

Social Change and the Conformity Trap

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2018 ASSA Annual Meeting

Introduction

A defining feature of human societies is continuous change – advances in technology and science, changing economic opportunities, and demographic trends (e.g., Weinstein, 2010).

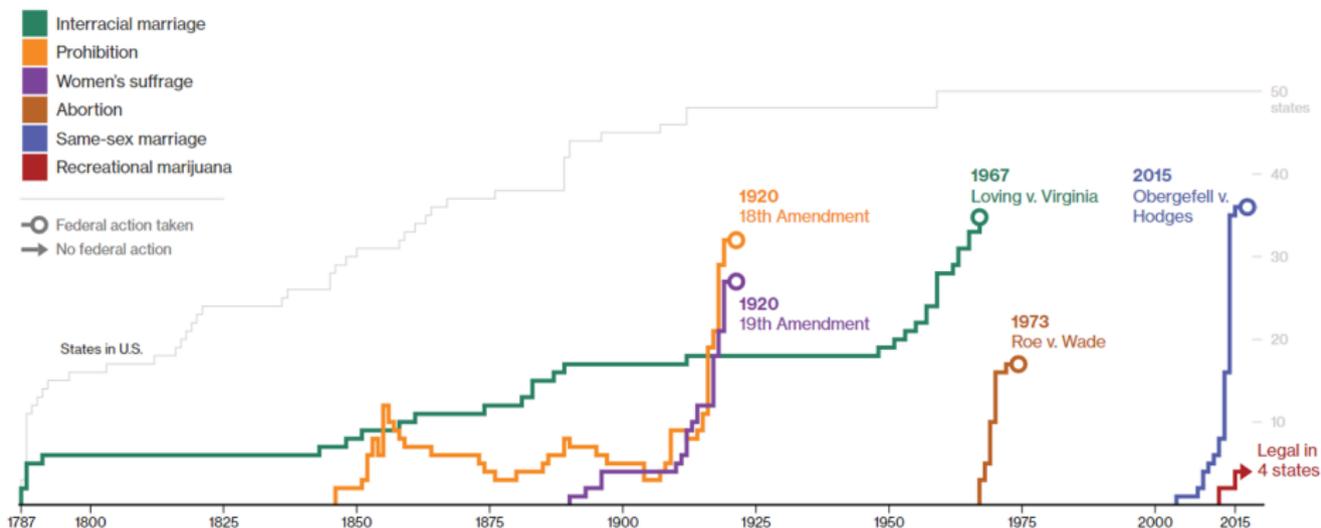
These developments have eroded traditional boundaries of human interaction, challenging in the process long-established social values, norms and institutions.

A fundamental question regarding social change is whether it occurs when it is socially beneficial or whether it is slow to ignite (e.g., North 1990, Ostrom 2000). Definition: Social Change

This Is How Fast America Changes Its Mind

Tracking the Pace of Social Change

Number of states that have removed a ban, by year
(Prohibition shows the number of states that enacted)



Source: Tribou and Collins (2015)

What We Do

Examples suggest that socially beneficial change can be slow: female genital cutting, child marriage, norms of personal revenge, *#MeToo* (e.g., Elster 1989, Mackie 1996, Bicchieri 2006).

We ask what can cause entrenchment of unproductive or inefficient paradigms and what forces can spark and accelerate change.

An unlikely arena: a laboratory environment where 20 human subjects gather for 90 minutes to play coordination games.

- ▶ Paucity of reliable data on individual preferences in daily life.
- ▶ Clearly constructed interventions that can help expedite change.

Related Literature on Conformity and Social Institutions

Investigations that model norms as equilibria in coordination games (e.g., Kandori et al. 1993, Young 1993, Brock and Durlauf 2001, Acemoglu and Jackson 2015).

Literature on institutional change (e.g., Arthur 1989, North 1990, Williamson 2000, Greif and Laitin 2004, Acemoglu and Robinson 2008).

Laboratory experiments studying the persistence of inefficient institutions (e.g., Hossain and Morgan 2009, Wilkening 2016, Smerdon et al. 2016).

The Experiment

The Social Change Game

Large group of individuals ($n=20$).

Pairwise interactions (randomly matched) in 31 rounds.

Preferences (type B and G) over two choices $c = \{\text{Blue}, \text{Green}\}$.

In round 1 all players prefer **Blue**. Preferences change at a known rate (10%) toward **Green** (50% in round 8, 90% in round 22).

Pressure to conform: disunity penalty in case of miscoordination proportional to the number of people choosing the opposite color.

Initially, everyone prefers **Blue**...

| | Blue | Green |
|-------|---|---|
| Blue | 30 30 | $30 - n_{\text{Green}}p$ $20 - n_{\text{Blue}}p$ |
| Green | $20 - n_{\text{Blue}}p$ $30 - n_{\text{Green}}p$ | 20 20 |

Blue is payoff-dominant.

...but soon almost all players prefer **Green**.

| | Blue | Green |
|-------|---|---|
| Blue | 20 20 | $20 - n_{\text{Green}}p$ $30 - n_{\text{Blue}}p$ |
| Green | $30 - n_{\text{Blue}}p$ $20 - n_{\text{Green}}p$ | 30 30 |

Green is payoff-dominant.

Treatments

| Treatment | Subjects | Obs. | Description |
|--------------|----------|------|--|
| Baseline | 120 | 6 | $n = 20$, $T = 31$, $p = 4$, parameters as above. |
| High Return | 120 | 6 | Payoff for type G if choosing Green increased to 50. |
| Low Penalty | 120 | 6 | Lower disunity penalty parameter: $p = 1$. |
| Endo Penalty | 120 | 6 | Subjects choose disunity penalty: $p = \{1, 4, 7\}$. |
| Poll | 120 | 6 | Poll about preferred color in period 14. |
| Fast Info | 120 | 6 | Immediate feedback about others' color choices. |

Sessions were run at the University of California, San Diego, in summer 2015 (treatment Reward in fall 2016). Total number of participants: 900. Average payment: \$36.4 (US). The design also includes treatments Reward (initiators of change receive highest earnings) and Small Group ($n = 10$).

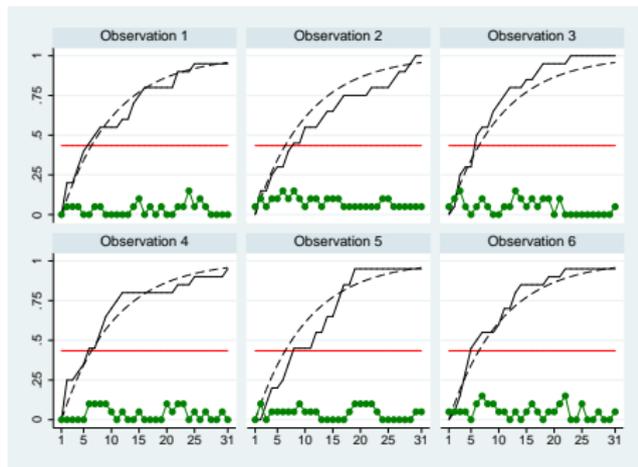
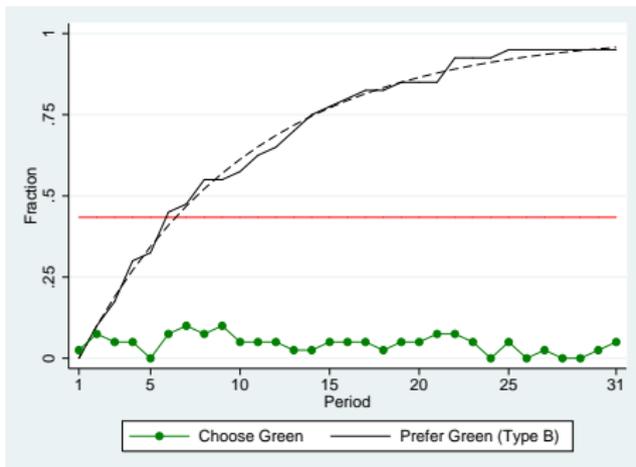
When Do Groups Switch to *Green*?

| Period of Change | Efficient | Risk Neutral | Elicited Risk Aversion |
|------------------|-----------|--------------|------------------------|
| Baseline | 8 | 12 | No Change |
| High Return | 4 | 6 | 19 |
| Low Penalty | 8 | 5 | 8 |
| Endo Penalty | 8 | 9 | 16 |
| Poll | 8 | 12 | 14 |
| Fast Information | 8 | 12 | No Change |

Risk Task

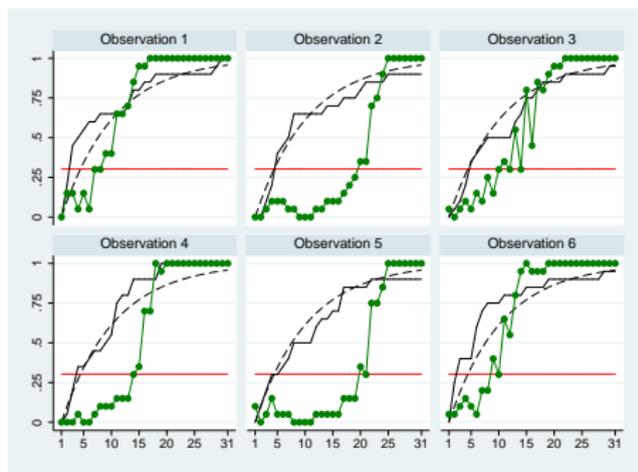
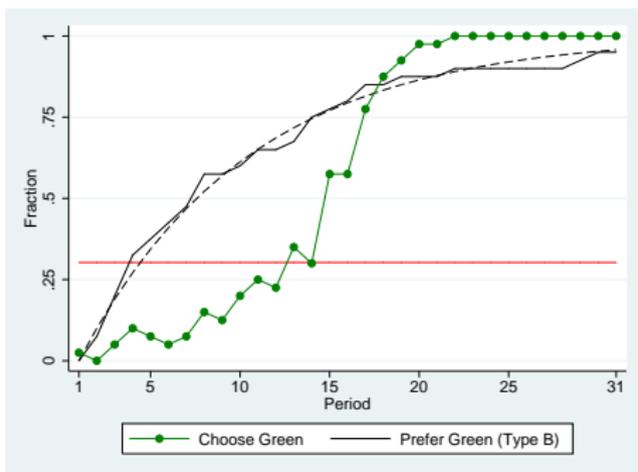
Experimental Results

Result 1 [Baseline]: All groups are caught in the conformity trap, even though it is known that almost all subjects prefer **Green**.



“I didn’t want to be the person who starts the change, and I think all of the participants had the same thought, so we were stuck on the choice of blue even though we were type G at that time.”

Result 2 [High Return]: Higher returns to **Green** facilitate social change, but there is a substantial delay relative to the efficient behavior.

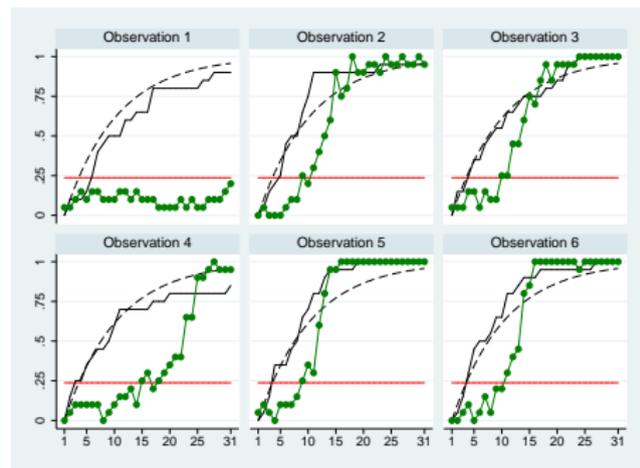
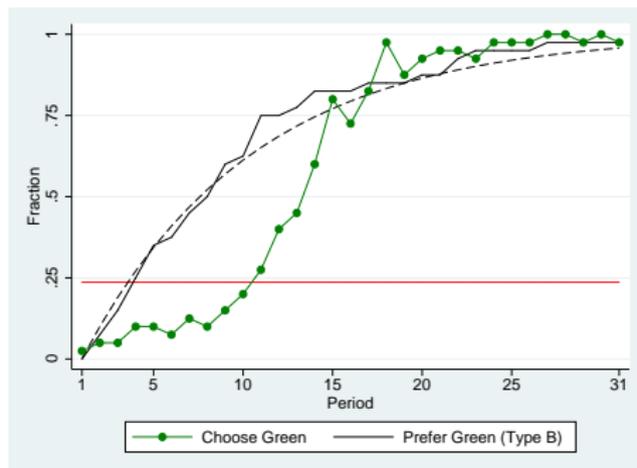


Period 4 is the socially optimal period of change.

The role of tolerance:

- ▶ Do lower disunity penalties promote efficient change?
- ▶ If yes, do participants lower the penalties if given the option?

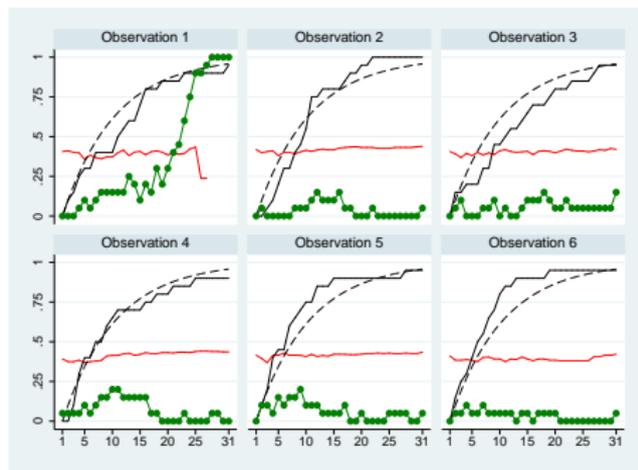
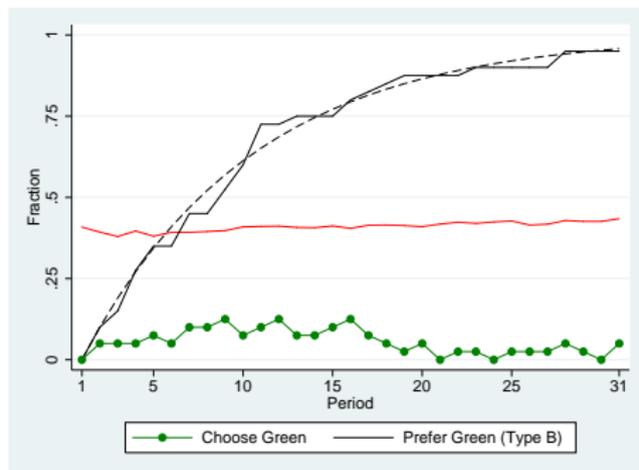
Result 3.1 [Low Penalty]: Reducing the nonconformity penalty promotes social change.



Fisher's exact test:

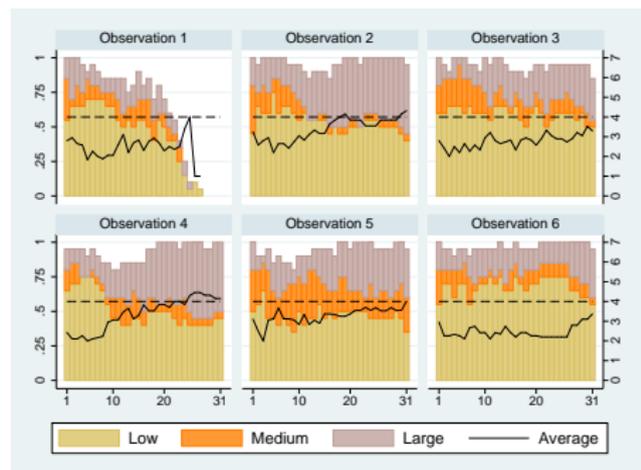
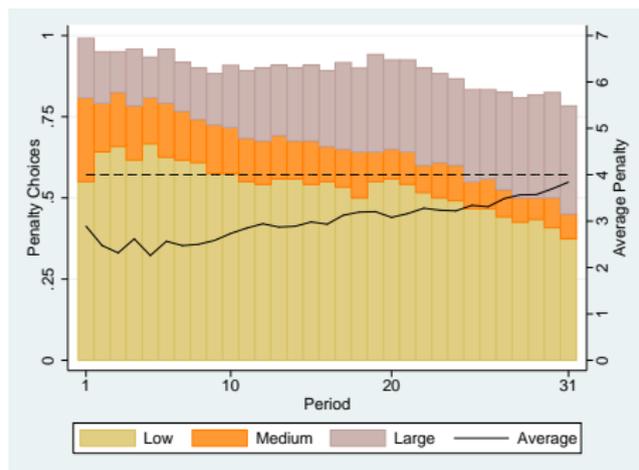
| Successes | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
|-----------|------|------|------|------|------|------|------|
| one-sided | 1.00 | .500 | .227 | .090 | .030 | .008 | .001 |

Result 3.2 [Endogenous Penalty]: The likelihood of the conformity trap in Endogenous Penalty is not significantly different from Baseline.



Subjects' decision screen: Endogenous Penalty

Penalty choices of players who choose Blue

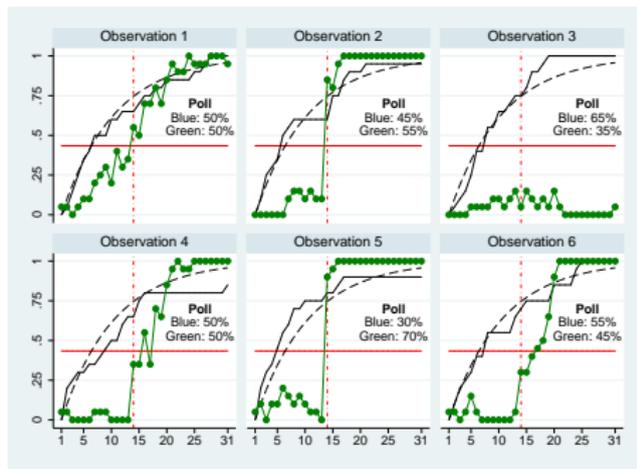
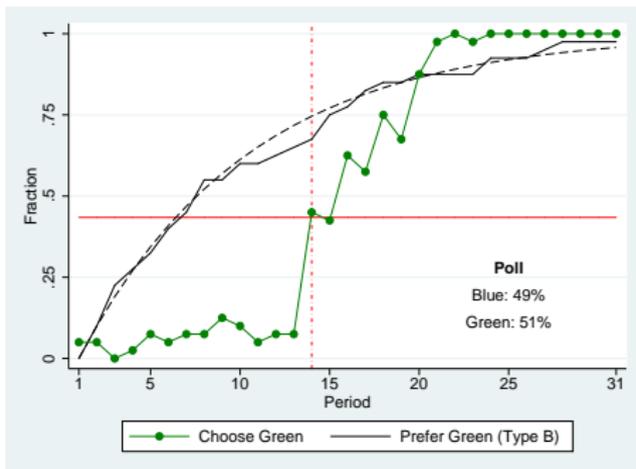


⇒ fear of miscoordination & low penalties can be counteracted with endogenous intolerance.

The role of information:

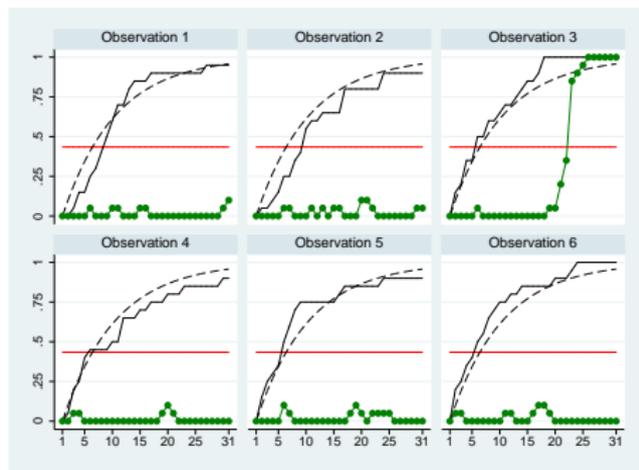
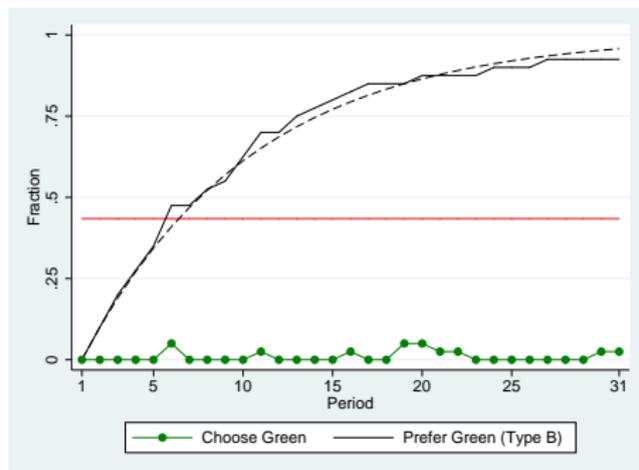
- ▶ Can an objective and public recording of opinions be the catalyst to precipitate change?
- ▶ Can the faster spread of information, such as through social media, help spark change?

Result 4 [Poll]: Most groups use the poll to break out of the conformity trap.



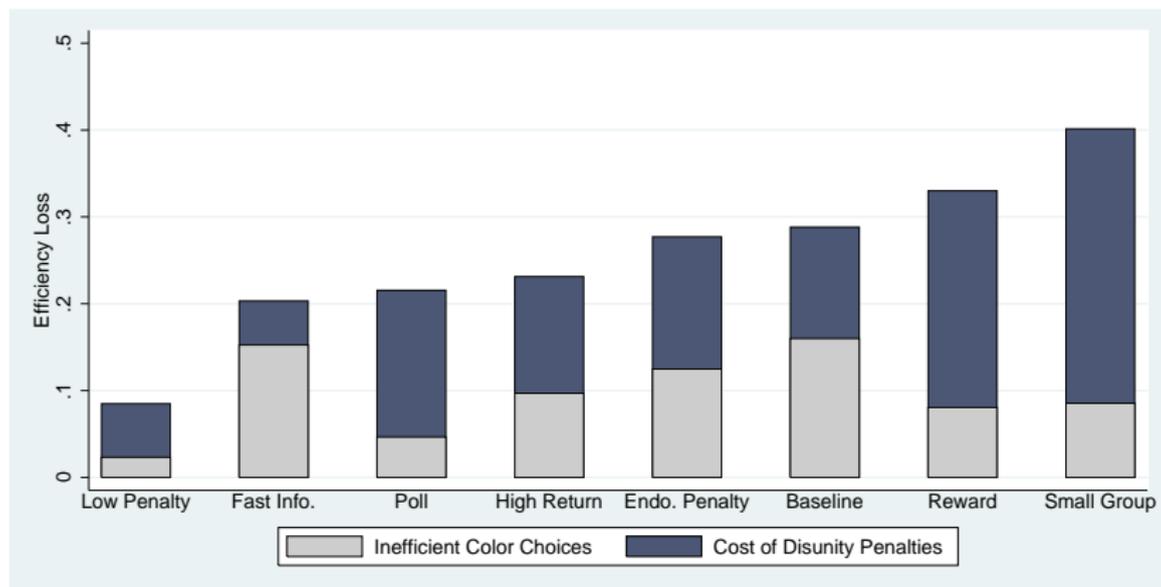
Subjects' decision screen: Poll

Result 5 [Fast Information]: The likelihood that the conformity trap occurs is not significantly different in Fast Information and Baseline.



Subjects' feedback screen: Fast Information

Efficiency Loss



Efficiency is measured as the sum of realized earnings divided by the maximum earnings; efficiency loss due to color choices (grey) and penalties (blue).

Initiators of Change (Risk and Non-Conformity Tasks)

| $Prob(Green \theta = G)$ | (1) | (2) | (3) | (4) |
|----------------------------------|----------------------|----------------------|----------------------|----------------------|
| High Return | 0.025*** (0.006) | 0.024*** (0.006) | 0.024*** (0.006) | 0.024*** (0.006) |
| Low Penalty | 0.041*** (0.006) | 0.041*** (0.007) | 0.042*** (0.006) | 0.042*** (0.006) |
| Endogenous Penalty | 0.015** (0.007) | 0.015** (0.007) | 0.014** (0.007) | 0.014** (0.007) |
| Poll | 0.010 (0.008) | 0.010 (0.008) | 0.010 (0.009) | 0.010 (0.009) |
| Fast Information | -0.019*** (0.005) | -0.020*** (0.005) | -0.021*** (0.005) | -0.021*** (0.005) |
| Risk-accepting | 0.016*** (0.006) | | 0.016*** (0.006) | 0.016*** (0.006) |
| Non-conformist | | 0.015*** (0.005) | 0.015*** (0.005) | 0.014*** (0.005) |
| Female | | | | -0.005 (0.005) |
| Fraction of <i>Green</i> Choices | < 0.25 | < 0.25 | < 0.25 | < 0.25 |
| Observations (Individuals) | 11,363 (643) | 11,363 (643) | 11,363 (643) | 11,363 (643) |

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$. Robust standard errors clustered on session (48). Reported values are average marginal effects of mixed effects probit regressions with session and individual random intercepts. Period dummies included. Regressions also include treatments Reward and Small Group (not reported).

Three Lessons

Leadership: first-movers must be willing to suffer extreme losses to spark change. Reward: Results

Luck: many people may stick their necks out, but they need enough others who by chance also move toward change at the same time.

Hope: pessimism about the miscoordination cost associated with change leads to a status quo bias (intolerance, vote against change).

⇒ Easily extendable setting: what role do social networks play in precipitating change?

Social Change

The significant alteration of social structures and interactions, including changes in rules of behavior (social norms), authority structures, social stratification, cultural symbols, and value systems (Moore 1968, Vago 2004, Encyclopedia Britannica).

Let R be a behavioral rule for situations of type S . We say that R is a *social norm* in a population P if for each $i \in P$ (adapted from Bicchieri 2006):

- ▶ i knows that a rule R exists and applies to S .
- ▶ Conditional preference: i prefers to conform to R on the conditions that (a) i believes that a sufficiently large subset of P conforms to R (*empirical expectation*) and (b) i is expected to conform to R and may be sanctioned otherwise (*normative expectations*).

Decision Screen: Endogenous Penalty

Subjects choose $p = \{1, 4, 7\}$ for their matched participant.

Please make your color choice:

BLUE

GREEN

Please make your penalty choice:

Small Penalty

Medium Penalty

Large Penalty

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Decision Screen: Poll

Poll conducted in period 14 (on average 15 out of 20 are type B, 98.5% probability that type *G* are in the majority).

What color would you prefer people in your matching group chose in the next rounds?

BLUE

GREEN

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Feedback Screen: Fast Information

End of period feedback:

Round: 1

Your type: A

You chose: GREEN

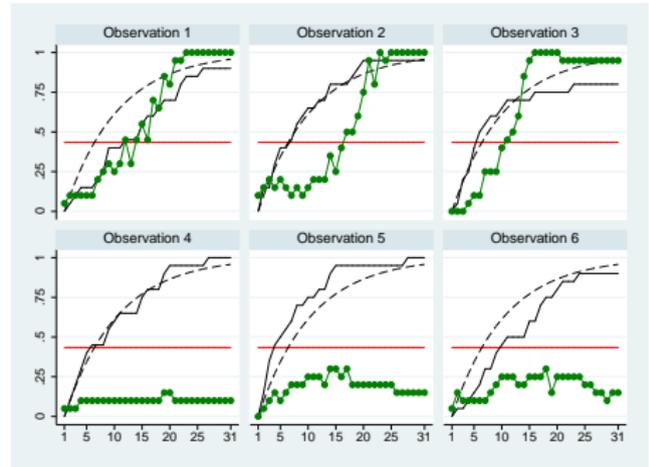
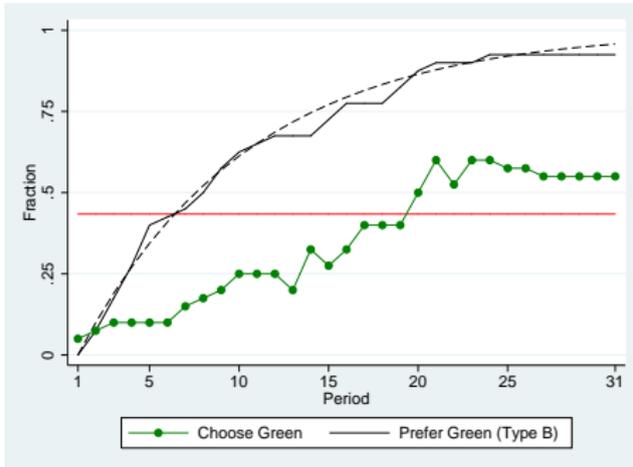
The participant you were matched with chose: GREEN

Your payoff in this round: 20

Number of participants (including you) who chose the same color as you in this round: 13 out of 20

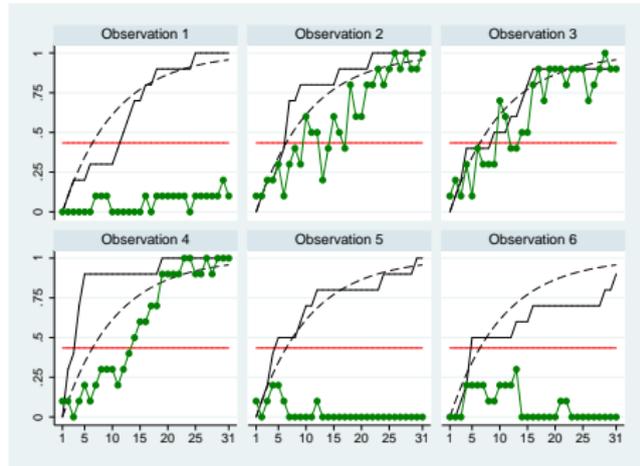
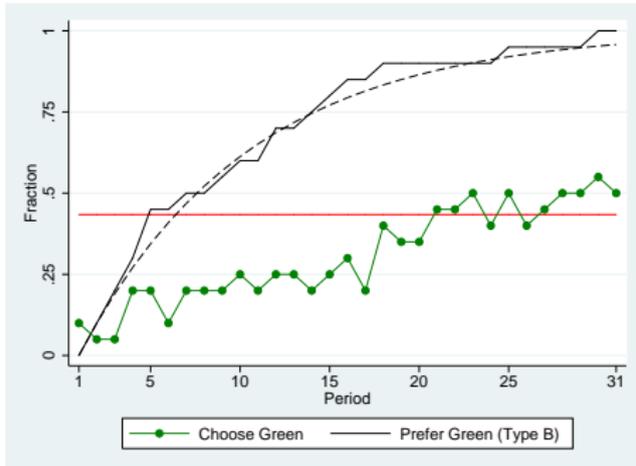
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Result A.1 [Reward]: Incentivising the emergence of non-conformists reduces the likelihood of the conformity trap, but the conformity trap is still common.



⇒ effective policy requires incentivising the marginal agent.

Result A.2 [Small Group]: Smaller groups are less likely to fall into the conformity trap, but social change is costly.



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Non-conformity measure

(Hong and Page 1989)

I find contradicting others stimulating.

I become angry when my freedom of choice is restricted.

Regulations trigger a sense of resistance in me.

It disappoints me to see others submitting to standards and rules.

When someone forces me to do something, I feel like doing the opposite.

I become frustrated when I am unable to make free and independent decisions.

It irritates me when someone points out things which are obvious to me.

I am content only when I am acting of my own free will.

I resist the attempts of others to influence me.

Risk measure

Lottery

- | | |
|----------------------------|------------------------|
| <input type="checkbox"/> 1 | 8 in 10 chance of \$2. |
| <input type="checkbox"/> 2 | 7 in 10 chance of \$3. |
| <input type="checkbox"/> 3 | 6 in 10 chance of \$4. |
| <input type="checkbox"/> 4 | 5 in 10 chance of \$5. |
| <input type="checkbox"/> 5 | 4 in 10 chance of \$6. |
| <input type="checkbox"/> 6 | 3 in 10 chance of \$7. |

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[Back to Initiators of Change](#)