Questions of this Research:

• What is hope and how much do hope and aspirations matter in economic development?
• IF they do matter, can we change them?
• IF we can change them, can we measure the effect of these changes?
Outline:

- Background on Hope as a research concept
- Outline an economic model of hope
- Relate cases derived from model to new literature
- Description of Oaxaca Hope Project RCT
- Some early results after one-month follow-up survey
- Conclusions and implications for development
Influence of Psychological Factors on Economic Development:

**Hope**
- Snyder (1994) *Psychology of Hope*
- Bandura (1994)
- Fryer & Torelli (2010) "Econ. of Acting White"

**Aspirations**
- Bandura (1994)
- Bernard et al. (2014)
- Glewe et al. (2015)
- Macours & Vakis (2009)

**Identity**
- Hoff & Padney (2006)

**Key Investments of Time & Resources**
- Mischel et al. (1989)
- Baumeister & Tierney (2011)
- Banerjee & Duflo (2007)
- Mullainathan (2009)

**Self-Efficacy**
- Rotter (1966) "Locus of Control"
- Bandura (1993)

**Self-Control**
- Dickerson (2007)

**Development Outcomes**
- Depression
- Cognitive Function

**Introduction**
- Hope: A Primer
- A Framework for Hope
- Oaxaca Hope Project
- Results
- Conclusion
Hope

What is hope? Hope is both a **noun** and a **verb**: (Webster’s)

1. (Noun) Desire accompanied by expectation of or belief in fulfillment, e.g.
   
   “When they started their life together, they were young and full of *hope*.”

   “Rescuers have not yet abandoned *hope* that more survivors will be found.”

   “He had little *hope* of attending college.”

2a. (Verb) to cherish a desire with anticipation

   **Davíd hopes that it may rain on his field tomorrow.”**

2b. (Verb) to desire with expectation of attainment

   “**Davíd hopes to irrigate his field this coming Saturday.”**
Aspirations

Key difference between “hope that” (2a) and “hope to” in (2b):

Wishful hope which may motivate fatalism vs.

Aspirational hope which may motivate proactivity

• Different world views throughout history and today have strongly emphasized one type of hope over another.
• Related to locus of control.
The Space of Agency and Optimism

**Perceptions about Future**

- **Negative**
  - Self-Determination
  - Grit
- **Positive**
  - Aspirational Hope

**Agency over Future**

- **High**
  - Grit
  - Aspirational Hope
- **Low**
  - Victimization
  - Wishful Hope

**Optimism**

- **Fatalism**

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**Introduction**

Hope: A Primer

**A Framework for Hope**

Oaxaca Hope Project

**Results**

**Conclusion**
Work in Economics Related to Hope and Aspirations

Theoretical:
• Appadurai (2004) “Capacity to Aspire”
• Ray (2006)
• Genicot and Ray (2014, NBER)
• Dalton, Ghosal, & Mani (2014, EJ)

Experimental/Empirical:
• Bernard, Dercon, Orkin, and Taffesse (2014) Ethiopia
• Macours & Vakis (forthcoming, EJ), CCT Nicaragua
• Karlan et al. (ongoing), ICM Philippines
• Beaman et al. (2012, Science), India
• Wydick, Glewwe, and Rutledge (2013, JPE)
• Glewwe, Ross, & Wydick (2015), Indonesia
Children’s Drawings and Psychological Characteristics
(Drawing and Attribute Ranking from Factor Analysis Score: Happiness)

Happiness, 17th percentile

Happiness, 92nd percentile
Children’s Drawings and Psychological Characteristics
(Drawing and Attribute Ranking from Factor Analysis Score: **Self-Efficacy**)

**Self-Efficacy, 8th percentile**

**Self-Efficacy, 94th percentile**
Children’s Drawings and Psychological Characteristics
(Drawing and Attribute Ranking from Factor Analysis Score: **Hope**)

![Hope, 15th percentile](image1)

![Hope 93rd percentile](image2)
Drawing Analysis Results

Using psychometric indices, international sponsorship causes children in Indonesia to (mean across specifications)

- Exhibit much higher levels of **hope** (0.66$\sigma$)
- Be more **happy** (0.42$\sigma$)
- Have higher **self-efficacy** (0.29$\sigma$)
The Psychology of Hope

R. Snyder (1994) classic *The Psychology of Hope* identifies three characteristics of hope:

1. Goals/Aspirations

2. Agency/Self-Efficacy

3. Pathways/Avenues

E.g. A woman living in poverty establishes a goal of expanding her clothing business, has a reasonable basis for believing she is capable of her realizing her aspiration, and identifies the pathway to her goal as obtaining a microfinance loan and getting additional small-business training.
A Model of Hope Based in the Psychology of Hope

An Aspirations-dependent Utility Function

Should satisfy the following four properties:

1. Marginal utility is higher immediately below $A$ than it is just above it. For small $\epsilon$, this implies that $\frac{du}{dY}\bigg|_{Y=A-\epsilon} > \frac{du}{dY}\bigg|_{Y=A+\epsilon}$.

2. There is increasing marginal utility in outcomes below the aspiration and decreasing marginal utility in outcomes at and beyond the aspiration, i.e. $\frac{d^2u}{dY^2} > 0$ for $Y \geq A$ and $\frac{d^2u}{dY^2} < 0$ for $Y \geq A$.

3. As aspirations grow in importance to utility, gains in utility become uniquely a function of realized aspirations, i.e. as $\alpha \to 1$, $u = c_1$ for $\forall Y < A$ and $u = c_2$ for $\forall Y \geq A$, where $c_2 > c_1$ and $c_1, c_2$ are constants.

4. Utility is increasing in higher realized aspirations, i.e. $u(Y_2, A_2) > u(Y_1, A_1)$, where $Y_1 = A_1$, $Y_2 = A_2$, and $Y_2 > Y_1$. 
A Model of Hope Based in the Psychology of Hope

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The following utility function satisfies these four properties:

$$u = 1(Y < A) \cdot A \left(\frac{Y}{A}\right)^{(1/1-\alpha)} + 1(Y \geq A) \cdot A \left(\frac{Y}{A}\right)^{1-\alpha} \quad (1)$$
Aspirations-based utility based on different weights of aspiration importance ($\alpha$):

\[
u = A(Y/A)^{(1/1-\alpha)} \cdot 1(Y > A) + A(Y/A)^{(1-\alpha)} \cdot 1(Y \geq A)
\]
A Model of Hope

Agency and Avenues

A complete production structure reflecting both agency and avenues – is given by

- \( Y = \pi_1 e + \pi_2 v \) \hspace{1cm} (2)

- \( E[Y] = \begin{cases} \frac{\pi_1 e}{\bar{Y}} & \text{if } e < \bar{e} \\ \bar{Y} & \text{if } e \geq \bar{e} \end{cases} \) \hspace{1cm} (3)

where \( \pi_1 \bar{e} = \bar{Y} \).

- Assume that effort is costly in utility terms at an increasing rate according to the function \( c(e) \) where \( c'(e) > 0 \), \( c''(e) > 0 \) and \( c(0) = 0 \).

- The agent in this economic model of hope solves the problem

\[
\max_e U = E[u] - c(e)
\]

subject to (1) – (3).
A Model of Hope

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A Model of Hope

Low Self-Efficacy and Internalized Constraints:

• To account for misperceptions of agency and avenues, we generalize the production function in (2) and (3) such that individuals make decisions on their perception of agency:

\[ \tilde{\pi} = \begin{cases} \pi & \text{if } e_t < e^0 \\ \rho \pi \pi' & \text{if } e_t \geq e^0 \end{cases} \]

and their perception of avenues:

\[ \tilde{Y} = \rho \bar{Y} \]

• Note: Suppose \( c(e_t) = \gamma e_t^2 \), then as \( \alpha \to 1 \), \( e^* = \rho \pi \pi' / 2\gamma \) and \( A^* = (\rho \pi \pi')^2 / 2\gamma \), but we don’t assume optimal aspirations.
A Model of Hope

• Putting our model together we have:
• Case of International Child Sponsorship / Oaxaca Hope Project
Aspirations

• Could aspirations lie beneath most successful development interventions? (when they are successful)
  – Some educational interventions: textbooks, more teachers, ipads, scholarships, etc.
  – CCTs, UCTs
  – BRAC poverty graduation program

• Might a lack of aspirations lie behind most failed development intervention?
  – Lack of “by-in” by local communities for infrastructure project
  – Microfinance
  – TOMS Shoes
The Oaxaca Hope Project

- Joint research with Travis Lybbert, U.C. Davis, Irvin Rojas, U.C. Davis, Bob Dowd, Notre Dame.
- NGO Partner: Fuentes Libres, 52 community banks in Oaxaca, Mexico.
Cluster Randomization using Pairwise Matching of Community Banks:

• Used loan officer focus group to rank factors most heavily influencing borrowing group performance.

• Matched groups by hierarchical process of
  1. Same Loan Officer
  2. Size of group
  3. Experience of Group
  4. Age of Members
  5. Similarity of Microenterprises

• 52 Community Banks (Female): 26 treatment, 26 control.
• 601 Microfinance Borrowers: 326 treatment, 275 control.
Intervention:

**Goal:** Increase aspirational hope for microenterprises among women in the randomly selected community banks through three main interventions.

1. **Creation and Screening of Documentary Film** on best borrowers within the organization.

2. **Goal Exercise** with refrigerator magnets →

3. **Hope Curriculum**, intensive in first month but carried out continually for 12 months. Focus on development of “Los Tres A’s”: *aspiraciones, habilidades, avenidas.*

*Bruce Wydick, University of San Francisco*
Data (baseline, 1 month and 12 month surveys):

On Hope

• 5 questions used to create Aspirations Index
• 5 questions used to create Agency Index + ANOVA
• 5 questions used to create Avenues out of Poverty Index + data on future-mindedness, risk-aversion, spiritual values.

Business Performance, impacts on

• Community bank savings, Gross enterprise revenue, Net profits, Employees in enterprise

Impact Estimator: ANCOVA

\[ y_{ijt} = \alpha + \tau \text{Treat}_j + y_{ijt-1} + X_i' \beta + \varepsilon_{it}. \]
Measuring *self-efficacy*

- We use ANOVA-type technique on the following matrix:

```
A. ¿Cuál es su mejor estimación de sus ventas semanales en las siguientes situaciones?

<table>
<thead>
<tr>
<th></th>
<th>Mala Suerte</th>
<th>Suerte Normal</th>
<th>Buena Suerte</th>
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<td>Máximo Esfuerzo y</td>
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</tbody>
</table>
```

- Measure of agency is BSS/TSS, where

\[
BSS = \sum_{j=1}^{3} c_j \ast (\bar{e}_j - \bar{e})^2, \quad TSS = \sum_{i=1}^{C=3} \sum_{j=1}^{R=3} (e_{ij} - \bar{e})^2
\]

- Yields *agency coefficient*, \( a \in [0,1] \) for every woman.

Bruce Wydick, University of San Francisco

Oaxaca Hope Project
Utility of Sales Levels: Control Groups
Before and After Intervention

Standardized Sales Level

Control Before Treatment
Control After Treatment (on Treated)
Utility of Sales Levels: Treated Groups
Before and After Intervention

\[
\text{Diff-in-Diff.} = [A_{11} - A_{10}] - [A_{01} - A_{00}]
= [(-0.98) - (-1.27)] - [(-1.23) - (-1.04)]
= 0.4757\sigma \text{ (bootstrapped } t \approx 0.75)\]
• What could be responsible for this?

<table>
<thead>
<tr>
<th>Baseline Differences: Protestant vs. Catholic Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>(standard deviations, n= 555)</td>
</tr>
<tr>
<td>(1)</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>Aspirations</td>
</tr>
<tr>
<td>0.209**</td>
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<tr>
<td>(0.101)</td>
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</tbody>
</table>

• Baseline differences between Protestant and Catholic in business variables not significant overall.

• What did we do to the Catholic women of Oaxaca?
Key Questions Moving Forward...

• Will aspirational hope survive over $\geq 12$ months?
• Will we be able to raise agency & avenues?
• Will we see real, sustained impacts on income?
• Will we find that the impacts from the hope intervention are bigger than we see from microfinance interventions themselves?
• Larger Question: Can a new human development framework evolve that incorporates importance of hope with insights of behavioral economics.
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