

# New Research on Behavior Change

Gregory M. Walton

Department of Psychology  
Stanford University  
[gwalton@stanford.edu](mailto:gwalton@stanford.edu)

# Four Avenues to Behavior Change

1. Social belonging
2. Choice and models of agency
3. Goals and feedback
4. The neural underpinnings of decision-making

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# Social Belonging and Motivation

- *Social identity*—people's sense of membership in social groups and interpersonal relationships
- May be a major source of human motivation

# Two “Mere Belonging” Studies

- *Mere belonging*—the minimal conditions needed to make people feel connected to others in a domain
- Methods
  - Minimal manipulation of social connection to math
  - Assess persistence on insoluble math puzzle
  - Control conditions hold constant established motivational processes

# **Study 1**

## **A Birthday Link**

# Math and Science Education

## THE WORD IN THE CLASSROOM

by Nathan Jackson

# Profile of a Math Major

Coming to Yale, I would not have guessed that I would major in math. Yet four years later, learning about math in the Math Department has proven to be among the best parts of my academic experience in college.

My parents and I brought a car full of boxes, rugs, bedding, and posters to New Haven— things to make my new world more familiar. Although I had visited campus before, it impressed me again. The gothic buildings provided a staid backdrop to the controlled chaos of the new school year: people threw Frisbees on the lawn, signs for parties were plastered to notice boards, and freshmen counselors directed kids carrying luggage to dormitories. My nervousness about coming to college was tempered by excitement.

As I became involved in life at Yale, my nerves calmed. I made a number of friends early on, some of whom turned out to be among my closest friends. I also joined a club, worked for a short stint at the Yale Daily News, and played several intramural sports for my undergraduate college. I took a variety of courses, ranging from “History of Modern China” to “Evolutionary

### Student Profile

Name: Nathan Jackson

College: Yale University

Hometown: Dundas, PA

Birthdate: March 17, 1980

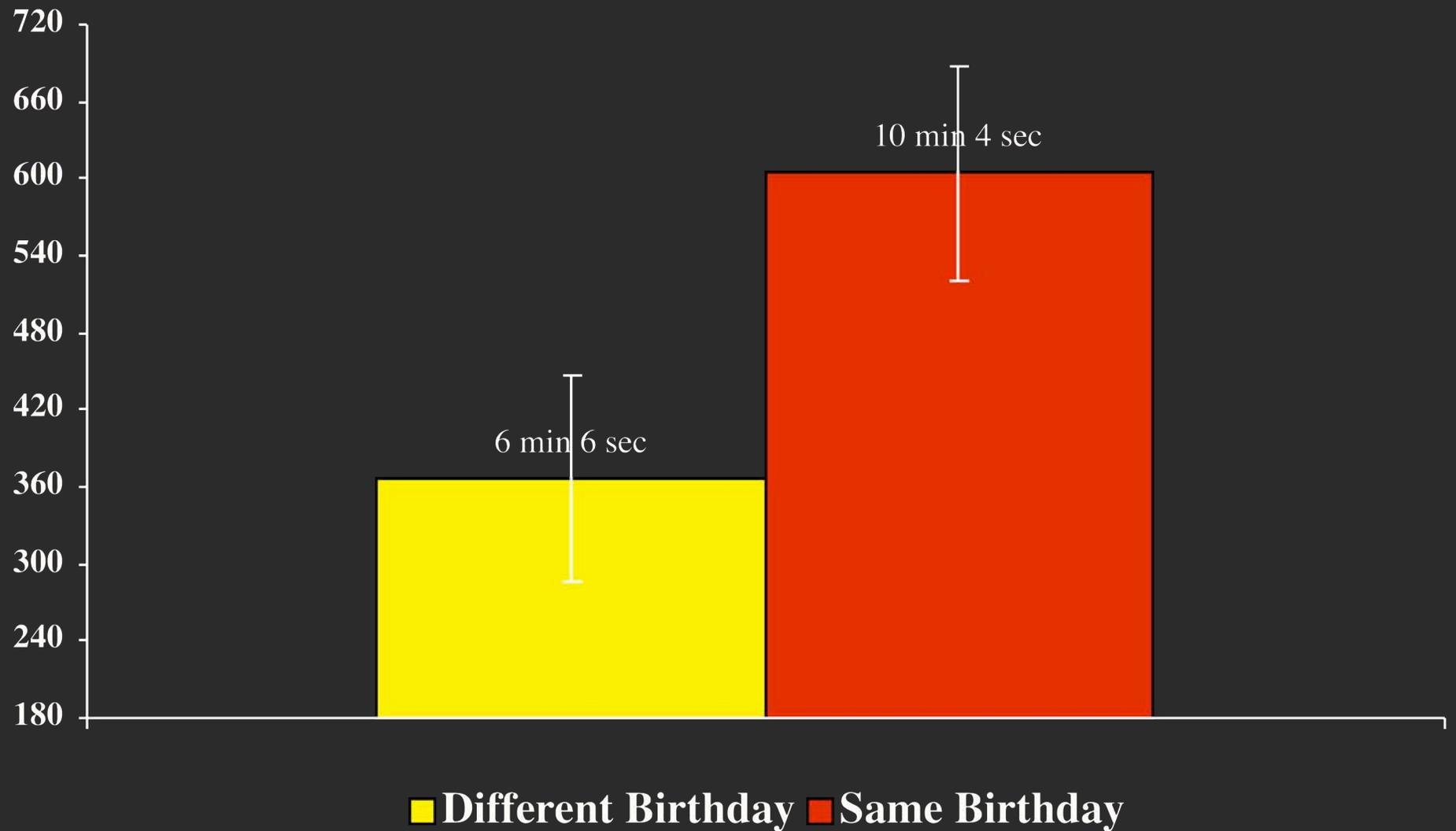
math. I remember what he said almost verbatim: “Sometimes students get caught up in the excitement of math and they want to be a part of that. But math is not right for everybody. It is very demanding and very challenging, and it requires a certain kind of focus and kind of skill set.” As I think back on my experience, I see the wisdom in his

advice: not everyone is right for math.

At it turned out, however, I was the right kind of person for math. Like many Yale students, I disliked the large and impersonal introductory lecture classes. The higher-level courses, however, provided a more in-depth intellectual examination of mathematical principles. Our professors encouraged us to work in groups, and I spent many of my late nights in Cross Campus Library with friends from class working through difficult problem sets.

During my last year at Yale I conducted my senior project under the guidance of Professor Samuelson. I worked on a problem related to Linear and Gaussian elimination, a topic related to a question Professor Samuelson had studied in graduate school.

# The Birthday Study



# **Study 2**

## **A Minimal Group Identity**

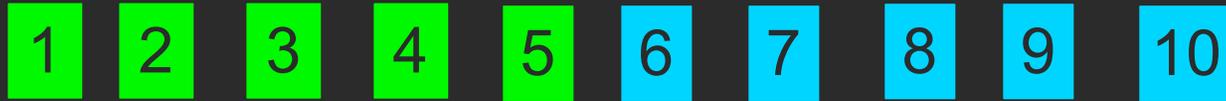
# Minimal Group Manipulation

- Numbers Group
- Numbers Person

1) 8-10 participants came to lab at once. Each received a sticker:

1 2 3 4 5 6 7 8 9 10

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2) Sent to individual rooms, and assigned to condition

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“Numbers Group” Condition Rooms

- Sign posted on wall, label on cover of experimental materials:



- Experimenter: “You are a green [blue]. So you are a member of the numbers group...”

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“Numbers Group” Condition Rooms

- Sign posted on wall, label on cover of experimental materials:



- Experimenter: “You are a green [blue]. So you are a member of the numbers group...”

“Numbers Person” Condition Rooms

- No sign on wall
- Label on cover of experimental materials:

[x] - Numbers  
Person

- Experimenter: “You are number [x]. So you are the numbers person...”

# The Minimal Group Study



# Extensions

- Even minimal social cues can change behavior
  - *Mere sociality*: Simply doing a task with others can increase interest in it
- Interventions that target social belonging can have large, long-lasting effects
  - One brief (1-hour) interventions raised Black students' college grades even years later  
(Walton & Cohen, 2007)
- Important to identify boundary conditions

# 2. Choice and Models of Agency

## Hazel Markus, Psychology

- *Models of agency (MA)*—guidelines for how to be a “good” person (Snibbe & Markus, 2005; Stephens, Markus, & Townsend, 2007)
- College educated, middle-class Americans
  - MA emphasizes uniqueness, independence
    - Prefer products that emphasize uniqueness
    - Like products they choose more than those they didn’t choose
- High school educated, working-class Americans
  - MA emphasizes connections to others, interdependence
    - Prefer products that emphasize faithful social relationships
    - Choose products that are common
    - Like products better when others choose the same product

# 3. Goals and Feedback

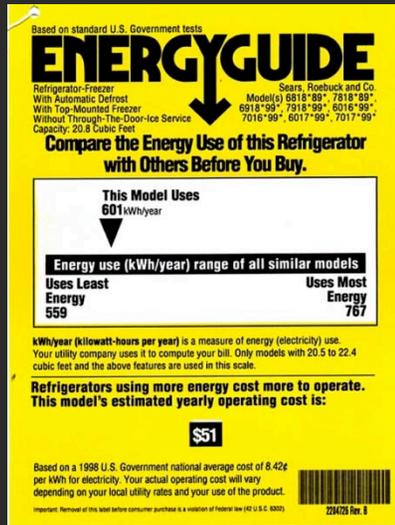
## Abby King, School of Medicine

- Twice daily individualized feedback, goal setting, and support delivered via PDA over 8 weeks
  - Eat healthier food (Atienza, King, Oliveira, Ahn, & Gardner, 2008)
  - Increased exercise (King, Ahn, Oliveira, Atienza, Castro, & Gardner, 2008)
- Regular automated telephone counseling can be as effective as human counseling
  - In increasing physical activity (King, Friedman, Marcus, Castro, Napolitano, Ahn, & Baker, 2007)

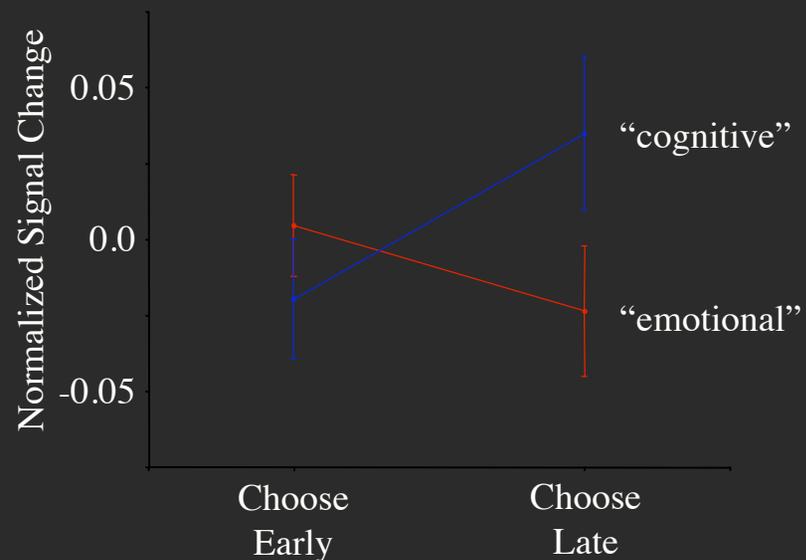
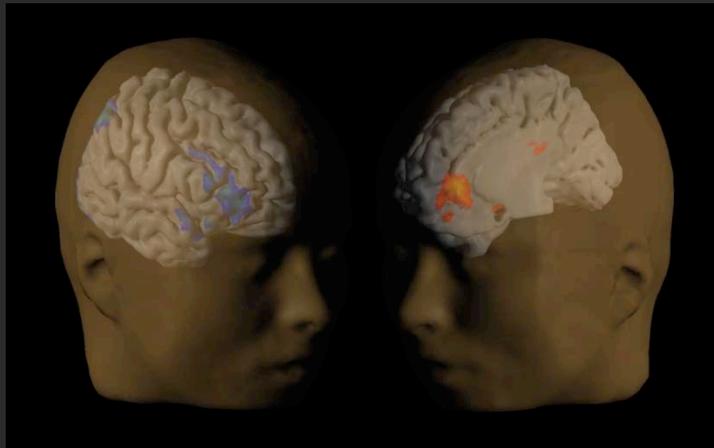
## 4. Neuroeconomics at Stanford

- Biological basis for decision-making
- Separate representations of costs and benefits
  - *Brian Knutson (Psychology and Neuroscience)*
- Integration of information to make decisions
  - *Jay McClelland (Psychology); Bill Newsome (Neurobiology)*
- Interaction of automatic (emotional) versus cognitive processes
  - *Sam McClure (Psychology)*

# Example: delay discounting



- Which refrigerator to choose?
- Need to balance immediate cost and long-term energy savings



# Conclusion

- Some ways to change behavior
  - Create a sense of social connection
  - Tailor treatments to people's model of agency
  - Establish personalized goals and provide regular feedback
  - Understand neural underpinnings
- *To change behavior, understand it*

**Thank you!**

