



Instructor's Guide to Expert Information

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 expert information and electoral evaluation family available through the Behavioral and Experimental Economics Research Lab (BEER Lab) at the Department of Economics of Tecnológico de Monterrey. It is intended for instructors with different levels of familiarity with experimental and behavioral economics.

The document offers three reading paths. The **opening chapters** provide the basis for launching a session. The operational chapters explain each screen used by instructors and students. The conceptual chapters present the theories, predictions, and empirical findings needed to lead the post-game discussion.

Access instructions and common screens are explained once. Each variant then focuses only on what changes relative to the basic game: configuration, group size, decisions, predictions, relevant outcomes, and academic literature.

Author

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For the instructor

This guide follows the English-language interface. Spanish configurations use the same logic. Never project individual codes or connect outcomes to names, student identification numbers, or seats in the room.

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Objectives and organization

The information and competence chapters describe the original five-person modes. The final private-preferences chapter adds three-person groups and policy utility outside office. Use each mode's own rules; preference differences are not information-accuracy differences.

Purpose	Connect private information, policy choice, and continuation
Participants	Accuracy modes: groups of five; private-preference modes: groups of three
Suggested duration	30–45 minutes one encounter; 60–90 ten encounters including discussion
Experimental unit	Five-person or three-person group, depending on mode, in a two-period encounter
Basic edition	One encounter; ten with fixed or reassigned groups
Extended edition	Twenty-one configurations per language; accuracy, institutions, and private preferences
Decision	Choose options, evaluate continuation, and, in one variant, choose a rule
Payoff	100 ECU base per period; 30 for citizen accuracy; policy bonuses of 10 or 30 and office bonuses by mode
Topics	Asymmetric information; private political preferences; Bayesian learning; reelection; electoral pandering; delegation and institutional choice
JEL	A22, C92, D72, D82, D83

1.1 Question and central mechanism

For the instructor

The game examines how an authority uses information citizens do not observe and how citizens evaluate a decision before learning its consequences. Each encounter has three voters and two potential authorities. One authority receives private information about a state and chooses between two options. The continuation rule then determines whether that person or the alternative authority makes a second-period decision. Voter accounts depend on whether each option matches its corresponding state.

The question is more precise than whether a policy is popular. Voters begin with a probability distribution and may learn from an action, an additional signal, or a published outcome. The authority anticipates this evaluation. An institution can therefore affect both the decision and what the electorate can infer from it. The activity separates correctness, response to a signal, continuation, and selection. These variables are related, but none automatically substitutes for the others. Start with the sequence of information and decisions before introducing interpretations of

political motivation.

1.2 Objectives and prerequisites

Students should finish able to calculate both periods' accounts, distinguish private from public information, and reconstruct a continuation decision. They should recognize that selecting the most probable option before a signal is not equivalent to selecting the best option after observing it. They should also explain why an incorrect decision does not establish an intention to please the electorate. Predictions require assumptions about information, payoffs, and voting behavior.

The basic version requires simple probabilities, majority rule, and addition of earnings. Extensions support Bayesian updating, selection among authorities with different accuracy, and institutional choice. Early undergraduate classes can focus on perfect information and observable outcomes. Advanced courses can require posterior calculations and equilibrium assessment. Match mathematical demands to the learning objective. Vocabulary about reputation is not an adequate explanation when a student cannot reconstruct who knew what. A clear numerical example with an explicit limitation is more informative than a general statement that elections improve or worsen decisions.

1.3 Curricular placement and related games

This family fits political economy, information economics, and institutional design. JEL codes are A22, C92, D72, D82, and D83: undergraduate teaching, group experiments, political processes, private information, and learning. Catalog topics include asymmetric information, electoral evaluation, policymaker competence, Bayesian learning, public advice, and political delegation. These concepts help instructors select the activity; participant screens present only operational rules and decisions.

The content complements electoral discipline over rents and competition between territorial spending platforms. Here participants do not choose how much to appropriate or how to distribute a budget. They choose an option whose quality depends on a state that some people know better than others. Nor is this a cascade of sequential citizen choices: private information belongs to the authority controlling a policy. These distinctions support a curricular sequence without treating every variant as a separate family or attributing several unidentified mechanisms to the same observed outcome. Select the exercise according to the decision and information problem the class needs to understand.

1.4 Experimental unit and timing

A complete group has five people: three voters and authorities A and B. Each encounter contains two periods with independent states. The single-encounter version therefore contains two policy choices. Ten-encounter modes contain twenty choices, not ten. Fixed groups retain participants and roles; reassigned groups change composition and positions between encounters. The same five people remain together within an encounter, preserving the continuation problem.

The initial authority is randomly selected again for every encounter. Private types, when present, persist across its two periods and are drawn anew for the next encounter. Participants can learn about classmates' behavior even though states and types are renewed. Ten encounters from one fixed group are therefore not ten independent groups. When planning a lesson, allow around thirty to forty-five minutes for one encounter including discussion, and more time for repeated play. These

are planning estimates, not guaranteed durations. A class that is still clarifying the information sequence benefits more from a careful debrief than from completing additional encounters quickly.

1.5 Neutrality, participation, and privacy

Explain before starting that choices are not graded according to which option is selected, electoral success, or monetary earnings. Academic assessment concerns reasoning, calculations, and subsequent interpretation. Participants should decide individually and keep signals private while required by the protocol. Restricting communication preserves an information structure; it is not moral advice about voting or governing.

Distribute participant links and keep administrative access separate. Do not project individual codes, private signals, ballots, or files connecting a choice to a name. The aggregate report uses completed encounters only, whereas the native data file contains internal audit variables. Understand that distinction before opening it in front of the class. Acceptance of laboratory rules organizes a teaching activity. Using the session for a separate research project would require the procedure applicable to that project. Prepare an alternative exercise for students who cannot enter a complete five-person group, and avoid adding fictitious players to data intended to represent actual classroom behavior.

Rules and information

2.1 States, options, and probabilities

In each period, the actual state is zero with probability 0.80 and one with probability 0.20. A fresh independent draw determines the second-period state. An option is correct when its number matches the state: zero in state zero and one in state one. Before receiving additional information, choosing zero maximizes accuracy. This explains its initially popular status in the conceptual discussion without making it an instruction to participants.

Independence means that observing the first state does not change the distribution of the second. It does not mean human choices are independent: people may react to the encounter's history or previous experience. It also does not require exactly one state-one observation in every block of five. Probability describes the draw process rather than a quota. Before interpreting a short session with few rare-state observations, ask students to distinguish expected frequency from realized frequency. An unusual sequence does not by itself show that the stated probability was implemented incorrectly.

2.2 Resources and accounts by role

What participants will see

Each person receives one hundred ECU at the start of every period. Each voter receives another thirty when policy is correct. The active authority receives forty for holding the decision and ten more for a correct choice. The inactive authority keeps one hundred. These are external resources: the authority's reward does not reduce citizen accounts, and accuracy bonuses do not come from a shared budget. In the no-office-reward treatment, forty becomes zero while other components remain unchanged.

In a correct period, each voter receives 130, the active authority 150, and the inactive authority 100. In an incorrect period, the respective accounts are 100, 140, and 100. The group sum is 640 after a correct choice and 540 otherwise. The hundred-unit difference includes ninety for the three voters and ten for the decision maker. Keeping these components explicit prevents policy quality from being confused with a redistribution of payments between roles. There is no tax, contribution decision, or resource extraction stage in this activity.

$$\pi_{V,t} = b + v\mathbf{1}\{a_t = \theta_t\}, \quad (2.1)$$

$$\pi_{i,t} = b + \mathbf{1}\{i = j_t\} [o + k\mathbf{1}\{a_t = \theta_t\}]. \quad (2.2)$$

Here $b=100$ is the initial account, $v=30$ the citizen bonus, $o=40$ the office reward, $k=10$ the accuracy bonus, j the active authority, a the option, and θ the state. Both periods are summed.

2.3 A fully worked encounter

Suppose A decides first, the first state is one, and A chooses zero. Policy is incorrect. Each voter receives one hundred for that period, A receives 140, and B receives one hundred. If two voters replace A, B receives the second decision. Suppose the new state is zero and B chooses zero. Each voter then receives 130, B receives 150, and A keeps one hundred in the second period.

At completion, each voter has 230, A has 240, and B has 250. The five accounts sum to 1180. Check this by adding 540 from the first period and 640 from the second. Replacement neither removes A's earlier earnings nor transfers them to B. If A had continued and made a correct second choice, voters would still accumulate 230, but A would receive 290 and B 200. Who holds authority matters for political earnings even when the same sequence of correct and incorrect policies produces identical citizen accounts.

2.4 Why feedback is deferred

In the electoral reference, voters observe the first option but not the first state or realized earnings before choosing continuation. Displaying a citizen account would immediately reveal correctness: 130 versus one hundred. Because the option is already known, that information would reveal the state. Hiding a state label while publishing earnings would not preserve the information asymmetry motivating the exercise.

Accounts are therefore settled together after the second period. The transparent treatment expressly changes when the first state becomes public; other versions retain joint closing feedback. The aggregate report and encounter CSV follow the same discipline and do not expose latent variables from unfinished encounters. Deferred feedback does not mean resources disappear or a decision is forgotten: both choices and their accounting components are recorded. Explain the disclosure timing before play so participants do not mistake withheld information for a software failure. The timing is part of the institution being studied and must remain consistent across the intended comparison.

2.5 Perfect information and an imperfect signal

At one hundred percent accuracy, private information identifies the state and following it guarantees a correct choice. With lower accuracy, a signal can be wrong, and its best use also depends on the prior. Accuracy is the probability that a signal matches the state in each case. It is not automatically the posterior probability of a state after a particular signal. Confusing these probabilities can lead to an incorrect recommendation.

In type variants, each authority has either one hundred or sixty-five percent accuracy, with equal probabilities. The type is private and lasts two periods. Authorities know their accuracy and receive a signal when selected to decide. An inactive person has neither a policy decision nor a usable signal at that stage. The second state is independent, but a person's accuracy persists within the encounter. Persistence gives selection substantive meaning: what voters learn about an authority can matter for the quality of that person's next decision. Across encounters, types are drawn anew rather than inherited.

Preparation and screens

3.1 Access and session preparation

Start at beer-lab.org/en/ and select CLASSROOM to reach the teaching catalog. Search for expert information or use the family's topics and JEL codes. The card distinguishes Español and English and offers an extended edition. Clear earlier filters if the search returns no result. Catalog language does not automatically determine session language: check the configuration label before creating the session.

This delivery's preview uses <http://localhost:8146>. Demo and Rooms menus are isolated by family. Proposed public routes require the laboratory's deployment procedure; an address printed in this guide does not establish publication. Before class, select a participant count divisible by five, a matching mode, and the encounter count. Open the student room in a separate window and retain administrative access for monitoring. If real payments are offered, announce ECU conversion, summation of both periods, and the closing procedure before decisions begin. A short access check beforehand is preferable to diagnosing configuration or language mistakes while the whole class waits.

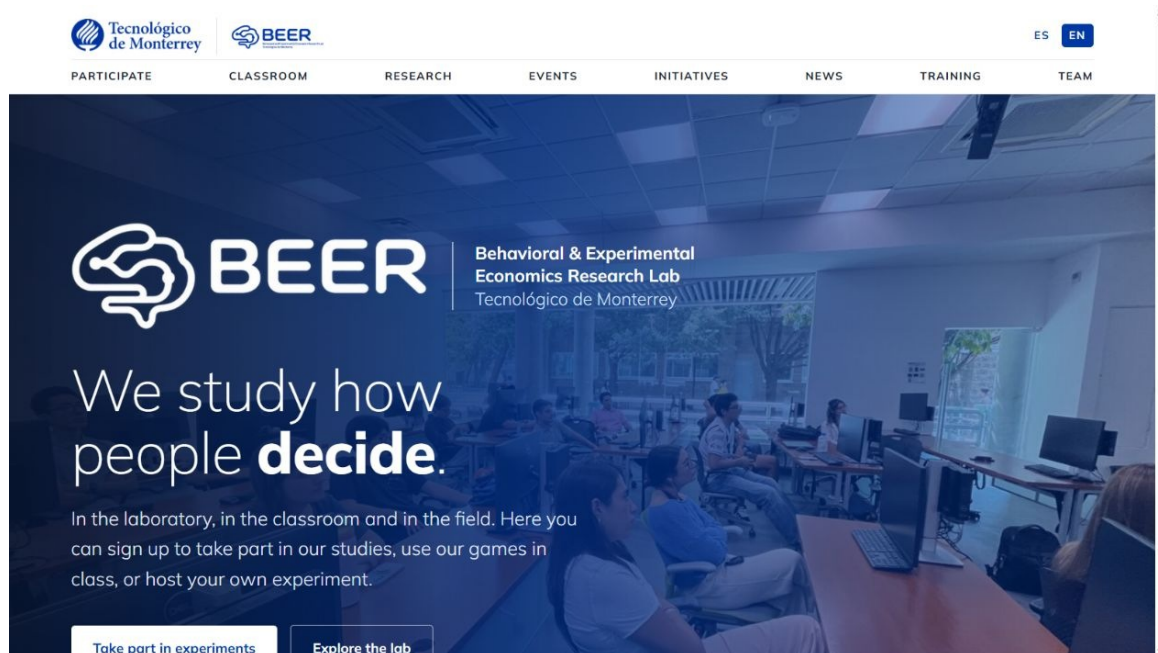


Figure 3.1: Access through the laboratory portal

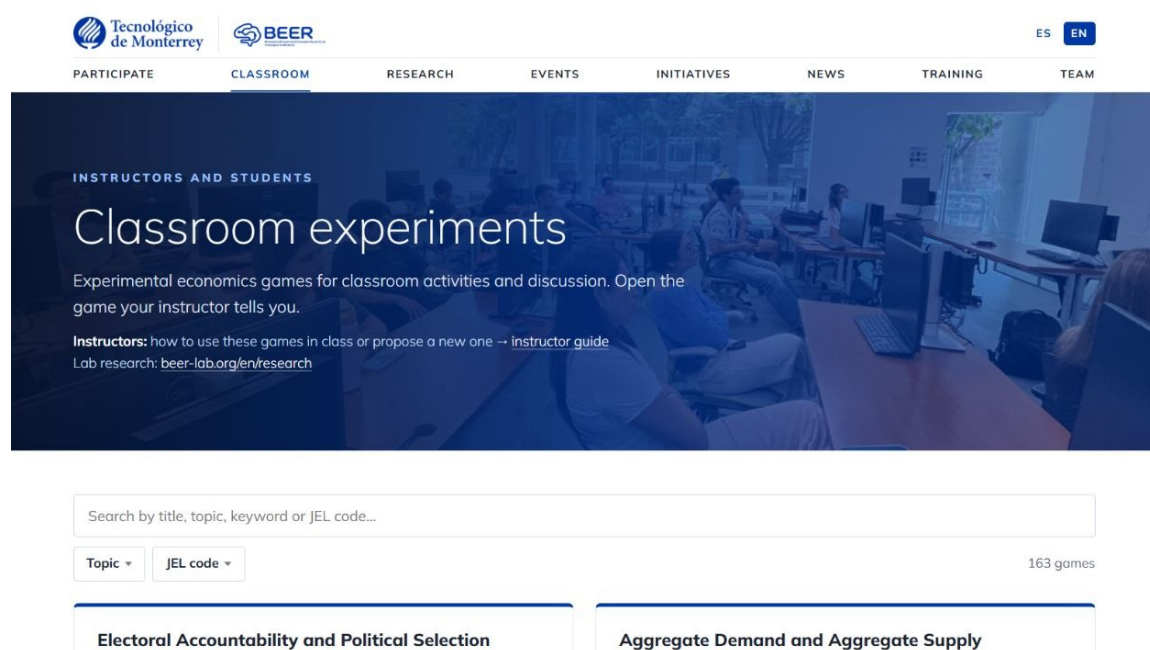


Figure 3.2: Teaching catalog; the new family requires deployment

3.2 Rooms, modes, and configurations

The family has four rooms: basic and extended in Spanish and English. Each basic room offers one encounter, ten encounters with fixed groups, and ten with reassigned groups. Each extended room contains eleven configurations, giving twenty-eight overall with shared logic across languages. The extended electoral reference duplicates this family's repeated basic mode. It is a comparison point within the larger menu, not a separate game.

Extensions cover random continuation, early disclosure, private types, types with disclosure, action-dependent continuation with and without an office reward, strong and weak public advice, an independent mandate, and choice of rule. Those eleven original modes retain three voters and two authorities; the new private-preference modes use one citizen and two candidates. Select configurations according to a classroom question. Running all twenty-eight is unnecessary for understanding the mechanism. A reference and one carefully selected comparison usually support clearer discussion than a long sequence of simultaneous changes. Confirm the distinction between encounter and period when estimating lesson duration, since every active encounter includes two policy decisions.

Information-accuracy configurations

<code>expert_information_en_one</code>	One encounter
<code>expert_information_en_fixed</code>	Ten encounters, fixed group
<code>expert_information_en_random</code>	Ten encounters, reassigned groups
<code>expert_information_extended_election</code>	Election with deferred outcome
<code>expert_information_extended_lottery</code>	Random continuation
<code>expert_information_extended_transparent</code>	State visible before voting
<code>expert_information_extended_types</code>	Private policymaker accuracy

<code>expert_information_extended_types_transparent</code>	Private accuracy and visible state
<code>expert_information_extended_automatic</code>	Action-dependent continuation
<code>expert_information_extended_automatic_low</code>	Action-dependent continuation without office reward
<code>expert_information_extended_advice</code>	Public advice with 90% accuracy
<code>expert_information_extended_advice_weak</code>	Public advice with 70% accuracy
<code>expert_information_extended_independent</code>	Independent two-period mandate
<code>expert_information_extended_institution_choice</code>	Choice of continuation rule

http://localhost:8146/room/expert_information_en

http://localhost:8146/room/expert_information_extended

Portal: <https://beer-lab.org/en/> ; catalog: <https://teaching.beer-lab.org/en/> . Proposed domain: <https://expertinformation.beer-lab.org/> . Publication pending. Instructor: /rooms and /sessions; private report: /AdminReport/<session_code>.

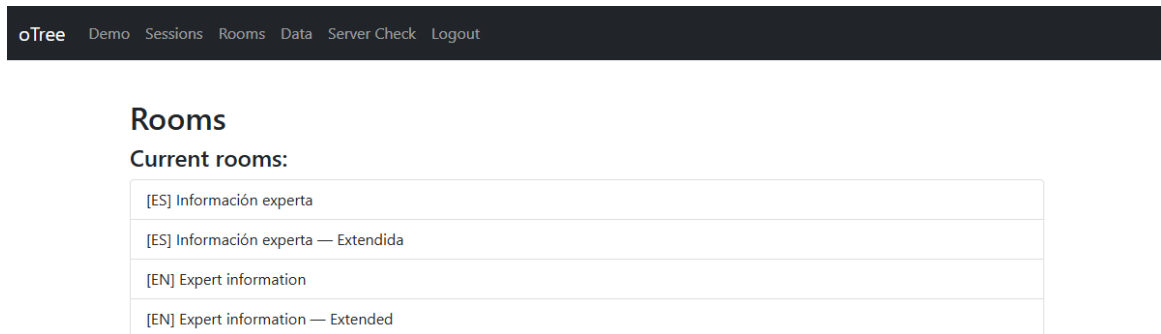


Figure 3.3: Four rooms in the local instance

3.3 Welcome and understanding questions

The welcome screen presents laboratory rules and individual confirmation. Instructions explain resources, probabilities, sequence, and feedback timing. Four questions then cover the probability of state zero, a citizen's account after a correct choice, the active authority's account after a correct choice, and whether the state is published before continuation is determined. Incorrect answers receive specific explanations while other responses are retained. Corrections do not deduct ECU.

With standard parameters, the first three answers are eighty, one hundred thirty, and one hundred fifty. Without the office reward, the third is one hundred ten. Early state disclosure is affirmative only in transparent variants. Do not answer for participants or use clarification to recommend a ballot. If several people confuse a per-period payment with the encounter total, reconstruct one account from each stage. Resolve that confusion before comparing continuation or reputation, because the intertemporal interpretation depends on it. Completing the quiz quickly is less important than understanding which resources are renewed and when earnings become visible.

oTree Demo Sessions Rooms Data Server Check Logout

Room: [EN] Expert information

Create a new session

Session Config

Expert information · EN · One encounter

Number of participants

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

Create

[Configure session](#) ⚙

App sequence

expert_information_game (10 rounds) Private policy information, electoral evaluation, competence and institutional choice.

0 participants present

Start links

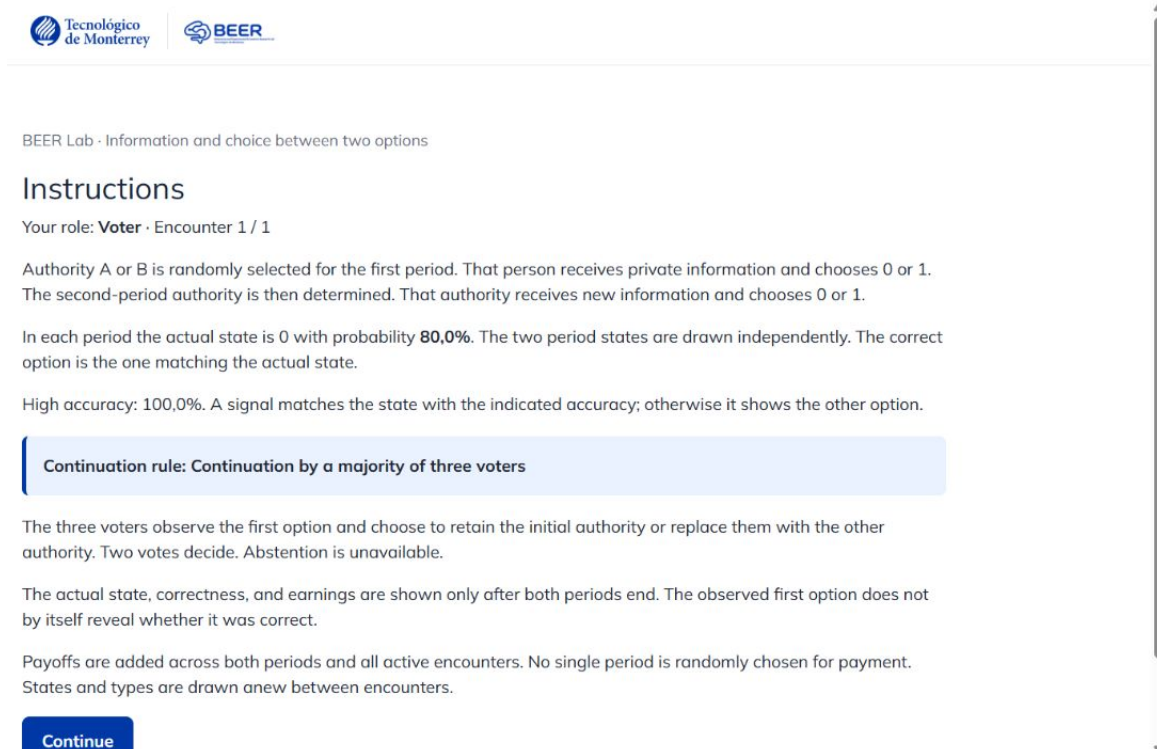
These URLs will stay constant for new sessions, even if the database is recreated.

Room-wide URL

Here is the room-wide URL anyone can use. Don't use this link when testing in multiple tabs on the same browser, because all tabs will be assigned to the same participant, using a cookie.

http://127.0.0.1:8146/room/expert_information_en

Figure 3.4: Basic room form: complete groups of five



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BEER Lab · Information and choice between two options

Instructions

Your role: **Voter** · Encounter 1 / 1

Authority A or B is randomly selected for the first period. That person receives private information and chooses 0 or 1. The second-period authority is then determined. That authority receives new information and chooses 0 or 1.

In each period the actual state is 0 with probability **80.0%**. The two period states are drawn independently. The correct option is the one matching the actual state.

High accuracy: 100.0%. A signal matches the state with the indicated accuracy; otherwise it shows the other option.

Continuation rule: Continuation by a majority of three voters

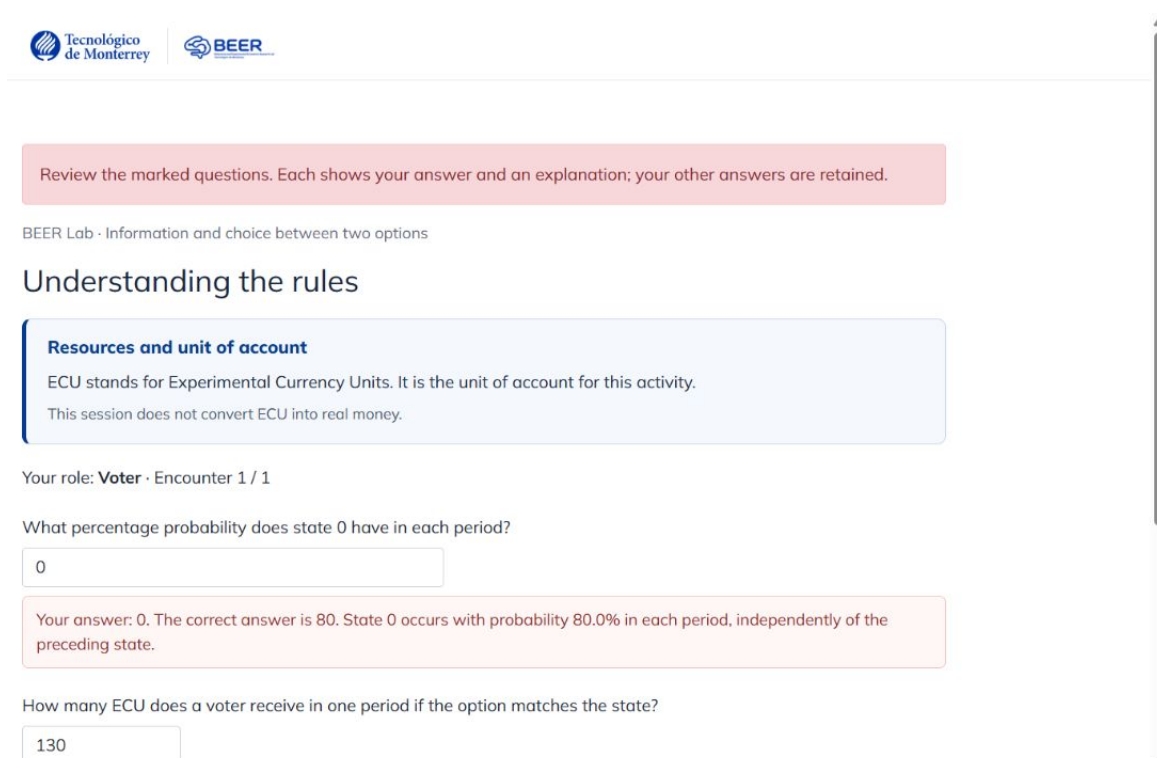
The three voters observe the first option and choose to retain the initial authority or replace them with the other authority. Two votes decide. Abstention is unavailable.

The actual state, correctness, and earnings are shown only after both periods end. The observed first option does not by itself reveal whether it was correct.

Payoffs are added across both periods and all active encounters. No single period is randomly chosen for payment. States and types are drawn anew between encounters.

[Continue](#)

Figure 3.5: Initial instructions; scroll to read the remainder



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BEER Lab · Information and choice between two options

Understanding the rules

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.

Your role: **Voter** · Encounter 1 / 1

What percentage probability does state 0 have in each period?

Your answer: 0. The correct answer is 80. State 0 occurs with probability 80.0% in each period, independently of the preceding state.

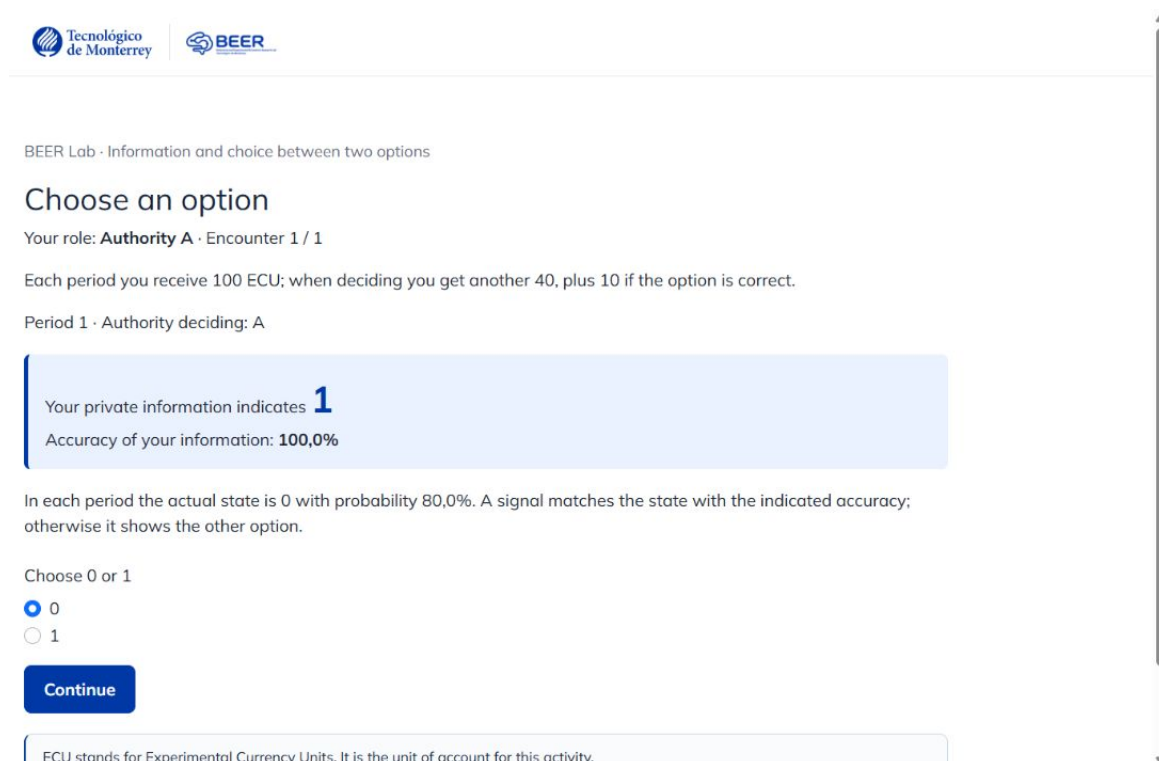
How many ECU does a voter receive in one period if the option matches the state?

Figure 3.6: An understanding error explained beside the answer

3.4 The first decision and its evaluation

The initial authority sees a private signal and its accuracy, chooses zero or one, and submits. Other participants wait until that stage is complete. Everyone then sees the first option and continuation rule. The reference reveals neither state nor correctness. The transparent version displays the first state; advice versions display an additional public signal explicitly identified as imperfect.

The three voters submit individual ballots when the rule includes an election. Two votes retain or replace the authority. Automatic, random, and independent controls request no human continuation ballot. That absence is part of the treatment rather than a missing form. If voters selected the rule at the outset, the screen reminds participants which rule obtained a majority. Waiting pages coordinate the same group: participants should not go back or use another person's link to accelerate a stage. The instructor can identify a pending decision through the monitor. Clarify procedural delays without revealing private information that others are not yet entitled to observe.



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BEER Lab · Information and choice between two options

Choose an option

Your role: **Authority A** · Encounter 1 / 1

Each period you receive 100 ECU; when deciding you get another 40, plus 10 if the option is correct.

Period 1 · Authority deciding: A

Your private information indicates **1**

Accuracy of your information: **100,0%**

In each period the actual state is 0 with probability 80,0%. A signal matches the state with the indicated accuracy; otherwise it shows the other option.

Choose 0 or 1

☒ 0

☐ 1

Continue

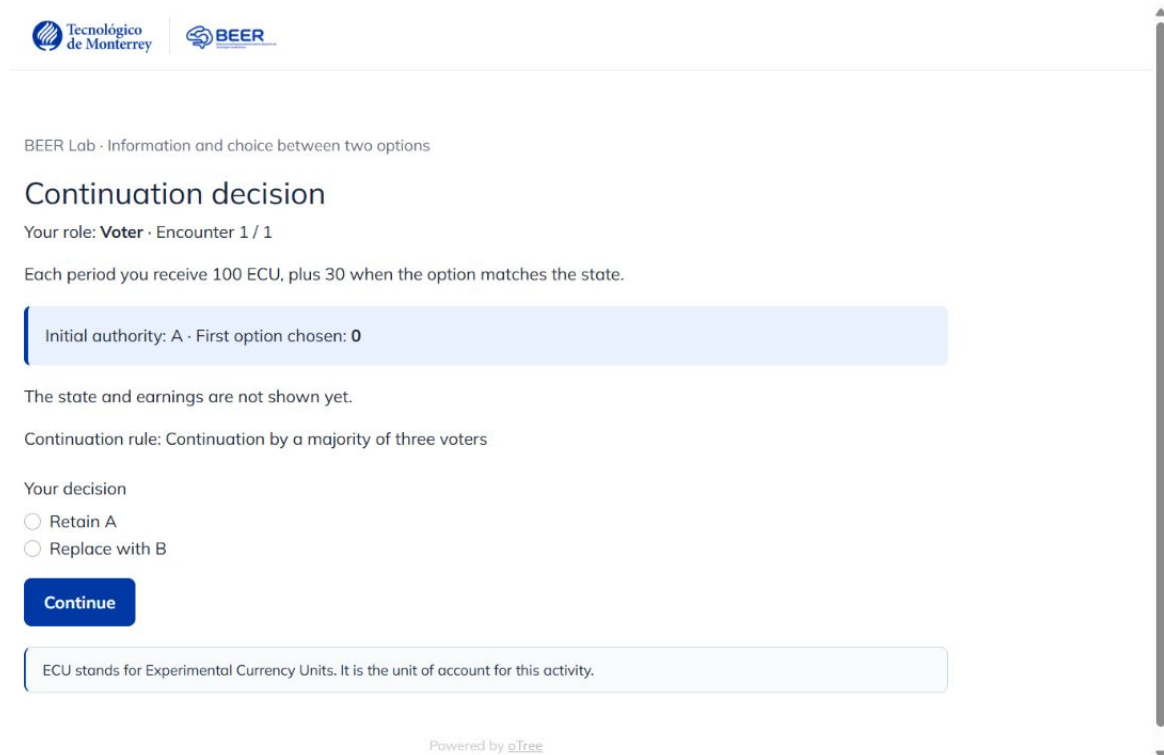
ECU stands for Experimental Currency Units. It is the unit of account for this activity.

Figure 3.7: Private information and a selected option in the demonstration

3.5 Second period, results, and closing

After continuation is resolved, participants see who decides in the second period. That person receives new private information and chooses for a new state. The previous state is neither carried forward nor decided again. First-period earnings are already determined by its option and state, although not yet displayed. Continuation determines who receives the second decision and reward, not who retroactively earns the first-period payment.

At completion, a table displays both states, options, correct choices, and individual period accounts. The final screen gives accumulated earnings from active encounters and requests no further decision. Download the CSV before closing the instructor record and retain the configuration, matching mode, group count, and interruptions. Screenshots in this guide use synthetic native states to document the interface. They are not student decisions or evidence that an institution generated a



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BEER Lab · Information and choice between two options

Continuation decision

Your role: **Voter** · Encounter 1 / 1

Each period you receive 100 ECU, plus 30 when the option matches the state.

Initial authority: A · First option chosen: 0

The state and earnings are not shown yet.

Continuation rule: Continuation by a majority of three voters

Your decision

☐ Retain A

☐ Replace with B

Continue

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

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Figure 3.8: Evaluation without revealing the state or earnings

particular behavior. For classroom analysis, exclude these demonstrations and use only sessions corresponding to the actual exercise. Keep a clear distinction between interface documentation and behavioral evidence.



BEER Lab · Information and choice between two options

Second period

Your role: **Authority B** · Encounter 1 / 1

Initial authority: A · First option chosen: **0**

The state and earnings are not shown yet.

Continuation rule: Continuation by a majority of three voters

Authority deciding: **B**. The other authority decides in the second period.

The second state was drawn independently. New private information is shown only to the person deciding.

Continue

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Figure 3.9: Identity of the second-period authority



BEER Lab · Information and choice between two options

Encounter results

Your role: **Voter** · Encounter 1 / 1

Period	Authority deciding	Actual state	Option	Matches the state	Your account
1	A	1	0	No	100
2	B	0	0	Yes	130

Your encounter earnings: **230 ECU**
Accumulated earnings: 230 ECU

Payoffs are added across both periods and all active encounters. No single period is randomly chosen for payment. States and types are drawn anew between encounters.

Continue

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

Figure 3.10: Joint closing feedback for both periods

Learning and incentives

4.1 Initial popularity and new evidence

Without additional information, choosing zero is correct eight times out of ten in expectation. With perfect information, the recommendation depends on the observed state and is always correct. The relevant tension appears in state one: the initially more probable option is no longer correct for someone who knows that state. This situation occurs in one fifth of draws in expectation, not a guaranteed fifth of every session.

A voter's preference before evidence must be distinguished from the preference after updating. A citizen who does not know the state may regard as reasonable a decision the authority knows is wrong. The citizen may also interpret an uncommon choice as evidence that special information existed. Such inferences depend on beliefs about how authorities behave. Examples in this guide make those beliefs explicit rather than assigning participants a unique inference rule from their observed choice. Ask students to state both the information available and the behavioral assumption used whenever they interpret an action.

4.2 Bayesian updating in a table

Consider one hundred hypothetical draws with eighty state-zero cases and twenty state-one cases. A ninety-percent-accurate signal indicates one in eighteen of the twenty state-one cases. Among the eighty state-zero cases, its ten-percent error rate produces eight signals of one. There are therefore twenty-six signals of one, of which eighteen actually correspond to state one. The posterior probability is $18/26$, or nine thirteenths, approximately 0.6923.

A signal of zero has seventy-two state-zero cases and two state-one cases. The posterior probability of state zero is $72/74$, or thirty-six thirty-sevenths. Begin with joint frequencies instead of treating ninety percent as the posterior answer. Even a highly accurate signal requires updating from an unequal base. Ask students to construct all four cells before dividing. The denominator is the total number of cases compatible with the signal observed. This frequency representation often makes the distinction between signal accuracy and posterior confidence easier to explain than beginning directly with a formula.

$$\Pr(\theta = 1 \mid s = 1) = \frac{(1-p)q}{(1-p)q + p(1-q)}. \quad (4.1)$$

p is the prior probability of state zero; q is accuracy; s is the observed signal.

4.3 A weak signal that leaves the best choice unchanged

Theoretical foundation

With seventy-percent accuracy, eighty state-zero cases generate twenty-four signals of one, while twenty state-one cases generate fourteen. After observing one, the probability of state one is $14/38$, or seven nineteenths, approximately 0.3684. State zero remains more likely. Choosing zero can therefore be an appropriate response to available information even though it literally contradicts the signal received.

The comparison with ninety-percent accuracy is substantive: under the same prior, a strong signal of one changes the best option and a weak signal does not. The accuracy threshold is eighty percent. Exactly at that threshold, a signal of one makes both options equally likely and creates material indifference. Do not impose a unique answer in that case. This distinction explains why the report separates signal following from deviation from a best informed response. Calling every choice against a signal an error would confuse learning with literal obedience. A correct interpretation requires the prior, the signal, its accuracy, and the payoff criterion together.

4.4 Terminal incentives and the value of continuing

In the second period, no further election remains within the encounter. With perfect information, a correct choice gives the active authority ten more and each voter thirty more. Under exclusively monetary preferences, correctness strictly improves the decision maker's account. The forty-unit office reward is received regardless of the option and therefore does not alter the terminal comparison between zero and one.

Before continuation is determined, keeping the second decision is worth forty plus the expected accuracy bonus relative to becoming inactive. With perfect information and a correct terminal choice, this additional value is fifty. The initial hundred cancels because both active and inactive people receive it. Using one hundred fifty as the continuation reward would incorrectly count a resource obtained in both situations as an incremental benefit. With imperfect information, replace certain correctness by its probability under the strategy being analyzed and state that assumption. The distinction between a total account and a marginal incentive is essential for every comparison of electoral rewards.

4.5 Why the homogeneous reference is exploratory

In the reference, both authorities have perfect information and identical payoffs. If both choose correctly in the second period, voters receive the same expected earnings regardless of who continues. The homogeneous core therefore offers no capacity-selection advantage. Participants may learn about human behavior, but that possibility does not automatically turn the environment into a model with persistent private types.

Choosing zero in state one departs from perfect information but does not identify its motive. Seeking support, confusion, additional preferences, and personal rules remain possible explanations. An electoral explanation requires institutional comparisons and evidence about anticipated consequences. The homogeneous core does not establish a unique pandering equilibrium. It provides a reference for extensions; correct policies and null results also help examine when electoral incentives matter.

Extended versions

5.1 Random continuation and an independent mandate

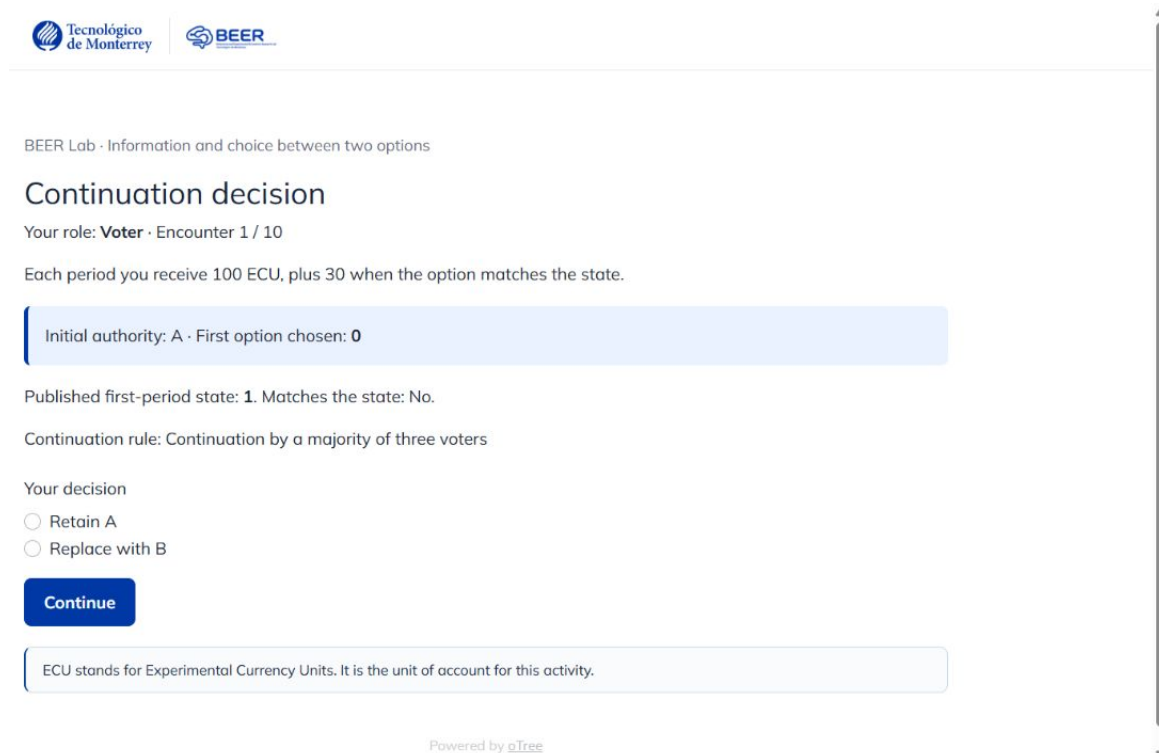
The lottery control retains the initial authority with probability one half after the first decision. It requests no binding ballot and preserves private information, accounts, and the office reward. The independent mandate keeps the same authority for both periods with probability one. Under either rule, the first option does not change the institutional probability of continuation. With perfect information and monetary preferences, a correct first choice earns ten more without sacrificing continuation.

Compare each control with the electoral reference while keeping the horizon and number of decisions constant. Realized electoral retention may differ from one half or one, so the comparison changes a broader political incentive rather than only a procedural label with identical realized retention. The report displays continuation and correctness to help instructors describe that difference. During feedback, ask which part of holding office depends on the first option and which part is fixed by the rule. The absence of a ballot must be explained as an institution of the exercise rather than an omission.

5.2 State disclosure before the election

The transparent configuration publishes the first state after the choice and before the continuation ballot. Voters can determine whether the first option was correct. It preserves both authorities' perfect information, payoffs, and two-period horizon. The types-with-disclosure version applies the same timing change to the private-accuracy environment. Final accounts remain jointly displayed at the encounter's end, keeping the closing screen comparable.

Transparency permits evaluation of realized performance but does not eliminate every selection ambiguity. A correct choice can reflect good information, an initially likely option, or coincidence. An authority receiving an imperfect signal can make an incorrect choice despite using information appropriately. Compare correctness, support, and continuation conditional on available evidence. For feedback, distinguish publishing a state from publishing advice: the former verifies an outcome, whereas the latter adds uncertain information. The extension changes when participants know the first state, not its initial distribution. Avoid presenting transparency as a guarantee that every voter will infer either ability or motivation correctly.



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BEER Lab · Information and choice between two options

Continuation decision

Your role: **Voter** · Encounter 1 / 10

Each period you receive 100 ECU, plus 30 when the option matches the state.

Initial authority: A · First option chosen: 0

Published first-period state: 1. Matches the state: No.

Continuation rule: Continuation by a majority of three voters

Your decision

☐ Retain A

☐ Replace with B

Continue

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

Powered by [oTree](#)

Figure 5.1: State published before voting

5.3 Private types and learning about accuracy

Authorities have either perfect accuracy or sixty-five-percent accuracy, each with probability one half. Accuracy is private, persists across both periods, and is renewed between encounters. Voters know the distribution. The alternative authority has an independently drawn type. Who continues can therefore change expected second-period correctness, unlike in the homogeneous reference.

With a state-zero prior of 0.80, a low-accuracy authority maximizing correctness chooses zero after either signal. Effective decision accuracy is then 0.80, exceeding the 0.65 obtained by literally following the signal. A perfectly informed authority is always correct when following its information. Under that strategy, a new authority of unknown type provides expected accuracy of 0.90. These are informative benchmarks, not imposed behavior. The report and CSV permit analysis of selected accuracy, continuation by type, and deviations, but interpretation must remain conditional on the strategy being considered. Persistence creates a selection problem; it does not establish that voters correctly solve it or that authorities follow the benchmark.

5.4 Inferring types requires an explicit strategy

Attention

Suppose, as an exercise, every authority maximizes correctness given its signal and resolves indifference by choosing zero. The low-accuracy authority always chooses zero, while the high-accuracy authority does so with probability 0.80. After zero, the posterior probability of a high type is 0.40 divided by 0.90, or four ninths. After one, the high type has posterior probability one within this benchmark because the low type never chooses one.

Under those beliefs, retaining after one offers expected correctness of one rather than 0.90 from a

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BEER Lab · Information and choice between two options

Choose an option

Your role: **Authority A** · Encounter 1 / 10

Each period you receive 100 ECU; when deciding you get another 40, plus 10 if the option is correct.

Period 1 · Authority deciding: A

Your private information indicates **1**

Accuracy of your information: **65,0%**

In each period the actual state is 0 with probability 80,0%. A signal matches the state with the indicated accuracy; otherwise it shows the other option.

Choose 0 or 1

☒ 0

☐ 1

[Continue](#)

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

Figure 5.2: Private signal with sixty-five-percent accuracy

new authority. Retaining after zero offers eight ninths, below 0.90. Yet this voting rule changes the initial authority's incentives: the authority may try choosing one to keep office. Posterior calculations alone therefore do not establish a joint equilibrium of behavior and beliefs. Adding types does not guarantee pandering or validate an intuitive voting rule. Teaching equilibrium requires checking updating and best responses simultaneously. This example is deliberately a conditional benchmark that exposes the missing strategic step.

5.5 Continuation automatically linked to the option

In automatic, choosing zero retains the authority with probability 0.80, while choosing one retains them with probability 0.20. There is no human ballot. The rule is announced before decisions, with perfect information and the usual forty-unit office reward. In the second period, correctness is strictly preferable under monetary preferences. Continuation is therefore worth fifty more than inactivity: forty for office and ten for correctness.

When the first state is one, choosing zero sacrifices ten in current accuracy earnings but raises by 0.60 the probability of obtaining fifty later. The net expected gain is twenty. Zero is therefore strictly preferable in that state under the stated benchmark. In state zero it is also preferable because correctness and continuation coincide. This provides a calculable prediction of following the initially popular option at the expense of quality when state one occurs. The incentive is induced by the program; it is neither evidence of human voting nor an automatic replication of a reputational equilibrium.

$$\Delta_0(\theta_1 = 1) = -k + (r_0 - r_1)(o + k). \quad (5.1)$$

r_0 and r_1 are continuation probabilities after each option; terminal correctness with perfect information is assumed.



BEER Lab · Information and choice between two options

Observed first decision

Your role: **Voter** · Encounter 1 / 10

Initial authority: A · First option chosen: **0**

The state and earnings are not shown yet.

Continuation rule: Continuation based on the first option

$0 \rightarrow 80,0\%$ · $1 \rightarrow 20,0\%$.

Continue

Powered by [oTree](#)

Figure 5.3: Announced continuation probabilities

5.6 The same rule without an office reward

The `automatic_low` treatment preserves continuation probabilities of 0.80 and 0.20 but removes the forty-unit office reward. Continuing is now worth ten more, corresponding to second-period correctness. In state one, choosing zero costs ten today and provides an expected future benefit of six. The difference is minus four, so choosing one is strictly better. In state zero, choosing zero still aligns correctness and continuation.

This comparison holds the continuation rule fixed while changing the value of office. It shows that favorable evaluation of an option alone is insufficient to produce distortion: how much the authority gains from retaining the future decision matters. Do not interpret a change in gross earnings as a social loss from poorer policy, because this treatment deliberately removes an external payment. Compare correctness and citizen earnings to assess quality, and use the authority's marginal difference to explain incentives. The report and configuration data preserve these objects separately rather than treating every account difference as a change in policy performance.

5.7 Strong and weak public advice

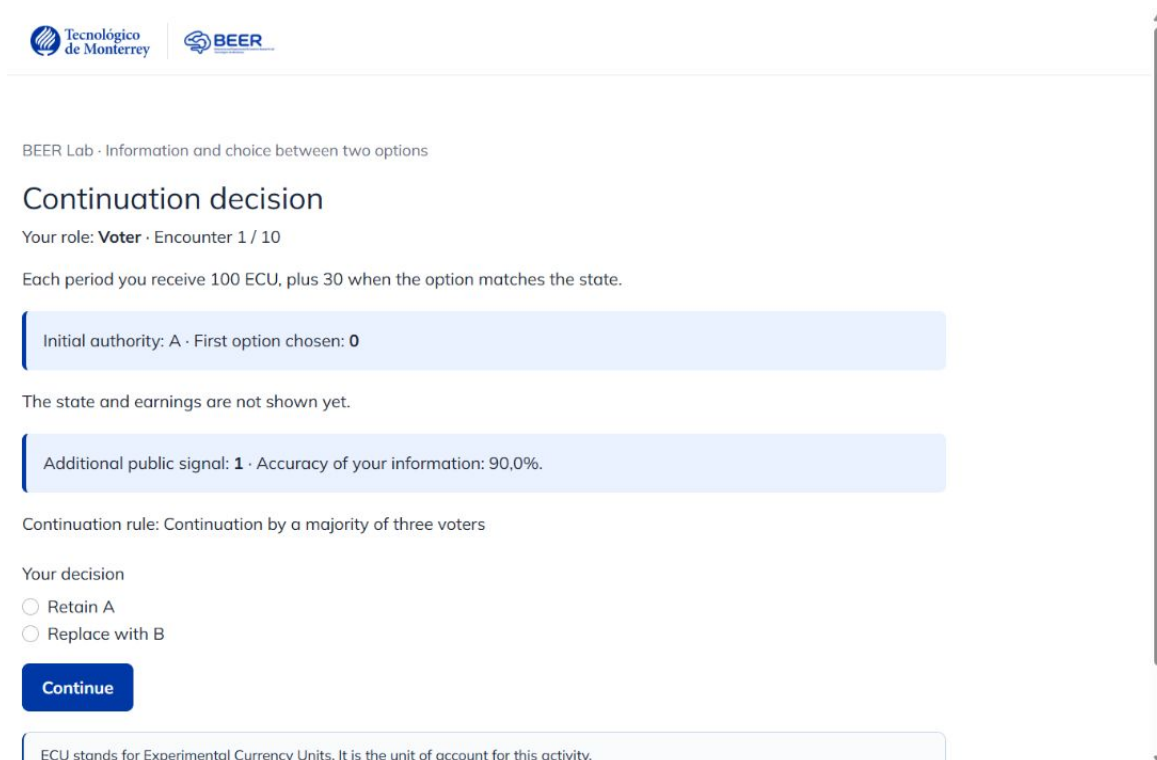
The `advice` and `advice_weak` treatments publish an additional signal after the first option and before electoral evaluation. Accuracy is ninety and seventy percent, respectively. The initial authority knows the accuracy when deciding but has not yet observed the public signal's realization. No additional advice is provided for the second period. This changes evaluators' information without giving the initial authority another private instruction before its first choice.

Public advice does not verify the state. Agreement between advice and the option does not establish correctness, and disagreement does not establish that the authority ignored perfect information. Under a 0.80 prior, a strong signal of one changes the most probable option, whereas a weak signal does not. Ask students to calculate both cases before examining continuation. Compare advice with the reference to study additional information and with `advice_weak` to discuss accuracy. Keep interpretations about students' trust in real experts separate: the assigned signal process does not identify that broader attitude.

5.8 Choosing the institution before knowing the state

In `institution_choice`, the three voters first choose between electoral continuation and an independent two-period mandate. A majority of two sets the encounter's rule before states, signals, or the initial authority's identity are known. Both authorities retain perfect information and identical payoffs under either rule. The corresponding sequence then follows: an election produces a ballot after the first choice, while a mandate keeps the same authority.

Institutional choice is an outcome for discussion, not random treatment assignment. Groups preferring different rules may have different expectations or experiences. Directly comparing their accuracy does not identify an institutional causal effect. Use exogenous election and independent configurations for a designed comparison and the initial choice to study preferences for control. Homogeneous authorities create no built-in capacity advantage for the mandate. Connect institutional preferences with expectations and experience without declaring that voters should always delegate or always demand another ballot. A preference for accountability can be documented even when the class has not established its effect on performance.



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BEER Lab · Information and choice between two options

Continuation decision

Your role: **Voter** · Encounter 1 / 10

Each period you receive 100 ECU, plus 30 when the option matches the state.

Initial authority: A · First option chosen: 0

The state and earnings are not shown yet.

Additional public signal: 1 · Accuracy of your information: 90.0%.

Continuation rule: Continuation by a majority of three voters

Your decision

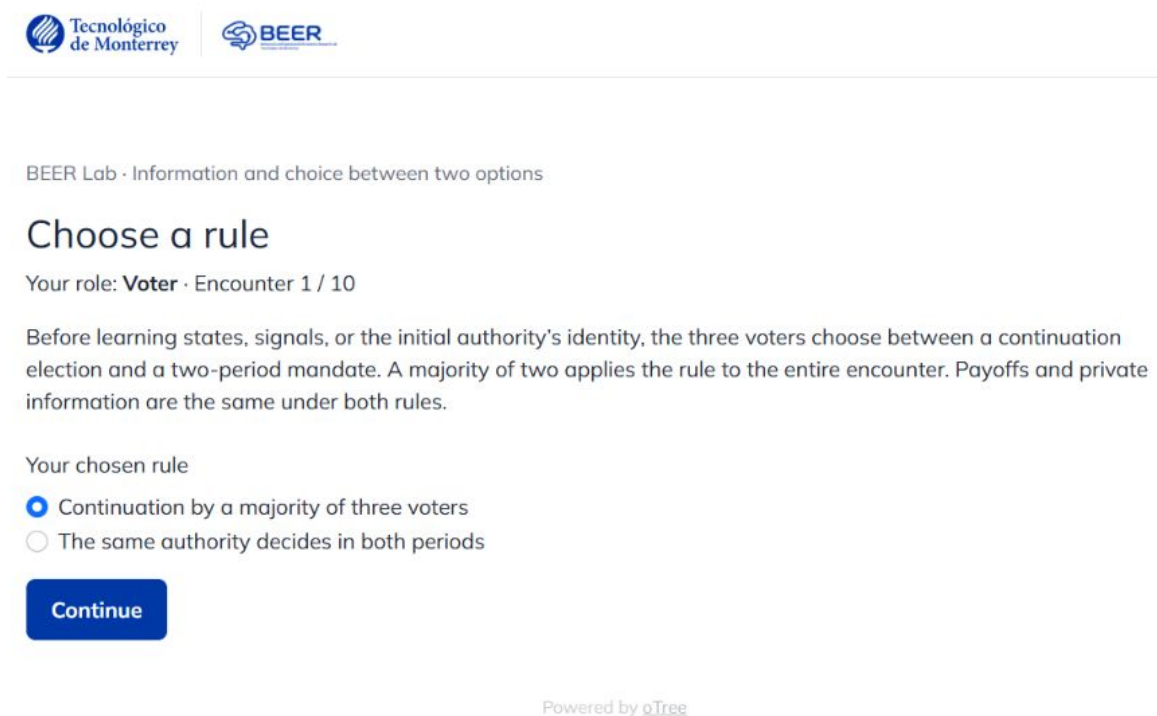
☐ Retain A

☐ Replace with B

Continue

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

Figure 5.4: An additional signal for evaluating the first decision



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BEER Lab · Information and choice between two options

Choose a rule

Your role: **Voter** · Encounter 1 / 10

Before learning states, signals, or the initial authority's identity, the three voters choose between a continuation election and a two-period mandate. A majority of two applies the rule to the entire encounter. Payoffs and private information are the same under both rules.

Your chosen rule

☒ Continuation by a majority of three voters

☐ The same authority decides in both periods

Continue

Powered by qTree

Figure 5.5: Choosing the rule before states and initial authority are known

Report, data, and discussion

6.1 Progress and private-report indicators

Checkpoint

The report counts completed participant-encounters, expected total, pending records, and completed group-encounters. A five-person group playing ten encounters has fifty expected participant-encounters and twenty policy choices. This denominator is not fifty voters or ten periods. An encounter is complete once both periods are resolved and all five accounts calculated. A submitted first option does not appear as a final quality outcome.

Aggregates remain hidden until the instructor selects show. Progress can therefore be projected without revealing results that might influence later encounters. An empty report provides an explicit message. A partial report calculates means from completed encounters only while retaining the pending count. An average changing as more groups finish also reflects changing sample composition. Explain that fact before describing an update as learning or a time trend. For an orderly discussion, open the panel answering the classroom question first and reveal others when needed. The projection control is useful only if the instructor also avoids displaying individual links or raw private variables.

6.2 Correctness, signals, and informative deviation

Accuracy divides correct choices by two choices for each completed encounter. Signal following compares the option with the observed signal. Bayesian deviation compares the option with the set of best responses given the prior and private accuracy, preserving indifference. These measures answer different questions. When a weak signal indicates one against a strong prior favoring zero, not following the signal may be the best informative choice.

The informed option-zero measure restricts its denominator to perfectly informed authorities facing first-period state one. It counts how many choose zero among those eligible cases. This restriction avoids labeling as pandering a choice based on an imperfect signal when the authority did not know the state. If no eligible cases occur, the report displays an unavailable measure and zero denominator, not a zero-percent rate. Even the restricted measure does not identify intent. During feedback, require the numerator, denominator, and a compatible alternative mechanism before comparing treatments. Keep the definition fixed after seeing the observed pattern.

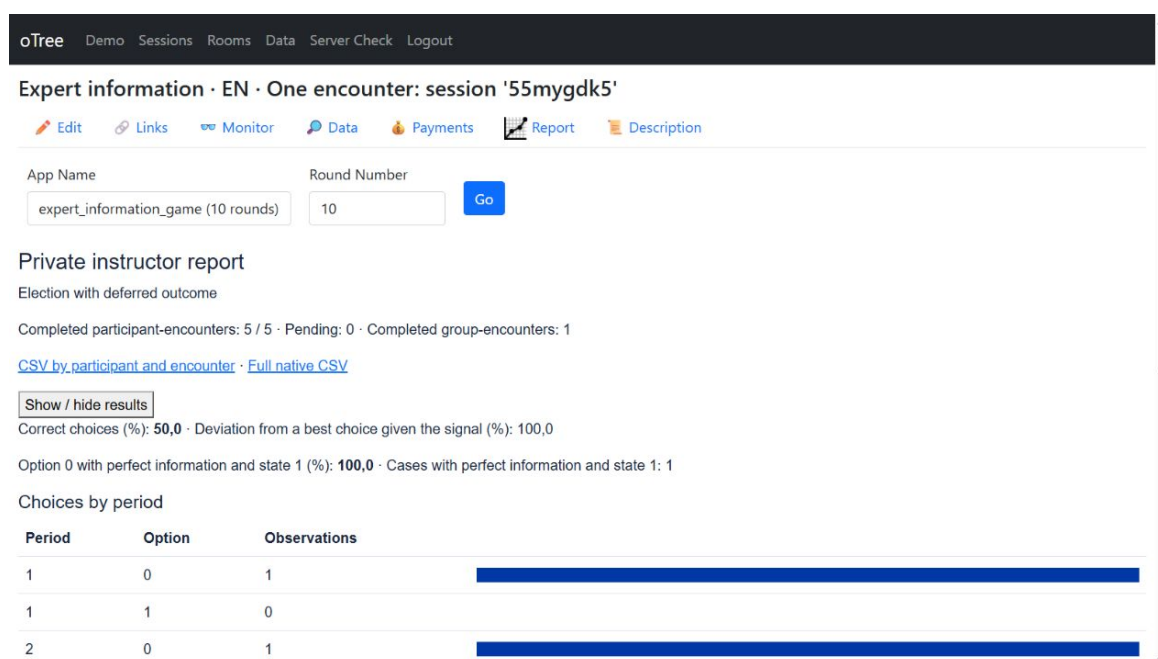


Figure 6.1: Private report with revealed results

6.3 CSV and pending decisions

The participant-encounter file contains one row per person in every active encounter. It records role, rule, both authorities, ballots, options, states, accuracy, observed signals, account components, and parameters. Latent variables and earnings from unfinished encounters remain empty. A submitted zero option remains zero; an unresolved item is not replaced by that value. People who did not receive a decision are not assigned a corresponding observed signal.

The native wide CSV preserves additional internal variables and requires instructor access. Do not project it during ongoing decisions. Retain an original copy and use completed to distinguish final outcomes. Keys should combine session, participant, and encounter; group numbers alone are not unique across sessions. When combining languages, use treatment and role codes rather than translated labels. Exported parameters permit account reconstruction, especially when the office reward or advice accuracy changes. Keep missing-by-design fields separate from unanswered decisions, and document any exclusions before comparing averages or calculating a behavioral rate.

6.4 Distributions, continuation, and selection

The report shows zero and one frequencies in each period and an encounter table with correctness, continuation, and citizen accounts. Each bar uses group decisions, not three copies corresponding to the voters. Average accuracy can hide an incorrect first policy followed by a correct second policy, so compare periods before summarizing everything in one number. Role accounts distinguish voters from authorities.

Continuation conditional on the first option uses human-election encounters only. Denominators show how many observations exist for each option and do not treat draws as ballots. Type variants additionally show the high-accuracy share among second-period authorities and retention by initial type. These measures describe realized selection without proving that voters knew the type. Reconstruct one encounter and identify the evidence available at the electoral decision before interpreting the aggregate pattern. A high selected-accuracy share can arise from chance in a

small session, and a low share does not establish that participants ignored information they never observed.

6.5 Comparisons and causal scope

To compare institutions, hold resources, private information, and horizon constant and assign groups to configurations before play. First calculate group-encounter outcomes, then average within each group. Encounters from the same group share participants and history and should not be treated as independent observations to inflate precision. In a small class, accounts and group-level points are often more informative than emphasis on a significance threshold.

Endogenous institutional choice requires another interpretation. Groups selecting a mandate may differ from groups choosing a vote even before the rule operates. Do not directly compare a single encounter with ten without adjusting the unit and duration. When the same students play several treatments, record order and learning; reassignment does not erase experience. A useful conclusion identifies the outcome, the contrast producing it, and a limitation. No difference is also a valid result. Do not change the indicator after seeing data to obtain a preferred story, or describe an association between correctness and retention as proof of a particular intention.

6.6 A debrief sequence

Feedback script

Begin by reconstructing who received information, which option was chosen, what voters observed, and who decided next. Calculate one account per period and verify the encounter total. Then ask which option was best before a signal and which after it. This sequence prevents pandering or good-government labels from replacing analysis of information and incentives.

Next compare rules. For the automatic control, request the marginal value of continuation and the cost of an incorrect choice. For types, require a stated strategy before calculating posteriors. For advice, contrast accuracy with posterior probability. Finally reveal the report and distinguish an observed outcome, a compatible mechanism, and an unsupported claim. An individual note containing three sentences and one calculation can close the lesson. Do not require anyone to reveal a ballot publicly or defend it to the authority replaced. The aim is to understand incentives and learning rather than assess classmates' loyalty. Keep alternative explanations visible even when the aggregate result resembles the predicted pattern.

Lesson plans and solved exercises

7.1 An introductory class

Prepare one basic encounter and a worksheet showing both periods. Allow roughly five minutes for resources and roles, ten for instructions and understanding, ten for choices, and fifteen for discussion, adapting to the course. Monitor without projecting signals or other groups' outcomes during play. Before revealing aggregates, request an individual account calculation and an explanation of why first-period earnings are deferred.

An exit sheet can contain four elements: a voter and authority account, information available when voting, the outcome of a two-to-one majority, and a sentence distinguishing error from intent. Assess accuracy and clarity. If students still confuse option and state, use a case where they differ and show its consequences. Do not add private types and Bayesian posteriors before resolving that basic distinction. A later session can introduce the independent control and ask what changes when the first choice does not affect who decides next. The lesson is successful when students can reconstruct the mechanism, even if every actual policy was correct.

7.2 An advanced two-class module

In the first class, compare an election with an independent mandate or transparency using different groups and the same horizon. Collect a hypothesis before play and retain it. In the second class, analyze group data and reconstruct a case where signal, state, and option differ. Then introduce automatic continuation and its no-office-reward version to solve the incentive numerically. This comparison provides a concrete prediction without requiring motives to be inferred from a ballot.

For an information module, use strong and weak advice with frequency tables instead. For selection, examine private types and explain why a posterior depends on a strategy. An advanced assignment can require an account table, one update, and an assessment of causal scope. Running every treatment is unnecessary. Choose one main question and an extension changing the relevant element. Accumulating institutions without time to formulate the comparison reduces analytical value. Preserve students' initial hypotheses so they can distinguish a genuine prediction from a retrospective explanation after examining the class results.

7.3 Exercise: accounts and replacement

Suppose A decides in both periods and is correct only in the first. Each voter receives 130 plus one hundred and accumulates 230. A receives 150 plus 140, accumulating 290; B receives one hundred twice, accumulating 200. The group sum is three times 230 plus 290 plus 200, or 1180. If

B instead made the second decision and also chose incorrectly, A would have 250 and B 240, with citizen accounts unchanged.

Replacement and quality are therefore different outcomes. Changing who decides does not automatically improve policy. As an extension, preserve the same accuracy but remove the office reward. Voters still receive 230, while two forty-unit rewards disappear from political accounts. The group sum falls by eighty by treatment definition. Explain why that decrease does not establish a loss in citizen welfare. A correct solution separates an external resource removed from the experiment from a change in the probability of making a correct policy choice.

7.4 Exercise: sixty-five-percent accuracy

With one hundred hypothetical cases, eighty state-zero and twenty state-one, a signal with accuracy 0.65 generates twenty-eight signals of one in state zero and thirteen in state one. After signal one, the posterior probability of state one is $13/41$, approximately 0.3171, so zero maximizes accuracy. For signal zero, there are fifty-two state-zero and seven state-one cases; the probability of zero is $52/59$, approximately 0.8814. Zero is again preferred.

This strategy has effective accuracy 0.80 because it always selects the initially more likely state. Literally following the signal would yield 0.65. Explain how a person can use a signal appropriately without changing the chosen option after either realization. The signal still contains information: it changes the posterior but does not cross the decision threshold under these payoffs. The central lesson is the distinction between a changed belief and a changed action. An unchanged option is not sufficient evidence that the person ignored information.

7.5 Exercise: the electoral-reward threshold

Under automatic continuation, zero has a retention advantage of 0.60 over one. In state one with perfect information, zero costs ten today. If the office reward is o , continuing is worth o plus ten, assuming terminal correctness. The expected difference is $0.60(o+10)-10$. Zero is preferred when o exceeds two-thirds, approximately 6.67 ECU. At the threshold there is material indifference.

For o equal to forty, the advantage is twenty; for o equal to zero, it is minus four. This connects both automatic treatments without memorizing a verbal rule. Change continuation probabilities and solve the threshold again. Equal probabilities mean the first option does not affect the expected continuation reward and correctness dominates. Imperfect terminal information would require another calculation of continuation value. Keep those assumptions explicit rather than treating future value as a universal constant. The algebra identifies a conditional incentive; it does not establish that participants calculated or perceived it correctly.

7.6 Exercise: posteriors and strategic consistency

Consider the illustrative strategy in which high types follow perfect information and low types always choose zero. After zero, high-type probability is four-ninths. Expected accuracy from retaining that authority is four-ninths times one plus five-ninths times 0.80, or eight-ninths. A new authority offers 0.90. After one, retention offers one. This gives an evaluation rule conditional on the stated strategy.

Return now to the initial authority's choice. If one guarantees continuation while zero leads to replacement, the additional future reward may outweigh the cost of an incorrect option. The original strategy cannot simply be treated as an established best response. Solving the exercise

means locating that inconsistency rather than declaring a nonexistent equilibrium. Ask which extra belief, preference, or institution would sustain a different prediction. This teaches how to complete a reputational argument: voters' inferences and the decisions generating them must be compatible. A correct posterior calculation is necessary but not sufficient for a strategic equilibrium.

Evidence and instructor preparation

8.1 Theoretical framework and classroom adaptation

Maskin and Tirole examine tension between accountability and approval-oriented choices. Alesina and Tabellini study criteria for assigning tasks to politicians or independent authorities. Besley offers a broader framework of incentives and selection. These readings motivate the family's questions; they do not establish that every deviation in this application is an equilibrium of their models. This guide's accounts and probabilities belong to the teaching protocol specified here.

The adaptation retains two periods and adds controls with comparable information and rewards. It uses a hundred-unit initial account to make resources explicit without creating a budget someone must finance. The type module changes accuracy rather than preferences for a particular policy. Automatic continuation is an announced function of the option and supports a strict prediction with perfect information. Institutional choice uses an initial majority rather than reproducing another experiment's elicitation method. State these choices when connecting classroom evidence to the literature, and distinguish an internally checked account from an externally validated behavioral finding.

([Maskin and Tirole, 2004](#); [Alesina and Tabellini, 2007](#); [Besley, 2007](#)).

8.2 Experimental evidence and its scope

Woon finds that voters create electoral incentives while officeholders do not exploit them as the model predicts; participants also prefer retaining institutional control. This related experimental finding separates the existence of an incentive from the behavior that actually occurs. It is not a result from the new application or a guaranteed prediction for this class.

The lesson can distinguish three levels: an exact accounting relationship, a best response under assumptions, and an observed empirical regularity. Program checks verify the first and the stated benchmarks, while classroom data describe local behavior. Neither substitutes for an empirical design supporting extrapolation to real governments. Politics outside the classroom includes parties, careers, media, and preferences simplified here. Ask students to identify one missing institution, explain which incentive it changes, and state the evidence needed to evaluate that extension. This exercise links a controlled mechanism to a broader question without claiming that the simplified environment measures every component of political competence or public trust.

([Woon, 2014](#)).

8.3 Operational problems and recovery

If someone is waiting, use the monitor to identify the pending choice before reloading screens. An inactive authority receives no policy form, and neither does a voter. Controls without an election contain no continuation ballot. In the second period, only the person selected by the rule decides. These differences belong to the flow and should not be corrected by submitting other people's decisions.

When an understanding question fails, use its explanation while preserving correct answers. A signal differing from the state can be valid below perfect accuracy, and state one can repeat by chance. Do not restart to generate an expected-looking sequence. After a disconnection, preserve the database and records and document the interruption's scope. Do not reinitialize a database containing decisions to refresh a server. An identified partial encounter is preferable to reconstructed choices without a clear record. Before combining downloads, confirm the session and encounter count. A missing value is an analytical fact to explain, not a reason to invent a completed choice.

8.4 Preparation and assessment criteria

Before class, confirm language, configuration, multiples of five, and encounter count. Calculate one correct and one incorrect account for each role, check state-disclosure timing, and determine whether a ballot exists. Decide which outcome will be displayed and the question motivating it; opening every report panel is unnecessary. Keep resources, probabilities, and sequence constant within the chosen comparison and record substantive exceptions.

Assess four abilities: reconstructing information, calculating accounts, reasoning about probabilities, and limiting a conclusion. A strong answer may find no distortion or no institutional difference, provided it documents the evidence and its scope. A weak answer may use sophisticated political vocabulary while confusing a total account with a marginal incentive or a signal with a state. Give feedback on the operation that failed. For a short assignment, a timeline, two accounts, and a paragraph suffice. An advanced assignment can add updating, group comparisons, and strategic-consistency checks. Keep assessment proportional to the course objective rather than rewarding a particular policy or electoral decision.

Private preferences and electoral pandering

9.1 An extension distinct from information accuracy

The earlier chapters describe five-person expert-information modes. Their types change signal accuracy and authorities receive a bonus for correct policies. This extension uses groups of three: one citizen and two candidates. Each active candidate knows the state with certainty, but their policy preferences can match or oppose the citizen's. Preferences and information are distinct dimensions. A policy contrary to citizen interests might be a candidate's favorite option, a distortion of that preference, or a suboptimal choice; the observation alone cannot choose between these interpretations.

The reference is section 13.3 of [Osborne \(2025\)](#). The state determining the citizen's best policy persists across the two periods of an encounter. The initial officeholder acts with complete information; the citizen observes the policy and chooses to retain or replace that candidate. The state and first-period payoff remain hidden before that choice. The subsequent officeholder chooses the terminal policy. Repeated encounters redraw types, bonuses, and states; this between-encounter renewal differs from redrawing the state between the two periods.

Attention

Candidates value the implemented policy even outside office. Removing a replaced candidate's policy utility would produce a different game. The continuation bonus goes only to the second-period officeholder. Citizen choice is human; an automatic rule favoring the initially more likely policy does not replace the electoral decision.

9.2 Roles, accounts, and sequence

Each person has a base account of 100 ECU in each period. There is no shared budget to divide or exhaust. The citizen adds 30 ECU when the option matches the state. A congruent candidate adds 30 for matching; a dissonant candidate adds 30 for differing. Both candidates receive the applicable policy bonus whether they hold office or not. Types are private, independent, and fixed within the encounter. An active candidate sees the state and their favorite option on the decision screen, without seeing the rival's type or bonus.

The reference has initial state-0 probability $p = 0.8$ and congruent-type probability $\pi = 0.5$. Each candidate privately receives a continuation bonus of 0 or 80 ECU with equal probability, independently of preference type and state. The initial candidate is selected randomly. The citizen

sees the first policy, reports two probabilities, and chooses who decides next. These reports are unscored and provide no additional information. The first-period account is not shown until the second period is complete.

What participants will see

A candidate's bonus-generating option depends on their private rule. For a congruent type it is the observed state; for a dissonant type it is the opposite option. Changing the officeholder changes the office bonus and who decides next, without removing the policy bonuses of people outside office.

Let s_t be the state, a_t the policy, and h_j candidate j 's type. Define $f_j(s) = s$ for a congruent type and $f_j(s) = 1 - s$ for a dissonant type. Payoffs are

$$U_V = 200 + 30 \sum_{t=1}^2 \mathbf{1}\{a_t = s_t\},$$

$$U_j = 200 + 30 \sum_{t=1}^2 \mathbf{1}\{a_t = f_j(s_t)\} + b_j \mathbf{1}\{j \text{ holds office in } 2\}.$$

There is no second-period discounting or terminal payoff tail. ECU means Experimental Currency Units; the activity does not establish a new monetary conversion rate.

9.3 A worked example of utility outside office

Suppose state 1 persists, candidate A is congruent with bonus 80, and B is dissonant with bonus zero. A holds office first and chooses 0. The citizen replaces A with B, who chooses 0 again. The citizen is wrong twice and receives $100 + 100 = 200$. A also receives no policy bonus and obtains 200, with no continuation bonus because A is outside office in period two. B receives $130 + 130 = 260$, despite being outside office in period one. B's office bonus is zero. The group total is 660 ECU.

Had the citizen retained A and had A chosen their favorite option 1 in period two, the citizen would receive 230. A would receive $100 + 130 + 80 = 310$. B would receive $130 + 100 = 230$ despite never holding office. This comparison explains why policy preferences matter outside office. B's account does not disappear when B is inactive or not selected. Ask students to reconstruct both histories from the formulas before discussing incentives.

9.4 A jointly verified strategic profile

In period two an account-maximizing candidate chooses their favorite option because there is no subsequent election within the encounter. Consider this reference profile: candidates with bonus 80 choose 0 in both states in period one; candidates with zero bonus choose their favorite option; the citizen retains after 0 and replaces after 1. A theoretical proposal must verify choices, beliefs, and continuation jointly.

The probability of observing 0 is 0.75. The joint probability of a congruent type and a first choice of 0 is 0.45, so

$$\Pr(C \mid a_1 = 0) = \frac{0.45}{0.75} = 0.6.$$

After 1 the congruent probability is $0.05/0.25 = 0.2$. A challenger is congruent with probability 0.5. Retaining after 0 and replacing after 1 therefore maximizes expected terminal accuracy. With

these parameters the posterior probability of state 0 remains 0.8 after either action: learning about a type need not mean learning about the state.

A congruent candidate with bonus 80 in state 1 obtains $100 + 130 + 80 = 310$ by choosing 0 and staying. Choosing their favorite option 1 and leaving yields $130 + 115 = 245$ in expectation. A zero-bonus candidate in that situation receives 230 by choosing 0 and staying, against 245 from choosing 1 and leaving, and therefore prefers their favorite option. Equivalent calculations are checked for every type, state, and bonus. The engine enumerates pure strategies, applies Bayes at the two reached histories, and checks best responses. Under the assumptions of Proposition 13.3 this is the reference model's profile. Participants are free to choose otherwise.

Theoretical foundation

Increasing an office bonus is insufficient to announce pandering. Candidate policies, citizen interpretations, and continuation decisions must be compatible. The computational enumeration covers pure assessments with optimal terminal behavior; by itself it does not search all mixed equilibria of every variant.

In this profile expected accuracy is 0.65 in period one and 0.575 in period two. Expected citizen payoff is $200 + 30(0.65 + 0.575) = 236.75$ ECU. Under random selection and favorite-option candidate behavior, the benchmark is $200 + 60\pi = 230$. An uninformed citizen always choosing 0 receives $200 + 60p = 248$. These figures require explicit strategies and parameters. They are not classroom results or instructions on which institution to choose. The example shows that improved terminal selection and lower total citizen welfare can coexist.

9.5 Nine modes and their comparisons

Mode	Difference from the reference
Private preferences and election	$p = 0.8$, $\pi = 0.5$, private bonuses 0/80, and persistent state. One encounter or ten with a fixed group.
Random continuation	Each candidate has a 50% chance to hold office next, independently of the first action.
Direct choice	The citizen chooses both policies without state information or intermediate feedback. Nobody earns an office bonus.
No continuation bonus	Both candidates have publicly known zero bonuses.
Uniform bonus 40	Changes office motivation and removes its private uncertainty.
Uniform bonus 80	A high bonus is known for both; do not automatically retain predictions from the heterogeneous case.
Less concentrated prior	$p = 0.6$, otherwise the reference rules.
More aligned preferences	$\pi = 0.8$, otherwise the reference rules.
Renewed state	An independent state draw in period two, explicitly separated from the persistent-state core.

Compare one specified change at a time. Relative to the private reference, uniform-bonus modes change both the bonus distribution and uncertainty about it; compare zero, forty, and eighty with one another to isolate the level. Under direct choice the other two members retain policy accounts but control no decisions. This rule keeps group payoffs transparent without assigning an office to someone who does not hold one.

9.6 Turning records into discussion

The report uses group-encounter as its unit and aggregates all active rounds, even when opened from technical round ten. It shows accuracy by period, citizen payoff, deviation from a candidate's favorite option, selection of a congruent type, and the specific case of a congruent candidate in state 1 choosing 0. That last rate divides by encounters actually satisfying those conditions rather than by the whole class. A histogram distinguishes citizen accounts of 200, 230, and 260 ECU. Evolution by encounter describes learning without treating the two within-encounter periods as independent rounds.

Reported beliefs and continuation are grouped by the first policy. The table displays denominators and does not treat the equilibrium posterior as an obligatory student response. Direct choice has neither candidate continuation nor belief reports about a candidate, so those measures have zero denominators. A useful discussion starts with the information sequence before comparing complete profiles.

Feedback script

First establish what each person knew when choosing. Then distinguish the citizen's best policy from the candidate's favorite policy. Finally compare the first policy, reported beliefs, and continuation. A single deviation neither identifies an intention to please voters nor establishes equilibrium.

This session's CSV has one row per participant and active encounter: thirty rows per group in ten encounters. It includes both periods' states and policies, private preferences, bonuses, beliefs, continuation, and decomposed accounts. Pending outcomes and unrevealed preferences remain empty. Zero is not an absent response. The native download has one row per participant with rounds in columns. Both downloads must correspond to the selected session code and remain under instructor access.

Checkpoint

Before starting verify whether the mode requires five-person or three-person groups. Before revealing check completed encounters and each comparison's denominator. At closure verify that the citizen saw no intermediate payoff and that both candidates received applicable policy utility even outside office.

9.7 Access and visual evidence

The family retains four rooms and its original 28 configurations. Twenty configurations are added: nine ten-encounter modes and a one-encounter mode per language, totaling 48. Each basic room retains three options; each extended room offers twenty-one. New keys use the extended room prefix followed by `pandering_...`; these are technical identifiers rather than participant-facing labels. The local preview is <http://localhost:8146/demo>. Upload and deployment are required before new modes become publicly available.

After the room prefix append `pandering_` and one of these identifiers: `election`, `lottery`, `direct`, `no_office`, `uniform_office`, `high_office`, `less_skew`, `more_aligned`, `renewed_state`, `one`.

oTree Demo Sessions Rooms Data Server Check Logout

Demo

Información experta · ES · Un encuentro
Información experta · ES · Diez encuentros, grupo fijo
Información experta · ES · Diez encuentros, grupos reasignados
Información experta · ES · Elección con resultado diferido
Información experta · ES · Continuidad por sorteo
Información experta · ES · Estado visible antes de votar
Información experta · ES · Precisión privada del gobernante
Información experta · ES · Precisión privada y estado visible
Información experta · ES · Continuidad ligada a la decisión
Información experta · ES · Continuidad ligada a la decisión sin premio de cargo
Información experta · ES · Asesoría pública de precisión 90%
Información experta · ES · Asesoría pública de precisión 70%
Información experta · ES · Mandato independiente de dos períodos
Información experta · ES · Elección de la regla de continuidad
Expert information · EN · One encounter
Expert information · EN · Ten encounters, fixed group
Expert information · EN · Ten encounters, reassigned groups
Expert information · EN · Election with deferred outcome
Expert information · EN · Random continuation
Expert information · EN · State visible before voting
Expert information · EN · Private policymaker accuracy
Expert information · EN · Private accuracy and visible state
Expert information · EN · Action-dependent continuation
Expert information · EN · Action-dependent continuation without office reward

Información experta, popularidad y reelección / Expert Information, Popularity and Reelection — BEER Lab

Seleccione una variante de este juego. Select a version of this game.

Figure 9.1: Demo detail: the instance contains only this family and offers 48 configurations.

oTree Demo Sessions Rooms Data Server Check Logout

Room: [EN] Expert information — Extended

Create a new session

Session Config

Preferences and continuation · EN · One encounter with private preferences ▾

Number of participants

Complete groups of 3 participants. Use a multiple of 3; minimum 3.

Create

[Configure session](#) ⚙

App sequence

expert_information_game (10 rounds) Private policy information, electoral evaluation, competence and institutional choice.

0 participants present

Start links

These URLs will stay constant for new sessions, even if the database is recreated.

Room-wide URL

Here is the room-wide URL anyone can use. Don't use this link when testing in multiple tabs on the same browser, because all tabs will be assigned to the same participant, using a cookie.

http://127.0.0.1:8146/room/expert_information_extended

Figure 9.2: The extended room adjusts its requirement to complete groups of three.

BEER Lab · Private preferences and election

Rules for the two periods

Your role: Citizen · Encounter 1/10

Resources and unit of account

Each person has a 100 ECU account per period, renewed in period two. This is not a shared budget. The citizen adds 30 ECU if the decision matches the state. Each candidate adds 30 ECU if the decision matches the option favored by their type, even outside office. ECU means Experimental Currency Units.

The additional bonus for holding office in period two can be 0 / 80 ECU, with equal probability for each listed value. Each candidate knows only their own value. There is no first-period office bonus.

The same state persists across both periods of an encounter.

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 citizen and two candidates, A and B. Candidate types and bonuses and the state are redrawn each encounter. The initial state-0 and type probabilities are public. The active candidate observes the state with certainty and chooses 0 or 1. The citizen observes the first decision and selects continuation without seeing the state, types, or payoffs. The subsequent officeholder chooses the second decision. Accounts settle after both periods.

Each person has a 100 ECU account per period, renewed in period two. This is not a shared budget. The citizen adds 30 ECU if the decision matches the state. Each candidate adds 30 ECU if the decision matches the option favored by their type, even outside office. ECU means Experimental Currency Units.

The additional bonus for holding office in period two can be 0 / 80 ECU, with equal probability for each listed value. Each candidate knows only their own value. There is no first-period office bonus.

Initial probability of state 0: 80% · Probability of the matching-bonus type: 50%

Each candidate has one of two types: one earns the bonus for matching the state and the other for differing from it. Types persist within an encounter and do not change information: both know the state with certainty when deciding. A and B types are drawn independently.

The same state persists across both periods of an encounter.

Citizen election

The state, types, bonuses, and all first-period payoffs remain hidden from the citizen until closure. The first decision alone does not reveal whether it was correct.

Accounts for both periods are shown and added at the end. There is no subsequent payoff after period two within this encounter.

[Continue](#)

Figure 9.3: Private-preference instructions: accounts, types, and revelation timing.

BEER Lab · Private preferences and election

First-period decision

Your role: Candidate A · Encounter 1/10

Period 1 · A

State you observe: **1**

Option activating your 30 ECU bonus: **1**

Choose 0 or 1

☒ 0

☐ 1

Your private bonus rule: 30 ECU bonus when the decision matches the state

Your private bonus for holding office in period two: 80 ECU

Continue

Figure 9.4: Private candidate information: state, favorite option, and own office bonus.

BEER Lab · Private preferences and election

Information and continuation

Your role: Citizen · Encounter 1/10

First active candidate: A · Observed first decision: 0

The state, types, bonuses, and all first-period payoffs remain hidden from the citizen until closure. The first decision alone does not reveal whether it was correct.

These estimates do not change your account or provide additional information. No correct answer is displayed.

After observing this decision, what probability do you assign to state 0? (0–100%)

What probability do you assign to the first candidate having the matching-state bonus? (0–100%)

Who will decide in period two?

☐ Keep A

☐ Replace with B

Continue

Figure 9.5: The citizen infers and chooses continuation without seeing the state or payoffs.

BEER Lab · Uninformed direct choice

First-period decision

Your role: Citizen · Encounter 1/10

Period 1 · Citizen

You do not observe the state; only the initial probabilities and your own decisions are available.
Initial probability of state 0: 80%

Choose 0 or 1

☒ 0

☐ 1

Continue

Figure 9.6: Direct citizen choice without state information.

BEER Lab · Private preferences and election

Encounter result

Your role: Candidate A · Encounter 1/10

Period	State you observe	Decision	Your account (ECU)
1	1	0	100
2	1	1	210

This encounter's total (ECU): **310**

Accounts for both periods are shown and added at the end. There is no subsequent payoff after period two within this encounter.

Your private bonus rule: 30 ECU bonus when the decision matches the state

Your private bonus for holding office in period two: 80 ECU

[Continue](#)

Figure 9.7: Closure shows both period accounts, including utility outside office.

Instructor report: preferences and continuation

Private preferences and election

Expected encounters

10

Complete

10

Pending

0
[Download this session \(CSV\)](#)

The instructor report shows aggregates; individual codes appear only in the private download.

[Hide results](#)

Citizen accuracy, period 1

0,0%

n=10

Citizen accuracy, period 2

40,0%

n=10

Mean citizen account

212,0 ECU

n=10

Deviation from preferred option

50,0%

n=10

Matching type selected

40,0%

n=10

Matching type, state 1, chooses 0

100,0%

n=5

Citizen welfare distribution

200 ECU



n=6

230 ECU



n=4

Figure 9.8: Private report detail with indicators and denominators.

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