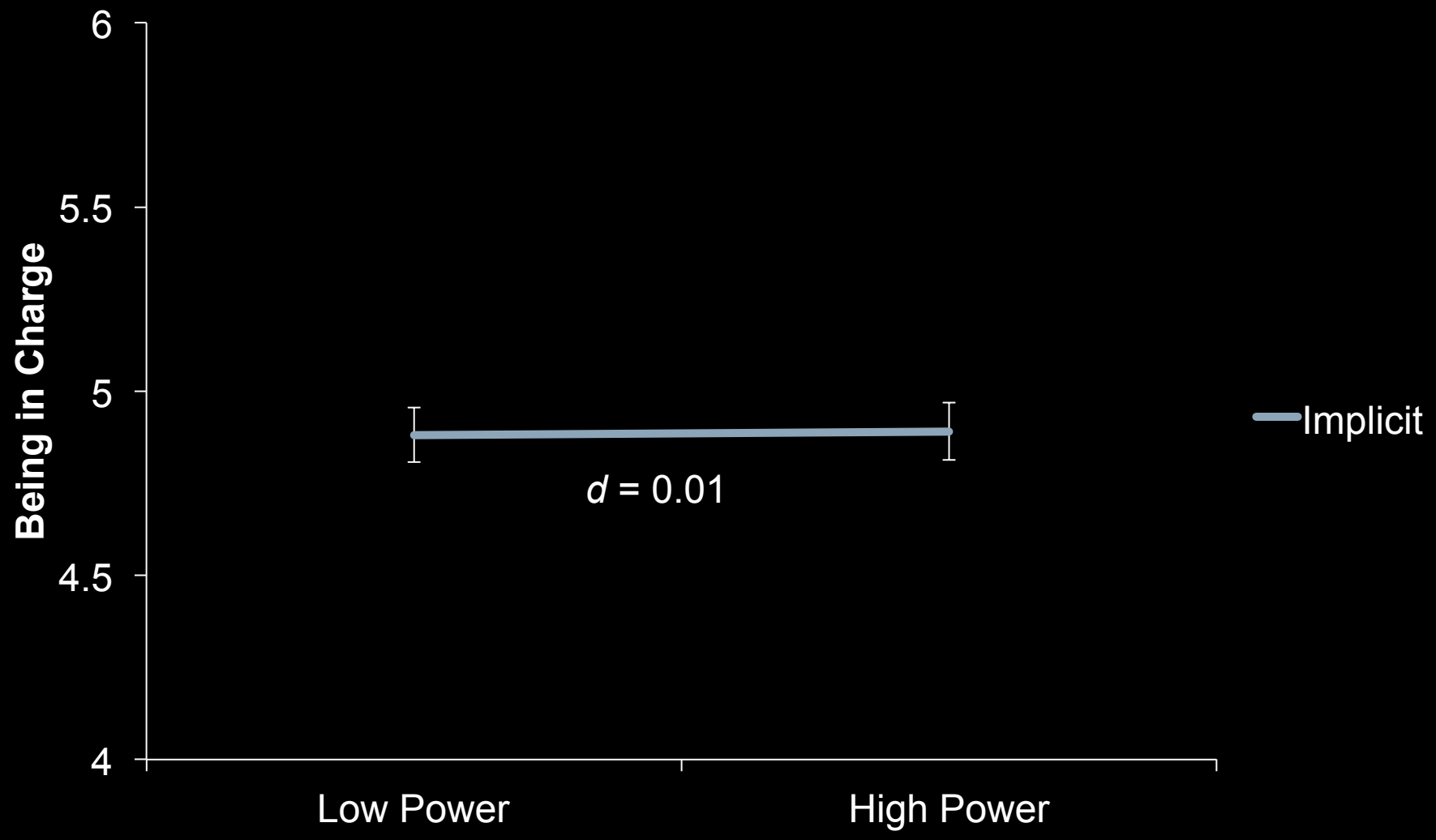
(Baldwin, 1989; Galinsky et al., 2003)

Study 2: Being in Charge

- 12 items; 7-point scales
  - I have a high level of respect in others' eyes
  - I tend to be influenced by people with strong opinions (r)
- $\alpha = .84$

(Anderson et al., 2006; Porter, 1961; Ryff & Keyes, 1995)

Study 2: Results



Power*Method: $b = 0.24$, $t = 2.27$, $p = .024$

Study 2: Results

Power*Method: $b = 0.24$, $t = 2.27$, $p = .024$

Study 2: Summary

- Strongly associated concepts can produce priming effects
- How strongly associated must concepts be?

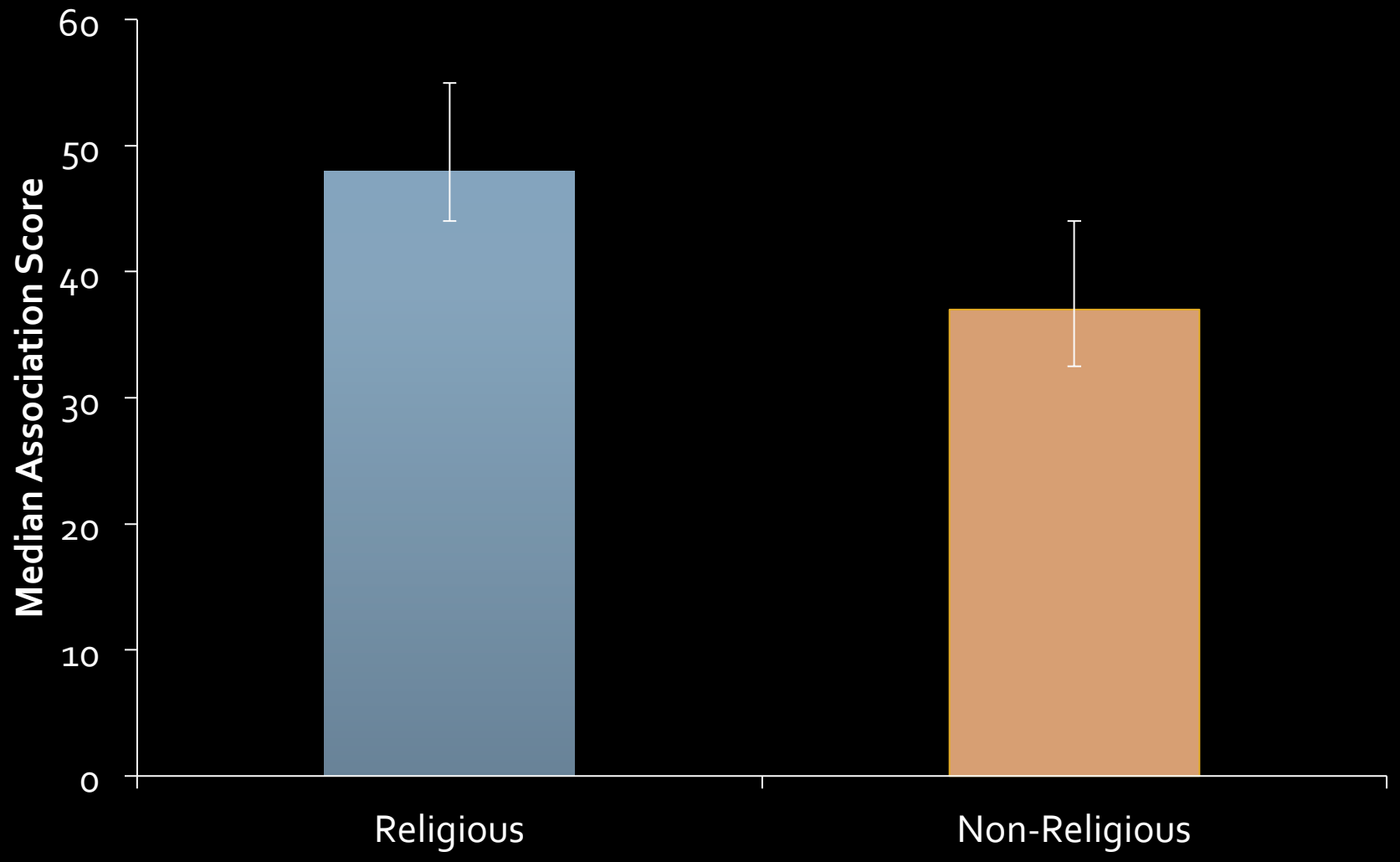
Study 3: Priming a Moderate Association

- Concept pair:

GOD – WATCHING

- *Median* = 40

GOD – WATCHING
Association by Religious Affiliation



Study 3: Priming a Moderate Association

- Concept pair:

  GOD – WATCHING

- *Median* = 40
  - Religious: 48
  - Non-religious: 37

- 634 Mechanical Turk Workers
  - 53% Religious
  - 47% Non-religious

Study 3: Priming Manipulation

- Please think about:
  - God: your beliefs and feelings about God and your religion. . . .
  - Control: the sorts of items you have in your home, apartment, or dormitory room. . . .

(Baldwin, 1989; Galinsky et al., 2003)

Study 3: Being Watched

- Situational Self-Awareness Scale (Govern & Marsch, 2001)

- Private (3 items)
  - Right now, I am conscious of my inner feelings
  - $\alpha = .77$

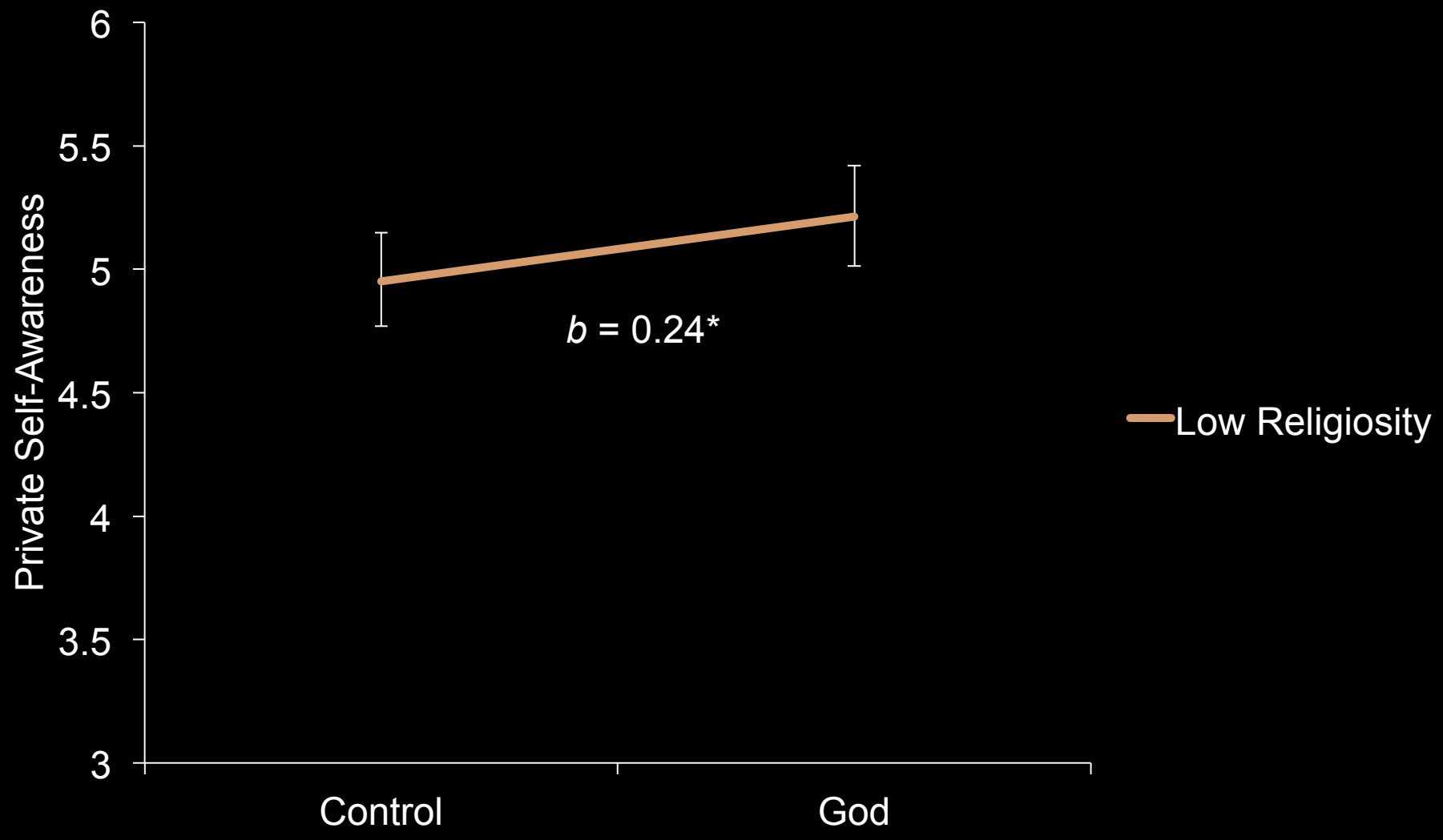
- Public (3 items)
  - Right now, I am concerned about the way I present myself
  - $\alpha = .82$

- 7-point Likert scales
- $r = .16$

Study 3: Religiosity

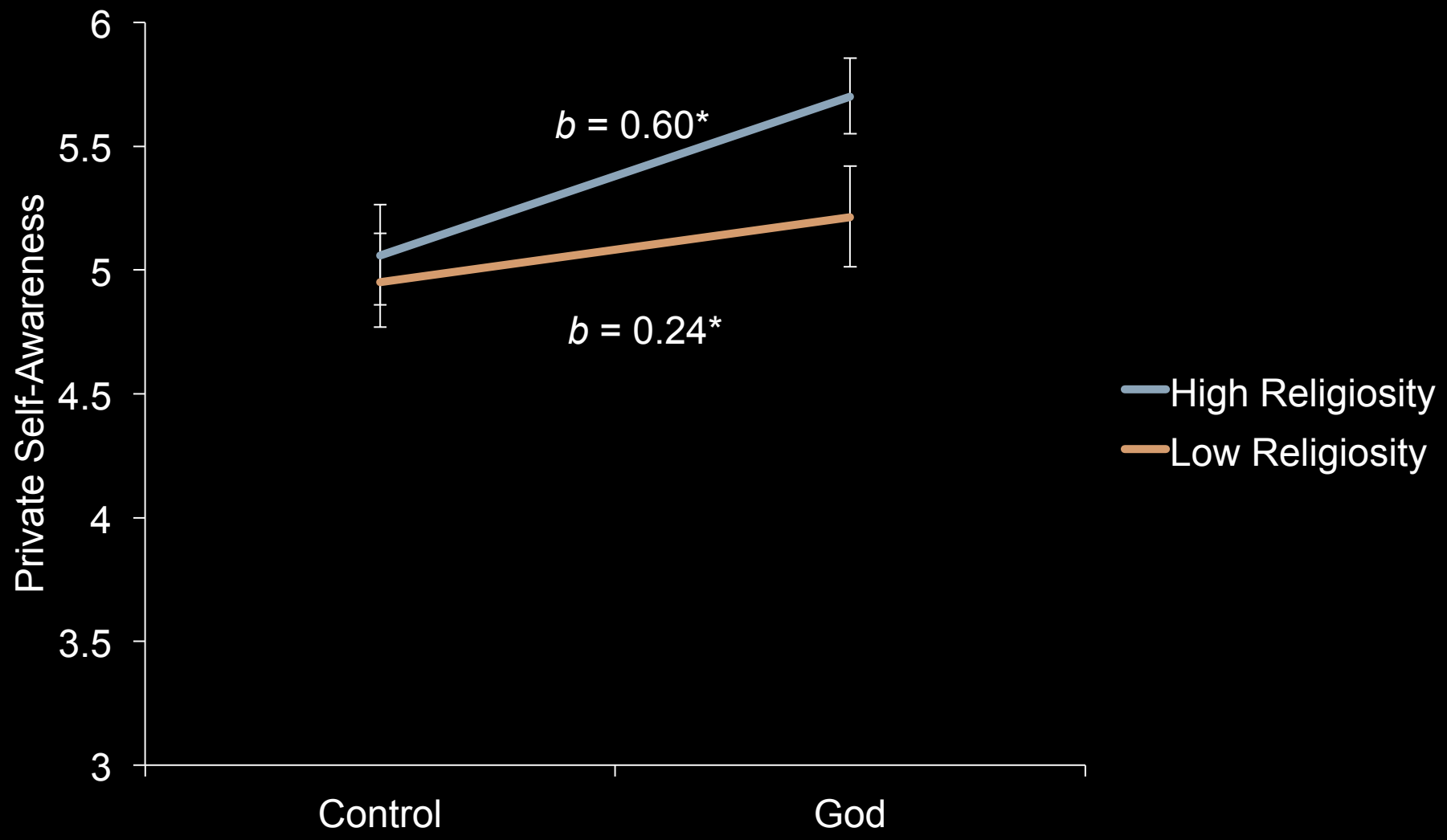
- 6 intrinsic religiosity items (Shariff, Cohen, & Norenzayan, 2008)
  - My personal religious beliefs are very important to me
- Single-item measure of religious attendance
  - How often do you attend religious services?
- 7-point scales
- $\alpha = .95$

Study 3: Private Self-Awareness



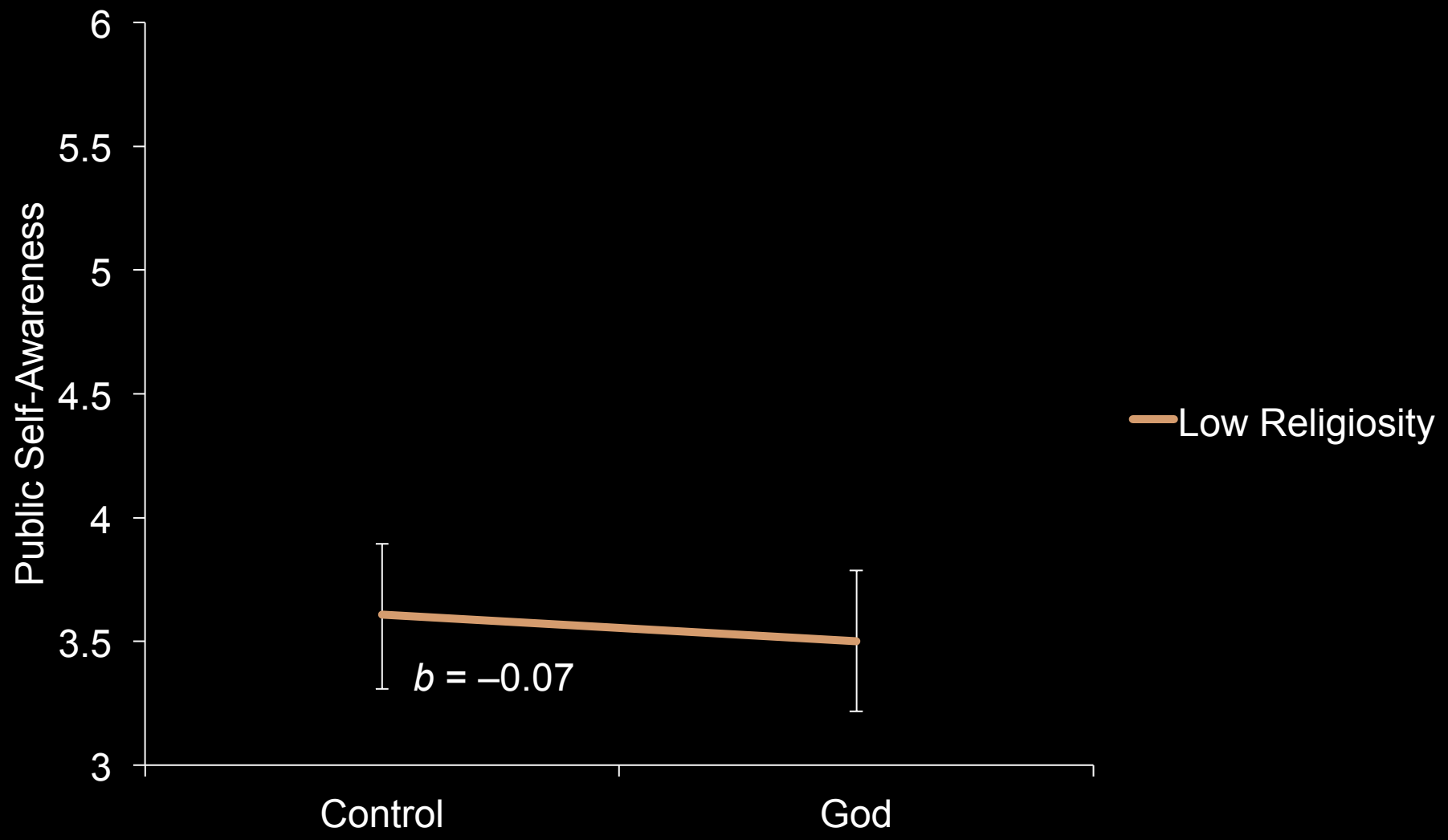
Condition*Religiosity: b = 0.19, t = 2.19, p = .029

Study 3: Private Self-Awareness



Condition*Religiosity: $b = 0.19$, $t = 2.19$, $p = .029$

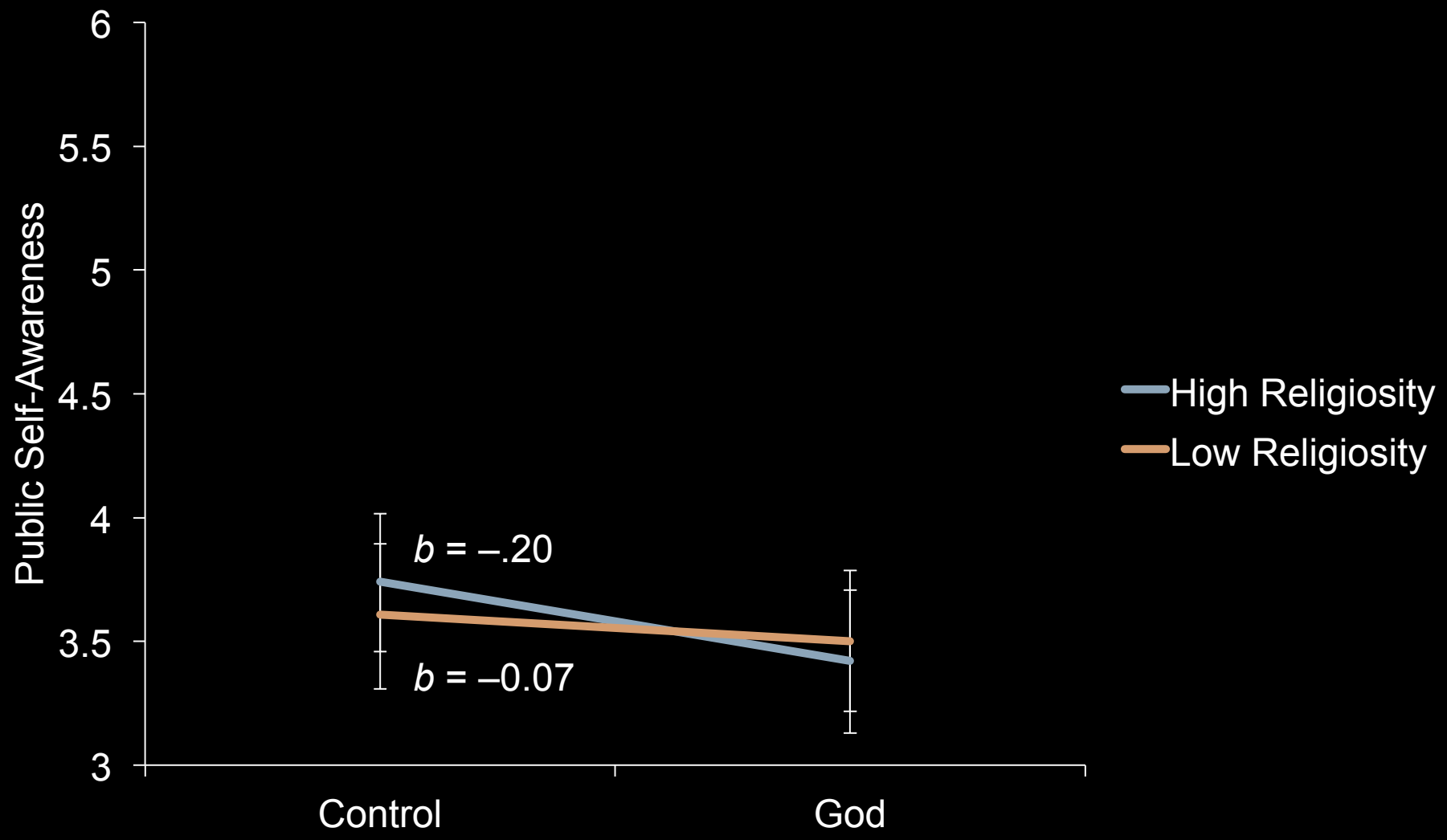
Study 3: Public Self-Awareness



Condition: $b = -0.13$, $t = -1.70$, $p = .091$

Condition*Religiosity: $b = -0.07$, $t = -0.85$, $p = .393$

Study 3: Public Self-Awareness



Condition: $b = -0.13$, $t = -1.70$, $p = .091$

Condition*Religiosity: $b = -0.07$, $t = -0.85$, $p = .393$

Study 3: Conclusions

- Moderators may be identified *a priori* from variation in concept associations
- Priming for moderately associated concept pair
- How low can you go?

Study 4: Priming a Weak Association

- Concept pair:

  TIME – SELF-REFLECTION

- *Median* = 21

- 1450 Mechanical Turk Workers

- 2 priming methods:
  - Implicit
  - Explicit

Study 4: Implicit Priming

- Unscramble 17 sentences
- 10 sentences contain words relating to either:
  - **Money**
  - **Time**

Money	Time
pack box the wallet	pack box the life
money we spend I	time we spend I
it financing takes work	it hours takes work

(Gino & Mogilner, 2014)

Study 4: Explicit Priming

Please recall a particular incident in which you had a lot more money/time than you normally do. . . .

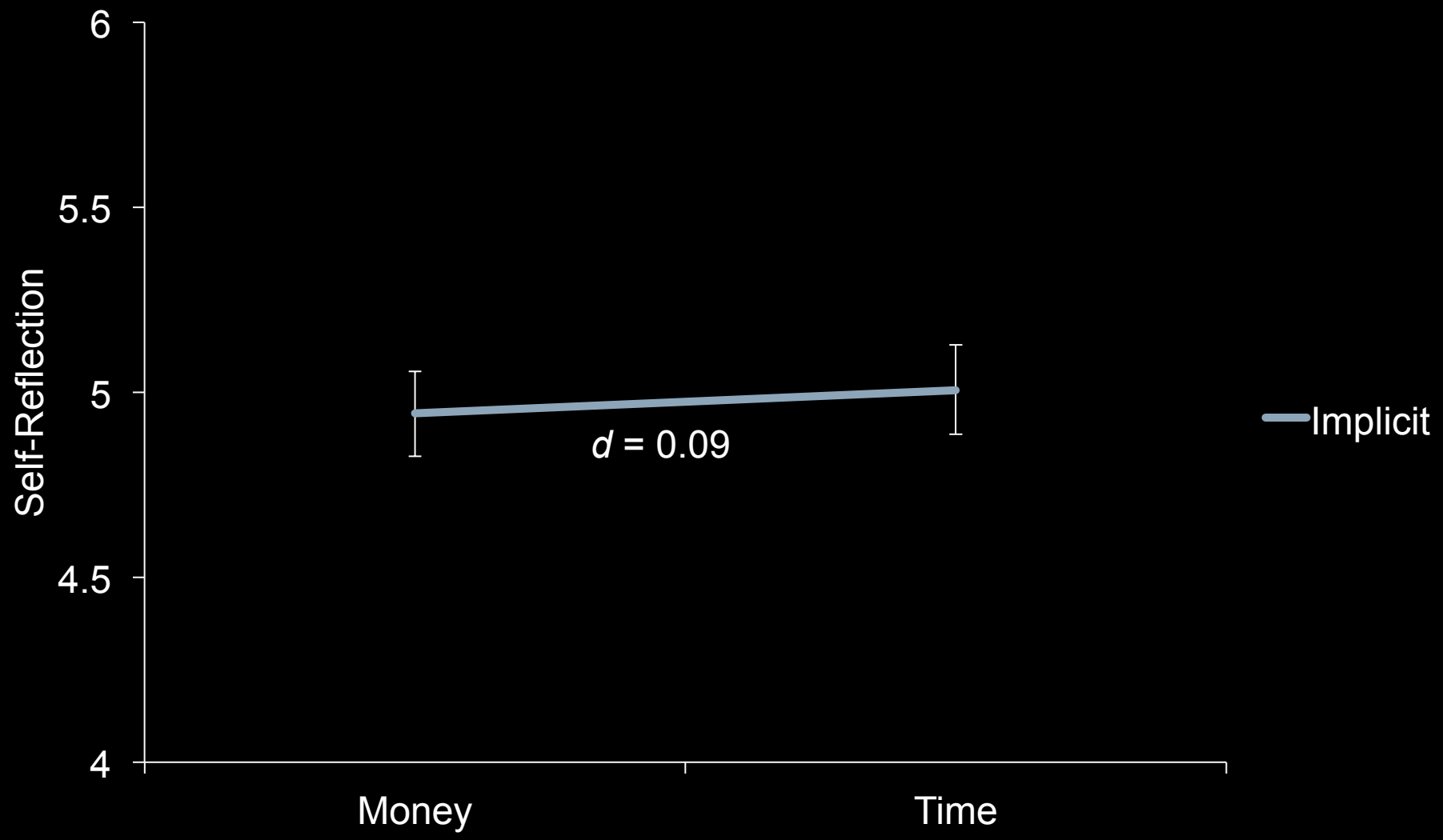
(Baldwin, 1989)

Study 4: Self-Reflection

- 9 items; 7-point scales
  - Right now, I am conscious of my inner feelings
  - It is important to me to try to understand what my feelings mean.
- $\alpha = .90$

(Gino & Mogilner, 2014; Govern & Marsch, 2001; Grant et al., 2002)

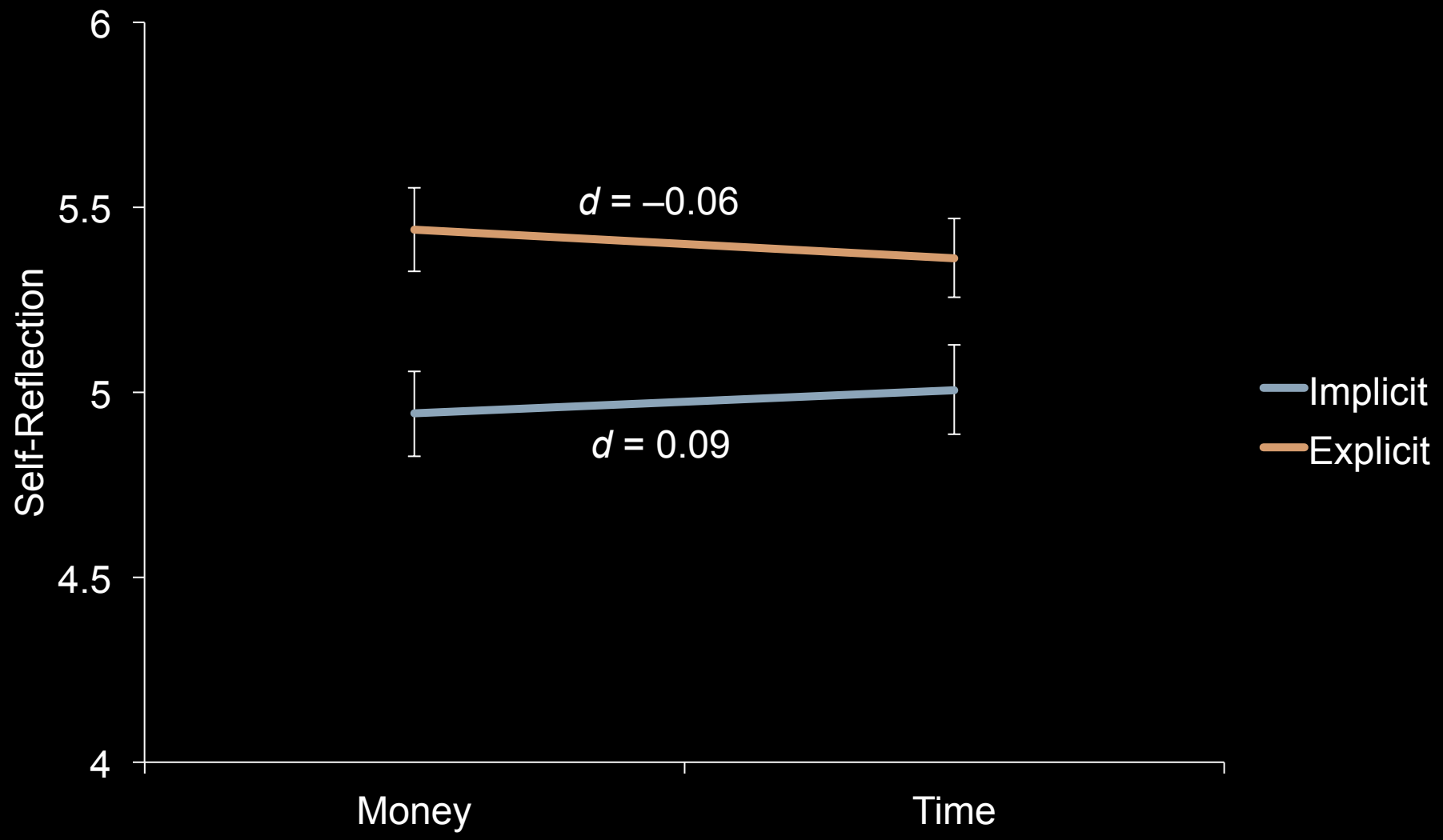
Study 4: Results



Condition: $b = -0.01$, $t = 0.55$, $p = .582$

Condition*Method: $b = -0.14$, $t = -1.36$, $p = .175$

Study 4: Results



Condition: $b = -0.01$, $t = 0.55$, $p = .582$

Condition*Method: $b = -0.14$, $t = -1.36$, $p = .175$

Study 4: Conclusions

- No effects of priming manipulation
- Weakly associated concept pairs are poor candidates for priming research

Summary

- Variation in concept associations from priming literature
- Priming effects for strongly and moderately related concept pairs
- Some concept associations differed among people
- Priming stronger among those who held concept association more strongly

Limitations & Future Directions

- Methods & measures
- Experimentally manipulate concept association