



Instructor's Guide to Authoritarian Survival and Elite Pacts

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 preparation, implementation, and discussion of the **Authoritarian Survival and Elite Pacts** family available through the Behavioral and Experimental Economics Research Lab (BEER Lab) at the Department of Economics of Tecnológico de Monterrey. It is written for instructors in political science, political economy, and game theory, including those who have not previously used classroom experiments or oTree.

The document offers three reading paths. The quick guide is sufficient to organize a session.

The operational chapters explain screens, links, and the instructor report. The conceptual chapters develop power sharing, commitment, coordination, succession, and institutions for a careful interpretation of the results. Common instructions appear once; each variant describes only what changes.

Author

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For the instructor

The protocol is an original teaching design motivated by the literature on authoritarian power sharing. It is not a direct replication of one published experiment. Roles are abstract: a “challenge” is an experimental choice and does not represent real violence. Never associate an individual’s choice with that person’s political views.

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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.

la autoritaria — una interacción	Supervivencia autoritaria y pactos entre élites / Authoritarian Survival and Elite Pacts — BEER Lab Seleccione una variante de este juego. Select a version of this game.
la autoritaria — 10 rondas, grupo fijo	
la autoritaria — 10 interacciones independientes con reasignación	
n Survival — one interaction	
n Survival — 10 rounds, fixed group	
n Survival — 10 independent interactions with rematching	
la autoritaria extendida — regla central	
la autoritaria extendida — comunicación entre élites	
la autoritaria extendida — ofertas privadas	
la autoritaria extendida — consejo con veto	
la autoritaria extendida — sucesión por elección	
la autoritaria extendida — coerción y lealtad	
uthoritarian Survival — central rule	
uthoritarian Survival — elite communication	
uthoritarian Survival — private offers	
uthoritarian Survival — council veto	
uthoritarian Survival — elected succession	
uthoritarian Survival — coercion and loyalty	

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

Rooms

Current rooms:

[ES] Supervivencia autoritaria y pactos entre élites
[EN] Authoritarian Survival and Elite Pacts
[ES] Supervivencia autoritaria — Extendida
[EN] Authoritarian Survival — Extended

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

Room: [EN] Authoritarian Survival and Elite Pacts

Create a new session

Session Config

[EN] Authoritarian Survival — one interaction

Number of participants

Complete groups of 5 participants. Use a multiple of 5; minimum 5.

Create

Configure session

App sequence

elite_survival_game (10 rounds) Elite allocations, collective challenges, leadership succession, and power-sharing institutions.

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 Family profile

Purpose	Study how a leader distributes resources to sustain a coalition and how elites coordinate support, challenge, and succession under different institutions.
Experimental unit	A five-person group in the central design: one leader and four elites. The coercion variant uses six participants.
Basic edition	One interaction, ten rounds with a fixed group and succession, or ten independent rounds with rematching.
Extended edition	Control, communication, private offers, council veto, elected succession, and a coercive apparatus.

Decision	The leader allocates a 100 ECU fund. Each elite supports or challenges; variants add messages, veto, voting, or loyalty.
Payoff	A 10 ECU base plus allocations; challenging costs 5 ECU. After a successful challenge, the fund is divided under the active institutional rule.
Topics	authoritarian survival; elite pacts; support coalitions; political coordination; political succession; political economy.
JEL	A22; C72; C92; D72; D74.
Participants	Multiples of five in the central design and multiples of six in the coercive-apparatus variant.
Suggested duration	35–45 minutes for one interaction; 55–80 minutes for ten rounds or an institution-rich comparison.
Basic route	https://elitesurvival.beer-lab.org/room/elite_survival_en .

1.3 Minimum sequence

1. Confirm attendance. Use multiples of five, or multiples of six for coercion and loyalty.
2. Begin at beer-lab.org, open the teaching catalog, and select this family.
3. At elitesurvival.beer-lab.org/demo, choose the language, edition, and treatment.
4. Create the session, keep Monitor and Report in separate tabs, and share only the student room.
5. Read a neutral introduction. Do not announce a hypothesis or describe one action as morally correct.
6. Wait until everyone finishes. Reveal aggregates only during the debrief.
7. Begin with denominators and rules, then move to mechanisms and interpretations.

Checkpoint

Before admitting participants, verify family, language, treatment, round count, group size, and rematching rule. Demo and Rooms must display only the 18 configurations and four rooms in this family.

1.4 Learning objectives

The activity turns an abstract power-sharing problem into an observable sequence. Participants discover that a transfer changes more than consumption: it may affect willingness to sustain a coalition. They also see that wanting to replace a leader and coordinating three challenges are separate problems. Under repetition, office becomes an endogenous asset and public history alters expectations. The variants show how communication, privacy, veto, successor selection, and coercion modify the same central problem.

Access and session preparation

2.1 From the laboratory website to the family

The institutional route begins at beer-lab.org. It leads to teaching.beer-lab.org, the bilingual directory of teaching games. The family card should display its purpose, topics, JEL codes, student routes, and guide. The proposed subdomain is elitesurvival.beer-lab.org. Until DNS and deployment are completed, the same isolated structure can be checked in the local instance.

Students and instructors use different routes. https://elitesurvival.beer-lab.org/room/elite_survival_en admits participants to the English basic edition. The Spanish room is https://elitesurvival.beer-lab.org/room/supervivencia_elites_es. The extended rooms are https://elitesurvival.beer-lab.org/room/elite_survival_extended and https://elitesurvival.beer-lab.org/room/supervivencia_elites_extendida. Instructors enter Demo or Rooms with administrative credentials and never distribute that access.

Attention

A basic room must default to a basic configuration. If it displays another family or an extended configuration, do not create the session. Check `GAME_FAMILY`, the room name, and deployment. Each production subdomain should use its own instance and database.

2.2 Size, timing, and assignment

With five-person groups, 20 participants create four group observations per round. One interaction provides a compact introduction but little between-group variation. Ten rounds with a fixed group reveal learning, tenure, and succession. Ten rounds with rematching separate part of relationship-specific behavior from general learning; the system redraws groups and offices, so no participant carries the leadership position into a new group.

Allow time for instructions and comprehension. A practical schedule uses ten minutes for entry, ten for rules and questions, ten to thirty for decisions, and at least fifteen for the debrief. Do not shorten comprehension to save time: a challenge rate is interpretable only when participants understand its cost and threshold.

2.3 Checklist

- ☐ Computers, internet connection, and projector checked.
- ☐ Configuration, language, and treatment confirmed.
- ☐ Attendance compatible with groups of five or six.
- ☐ Student room or QR code ready.
- ☐ Monitor and Report open without identifiable data.
- ☐ Contingency plan for absences or extra participants.
- ☐ Debrief questions selected before results are revealed.

Participant journey

3.1 Welcome and laboratory rules

The welcome page displays the BEER Lab logo and an unambiguous start button. The next page explains the laboratory's teaching purpose and asks participants to remain silent, decide privately, avoid refreshing the browser, and request help from staff. These rules protect independence and keep procedures comparable across courses.

3.2 Instructions and comprehension

The system identifies the five positions, the 100 ECU fund, the 10 ECU base, the 5 ECU cost, and the threshold of three challenges. A numerical example reconstructs payoffs. Comprehension checks focus on elements that change best responses; incorrect answers receive feedback before any incentivized choice.

What participants will see

Every participant should be able to answer four questions: who controls the fund, what challenging costs, how many challenges are required, and what happens to the fund after a successful challenge. Explain any unclear rule without recommending an action.

3.3 Choices and outcomes

The leader enters nonnegative integer allocations for the four elites; their sum cannot exceed 100 ECU. The interface updates retention as entries change. Each elite then sees the information allowed by the treatment and chooses support or challenge. Wait pages coordinate sequential decisions without prematurely disclosing actions.

The result page reports the allocation, number of challenges, leader survival, own payoff, and next office. A clear final page appears after all active rounds, so participants never encounter the technical "No more pages left" message.



Welcome to the BEER Lab

The Behavioral and Experimental Economics Research Lab of the Department of Economics at Tecnológico de Monterrey is a space designed to learn about economic decision-making through controlled activities.

In this activity, you will study how a person in authority distributes resources within a coalition and how its members coordinate support or challenge.

General laboratory rules

- Remain silent and do not talk to other participants.
- Make decisions individually and privately.
- Follow only the instructions shown on screen.
- Do not refresh, close, or leave this page.
- If you need help, raise your hand and wait for laboratory staff.

☐ I have read and accept the laboratory rules.

Start

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Figure 3.1: Beginning of the English participant flow. Institutional welcome.

Game instructions

Resources and unit of account

Initial fund per round: 100 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.

Each group has one leader and four elites. In every round there is a fund of 100 ECU, and every person also receives a base of 10 ECU.

1

The leader offers an integer amount of ECU to each elite and keeps the rest of the fund.

2

Each elite simultaneously chooses whether to support or challenge. Challenging costs 5 ECU.

3

With fewer than three challenges, the offers and the leader's remainder are paid.

4

With three or four challenges, the offers are cancelled and the 100 ECU are divided equally among the five people.

5

After a successful challenge, one challenging elite becomes leader in the next round. The final-round allocation is paid, but it creates no later office.

Rule specific to this session

All four elites observe all offers, and replacement is randomly selected among challengers.

Decisions represent internal support and opposition in an abstract form. They do not represent violence or real political situations.

Continue

Con tecnología de [oTree](#)

Figure 3.2: Current basic-edition instructions, with initial resources and experimental units.

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

Comprehension check

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 are in the fund in each round?

Your answer: 101. The correct answer is 100. Review the rules: the fund is 100 ECU, challenging costs 5 ECU, and the central threshold is three elites.

How many ECU does a challenge cost?

Under the central rule, how many elites must challenge for the challenge to succeed?

Confirm decision

Con tecnología de [oTree](#)

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

Two worked examples

1

If the leader offers 10 ECU to each elite and nobody challenges, the leader keeps 60 ECU from the fund and earns 70 ECU including the base. Each elite earns 20 ECU.

2

If three elites challenge, all five people receive 20 ECU from the fund plus the 10 ECU base. The three challengers pay 5 ECU and finish with 25 ECU; the other two people finish with 30 ECU.

Continue

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Figure 3.4: Worked numerical example.

Round 1 of 1

A new round begins

Your role this round: Elite 4

Central rule

All four elites observe all offers, and replacement is randomly selected among challengers.

Public history

There are no previous rounds yet.

Continue

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Figure 3.5: Round opening and distribution choice. Current role and round.

Round 1 of 1

Allocate the fund

Leader

Enter an integer offer for each elite. You may leave part of the fund unallocated; that amount will be your retention if the challenge does not succeed.

Elite 1

Elite 2

Elite 3

Elite 4

Total offered: 0 / 100 ECU

Provisional retention: 100 ECU

Confirm decision

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Figure 3.6: Leader allocation of the fund.

Round 1 of 1

Support or challenge

Elite 4

Your decision is simultaneous and private. Challenging costs 5 ECU. Review the available information before confirming.

Your offer
10 ECU

Success threshold
3 / 4

Leader's provisional retention
60 ECU

All offers

Elite 1
10,0 ECU

Elite 2
10,0 ECU

Elite 3
10,0 ECU

Elite 4
10,0 ECU

☐ Support☐ Challenge and pay 5 ECU**Confirm decision**Powered by [oTree](#)

Figure 3.7: Challenge decision and round outcome. Each elite's simultaneous decision.



Round 1 of 1

Round result

Elite 4

The challenge reached the threshold and the offers were cancelled.

Number of challenges: 3 · Success threshold: 3

This was the final round: the outcome is paid, but no later office is assigned.

Your earnings this round

25 ECU

Total group payments

135 ECU

Role	Share of fund	Action	Payoff
Leader	60 ECU	Retention	30 ECU
Elite 1	10 ECU	Supported	30 ECU
Elite 2	10 ECU	Challenged	25 ECU
Elite 3	10 ECU	Challenged	25 ECU
Elite 4	10 ECU	Challenged	25 ECU

Continue

Powered by oTree

Figure 3.8: Individual result and applied rule.





Activity completed

Thank you for participating. Remain at your station and wait for the instructor's directions.

Cumulative earnings: 25 ECU

Round	Role	Payoff
1	Elite 4	25 ECU

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Figure 3.9: Explicit completion page with an individual activity summary.

Central mechanism and payoff calculation

4.1 Formal sequence

Let $F = 100$ be the fund and $b = 10$ the base payoff. The leader offers $x_i \geq 0$ to each elite $i \in \{1, 2, 3, 4\}$, with $\sum_i x_i \leq F$, and retains $R = F - \sum_i x_i$. Each elite chooses $d_i \in \{0, 1\}$, where one denotes challenge. A challenge costs $c = 5$ ECU. Let $D = \sum_i d_i$.

When $D < 3$, the leader survives. The leader earns $b + R$, and elite i earns $b + x_i - cd_i$. When $D \geq 3$, leadership changes and the offers are canceled. In the five-person design, every member receives $b + 20$, and each challenger pays c . The next leader is selected among challengers by lottery in the central treatment and by ballot under elected succession.

Theoretical foundation

The threshold creates strategic complementarity. The political return to challenging depends on the actions of other elites. A person may prefer replacement when coordination is expected and, under the same material payoffs, prefer support when too few additional challenges are expected.

4.2 Fully worked example

Suppose offers are $(30, 20, 10, 0)$. The leader retains 40 ECU. If only elites 3 and 4 challenge, $D = 2$ and the leader survives. Payoffs are 50 for the leader; 40 and 30 for the first two elites; 15 for elite 3; and 5 for elite 4. The two challengers pay the cost but do not change the allocation.

If elites 2, 3, and 4 challenge, $D = 3$. Offers no longer apply, and the fund is divided into five shares of 20. The leader earns 30 ECU. Elite 1, who supported, earns 30, while each challenger earns 25. Elite 2 therefore compares 30 after a failed challenge with 25 after a successful one. Elite 4 compares 5 with 25. The same coalition creates different individual incentives because offers were unequal.

4.3 One-shot material prediction

There is no unique prediction based only on preferring more ECU, because the optimal action depends on beliefs about other choices and on the succession mechanism. An elite who expects fewer than two additional challenges loses 5 ECU by challenging. An elite who expects the threshold

to be reached compares the current offer with the post-replacement share, adjusted for the cost and any future value of office. A leader may attempt to maintain a minimum coalition by paying enough elites to ensure that at least two do not challenge. Multiple equilibria are part of the teaching object.

4.4 Repetition, office, and reputation

With a fixed group, the current outcome determines who leads next round. Office therefore has continuation value. A low offer can increase replacement risk; a high offer reduces current retention but may purchase stability. Public history coordinates expectations and permits reciprocal responses. Reputation is not a binding contract: after remaining in office, the leader chooses again.

Under rematching, the system forms new units and resets offices. This prevents a political office from following a participant into a group that did not select that person. Learning about the interface, rules, and population persists. The comparison therefore separates some relationship-specific behavior without producing inexperienced participants after round one.

Political-economy foundations

5.1 The power-sharing problem

Research on authoritarian politics emphasizes that a ruler rarely acts alone. Rulers require support from actors with resources, information, or organizations that can sustain or replace them. The problem is not limited to repression against citizens; it also concerns relations between rulers and allies. [Svolik \(2012\)](#) organizes the field around authoritarian control and power sharing. [Boix and Svolik \(2013\)](#) examine how institutions can constrain a ruler when allies' replacement threat makes agreements credible.

The game represents this problem with a fund, four elites, and a threshold. The fund summarizes rents and benefits from coalition membership. Leadership chooses their distribution while elites retain a costly coordination option. Abstraction isolates incentives; it does not describe all sources of authority or measure popular legitimacy.

5.2 Coalitions and survival

Coalition theory asks which set of actors is sufficient to sustain a decision. [Bueno de Mesquita et al. \(2003\)](#) emphasize how winning-coalition size shapes benefits. [Acemoglu, Egorov, and Sonin \(2008\)](#) show how coalition formation in nondemocracies can be unstable when powerful actors change support. In class, the three-challenge threshold turns these concepts into a concrete question: how many elites must be satisfied, and how much must they receive?

A minimum winning coalition saves resources for the leader but may be vulnerable to mistakes, negative reciprocity, or communication among excluded elites. An oversized coalition costs more but provides slack against one defection. The report reveals concentration, dispersion, and survival; it cannot identify a unique motive for each pattern.

5.3 Institutions, commitment, and succession

Authoritarian institutions may facilitate bargains by creating procedures, information, or sanctions. [Gandhi and Przeworski \(2007\)](#) relate institutions to autocratic survival, and [Magaloni \(2008\)](#) develops credible power-sharing problems. Here, the council veto introduces a reference alternative and elected succession formalizes access to office. These are teaching adaptations for comparing institutional functions; they do not imply that every institution shares one origin or effect.

Succession matters because the reward from challenging can extend beyond the current allocation. A lottery spreads opportunity among challengers; an election makes lateral support relevant.

The latter may enlarge or shrink a coalition depending on whether candidacy mobilizes allies or fragments votes. The protocol records choices, not real identities or ideological affinities.

5.4 Social preferences and behavior

Outcomes may also reflect inequality aversion, reciprocity, allocation norms, and emotion. An elite can reject a profitable offer judged unfair; a leader may offer more than strategically necessary because of equity or caution. Communication may activate commitments and norms. These explanations are compatible with observable patterns but require discipline: the same allocation may arise from strategic calculation, distributive preferences, or confusion.

Separate three layers in the debrief. Material rules determine payoffs. Beliefs determine expected coordination. Preferences and norms determine how participants value payoffs and procedures. Aggregate reports describe behavior. Randomized treatment comparisons improve attribution to a mechanism, but a small classroom session remains illustrative evidence.

Basic editions

6.1 One interaction

The one-interaction edition isolates the static problem. Participants cannot punish in a later round or build a reputation. It is appropriate for introducing coalitions, thresholds, and expected payoffs. Before revealing results, elicit predictions about leader retention, offer distribution, and challenge rates. Then compare those predictions with the histogram.

6.2 Ten rounds with a fixed group

The same five participants remain together. A successful coalition transfers leadership to a challenger, and the former leader occupies that elite position. The history of offers, challenges, and offices is public within the group. Focus on paths: convergence toward a stable allocation, replacement cycles, punishment after low offers, and concentration of tenure.

Do not compare only the first and last rounds. Ask whether a change follows a crisis, whether the new leader repeats the prior allocation, and whether dispersion across groups grows. An average can hide stable high-offer groups alongside groups with recurrent succession.

6.3 Ten rounds with rematching

Each round creates a new unit and resets offices. Rematching reduces the scope for a durable relationship or coalition but preserves shared experience. It asks whether stability relies on common history or on a learned strategy applied to strangers.

Feedback script

Compare identical rules before comparing paths. Ask: did the mean offer change, did concentration change, and did challenge rates fall because leaders learned or because elites stopped coordinating? Require one figure and one denominator for each answer.

Extended editions

7.1 Extended control

The control reproduces the central mechanism inside the extended menu. It is the comparison point for all other variants. Information is public, succession uses a lottery, and the group has five participants. Running it beside one treatment within the same class is cleaner than comparing separate cohorts.

7.2 Elite communication

Before challenging, elites have 60 seconds to exchange nonbinding messages. The leader does not join the channel. Communication can coordinate expectations, reveal dissatisfaction, and support promises; it may also permit deception or ambiguity. The report does not display individual messages, and the instructor should analyze rates and dispersion rather than project potentially identifying text.



Time left to complete this page: 1:00

Round 1 of 6

Message of intent

Elite 4

You have up to 60 seconds to write a short message to the other elites. The message does not bind your later decision, and the leader does not observe it before the challenge.

Optional message, up to 160 characters

Confirm decision

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Figure 7.1: Communication extension. Time-limited communication channel.



Round 1 of 6

Support or challenge

Elite 4

Your decision is simultaneous and private. Challenging costs 5 ECU. Review the available information before confirming.

Your offer
10 ECU

Success threshold
3 / 4

Leader's provisional retention
60 ECU

All offers

Elite 1
10,0 ECU

Elite 2
10,0 ECU

Elite 3
10,0 ECU

Elite 4
10,0 ECU

Messages among elites

Elite 1: I intend to challenge if we coordinate.

Elite 2: I intend to challenge if we coordinate.

Elite 3: I intend to challenge if we coordinate.

Elite 4: I intend to challenge if we coordinate.

☐ Support

☐ Challenge and pay 5 ECU

Confirm decision

Powered by [oTree](#)

Figure 7.2: Nonbinding messages among elites.

If several elites prefer replacement but fear falling below the threshold, communication can increase successful challenges. It can also stabilize an allocation if coordinated demands are anticipated by the leader in later rounds. Compare complete groups at the same stage of the session.

7.3 Private offers

Each elite observes only their own offer. Everyone knows the rule and total fund, but elites do not observe one another's allocations. The leader knows the full distribution. This adds strategic uncertainty: an acceptable personal offer may coexist with severe exclusion elsewhere.



Round 1 of 6

Support or challenge

Elite 1

Your decision is simultaneous and private. Challenging costs 5 ECU. Review the available information before confirming.

Your offer
10 ECU

Success threshold
3 / 4

In this treatment you know only your own offer. The other offers will be revealed after the round.

☐ Support

☐ Challenge and pay 5 ECU

Confirm decision

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Figure 7.3: Challenge decision when only the participant's own offer is visible.

Privacy can impede coordination because elites cannot observe how many others were excluded. It can also generate suspicion or inferences from one's own offer. Distinguish objective information from beliefs that were not elicited. A lower challenge rate is consistent with harder coordination but does not reveal exactly what participants believed.

7.4 Council veto

Before accepting the allocation, all four elites vote on a veto. If at least three reject, a reference allocation of 20 ECU for each of the five people is activated and each rejecting voter pays 2 ECU. If the threshold is not met, the leader's proposal continues. This separates institutional review from the later challenge decision.

The veto places an observable constraint on discretion, but using it is costly. Each elite compares the offer with 20 ECU, adjusts for the cost, and anticipates others' votes. The treatment illustrates how an institution can improve commitment by supplying a known alternative. It does not represent a complete legislature or democracy.

Round 1 of 6

Council decision

Elite 4

You may accept the allocation or vote to reject it. If at least three elites reject, the reference allocation is activated: 20 ECU for every person. Rejecting costs 2 ECU regardless of the vote outcome.

Elite 1
10,0 ECU

Elite 2
10,0 ECU

Elite 3
10,0 ECU

Elite 4
10,0 ECU

Leader's provisional retention
60 ECU

☐ Accept the allocation

☐ Reject and pay 2 ECU

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Figure 7.4: Institutional veto and outcome. Individual council ballot.

7.5 Elected succession

After a successful challenge, all four elites vote among the challengers. The candidate with most votes becomes leader; ties use a reproducible lottery. The ballot can create competition among aspirants and makes lateral support relevant in addition to opposition against the current leader.

Compare the number of challengers, vote concentration, and subsequent tenure. Candidacy can encourage challenge through the value of office, while competition among candidates can fragment coordination. The design does not elicit policy platforms or ideology.

7.6 Coercive apparatus and loyalty

This variant adds a sixth person. The leader allocates the same 100 ECU fund among four elites and the apparatus. After seeing its transfer, the apparatus chooses neutrality or loyalty. Loyalty costs 5 ECU and raises the challenge threshold from three to four. If the challenge succeeds, the fund is divided equally among six; challengers and a loyal apparatus pay their respective costs.

The leader chooses between buying support directly from elites and transferring resources to a person who can make rival coordination harder. Loyalty is not automatic, and its cost prevents the institution from becoming a free technology. The role is an abstract representation of coercive capacity; it does not license conclusions about armed forces, police, or violence in a particular case.

Round 1 of 6

Support or challenge

Elite 4

Your decision is simultaneous and private. Challenging costs 5 ECU. Review the available information before confirming.

The council activated the reference allocation.

Your offer
20 ECU

Success threshold
3 / 4

Leader's provisional retention
20 ECU

All offers

Elite 1
20,0 ECU

Elite 2
20,0 ECU

Elite 3
20,0 ECU

Elite 4
20,0 ECU

☐ Support

☐ Challenge and pay 5 ECU

Confirm decision

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Figure 7.5: Reference allocation after a successful veto.

Round 1 of 6

Succession election

Elite 3

The challenge succeeded. Vote for one of the challenging elites to lead in the next round. If there is a tie, the computer will randomly select among tied candidates.

☐ Elite 2

☐ Elite 3

☐ Elite 4

Confirm decision

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Figure 7.6: Succession ballot among participants in the challenge.

Round 1 of 6

Institutional apparatus decision

Institutional apparatus

The leader offered you 10 ECU. If you remain neutral, the challenge threshold is three. If you pledge loyalty, you pay 5 ECU and the threshold rises to four challenges.

☐ Remain neutral

☐ Support the leader

Confirm decision

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Figure 7.7: Coercion as a costly investment in survival. Apparatus choice after observing its transfer.

Round 1 of 6

Support or challenge

Elite 2

Your decision is simultaneous and private. Challenging costs 5 ECU. Review the available information before confirming.

The apparatus supported the leader: four challenges are now required.

Your offer
10 ECU

Success threshold
4 / 4

Leader's provisional retention
50 ECU

All offers

Elite 1
10,0 ECU

Elite 2
10,0 ECU

Elite 3
10,0 ECU

Elite 4
10,0 ECU

☐ Support

☐ Challenge and pay 5 ECU

Confirm decision

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Figure 7.8: Threshold raised by loyalty.

Instructor report and interpretation

8.1 Controlled revelation

The report opens with aggregate results concealed. It shows progress and completed observations but requires the instructor to reveal distributions explicitly. This pause supports prior predictions and prevents unfinished groups from learning about earlier choices.

oTree Demo Sessions Rooms Data Server Check Logout

[EN] Authoritarian Survival — one interaction: session 'gaeehnpd' (demo)

New Links Monitor Data Payments Report Description

App Name elite_survival_game (10 rounds) Round Number 10 Go

Central rule

Instructor report

Support coalitions, challenges, and political succession

Participants 5	Completed elite decisions 0 / 4	Pending 4
--------------------------	---	---------------------

Completed group-rounds
0

Results are hidden. Reveal them when all groups have finished or when you are ready to begin class feedback.

Reveal results

Figure 8.1: Privacy control and aggregate results. Report with aggregates concealed.

8.2 Indicators

The first panel summarizes completed groups, active rounds, leader retention, mean offer per elite, challenge rate, successful-coalition frequency, tenure, and role payoffs. Read every percentage with its denominator. Incomplete choices are excluded from substantive calculations and reported as pending.

The offer histogram reveals concentration, zeros, modes, and tails that a mean hides. The challenge chart distinguishes support and opposition. Round paths display learning and succession; the coercion treatment adds loyalty and threshold information. Role colors remain stable throughout the interface.

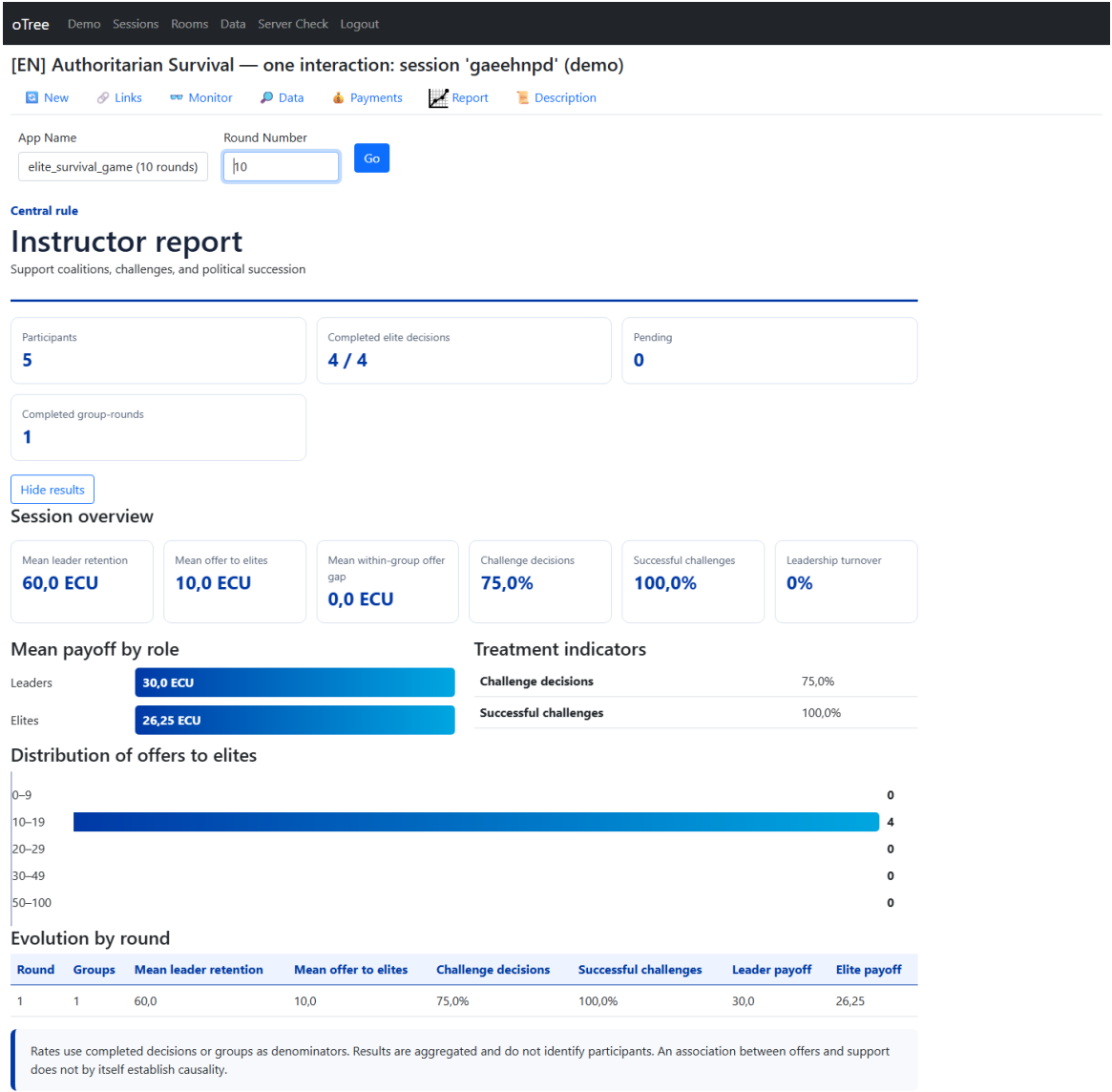


Figure 8.2: Report revealed for the debrief.

8.3 Interpretation protocol

Use four steps. First describe the figure: variable, scale, unit, and sample. Second reconstruct the payoff rule. Third compare the observation with a prediction recorded before revelation. Fourth discuss competing mechanisms and limits. A five-percentage-point difference in a small class can motivate discussion without being a precise estimate.

Attention

Do not project exports containing participant codes, name individuals, or turn a role decision into a political label. The report is designed for aggregate feedback. Research use requires an appropriate protocol, consent, ethics review, and a prespecified analysis.

Lesson plans

9.1 Thirty-five minutes

Use one interaction. Allocate five minutes to neutral context, eight to rules and comprehension, seven to choices, and fifteen to the report. Focus on threshold, offer, cost, and coordination. This format works as an opening to a lecture on coalitions.

9.2 Fifty-five minutes

Compare the control with one variant in separate groups. Use ten minutes for entry, ten for rules, fifteen for the game, and twenty for discussion. Communication or private offers provide a direct information-and-coordination contrast. Record one prediction before creating sessions.

9.3 Eighty minutes

Run ten fixed-group rounds or compare veto, election, and coercion. Add a brief pause after round five so the instructor can inspect progress without revealing aggregates. Use paths to connect behavior with commitment and succession. End with a written exercise that separates description, mechanism, and inference.

9.4 Neutral opening script

What participants will see

In this activity you will make choices in roles assigned by the system. Payoffs use ECU. Read every page carefully, remain silent, and do not try to identify other participants. There is no answer the instructor expects from you. We will compare aggregate decisions under different rules.

9.5 Debrief script

Feedback script

Before applying a theory, describe the data. How many groups finished? What was the typical offer and how dispersed were offers? What share challenged and how many coalitions reached the threshold? Now reconstruct the individual incentive. Finally, compare institutions and list at least two mechanisms consistent with each difference.

9.6 Prior record and closing product

Before revealing the report, give each team a card with four entries: predicted mean retention, predicted challenge rate, proposed mechanism, and an observation that could contradict it. Every prediction should state a direction and connect it to a rule. A useful example is, “private offers will reduce successful challenges because an elite cannot know whether two others are willing to pay the cost.” Recording the claim before looking at the chart limits explanations invented after the outcome and makes the distinction between a hypothesis and a retrospective story visible.

For the closing product, request a five-sentence paragraph. Sentence one identifies the comparison; sentence two reports the sample and denominator; sentence three describes the main pattern; sentence four gives two compatible mechanisms; and sentence five states one limitation. This product can be graded for reasoning without rewarding support or challenge. It also exposes three common mistakes: comparing unequal group counts without qualification, attributing beliefs that were never elicited, and treating one descriptive difference as a precise causal estimate.

Checkpoint

The debrief is ready when the instructor has preserved prior predictions, can name every rate’s denominator, identifies the configuration used, and has selected a conclusion that separates outcome, mechanism, and scope.

Discussion bank and exercises with answers

This chapter provides independent modules for the debrief. Each module can become an oral question, a small-group task, or a short written response. Ask first for an explanation based on the rules, then require evidence from the report, and only then discuss a political interpretation. This sequence prevents the class from moving directly from one bar in a chart to a causal claim that the design does not identify.

1. Minimum offer and support buying

Question. Should an elite who receives zero always challenge?

Answer path. Compare the guaranteed base payoff with the 5 ECU challenge cost and the probability that two other elites also challenge. Then write the decision in expected-payoff terms: challenging subtracts 5 ECU and changes the allocation only when the group reaches the threshold. A complete answer distinguishes own incentives, beliefs about other elites, and the active institution. It should also state whether the evidence comes from a treatment comparison, a time path, or a single distribution.

Using the report. Locate the observation count, offer distribution, challenge rate, and coalition outcome. For a treatment module, compare first with the extended control. Describe direction and magnitude before proposing an explanation. Do not treat one low offer as sufficient to replace the leader.

Feedback script

Ask two groups to defend competing interpretations using the same figure. Close by identifying which additional observation could distinguish them and which conclusion is still unsupported.

2. Minimum winning coalition

Question. Why might a leader concentrate resources on only a few people?

Answer path. Identify which three supporters are pivotal and whether paying a fourth elite changes the threshold. Then write the decision in expected-payoff terms: challenging subtracts 5 ECU and changes the allocation only when the group reaches the threshold. A complete answer distinguishes own incentives, beliefs about other elites, and the active institution. It should

also state whether the evidence comes from a treatment comparison, a time path, or a single distribution.

Using the report. Locate the observation count, offer distribution, challenge rate, and coalition outcome. For a treatment module, compare first with the extended control. Describe direction and magnitude before proposing an explanation. Do not reduce concentration to inequality aversion without studying the threshold.

Feedback script

Ask two groups to defend competing interpretations using the same figure. Close by identifying which additional observation could distinguish them and which conclusion is still unsupported.

3. Coordination and expectations

Question. What must an elite believe before paying the challenge cost?

Answer path. Separate a preference for replacement from an expectation that other people will coordinate. Then write the decision in expected-payoff terms: challenging subtracts 5 ECU and changes the allocation only when the group reaches the threshold. A complete answer distinguishes own incentives, beliefs about other elites, and the active institution. It should also state whether the evidence comes from a treatment comparison, a time path, or a single distribution.

Using the report. Locate the observation count, offer distribution, challenge rate, and coalition outcome. For a treatment module, compare first with the extended control. Describe direction and magnitude before proposing an explanation. Do not read every decision not to challenge as sincere support.

Feedback script

Ask two groups to defend competing interpretations using the same figure. Close by identifying which additional observation could distinguish them and which conclusion is still unsupported.

4. Credible commitment

Question. Why does a generous promise today fail to guarantee generosity tomorrow?

Answer path. Use succession to discuss what constrains a leader when promises cannot be enforced. Then write the decision in expected-payoff terms: challenging subtracts 5 ECU and changes the allocation only when the group reaches the threshold. A complete answer distinguishes own incentives, beliefs about other elites, and the active institution. It should also state whether the evidence comes from a treatment comparison, a time path, or a single distribution.

Using the report. Locate the observation count, offer distribution, challenge rate, and coalition outcome. For a treatment module, compare first with the extended control. Describe direction and magnitude before proposing an explanation. Do not assume reputation completely solves commitment.

Feedback script

Ask two groups to defend competing interpretations using the same figure. Close by identifying which additional observation could distinguish them and which conclusion is still unsupported.

5. Horizontal inequality

Question. Does the distance among offers matter in addition to their level?

Answer path. Compare groups with the same total retention but different distributions across elites. Then write the decision in expected-payoff terms: challenging subtracts 5 ECU and changes the allocation only when the group reaches the threshold. A complete answer distinguishes own incentives, beliefs about other elites, and the active institution. It should also state whether the evidence comes from a treatment comparison, a time path, or a single distribution.

Using the report. Locate the observation count, offer distribution, challenge rate, and coalition outcome. For a treatment module, compare first with the extended control. Describe direction and magnitude before proposing an explanation. Do not claim a causal inequality effect from one descriptive session.

Feedback script

Ask two groups to defend competing interpretations using the same figure. Close by identifying which additional observation could distinguish them and which conclusion is still unsupported.

6. Private information

Question. What changes when each elite sees only their own offer?

Answer path. Ask how participants form beliefs about other offers and how those beliefs affect coordination. Then write the decision in expected-payoff terms: challenging subtracts 5 ECU and changes the allocation only when the group reaches the threshold. A complete answer distinguishes own incentives, beliefs about other elites, and the active institution. It should also state whether the evidence comes from a treatment comparison, a time path, or a single distribution.

Using the report. Locate the observation count, offer distribution, challenge rate, and coalition outcome. For a treatment module, compare first with the extended control. Describe direction and magnitude before proposing an explanation. Do not present the result as direct evidence about real misinformation.

Feedback script

Ask two groups to defend competing interpretations using the same figure. Close by identifying which additional observation could distinguish them and which conclusion is still unsupported.

7. Nonbinding communication

Question. Can words coordinate action even when they are not contracts?

Answer path. Look for commitments, signals of intent, and changes in the dispersion of choices. Then write the decision in expected-payoff terms: challenging subtracts 5 ECU and changes the allocation only when the group reaches the threshold. A complete answer distinguishes own incentives, beliefs about other elites, and the active institution. It should also state whether the evidence comes from a treatment comparison, a time path, or a single distribution.

Using the report. Locate the observation count, offer distribution, challenge rate, and coalition outcome. For a treatment module, compare first with the extended control. Describe direction and magnitude before proposing an explanation. A message does not reveal a stable preference or a credible promise by itself.

Feedback script

Ask two groups to defend competing interpretations using the same figure. Close by identifying which additional observation could distinguish them and which conclusion is still unsupported.

8. Institutional veto

Question. When does a veto rule discipline the leader?

Answer path. Compare the proposal with the equal 20 ECU reference allocation and the 2 ECU rejection cost. Then write the decision in expected-payoff terms: challenging subtracts 5 ECU and changes the allocation only when the group reaches the threshold. A complete answer distinguishes own incentives, beliefs about other elites, and the active institution. It should also state whether the evidence comes from a treatment comparison, a time path, or a single distribution.

Using the report. Locate the observation count, offer distribution, challenge rate, and coalition outcome. For a treatment module, compare first with the extended control. Describe direction and magnitude before proposing an explanation. Do not describe this abstract council rule as full democracy.

Feedback script

Ask two groups to defend competing interpretations using the same figure. Close by identifying which additional observation could distinguish them and which conclusion is still unsupported.

9. Successor selection

Question. Does choosing among challengers alter the incentive to challenge?

Answer path. Consider whether participants seek office or a better allocation and explain the tie rule. Then write the decision in expected-payoff terms: challenging subtracts 5 ECU and changes the allocation only when the group reaches the threshold. A complete answer distinguishes own incentives, beliefs about other elites, and the active institution. It should also state whether the evidence comes from a treatment comparison, a time path, or a single distribution.

Using the report. Locate the observation count, offer distribution, challenge rate, and coalition

outcome. For a treatment module, compare first with the extended control. Describe direction and magnitude before proposing an explanation. Do not infer personal motives from an anonymous ballot.

Feedback script

Ask two groups to defend competing interpretations using the same figure. Close by identifying which additional observation could distinguish them and which conclusion is still unsupported.

10. Coercive apparatus

Question. What exactly does the transfer to the sixth person buy?

Answer path. Separate the leader's transfer, the loyalty cost, and the rise in the challenge threshold from three to four. Then write the decision in expected-payoff terms: challenging subtracts 5 ECU and changes the allocation only when the group reaches the threshold. A complete answer distinguishes own incentives, beliefs about other elites, and the active institution. It should also state whether the evidence comes from a treatment comparison, a time path, or a single distribution.

Using the report. Locate the observation count, offer distribution, challenge rate, and coalition outcome. For a treatment module, compare first with the extended control. Describe direction and magnitude before proposing an explanation. Do not mechanically map the abstract role onto one historical institution.

Feedback script

Ask two groups to defend competing interpretations using the same figure. Close by identifying which additional observation could distinguish them and which conclusion is still unsupported.

11. Repetition and discipline

Question. Does observed stability reflect trust, learning, or the threat of replacement?

Answer path. Compare offers, challenges, and leader tenure over ten rounds. Then write the decision in expected-payoff terms: challenging subtracts 5 ECU and changes the allocation only when the group reaches the threshold. A complete answer distinguishes own incentives, beliefs about other elites, and the active institution. It should also state whether the evidence comes from a treatment comparison, a time path, or a single distribution.

Using the report. Locate the observation count, offer distribution, challenge rate, and coalition outcome. For a treatment module, compare first with the extended control. Describe direction and magnitude before proposing an explanation. Do not invoke reputation without stating which history was public.

Feedback script

Ask two groups to defend competing interpretations using the same figure. Close by identifying which additional observation could distinguish them and which conclusion is still unsupported.

12. Independent rematching

Question. What disappears when groups are redrawn each round?

Answer path. Contrast general learning with relationship-specific dynamics and recall that offices reset. Then write the decision in expected-payoff terms: challenging subtracts 5 ECU and changes the allocation only when the group reaches the threshold. A complete answer distinguishes own incentives, beliefs about other elites, and the active institution. It should also state whether the evidence comes from a treatment comparison, a time path, or a single distribution.

Using the report. Locate the observation count, offer distribution, challenge rate, and coalition outcome. For a treatment module, compare first with the extended control. Describe direction and magnitude before proposing an explanation. Rematching does not eliminate all learning across rounds.

Feedback script

Ask two groups to defend competing interpretations using the same figure. Close by identifying which additional observation could distinguish them and which conclusion is still unsupported.

13. Efficiency and distribution

Question. Is a stable outcome necessarily efficient or fair?

Answer path. Compute challenge and veto costs, then examine who receives the fund and who keeps office. Then write the decision in expected-payoff terms: challenging subtracts 5 ECU and changes the allocation only when the group reaches the threshold. A complete answer distinguishes own incentives, beliefs about other elites, and the active institution. It should also state whether the evidence comes from a treatment comparison, a time path, or a single distribution.

Using the report. Locate the observation count, offer distribution, challenge rate, and coalition outcome. For a treatment module, compare first with the extended control. Describe direction and magnitude before proposing an explanation. Do not use efficiency, equality, and legitimacy as synonyms.

Feedback script

Ask two groups to defend competing interpretations using the same figure. Close by identifying which additional observation could distinguish them and which conclusion is still unsupported.

14. Report denominators

Question. What exactly does a 40 percent challenge rate mean?

Answer path. Require the number of completed elite decisions, groups, and included rounds. Then write the decision in expected-payoff terms: challenging subtracts 5 ECU and changes the allocation only when the group reaches the threshold. A complete answer distinguishes own incentives, beliefs about other elites, and the active institution. It should also state whether the evidence comes from a treatment comparison, a time path, or a single distribution.

Using the report. Locate the observation count, offer distribution, challenge rate, and coalition

outcome. For a treatment module, compare first with the extended control. Describe direction and magnitude before proposing an explanation. Do not compare percentages with different denominators silently.

Feedback script

Ask two groups to defend competing interpretations using the same figure. Close by identifying which additional observation could distinguish them and which conclusion is still unsupported.

15. Variation across groups

Question. Why can the mean conceal two opposite dynamics?

Answer path. Look for stable groups with high offers and unstable groups with low offers before interpreting the average. Then write the decision in expected-payoff terms: challenging subtracts 5 ECU and changes the allocation only when the group reaches the threshold. A complete answer distinguishes own incentives, beliefs about other elites, and the active institution. It should also state whether the evidence comes from a treatment comparison, a time path, or a single distribution.

Using the report. Locate the observation count, offer distribution, challenge rate, and coalition outcome. For a treatment module, compare first with the extended control. Describe direction and magnitude before proposing an explanation. Do not build one story from a multimodal distribution.

Feedback script

Ask two groups to defend competing interpretations using the same figure. Close by identifying which additional observation could distinguish them and which conclusion is still unsupported.

16. External limits

Question. Which aspects of authoritarian politics remain outside the game?

Answer path. List citizens, ideology, real repression, bureaucracy, natural resources, and international pressure as omitted dimensions. Then write the decision in expected-payoff terms: challenging subtracts 5 ECU and changes the allocation only when the group reaches the threshold. A complete answer distinguishes own incentives, beliefs about other elites, and the active institution. It should also state whether the evidence comes from a treatment comparison, a time path, or a single distribution.

Using the report. Locate the observation count, offer distribution, challenge rate, and coalition outcome. For a treatment module, compare first with the extended control. Describe direction and magnitude before proposing an explanation. Do not generalize the protocol to a specific country, period, or regime.

Feedback script

Ask two groups to defend competing interpretations using the same figure. Close by identifying which additional observation could distinguish them and which conclusion is still unsupported.

Operations, troubleshooting, and data

11.1 Incomplete groups and waiting

Wait pages are normal in a sequential game. If one computer remains there, inspect Monitor before refreshing. Determine whether the missing choice belongs to the leader, an elite, or the apparatus. Do not close another participant's page or create a second session with the same link. If attendance is not a multiple of the required group size, assign observers before starting.

11.2 Expired links and reset databases

A message saying that a user does not exist usually means the local database changed or an old link was reused. Create a new session and distribute its current link. Never run `resetdb` against production during class. Each family should use a separate database so Demo, Rooms, Sessions, and Data do not mix games.

11.3 Exports and privacy

The data export contains one participant-round row with treatment, role, offer, action, collective outcome, payoff, and institution-specific variables. Preserve the session configuration with the export. Use the aggregate report for classroom feedback. If the activity is graded, announce the assessed product beforehand; never grade a revealed preference for supporting or challenging.

11.4 Technical checks

Before class, open Demo and Rooms, create a test session, complete at least one leader and one elite position, verify the final page, and inspect both concealed and revealed reports. Restart the family server after code changes because the production server does not hot reload. Confirm that the basic room does not offer extended configurations.

11.5 Glossary

Support coalition

Set of elites whose actions allow the leader to remain in office.

Challenge

Costly elite action that changes the outcome only when the threshold is reached.

Threshold

Minimum number of simultaneous challenges required for replacement.

Retention

Portion of the fund that the leader does not allocate to other people.

Succession

Rule that determines who leads after a successful challenge.

Commitment

Ability to sustain a future promise when an incentive to deviate arises.

Public history

Offers, actions, outcomes, and offices observable within a group.

Veto

Collective procedure that replaces a proposal with a reference allocation.

Apparatus

Abstract sixth role whose costly loyalty raises the challenge threshold.

ECU

Experimental Currency Unit used to express payoffs inside the activity.

Scope, evidence, and responsible use

The protocol demonstrates incentives and compares institutions under controlled rules. It does not reproduce national elections, repression, ideology, citizen mobilization, or the complete history of a regime. A class population does not automatically represent real leaders or elites. Its main value is analytical: rules remain constant while interdependent choices respond to institutional changes.

One session teaches hypothesis formation and data reading. A descriptive difference is not causal evidence when participants were not randomly assigned, sessions occurred at different times, or course composition changed. Even under random assignment, a small number of groups creates uncertainty. Report sample sizes, variation, and denominators, and avoid language of definitive proof.

The cited literature motivates coalition, commitment, and institutional problems. Specific parameters—the 100 ECU fund, 10 ECU base, costs, equal reference allocation, and apparatus—are transparent teaching choices. This distinction protects rigor: a theory can motivate an activity without turning it into a replication of one study.

For the instructor

A strong conclusion connects three sentences: “The rule implied...”, “In our session we observed...”, and “This pattern is consistent with..., although it could also reflect...”. This structure keeps design, evidence, and interpretation separate.

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