THE ULTIMATUM GAME

A proposal is made.
The other person can say no.

Introduced in experimental economics
Werner Güth · Rolf Schmittberger · Bernd Schwarze

Published
1982

Original paper
An Experimental Analysis of Ultimatum Bargaining

> Would you accept a small share of the money—or reject it so neither of you gets anything?

A clear guide to the rules, strategic benchmark, classic behavioral patterns, and research questions behind the game.

01 / THE IDEA

Why does the power to reject matter?

Two anonymous participants must divide a fixed amount of money. One proposes a split; the other decides whether to accept it. A rejection destroys the payoff for both.

The Ultimatum Game is a bargaining experiment. It places a simple tension at the center: the proposer can offer a larger share to themselves, but the responder can refuse an offer they consider unacceptable.

The responder’s veto makes fairness and strategic reasoning matter together. A proposer may offer more than the self-interest benchmark because they anticipate rejection; a responder may reject an offer that gives them positive money because it feels unfair—or for other reasons.

PLAYER 1 · PROPOSER	PLAYER 2 · RESPONDER
Chooses how to divide the pie and makes an offer.	Accepts or rejects the proposed division.

> A rejection is costly: under the standard rules, both players receive zero.

02 / EXPERIMENTAL DESIGN

How the game works

A standard version uses a $10 pie, though researchers vary the pie size and offer increments.

01 Pair participants anonymously.
One is randomly assigned proposer; the other responder.

02 Give the proposer a $10 pie.
The proposer chooses a division, e.g. $7 for self and $3 for responder.

03 Responder observes the offer.
The responder decides whether to accept or reject.

04 If accepted, the split is implemented.
Proposer gets $7 and responder gets $3 in this example.

05 If rejected, both receive $0.
The responder’s decision ends the game.

> The responder’s decision is binary—accept or reject—but the proposer can often choose among many possible splits.

03 / A WORKED EXAMPLE

Offer $2 from a $10 pie

Suppose the proposer offers $2 to the responder and keeps $8. The responder chooses whether to accept.

IF ACCEPTED	IF REJECTED
Proposer receives $8 Responder receives $2 Total paid: $10	Proposer receives $0 Responder receives $0 Total paid: $0

PAYOFF RULES

Accept	Proposer: proposed share; responder: offered share
Reject	$0 to both players

The offer is not final until the responder accepts. This is the defining difference from the Dictator Game, where the recipient has no response.

> The responder can reject $2 and get $0 instead. Why might someone do that? The experiment investigates—without assuming one single motive.

What does standard game theory predict?

Assume both players care only about their own monetary payoff, and a responder accepts any offer that gives strictly more than zero.

Think backward. The responder accepts any positive offer because accepting gives them money while rejecting gives zero. Knowing this, the proposer offers the smallest positive amount allowed by the experiment and keeps the rest.

If offers are continuous and the responder accepts any strictly positive amount, the proposer can offer an amount arbitrarily close to zero. If offers use discrete increments, the proposer offers the smallest positive increment.

> Benchmark: proposer keeps almost all the pie; responder accepts the smallest positive offer. Exact prediction depends on offer increments and how responders treat a zero offer.

This prediction relies on strong assumptions. If responders care about fairness, or reject low offers, proposers may offer more. If responders accept low offers, proposers have less reason to share.

What do participants tend to do?

In the original study by Güth, Schmittberger, and Schwarze (1982), and in many later laboratory experiments, behavior commonly departs from the extreme self-interest benchmark.

COMMON OBSERVED PATTERN	SUMMARY	POSSIBLE INTERPRETATION
Proposers offer a substantial share	Offers often cluster around roughly 30–50% of the pie in many standard laboratory settings.	Proposers may anticipate rejection or care about fairness. Context matters.
Very low offers are sometimes rejected	Responders may reject offers positive in money.	Fairness, inequity aversion, norms, or other motives may matter.
Equal or near-equal splits are frequent	Many proposals divide the pie equally or close to equally.	Equality can be a focal point, but is not the only choice.
Behavior varies across settings	Stakes, anonymity, population, and instructions can shift outcomes.	Do not treat one lab result as a universal constant.

> The pattern is not simply “people are fair.” Proposals and responses reflect strategic incentives as well as distributional preferences.

Dictator Game vs. Ultimatum Game

DICTATOR GAME	ULTIMATUM GAME
Recipient cannot reject. A gift is not needed to avoid veto.	Recipient can reject. Offers can reflect anticipated vetoes.

If proposers give more in the Ultimatum Game than in the Dictator Game, strategic concerns about rejection may explain part of the difference. The comparison is informative, but not a perfect decomposition: the games also differ in interaction and framing.

The responder’s rejection decision is useful too. It lets researchers test how acceptance thresholds respond to offer size, context, beliefs, or social information.

> Design lesson: compare behavior across carefully controlled games to separate possible motives; do not claim that one choice reveals a motive by itself.

07 / THINK LIKE A RESEARCHER

Do not memorize the average offer.

01 Why did the responder reject?

Was the offer unfair, misunderstood, or rejected to express a norm? How could you distinguish these explanations?

02 What does the proposer anticipate?

Could you elicit beliefs about the minimum acceptable offer or probability of rejection?

03 How does pie size matter?

Would the same offer percentage appear with different stakes? Would absolute amounts change rejection behavior?

04 How can you identify a mechanism?

Could a Dictator Game comparison, belief measure, or modified rejection rule help separate fairness from strategic concerns?

> Research sequence: observe a pattern → propose competing mechanisms → derive different predictions → design a treatment that separates them.

THE TAKEAWAY

The Ultimatum Game makes bargaining strategic: one player proposes a split, and the other can veto it. Its simple benchmark provides a reference point; real choices reveal that fairness, expectations, and strategic incentives can interact.

ORIGINAL SOURCE

Güth, W., Schmittberger, R., & Schwarze, B. (1982). “An Experimental Analysis of Ultimatum Bargaining.” Journal of Economic Behavior & Organization, 3(4), 367–388. DOI: 10.1016/0167-2681(82)90011-7.

Behavioral ranges above are broad recurring patterns across laboratory studies, not exact estimates from one treatment.