Competing Promises

Andreas Born

Stockholm School of Economics

andreas.born@phdstudent.hhs.se

November 3, 2017

Motivation

- Large literature about lying and promise (starting with Gneezy, 2005, Ellingsen & Johannesson, 2004; Charness & Dufwenberg, 2006).
- Interested in situations with more than one promise.
- Promisee chooses between promises.
  - I.e. promisors compete to get chosen.
- e.g. Hiring decision, election promise.
  $\Rightarrow$ Two or more promises to choose from.

Research Question

- Does competition change the promisors behavior?
- Do promises allow the promisee to select better promisors?

Model based on previous findings, test implications in a laboratory experiment.

Research Question

- Does competition change the promisors behavior?
- Do promises allow the promisee to select better promisors?

Model based on previous findings, test implications in a laboratory experiment.

Prediction: *Promises don't allow selection, but will lead otherwise non-generous promisors, who don't want to break their promise, to act more in the interest of the promisee.*

Previous Studies

Corazzini, Kube, Maréchal & Nicolo (2014); Born, van Eck & Johannesson (2017)

- Both experiments framed as politicians and voters.
- Group elects one of two candidates.
- Candidates make promise about how to split an endowment upon election.
- Winner makes decision not bound to their promise.
- Repeated elections with history of candidates visible.

Stylized Results

- Promise influences beliefs and voting behavior. Voters do not prefer the highest possible promise.
- Significant share of promise keeping, breaking, and partial fulfillment.
- Competition seems to increase promises and givings.
- Voters punish promise breakers in later elections (controlling for beliefs).

A model of competing promises

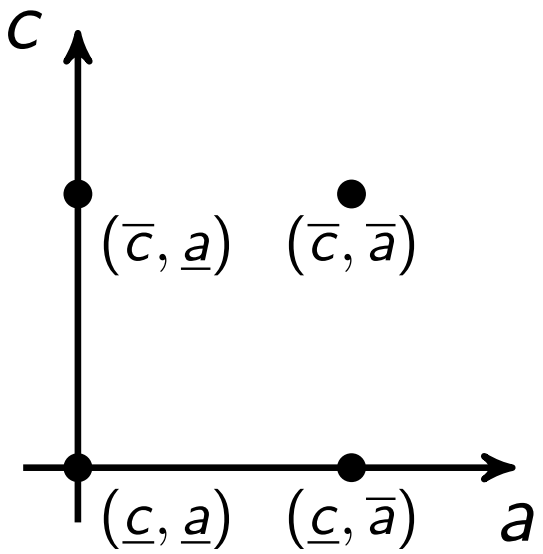
- Promisee chooses the Promisor who gets to divide endowment $E = 100$.
- Promisee's utility strictly increasing in the amount she gets x.
- Promises serve as a signal about intentions.
- Might influence decision about x if promise-breaking is costly.
- Assume promisors differ in two dimensions (Frankel & Kartik, 2017).

Types

- Promisors differ in two dimensions: (1) Natural propensity to give a, (2) Cost of breaking a promise c.
  $\rightarrow$ four types of promisors:

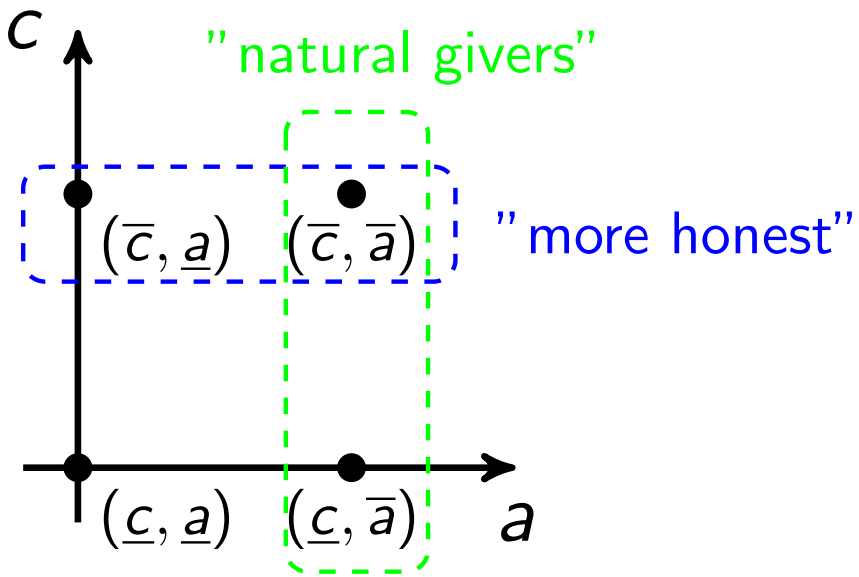
Types

- Promisors differ in two dimensions: (1) Natural propensity to give a, (2) Cost of breaking a promise c.
  $\rightarrow$ four types of promisors:



Types

- Promisors differ in two dimensions: (1) Natural propensity to give a, (2) Cost of breaking a promise c.
  $\rightarrow$ four types of promisors:



Utility

- Cost of promise breaking.
  - Fixed cost and variable cost

(Abeler, Nosenzo & Collin, 2017; Gneezy, Kajackaite & Sobel, 2017).

Utility

- Cost of promise breaking.
  - Fixed cost and variable cost

(Abeler, Nosenzo & Collin, 2017; Gneezy, Kajackaite & Sobel, 2017).

$$G(\rho, x) = \begin{cases} \alpha + \beta \left(\frac{\rho - x}{2\rho} \right)^2 & \text{if } \rho \neq x, \\ 0 & \text{otherwise.} \end{cases}$$

Utility

- Cost of promise breaking.
  - Fixed cost and variable cost

(Abeler, Nosenzo & Collin, 2017; Gneezy, Kajackaite & Sobel, 2017).

$$G(\rho, x) = \begin{cases} \alpha + \beta \left(\frac{\rho - x}{2\rho}\right)^2 & \text{if } \rho \neq x, \\ 0 & \text{otherwise.} \end{cases}$$

- Utility function

$$U(\rho, x) = 100 - x - c \cdot G(\rho, x) + F(x, a),$$

where

$$\frac{dF(x,a)}{dx} \begin{cases} > 1 & \text{if } x < a, \\ \leq 0 & \text{if } x > a. \end{cases}$$

Equilibria

- Perfect Bayesian Equilibrium.
  - Any promise may be a pooling equilibrium, justified by 'bad' beliefs about any other promise.
  - Many separating equilibria exist.

Equilibria

- Perfect Bayesian Equilibrium.
  - Any promise may be a pooling equilibrium, justified by 'bad' beliefs about any other promise.
  - Many separating equilibria exist.
- Refinements that constrain beliefs: Criterion D1.
  - Pooling Equilibrium at $\bar{a}$.
  - No separating equilibrium if there is a type with $\underline{c} = 0$.
  - Discrete scale: Semi-separating equilibrium including $\bar{a}$ and next higher or lower promise (Casella, Kartik, Sanchez & Turban, 2017).

Experimental design

- Treatment
  - Dictator game with two potential senders and promises.
  - Both senders make non-binding promise about amount to receiver.
  - Receiver then chooses who to play the Dictator Game with.
  - Strategy method to get both senders' decision.
- Control.
  - Same game, just one dictator and choosing between the dictator and not playing.
- Both play regular dictator game.

Issues

- Avoid salience of fair split?
  - Different starting endowments / different time in the experiment.
- Repeating the game?
  - Stranger matching.
  - Which information should be visible to who?

Cost of promise breaking

- Compare giving in dictator game and treatment to confirm assumptions about of promise breaking cost.
- Convexly increasing cost implies promise-breakers who increase their givings due to promise.
- Fixed cost implies that participants keep a promise higher than what 'natural giving' in a dictator game.

Predictions

- Higher average giving of senders.
  a. Treatment relative to dictator game.
  b. Treatment relative to control group.

$\Rightarrow$ Increase is due to senders who give nothing/little in dictator game but promise and give more in the treatment game.

- Senders who give much in the dictator game do not increase their giving.
- No selection of senders.

Underpromising

- Setting in which a promisor might promise *less* than she intends to give.
- Promising the actual amount could be regarded as a likely lie.
- Current version of the model rules this out as it assumes a cost of lying down-ward. Can be tested in this set-up.
- Extra treatment, common knowledge that 20% of promisors get a higher mulitplicator of giving,
  private knowledge if one has the higher multiplicator.

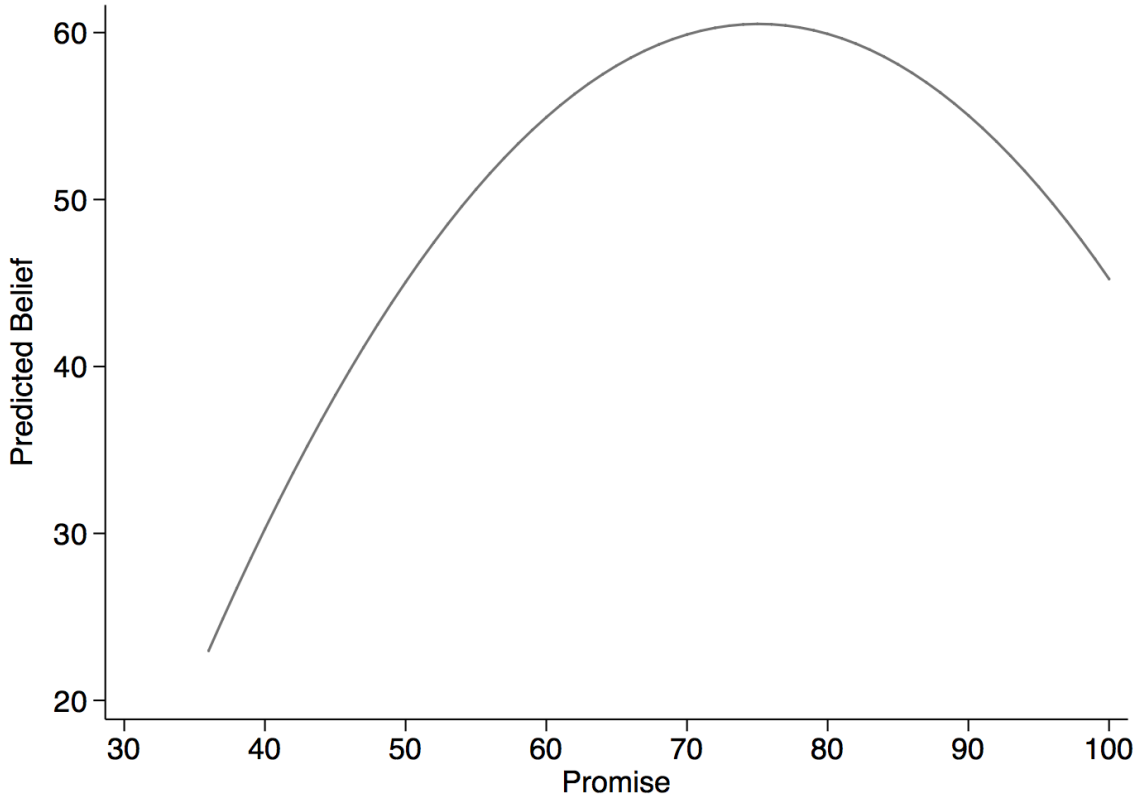
Thanks for listening!

Any critique and feedback is appreciated :)

Power Calculations

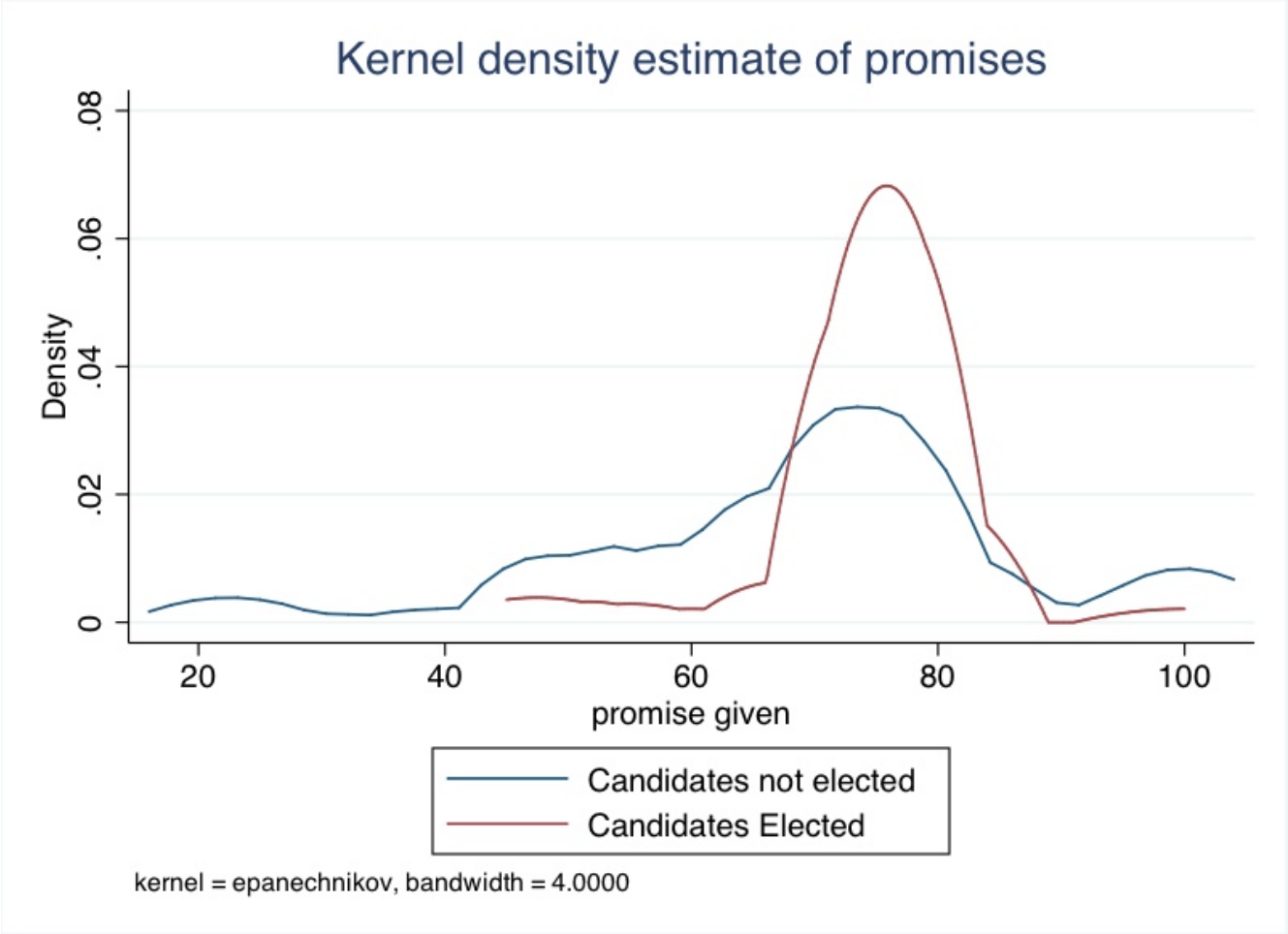
- With a paired t-test, sample size 200 promisors, a difference of 0.1991 standard deviations is detectable with 80% power (5% significance)
- In previous experiment: mean giving 64/100, standard dev. ~ 23.
- Then difference of 4.6 would be the minimal difference detectable ($\sim 7\%$ of previous givings).

Promises and beliefs



back

Promises chosen vs. not chosen



back

Optimal action and types