



Instructor Guide to the Gift Exchange Games

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 discussion of the gift exchange game family developed for the Behavioral and Experimental Economics Research Lab (BEER Lab), Department of Economics, Tecnológico de Monterrey.

It is written for instructors with different levels of familiarity with experimental economics, labor economics, and contract theory.

Common procedures appear once; each variant section explains only what changes.

Author

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For the instructor

This guide corresponds to the English interface. A separate Spanish version is available. Project aggregate anonymous results only; never connect participant codes to identities.

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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.

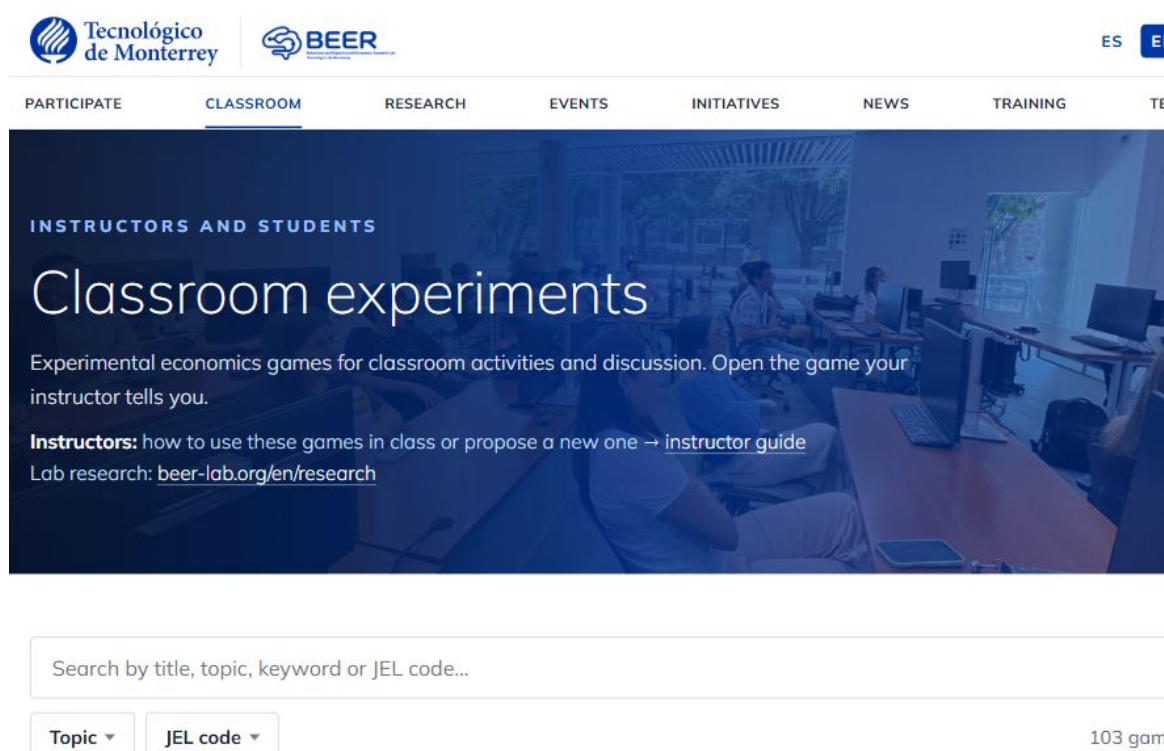


Figure 1.2: Current catalog: search by title, topic, or JEL code. Then locate this family's card and select language and edition. Captured on October 7, 2026.

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.

de regalos — una ronda
de regalos — 10 rondas, pareja fija
de regalos — 10 rondas, parejas aleatorias
je Game — one round
je Game — 10 rounds, fixed partner
je Game — 10 rounds, random partners
de regalos extendido — Versión básica — una ronda
ft Exchange — Baseline — one round
de regalos extendido — Versión básica — 10 rondas, pareja fija
ft Exchange — Baseline — 10 rounds, fixed partner
de regalos extendido — Versión básica — 10 rondas, parejas aleatorias
ft Exchange — Baseline — 10 rounds, random partners
de regalos extendido — Solicitud no vinculante de esfuerzo
ft Exchange — Nonbinding effort request
de regalos extendido — Comunicación estructurada
ft Exchange — Structured communication
de regalos extendido — Salario exógeno
ft Exchange — Exogenous wage
de regalos extendido — Salario mínimo
ft Exchange — Minimum wage
de regalos extendido — Bono discrecional
ft Exchange — Discretionary bonus
de regalos extendido — Castigo costoso — 10 rondas
ft Exchange — Costly punishment — 10 rounds
de regalos extendido — Productividad alta
ft Exchange — High productivity
de regalos extendido — Productividad baja
ft Exchange — Low productivity

Intercambio de regalos / Gift Exchange Game — BEER Lab

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

Figure 1.3: Demo contains only the configurations of this game family, in both languages and editions. Continuation 1/2.

BE	de regalos extendido — Versión básica — 10 rondas, parejas aleatorias
	ft Exchange — Baseline — 10 rounds, random partners
	de regalos extendido — Solicitud no vinculante de esfuerzo
	ft Exchange — Nonbinding effort request
	de regalos extendido — Comunicación estructurada
	ft Exchange — Structured communication
	de regalos extendido — Salario exógeno
	ft Exchange — Exogenous wage
	de regalos extendido — Salario mínimo
	ft Exchange — Minimum wage
	de regalos extendido — Bono discrecional
	ft Exchange — Discretionary bonus
	de regalos extendido — Castigo costoso — 10 rondas
	ft Exchange — Costly punishment — 10 rounds
	de regalos extendido — Productividad alta
	ft Exchange — High productivity
	de regalos extendido — Productividad baja
	ft Exchange — Low productivity
	de regalos extendido — Información social — 10 rondas
	ft Exchange — Social information — 10 rounds
	de regalos extendido — Resultados observables
	ft Exchange — Observable outcomes

Figure 1.4: Demo contains only the configurations of this game family, in both languages and editions. Continuation 2/2.

Rooms

Current rooms:

[ES] Juego de intercambio de regalos
[EN] Gift Exchange Game
[ES] Juego de intercambio de regalos extendido
[EN] Extended Gift Exchange Game

Figure 1.5: Rooms contains the four rooms for this family: basic and extended editions in Spanish and English.



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

Check the rules

One round
One random pair

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.

Answer correctly before continuing.

Use this example: a wage of **60 ECU**, effort of **5**, and effort cost of **6 ECU**.

With wage 60 and effort 5, what is the worker's payoff before any bonus or punishment?

Your answer: 85. The correct answer is 84. The wage is added to the worker's account and effort cost is deducted.

Figure 1.6: Current comprehension check: specific feedback explains the incorrect answer and preserves the other responses. Continuation 1/2.

With wage 60, effort 5, and productivity 20, what is the employer's payoff before any bonus or punishment?

Does the worker observe the wage before choosing effort?

- ☒ Yes
☐ No

How many rounds are in this session?

- ☒ 1 round
☐ 10 rounds

How are pairs formed?

- ☒ The interaction occurs only once.
☐ The same pair remains together for all 10 rounds.

With wage 60 and effort 5, what is the worker's payoff before any bonus or punishment?

85

Your answer: 85. The correct answer is 84. The wage is added to the worker's account and effort cost is deducted.

With wage 60, effort 5, and productivity 20, what is the employer's payoff before any bonus or punishment?

140

Does the worker observe the wage before choosing effort?

☒ Yes
☐ No

How many rounds are in this session?

☒ 1 round
☐ 10 rounds

How are pairs formed?

☒ The interaction occurs only once.
☐ The same pair remains together for all 10 rounds.
☐ A partner is randomly assigned in every round.

Check answers

Powered by [oTree](#)

Figure 1.7: Current comprehension check: specific feedback explains the incorrect answer and preserves the other responses. Continuation 2/2.

Room: [EN] Gift Exchange Game

Create a new session

Session Config

[EN] Gift Exchange Game — one round

Number of participants

Complete groups of 2 participants. Use a multiple of 2; minimum 2.

Create

[Configure session](#) 

App sequence

gift_exchange_game (10 rounds)

Extended gift exchange game with eleven pedagogical treatments.

Figure 1.8: 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 Sequence

1. Confirm an even number; select language, treatment, rounds, and matching.
2. Open beer-lab.org; follow CLASSROOM to the [teaching catalog](#).
3. Choose the Gift Exchange Game.
4. Use **Rooms** for class or **Demo** for practice.
5. Create the session, open **Monitor** and **Report**, and distribute the room link.
6. Reveal aggregate outcomes once all pairs finish.

Purpose	Study incomplete contracts, reciprocity, efficiency wages, intentions, and incentives.
Participants	An even number; anonymous employer–worker pairs.
Decision	Wage $w \in [0, 100]$, followed by observed-wage effort $e \in \{1, \dots, 10\}$.
Payoff	Employer: $100 + 20e - w$. Worker: $30 + w - c(e)$.
Duration	20–30 minutes for one round; 40–60 for ten rounds or an extension.
Students	https://giftexchange.beer-lab.org/room/gift_exchange_en
Instructor	https://giftexchange.beer-lab.org/demo
Report	Wage and effort histograms, wage–effort plot, payoffs, and round trend.

Experimental unit	Interactions in groups of 2 participants.
Basic edition	one round; 10 rounds, fixed partner; 10 rounds, random partners.
Extended edition	Baseline — one round; Nonbinding effort request; Structured communication; Exogenous wage; Minimum wage; Discretionary bonus; Costly punishment — 10 rounds; High productivity; Low productivity; Social information — 10 rounds; Observable outcomes.
Topics	reciprocity; incomplete contracts; efficiency wages; labor markets; behavioral economics.
JEL	C91; C92; D91; J31; J41.

Accessing the platform

2.1 Proposed routes

Basic, Spanish	https://giftexchange.beer-lab.org/room/gift_exchange_es
Basic, English	https://giftexchange.beer-lab.org/room/gift_exchange_en
Extended, Spanish	https://giftexchange.beer-lab.org/room/intercambio_regalos_extendido
Extended, English	https://giftexchange.beer-lab.org/room/gift_exchange_extended
Instructors	https://giftexchange.beer-lab.org/demo

For the instructor

These are the proposed production routes. For local testing, replace the domain with `http://localhost:8000`.

At the address for this game, **Demo** lists only the 32 gift exchange game configurations, and **Rooms** shows only its four rooms (basic and extended in Spanish and English). If another game appears, do not start the session; contact the laboratory coordinator.

2.2 Preparing and running a session

Before class, verify participant count, keep Monitor and Report open, test the room from a second computer, and prepare discussion questions. During play, do not tell participants which choice is advisable. If the screen says *Please wait*, oTree is synchronizing the pair; participants should not refresh.

- ☐ Even participant count, language, treatment, rounds, and matching confirmed.
- ☐ Computers, internet, browser, projector, and room link tested.
- ☐ Pedagogical status of ECU explained.
- ☐ Monitor and Report open; predictions recorded before reveal.

The basic game

3.1 Rules

The employer chooses a wage. The worker observes it and then chooses effort. Effort costs are:

e	1	2	3	4	5	6	7	8	9	10
$c(e)$	0	1	2	4	6	9	12	16	20	25

$$\pi_E = 100 + 20e - w, \quad \pi_W = 30 + w - c(e).$$

The wage transfers ECU. Effort creates surplus: $\pi_E + \pi_W = 130 + 20e - c(e)$.

3.2 Participant screens

The comprehension check uses wage 60 and effort 5: the employer receives 140 ECU and the worker 84 ECU. Blue identifies the employer; orange identifies the worker. The same coding appears in outcomes and the instructor report. The final page explicitly states that the session is complete and asks participants to wait for the class discussion.



Welcome to the BEER Lab

The **Behavioral and Experimental Economics Research Lab** of the Department of Economics at Tecnológico de Monterrey is a space for learning about economic decision making through controlled activities.

During this session you will make individual decisions. Aggregate results will be used for discussion and learning.

Laboratory rules

- Remain quiet and do not talk to other participants.
- Do not look at other screens and put away your phone.
- Read each screen carefully; do not close or refresh the page.
- If you have a question, raise your hand.

Your decisions must be personal and independent.

☐ I have read and understood the laboratory rules.

Continue to the game instructions

Con tecnología de [oTree](#)

Figure 3.1: Entry and instructions. Welcome and laboratory rules.



Wages, effort, and reciprocity

Resources and unit of account

Starting accounts per round: employer 100 ECU; worker 30 ECU. Wages, production and effort costs change these accounts.

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

This session does not convert ECU into real money.

Gift Exchange Game · BEER Lab

One round

One random pair

Each pair has an employer and a worker. Decisions take place in two stages.

1 · Employer decision

The employer chooses an integer wage from 0 to 100 ECU.



2 · Worker decision

After observing the wage, the worker chooses effort from 1 to 10. Higher effort produces more for the employer and costs more to the worker.

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

Continuation 1/2.

Employer payoff: $100 + 20 \times \text{effort} - \text{wage}$.

Worker payoff: $30 + \text{wage} - \text{cost}(\text{effort})$.

Cost of effort

Effort	1	2	3	4	5	6	7	8	9	10
Cost	0	1	2	4	6	9	12	16	20	25

Example

With a wage of 60 and effort of 5, the employer receives 140 ECU and the worker receives 84 ECU.

Matching: One random pair. Identities are never shown and there is no communication.

ECU describe outcomes and have no monetary value in this version.

Each pair has an employer and a worker. Decisions take place in two stages.

1 • Employer decision

The employer chooses an integer wage from 0 to 100 ECU.

→

2 • Worker decision

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Employer payoff: $100 + 20 \times \text{effort} - \text{wage}$.

Worker payoff: $30 + \text{wage} - \text{cost}(\text{effort})$.

Cost of effort

Effort	1	2	3	4	5	6	7	8	9	10
Cost	0	1	2	4	6	9	12	16	20	25

Example

With a wage of 60 and effort of 5, the employer receives 140 ECU and the worker receives 84 ECU.

Matching: One random pair. Identities are never shown and there is no communication.

ECU describe outcomes and have no monetary value in this version.

Continue

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Figure 3.3: Current basic-edition instructions, with initial resources and experimental units.
Continuation 2/2.

Your role

Gift Exchange Game

One round
One random pair

During this session you are the

Employer

You will choose the wage. The other person observes it before choosing effort.

Start

Con tecnología de [oTree](#)

Figure 3.4: Anonymous role assignment.

Round 1 of 1

Employer decision

One round

One random pair

You are the employer

Choose the wage

A higher wage directly lowers your payoff, but it may influence the other person's effort.

What wage do you want to offer the worker?

Confirm wage

Con tecnología de [oTree](#)

Figure 3.5: Sequential decisions. Employer wage decision.

Round 1 of 1

Worker decision

One round
One random pair

The employer chose a wage of

60 ECU

Higher effort increases the employer's payoff and increases your cost.

Effort	1	2	3	4	5	6	7	8	9	10
Cost	0	1	2	4	6	9	12	16	20	25

What effort level do you want to choose?

☐

1

☐

2

☐

3

☐

4

☐

5

☐

6

☐

7

☐

8

☐

9

☐

10

Confirm effort

Con tecnología de [oTree](#)

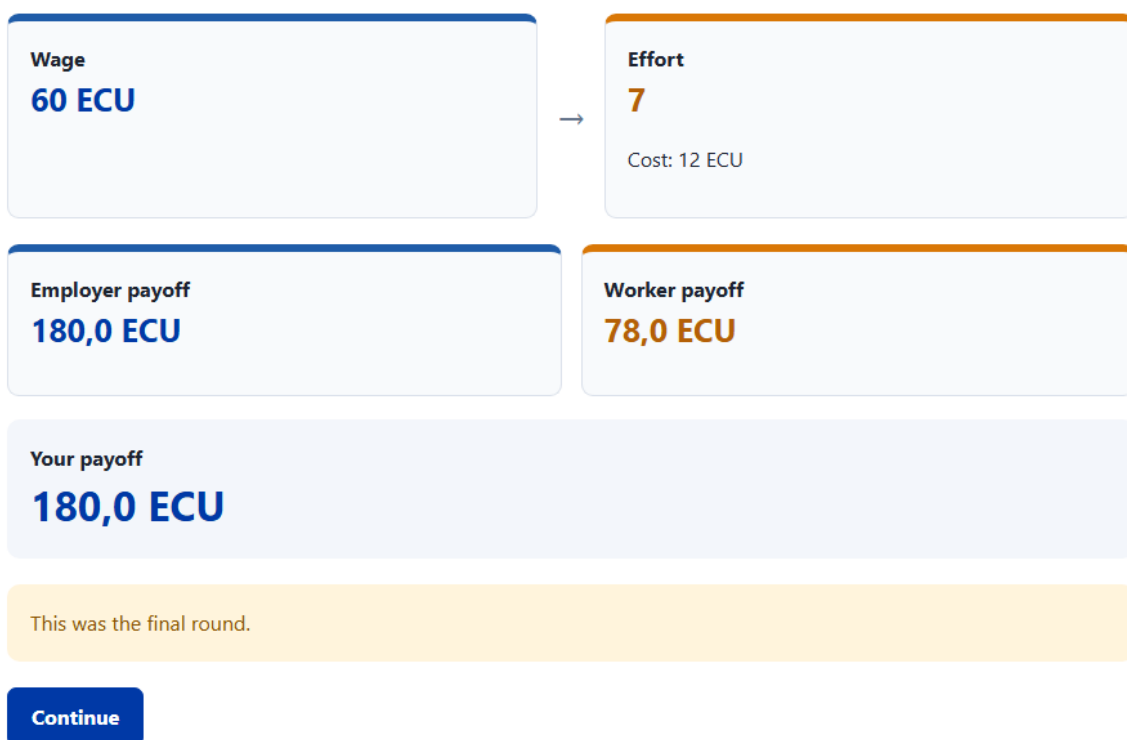
Figure 3.6: Worker effort after observing the wage.

Result for round 1

Both decisions have been recorded.

One round

Employer



Con tecnología de [oTree](#)

Figure 3.7: Pair outcome and own payoff.

Instructor report

Results remain hidden while pairs are pending. When the count reaches zero, the instructor clicks **Reveal round results**.

The screenshot shows the oTree Instructor Report interface for a session titled "[EN] Gift Exchange Game — one round: session 'up4bk2us' (demo)". The interface includes a navigation bar with links for New, Links, Monitor, Data, Payments, Report, and Description. Below this, there are input fields for "App Name" (set to "gift_exchange_game (10 rounds)") and "Round Number" (set to "1"), with a "Go" button. The main section displays the game status: "Gift Exchange Game · One round" and "Round 1 of 1 · One random pair". A table shows the current state: 4 Participants, 2 Pairs, 2 Completed, and 0 Pending. A "Reveal round results" button is visible at the bottom.

Participants	Pairs	Completed	Pending
4	2	2	0

Figure 4.1: Results remain hidden until all pairs complete the round.

4.1 Reading the visualizations

1. Examine full distributions; a mean alone hides heterogeneity.
2. Compare zero and high wages and the share choosing minimum effort.
3. Use the wage–effort scatterplot for the central descriptive relationship.
4. Compare payoffs by role and efficiency generated by effort.
5. With ten rounds, examine trends before attributing change to learning.

Feedback script

Ask for the self-interest prediction first. Reveal wages, effort, and then the relationship between them. Finally ask whether the pattern reflects reciprocity, distributional concern, or both, and which treatment could distinguish them.

4.2 Theory and evidence

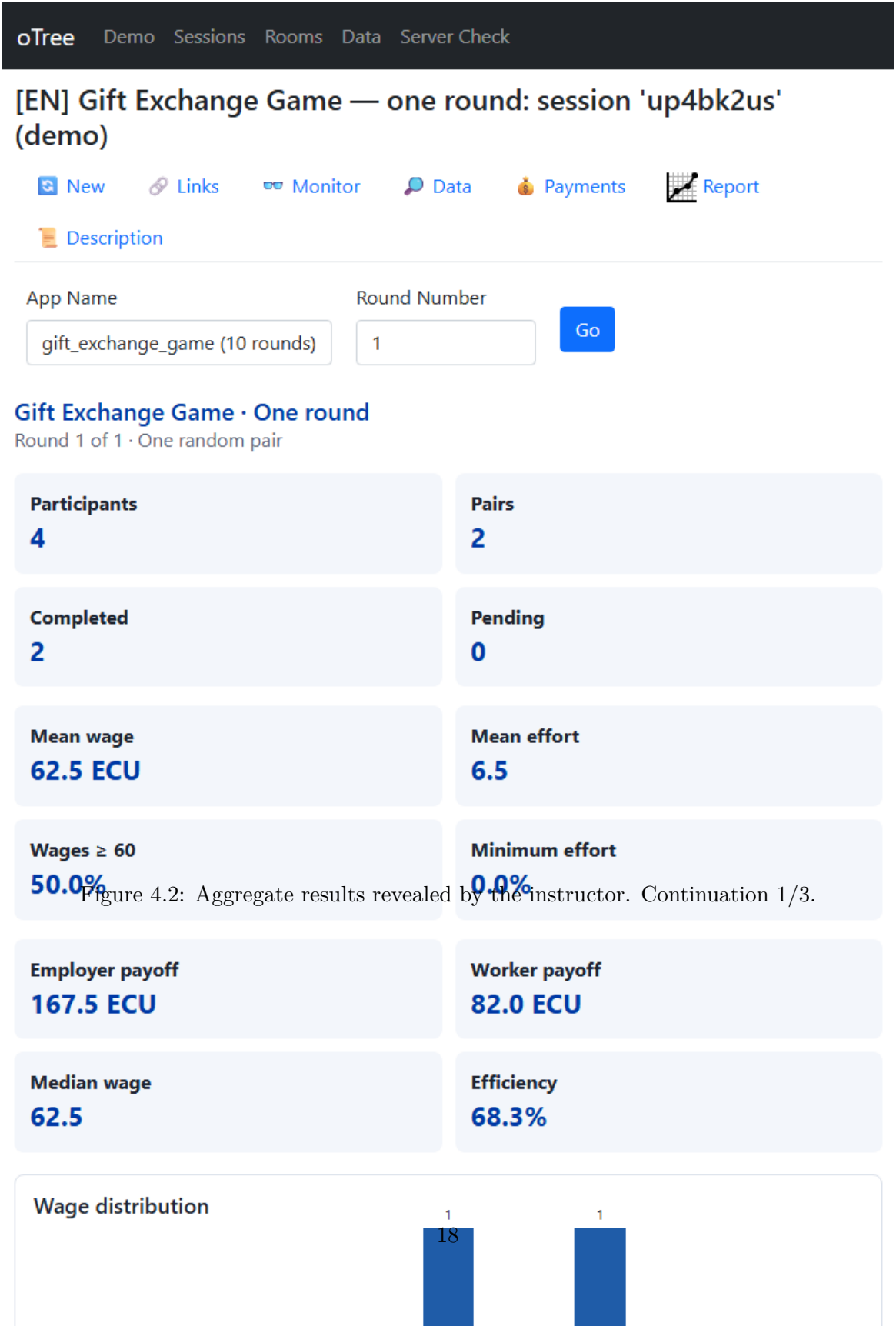


Figure 4.2: Aggregate results revealed by the instructor. Continuation 1/3.

4

2

Completed

2

Pending

0

Mean wage

62.5 ECU

Mean effort

6.5

Wages ≥ 60

50.0%

Minimum effort

0.0%

Employer payoff

167.5 ECU

Worker payoff

82.0 ECU

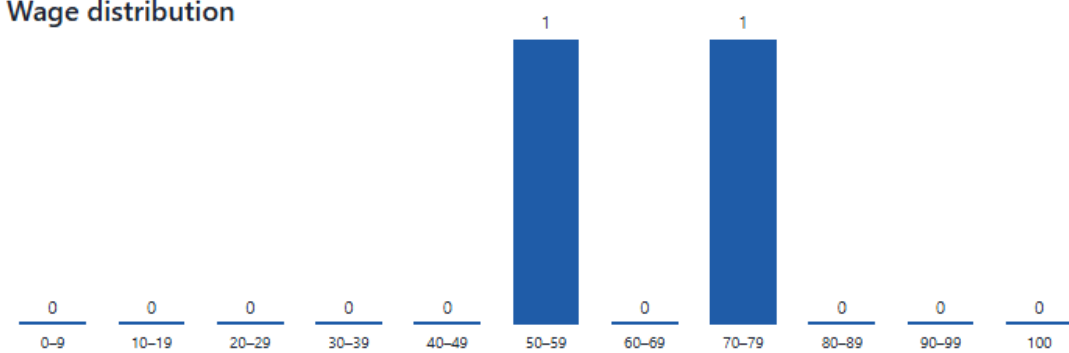
Median wage

62.5

Efficiency

68.3%

Wage distribution



Effort distribution

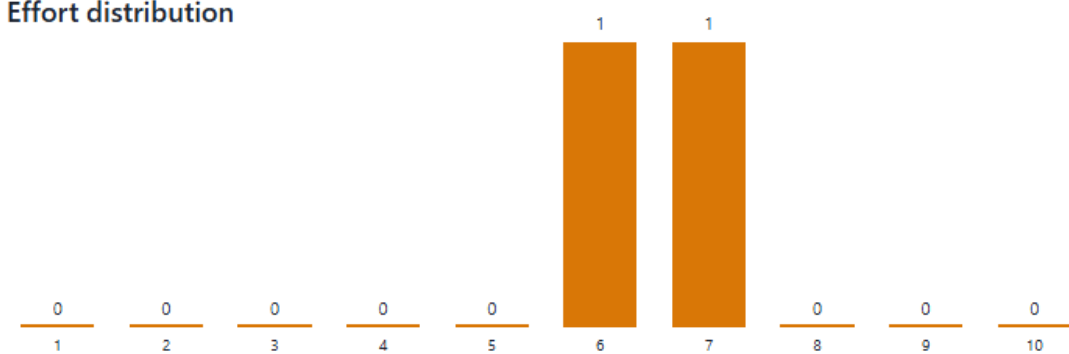
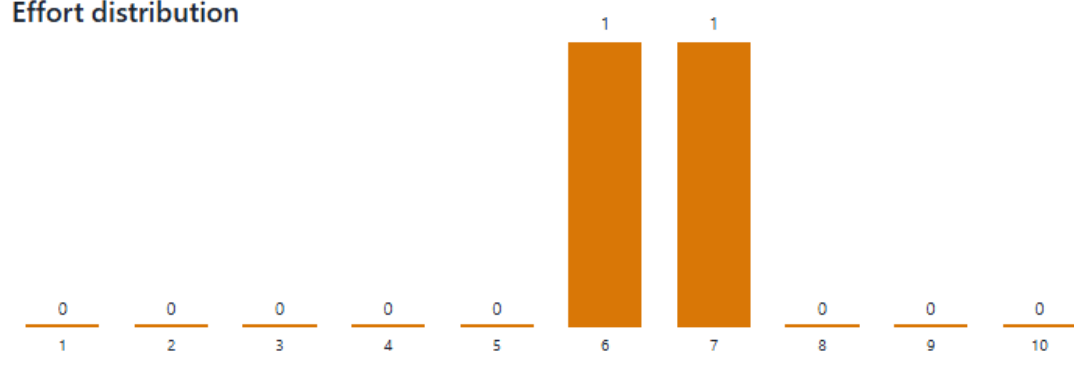


Figure 4.3: Aggregate results revealed by the instructor. Continuation 2/3.

Wage-effort relationship



Effort distribution



Wage-effort relationship



Evolution by round

Round 1



Theoretical benchmark: self-interest predicts wage 0 and effort 1 in a one-shot interaction. A positive wage-effort relationship is consistent with positive reciprocity.

Figure 4.4: Aggregate results revealed by the instructor. Continuation 3/3.

4.3 Standard prediction and efficiency

Theoretical foundation

In a one-shot interaction, a payoff-maximizing worker chooses $e = 1$ because the wage has already been fixed. Anticipating this, a payoff-maximizing employer chooses $w = 0$. Backward induction gives $(w, e) = (0, 1)$.

The corresponding payoffs are 120 and 30 ECU. Total surplus is maximized at $e = 10$ and reaches 305 ECU. The design therefore separates the self-interest prediction from efficiency.

4.4 Reciprocity, distributions, and intentions

Fehr et al. (1993) document wages above the competitive minimum and a positive wage–effort relationship. Fehr et al. (1997) study reciprocity as an enforcement mechanism in incomplete contracts. Yet a high wage also changes the income distribution. Charness (2004) compares chosen and exogenous wages and finds a role for both consequences and attributed intentions.

With reciprocity, higher wages can raise effort and production. Profitability depends on whether additional output covers the wage. Field evidence shows real responses but also that an initial effect can fade (Gneezy and List, 2006). The form of the gift matters (Kube et al., 2012), and recent work combines workplace experiments with models of social preferences (DellaVigna et al., 2022).

Attention

Class results are descriptive. Without random assignment, balance, and adequate sample size, a difference between sessions does not identify a causal effect.

4.5 Basic modes

4.6 One round

`gift_exchange_en_1_round` is suited to backward induction and a first measure of reciprocity.

4.7 Ten rounds, fixed partner

`gift_exchange_en_10_fixed_partner` permits direct reciprocity, bilateral reputation, and adaptation.

4.8 Ten rounds, random partners

`gift_exchange_en_10_random_partners` keeps roles fixed and minimizes partner repetition, reducing bilateral reputation.

Extended variants

5.1 Effort request

The employer adds a nonbinding requested effort. Compare requested and chosen effort. [Hannan et al. \(2002\)](#) motivates discussion of expectation coordination and perceived obligation.

5.2 Structured communication

The employer selects one of three predefined messages. Free text and identifying information are excluded.

5.3 Exogenous wage

The system assigns 20 or 80 ECU, balanced across pairs. This treatment partly separates distributions from intentions ([Charness, 2004](#)).

5.4 Minimum wage

The employer chooses from 40 to 100 ECU. Discuss reference points, incidence, and possible motivational crowding ([Falk et al., 2010](#)).

5.5 Discretionary bonus

After observing effort, the employer may transfer up to 20 ECU. The bonus is not enforceable; self-interest predicts zero. Voluntary bonus contracts may nevertheless sustain performance ([Fehr et al., 2007](#)).

5.6 Costly punishment

The employer may spend up to 10 ECU; each ECU reduces the worker payoff by 3 ECU. This mode lasts ten rounds. A round payoff can be negative.

Round 1 of 1

Employer decision

Structured communication

One random pair

You are the employer

Choose the wage

The wage may range from 0 to 100 ECU.

Wage

Message

- ☐ I am offering a wage that I consider fair.
- ☐ High effort would benefit our pair.
- ☐ Choose the effort you consider appropriate.

Confirm decision

Con tecnología de [oTree](#)

Figure 5.1: Structured communication. Wage and employer message.

Round 1 of 1

Worker decision

Structured communication

One random pair

Observed wage

70 ECU

Choose effort from 1 to 10.

Employer message: "I am offering a wage that I consider fair."

Effort	1	2	3	4	5	6	7	8	9	10
Cost	0	1	2	4	6	9	12	16	20	25

Effort

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9
- ☐ 10

Confirm effort

Con tecnología de [oTree](#)

Figure 5.2: Message observed before effort.

5.7 High and low productivity

Each effort unit produces 30 or 12 ECU. Compare wages, effort, profits, and surplus.

5.8 Social information

From round 2, participants see the previous class mean wage and effort.

5.9 Observable outcomes

Participants see an anonymous pair table without names or participant codes.

Variant	Configuration suffix	Teaching question
Request	<code>effort_request</code>	Does it coordinate expectations?
Communication	<code>communication</code>	Do messages predict effort?
Exogenous	<code>exogenous_wage</code>	Do intentions matter?
Minimum	<code>minimum_wage</code>	Does effort change too?
Bonus	<code>discretionary_bonus</code>	Is a relational promise honored?
Punishment	<code>costly_punishment</code>	Does it sustain effort, and at what cost?
Productivity	<code>high/low_productivity</code>	Does the contract respond to surplus?
Information	<code>social_information</code>	Do choices converge?
Observability	<code>observable_outcomes</code>	Does anonymous exposure matter?

5.10 A 50-minute class plan

0–5	Entry, rules, and access.
5–12	Instructions and comprehension.
12–20	One round without discussion.
20–25	Self-interest and efficiency predictions.
25–38	Reveal and distribution reading.
38–47	Alternative theories and evidence.
47–50	Closure and application to labor contracts.

Useful questions: What maximizes monetary payoff? Did effort rise with wage? Was a high wage profitable? What distinguishes reciprocity from inequality aversion? What changes with history, messages, bonuses, or punishment?

5.11 Troubleshooting

Please wait	The partner has not finished. Check Monitor and do not refresh.
Participant does not exist	The link is old or the database changed. Re-enter through the active room.
Game missing	Restart oTree after updating code and verify <code>/demo</code> .
Results hidden	At least one pair is pending; this is deliberate.
Odd number	Adjust capacity before creating the session.
Wrong language	Use the corresponding room and configuration.

Expanded teaching manual for nonspecialist instructors

This part brings together what an instructor needs to turn Gift exchange into a learning experience. It complements the operational material above. It can be read before the first session and reused as a script during the discussion of results. The central question is whether a generous wage induces reciprocal effort even when the contract cannot enforce it. The guide always separates four levels: rules, benchmark prediction, observed behavior, and interpretation. Moving directly from a bar in a chart to a psychological explanation confuses those levels.

6.1 Conceptual map before opening the session

6.1.1 Unit of analysis

The relevant unit is the employer-worker relationship in each round. One data row is not always one independent person: the same person may decide repeatedly, and interacting participants share information, payoffs, or history. The instructor should therefore state what enters the numerator, what enters the denominator, and whether observations are people, decisions, pairs, groups, or rounds. This prevents thirty repeated decisions from being presented as thirty independent participants.

The task is to the employer sets a wage and the worker then chooses costly effort. Before presenting theory, ask students to restate the rule and identify what information is available when they decide. A correct calculation does not guarantee understanding of the strategic or behavioral structure. Check available actions, information, payoffs, order, and feedback timing separately.

6.1.2 Benchmark prediction

The starting point is: by backward induction, a purely material worker chooses minimum effort; anticipating this, the employer offers the minimum wage compatible with participation. The benchmark is a disciplined comparison, not a moral statement about what a person ought to do. First write the assumptions that support it, then derive the action or pattern, and only then compare it with the class. If information, repetition, incentives, matching, or the reference point changes, derive the prediction again instead of carrying it over automatically.

Keep equilibrium, efficiency, and fairness separate. An action can be a best response and generate a poor joint outcome; another action can raise surplus and remain vulnerable to unilateral deviation. Likewise, an equal outcome need not be efficient, and an efficient distribution does not reveal the process that produced it. Asking the class to label each statement as positive, normative, or

strategic reduces confusion.

6.1.3 Alternative mechanisms

The literature and treatments permit discussion of positive reciprocity, intentions, inequality aversion, wage norms, reputation, and learning. These mechanisms are not interchangeable labels. Two can predict the same baseline action and separate only when a treatment changes. The informative comparison therefore asks not only how much behavior occurred but also what experimental change should increase, reduce, or leave the pattern unchanged if one mechanism matters.

Organize discussion in three columns. Write the observed fact in the first, such as a share, median, or trajectory. List compatible mechanisms in the second. Record the additional evidence needed to distinguish them in the third. The third column is essential because a classroom session rarely identifies a stable preference or causal relationship by itself.

6.2 Worked example and explanation

Suppose the employer's revenue rises by 20 ECU per unit of effort and the worker's cost increases with effort. After a wage of 20, minimum effort maximizes the worker's material payoff. If wages of 60 receive higher effort, the positive slope is consistent with reciprocity. Without randomized wages, it also reflects employer selection and expectations.

Solve the example in six steps. First list actions and possible states. Second calculate payoffs or consequences without interpreting motives. Third derive the theoretical benchmark under its assumptions. Fourth identify the minimum observation needed to evaluate that benchmark. Fifth compare treatments while stating what is held constant and what changes. Sixth formulate a limited conclusion: "the pattern is consistent with" is more accurate than "the experiment proves" when rival explanations remain.

Then change one parameter and ask for a new prediction before calculating. This pause turns the example into a reasoning tool. It also reveals whether students memorized an answer or understood the mechanism. If answers diverge, ask each group to identify the assumption producing the difference.

6.3 Reading the instructor report

The central measures are mean wage; mean effort; wage-effort relationship; profits by role; frequency of minimum wages and effort. Write the denominator next to every indicator. A rate can divide by eligible participants, completed decisions, formed pairs, groups, or rounds; these alternatives are not equivalent. If records are incomplete, show how many were excluded and why.

Use this reading order:

1. Verify participants, groups, and completed decisions. Do not interpret percentages before checking coverage.
2. Inspect the full distribution. A mean can hide two groups with opposing responses or a concentration at focal values.
3. Compare the median, range, and theoretically relevant categories. Explain whether the graph counts people or decisions.

4. Inspect time paths only when rounds are comparable. Changes in matching or treatment must be marked.
5. Compare treatments with absolute differences and denominators, not merely with bars of different heights.
6. Select one anonymous case or sequence connecting rules and the aggregate. Never use it to identify or ridicule a student.

A visible difference in a small class is descriptive evidence from that session. Do not call it a causal effect without appropriate assignment, adequate size, and a comparison defined before seeing the data. Across classes, composition, time, and prior experience may change together. The pedagogical value lies in stating a prediction, confronting it with evidence, and asking what design would teach us more.

6.4 Step-by-step debrief script

Begin without revealing results. Ask for the benchmark prediction and which assumption students find most demanding. Record two quantitative class predictions. Next reveal the observation count and distribution, initially withholding the mean if it would distract from heterogeneity. Ask students to describe the chart without explaining causes.

In a second stage, show aggregate measures and ask: which observation contradicts the simplest prediction, which remains compatible with it, and what heterogeneity disappears in the average? Accept multiple explanations, but require each to yield a testable prediction. Introduce the variants: one or ten rounds; fixed or reassigned partner; chosen or exogenous wage; communication; social information; reputation. For each variant, identify the single changed element, predicted direction, and report measure to inspect.

Close by connecting the laboratory to labor markets, incomplete contracts, efficiency wages, and team management. Point out which elements of the real setting are absent: institutions, selection, repetition, long-run consequences, or rich information. The analogy is useful when it isolates a mechanism; it becomes misleading if the class assumes that the laboratory reproduces the full context.

A verbal sequence that works well is: “first describe,” “now derive,” “then interpret,” and “finally ask what evidence is missing.” This discipline allows a nonspecialist instructor to lead a rigorous discussion without treating every departure as a bias or every match as definitive confirmation.

6.5 Comparable class plans

6.5.1 A 50-minute class

Use one mode. Spend five minutes on rules and comprehension, five on private predictions, ten on the activity, five collecting predictions about the aggregate, fifteen revealing the report in layers, and ten connecting the result to theory. The goal is not to cover every variant but to ensure that every student can explain whether a generous wage induces reciprocal effort even when the contract cannot enforce it. End with one written sentence separating outcome from mechanism.

6.5.2 An 80-minute class

Run the baseline and one variant from one or ten rounds; fixed or reassigned partner; chosen or exogenous wage; communication; social information; reputation. Allow ten minutes for instructions, fifteen for each treatment, twenty for comparing distributions, and fifteen for theory and applications. Before the second treatment, request a directional prediction. If the result points the other way, do not dismiss it: inspect comprehension, composition, denominators, and descriptive power.

6.5.3 A 110-minute class

Combine experience, derivation, and design. After two treatments, give small groups a rival explanation and ask them to propose a third condition that distinguishes it. Each group must define the manipulated variable, outcome, unit of analysis, and prediction. Close by comparing proposals with existing variants and with labor markets, incomplete contracts, efficiency wages, and team management. This stage turns the student from participant into experimental designer.

6.6 Exercises with answer guidance

6.6.1 1. Reconstructing the prediction

Question. State the benchmark and three indispensable assumptions. What observation would be a departure?

Guidance. Begin from by backward induction, a purely material worker chooses minimum effort; anticipating this, the employer offers the minimum wage compatible with participation. Mention incentives, information, and horizon, and define the observation at the correct level. A departure is inconsistent with the full assumption set; it does not automatically identify its cause.

6.6.2 2. Auditing a percentage

Question. The report displays 60 percent. Propose two possible denominators and explain how interpretation changes.

Guidance. It could be 60 percent of eligible people or of completed decisions. If some people did not decide, the rates differ. A complete answer names numerator, denominator, exclusions, and aggregation level.

6.6.3 3. Reading heterogeneity

Question. Two classes have the same mean, but one is concentrated around it and the other has two modes. What does the instructor learn?

Guidance. The mean does not exhaust the distribution. The second class may combine different strategies or interpretations. Compare the median, dispersion, and categories linked to mean wage; mean effort; wage-effort relationship; profits by role; frequency of minimum wages and effort before explaining mechanisms.

6.6.4 4. Separating explanations

Question. Select two mechanisms from this list: positive reciprocity, intentions, inequality aversion, wage norms, reputation, and learning. Design a contrast that produces different predictions.

Guidance. Change one relevant element, hold others constant, and state each directional prediction. A variant from one or ten rounds; fixed or reassigned partner; chosen or exogenous wage; communication; social information; reputation may help, but the justification must connect manipulation and report measure.

6.6.5 5. Interpreting no difference

Question. Two treatments produce similar means. Does the manipulation not matter?

Guidance. Not necessarily. There may be weak comprehension, a small sample, offsetting responses, manipulation failure, or effects in tails and dispersion. Inspect descriptive uncertainty and the full distribution before concluding.

6.6.6 6. Transferring carefully

Question. Relate the activity to labor markets, incomplete contracts, efficiency wages, and team management and identify two contextual differences.

Guidance. A convincing application states the common mechanism and the limits. Real consequences, selection, experience, institutions, and repetition can change behavior. The conclusion should be an informed hypothesis rather than a universal prediction.

6.7 Data, inference, and learning assessment

6.7.1 A minimum results table

Prepare a table with treatment, eligible participants, completed decisions, independent unit, primary measure, median, and dispersion. For Gift exchange, the primary measure should come from mean wage; mean effort; wage-effort relationship; profits by role; frequency of minimum wages and effort. Add a note describing exclusions. With rounds, report people and groups as well as decisions; with roles, present each role separately.

6.7.2 Comparing without overstatement

An internal comparison requires assigned treatments under the same protocol. A comparison across classes can generate questions but may mix cohort, time, instructor, and experience. Report absolute differences and, when accessible, an uncertainty interval. Do not interpret nonsignificance as equality or statistical significance as automatic economic importance.

Do not select the metric after seeing which one produces the most attractive story. Define a primary measure in advance and use the others diagnostically. With many variants, some differences arise by chance. In a teaching session, transparency about this issue is more valuable than simulating research precision.

6.7.3 Assessing understanding

Use three products: a prior prediction, a posterior explanation, and a design proposal. The prediction assesses whether the student derives the benchmark; the explanation assesses whether evidence and mechanism are separated; the design shows understanding of identification. A short rubric can award one point each for correct rules, prediction, denominator, limited interpretation, and a relevant treatment.

6.7.4 Closing protocol

Before ending, confirm that nobody remains on a wait page, close the session, preserve the export, and record treatment, date, and incidents. Do not project individual codes. Review open text before displaying it. Documenting parameter changes allows the next instructor to compare sessions responsibly.

6.8 Operational glossary and contingencies

Theoretical benchmark: a prediction derived from an explicit assumption set. **Treatment:** a condition changing one dimension of the environment. **Unit of analysis:** the object treated as independent for description or comparison. **Denominator:** eligible observations used to calculate a rate. **Heterogeneity:** differences across people, groups, or rounds hidden by a mean. **Mechanism:** a process connecting a condition to behavior. **ECU:** experimental currency unit.

If someone does not advance, first check whether the page is waiting for another person and then inspect the monitor; do not refresh repeatedly. If a link says that the user does not exist, create a new session. If records are missing, report coverage rather than filling values. If the aggregate differs from expectation, preserve the session: the discrepancy is pedagogical material for revisiting assumptions, comprehension, and design.

The instructor's final checklist should confirm rules, treatment, expected attendance, routes, hidden report, reveal plan, denominators, closing question, and export. In Gift exchange, a strong session ends when students can explain whether a generous wage induces reciprocal effort even when the contract cannot enforce it with a prediction, one piece of evidence, and one limitation.

6.9 Frequently asked questions and model answers

Should theory be explained before play? In a first session, collect predictions without revealing the full solution. Explain rules, payoffs, and information. Then derive by backward induction, a purely material worker chooses minimum effort; anticipating this, the employer offers the minimum wage compatible with participation. In a second session, reverse the order and assess whether theory improves prediction or only changes vocabulary.

Is there a correct answer? Separate a normative or equilibrium solution from a behavioral prediction. Theory supplies a conditional benchmark. The laboratory reveals what occurs and why a reasonable person may choose differently.

Does a departure prove irrationality? No. It may reflect omitted preferences, beliefs, error, weak comprehension, or a different institution. Check controls and incentives. Then treat positive reciprocity, intentions, inequality aversion, wage norms, reputation, and learning as hypotheses requiring further comparisons.

Why show the distribution? The same mean can arise from moderate consensus or two opposing groups. A distribution reveals focal values, boundaries, and heterogeneity. In Gift exchange, connect those shapes to mean wage; mean effort; wage-effort relationship; profits by role; frequency of minimum wages and effort.

How many observations are enough? There is no universal threshold for debriefing. A small class is useful when described cautiously. Treatment comparisons require several independent units, clear assignment, and common protocols. Repeated decisions do not create new participants.

Can sessions be pooled? Yes, if parameters and definitions remain fixed. Retain session

identifiers and inspect each cohort first. If instructions, composition, or incentives change, document the heterogeneity.

What if results contradict the literature? Check rules, treatment, comprehension, exclusions, and calculation. If no error exists, preserve the result. A class need not reproduce a published estimate. Ask what design would distinguish chance, composition, and mechanism.

How can embarrassment be avoided? Project aggregates and anonymous sequences. Avoid personal labels. Describe actions and consequences. The laboratory studies decisions under specific rules; it does not diagnose traits.

Should the decision be graded? Do not grade agreement with a prediction. Assess understanding: derive the benchmark, calculate a measure, explain a limitation, and design a comparison. Experimental incentives and academic assessment serve different purposes.

How should a variant be chosen? Begin with the mechanism to separate. Select from one or ten rounds; fixed or reassigned partner; chosen or exogenous wage; communication; social information; reputation, state a direction and measure, and hold other elements constant. Do not run more conditions than can be analyzed.

What conclusion is appropriate? Use three sentences: what was observed, which mechanism it is consistent with, and what evidence is missing. The connection to labor markets, incomplete contracts, efficiency wages, and team management should preserve those limits.

What should students remember? They should reconstruct the central tension, explain the benchmark, read the main denominator, and propose an institution that could change the outcome.

6.10 Diagnostic cases for interpretation practice

6.10.1 Agreement with the benchmark

The distribution is concentrated near the prediction derived from by backward induction, a purely material worker chooses minimum effort; anticipating this, the employer offers the minimum wage compatible with participation. Do not conclude that everyone shared the same motive. Some calculated, others followed a signal, and others chose intuitively. The evidence supports the aggregate prediction under session conditions but does not identify individual reasoning. Ask what belief, process, or response-time measure would distinguish those routes.

Then introduce a variant from one or ten rounds; fixed or reassigned partner; chosen or exogenous wage; communication; social information; reputation. If the pattern remains when the seemingly obvious mechanism weakens, the original explanation needs revision. A correct prediction does not automatically validate all its assumptions.

6.10.2 Two groups with opposite behavior

Half the class is at one extreme and half at the other; the mean lies where almost nobody chose. Showing only the average would create a fictional description. Calculate the median, modes, range, and share in theoretical categories. Ask whether heterogeneity is related to role, round, treatment, or comprehension.

Consider positive reciprocity, intentions, inequality aversion, wage norms, reputation, and learning. Write one additional observation for each. If it predicts role differences and none appear, it receives less relative support. If it predicts learning, inspect the trajectory. Do not fill missing measurement with a compelling story.

6.10.3 A large difference with few units

One treatment apparently doubles the main measure but contains two groups and the comparison contains three. Display each group before pooling. One extreme unit can create the difference. Twenty decisions nested in two groups are not twenty independent units.

Ask students to plan the next session: groups, assignment, primary measure, and exclusions. The answer should mention mean wage; mean effort; wage-effort relationship; profits by role; frequency of minimum wages and effort and incomplete data. The experience thereby introduces design and transparency.

6.10.4 A null difference

Two conditions have the same mean. Before declaring that the manipulation does not matter, inspect compliance, comprehension, tails, and dispersion. Opposing subgroup effects can cancel. Define what range of differences would be pedagogically or economically meaningful and what size could distinguish it.

The cases teach four disciplines: do not infer motives from agreement, hide heterogeneity, confuse rows with units, or treat absence of evidence as evidence of absence.

6.11 Explanatory sequence for a complete class

6.11.1 Step 1: pose the problem without labels

Present the decision as a concrete situation and ask what information is missing. Do not announce the name of the bias, equilibrium, or preference at the start. The question is whether a generous wage induces reciprocal effort even when the contract cannot enforce it. Collect private responses so the first speaker does not become a focal point.

6.11.2 Step 2: reconstruct rules and incentives

Ask one student to describe actions and another to describe consequences. A third explains available information. Draw the sequence. In Gift exchange, the decision is to the employer sets a wage and the worker then chooses costly effort. Do not move to interpretation until the class can calculate a simple case.

6.11.3 Step 3: derive the benchmark

Write by backward induction, a purely material worker chooses minimum effort; anticipating this, the employer offers the minimum wage compatible with participation. Underline each assumption. Ask what happens if one fails. Distinguish a logical derivation from an empirical expectation: an equilibrium strategy need not be played immediately by everyone.

6.11.4 Step 4: record predictions

Request one prediction about the mean, another about the distribution, and a third about a variant. Predictions should use mean wage; mean effort; wage-effort relationship; profits by role; frequency of minimum wages and effort. Preserve the record; later comparison reveals learning and reduces hindsight.

6.11.5 Step 5: reveal in layers

Show coverage first, then distribution, measures, and comparisons. At every layer request description before explanation. If someone proposes positive reciprocity, intentions, inequality aversion, wage norms, reputation, and learning, ask what observation would distinguish it from another mechanism.

6.11.6 Step 6: work through one sequence

Use the worked example in this guide. Recalculate slowly and change one parameter. Ask each team to find one excessive conclusion and rewrite it with limited language. Editing claims is as important as calculation.

6.11.7 Step 7: compare institutions

Choose one condition from one or ten rounds; fixed or reassigned partner; chosen or exogenous wage; communication; social information; reputation. Write a table with constant, change, prediction, and measure. If the variant changes several elements, acknowledge it. Ask whether a third treatment would separate explanations.

6.11.8 Step 8: transfer and close

Connect the mechanism to labor markets, incomplete contracts, efficiency wages, and team management. Identify two differences between the laboratory and the real context. End with an exit response: prediction, evidence, compatible mechanism, and limitation. This structure assesses understanding without rewarding a particular decision.

6.11.9 A short script to read aloud

“Describe what happened before explaining why. Identify the prediction and its assumptions. Compare the distribution with the mean. Propose two compatible mechanisms. Finally, state which treatment or additional evidence could distinguish them.” The script keeps discussion in a common sequence across families.

6.12 Assessment bank with solutions

Exercise 1. List actions, information, and payoffs. **Solution:** reconstruct the employer sets a wage and the worker then chooses costly effort without adding information unavailable to the participant.

Exercise 2. Derive the material benchmark. **Solution:** begin from by backward induction, a purely material worker chooses minimum effort; anticipating this, the employer offers the minimum wage compatible with participation and name at least two assumptions. For an interactive game, state best responses; for an individual task, state the decision rule.

Exercise 3. The report shows 40 percent. **Solution:** it cannot be interpreted without numerator, denominator, exclusions, and unit. Eligible people and completed decisions are alternative denominators.

Exercise 4. The mean matches the prediction. **Solution:** inspect the distribution. A correct mean can combine extremes, offsetting errors, or different strategies. Agreement does not identify reasoning.

Exercise 5. Select two mechanisms from positive reciprocity, intentions, inequality aversion, wage norms, reputation, and learning. **Solution:** design a condition changing one prediction but not the other, with an outcome from mean wage; mean effort; wage-effort relationship; profits by role; frequency of minimum wages and effort.

Exercise 6. Compare treatments of different sizes. **Solution:** report counts and shares, preserve the independent unit, and do not compensate for a small group by multiplying rounds.

Exercise 7. Mean differences are absent. **Solution:** inspect dispersion, tails, compliance, and comprehension; define a relevant difference. A broad null does not establish equivalence.

Exercise 8. Propose a figure. **Solution:** use histograms or dots for distributions, lines for rounds, separate bars for roles, and bivariate plots when a response depends on a prior action.

Exercise 9. Explain a variant from one or ten rounds; fixed or reassigned partner; chosen or exogenous wage; communication; social information; reputation. **Solution:** identify what changes, what remains constant, predicted direction, and an interpretive threat.

Exercise 10. Transfer to labor markets, incomplete contracts, efficiency wages, and team management. **Solution:** describe the common mechanism and two institutional differences. Do not claim that one session determines policy.

Exercise 11. Write a three-sentence conclusion. **Solution:** observation with denominator; compatible mechanisms; evidence needed to distinguish them.

Exercise 12. Design a replication. **Solution:** preserve parameters, record assignment, announce the primary measure, set exclusions, and archive the export.

A twelve-point rubric awards one point for each correct component. For a short assignment use Exercises 2, 3, 5, and 11. For a project use all twelve and request a reproducible figure.

6.13 Advanced seminar: from evidence to mechanism

Divide the class into four teams: benchmark model, alternative preferences or beliefs, institutions, and identification critique. Each interprets the same report from its assigned role. The first derives by backward induction, a purely material worker chooses minimum effort; anticipating this, the employer offers the minimum wage compatible with participation; the second uses positive reciprocity, intentions, inequality aversion, wage norms, reputation, and learning; the third selects a variant from one or ten rounds; fixed or reassigned partner; chosen or exogenous wage; communication; social information; reputation; the fourth identifies missing evidence.

In a replication round, every team writes a quantitative prediction and a condition that could refute it. It exchanges the proposal with another team, which audits unit, denominator, and manipulation. A useful explanation does not merely accommodate past outcomes; it risks a prediction about new evidence.

End with a one-page memo containing question, benchmark, descriptive finding, two mechanisms, discriminating design, application to labor markets, incomplete contracts, efficiency wages, and team management, and limitation. Grade causal clarity, technical correctness, use of evidence, and inferential restraint.

For a quantitative extension, export data and reproduce three figures: individual distribution, aggregate by independent unit, and treatment comparison. All three require titles, denominators,

and exclusion notes. Compare how the narrative changes when the correct unit is used.

An ethics extension asks which decisions should remain private, when an incentive is proportionate, and how to communicate results without turning group patterns into personal judgments. The answer should separate participant protection, instructional integrity, and analytical transparency.

6.14 Quality control before teaching

6.14.1 Full rehearsal

Open a test session and complete one full participant path. Check cover, language, comprehension, decision, waiting, result, and close. In Gift exchange, verify especially that the participant understands how the employer sets a wage and the worker then chooses costly effort. Open the report before class, keep it hidden, and confirm that mean wage; mean effort; wage-effort relationship; profits by role; frequency of minimum wages and effort appear with their denominators.

6.14.2 Fifteen control questions

1. Does the configuration belong only to this family and the correct language?
2. Can expected attendance form every required unit?
3. Do the rules describe actions, information, order, and payoffs?
4. Does the comprehension question detect the most likely mistake?
5. Is the benchmark derived rather than merely asserted?
6. Will students record a prediction before seeing the result?
7. Does the report show counts as well as percentages?
8. Does every rate state numerator and denominator?
9. Is the distribution readable from the classroom?
10. Are roles, treatments, and rounds labeled and colored consistently?
11. Was the main comparison selected before observing data?
12. Is there time to describe results before interpreting them?
13. Do questions avoid judgments about individual participants?
14. Does the link to labor markets, incomplete contracts, efficiency wages, and team management state explicit limits?
15. Will the export and incidents be documented?

6.14.3 A micro-rehearsal of the debrief

Practice a three-minute explanation. Begin with by backward induction, a purely material worker chooses minimum effort; anticipating this, the employer offers the minimum wage compatible with participation. Then show a hypothetical distribution and state two compatible interpretations from positive reciprocity, intentions, inequality aversion, wage norms, reputation, and learning. Identify which variant among one or ten rounds; fixed or reassigned partner; chosen or exogenous wage;

communication; social information; reputation would distinguish them. End with one limitation. If the sequence cannot fit in three minutes, simplify the session objective.

6.14.4 After class

Record attendance, completed decisions, parameters, and incidents. Note which explanation caused confusion and which graph worked. Preserve one question for the next cohort. Cumulative improvement depends on documenting experience rather than changing parameters without a record.

The closing condition is concrete: a person who did not attend should be able to read the report and know what was decided, what the benchmark was, how many units participated, what pattern appeared, and what cannot be concluded. If any element is missing, complete the instructor note before archiving the session.

6.14.5 Worked comparison of wages, effort, and surplus

Use the following pair of observations in the debrief. Employer A offers a wage of 30 ECU and Worker A chooses effort 4. Employer B offers a wage of 60 ECU and Worker B chooses effort 7. Students often conclude immediately that the higher wage caused the higher effort. First calculate each party's payoff with the parameters displayed in the active configuration. Then calculate total surplus and compare both observations with the self-interest benchmark and the efficient effort level. The wage is primarily a transfer between the parties, whereas effort changes the size of the surplus through productivity and cost. Keeping those roles separate prevents a high wage from being confused with high efficiency.

The next step is to ask what comparison would support a causal claim. A cross-sectional wage-effort correlation can reflect reciprocity, worker heterogeneity, employer selection, or repeated-game incentives. Random assignment of wages, a strategy-method treatment, or within-worker variation can sharpen the comparison, but each design changes what participants know and how they decide. In a repeated session, distinguish the first-round response from later adaptation. With fixed partners, a worker may reward a generous wage and also protect a future relationship. With random rematching, the same aggregate pattern has a different interpretation.

When reporting the class results, show the wage distribution, the conditional mean effort for clearly stated wage intervals, the number of observations in each interval, and realized surplus. Do not connect category means with a smooth curve unless the figure is explicitly described as a visual aid. Ask students to identify one observation that does not fit a simple reciprocity story and explain why such observations matter. The aim is to compare mechanisms using the design and the full distribution, rather than to label individual workers as reciprocal or selfish.

6.15 Quick reference

Self-interest predicts $w = 0, e = 1$. Total surplus is maximized at $e = 10$. Wage is a transfer; effort creates output and has a private cost. The apps export wage, effort, treatment, round, role, anonymous partner, and payoffs; variants add requests, messages, bonuses, or punishment. No demographic data are collected.

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