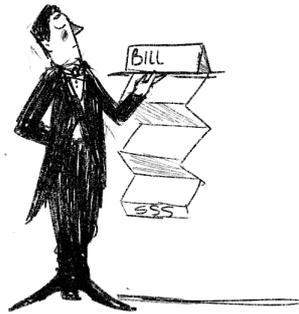


the Inefficiency of Splitting the Bill



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Gneezy, U., Haruvy, E., & Yafe, H. (2004). The Inefficiency of Splitting the Bill. *The Economic Journal*, 114(495), 265–280. <http://www.jstor.org/stable/3590095>

Project created for the class: Visual Thinking and Composition, Winter 2021

Tilburg University, Department of Communication and Cognition

Instructor: Neil Cohn, neilcohn@visuallanguagelab.com, www.visuallanguagelab.com

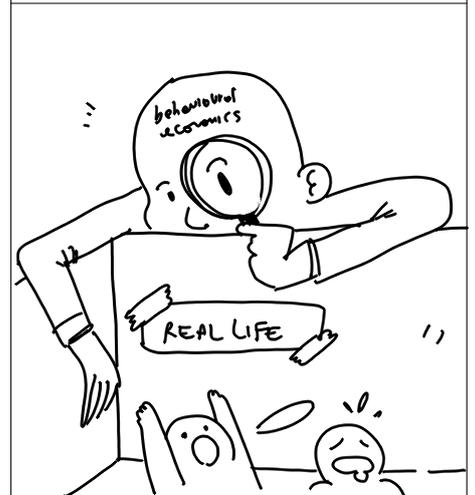
IN THE VIEW OF STANDARD ECONOMY, PEOPLE ARE SELFISH AGENTS THAT TRY TO MAXIMISE THEIR PAYOFF WITHOUT CARING ABOUT OTHER PEOPLE.



THIS MEANS THAT IN A SITUATION IN WHICH EXTERNALITIES* EXIST, THE PRODUCTION, DISTRIBUTION AND CONSUMPTION OF GOODS IS LIKELY TO BE INEFFICIENT.



HOWEVER, IN CONTRAST TO THIS VIEW, BEHAVIOURAL ECONOMICS SUGGESTS THAT PEOPLE ARE NOT RATIONAL MACHINES MAKING DECISIONS...



...AND SOME STUDIES IN THIS FIELD HAVE SHOWN THAT PEOPLE DO NOT ALWAYS DIERGARD THE COST THAT THEIR CHOICES HAVE ON OTHERS.



CLASSICAL ECONOMICS: EXPECTATIONS



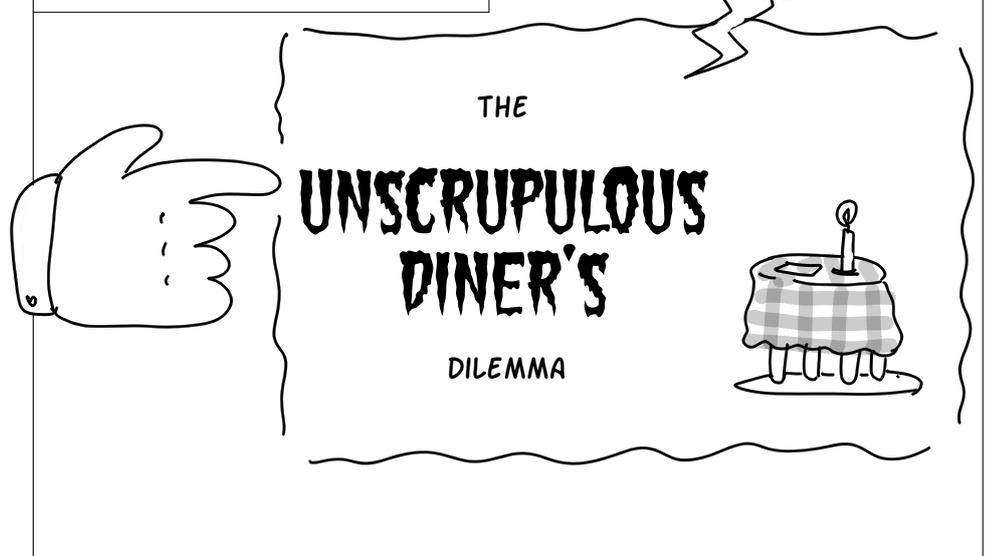
CLASSICAL ECONOMICS: REALITY



AND SO THE QUESTION REMAINS: TO WHAT EXTENT ARE PEOPLE SELFISH AND TO WHAT EXTENT DO THEY THINK ABOUT OTHERS WHEN MAKING CHOICES?



WE ARE GOING TO TEST IT WITH A CLASSICAL SITUATION OF EVERYDAY LIFE...



*EXTERNALITIES: "EXTERNALITIES OCCUR IN AN ECONOMY WHEN THE PRODUCTION OR CONSUMPTION OF A SPECIFIC GOOD OR SERVICE IMPACTS A THIRD PARTY THAT IS NOT DIRECTLY RELATED TO THE PRODUCTION OR CONSUMPTION OF THAT GOOD OR SERVICE." (HTTPS://WWW.INVESTOPEDIA.COM/TERMS/EXTERNALITY.ASP)

A GROUP OF FRIENDS GOES OUT TO EAT TOGETHER AT SOME NICE PLACE.



BUT SOMETHING IS CASTING A SHADOW OVER THEM...



THE UNSPOKEN AGREEMENT



OF SPLITTING THE BILL

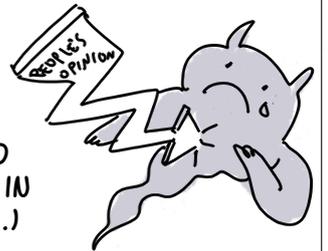
ORDERING A BUNCH OF STUFF



(JUST ORDERD A SIMPLE FIRST)

yeah ok

(BY THE WAY, THE MAJORITY OF PEOPLE (80% OF THE EXPERIMENT PARTICIPANTS) WOULD PREFER TO PAY INDIVIDUALLY IN SUCH OCCASIONS...)



Recipe

FOR THE EXPERIMENT SET UP

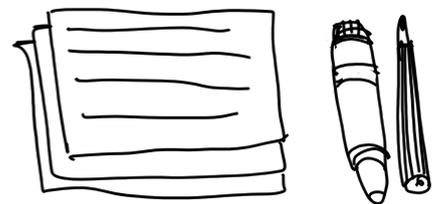


PARTICIPANTS: 60 (IN GROUPS OF SIX)

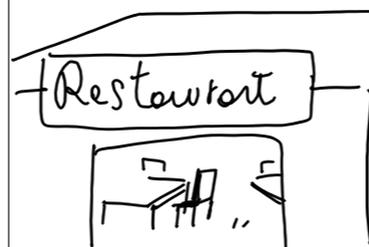


CONDITION: UNFAMILIAR WITH EACH OTHER

INSTRUCTIONS + QUESTIONNAIRE: AS MANY AS PARTICIPANTS



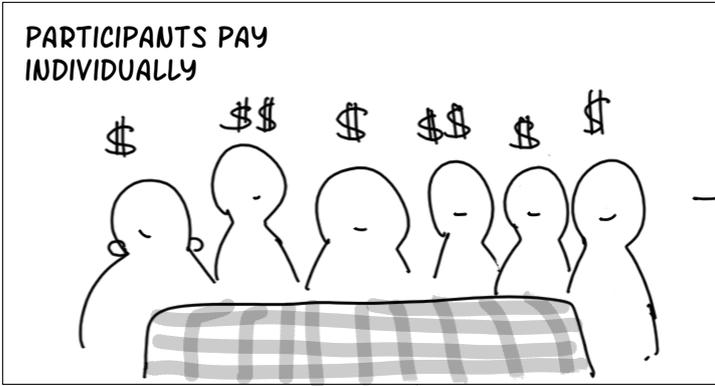
REAL RESTAURANT: 1



PARTICIPANTS WERE GIVEN INFORMATION ABOUT HOW THEY WILL PAY THE MEAL AND THEY HAD TO ORDER FOOD BY WRITING THEIR CHOICE ON A PIECE OF PAPER (TO NOT INFLUENCE EACH OTHER)

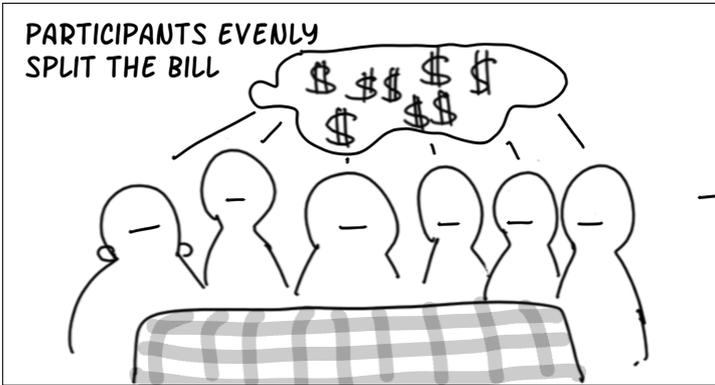
EXPERIMENTAL
CONDITIONS

A



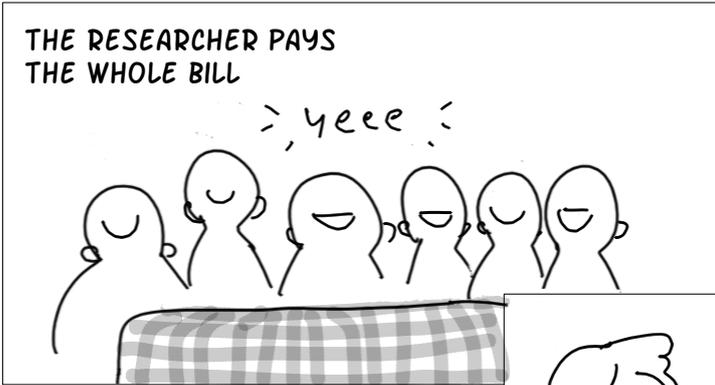
4
Groups
in total

B



4
Groups
in total

C



2
Groups
in total

IT'S FOR SCIENCE'S SAKE!



Predictions

WELL, IF PEOPLE ARE SELFISH AGENTS, IT IS EXPECTED THAT THE CONSUMPTION WILL RISE AS THE COST OF THE FOOD DECREASES.



IN OTHER WORDS, WHEN THE MARGINAL BENEFIT IS HIGHER THAN THE MARGINAL COST, PEOPLE TEND TO CONSUME MORE, AND VICEVERSA.

MARGINAL BENEFIT

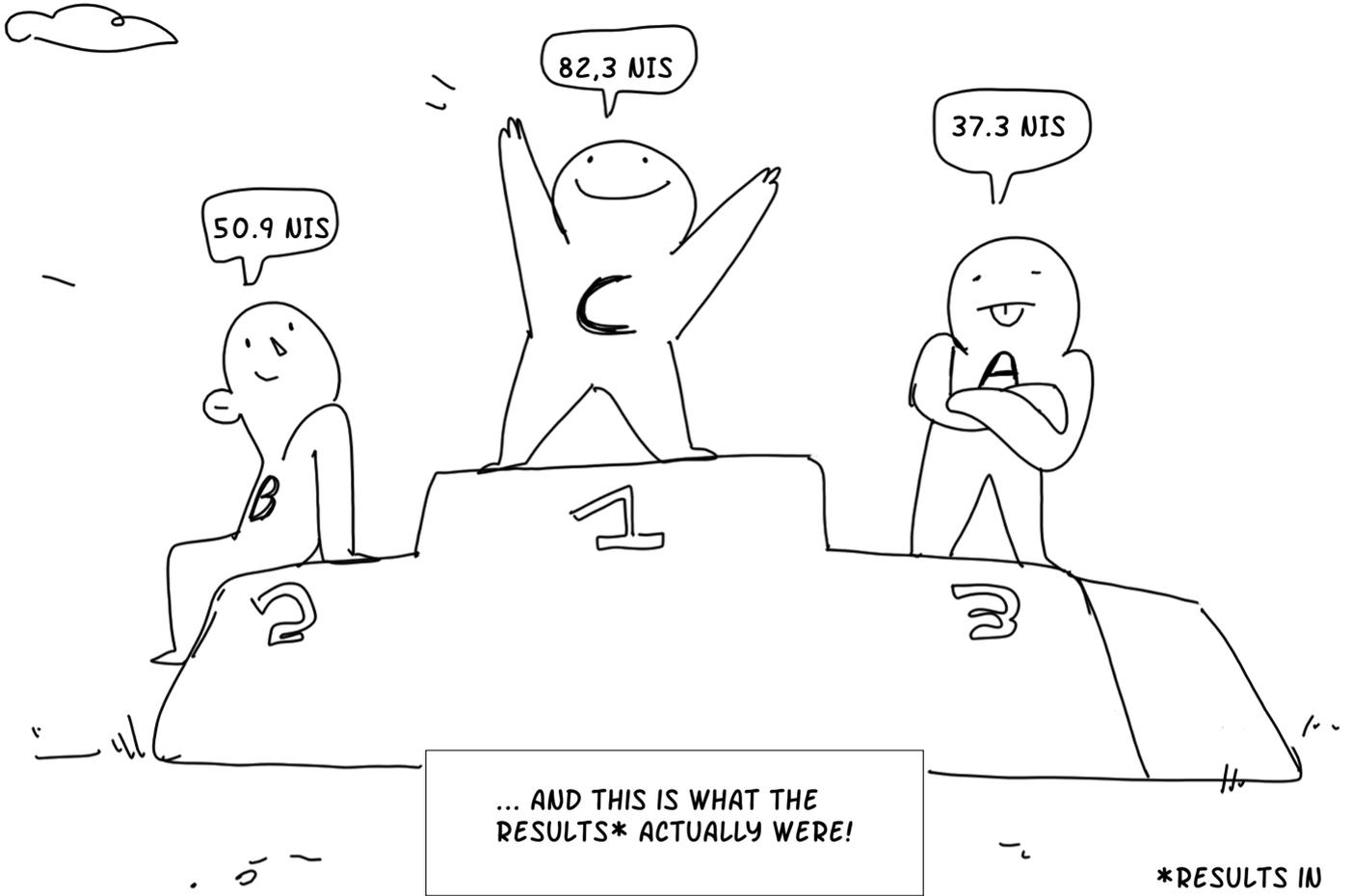
MARGINAL BENEFIT: MAXIMUM AMOUNT PEOPLE ARE WILLING TO PAY FOR AN ADDITIONAL GOOD OR SERVICE*

MARGINAL COST

MARGINAL COST: THE CHANGE IN COST DUE TO INCREASING PRODUCTION/ CONSUMPTION OF 1 UNIT**

*[HTTPS://WWW.INVESTOPEDIA.COM/TERMS/M/MARGINALBENEFIT.ASP](https://www.investopedia.com/terms/m/marginalbenefit.asp)
 **[HTTPS://WWW.INVESTOPEDIA.COM/TERMS/M/MARGINALBENEFIT.ASP](https://www.investopedia.com/terms/m/marginalbenefit.asp)

MORE SPECIFICALLY, IT IS EXPECTED THAT PEOPLE IN CONDITION C WILL SPEND THE MOST, WHILE PEOPLE IN CONDITION A WILL SPEND THE LEAST, WITH THE EVEN-SPLIT CONDITION (B) IN THE MIDDLE...



... AND THIS IS WHAT THE RESULTS* ACTUALLY WERE!

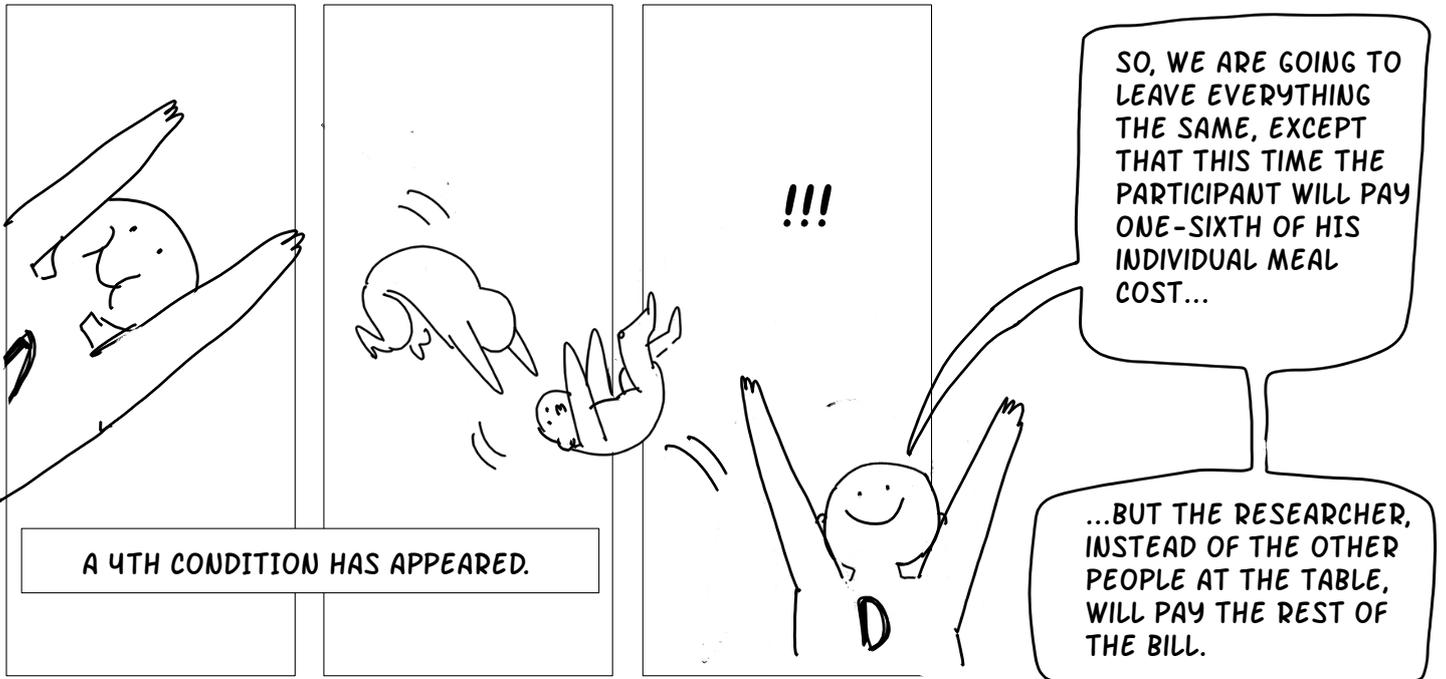
*RESULTS IN AVERAGE COST PER MEAL



WELL, BASED ON THE RESULTS, IT SEEMS THAT PEOPLE DISREGARD THE COST OF THEIR CHOICES ON THE OTHER PEOPLE, AND CONSUMED MORE IN THE SPLITTING CONDITION....

BUT DID THEY IGNORE ALL THE COSTS OR DID THEY ACCOUNT FOR THEM A BIT?
MMM, HOW COULD WE TEST THIS...?





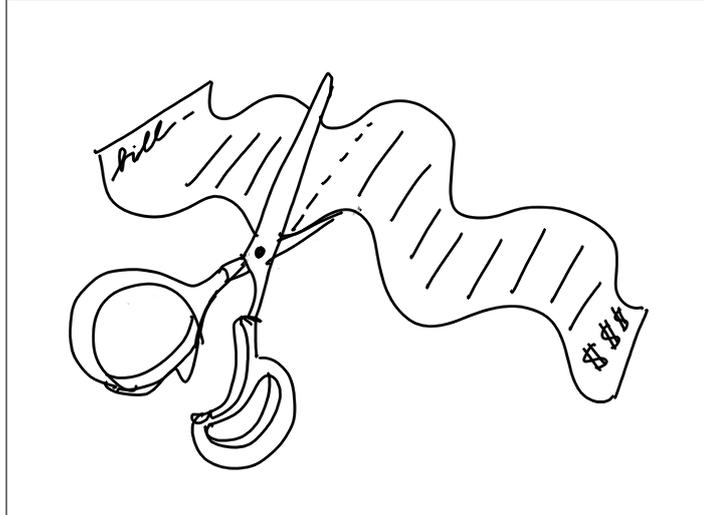
A 4TH CONDITION HAS APPEARED.

SO, WE ARE GOING TO LEAVE EVERYTHING THE SAME, EXCEPT THAT THIS TIME THE PARTICIPANT WILL PAY ONE-SIXTH OF HIS INDIVIDUAL MEAL COST...

...BUT THE RESEARCHER, INSTEAD OF THE OTHER PEOPLE AT THE TABLE, WILL PAY THE REST OF THE BILL.

BASED ON THEORIES OF ALTRUISM, EQUITY AND RECIPROCITY, PARTICIPANTS SHOULD CONSUME MORE IN THIS CONDITIONS THAN IN EVEN SPLIT,

HERE PEOPLE ARE GOING TO HAVE THE SAME MARGINAL COST OF CONSUMING MORE AS IN THE SPLIT CONDITION, BUT WITH THE EXTERNALITIES OF THE COST REMOVED.



WAIT, BUT WHAT ABOUT CARING FOR THE COST IMPOSED ON THE RESEARCHER?

AH, GOOD POINT. SINCE PEOPLE OVERCONSUMED IN THE FREE-MEAL CONDITION, IT SEEMS THE REGARDS FOR THE RESEARCHER ARE LOWER THAN FOR THE PEOPLE AT THE TABLE



I'M FINE, IT'S FOR SCIENCE'S SAKE.

Results



IT'S ME, SELFISHNESS HORSE AGAIN!

WELL, THERE WAS NO SIGNIFICANT DIFFERENCE BETWEEN THE TWO CONDITIONS*.

THUS, IT SEEMS THAT PEOPLE DO NOT TAKE FULLY INTO ACCOUNT HOW THE COST OF THEIR CONSUMPTION IS IMPOSED ON THE OTHER PEOPLE.

WHICH IS NO GOOD, BECAUSE...



Scientific Scale



... WELL IT MEANS THAT SPLITTING THE BILL CREATES INEFFICIENT CONSUMPTION! PEOPLE TEND TO CONSUME MORE THAN NECESSARY - MORE THAN WHAT THEY CHOOSE WHEN THEY PAY INDIVIDUALLY - RESULTING IN A SUBOPTIMAL SITUATION FOR SOCIETY.

MOREOVER, SPLITTING THE BILL RISES CONTROVERSIES ABOUT THE 'FAIRNESS' OF THIS SYSTEM, EVEN AMONG GROUPS OF CLOSE FRIENDS.

THUS, PAYING INDIVIDUALLY IS CLEARLY A PARETO IMPROVEMENT**!

WELL, NOW YOU CAN MAKE AN INFORMED PROPOSAL FOR PAYING INDIVIDUALLY THE NEXT TIME YOU EAT OUT WITH FRIENDS!

*SOME CAUTION IN INTERPRETING THIS RESULTS IS SUGGESTED DUE TO SMALL SAMPLE SIZE.

**PARETO IMPROVEMEENT: A CHANGE IN THE DISTRIBUTION OF GOODS THAT BENEFIT AT LEAST AN INDIVIDUAL AND HARMS NO ONE