The theory of rational choice

Preferences are:

i) Complete

ii) Internally consistent

iii) Stable

iv) Self-referred (selfish)

On the notion of economic rationality…

The sovereign consumer: Neoclassical notion

Consumer sovereignty **in terms of satisfaction of coherent preferences**

"Each individual, it is usually claimed, is the best or proper judge of her own well-being, and those judgments of well-being are revealed in her preferences" (Sugden, 2004, p. 1016) -emphasis added.

"Economists usually assume that these revealed preferences are also *normative preferences* –preferences that represent the economic actor's true interests." (Beshears et al., 2008, p. 1787) -emphasis added.

Il problema della malattia asiatica .1

"Immaginate che un comitato di pronto intervento si stia preparando ad affrontare un'epidemia proveniente dall'Asia che, considerata l'eccezionale gravità, dovrebbe causare la morte di 600 persone.

Per fronteggiarla vengono proposti due programmi d'intervento tra loro alternativi. Le conseguenze dei due programmi sono state scientificamente stimate nel modo seguente:

Se il programma A sarà scelto, 200 persone saranno salvate.

Se il programma B sarà scelto, vi è 1/3 di probabilità che 600 persone saranno salvate e 2/3 di probabilità che nessuna persona sarà salvata.

Quale tra i due programmi sceglieresti?"

<u>Il 72% preferisce il programma A</u>

Il problema della malattia asiatica .2

Se il programma A sarà scelto, 400 persone moriranno.

Se il programma B sarà scelto, vi è 1/3 di probabilità che nessuno morirà e 2/3 di probabilità che moriranno 600 persone.

Quale tra i due programmi sceglieresti?"

<u>Il 78% preferisce il programma B</u>

Prospect Theory

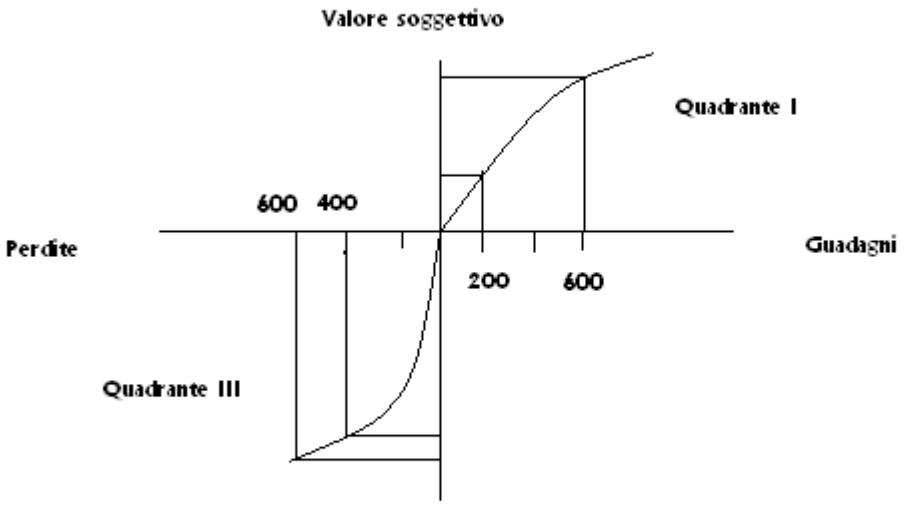
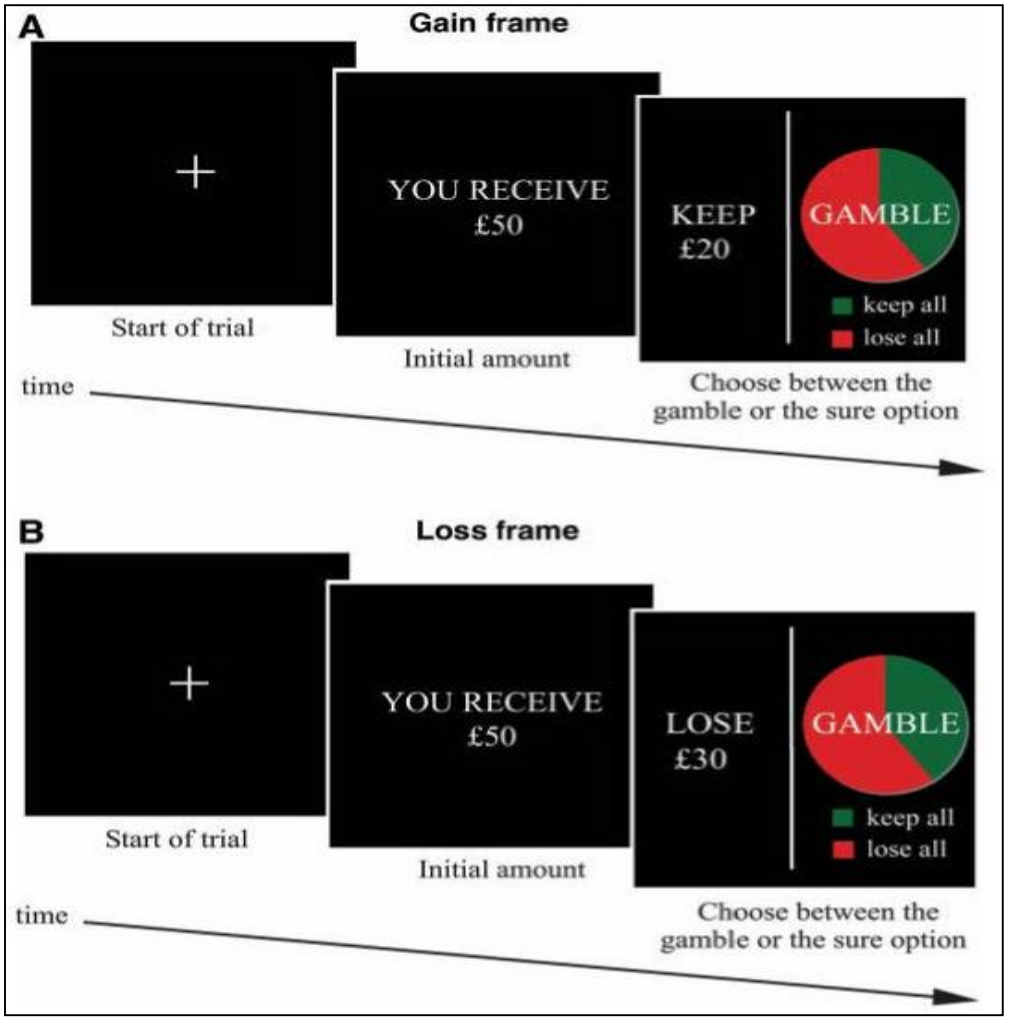


Fig. 1: Sigmoide che descrive la funzione del valore nella teoria del prospetto

Behavioral results: with the gain frame – safe choices; with the loss domain – risky choices.

De Martino et al., (2006). *Science*. Aug 4; 313(5787): 684–687.

Framing **effect**



Financial decision-task:

The expected outcomes of gamble and sure options were equivalent.

Gain and loss frame trials were **intermixed pseudo-randomly**.

No feedback concerning trial outcome was given during the experiment.

QUESTION: how do people respond to this framing effect? How to explain it?

Choice findings: RISKY choice…

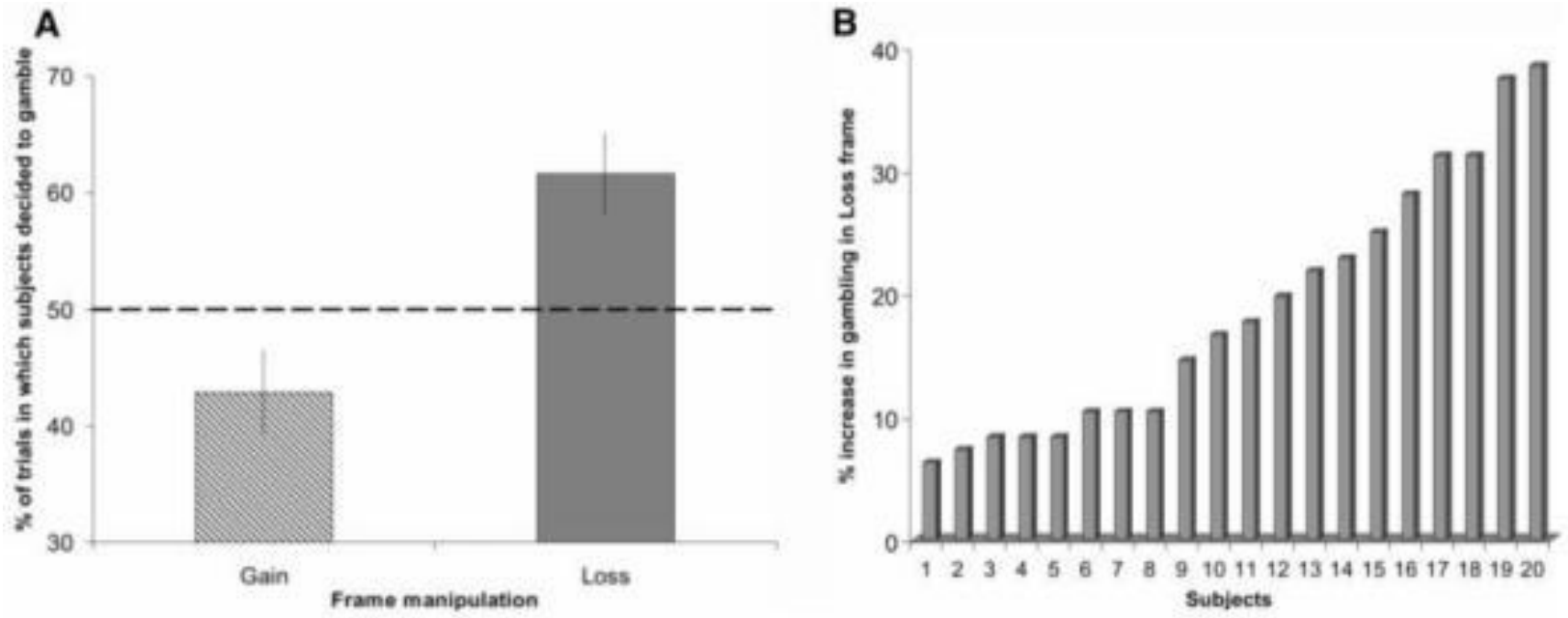


Fig. 2: Behavioral results. (A) Percentages of trials in which subjects chose the gamble option in the Gain frame and the Loss frame. Subjects showed a significant increase in the percentage of trials in which the gamble option was chosen in the Loss frame with respect to the Gain frame [61.6%> 42.9% ($P < 0.001$, $t_{19} = 8.06$)]. The dashed line represents risk-neutral behavior (choosing the gamble option in 50% of trials). Error bars denote SEM.

(B) Each bar represents, for each individual subject, **the percentage difference** between how often subjects chose the gamble option in the Loss frame as compared to the Gain frame. **A hypothetical value of zero represents a complete indifference to the framing manipulation** (i.e., fully 'rational' behavior). **All participants,** to varying degrees, showed an effect of the framing manipulation.

Framing and commercial choice….

What else? HOW the framing effect can be exploited in the business?

Framing the attributes of a food product

Levin & Gaeth, 1988

LEAN Label: "You would be given a taste of 75% of lean ground beef"

FAT Label: "You would be given a taste of 25% of fat ground beef"

After tasting the sample of the same freshly cooked ground beef, *participants judged* the meat (on 7-point scales)

RESULTS: The same ground beef was judged "more lean", and of "higher quality" with the LEAN than FAT label (= multi-sensory experience/interaction) [real consumer experience]
[the approach/avoidance model?]

The same result was found when participants did not taste the meat (they were only provided with a verbal description of the meat attributes). [hypothetical experience]

However, when participants judged the meat before exposure to the label, the above findings were lessened => the power of visual information which affects J/DM

Loss aversion

An important concept; several findings…

1) **Il problema del <u>pagamento con carta di credito</u>: sconto o sovrapprezzo?**

2) **La nozione di scommessa equa…**

3) **Mckinsey communication strategy…**

4) **Pubblicità&Progresso (autopalpazione seno, crème solari, incidenti stradali, etc.)**

L’autoesaminazione del seno

Presentazione "guadagno in protezione":

Facendo adesso l'autoesaminazione del seno, impari a conoscere le caratteristiche di una mammella sana, quindi sei preparata a notare qualsiasi minimo patologico cambiamento che possa verificarsi con l'invecchiamento.

Presentazione "perdita in protezione":

Non facendo adesso l'autoesaminazione del seno, non impari a conoscere le caratteristiche di una mammella sana, quindi non sei preparata a notare qualsiasi minimo patologico cambiamento che possa verificarsi con l'invecchiamento.

Quattro mesi dopo, si è rilevato un incremento del 38% nell'autopalpazione del seno nella prima condizione vs. 57% di incremento nella seconda condizione
(Meyerowitz & Chaiken, 1987)

L’acquisto di creme solari & Tumore alla pelle

Detweiler, Bedell, Salovey, Pronin & Rothman (1999)

Presentazione "guadagno in protezione» Vs. "perdita in protezione"

They found that when they presented beachgoers with information about sunscreen use and skin cancer in a loss frame («not using sunscreen increases your risk for skin cancer and prematurely aged skin»), beachgoers were more likely to purchase sunscreen that day than those who were presented with the same information in a gain frame («using sunscreen decreases your risk for skin cancer and prematurely aged skin»). [quoted from Rogers & Frey, 2015, p. 729]

Risky choices: Losses VS. Costs

Would you accept a gamble that offers a 10% chance to win $95 and a 90% chance to lose $5?

Would you pay $5 to participate in a lottery that offers a 10% chance to win $100 and a 90% chance to win nothing?

Answers: In the second version many more people say «yes» compared to the first version

HYPO: «A bad outcome is much more acceptable if it is described as the cost of a lottery ticket that did not win THAN if it is simply described as losing a gamble»

«*Losses* evokes stronger negative feelings than *costs*».

Choices are not reality-bound because System1 is not reality-bound» (Kahneman, 2011, p. 364)

WHAT A MENTAL ACCOUNTING IS?

"Mental accounting is essentially a collection of aggregation rules--what gets combined with what. The aggregation rules apply at two levels.

First, a particular outcome may be assigned (or not) to a larger category.

Second, within a category, outcomes may be coded separately or combined into a larger total" (Thaler, 1993, p. 2)

MENTAL ACCOUNTING MATTERS

"Accounting decisions such as to which category to assign an outcome, and whether to combine it with other events in that category, can affect the perceived attractiveness of an alternative that might lead to this outcome" (Thaler, 1993, p. 2)

Part I) The theater problem (K&T, 1981):
(mental) posting to a larger category

Condition $10 bill:

Imagine that you have decided to see a play where admission is $10 per ticket. As you enter the theater you discover that you have lost a $10 bill. Would you still pay $10 for a ticket for the play?

88% report 'Yes'

Condition $10 ticket:

Imagine that you have decided to see a play and paid the admission price of $10 per ticket. As you enter the theater you discover that you have lost the ticket. The seat was not marked and the ticket cannot be recovered. Would you pay $10 for another ticket?

46% report 'Yes'

CAUSES OF DEATH: WHICH IS THE MOST PROBABLE?

(Russo & Schoemaker, 1989)

PAIR1: Lung cancer vs. Motor Vehicle accidents

PAIR 2: Emphysema vs. Homicide

PAIR 3: Tuberculosis vs. Fire and Flames

Causes of Death

Cause of Death	*People's Choice in Each Pair*	*Annual U.S. Total (in 1,000s)*	*Newspaper Reports Per Year*
Lung Cancer	43%	140	3
Motor Vehicle Accidents	57%	46	127
Emphysema	45%	22	1
Homicide	55%	19	264
Tuberculosis	23%	4	0
Fire and Flames	77%	7	24

From Russo J.E. & Schoemaker P.J.H.. (1989). *Decision traps: the ten barriers to brilliant decision-making and how to overcome them.* New York: Simon & Schuster, p. 83.

motional / Affective reactions => Risk Perceptio

The Likeability Heuristic

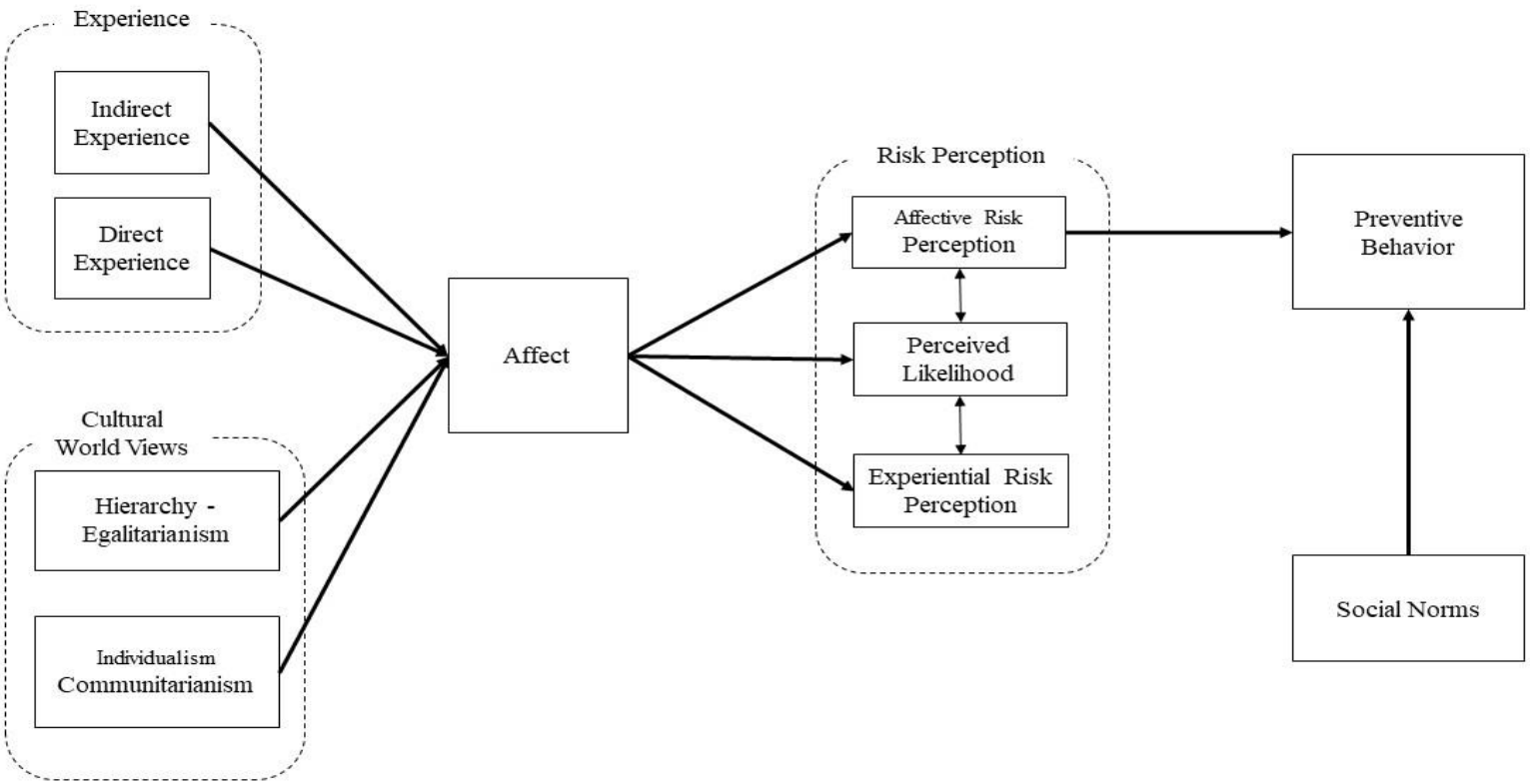
Likeability Heuristic => ***Risk Perception***

A non-probabilistic factor that guides *risk perception* is

the *affective reaction:*

like → low-risk; **dislike → high- risk**

ree dimensions of Risk Perception (Ferrer, Klein, Persoskie, Avishai-Yitshak, & Sheeran, 2



The taxi-cab problem

Kahneman & Tversky, 1972

A cab was involved in a hit and run accident at night. Two cab companies, the Green and the Blue, operate in the city. 85% of the cabs in the city are Green and 15% are Blue.

A witness identified the cab as Blue. The court tested the reliability of the witness under the same circumstances that existed on the night of the accident and concluded that the witness correctly identified each one of the two colors 80% of the time and failed 20% of the time.

What is the probability that the cab involved in the accident was Blue rather than Green knowing that this witness identified it as Blue?

The disease problem

Casscells, Schoenberg e Grayboys, 1978, p. 999

"If a test to detect a disease whose prevalence is 1/1000 has a false positive rate of 5%, what is the chance that a person found to have a positive result actually has the disease, assuming you know nothing about the person's symptoms or signs?"

The question was presented to 20 house officers, 20 fourth year medical students and 20 attending physicians from Harvard Medical School

RESULTS: The most common response given by almost half of the participants was 95%. The average answer was 56%. and only 11 participants gave the appropriate response of 2% , assuming the test correctly diagnoses every person who has the disease.

The Linda problem

T&K, 1982

Linda is 31 years old, single, outspoken, and very bright. She majored in philosophy. As a student, she was deeply concerned with issues of discrimination and social justice, and also participated in anti-nuclear demonstrations.

Which is more probable between these two events?

Linda is a bank teller.

Linda is a bank teller and is active in the feminist movement.

The Linda problem: Results

RESULTS: The majority of those asked chose option 2.

However, the probability of two events occurring together (in "conjunction") is always less than or equal to the probability of either one occurring alone—formally, for two events A and B this inequality could be written as:

Pr(A&B) LE Pr(A) and Pr(A&B) LE Pr(B)

For example, even choosing a very low probability of Linda being a bank teller, say Pr(Linda is a bank teller) = 0.05 and a high probability that she would be a feminist, say Pr(Linda is a feminist) = 0.95, then, assuming independence, Pr(Linda is a bank teller and Linda is a feminist) = 0.05 × 0.95 or 0.0475, lower than Pr(Linda is a bank teller).

LE = less or equal to

The percentage of African nations in the UN

Tversky, A.; Kahneman, D. (1974).

In another study participants observed a roulette wheel that was predetermined to stop on either 10 or 65.

Participants were then asked to guess the percentage of the United Nations that were African nations.

Participants whose wheel stopped on 10 guessed lower values (25% on average) than participants whose wheel stopped at 65 (45% on average).[5]

The pattern has held in other experiments for a wide variety of different subjects of estimation.

A&A in financial predictions

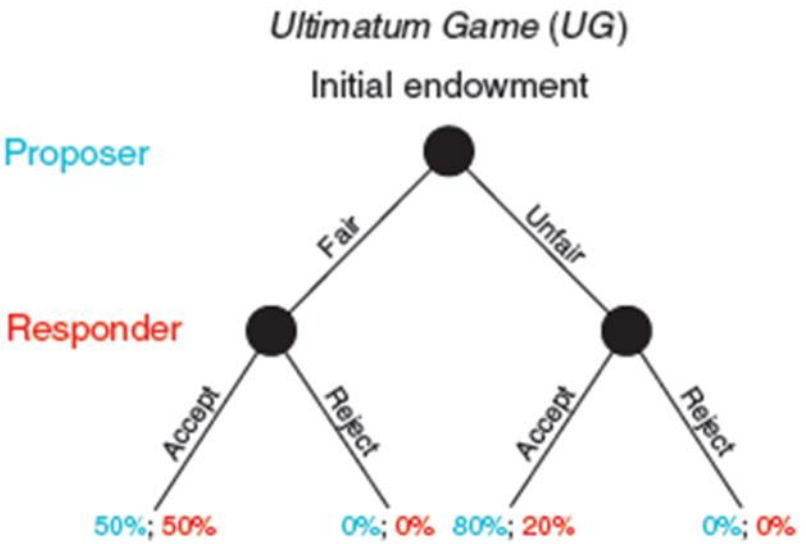
[Russo e Schoemaker, 1989]

3. Implicit and subtle anchors

Control Group: One-hundred managers were asked to predict the discount rate value in six months.

Group 1 (2): "Do you think that the discount rate in six months will be above or below 8% (14%)?"

RESULTS: Average prediction was 10.9% vs. 10.5% vs. 11.2% across three groups


Ultimatum Game (UG)
Initial endowment
Proposer
Fair
Unfair
Responder
Accept
Reject
Accept
Reject
50%; 50%
0%; 0%
80%; 20%
0%; 0%

RESULTS

1. Proposers cooperated when they “shouldn’t have”. They give roughly half of the pie to the responder.

2. Responders didn’t cooperate when they “should have”. When offered 25% or less of the total, most responders reject offers.

Strong, robust effects – even found with other primates.