PHPE 308M/PHIL 209F
Fairness

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Broome's Account of Fairness

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It requires that **claims should be satisfied in proportion to their strength**: equal claims require equal satisfaction, stronger claims require more satisfaction than weaker ones, and also—very importantly—weaker claims require some satisfaction. Weaker claims must not simply be overridden by stronger ones.

Claims give rise to two separate requirements:

1. Satisfaction requirement: Claims should be satisfied.
2. Fairness requirement: Claims should be satisfied proportionally.

Lotteries

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Each person can be given a sort of surrogate satisfaction. **By holding a lottery, each can be given an equal chance of getting the good.** This is not a perfect fairness, but it meets the requirement of fairness to some extent.

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But if she was sent because a lottery is held and she lost, she could make no such complaint.

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The conclusion will depend on how important fairness is in the circumstances. But there will certainly be some circumstances where it is better to hold a lottery than to choose the best candidates deliberately.

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In the life-saving example (when all the claims are roughly equal), a lottery provides at least a surrogate satisfaction: a chance. But the rule of picking the youngest gives no sort of satisfaction at all. It simply overrides the claims of older people. So it is less fair.

B. L. Curtis (2014). *To be fair*. Analysis, 74, pp. 47 - 57.

J. R. Kirkpatrick and N. Eastwood (2015). *Broome's theory of fairness and the problem of quantifying the strengths of claims*. Utilitas, 26, pp. 331 - 345.

Patrick Tomlin (2012). *On Fairness and Claims*. Utilitas, 24, pp. 200 - 213.

Hugh Lazenby (2014). *Broome on Fairness and Lotteries*. Utilitas, 26, pp. 331 - 345.

A.C. Paseau and Ben Saunders (2015). *Fairness and Aggregation*. Utilitas 27(4), pp. 460-469.

Debts

Suppose that a Debtor, D, owes money to two Creditors, C_1 and C_2.

He has no other obligations but, come the time to repay these debts, he does not have enough to repay C_1 and C_2 fully.

Suppose that he owes d_1 to C_1 and d_2 to C_2, but he has only m, where

$$m < d_1 + d_2.$$

How should he divide m between C_1 and C_2?

Broome: As a matter of fairness, claims should be satisfied proportionally.

C_1 has a claim to d_1 and C_2 has a claim to d_2. Proportionality implies that, if these claims are of equal strength,

- C_1 will receive $m\frac{d_1}{d_1+d_2}$ and
- C_2 will receive $m\frac{d_2}{d_1+d_2}$.

The Problem of Aggregation

Case 1: Two debtors D and D^* owe money to C_1 and C_2:

- D owes d_1 to C_1 and d_2 to C_2 but has only m (where $m < d_1 + d_2$).
- D^* owes d_1^* to C_1 and d_2^* to C_2 but has only m^* (where $m^* < d_1^* + d_2^*$).

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Case 2: A single debtor D owes money to C_1 and C_2

- D owes $d_1 + d_1^*$ to C_1 and $d_2 + d_2^*$ to C_2 but has only $m + m^*$ (where $m + m^* < d_1 + d_1^* + d_2 + d_2^*$).

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- D owes $d_1 + d_1^*$ to C_1 and $d_2 + d_2^*$ to C_2 but has only $m + m^*$ (where $m + m^* < d_1 + d_1^* + d_2 + d_2^*$).

Intuitively, C_1 and C_2 should be paid the same amount in both cases.

Case 1: Two debtors D and D^* owe money to C_1 and C_2:

- D owes 80 to C_1 and 40 to C_2 but has only 60 (where $60 < 80 + 40$).

- D^* owes 40 to C_1 and 80 to C_2 but has only 90 (where $90 < 40 + 80$).

Case 1: Two debtors D and D^* owe money to C_1 and C_2:

- D owes 80 to C_1 and 40 to C_2 but has only 60 (where $60 < 80 + 40$).

  According to fairness, D pays:

  $60 \frac{80}{80+40} = 40$ to C_1 and

  $60 \frac{40}{80+40} = 20$ to C_2
- D^* owes 40 to C_1 and 80 to C_2 but has only 90 (where $90 < 40 + 80$).

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  $90\frac{40}{40+80} = 30$ to C_1 and

  $90\frac{80}{40+80} = 60$ to C_2

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In aggregate: C_1 was owed $40 + 80 = 120$ and C_2 was owed $80 + 40 = 120$, but C_1 was paid $40 + 30 = 70$ and C_2 was paid $20 + 60 = 80$

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In aggregate: C_1 was owed $40 + 80 = 120$ and C_2 was owed $80 + 40 = 120$, but C_1 was paid $40 + 30 = 70$ and C_2 was paid $20 + 60 = 80$ *even though both are owed the same amount and had equal claims.*

This inequality between C_1 and C_2 seems unfair. Consider the case where $D = D^*$:

Case 2: A single debtor D owes money to C_1 and C_2:

- D owes 120 to C_1 and 120 to C_2 but has only 150 (where $150 < 120 + 120$).

This inequality between C_1 and C_2 seems unfair. Consider the case where $D = D^*$:

Case 2: A single debtor D owes money to C_1 and C_2:

- D owes 120 to C_1 and 120 to C_2 but has only 150 (where $150 < 120 + 120$).

  According to fairness, D pays:

  $150\frac{120}{120+120} = 75$ to C_1 and

  $150\frac{120}{120+120} = 75$ to C_2

In other words, Broome's theory is non-aggregative. It focuses on the distribution of particular goods on particular occasions, what we might call a 'narrow' view, but—as our example shows—the outcome of several fair transactions may be unfair, and vice versa, when we take a wider, overall view.

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The problem of non-aggregativity: Two transactions, each of which is fair in isolation, may produce an aggregate result which would be judged as unfair had it resulted from a single distribution.

Stefan Wintein and Conrad Heilmann (2020). *Theories of Fairness and Aggregation*. Erkenntnis, 85, pp. 715 - 738.

Conrad Heilmann and Stefan Wintein (2017). *How to be fairer*. Synthese, 194, pp. 3475 - 3499.

Kfir Eliaz and Ariel Rubinstein (2014). *On the fairness of random procedures*. Economics Letters, 123, pp. 168 - 170.

After a decision problem and two procedures (Procedure A and Procedure B) are described. The following is asked to an individual:

In your opinion, from the point of view of (an entity indicated in bold letters):

1. Procedure A is fairer than B (denoted by A)
2. Procedure B is fairer than A (denoted by B) or
3. Both procedures are equally fair (denoted by $A \sim B$).

P1: randomly pivotal

Consider a committee of 15 members that needs to decide by majority vote whether or not to fire some employee. Simultaneously, each committee member puts his name and his vote in a sealed envelope. The committee chair collects the envelopes and meets in private with the employee. Compare the fairness (from the point of view of the committee members) of the following two procedures for communicating the decision to the employee.

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(A) The committee chair opens the envelopes in private and counts the votes. He announces the outcome of the vote to the candidate and shows him the content of each envelope in some random order.

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(*A*) The committee chair opens the envelopes in private and counts the votes. He announces the outcome of the vote to the candidate and shows him the content of each envelope in some random order.

(*B*) The committee chair opens the envelopes in some random order in front of the candidate. For each opened envelope he announces the name of the committee member and his vote. When at some point, a majority of votes is reached the chair announces the outcome and continues to open the remaining envelopes.

P1: randomly pivotal

Procedure A is intuitively fairer than B since in B one of the committee members appears to be responsible for the firing decision, in violation of:

(C1) It is fair to treat all individuals equally ex-ante.

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Results:

A	B	$A \sim B$
56%	18%	26%

P2: random dictatorship

You are a student in a class that needs to select one of two exam dates. Compare the fairness (from the point of view of the students) of the following procedures for making the decision.

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You are a student in a class that needs to select one of two exam dates. Compare the fairness (from the point of view of the students) of the following procedures for making the decision.

(A) One of the students is selected at random and is asked to make the choice. His identity will be announced and his decision will determine the outcome.

(B) Each student has to submit a note bearing his name and his choice. One of the notes will be randomly picked; the identity of the student will be announced and his choice will determine the outcome.

P2: random dictatorship

The two procedures are versions of the “random dictator” voting method. Both treat all individuals equally ex-ante (it satisfies (C1)), but only Procedure B is more likely to be viewed as fairer since it is the only one satisfying:

(C2) It is fair to allow all individuals to actively participate in the procedure whatever the realization of the random elements.

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Results:

A	B	$A \sim B$
5%	52%	43%

P3: implicit or explicit randomization

Consider an employer who needs to fire at most one worker who failed some qualification exam. All workers have taken the exam, some passed some failed. Compare the fairness (from the point of view of the workers) of the following procedures for selecting the worker to be fired.

P3: implicit or explicit randomization

Consider an employer who needs to fire at most one worker who failed some qualification exam. All workers have taken the exam, some passed some failed. Compare the fairness (from the point of view of the workers) of the following procedures for selecting the worker to be fired.

(A) The employer reviews the list of exam results at a random order. The first worker to fail the exam is fired.

(B) The employer selects a worker at random from among all the workers who failed the exam.

This problem is related to experiment 9 in Keren and Teigen (2010). They asked subjects to rank four types of random procedures for deciding which patient will receive treatment. Their findings indicate a tendency to view a coin toss as fairer than procedures such as drawing a piece of paper out of a hat or randomly choosing one of the rooms in which each patient is waiting.

Gideon Keren and Karl H. Teigen (2010). *Decisions by coin toss: Inappropriate but fair*. Judgment and Decision Making, 5(2), pp. 83 - 101.

P3: implicit or explicit randomization

Both procedures satisfy (C1) and (C2): Ex ante, each worker who failed the exam has the same chance of being fired. In addition, all workers actively participate in the procedure by taking the exam.

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Both procedures have two stages: In A, the random element is activated first and then the exams are marked; In B, all exams are marked and then the random element is realized. But only B satisfies the following:

(C3) It is fair to delay any asymmetry in the treatment of participants to as late a stage as possible in the procedure.

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Results:

A	B	$A \sim B$
6%	40%	54%

P4: the doctor or the mother

Suppose two twins need to receive a kidney transplant from their mother. The mother can donate only one kidney. Compare the fairness (from the point of view of the mother) of the following two procedures for determining who will receive the kidney.

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Suppose two twins need to receive a kidney transplant from their mother. The mother can donate only one kidney. Compare the fairness (from the point of view of the mother) of the following two procedures for determining who will receive the kidney.

(A) The doctor will toss a coin.

(B) The mother will toss the coin.

P4: the doctor or the mother

If the mother tosses the coin, she will bear a higher psychological burden than the doctor as a result of denying a kidney to one of her children. Only A satisfies the following:

(C4) It is fair to reduce the psychological burden associated with the perception that the individual who executes a random device bears some responsibility for its outcome.

P4: the doctor or the mother

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(C4) It is fair to reduce the psychological burden associated with the perception that the individual who executes a random device bears some responsibility for its outcome.

Results:

A	B	$A \sim B$
31%	10%	58%