Wise Interventions:
Brief Exercises to Bolster Belonging Improve Disadvantaged Students’ Transition to College

Greg Walton
Stanford University
A Psychological Approach to Social Problems

- Bryan et al. (2011)
  - “Being a voter” increases voter turn-out

- Finkel et al. (2013)
  - Three 7-minute writing exercises that induce couples to take a 3rd-person perspective on marital conflicts stabilized relationship satisfaction over 1 year

- Devine et al. (2012)
  - Promoting awareness of and education about implicit race bias and increased concern about discrimination over 2 months
Wise Interventions
(Walton, 2014)

• Are wise to specific psychological processes: psychologically precise, not kitchen sink
  • But understand this process as occurring within a complex field of forces
  • Leverage powerful tools to alter these processes

• Often aim to alter dynamic processes that unfold over time

• Are inherently context dependent
  • Must address psychological processes actually present in a given context
  • May depend on affordances in the context that support or sustain an initial effect over time
Go Beyond Nudges
(Walton, 2014)

• Nudges:
  • Changes to a specific situation to encourage positive behaviors in that context
  • Have no theory of self
  • Cannot affect people’s behavior in disparate circumstances and over time (generally)

• Wise interventions
  • Aim to change how people think and feel in basic ways (i.e., the self) to help people flourish
Two Conclusions

• One important mediator of social disadvantage is psychology

• It is possible, through relatively brief exercises, to change key psychological levers; doing this can reduce persistent inequality in education
Some worries students have in school

• **Do I belong?:** When I feel lonely or disrespected, etc., does it mean I don’t belong?

• **Am I smart enough?:** When it’s hard, does it mean I can’t do it?

• **Does it matter?:** When it’s boring or I expect to do poorly, does it mean there is no reason to try?
They’re Magic*

• #1 – They’re magic … tricks.
  – *These effects can’t be real*

• #2 – They’re magic … bullets.
  – *Scale everywhere immediately without delay*

*They’re not magic (Yeager & Walton, 2011)
Students’ worries about belonging, about fixed intelligence, about stereotypes.

Opportunities for learning; Teachers’ parents’, and students’ motivation for students to do well in school.
My experiences at Princeton have made me far more aware of my “Blackness” than ever before . . . no matter how liberal and open-minded some of my White professors and classmates try to be toward me, I sometimes feel like a visitor on campus; as if I really don’t belong . . . It often seems as if, to them, I will always be Black first and a student second.

- Michelle Robinson (1985)
[At Princeton, I felt like] a visitor landing in an alien land . . . I have spent my years since Princeton, while at law school, and in my various professional jobs, not feeling completely a part of the worlds I inhabit.

- Sonia Sotomayor (memoir)

Race matters, because of the slights, the snickers, the silent judgments that reinforce that most crippling of thoughts: ‘I do not belong here.’

- Sonia Sotomayor (in dissent)

“I kind of feel like I’ve been dropped on Mars . . . I mean, it’s so different.”

-A rural student from South Dakota in a New England liberal arts school (Aries & Berman, 2012)
Belonging Uncertainty
(Walton & Cohen, 2007)

• People often wonder if they belong in new social and academic settings
  • Especially when they are targeted by stigma and negative stereotypes (see Goffman, 1963)

• This uncertainty *ambiguates* the meaning of negative social events
  • And prevents students from fully engaging in college life

• Potential target for intervention
  • Forestall global inferences of non-belonging
The Social Belonging Intervention
(Walton & Cohen, 2011 Science)

• Goal
  • Provide a more optimistic, hopeful narrative for common negative social experiences in school

• Stories from upper-year students indicating that
  • everyone worries at first about whether they belong in college but, with time, everyone feels at home
  • Designed to prevent students from attributing adversities to a permanent lack of belonging

• Wise elements
  • Students treated as benefactors, not beneficiaries
  • Message reinforced using “saying-is-believing” techniques (Aronson et al., 2002)

• Raised African American students’ college GPA from sophomore through senior year
  • 50% reduction in the achievement gap over 3-years
A Deleterious Interpretation of Social Adversity

Everyone is going out without me, and they didn’t consider me when making their plans. At times like this I feel like I don’t belong here and that I’m alienated.

-Black female, control condition
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-Black female, control condition

Statistical mediation:
This change in social construal statistically mediated the 3-year gain in academic performance.
How does it work?
(a model; conclusions from many studies)

Membership in a disadvantaged group in higher education (e.g., ethnic minority, first-gen.)

Student experiences a challenge or setback (e.g., critical feedback, feelings of loneliness)

With the social-belonging intervention

“I/people like me don’t belong in college”

Withdrawal from the social and academic environment

Psychological interpretation

“This is the kind of thing everyone goes through in the transition to college”

Behavioral response

Sustained engagement in the social and academic environment

Worse achievement and persistence

Better achievement and persistence

Academic outcome
A Psychological Road Map?

- *Pre-matriculation* interventions
  - Can we help students anticipate challenges they will encounter in college and how to overcome them?
  - Is *preventative* psychological intervention possible?
- Potential for large-scale dissemination
  - Possible to reach entire cohorts of students through online pre-enrollment materials
- Three trials
  - Charter school students
  - Two full-scale university partnerships
College-Going Among Urban Charter Graduates

David Yeager
U-Texas, Austin

Angela Duckworth
U-Penn

Donald Kamentz
YES Prep Charter Schools

Laura Keane
Mastery Charter/uAspire

Dave Paunesku
Stanford

Bill & Melinda Gates Foundation

PER TS

Improving education through science
Belonging R&D Process

- Design school
  - Student interviews
  - Brainstorms
  - “Journey maps”
- Coaching from d.school to synthesize initial hypotheses
  - Transcribed white boards/notes
  - Met weekly for 2 months to discuss and brainstorm
- Interviews and focus groups to test initial ideas and expand them
- Distilled ideas into candidate improvements
- Re-wrote the intervention
<table>
<thead>
<tr>
<th>Insight</th>
<th>Example</th>
<th>Optimization (revision to intervention message)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Students lack agency for creating social belonging at college, instead believing it should &quot;happen&quot; to them.</td>
<td>A student who would sit in her car, looking at peers, and wondering “how did everyone else make friends?”</td>
<td>Explain the <em>active</em> steps you have to take to make connections to professors or students, and that these take time to pay off.</td>
</tr>
<tr>
<td>2. Students believe casual friendships are distracting, not helpful, and so they do not make friends.</td>
<td>A student who said he made sacrifices to go to college to “do me,” i.e., get a degree, not have fun or make friends.</td>
<td>License students to create weak social ties by emphasizing their benefits for college and career goals and for reducing stress in school.</td>
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<td>3. Students believe college friends will never know them as authentically as high school friends or family and so they hesitate to connect.</td>
<td>A student who said that none of his peers in college were &quot;friends;&quot; they just &quot;hang out.&quot;</td>
<td>Emphasize that college friends do not have to compete with older friends in order to be helpful for meeting academic goals or reducing stress.</td>
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<tr>
<td>4. Students believe college teachers do not care about you as much as charter school teachers, and so they do not go to them for help.</td>
<td>A student who said that “in high school teachers shake your hand and look you in the eye when you walk in the class; in college, teachers don't do this … they don't care about you.”</td>
<td>Explain that in college professors have a different way of showing they care; they show it by giving you tough critical feedback or holding you to a higher standard, to prepare you for a career or life in general.</td>
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Evaluation

• Participants
  • Cohort 1: All graduates from two schools each in two urban charter networks (Mastery and Yes Prep; N=333)
  • Cohort 2: All graduates from 14 urban charter high schools (Mastery, Yes Prep, Achievement First, Aspire, KIPP; N=1,066)
  • Almost all first-generation students of color
  • All admitted to a 4- or 2-year college

• Design
  • Completed intervention materials online in school computer lab toward the end of senior year of high school

• Outcome
  • Continuous full-time college enrollment (National Clearinghouse Data)
You're finishing high school.
You're going to college.
You're excited.
And you probably still have lots of questions about what to expect.

This survey will give you an opportunity to learn more about current students’ experiences of going to college.

And because we value your point of view, we’ll ask you to share your personal thoughts and feelings about going to college too. The findings of this survey will then be shared anonymously with future high school graduates like you so they’ll know what to expect.
“Saying is Believing”

The initial worries about belonging to a college are likely to go away over time because once the student becomes more involved with social groups on campus that interest them, they later find friends with the same interest as them. Also, when students understand that they can go to office hours to meet with their professors to discuss a situation, they later feel that the professors are there for them and want them to succeed. The initial feelings will also go away after learning more about the campus. For example, a student might go on campus blind, not knowing where many things are, and once they realize this, they are more likely to feel at home.

-- Treated African American Female
Full-Time College Enrollment
(Raw data; NSC)

Cohort 1: N= 333

<table>
<thead>
<tr>
<th>Semester After High School</th>
<th>Control</th>
<th>Social belonging</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>61%</td>
<td>59%</td>
</tr>
<tr>
<td>2</td>
<td>55%</td>
<td>53%</td>
</tr>
<tr>
<td>3</td>
<td>53%</td>
<td>*</td>
</tr>
<tr>
<td>4</td>
<td>49%</td>
<td>*</td>
</tr>
<tr>
<td>5</td>
<td>41%</td>
<td>44%</td>
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3-4x the size of paying $3,500/semester

Cohort 2: N= 1,060

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<thead>
<tr>
<th>Semester After High School</th>
<th>Control</th>
<th>Social belonging</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>57%</td>
<td>54%</td>
</tr>
<tr>
<td>2</td>
<td>51%</td>
<td>52%</td>
</tr>
<tr>
<td>3</td>
<td>51%</td>
<td>*</td>
</tr>
<tr>
<td>4</td>
<td>48%</td>
<td>*</td>
</tr>
<tr>
<td>5</td>
<td>40%</td>
<td>40%</td>
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* Significant controlling for high school GPA and SAT
Social Integration on Campus

Optional fall survey in Cohort 1, $N=41$

- Using academic support services: Treatment vs. control: $b = .74$, $t(50) = 3.05$, $p = .005$
- Living on campus
- Joining extracurricular

Sum score fully mediates the treatment effect on full-time enrollment

Yeager, Walton, Brady et al. (in prep)
University Partnership 2: A Selective Private University

Shannon Brady
Stanford

Ezgi Akcinar
Stanford

Dave Yeager
U-Texas, Austin

Geoff Cohen
Stanford

Dave Paunesku
Stanford/PERTS

Carol Dweck
Stanford

Hazel Markus
Stanford

Rob Urstein
Stanford
Evaluation

- 90% of incoming students ($N=1,592$) at a selective private university (416 African American, Latino, Native, or White first-gen)

- Link on orientation website

- Directed to online survey
  - Control group (information about moving to California)
  - Three treatments (quotes + letter)
    - Standard social belonging
    - Address *cultural fit* as a factor that can give rise to worries about belonging
    - Address *critical feedback* as a cause of worries about belonging
Form 15: Social and Academic Life at Stanford: What is it like to come to Stanford?

Please follow the link below to take a brief survey about social and academic life at Stanford. This survey shares stories from current and former Stanford students about their experiences with the transition. You will then be asked about your thoughts and feelings about coming to Stanford. The thoughts shared in this survey will be used to help improve the transition experience.

Click here for the Social and Academic Life at Stanford survey.

You’re in.
You’re coming.
You’re excited.

You probably have lots of questions about what to expect.

This survey will give you an opportunity to learn more about students’ experiences coming to Stanford.

Because we value your point of view, we’ll also ask you to share your thoughts and feelings about coming to “The Farm.” We want to hear more about your and other students’ perspectives so we can give future Stanford students better insight into what coming to college is like.

Welcome to Stanford.
We're so very glad you're (almost) here.
First-Year Grade Point Average (raw means)

- Control: 3.62
- Any Belonging Treatment: 3.61
- Prior Two Years (N=968): 3.32
- Standard Belonging Control: 3.40
- Cultural Fit: 3.47
- Critical Feedback: 3.39
- Any Treatment: 3.42

35% reduction in raw 1st year achievement gap

Advantaged Students (Asian and White continuing-gen; N=1,186)

Social-Belonging Intervention

Disadvantaged Students (non-Asian minority, White first-gen; N=406)

Subgroup X Treatment (any) interaction: F(1, 1588)=4.77, p=0.029; Contrast for Disadvantaged: t(1584)=2.33, p=0.020, d=0.26
Social and Academic Engagement
(African American, Latino, and First-Gen White students; Spring Term)

**Made Close Friends**
3-item scale (e.g., “I have made some close friends at [school name]”) + average closeness of 7 closest friends (1-7)

**Extracurricular Involvement**
Sum of involvement in top three extracurricular activities (0-15)

**Use of Academic Support Services**
3-items: e.g., “So far this quarter, how often have you...met with a professor or TA outside of class? (1-5)

**Developed a Mentor Relationship**
1-item: “Has anyone associated with [school name] taken a special interest in you and your personal and academic development?”
Conclusions

- Psychology *mediates* the reproduction of inequality
- Psychological interventions are like *engine oil*, not the engine
  - They “grease” a complex system to allow it to function more smoothly
- Not “either/or” but “both/and”
- To be effective, psychological interventions:
  - Must speak to students’ experience in the setting at hand
    - Need for design processes and optimization
    - Need for true interdisciplinary collaborations
  - Must be delivered in contexts that afford better outcomes
    - Need for a better understanding of contexts
Next Steps: College Transition Collaborative (CTC)

PIs: Christine Logel (Waterloo), Mary Murphy (Indiana), Greg Walton (Stanford), David Yeager (UT Austin)

- A large-scale partnership between researchers and colleges and universities to test pre-matriculation interventions with full cohorts of incoming students
  - 13 colleges and universities
- Experimental design
  - Standardized control
  - Standard Social-Belonging Treatment
  - Campus-Specific Customized Treatment
- Common measures
### Full-Scale Prematriculation Trials

<table>
<thead>
<tr>
<th>CTC Partners: 2014-2018</th>
<th>Ongoing/Past Non-CTC Trials</th>
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<tbody>
<tr>
<td>Bowling Green University</td>
<td>Charter School Networks (KIPP, Mastery, Yes Prep)</td>
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<tr>
<td>California State University, Northridge</td>
<td>Michigan State University</td>
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<tr>
<td>Cornell University</td>
<td>Stanford University</td>
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<tr>
<td>Dartmouth College</td>
<td>University of Illinois, Chicago</td>
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<tr>
<td>Great Lakes College Association (Allegheny, DePauw, Hope, Wabash, and Wooster)</td>
<td>University of Texas at Austin</td>
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<td>Indiana State University</td>
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<td>Indiana University</td>
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<tr>
<td>Lewis &amp; Clark College</td>
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<tr>
<td>Southern Oregon University</td>
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<tr>
<td>University of California, Santa Cruz</td>
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<td>University of Central Arkansas</td>
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<tr>
<td>University of Waterloo</td>
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<td>Yale University</td>
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**Estimated CTC Participation in Summer of 2015**

- 40,000 students
- 11,700 First-gen
- 3,250 African American
- 5,100 Latino
- 300 Native
Key Research Questions

• Applied significance
  • How much can prematriculation interventions increase college persistence and achievement for disadvantaged youth? Cost-benefit analyses.

• Design and optimization
  • What’s the best way to create design processes to optimize psychological interventions for new settings? Are optimized interventions more effective or more robust?

• Heterogeneity
  • In what settings and for whom are prematriculation interventions most effective?

• Theories of inequality
  • How do psychological processes interrelate with other processes (e.g., opportunities available in colleges, levels of prejudice) to perpetuate inequality?