



Instructor's Guide to Democratization and Redistributive Commitment

Laboratory implementation, theoretical foundations,
experimental evidence, and variants

Behavioral and Experimental Economics Research Lab
Department of Economics



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<https://beer-lab.org/>

How to use this guide

This guide supports the preparation, implementation, and classroom discussion of the Democratization as Redistributive Commitment family available through the Behavioral and Experimental Economics Research Lab (BEER Lab) in the Department of Economics at Tecnológico de Monterrey. It is written for instructors with different levels of experience in game theory, political economy, and experimental methods. Every concept is introduced before it is used, predictions are derived step by step, and behavioral observations are separated from causal claims.

The activity turns a central political-economy question into an observable sequence: why would an elite that can transfer resources today surrender future political rights? A present promise may lack credibility. Democratization changes who decides tomorrow and can commit society to future redistribution. Students experience this logic from four roles, compare institutions, and observe when conflict is avoided or realized.

The document offers three reading paths. The **quick guide** is sufficient for a basic session. Operational chapters cover access, rooms, screens, the instructor report, and contingencies. Conceptual chapters develop backward induction, commitment, revolt threats, suffrage, and distribution. Instructors comparing treatments may read the benchmark model and proceed directly to the extended variants.

Common instructions appear once. Each variant then states what changes, what remains fixed, the monetary prediction, the result to project, and a question that distinguishes mechanisms. This activity is an original teaching adaptation inspired by the literature on political transitions. It is neither a literal replication of a published experiment nor a measure of participants' personal political views.

Author

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For the instructor

The guide follows the English interface. Spanish configurations implement the same institution and parameters. Public routes are proposed deployment routes; development was validated on the isolated local instance. Never project individual codes or connect decisions to names, student IDs, or seats in the laboratory.

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Quick implementation guide

1.1 Access through the updated laboratory website

Start at <https://beer-lab.org/en/>. Select **CLASSROOM** in the top navigation menu; it opens <https://teaching.beer-lab.org/en/>. In the **Classroom experiments** catalog, use the search box to locate the activity by name. You can also filter by **Topic** or **JEL code**. Clear any filters left from an earlier search before looking for another game.

Each family's card distinguishes **Español** and **English** access links. The **Show extended version** checkbox selects that edition before following a link. Catalog language and session language are separate choices: verify both. Students use the room specified by the instructor; the instructor prepares and monitors the session through this family's own administrative pages.

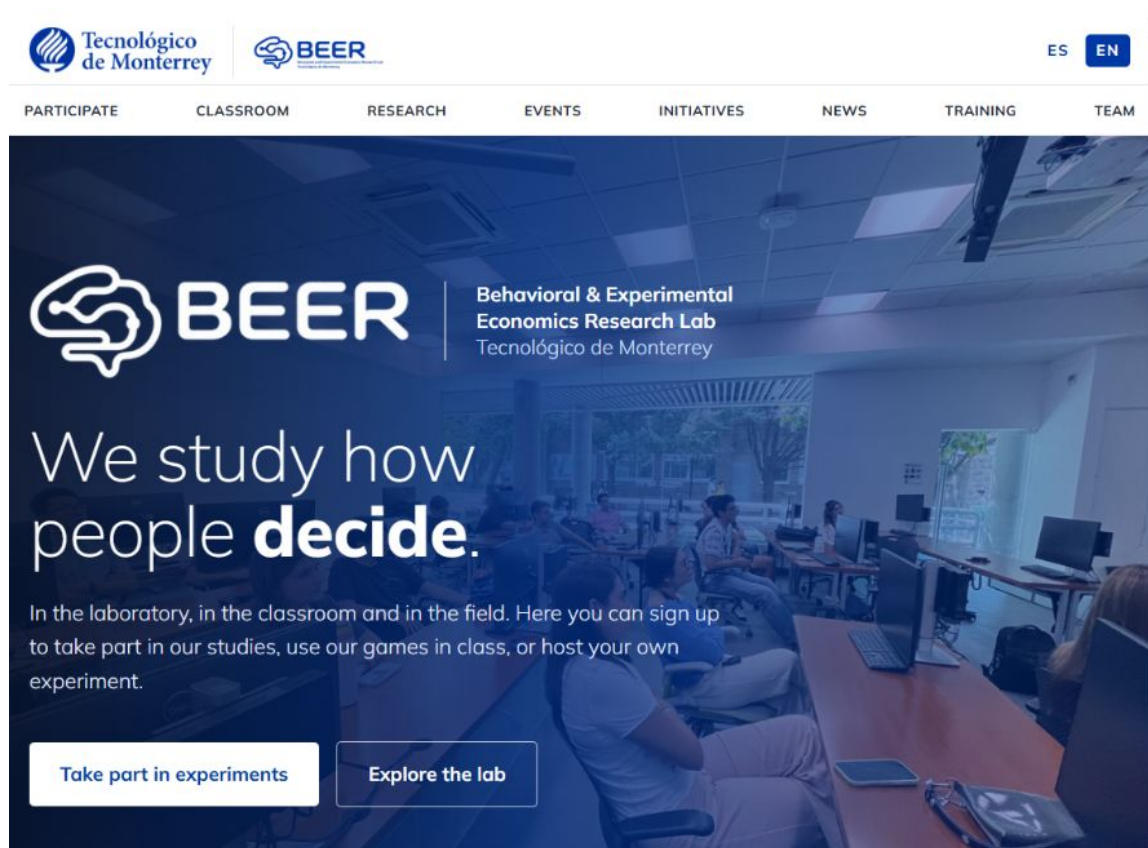


Figure 1.1: Current institutional website. Select CLASSROOM in the top navigation menu to open the teaching experiments. Captured on October 7, 2026.



Figure 1.2: Current catalog: search by title, topic, or JEL code. Then locate this family's card and select language and edition. Captured on October 7, 2026.

Checking resources, comprehension, and participant requirements

Before opening the room, check the selected configuration and the number of students present. The session-creation form states the group size and minimum required by that configuration. An individual activity accepts any positive participant count; an interactive activity must satisfy its stated requirement: complete groups when size is fixed, or a minimum participant count when size is flexible. Requirements may change across treatments, for example when adding a third party or changing an institution's size. If you edit a grouping parameter, check the requirement for the edited configuration, rather than relying only on the demo's suggested count.

In the instructions, ensure that students can identify what each role receives, what they can decide, and how the outcome is calculated. An initial account, a distributable budget, and final earnings need not be the same amount. Refer to the resources panel and the example for the selected treatment. Do not carry the basic edition's endowment into a treatment that changes accounts or introduces additional positions.

ECU stands for *Experimental Currency Units*: the activity's unit of account. An outcome of 100 ECU does not automatically equal 100 pesos or 100 dollars. Conversion depends on the session configuration. Before announcing a payment, confirm with the laboratory whether money is paid, the conversion rate, and which decisions count for payment. In hypothetical modules, describe amounts as outcomes in the stated situation.

When a comprehension check is included, an incorrect response receives an explanation beside that question, identifying the submitted answer and the correct answer. Other answers remain in the form. Ask the student to return to the example, locate the relevant rule, and redo the calculation before correcting the response. Avoid revealing answers to the entire class for an individual error, and do not interpret a comprehension mistake as an economic choice in the game.

ción — un encuentro	Democratización como compromiso redistributivo / Democratization as Redistributive Commitment — BEER Lab Seleccione una variante de este juego. Select a version of this game.
ción — 4 encuentros, grupo fijo	
ción — 4 encuentros, grupo reasignado	
ation — one encounter	
ation — 4 encounters, fixed group	
ation — 4 encounters, reassigned group	
ción extendida — referencia	
ción extendida — promesa vinculante	
ción extendida — amenaza costosa	
ción extendida — amenaza persistente	
ción extendida — represión	
ción extendida — sufragio parcial	
ción extendida — desigualdad inicial	
ción extendida — crisis	
emocratization — benchmark	
emocratization — binding promise	
emocratization — costly threat	
emocratization — persistent threat	
emocratization — repression	
emocratization — partial suffrage	
emocratization — initial inequality	
emocratization — crisis	

Figure 1.3: Demo contains only the configurations of this game family, in both languages and editions.

Rooms

Current rooms:

[ES] Democratización como compromiso redistributivo
[EN] Democratization as Redistributive Commitment
[ES] Democratización y compromiso redistributivo: extendido
[EN] Democratization and Redistributive Commitment: extended

Figure 1.4: Rooms contains the four rooms for this family: basic and extended editions in Spanish and English.

Room: [EN] Democratization as Redistributive Commitment

Create a new session

Session Config

[EN] Democratization — one encounter

Number of participants

Complete groups of 4 participants. Use a multiple of 4; minimum 4.

Create

[Configure session](#) 

App sequence

democratization_game (4 rounds)

Democratization as a credible commitment when current promises are not binding.

Figure 1.5: Session-creation form for the basic English room. Check the selected configuration and participant requirement before creating the session.

Downloading a session with several rounds

For the instructor

Open **Data** within the relevant session and use that session's CSV or CSV-for-Excel download link. The general export has one row per participant and columns for the different rounds. Ten rounds do not necessarily mean ten rows per person. When the family provides its own long-format export, observations may instead be organized by participant and round or another unit defined by the design.

Save the original file together with the configuration name, session code, and active-round count. Check that columns for the last active round are present and that the data belong to the selected session. Empty cells can represent inactive rounds, a pending decision, or a field that does not apply to a role; do not automatically recode them as zeros. To compare learning, preserve round and group identifiers alongside participant identifiers. Share only anonymous aggregates in class, and record session incidents before constructing derived tables.

1.2 Core facts

Name	Democratization as Redistributive Commitment.
Technical family	democratization; app democratization_game.
Purpose	Show why surrendering political power can make future redistribution credible when a current promise cannot.
Experimental unit	Group of four: one elite and three citizens. Attendance must be divisible by four.
Participants	Four per group; eight or more participants are recommended to observe at least two groups.

Basic edition	One or four encounters with a nonbinding promise, temporary threat, and median citizen vote under democracy.
Extended edition	Eight conditions: benchmark, binding promise, costly threat, persistent threat, repression, partial suffrage, inequality, and crisis.
Decision	Regime, current transfer, future promise, revolt vote, and future transfer; some variants add repression or a second vote.
Suggested duration	20–30 minutes for one encounter; 35–45 minutes for four encounters and feedback.
Outcome	Agreement: $\pi_E = 180 - x - y$ and $\pi_C = (x + y)/3$. Benchmark revolt: (0, 45, 45, 45).
Instructor report	Progress, democratization, revolt, transfers, promises, promise–delivery gap, role payoffs, surplus, histogram, and evolution.
Topics	democratization; franchise extension; redistribution; political commitment; conflict; political economy.
JEL codes	A22, C92, D72, D74, P16.
JEL	A22; C92; D72; D74; P16.

1.3 Learning objectives

Students should be able to explain why a current transfer need not substitute for institutional reform; solve a simple sequential game by backward induction; distinguish political power from current allocation; recognize that a temporary threat can open a reform window; calculate payoffs under autocracy, democracy, and revolt; and use aggregate data to compare a prediction with observed behavior. Advanced courses can add citizen coordination, multiple equilibria, endogenous regime choice, and identification limits.

The activity also teaches experimental logic. Changing one rule associates behavioral differences with one mechanism, while changing resources, preferences, and information together makes interpretation ambiguous. The extended conditions therefore separate commitment, conflict cost, persistence, repression, political inclusion, inequality, and crisis.

1.4 Minimum classroom sequence

1. Choose a configuration, confirm attendance divisible by four, and open the report in a tab that will remain private.
2. Participants enter through the stable room, read laboratory rules, and complete comprehension. Do not announce the prediction.
3. Each group completes the encounter. Repeated versions rotate roles so every participant experiences the elite position once.
4. Reveal the report and begin with the distribution of x , democratization, and revolt. Then introduce promises, future transfers, and payoffs.
5. Contrast the monetary prediction with behavior and close by separating descriptive evidence, treatment comparison, and causal interpretation.

Checkpoint

Before sharing links, verify that eight demo participants create two complete groups, `/demo` displays exactly 22 configurations from this family, and `/rooms` displays only the four democratization rooms.

1.5 Pedagogical preparation

Draw three columns on the board: “today,” “tomorrow,” and “conflict.” Place x in the first, m and y in the second, and 45 in the third. Do not yet explain the optimum. This layout prevents confusion between a promised transfer and an implemented transfer, the central distinction in the activity.

Open with: “If someone can revise tomorrow a decision promised today, what makes the promise credible?” Collect answers without grading them. At the end, classify proposals as reputation, contract, delegation, institution, or threat. Democratization belongs to solutions that reassign future authority.

Access, rooms, and family isolation

2.1 Path from the laboratory website

The institutional path starts at the [BEER Lab website](#). Its teaching section links to the [teaching directory](#). The game card will point to the [proposed game host](#). Instructors use the `/demo` route; participants never need that administrative page.

The subdomain must run as an isolated instance with `GAME_FAMILY` set to `democratization`, a separate database, and study protection. Isolation prevents a dictator-game link from launching trust or public-goods configurations and keeps sessions and exports from different courses separate.

2.2 The four rooms

The Spanish basic room is [democratizacion_es](#); the English basic room is [democratization_en](#). Extended rooms are [democratizacion_extendida](#) and [democratization_extended](#). Each room filters compatible configurations only.

The basic room offers one encounter, four encounters with a fixed group, and four encounters with reassignment. The extended room offers eight fixed-group treatments. A first class usually benefits from one encounter or four fixed encounters. Reassignment limits a relationship-specific history, although repeated observations from the same person are still correlated.

2.3 Session creation and monitoring

Choose a configuration in `/demo` and verify participant count. oTree creates individual links and the room handles stable entry. Project only the stable room route or its QR code. Keep the links page private. Use Monitor to identify unfinished roles without revealing decisions.

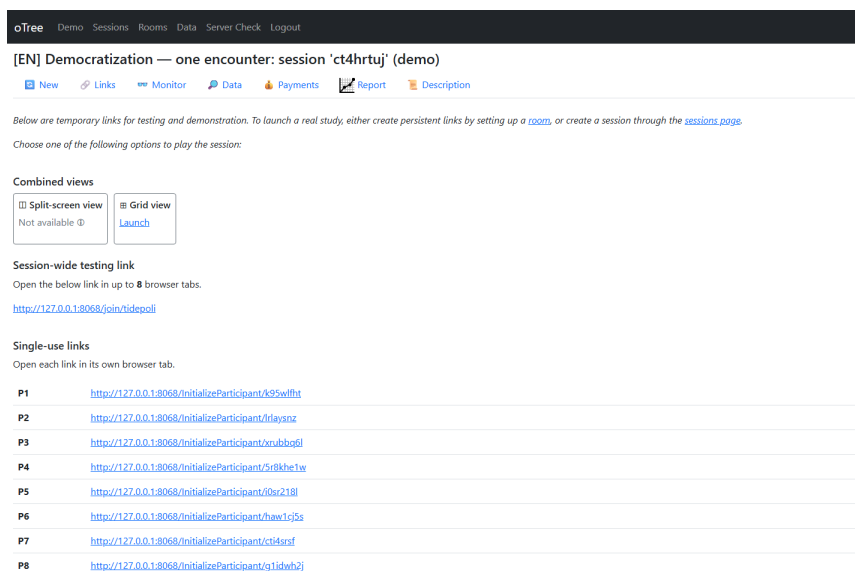


Figure 2.1: Instructor session-links page.

If a connection drops, participants should return to the same link or room. Creating a new session splits groups and leaves permanent wait screens. The report should remain private until completion because partial outcomes could affect decisions still in progress.

Attention

Do not distribute participant paths of the form `/p/code/...`. They are temporary and individual. Course materials and QR codes should contain stable room routes only. Never reset the database or switch a running configuration during class.

Participant experience

3.1 Welcome and general rules

The welcome page shows institutional logos, the laboratory purpose, silence and no-communication rules, screen-following instructions, and a private-help procedure. The English button says “Start.” Participants must accept the rules before proceeding.

The no-communication rule is substantive. Communication could let citizens coordinate revolt or let the elite negotiate outside the programmed mechanism. A future communication condition must be introduced as a treatment rather than an informal exception.

3.2 Instructions and timeline

The instruction page presents two 90 ECU resources, four roles, and the decision sequence. Three bordered cards separate current transfer, future authority, and revolt. The assigned condition appears in a blue callout box rather than unboxed colored text, preserving the established BEER Lab visual standard.

Ask participants to distinguish m from y . The first is a promise; the second is an implemented transfer. In the benchmark, m can convey intentions but does not constrain the elite. Under democracy, the future transfer is selected by citizen votes rather than the elite’s promise.

3.3 Comprehension and practice

Questions verify total resources, the citizen payoff after successful revolt, and whether the promise is binding. Incorrect responses generate a condition-specific explanation. Practice displays $x = 48$, democracy, and $y = 90$: the elite earns 42 and each citizen 46. Practice has no payoff consequences.

Do not answer for a participant unless accessibility requires assistance. If many fail, reread the condition rule without recommending a strategy. The questions detect a common mistake: x and y are total transfers divided among three citizens.

3.4 Role and elite proposal

Each encounter displays the assigned role prominently. Fixed groups rotate positions so each person becomes elite once over four encounters. The elite sees two 90 ECU resource bars, chooses autocracy or democracy, chooses x , and announces m . Menus use multiples of three to keep citizen



Instructions

Benchmark: nonbinding promise and temporary threat



Instructions

Benchmark: nonbinding promise and temporary threat

Resources and unit of account

Resource to allocate in each period: 90 ECU; the two periods total 180 ECU.

ECU stands for Experimental Currency Units. It is the unit of account for this activity.

This session does not convert ECU into real money.

The institution

Each encounter brings together one person as the elite and three people as citizens. There are two successive public resources of 90 ECU each.

The elite initially controls both resources. It first proposes retaining autocracy or establishing democracy, transfers x ECU now, and announces a future transfer m .

Citizens observe the proposal and vote to accept or revolt. Two votes activate revolt. If they accept, the proposed political rule determines who chooses the future transfer y .

1

The elite proposes regime, x , and m .

2

Citizens accept or revolt.

3

The future transfer y is chosen.

4

Payoffs and outcomes are calculated.

Condition in this session: Benchmark: nonbinding promise and temporary threat

Promise m is not binding. If citizens accept autocracy, the elite chooses y freely again. Revolt is available only in the first stage.

Transfer x is divided equally among the three citizens.

Under autocracy the elite chooses; under democracy the median of the three citizens chooses.

In the benchmark, a successful revolt ends the encounter: the elite receives 0 and each citizen receives 45 ECU.

Continue

Con tecnología de [oTree](#)

Figure 3.2: Current instructions for the basic edition: initial resources, decision rules, and experimental units. Continuation 2/2.



Review the marked questions. Each shows your answer and an explanation; your other answers are retained.

Comprehension questions

Benchmark: nonbinding promise and temporary threat

Resources and unit of account

ECU stands for Experimental Currency Units. It is the unit of account for this activity.

This session does not convert ECU into real money.

How many ECU do the two public resources sum to?

Your answer: 181. The correct answer is 180. Review the rules: the resources sum to 180 ECU; each citizen receives 45 ECU if the first revolt succeeds; the answer about whether m is binding is No.

If revolt succeeds in this condition, how many ECU does each citizen receive?

Is future promise m binding in this condition?

Continue

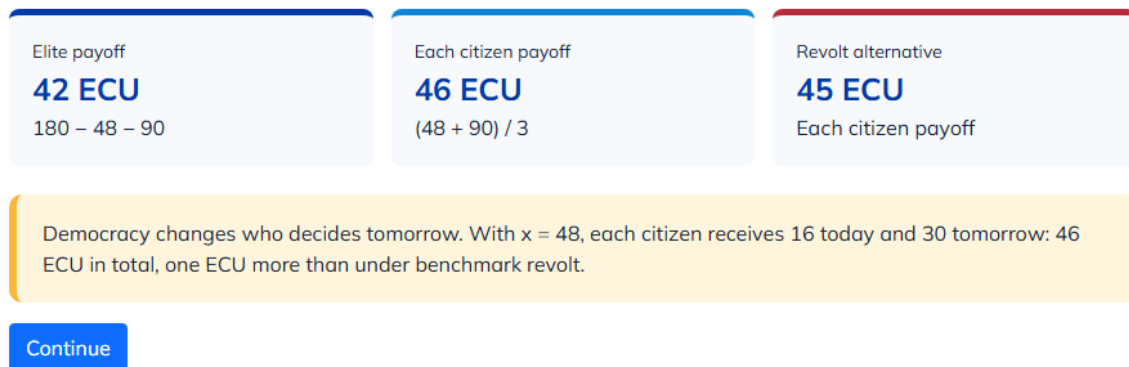
Con tecnología de [oTree](#)

Figure 3.3: Current comprehension check: specific feedback explains the incorrect answer and preserves the other responses.

Practice example

Benchmark: nonbinding promise and temporary threat

This example does not affect your payment. Suppose the elite democratizes, transfers $x = 48$, and citizens choose $y = 90$.



Powered by [oTree](#)

Figure 3.4: Numerical practice example.

shares integral.

Autocracy and democracy have equal visual weight, and their descriptions concern decision rights rather than normative labels. The interface seeks to observe institutional choice without cueing approval of one regime.

3.5 Citizen vote and future decision

Citizens observe regime, total transfer, personal share, and promise. They vote privately; two votes activate revolt. If accepted, everyone sees the first-stage result. Under democracy each citizen votes on y and the median applies. Under autocracy the elite chooses y unless the promise is binding.

Wait pages do not reveal partial choices. Do not announce how many revolt votes are missing, because that would break simultaneity. After completion, the group sees aggregate votes, the regime, and the appropriate continuation.

3.6 Outcome and completion

The result page separates outcome, x , m , y , gap $m - y$, elite and citizen payoffs, own payoff, and joint surplus. The final page summarizes encounters and asks participants to remain quiet during instructor preparation.



Your role in this encounter

Encounter 1 of 1



Role

Citizen 2

Observes the proposal, votes on revolt, and may take part in the democratic decision.

Benchmark: nonbinding promise and temporary threat

Promise m is not binding. If citizens accept autocracy, the elite chooses y freely again. Revolt is available only in the first stage.

Continue

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Figure 3.5: Role assignment precedes the elite decision. Role identification.



Elite proposal

Encounter 1 of 1

Choose the proposed regime, current total transfer x , and future promise m .

90 ECU

1

90 ECU

2

Proposed regime

Autocracy

The elite retains the right to choose the future transfer.

Democracy

Citizens obtain the right to choose the future transfer by vote.

Current total transfer x

0 ECU



It is divided equally among the three citizens.

Future promise m

0 ECU



A promise communicates intentions; it is binding only when the condition says so.

[Continue](#)Powered by [oTree](#)

Figure 3.6: Regime, transfer, and promise proposal.



Accept or revolt

Encounter 1 of 1

Observed proposal

Proposed regime
Democracy

Current transfer x
48 ECU

Your current transfer if accepted
16 ECU

Promise m
90 ECU

Vote individually. Two or more votes for revolt activate it.

Accept the proposal

Receive $x/3$ now and continue to the second period.

Revolt

If at least two citizens choose this option, the revolt alternative applies.

45 ECU - Each citizen payoff

Continue

Powered by [oTree](#)

Figure 3.7: Citizen decisions at both stages. Private accept-or-revolt vote.



Future democratic decision

Encounter 1 of 1

Vote for a total transfer y . The median of the three citizen votes determines the transfer.

Role: **Citizen 2**

0	3	6	9	12	15	18	21
24	27	30	33	36	39	42	45
48	51	54	57	60	63	66	69
72	75	78	81	84	87	90	

Continue

Powered by [oTree](#)

Figure 3.8: Future transfer vote.



Encounter result

Encounter 1 of 1

Outcome

Agreement and institutional allocation

Democracy

Current transfer x
48 ECU

Promise m
90 ECU

Future transfer y
90 ECU

Gap m – y
0 ECU

Elite payoff
42 ECU

Each citizen payoff
46 ECU

Your payoff
46 ECU
Citizen 2

Votes for revolt 0 / 3

Repression expenditure 0 ECU

Sum of group payoffs 180 ECU

Continue

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Figure 3.9: Outcome and completion without duplicate messages. Complete encounter result.



Activity completed

Benchmark: nonbinding promise and temporary threat

You have completed all encounters. Please remain quiet while the instructor prepares the results discussion.

Cumulative total

46 ECU

Encounter	Role	Proposed regime	x	y	Revolt	ECU earned
1	Citizen 2	Democracy	48	90	No	46

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Figure 3.10: Participant final summary.

Benchmark economic model

4.1 Objects, sequence, and payoffs

A group has one elite E and three identical citizens C_1, C_2, C_3 . Two 90 ECU resources are initially controlled by the elite. The elite proposes regime $r \in \{A, D\}$, current transfer $x \in \{0, 3, \dots, 90\}$, and promise m from the same menu. Citizens simultaneously vote to accept or revolt. Two revolt votes end the encounter with $(0, 45, 45, 45)$.

Acceptance gives the elite $90 - x$ and each citizen $x/3$ in period one. Under autocracy the elite chooses y ; under democracy the median citizen vote chooses y . Agreement payoffs are

$$\begin{aligned}\pi_E &= 180 - x - y, \\ \pi_{C_i} &= (x + y)/3.\end{aligned}$$

Agreement preserves all 180 ECU. Revolt preserves 135 and destroys 45. Social loss alone does not determine behavior because costs are distributed unevenly.

4.2 Backward induction under autocracy

Start in period two. A purely money-motivated elite chooses $y = 0$ because each transferred ECU lowers its payoff. Promise m does not change this incentive when nonbinding. Citizens anticipate a total payoff $x/3$ after accepting autocracy.

Strict acceptance over 45 requires $x/3 > 45$, or $x > 135$. The maximum current transfer is 90. No autocratic offer can strictly dominate revolt for coordinated, money-motivated citizens. The obstacle is not insufficient total resources; it is the inability to commit the future resource.

Theoretical foundation

A high promise does not change the continuation when the promisor retains control and may revise it. Observing $m = 90$ and $y = 0$ need not reveal psychological dishonesty; it can reflect the institution's incentives.

4.3 Democracy as commitment

Under democracy each citizen votes $y = 90$, and the median is 90. Citizens compare $x/3 + 30$ with 45. Strict acceptance requires $x > 45$, so the smallest menu option is 48. The resulting payoffs are 42 for the elite and 46 for every citizen. Agreement preserves 180, gives every party more than revolt, and avoids destruction.

Democratization commits because it reallocates the right to choose y , not because it directly changes elite preferences. If indifferent citizens accept, $x = 45$ can also support agreement. The application does not impose behavioral tie-breaking, so instructors should distinguish a strict prediction from the full best-response set.

4.4 Coordination in revolt voting

Revolt requires two votes. A citizen may believe that a vote is not pivotal or may expect others to accept. Low revolt frequency therefore need not prove that offers are attractive; it may reveal coordination failure. Likewise, an isolated revolt vote does not generate conflict payoffs.

Advanced classes can write citizen strategies conditional on x , regime, and beliefs. Ask whether acceptance equilibria exist under autocracy when everyone expects acceptance. Distinguish Nash equilibrium, refinements, threshold behavior, and social preferences. The application records individual votes while the projected report uses aggregates.

4.5 Promises, signaling, and social preferences

Although nonbinding, m may predict y if participants value consistency, reciprocity, or signaling. A small average gap does not transform the mechanism into a contract. The binding-promise condition provides the causal comparison by holding resources and choices fixed while adding enforcement.

Inequality aversion can raise x or y , and citizens may reject profitable offers through negative reciprocity. These explanations belong after the monetary benchmark. A productive feedback sequence is institution, calculation, outcome, and behavioral interpretation.

Theory and evidence

5.1 Franchise extension as a strategic concession

[Acemoglu and Robinson \(2000\)](#) interpret franchise extension as an elite response to unrest and revolution threats. Present transfers cannot guarantee future redistribution after the threat recedes. Voting rights change future political equilibrium and serve as commitment. The laboratory compresses this mechanism into two resources and one temporary revolt opportunity.

The exercise does not claim that every historical democratization follows this channel. Other mechanisms include modernization, war, party organization, diffusion, and intra-elite conflict. It isolates temporary de facto power, noncredible promises, and a change in de jure authority.

5.2 Political transitions and windows of opportunity

[Acemoglu and Robinson \(2001\)](#) show how recessions and other events can lower mobilization costs and create temporary threats. An elite cannot promise redistribution once the window closes. Democracy changes the allocation of future power. Benchmark revolt disappears in period two, making the first period a reform window.

The persistent-threat condition removes part of this asymmetry. If citizens can revolt again, autocracy must provide a larger future transfer. Comparing these treatments separates a permanent institution's commitment value from continued discipline by a threat.

5.3 Commitment and the political Coase theorem

A Coasian argument suggests bargaining over transfers instead of costly reform or conflict. [Acemoglu \(2003\)](#) explains why bargains fail when future political power is not contractible. Tomorrow's decision maker can revise today's promise. In this exercise m exposes the missing contract. The binding condition deliberately supplies enforcement and reveals its consequences.

Binding promise is a benchmark, not a universal institutional prescription. It might represent a constitution, court, escrow, automatic rule, or verifiable debt, each with costs and limits. The learning objective is to identify commitment requirements.

5.4 Historical and experimental evidence

[Aidt and Franck \(2015\)](#) study the British Great Reform Act and provide evidence consistent with

democratization under a revolution threat. Historical evidence combines protest, economic change, and legislative choice. It provides external context but not laboratory control. Students can map laboratory variables to historical analogues and identify simplifications.

[Chatziathanasiou et al. \(2022\)](#) experimentally examine whether overthrow threats discipline elites. Their study is a close antecedent for threat, concession, and conflict, though the BEER Lab exercise uses its own parameters and screens. “Inspired by” is not “replicated”: replication requires preserving treatments, procedures, payoffs, and analysis.

5.5 Limits of inference

A classroom session describes behavior under specific rules. It does not estimate population political preferences or explain a country's democratization. Choices may depend on comprehension, norms, course context, learning, and prior experience. Repeated group observations are correlated.

For pedagogical treatment comparisons, assign participants before observing choices, hold all instructions constant except the treatment rule, and analyze groups. Report denominators, incomplete sessions, and oral interventions. Research intended to produce generalizable knowledge requires the relevant ethical and institutional procedures.

5.6 Basic versions

5.7 One encounter

Use one encounter for a 20–30 minute demonstration. It minimizes learning and reputation. Each person holds one role, so feedback should deliberately compare perspectives. Its limitation is that role differences are also person differences.

5.8 Four encounters with fixed groups

Roles rotate inside the same group. Every participant is elite once. The version supports discussion of learning, reciprocity, and history. Round evolution can show convergence toward $x = 48$, smaller gaps, or punishment after unfulfilled promises. Rounds are not independent observations.

5.9 Four encounters with reassignment

Groups change and roles rotate. Reassignment limits relationship-specific agreements while allowing population learning. “Random” describes programmed matching; it does not make every row statistically independent because people reappear.

Extended variants

6.1 Extended benchmark

6.1.1 Mechanism

Four fixed-group encounters repeat the central protocol with nonbinding promises, a temporary revolt opportunity, and median citizen voting.

6.1.2 Prediction

Backward induction gives $y = 0$ under autocracy and $y = 90$ under democracy. Autocracy cannot strictly compensate citizens for 45; democracy with $x = 48$ yields $(42, 46, 46, 46)$.

6.1.3 Report

Compare democratization, x , promises, y , and gaps. A large positive gap illustrates credibility problems; a small gap suggests voluntary fulfillment but does not identify why.

Feedback script

Ask: “What changed when the elite democratized: resources, preferences, or the right to decide?” Keep the first discussion on authority allocation before normative evaluation.

6.2 Binding promise

6.2.1 Mechanism

If autocracy is accepted, the server automatically sets $y = m$. Democracy retains citizen voting. All resources and revolt rules remain fixed.

6.2.2 Prediction

Autocracy can reproduce the democratic result with $m = 90, x = 48$. Enforcement can make surrendering power unnecessary for future redistribution. Other combinations may satisfy participation, depending on tie-breaking.

6.2.3 Report

Inspect autocracy, m , and a mechanically zero autocratic gap. Persistent democratization can open discussion of procedural preferences, residual distrust, or intrinsic participation value.

6.3 More costly revolt

6.3.1 Mechanism

Successful revolt pays each citizen 25 and the elite zero, destroying 105 ECU. Nothing else changes.

6.3.2 Prediction

Autocracy needs $x/3 > 25$, so the smallest strict offer is 78 and the elite earns 102. Democracy can offer $x = 0$ because $y = 90$ gives each citizen 30, leaving the elite 90. Buying autocratic acceptance can therefore be more attractive.

6.3.3 Report

Look for lower democratization and higher current transfers. If transfers do not rise, discuss coordination, fairness, or backward-induction errors.

6.4 Persistent threat

6.4.1 Mechanism

Citizens may revolt after observing y . They keep $x/3$ and receive 22.5 from the second resource if two votes activate the second revolt.

6.4.2 Prediction

Avoiding second revolt strictly requires $y > 67.5$, so $y = 69$. Initial acceptance with $y = 69$ requires $x > 66$, so $x = 69$. Autocracy then leaves the elite 42, the same as the benchmark minimum-democracy outcome. Continued threat can substitute partly for reform.

6.4.3 Report

Examine autocratic y , second revolt, and regime. High future transfers show discipline; revolt may indicate a below-threshold offer or behavioral considerations.

6.5 Repression

6.5.1 Mechanism

The elite spends 0, 10, or 20 ECU before citizen voting. Activated revolt succeeds with probability 80%, 50%, or 20%. Failure gives the elite remaining resources and citizens zero; success gives

Persistent threat

Encounter 1 of 4

After observing y , citizens may again accept or revolt over the second resource. Two votes activate revolt.

Future transfer y

90 ECU

30 ECU · Each citizen payoff

Accept the proposal

Receive $x/3$ now and continue to the second period.

Revolt in the second period

The first-period transfer is retained. Each citizen receives 22.5 ECU from the second resource if revolt is activated.

22.50 ECU

Continue

Powered by [oTree](#)

Figure 6.1: Persistent-threat vote after observing the future transfer.

citizens 45 each.

6.5.2 Prediction

Expected citizen revolt payoff is 36, 22.5, or 9. Repression lowers the transfer required for acceptance but costs the elite. Risk attitudes and coordination make realized behavior richer than an expected-value comparison.

6.5.3 Report

Compare repression, revolt, success, and surplus. Less observed conflict does not imply greater citizen welfare. Keep positive analysis separate from normative judgment.

6.6 Partial suffrage

6.6.1 Mechanism

The elite and Citizen 1 vote over y ; disagreement applies the lower vote. Excluded citizens still receive the universal transfer.



Propuesta de la élite

Encuentro 1 de 4

Elija el régimen propuesto, la transferencia actual total x y la promesa futura m .

90 ECU

1

90 ECU

2

Régimen propuesto

Autocracia

La élite conserva el derecho de decidir la transferencia futura.

Democracia

Los ciudadanos obtienen el derecho de decidir la transferencia futura por votación.

Transferencia actual total x

0 ECU

Se divide en partes iguales entre los tres ciudadanos.

Promesa futura m

0 ECU

Una promesa informa intenciones; solo obliga cuando la condición lo indica.

Gasto en represión

Reduce la probabilidad de éxito de la rebelión y se descuenta de los recursos de la élite.

0 ECU

10 ECU

20 ECU

Continuar

Powered by [oTree](#)

Figure 6.2: Repression choice displayed with cost and conflict implications.

6.6.2 Prediction

A money-motivated elite votes zero and the included citizen votes 90, so $y = 0$. A democratic label does not guarantee redistributive commitment without decisive inclusion. The proposal again cannot strictly outperform 45 for all citizens.

6.6.3 Report

Inspect democratization, y , and revolt. Democratization despite ineffective suffrage can reflect framing, procedure, or mistaken expectations.

6.7 Greater initial inequality

6.7.1 Mechanism

The elite receives a protected additional 60 ECU endowment. Political resources, choices, and revolt payoffs are unchanged.

6.7.2 Prediction

With linear utility the bonus shifts every elite branch equally and leaves marginal incentives unchanged. Behavioral differences can arise through fairness, entitlement, legitimacy, or inequality aversion.

6.7.3 Report

Compare x , democratization, and revolt with benchmark. Do not attribute any change automatically to monetary incentives.

6.8 Crisis

6.8.1 Mechanism

Successful revolt pays each citizen 55 and destroys only 15 ECU. Political resources and regime rules stay fixed.

6.8.2 Prediction

Democracy needs $(x + 90)/3 > 55$, so the smallest strict x is 78. The elite earns 12 and citizens 56. Autocracy cannot strictly beat revolt. A stronger outside option raises concessions and compresses elite rents.

6.8.3 Report

Look for larger x , democratization, and revolt. If conflict rises despite an efficient bargain, discuss coordination and commitment failure.

Instructor report and feedback

7.1 Controlled reveal

The report remains hidden until all active decisions are complete. Before then it shows participants, completed decisions, pending decisions, and observed encounters. This prevents partial results from influencing active groups. “Reveal results” opens the panel and “Hide results” protects it again.

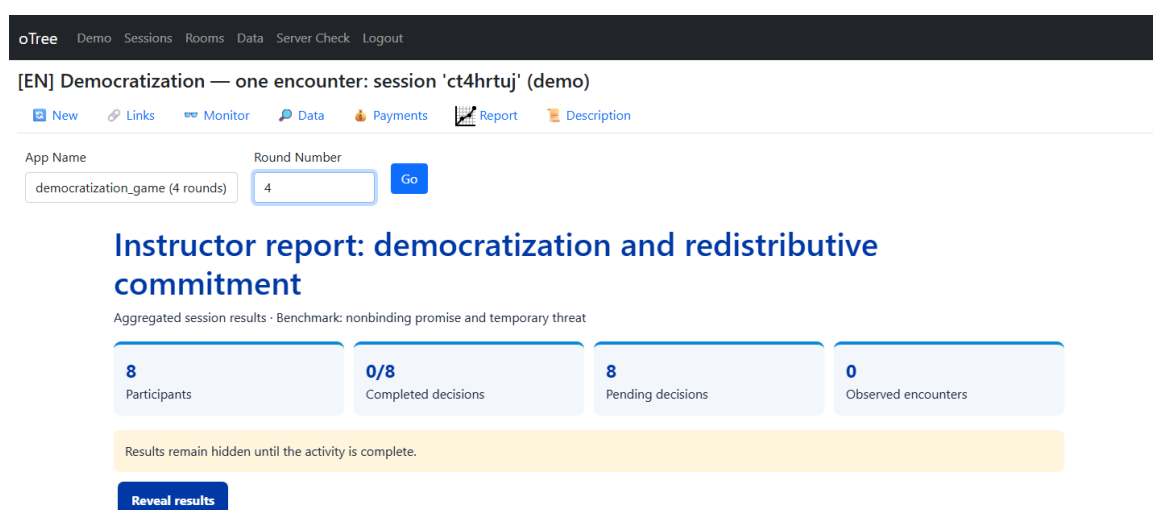
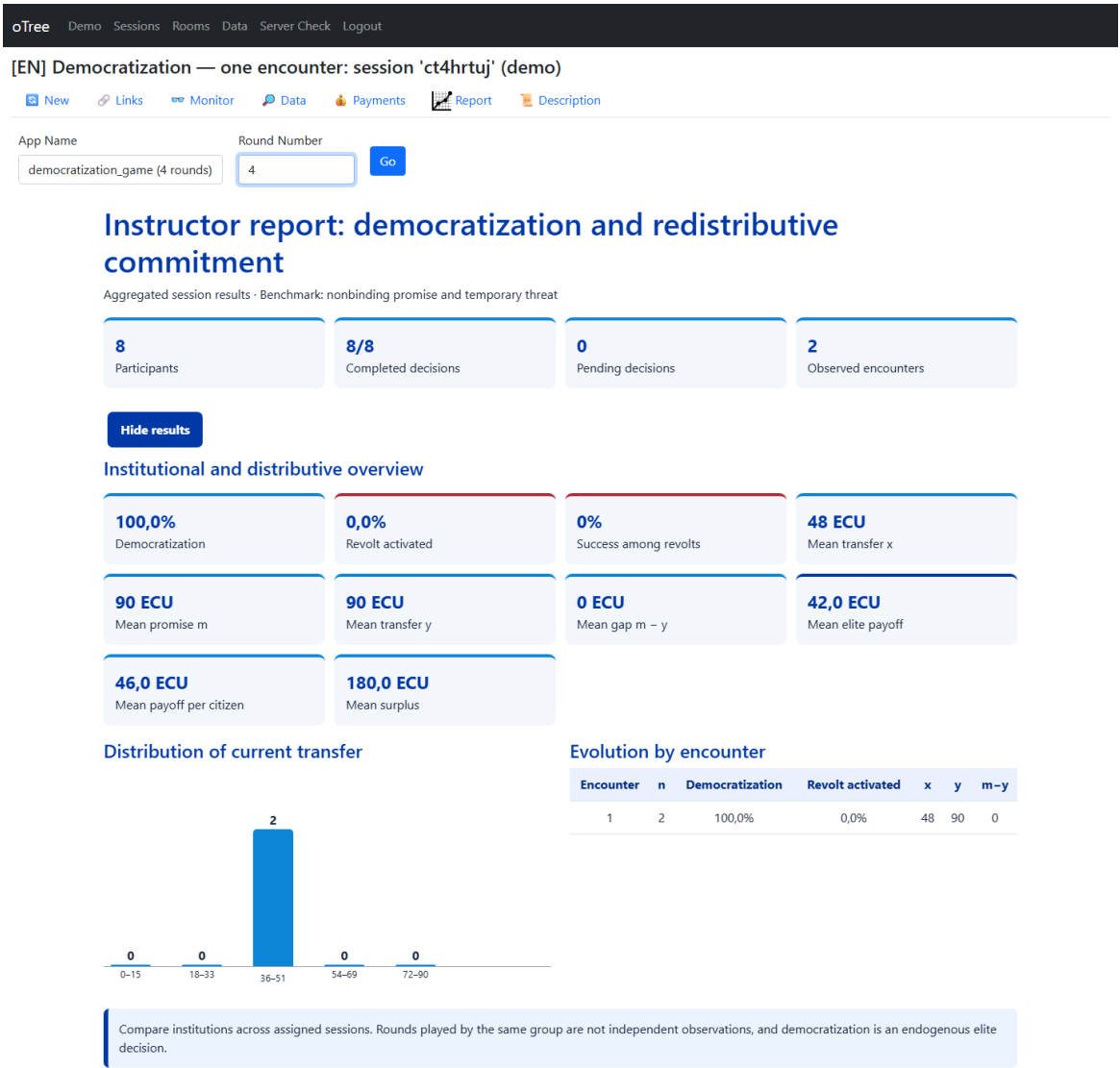


Figure 7.1: Controlled instructor-report reveal. Report before reveal.

7.2 Main indicators

The first row reports democratization, activated revolt, and success among revolts. Other cards show x , m , y , $m - y$, role payoffs, and surplus. Always state denominators. If no revolt occurs, a zero success rate means no cases rather than certain failure.

The promise gap is calculated for agreements. In democracy it is not elite noncompliance because citizens choose y . To study autocratic credibility, use the export and condition on regime.



7.3 Histogram and round evolution

The histogram groups x into five ranges and reveals clustering near 48, low offers, large concessions, or multimodality. The mean can conceal distinct strategies. The round table shows democratization, revolt, x , y , and the gap.

Do not treat small-sample bars as precise estimates. Say “in this session” and display counts. Treatment comparison requires assigned sessions, comparable group counts, and a group-level unit of analysis. Repeated rounds call for clustering or aggregation in formal analysis.

7.4 Five-step feedback script

1. Elicit predictions before revealing results.
2. Reveal the x histogram and democratization rate; ask about citizen thresholds.
3. Show m , y , and the gap; separate promise, delivery, and future authority.
4. Compare elite, citizen, and surplus outcomes; separate distribution from efficiency.
5. Introduce the treatment and identify the single changed rule. End with one supported and one unsupported claim.

Feedback script

Use: “The monetary benchmark predicts democratization with a current transfer just above 45. Our session produced X% democratization and this distribution of offers. Coordination, social preferences, learning, or mistakes can explain departures. Identifying one mechanism requires an assigned treatment comparison.”

7.5 Lesson plans

7.6 Fifty-minute lesson

Allocate five minutes to access and rules, eight to instructions and comprehension, ten to play, fifteen to the report, and ten to derivation. Use one basic encounter and focus on commitment. Do not attempt all extensions.

7.7 Eighty-minute standard lesson

Use four fixed encounters. Reserve ten minutes for access, fifteen for play, twenty for empirical feedback, twenty for the model, and ten for historical evidence. Role rotation supports perspective taking. Show aggregate distribution before round evolution.

7.8 One-hundred-minute comparison

Run benchmark against binding promise or costly revolt in parallel. Match group counts and rounds. Elicit directional predictions before reveal. Compare regime, x , gap, and revolt. Emphasize that the treatment changes an institution rather than group personalities.

7.9 Advanced political-economy lesson

Ask for complete strategies, analyze coordination in revolt, and derive equilibrium sets under different indifference rules. Use partial suffrage and persistent threat to show that “democracy” and “threat” require institutional definitions. Teams can design an extension by specifying timing, payoffs, and a discriminating observable.

Questions, exercises, and solutions

8.1 Questions before reveal

1. What does a money-motivated autocratic elite choose in period two?
2. Can a maximum current transfer of 90 beat a revolt payoff of 45 per citizen?
3. What exactly changes when the elite democratizes?
4. What is the smallest x that strictly beats revolt when $y = 90$?
5. Is a high promise evidence of commitment?
6. Why does a two-vote threshold create coordination concerns?
7. Does avoiding revolt imply maximizing citizen welfare?
8. What observation distinguishes binding promise from voluntary fulfillment?

8.2 Solved quantitative exercises

8.2.1 Exercise 1: democratic agreement

At $x = 48, y = 90$, the elite earns $180 - 48 - 90 = 42$ and each citizen earns $(48 + 90)/3 = 46$. Total payoff is 180. Everyone strictly improves over revolt and 45 ECU are preserved.

8.2.2 Exercise 2: autocracy and promise

With $x = 90, m = 90$ and nonbinding autocracy, backward induction gives $y = 0$. The elite earns 90 and each citizen 30. Promise m never enters payoffs. Anticipating this, citizens prefer revolt at 45.

8.2.3 Exercise 3: democratic threshold

Solve $(x + 90)/3 > 45$ to obtain $x > 45$. The smallest menu option is 48. If indifferent citizens accept, $x = 45$ also works. State the tie rule.

8.2.4 Exercise 4: costly threat

At a 25 citizen revolt payoff, autocracy requires $x/3 > 25$, so $x = 78$ is the smallest strict offer. The elite earns 102. Democracy with $x = 0, y = 90$ leaves the elite 90. Autocratic concession yields 12 more.

8.2.5 Exercise 5: crisis

At a 55 revolt payoff, democracy requires $(x + 90)/3 > 55$, so $x = 78$. The elite earns 12 and each citizen 56. Relative to revolt, every citizen gains one and the elite gains twelve.

8.2.6 Exercise 6: persistent threat

Second-stage acceptance requires $y/3 > 22.5$, so $y = 69$. Initial acceptance then gives $x/3 + 23 > 45$, requiring $x = 69$. The elite retains 42.

8.2.7 Exercise 7: repression expected value

With expenditures 0, 10, and 20, expected citizen revolt payoffs are $0.8(45) = 36$, $0.5(45) = 22.5$, and $0.2(45) = 9$. Risk aversion and social utility are absent from these figures.

8.2.8 Exercise 8: partial suffrage

If the elite votes zero and Citizen 1 votes 90, the lower-vote tie rule sets $y = 0$. Excluded citizens also receive zero in period two. A democratic label alone does not transfer decisive authority.

8.3 Interpretation problems

Democracy with $x = 0$ and acceptance does not immediately imply indifference to money; citizens may anticipate $y = 90$, expect coordination failure, or misunderstand. Accepted autocracy with $x = 90$ may reflect belief in the promise. A zero gap in benchmark can reflect voluntary fulfillment rather than enforcement.

Revolt may reduce total surplus and still be individually rational for a citizen. Forty-five exceeds an autocratic allocation of thirty. Efficiency and individual incentives are distinct. Repression can reduce observed conflict while worsening citizen welfare.

8.4 Short rubric

An excellent response states timing, solves y before x , computes thresholds, distinguishes m from y , compares individual and total payoffs, recognizes coordination, and limits inference. A satisfactory response calculates payoffs and explains commitment but omits equilibrium or data limitations. An insufficient response treats promise as payment, confuses total and individual transfers, or evaluates a regime only by its label.

Operations, privacy, and contingencies

9.1 Incomplete attendance

The game needs groups of four. If attendance is not divisible by four, use documented assistant-controlled backup accounts or reduce participation before session creation. Do not leave a three-person group waiting. Exclude backup-account behavior from empirical comparisons.

9.2 Common problems

“Please wait” usually means another role is still deciding. Check Monitor if it persists. “Participant does not exist” indicates an old database or session link. “Not Found” often means an expired participant route. Return to the stable room. If `/demo` displays other families, fix `GAME_FAMILY` before class.

If a browser closes, reopen the same link. Re-entering a room twice can occupy another seat, so controlled entry is useful. If a participant leaves after grouping, an instructor may continue through a backup account but should record the incident.

9.3 Privacy and export

The report aggregates data and needs no names. Do not project participant codes beside decisions. Exports should retain treatment, round, group, role, regime, x , m , votes, y , gap, revolt, repression, and payoffs. Any connection to grades or surveys belongs in an authorized procedure outside the public display.

Causal comparisons must respect assignment. Record treatment, matching, incomplete groups, and oral interventions. Repeated group rows are not independent. Formal exercises should aggregate by group or use clustered uncertainty.

9.4 Visual accessibility

Project at a scale that makes labels and denominators readable. Color reinforces elite, citizen, and conflict categories, but text labels preserve meaning. Read formulas aloud without reading individual choices. Allow extra comprehension time without pointing to a particular terminal. Multiples of three reduce arithmetic burden.

9.5 Closing checklist

Confirm every terminal displays “Activity completed,” hide the report if the projector remains in use, and export data for planned comparisons. Record configuration, treatment, attendance, incidents, and any extra oral instruction. Do not delete sessions simply to clean the panel; history supports auditing.

Keep stable room routes in course materials. Record any ECU conversion and selected payoff encounter without names. Verify compatible denominators before comparing conditions and report exclusions transparently.

9.6 Glossary and conceptual map

Autocracy: elite control over the future transfer. **Citizens:** three participants receiving transfers and voting on revolt. **Commitment:** a mechanism constraining future choice. **Crisis:** a condition that improves the citizen conflict alternative. **Democratization:** reassignment of the right to choose y . **Elite:** participant initially controlling resources. **ECU:** experimental currency unit. **Median:** middle of three ordered votes. **Partial suffrage:** a rule including only some interests. **Promise:** announcement m that may not bind. **Promise gap:** $m - y$. **Repression:** expenditure lowering revolt success. **Revolt:** collective alternative activated by two votes. **Surplus:** sum of group payoffs. **Temporary threat:** conflict option available today but absent tomorrow. **Transfer:** total resources divided equally among citizens.

The conceptual map begins with citizen de facto power, represented by revolt. The elite chooses current concession and future de jure power. Citizens coordinate acceptance or revolt. Acceptance lets the regime allocate authority over y . Authority determines distribution; conflict determines destruction. Each variant modifies one link: enforcement binds m , persistence maintains threat, repression changes success, partial suffrage changes the electorate, inequality changes endowment, and crisis changes the outside option.

Cases for deeper discussion

10.1 A promise fulfilled without enforcement

Suppose an elite retains autocracy, promises 90, and later transfers 90. This outcome does not refute the model as a description of incentives; it departs from the point prediction based solely on money. Participants may dislike lying, prefer consistency, care about citizens, build reputation across encounters, or interpret a promise as a moral commitment. The instructor should ask what comparison distinguishes these accounts. Binding promise separates enforcement from voluntary fulfillment, while a one-shot anonymous condition limits reputation.

The case also shows why institutions may be unnecessary in one group and valuable under uncertainty about future rulers. Rules are rarely designed only for a known benevolent person; they govern successions of decision makers. Ask whether students would rather rely on a known generous elite or on a rule that constrains every future elite. Then ask what information would justify confidence in the person's type.

10.2 Democratization without effective redistribution

Under partial suffrage, the elite can democratize while preserving decisive influence over y . High democratization combined with low future transfers shows that a regime label and its distributive content can diverge. The discussion may introduce restricted franchise, malapportionment, veto power, agenda setting, and capture without claiming that the simplified condition literally represents one historical institution.

Ask students to identify the decisive components: who votes, how votes aggregate, and who receives the transfer. Changing any component creates another institution. This decomposition prevents the common empirical mistake of treating democracy as a single binary indicator and assuming that all democratic arrangements produce the same equilibrium.

10.3 Conflict that benefits citizens and destroys surplus

Revolt can raise citizen payoffs relative to autocracy while lowering total surplus. Under autocracy with $x = 90, y = 0$, the elite gets 90 and citizens get 30 each. Revolt changes these values to zero and 45. Citizens gain, the elite loses by more, and the sum falls. Conflict both redistributes and destroys.

Use this example to separate utilitarian welfare, Pareto comparisons, distribution, and legitimacy. Do not impose a social welfare function. Require students to state their criterion and weights.

Return to the report afterward: joint surplus is an accounting measure, not a normative verdict.

10.4 Role learning and perspective

In fixed groups, someone who first acts as a citizen may offer more after becoming elite. This pattern can reflect threshold learning, empathy, reciprocity, or strategy based on group history. Rotation makes the change visible but does not identify its cause. Reassignment helps separate relationship-specific history from general learning, though expectations may still differ across conditions.

Ask for a private individual plot or a summary by role order. Classroom discussion can remain descriptive. Formal analysis should pre-specify the hypothesis and account for dependence within people and groups. Do not select the most appealing story after inspecting many trajectories.

10.5 Beliefs and pivotal voting

A citizen's vote matters only when at least one of the other two citizens also votes for revolt. A person who expects unanimous acceptance may accept even a poor offer because an isolated revolt vote changes nothing. Another may vote for revolt to express disapproval despite expecting no collective action. Observed votes therefore combine material comparison and beliefs about pivotality.

One extension would elicit beliefs before the vote. It should specify incentives for accuracy and avoid revealing beliefs to group members. Comparing choices with elicited beliefs can separate low willingness to revolt from pessimism about coordination, but belief elicitation may itself focus attention on strategic reasoning and change behavior.

10.6 Risk in the repression condition

Expected-value calculations summarize the repression lottery but do not exhaust behavior. A risk-averse citizen may accept a safe transfer below the expected revolt payoff. Probability weighting may make a 20 percent success chance more influential than expected utility predicts. A citizen may also reject repression as procedurally objectionable. The treatment therefore connects political economy to decision under risk and social preferences.

For a clean class exercise, first compute expected values and then list departures. Do not infer risk aversion from one decision because beliefs, coordination, and fairness also change. A separate risk-elicitation task could provide an individual measure, but combining instruments raises time and order effects.

10.7 Crisis and the window of opportunity

The crisis condition improves the revolt alternative without changing the resource controlled by the elite. This is an intentionally narrow representation of a political opportunity. A real recession may reduce income, alter state capacity, reorganize groups, or change beliefs simultaneously. The teaching treatment isolates one channel and should be described accordingly.

Ask students why the elite cannot postpone the bargain. Once the first-stage opportunity disappears, the autocratic elite chooses zero future transfer. Democratization acts now because it changes

tomorrow's decision. This timing is the core of the commitment explanation.

10.8 Comparing commitment devices

List several devices: franchise extension, constitution, court enforcement, escrow, delegation to an independent authority, debt, and repeated-game reputation. For each, identify who controls the future action, what can be observed, what can be enforced, and what costs arise. The binding-promise variant represents perfect enforcement and therefore supplies an upper benchmark rather than a realistic universal solution.

Students can place the devices on two axes: how strongly they constrain the elite and how costly they are to reverse. Democracy transfers decision rights broadly; an escrow contract may commit one payment without changing political power. The same distributive outcome can arise from different institutions, but their robustness to future shocks differs.

10.9 Normative neutrality in facilitation

The labels autocracy and democracy carry strong normative associations. The instructor should keep the initial explanation procedural: who chooses y and how. Do not congratulate democratic choices or condemn autocratic ones during play. Normative discussion belongs after results and should distinguish participation, equality, efficiency, stability, and rights.

If students relate the game to current politics, acknowledge the relevance and return to the mechanism. The laboratory does not diagnose a country or person. A useful phrase is: "This two-period institution isolates one commitment channel; real political systems contain many additional actors and constraints."

10.10 Designing an original extension

Student teams may propose one modification while preserving the core game. Each design must specify timing, actions, information, payoffs in every branch, and one report variable. A communication treatment must say who messages whom, when, whether messages are public, and whether they cost ECU. A coup treatment must identify the decision maker, success probability, destruction, and treatment of transfers already paid.

Evaluation rewards internal consistency and mechanism identification. More buttons do not create a better experiment. Strong designs alter one rule, hold the rest fixed, and generate discriminating predictions. This design task connects theory, programming, and experimental method without requiring students to code.

10.11 From classroom evidence to a research question

An instructor may notice a recurring pattern, such as promises influencing acceptance despite being nonbinding. Turning that pattern into research requires a hypothesis, relevant literature, treatment variation, power analysis, ethics review where applicable, and a pre-specified analysis plan. Classroom observations can motivate questions but are not confirmatory evidence.

A promising design might compare a neutral announcement, an explicit promise, and an enforced commitment while holding allocations identical. The outcome would be acceptance and future transfer, with beliefs elicited separately. Such a design distinguishes information, moral obligation, and enforcement more clearly than a post-hoc interpretation of the teaching session.

Annotated references

Acemoglu and Robinson (2000)

“Why Did the West Extend the Franchise? Democracy, Inequality, and Growth in Historical Perspective.” *Quarterly Journal of Economics*, 115(4), 1167–1199. The main source for democratization as redistributive commitment under revolution threat.

Acemoglu and Robinson (2001)

“A Theory of Political Transitions.” *American Economic Review*, 91(4), 938–963. Develops political transitions, opportunity windows, inequality, democratization, and coups.

Acemoglu and Robinson (2006)

Economic Origins of Dictatorship and Democracy. Cambridge University Press. A broader statement of de facto and de jure power.

Acemoglu (2003)

“Why Not a Political Coase Theorem? Social Conflict, Commitment, and Politics.” *Journal of Comparative Economics*, 31(4), 620–652. Explains why commitment failures obstruct policy bargains without institutional change.

Acemoglu and Robinson (2008)

“Persistence of Power, Elites, and Institutions.” *American Economic Review*, 98(1), 267–293. Shows why formal reform need not eliminate de facto elite power.

Aidt and Franck (2015)

“Democratization under the Threat of Revolution: Evidence from the Great Reform Act of 1832.” *Econometrica*, 83(2), 505–547. Historical evidence connecting protest and franchise reform.

Chatziathanasiou et al. (2022)

“Does the Threat of Overthrow Discipline the Elites? Evidence from a Laboratory Experiment.” *Journal of Legal Studies*. A close experimental antecedent on overthrow threats and concessions.

Dal Bó et al. (2010)

“Institutions and Behavior: Experimental Evidence on the Effects of Democracy.” *American Economic Review*, 100(5), 2205–2229. Useful for discussing chosen institutions and selection effects.

These sources support related mechanisms rather than an identical protocol. The two 90 ECU resources, multiples-of-three menu, revolt payoffs, and screens were selected for classroom transparency. Cite the activity as a BEER Lab teaching adaptation.

Implementation card

Family	democratization; app democratization_game.
Proposed subdomain	https://democratization.beer-lab.org/ .
Instructor access	https://democratization.beer-lab.org/demo .
Rooms	democratizacion_es; democratization_en; democratizacion_extendida; democratization_extended.
Configurations	22: six basic and sixteen extended.
Group size	Four participants: one elite and three citizens.
Report	Progress, regime, revolt, transfers, promise, gap, payoffs, surplus, histogram, and evolution.
Topics	democratization, franchise extension, redistribution, political commitment, conflict, political economy.
JEL	A22, C92, D72, D74, P16.
Authorship	Stanislao Maldonado, Department of Economics, Tecnológico de Monterrey, Monterrey Campus.
Contact	stanislao.maldonado@tec.mx .

Checkpoint

The package is operationally ready when the instance shows 22 configurations, four rooms, successful HTTP responses, compiled guides, hidden and revealed reports, and no other families. The public domain remains proposed until the server team configures DNS, process, and a separate database.

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