

The Economics of Corruption

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**Monitoring corruption: Evidence from a field experiment in
Indonesia**

Olken, 2005

Treatment strategy: A stratified design

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Please see Table 1 in Olken, Benjamin. "Monitoring Corruption: Evidence from a Field Experiment in Indonesia." NBER Working Paper, no. 11753 (2005).

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Please see Table 2 in Olken, Benjamin. "Monitoring Corruption: Evidence from a Field Experiment in Indonesia."
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Please see Table 3 in Olken, Benjamin. "Monitoring Corruption: Evidence from a Field Experiment in Indonesia." NBER Working Paper, no. 11753 (2005).

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Please see Table 4 in Olken, Benjamin. "Monitoring Corruption: Evidence from a Field Experiment in Indonesia."
NBER Working Paper, no. 11753 (2005).

Bigger drop in corruption in villages with an upcoming election or a narrow victory in last election

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Please see Table 5 in Olken, Benjamin. "Monitoring Corruption: Evidence from a Field Experiment in Indonesia." NBER Working Paper, no. 11753 (2005).

More nepotism in audited villages!

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Please see Table 6 in Olken, Benjamin. "Monitoring Corruption: Evidence from a Field Experiment in Indonesia." NBER Working Paper, no. 11753 (2005).

Invitations Increased Attendance

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Please see Table 7 in Olken, Benjamin. "Monitoring Corruption: Evidence from a Field Experiment in Indonesia." NBER Working Paper, no. 11753 (2005).

Invitations did not reduce overall corruption – but they did reduce labor cost inflation

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Please see Table 9 in Olken, Benjamin. "Monitoring Corruption: Evidence from a Field Experiment in Indonesia."
NBER Working Paper, no. 11753 (2005).

What are the ingredients in the cost-benefit calculation?

- **Cost, benefit or other?**
 - Monetary costs of audits.
 - Villagers' time costs of participation in monitoring.
 - Reduction in rents of corrupt officials
 - Wage gains by workers
 - Additional value of services obtained from roads if money spent on materials
 - Dead-weight loss of taxation needed to pay for audits.

Passes a Cost-Benefit Test

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Please see Table 10 in Olken, Benjamin. "Monitoring Corruption: Evidence from a Field Experiment in Indonesia." NBER Working Paper, no. 11753 (2005).

Conclusions

- **External validity? Some factors to consider:**
 - Long run consequences: Will they differ from short run consequences?
 - Monitoring versus participation: Should we give up on citizen participation as a corruption reduction tool?
 - How do we get from the corrupt to the non-corrupt equilibrium?
 - Consider the `everybody is doing it' problem (`the Italy scenario').
- **Other?**

Rotten Apples: An Investigation of the Prevalence and Predictors of Teacher Cheating

Brian Jacob and Steven Levitt, 2003

Data

- **All students in the Chicago Public Schools in third through seventh grades in 1993-2000.**
- **For each student, the question-by-question answer strong on each year's tests**
- **School and class identifiers**
- **Full history of past and future test scores (for ea. Student)**
- **Age, sex, race, fee lunch eligibility**
- **No teacher identifiers**

The challenge: How to use these data to detect cheating

- **Idea: Look for suspicious patterns in the data.**
- **What makes a pattern suspicious? Two dimensions:**
 1. Unexpected test score fluctuations.
 2. Suspicious answer patterns within a class—teacher may have modified students' answers.
- **Working hypothesis: These two aberrations should not occur together in one classroom except if cheating is occurring.**

Looking for Cheating: The Procedure

1. Unexpected test score fluctuations:

- Hypothesis: Test score fluctuations that reflect cheating should not be durable.
- Look at the gain for a group of students in a class in year t and rank that gain in the grade-wide distribution of gains.
- Follow these students into next year and again look at their gains relative to the school in $t+1$.
- If there is a large discrepancy—large gains in t followed by large reversals in $t+1$, will be considered suspicious.

Suspicious Test Score Pattern

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Please see Jacob, Brian A., and Steven D. Levitt. "Rotten Apples: An Investigation of the Prevalence and Predictors of Teacher Cheating." *Quarterly Journal of Economics* 118, no. 3 (2003): 843-877.

Typical Test Score Pattern

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Please see Jacob, Brian A., and Steven D. Levitt. "Rotten Apples: An Investigation of the Prevalence and Predictors of Teacher Cheating." *Quarterly Journal of Economics* 118, no. 3 (2003): 843-877.

Looking for Cheating: The Procedure

2. Suspicious test patterns:

1. Unlikely blocks of identical answers
2. High degree of correlation between answers within a class
3. High variance in degree of correlation across questions within a class (e.g., the teacher altered only a subset of questions for many students).
4. Comparison of pattern of answers with other students who got identical scores in grade in other classrooms. Because some questions hard, others easy, students at a given score level should have similar patterns of answers (i.e., low scoring kids should not get primarily hard questions right).

All four metrics combined into a single, composite cheating index.

Putting the metrics together

- **Three assumptions:**
 1. Cheating increases the likelihood that a class will have both large test score fluctuations and suspicious answer strings.
 2. If cheating classrooms had not cheated, their distribution of test score fluctuations and answer string patterns would be comparable to non-cheating classrooms.
 3. In non-cheating classrooms, the correlation between test score fluctuations and suspicious answers is constant throughout the distribution
- **In the absence of cheating, both anomalies may occur by chance, but they should rarely occur together.**

Correlation Between Two Dimensions of Cheating

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Please see Figure II in Jacob, Brian A., and Steven D. Levitt. "Rotten Apples: An Investigation of the Prevalence and Predictors of Teacher Cheating." *Quarterly Journal of Economics* 118, no. 3 (2003): 843-877.

Some Summary Statistics

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Please see Table I in Jacob, Brian A., and Steven D. Levitt. "Rotten Apples: An Investigation of the Prevalence and Predictors of Teacher Cheating." *Quarterly Journal of Economics* 118, no. 3 (2003): 843-877.

Estimated Prevalence of Cheating

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Please see Table II in Jacob, Brian A., and Steven D. Levitt. "Rotten Apples: An Investigation of the Prevalence and Predictors of Teacher Cheating." *Quarterly Journal of Economics* 118, no. 3 (2003): 843-877.

Notice that bottom panel is not four times the top panel. Why is that important?

Is Cheating Predictable?

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Please see Table III in Jacob, Brian A., and Steven D. Levitt. "Rotten Apples: An Investigation of the Prevalence and Predictors of Teacher Cheating." *Quarterly Journal of Economics* 118, no. 3 (2003): 843-877.

- Any suspected cheating on other subjects in this year or any cheating in past years in this class is highly predictive of cheating for this grade-subject-year.
- Again, this pattern appears unlikely unless actual cheating were occurring.

An Experimental Validation

- Spring 2002:
 - Chicago Public Schools offered J-L opportunity to conduct experimental retesting of 100+ classrooms under controlled circumstances (no cheating).
- Which classrooms would you test?
 - Classes with suspicious answers and large gains ('cheaters')
 - Classes w/suspicious answers but w/o large gains ('bad teachers')
 - Classes with large gains but w/o suspicious answers ('good teachers')
 - A random subset of classrooms (controls)

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Please see Table IV in Jacob, Brian A., and Steven D. Levitt. "Rotten Apples: An Investigation of the Prevalence and Predictors of Teacher Cheating." *Quarterly Journal of Economics* 118, no. 3 (2003): 843-877.

Conclusions

- **Useful to compare to Olken study**
 - External validity?
 - What do we learn about ‘equilibrium’ behavior
 - Policy value?
 - What to do about corruption
 - Research design?
 - Would you have been convinced by J-L had they not been given the opportunity (ex-post) to run an experiment?

Does Corruption Produce Unsafe Drivers?

Bertrand, Djankov, Hanna and Mullainathan

Testing Theories of Corruption

- **Is corruption efficient? Not as crazy as it sounds**
 - The efficient gatekeeper view...
 - How does rule-bound bureaucracy meet individual needs?
 - Bend rules when constituent needs them bent.
 - But do not bend substantively important rules. Comply with spirit if not letter of the law.
 - Gate-keeping could substitute for 'rationing by the queue.'
 - Needy constituents get to jump the queue (where need measured by willingness to pay).
- **Alternatives**
 - Pure venality:
 - Officials bend rules for personal gain. Letter and spirit of law violated.
 - Toll-collector (worse still):
 - Officials deliberately make rules unworkable so that can collect fee for providing public services.

Testing These Theories of Corruption

- **A step beyond measurement and monitoring:**
 - Create incentives for corrupt behavior among constituents (not among officials directly)
 - Measure whether/how incentives affect constituents' success in interacting with bureaucracy
- **Assuming that incentives change outcomes:**
 - Does this appear efficient: Constituents in a hurry get their needs met?
 - Do outcomes violate spirit of the law or only the letter?
 - Are corrupt officials: Efficient gatekeepers, pawns for hire, self-dealing toll collectors?

Driving Licenses in New Delhi

- **Licenses issued at nine Regional Transport Offices (RTOs)**
- **Must be 18 years of age.**
- **Must first obtain a learner's license (drive under supervision of licensed driver)**
 - Must have proof of residence, age, passport size photo, medical certificate, application fee of Rs360 (~\$8)
- **After 30 days (and no more than 180), apply for a permanent license.**
 - Additional documents
 - Fee of Rs90 (\$2)
 - Driving test
 - Can retake in 7 days if fail

Treatments

- **Recruitment, check qualifications, survey**
- **Random assignment:**
 1. Comparison group
 2. Lesson group – Free driving lessons (15 lessons, ½ hour each)
 3. Bonus group—Rs2,000 paid if obtained permanent license within 31 days of getting temporary license (about 1/3rd of a month's salary!)
- **Follow-up**
 - After getting learner's permit: follow-up survey
 - After obtaining license, subjects invited back for final session
 - Surprise driving test: Oral exam then practical
 - All participants then offered free driving lessons

PROJECT SUMMARY

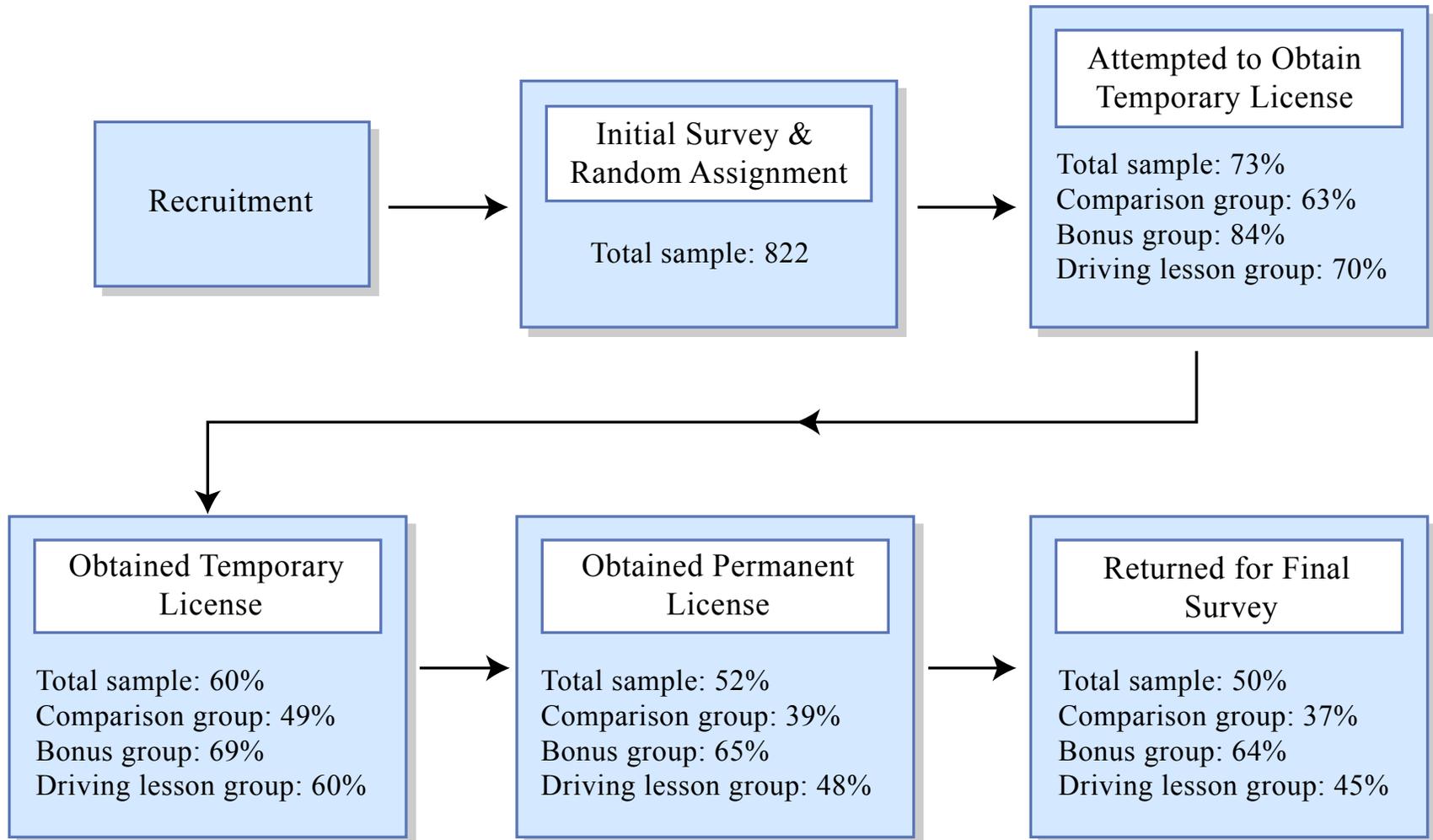


Figure by MIT OCW. Based on Bertrand, Marianne, Simeon Djankov, Simeon, Rema Hanna, and Sendhil Mullainathan. "Does Corruption Produce Unsafe Drivers?" NBER Working Paper, no. 12274 (June 2006).

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Please see Table 1 in Bertrand, Marianne, Simeon Djankov, Simeon, Rema Hanna, and Sendhil Mullainathan. "Does Corruption Produce Unsafe Drivers?" NBER Working Paper, no. 12274 (June 2006).

Main Outcomes

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Please see Table 4 in Bertrand, Marianne, Simeon Djankov, Simeon, Rema Hanna, and Sendhil Mullainathan. "Does Corruption Produce Unsafe Drivers?" NBER Working Paper, no. 12274 (June 2006).

Main Findings so far

1. Bureaucracy responds to individual needs:
 - Bonus group is 28 percentage points more likely to obtain a permanent license than comparison group.
 - Also got license 18 days faster
 - Note: Was more likely to try to get a license. Is this a problem?
2. Bonus group less likely to have had any driving experience!
 - 77 versus 49 percent had no experience
3. Driving skill:
 - Bonus group slightly worse drivers than comparison—though not significant.
 - Significantly less confident in driving skills.
4. Lesson group:
 - 8 pct. pts. more likely to obtain license than comparison group
 - But mostly because more likely to try—not because more likely to succeed conditional on trying.

Use of Private Agents to Obtain License

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Please see Table 5 in Bertrand, Marianne, Simeon Djankov, Simeon, Rema Hanna, and Sendhil Mullainathan. "Does Corruption Produce Unsafe Drivers?" NBER Working Paper, no. 12274 (June 2006).

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Please see Table 8 in Bertrand, Marianne, Simeon Djankov, Simeon, Rema Hanna, and Sendhil Mullainathan. "Does Corruption Produce Unsafe Drivers?" NBER Working Paper, no. 12274 (June 2006).

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Views supported?

- **Interpretation**

1. Does this appear efficient: Constituents in a hurry get their needs met?
2. Do outcomes violate spirit of the law or only the letter?
3. Are corrupt officials: Efficient gatekeepers, pawns for hire, self-dealing toll collectors?

Other Thoughts

- **Observations**

- Corruption operates w/o direct bribes to officials.
- The most corruptible part of the system is also the most important (driving tests).
- Why? Perhaps because hardest to verify by a third party.

- **Validity, generality?**

- Does this study offer general lessons about corruption?
- A template for future studies?
- Given what was known ex ante about the Indian licensing system, how credible were the alternative hypotheses?

Deception: The Role of Consequences

Uri Gneezy, 2005

Will Lies be Told Whenever it is Beneficial for the Liar, Regardless of the Consequences for the Other Party?

- **Standard economic assumption:**
 - Agents only tell the truth when it is in their self-interest to do so.
 - Truth has no intrinsic value.
 - But even economists tell the truth from time to time, without any strategic justification for doing so.
- **Questions of this study:**
 - Do agents place any intrinsic value on telling the truth?
 - Or, even if not, do they care about the consequences of lying for the other party?

Gneezy: Four Categories of Lies (other classifications exist)

- 1. Lies that help both sides or at least harm no one.**
 - “You look great today.”
- 2. Lies that help the other party, even if they harm the liar**
 - Altruism or enjoying the act of giving (but then is it harm?)
- 3. Lies that do not help the liar but can harm both sides**
 - Spite
- 4. Lies that increase the payoff to liar at cost to the other party**
 - Instrumentalism. This is where all Economic predictions reside.
 - **Idea :**
 - Manipulate the benefits of lying for the potential liar, costs to the “lyee” and see what happens.

Method

- **Cheap-talk sender-receiver game**
 - Two possible monetary distributions: A or B
 - Only player one informed about monetary consequences of each option
 - Rules of game known to both participants
- **Player one must send one of two messages to player two**
 - Message A: “Option A will earn you more money than option B.”
 - Message B: “Option B will earn you more money than option A.”

Predictions

- **What does receiver believe?**
- **What will sender do given these beliefs?**
- **Is there a Nash equilibrium?**
 - 82 percent of senders said they expected receivers to follow their message.
 - In point of fact, 78 percent of receivers did follow the message.
- **Assume senders expect receivers to be credulous (believe what they are told). What will the sender do?**
- **An additional manipulation: “Previous experience has shown that this recipient always does what s/he is told. Do you want to change your message?” Only 3 of 50 changed message.**

Outcomes

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Please see Table 1 and Table 2 in Gneezy, Uri. "Deception: The Role of Consequences." *American Economic Review* 95, no. 1 (2005): 385-394.

Outcomes

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Distinguishing Lying-Aversion from Caring about Others

- **Results so far consistent with either:**
 - Dislike lying
 - Care about others' outcomes
 - Both
- **Can we tease these apart at all?**
 - Re-run the game, but now as a dictator game rather than a game of deception.
 - Set exogenous odds of compliance with executing Player 1's choice at 80% (20% chance that other choice taken).
 - There is no lying in this treatment.
 - If agents don't mind lying, results should be identical to above.
 - If do mind lying, should appear more self-interested in this treatment.

More Income Maximization when No Need to Lie!

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Please see Figure 2 in Gneezy, Uri. "Deception: The Role of Consequences." *American Economic Review* 95, no. 1 (2005): 385-394.

Compare

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Please see Figure 1 and 2 in Gneezy, Uri. "Deception: The Role of Consequences." *American Economic Review* 95, no. 1 (2005): 385-394.

Choice Game: Lying Feasible

Dictator Game: No Lying

Conclusions

- **Gneezy's summary:**
 - “The implications of these results are illustrated by the purchase of a car: you can trust what the seller says about the condition of the brakes more than what she says about the state of the air conditioning.”
- **But it's more fundamental: Rejection of 'consequentialism.'**
 - Agents care about process as well as payoffs.
 - Do not simply value gains to self and losses to other party (cost-benefit).
 - Put weight on how those outcomes arrived at—holding outcomes fixed, like them less if arrived at through deception.
- **Do these results provide any insights into how to reduce corruption?**