Behavioral Public Policy Journal Club

Poverty & Financial Decision-Making

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April 2018

A brief history of economics

- Psychological insights were present in early theories (Adam Smith, Keynes, etc.)

- Rational decision maker as a mathematically robust and powerful model

- Later economists, documented systematic violations of the predictions of the rational model

- Behavioral economics as an effort to understand such anomalies
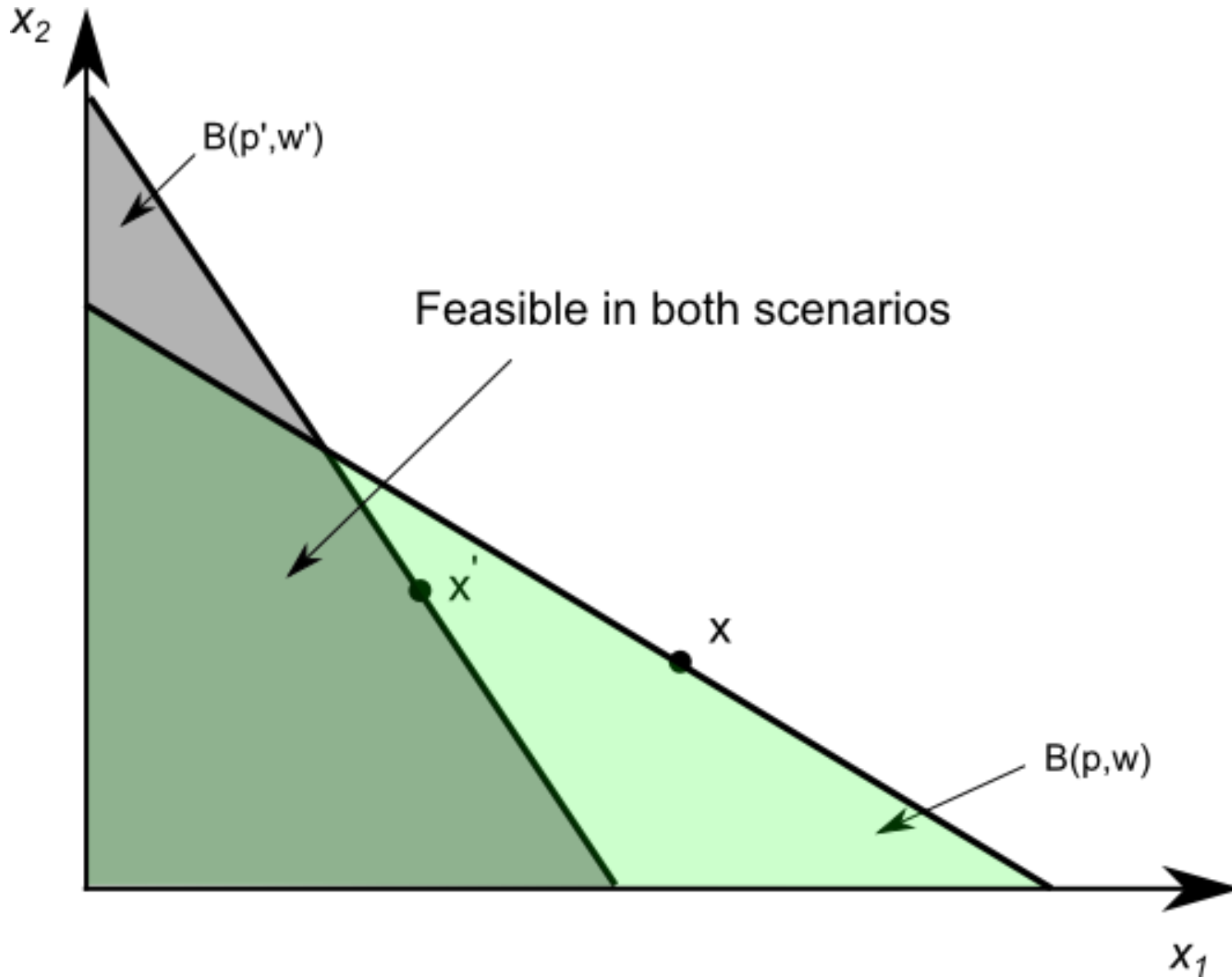
Rational decision maker

1. What is feasible (constraints)?
2. What is desirable (preferences)?
3. Given the notion of desirability, what is the best alternative among the feasible choices?
4. Actually choosing the best alternative!
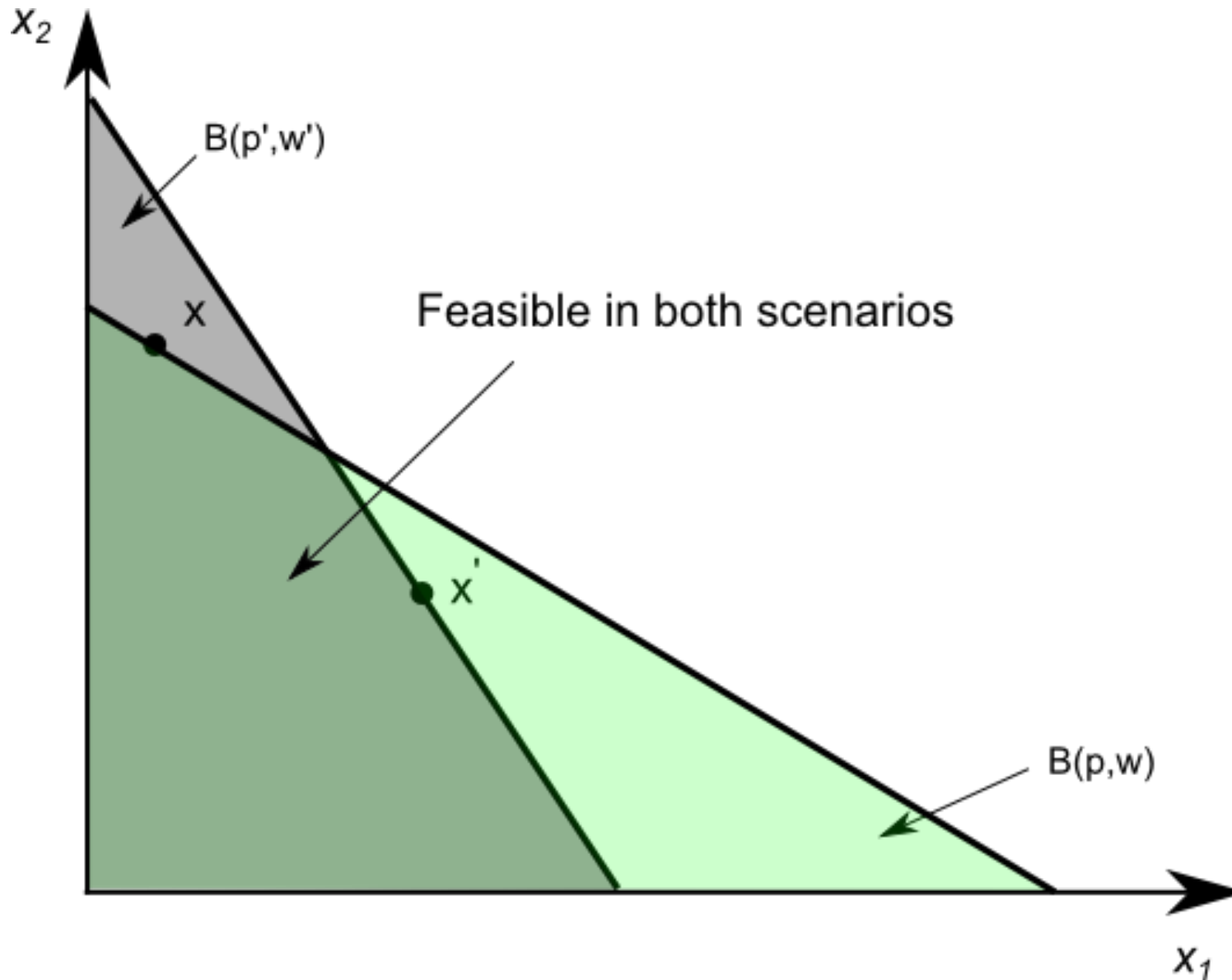
A very simple example

- An individual endowed with wealth w
- Chooses how much to spend on two goods X_1 and X_2
- Prices are p_1 and p_2

- How much of each good does she consume?
- How does her choice change when the situation changes?

A simple notion of **rationality**

X_2

B(p',w')

Feasible in both scenarios

X'

X

B(p,w)

X_1

Irrational behavior

Three types of deviations

Preferences
- Time: self-control problems
- Risk: reference dependence
- Social: charitable giving

Beliefs
- Overconfidence
- Non-Bayesian updating
- Overprojection of current tastes

Decision making
- Heuristics
- Framing, Attention to salient features
- Social pressure and persuasion
- Affected by emotions

Source: DellaVigna (2009), Psychology and Economics, Journal of Economic Literature.

Example: Organ donation

- High rates of donation
  - Austria, Belgium, France, Hungary all close to 100 percent
- Low rates of donation
  - Denmark, Netherlands, UK all less than 30 percent

Frame A (low rates)	Frame B (high rates)
• Tick here if you WOULD like to donate your organs after death.	• Tick here if you WOULD NOT like to donate your organs after death.

Table O.2 Examples of highly cost-effective behavioral interventions

Intervention	Description	Outcome
Reminders	Weekly text messages to remind patients to take their HIV drugs in Kenya.	**Adherence to a medical regimen** Weekly reminders improved the rate of drug adherence to 53% from a baseline of 40%.
Nonmonetary gifts	Small nonfinancial incentives and prizes—like lentils and metal dinner plates—were combined with a reliable immunization provider within the community in India.	**Immunization rate** Among children aged 1–3, rates of full immunization were 39% with the lentils incentives compared to 18% in the group with only the reliable immunization provision. In areas with no intervention, the rate of full immunization was 6%.
Public notices	Small stickers were placed in randomly selected buses encouraging passengers to "heckle and chide" reckless drivers in Kenya.	**Traffic accidents** Annual insurance claims rates for accidents declined from 10% to 5%.
Making products convenient	Chlorine dispensers were provided free of charge at local water sources, and promoters of chlorination to treat water were hired to visit houses in Kenya.	**Take-up of chlorination** The take-up rate was 60% in households with dispensers, compared to 7% for the comparison group.
Inspirational messages	Poor households were shown videos about how people like them had escaped from poverty or improved their socioeconomic status in Ethiopia.	**Aspirations and investment** Aspirations for children increased. Total savings and investments in schooling were higher after six months.
Timing of cash transfers	Part of a conditional cash transfer was automatically saved and given as a lump sum at the time when decisions about school enrollment were made in Colombia.	**Enrollment in higher education** Enrollment increased in the next school year, without a decline in current attendance.

Sources: Pop-Eleches and others 2011; Banerjee and others 2010; Habyarimana and Jack 2011; Kremer and others 2009; Bernard and others 2014; Barrera-Osorio and others 2011.

source: World Development Report 2015

Poverty Impedes Cognitive Function

Anandi Mani, Sendhil Mullainathan, Eldar Shafir, & Jiaying Zhao

Science 2013

- Poverty is not just a lack of money; It is not having the capability to realize one's full potential as a human being.

Amartya Sen, Nobel Laureate of Economic Sciences

What Poverty Implies?!

- Correlation between poverty and counterproductive behavior

    - use less preventive health care (Katz et al. 1994)

    - fail to adhere to drug regimens (Dimatteo et al., 2002)

    - are tardier and less likely to keep appointments (Karter et al., 2004 & Kim et al. 2006)

    - are less productive workers (Kim et al. 2004)

    - Less attentive parents (McLoyd, 1998)

    - worse managers of their finances (Barr et al., 2012, Blank et al., 2009, & Edin et al., 1997)

- These can further deepen poverty
- But is there a causal link?

Poverty Impedes Cognitive Function

1. Lab experiment
   - Induce thoughts about finances
   - Measure cognitive ability afterwards

2. Field study
   - Examined cognitive function of farmers before and after harvest

- Do you expect a difference between the rich and the poor?

- How are the two studies related?

The lab experiment

- Shoppers in a mall in New Jersey
- Presented with a hypothetical scenario

    "Your car is having some trouble and requires $X to be fixed. You can pay in full, take a loan, or take a chance and forego the service at the moment... How would you go about making this decision?"

    ➡️Randomly assigned to easy ($150) or hard ($1500) scenario

- Then performed two computer-based tasks
    - Raven's Progressive Matrices
    - Spatial compatibility task
- At the end ask about their income

Raven Progressive Test
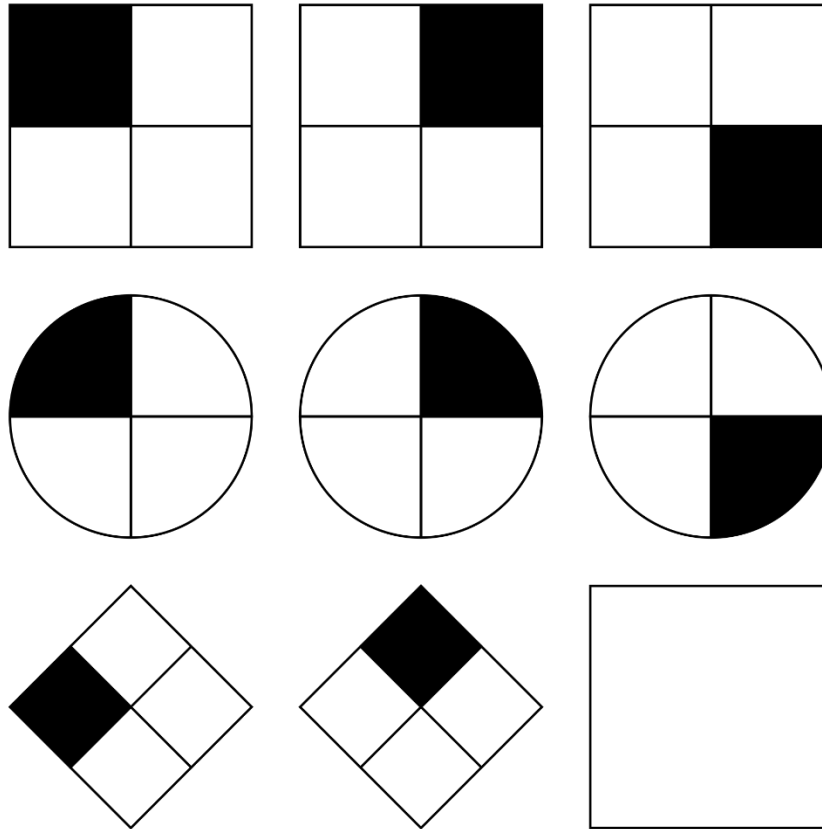
Spatial Compatibility Task
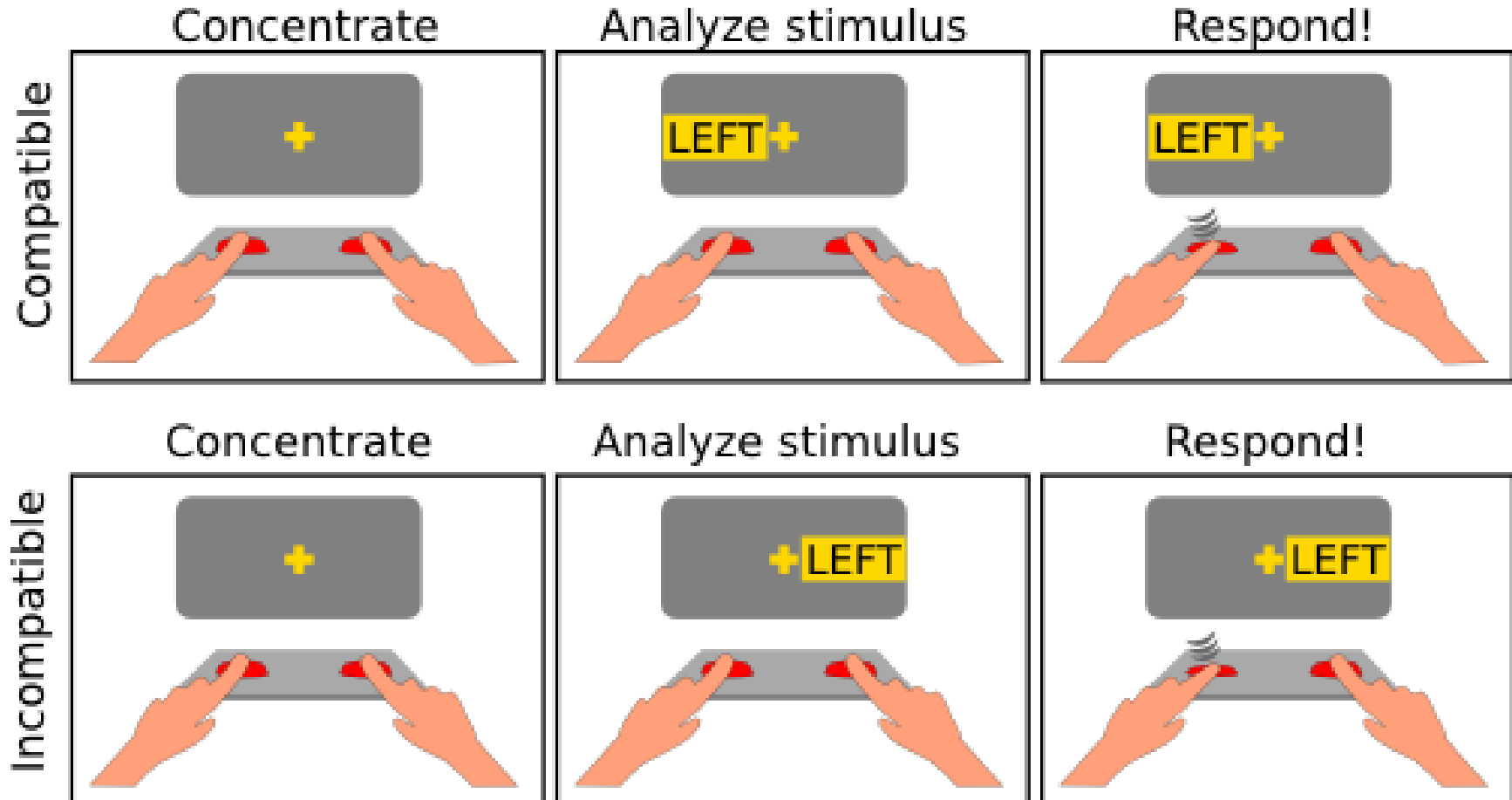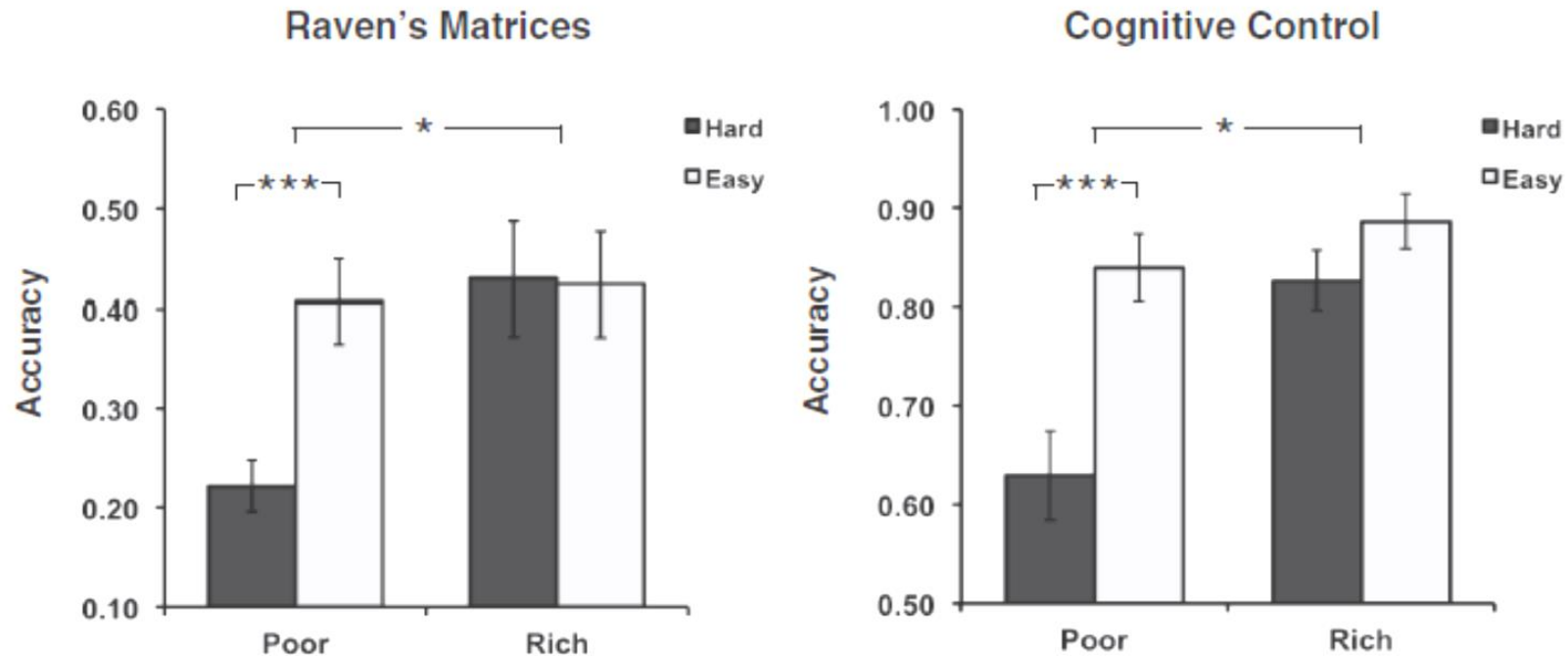
Cognitive performance of the poor vs. the rich
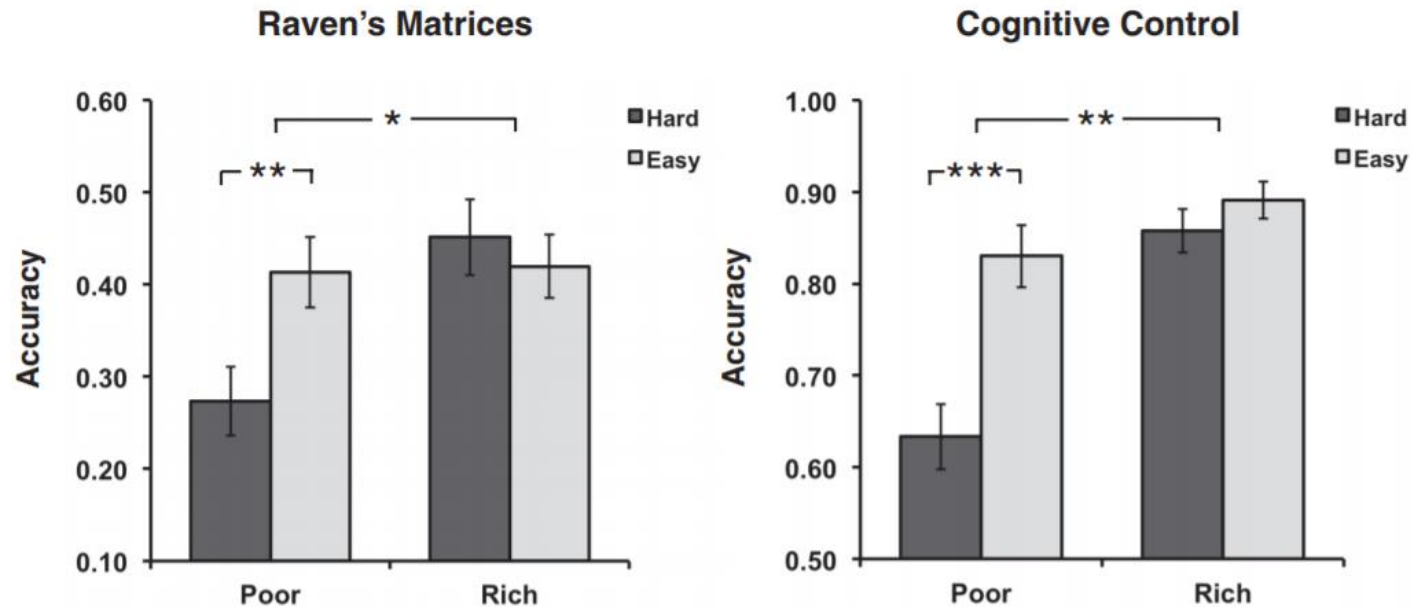
Fig. 1. Accuracy on the Raven's matrices and the cognitive control tasks in the hard and easy conditions, for the poor and the rich participants in experiment 1. (Left) Performance on the Raven's Matrices task. **(Right)** Performance on the cognitive control task. Error bars reflect ±1 SEM. Top horizontal bars show two-way interaction (poor versus rich × hard versus easy). *$P < 0.05$, **$P < 0.01$, ***$P < 0.001$

Cognitive performance of the poor vs. the rich

Fig. 2. Accuracy on the Raven's matrices and the cognitive control tasks in the hard and easy conditions, for the poor and the rich participants, when incentives were provided in experiment 3. (Left) Performance on Raven's Matrices task. **(Right)** Performance on cognitive control task. Error bars reflect ±1 SEM. Top horizontal bars show two-way interaction (poor versus rich × hard versus easy). *P < 0.05, ***P < 0.001.

The field study

- 464 Sugarcane farmers in India living in 54 villages
  - a random sample of small farmers who earned at least 60% of their income from sugarcane
- Interviewed twice: before and after harvest
  - over a 4 month period in 2010
- Measured cognitive ability using the same method
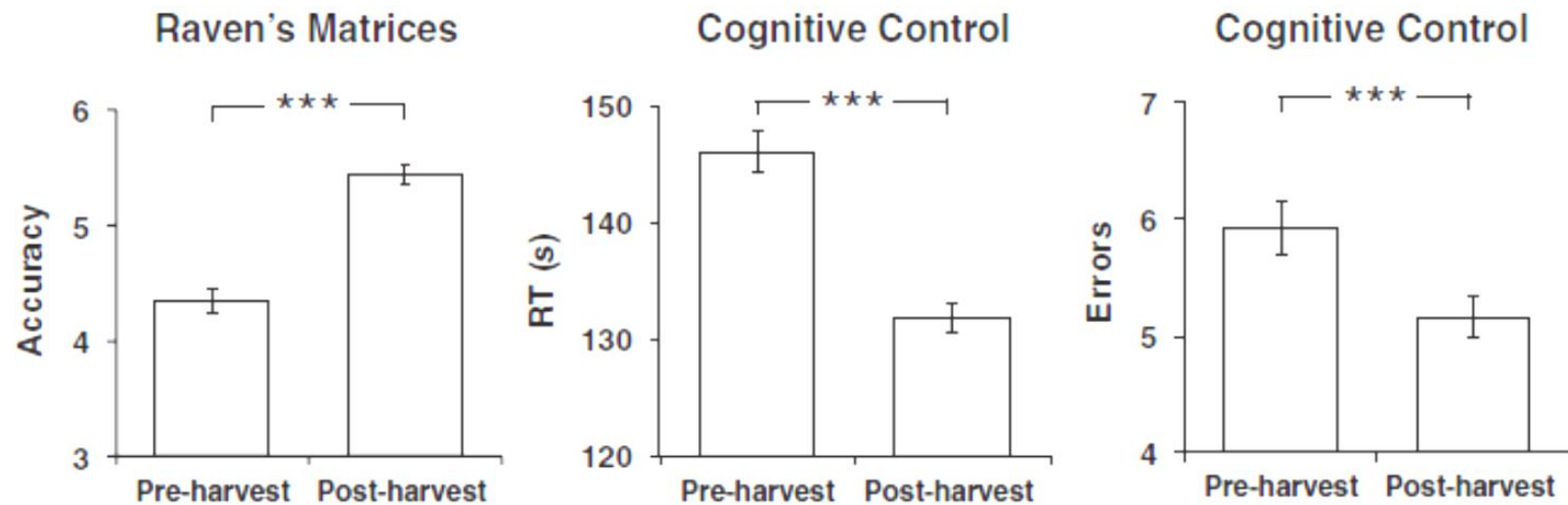
Poverty Impedes Cognitive Function

Fig. 4. Accuracy on the Raven's matrices and the cognitive control tasks for pre-harvest and post-harvest farmers in the field study. (Left) Performance on Raven's matrices task. **(Middle** and **Right)** Stroop task (measuring cognitive control) response times (RT) and error rates, respectively; error bars reflect ±1 SEM. Top horizontal bars show test for main effect of pre- versus post-harvest (***$P < 0.001$).

# Financial situation of farmers before and after harvest
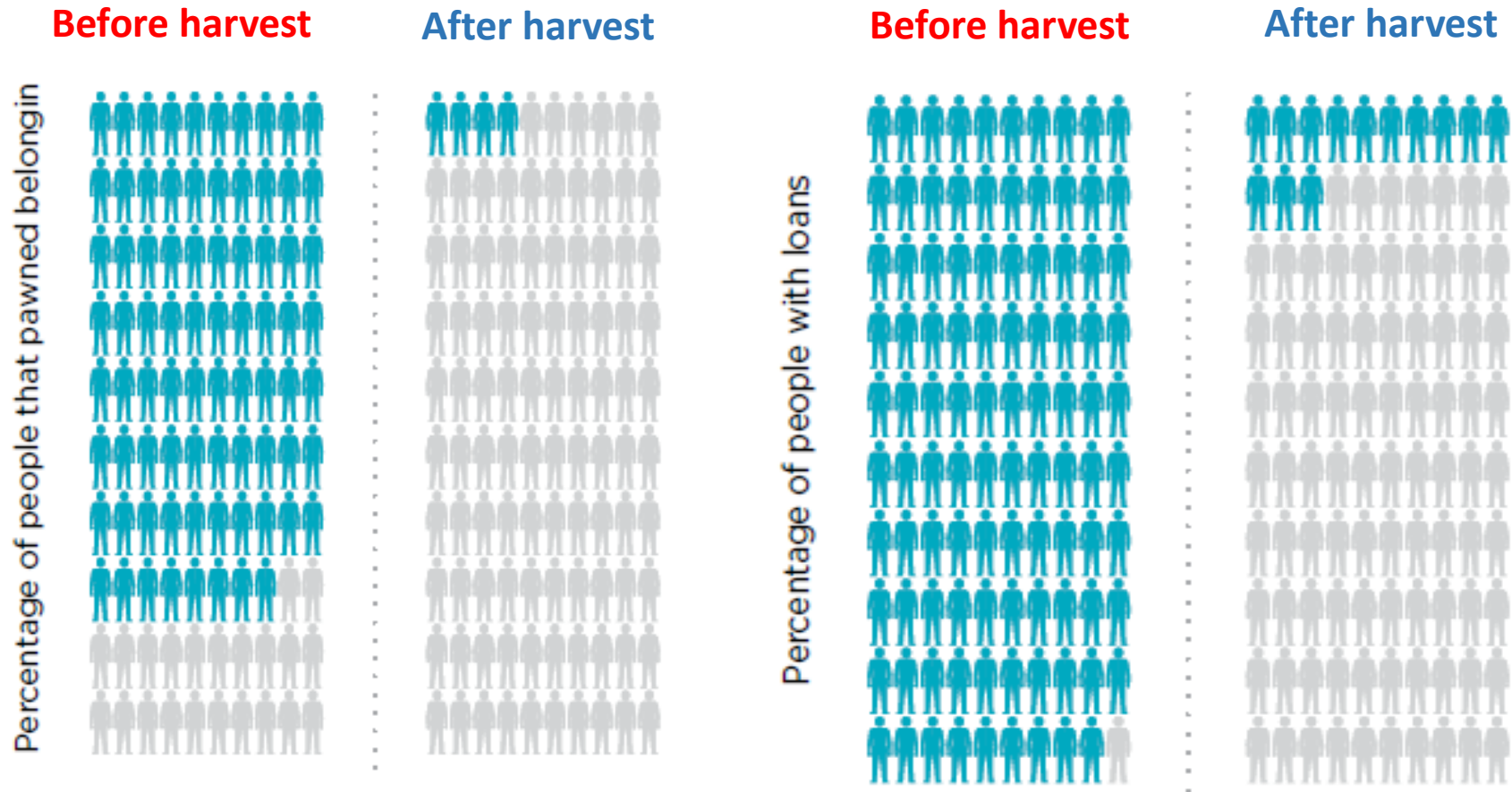
New Perspectives on Policy

- Being poor means:
  - Coping not just with a shortfall of money, but also with concurrent shortfall of cognitive resources.

- Policy-makers should beware of imposing "cognitive taxes" on the poor just as they avoid "monetary taxes" on the poor.
  - Filling out long forms
  - Preparing for a long interview
  - Deciphering new rules
  - Responding to complex incentives

New Perspectives on Policy

- What Can be done to avoid "cognitive taxes"?

  - Smart defaults (Smith et al., 2009)
  - Help filling forms out (Bettinger et al., 2012)
  - Planning prompts (Milkan et al., 2011)
  - Reminders (Ashraf et al., 2006)

For Further Reading
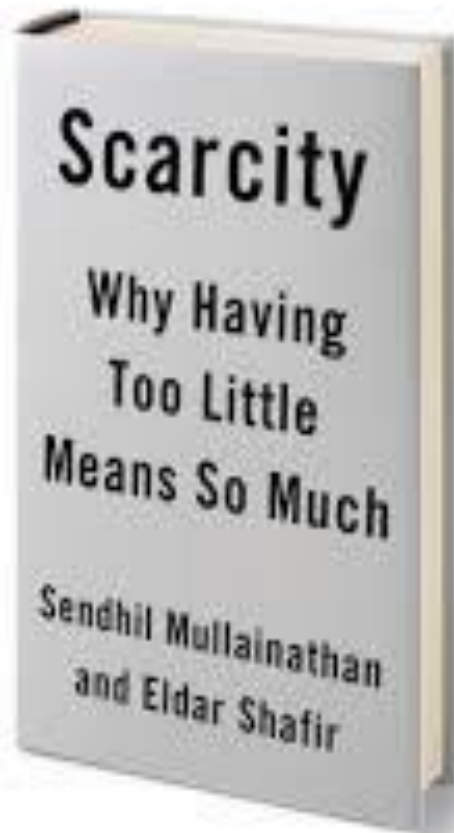
Thanks for your attention!

PHOTO : Saeed GholamHoseini