

# Team decision making and intertemporal choice

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# Motivation

The 'decision maker' is usually modeled as an individual in economics, but many real-life decisions are team decisions.

Think of (hiring) committees, executive boards, advisory boards, households, etc. deciding on job offers, monetary policy, corporate business strategy, judicial questions, household savings, investments decisions ...

Intertemporal choice (like in investment decisions) is obviously related to self-control questions. Are teams different than individuals?

## Related literature (in economics)

- Denant-Boemont, Diecidue and L'Haridon (2013): While individuals make impatient and (intertemporally) inconsistent choices, teams (of five) are more patient and much more consistent.
- Shapiro (2010): While relatively impatient themselves, individuals are more patient when making savings choices for others or in large teams (of four), but not in small teams (of two).
- Carlsson et al. (2012): Joint decisions of spouses are not different from husbands' and wives' individual decisions.

# What we are going to do

- We compare individual and team decisions.
- We introduce an element of conflict in the team decision making situation.
- We study whether team decision making has a subsequent effect (a week later) on individual decisions.

# Experimental design

- We implement five treatments.
- In all treatments, subjects have to make two sets of choices, called Part A and Part B.
- Part A is always an individual decision (to measure individual preferences).
- Part B is identical to Part A, yet it has to be taken under different conditions, depending on treatment.

# Choice list

[1]	10.10 euro today	<input type="radio"/>	or	<input type="radio"/>	10.40 euro in 4 weeks
[2]	10.10 euro today	<input type="radio"/>	or	<input type="radio"/>	10.70 euro in 4 weeks
[3]	10.10 euro today	<input type="radio"/>	or	<input type="radio"/>	11.00 euro in 4 weeks
[4]	10.10 euro today	<input type="radio"/>	or	<input type="radio"/>	11.30 euro in 4 weeks
[5]	10.10 euro today	<input type="radio"/>	or	<input type="radio"/>	11.60 euro in 4 weeks
[6]	10.10 euro today	<input type="radio"/>	or	<input type="radio"/>	11.90 euro in 4 weeks
[7]	10.10 euro today	<input type="radio"/>	or	<input type="radio"/>	12.20 euro in 4 weeks
[8]	10.10 euro today	<input type="radio"/>	or	<input type="radio"/>	12.50 euro in 4 weeks
[9]	10.10 euro today	<input type="radio"/>	or	<input type="radio"/>	12.80 euro in 4 weeks
[10]	10.10 euro today	<input type="radio"/>	or	<input type="radio"/>	13.10 euro in 4 weeks
[11]	10.10 euro today	<input type="radio"/>	or	<input type="radio"/>	13.40 euro in 4 weeks
[12]	10.10 euro today	<input type="radio"/>	or	<input type="radio"/>	13.70 euro in 4 weeks
[13]	10.10 euro today	<input type="radio"/>	or	<input type="radio"/>	14.00 euro in 4 weeks
[14]	10.10 euro today	<input type="radio"/>	or	<input type="radio"/>	14.30 euro in 4 weeks
[15]	10.10 euro today	<input type="radio"/>	or	<input type="radio"/>	14.60 euro in 4 weeks
[16]	10.10 euro today	<input type="radio"/>	or	<input type="radio"/>	14.90 euro in 4 weeks
[17]	10.10 euro today	<input type="radio"/>	or	<input type="radio"/>	15.20 euro in 4 weeks
[18]	10.10 euro today	<input type="radio"/>	or	<input type="radio"/>	15.50 euro in 4 weeks
[19]	10.10 euro today	<input type="radio"/>	or	<input type="radio"/>	15.80 euro in 4 weeks
[20]	10.10 euro today	<input type="radio"/>	or	<input type="radio"/>	16.10 euro in 4 weeks

# Experimental treatments

- **SINGLE**: Part B is done alone.
- **TEAM**: Part B is done in teams of two. Both subjects have to agree in each row of the decision sheet.
- **CONFLICT**: Like in TEAM, but the decision sheets entail a mild conflict between team members.
- **STRONG**: Like CONFLICT, but the conflict is stronger.
- **COMM**: Like STRONG, but only communication in pairs, no joint decision.

# Implementing conflict in teams

- In treatments CONFLICT, STRONG, and COMM, one subject in the team was randomly assigned to the **LOW**-choice list, and the other subject to the **HIGH**-choice list.
- These choice lists were also used in Part A (not only in Part B).
- When making joint decisions in the case of conflict, both team members have to agree on choosing left or right (i.e., sooner or later) in each single row! They can iterate up to 10 times for each row.



# LOW-choice list in CONFLICT

[1]	10.10 euro today	0	or	0	10.30 euro in 4 weeks
[2]	10.10 euro today	0	or	0	10.50 euro in 4 weeks
[3]	10.10 euro today	0	or	0	10.70 euro in 4 weeks
[4]	10.10 euro today	0	or	0	10.90 euro in 4 weeks
[5]	10.10 euro today	0	or	0	11.10 euro in 4 weeks
[6]	10.10 euro today	0	or	0	11.30 euro in 4 weeks
[7]	10.10 euro today	0	or	0	11.50 euro in 4 weeks
[8]	10.10 euro today	0	or	0	11.70 euro in 4 weeks
[9]	10.10 euro today	0	or	0	11.90 euro in 4 weeks
[10]	10.10 euro today	0	or	0	12.10 euro in 4 weeks
[11]	10.10 euro today	0	or	0	12.30 euro in 4 weeks
[12]	10.10 euro today	0	or	0	12.50 euro in 4 weeks
[13]	10.10 euro today	0	or	0	12.70 euro in 4 weeks
[14]	10.10 euro today	0	or	0	12.90 euro in 4 weeks
[15]	10.10 euro today	0	or	0	13.10 euro in 4 weeks
[16]	10.10 euro today	0	or	0	13.30 euro in 4 weeks
[17]	10.10 euro today	0	or	0	13.50 euro in 4 weeks
[18]	10.10 euro today	0	or	0	13.70 euro in 4 weeks
[19]	10.10 euro today	0	or	0	13.90 euro in 4 weeks
[20]	10.10 euro today	0	or	0	14.10 euro in 4 weeks

# HIGH-choice list in CONFLICT

[1]	10.10 euro today	0	or	0	10.50 euro in 4 weeks
[2]	10.10 euro today	0	or	0	10.90 euro in 4 weeks
[3]	10.10 euro today	0	or	0	11.30 euro in 4 weeks
[4]	10.10 euro today	0	or	0	11.70 euro in 4 weeks
[5]	10.10 euro today	0	or	0	12.10 euro in 4 weeks
[6]	10.10 euro today	0	or	0	12.50 euro in 4 weeks
[7]	10.10 euro today	0	or	0	12.90 euro in 4 weeks
[8]	10.10 euro today	0	or	0	13.30 euro in 4 weeks
[9]	10.10 euro today	0	or	0	13.70 euro in 4 weeks
[10]	10.10 euro today	0	or	0	14.10 euro in 4 weeks
[11]	10.10 euro today	0	or	0	14.50 euro in 4 weeks
[12]	10.10 euro today	0	or	0	14.90 euro in 4 weeks
[13]	10.10 euro today	0	or	0	15.30 euro in 4 weeks
[14]	10.10 euro today	0	or	0	15.70 euro in 4 weeks
[15]	10.10 euro today	0	or	0	16.10 euro in 4 weeks
[16]	10.10 euro today	0	or	0	16.50 euro in 4 weeks
[17]	10.10 euro today	0	or	0	16.90 euro in 4 weeks
[18]	10.10 euro today	0	or	0	17.30 euro in 4 weeks
[19]	10.10 euro today	0	or	0	17.70 euro in 4 weeks
[20]	10.10 euro today	0	or	0	18.10 euro in 4 weeks

# LOW-choice list in STRONG

[1]	10.10 euro today	0	or	0	10.20 euro in 4 weeks
[2]	10.10 euro today	0	or	0	10.30 euro in 4 weeks
[3]	10.10 euro today	0	or	0	10.40 euro in 4 weeks
[4]	10.10 euro today	0	or	0	10.50 euro in 4 weeks
[5]	10.10 euro today	0	or	0	10.60 euro in 4 weeks
[6]	10.10 euro today	0	or	0	10.70 euro in 4 weeks
[7]	10.10 euro today	0	or	0	10.80 euro in 4 weeks
[8]	10.10 euro today	0	or	0	10.90 euro in 4 weeks
[9]	10.10 euro today	0	or	0	11.00 euro in 4 weeks
[10]	10.10 euro today	0	or	0	11.10 euro in 4 weeks
[11]	10.10 euro today	0	or	0	11.20 euro in 4 weeks
[12]	10.10 euro today	0	or	0	11.30 euro in 4 weeks
[13]	10.10 euro today	0	or	0	11.40 euro in 4 weeks
[14]	10.10 euro today	0	or	0	11.50 euro in 4 weeks
[15]	10.10 euro today	0	or	0	11.60 euro in 4 weeks
[16]	10.10 euro today	0	or	0	11.70 euro in 4 weeks
[17]	10.10 euro today	0	or	0	11.80 euro in 4 weeks
[18]	10.10 euro today	0	or	0	11.90 euro in 4 weeks
[19]	10.10 euro today	0	or	0	12.00 euro in 4 weeks
[20]	10.10 euro today	0	or	0	12.10 euro in 4 weeks

# HIGH-choice list in STRONG

[1]	10.10 euro today	<input type="radio"/>	or	<input type="radio"/>	10.60 euro in 4 weeks
[2]	10.10 euro today	<input type="radio"/>	or	<input type="radio"/>	11.10 euro in 4 weeks
[3]	10.10 euro today	<input type="radio"/>	or	<input type="radio"/>	11.60 euro in 4 weeks
[4]	10.10 euro today	<input type="radio"/>	or	<input type="radio"/>	12.10 euro in 4 weeks
[5]	10.10 euro today	<input type="radio"/>	or	<input type="radio"/>	12.60 euro in 4 weeks
[6]	10.10 euro today	<input type="radio"/>	or	<input type="radio"/>	13.10 euro in 4 weeks
[7]	10.10 euro today	<input type="radio"/>	or	<input type="radio"/>	13.60 euro in 4 weeks
[8]	10.10 euro today	<input type="radio"/>	or	<input type="radio"/>	14.10 euro in 4 weeks
[9]	10.10 euro today	<input type="radio"/>	or	<input type="radio"/>	14.60 euro in 4 weeks
[10]	10.10 euro today	<input type="radio"/>	or	<input type="radio"/>	15.10 euro in 4 weeks
[11]	10.10 euro today	<input type="radio"/>	or	<input type="radio"/>	15.60 euro in 4 weeks
[12]	10.10 euro today	<input type="radio"/>	or	<input type="radio"/>	16.10 euro in 4 weeks
[13]	10.10 euro today	<input type="radio"/>	or	<input type="radio"/>	16.60 euro in 4 weeks
[14]	10.10 euro today	<input type="radio"/>	or	<input type="radio"/>	17.10 euro in 4 weeks
[15]	10.10 euro today	<input type="radio"/>	or	<input type="radio"/>	17.60 euro in 4 weeks
[16]	10.10 euro today	<input type="radio"/>	or	<input type="radio"/>	18.10 euro in 4 weeks
[17]	10.10 euro today	<input type="radio"/>	or	<input type="radio"/>	18.60 euro in 4 weeks
[18]	10.10 euro today	<input type="radio"/>	or	<input type="radio"/>	19.10 euro in 4 weeks
[19]	10.10 euro today	<input type="radio"/>	or	<input type="radio"/>	19.60 euro in 4 weeks
[20]	10.10 euro today	<input type="radio"/>	or	<input type="radio"/>	20.10 euro in 4 weeks

# Procedure

- One decision sheet randomly selected for payment, and one row randomly implemented.
- Experiment was run between December 2015 and May 2016 at the University of Innsbruck.
- Experiment was computerized (zTree by Fischbacher, 2007)
- In total, 318 participants.

# Main results – number of patient choices

## Part A

Treatment	Number of patient choices
SINGLE	15.30
TEAM	15.50
CONFLICT	14.02
STRONG	13.89
COMM	14.73

No significant differences across treatments.

# Main results – number of patient choices

## Part B (final decisions)

Treatment	Number of patient choices
SINGLE	15.35
TEAM	15.79
CONFLICT	14.54
STRONG	15.77
COMM	15.23

No significant differences across treatments.

However, checking the changes between Part A and Part B, we find significant differences, with largest improvements in STRONG ( $p < 0.05$ ).

# What happens in case of conflict

Treatment	Part A LOW	Part A HIGH	Part B Final
CONFLICT	14.67	13.38	14.54
STRONG	11.14	16.64	15.77
COMM	12.00	17.46	12.45 <sup>LOW</sup> / 18.00 <sup>HIGH</sup>

- Significant differences between LOW and HIGH in STRONG CONFLICT and COMMUNICATION. If stakes are high, subjects are more likely to wait for the future.
- LOW-list subjects adapt much more to HIGH-list subjects than the other way round (significant increase in LOW).
- Yet, this is only true for joint decisions, not when pairs only communicate, but make individual decisions in COMM).



# Adapation process of LOW subjects in STRONG

Role	Part A	Part B 1st choice	Part B Final choice
LOW	11.14	12.27	15.77
HIGH	16.64	16.67	15.77

For LOW-subjects, it holds

Part A < Part B-1st < Part B-Final (all significant  $p < 0.05$ )

For HIGH-subjects, we find

Part A = Part B-1st < Part B-Final ( $p < 0.1$ )

# Are the effects persistent?

- Given the results in STRONG, we re-invited the participants in this treatment **one week later** and let them make the same choices again individually.
- We had two conditions in this repetition.
  - **Without default**: Subjects had to fill in choice lists.
  - **With default**: Subjects were given their previous choices one week ago and could change them.
- In both conditions, subjects make choices that are indistinguishable from their individual choices in Part A one week ago. Hence, no persistent effect of team decision-making in STRONG on individual choices.

# Summary

- Team decision making in itself does not change intertemporal choice patterns.
- Introducing conflict within teams where one member benefits much more from patience than the other member makes the disadvantaged member more patient.
- The latter effect does not persist, though, and it is not driven by communication between team members, but the consequence of having to agree on a joint decision.

**Thank you for your attention!**

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**UoC Forum: Motivation, self control and  
economic behavior (speaker: Carlos Alos-Ferrer)**