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Do spouses cooperate? And if not: why?

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Overview of the Presentation

- MOTIVATIONS & LITERATURE
- TASKS AND PREDICTIONS
- PROTOCOL
- RESULTS
- CONCLUSION

Motivation

- This paper aims at testing efficiency of household decision-making using an experiment on true couples. Then it explores the why of the result ?

It is at the meeting point of two strands of the literature

1. Household Decision-Making Theory

2. Experiments on Social Dilemmas

Motivation 1
Household Decision-Making Models

(I) Cooperative

- Nash-bargaining (Manser & Brown, 1980; McElroy & Horney, 1981)
- « Unitary » models (Samuelson, 1956)
- « Collective » models (Chiappori, Apps & Rees…)

Very common models. Cooperation is often taken as an 'obvious' fact for a family…

(II) Non-cooperative

- Limited commitment (Lundberg and Pollak, 2003; Basu, 2001)

Rarely used for HH in developped countries

Selfishness of individuals also assumed

Motivation 1
Household Decision-Making Models

Is efficiency tested → Rarely !

How is efficiency tested ?

→ Microeconometric models of household consumption behavior and rank tests.

(Browning and Chiappori, 1998; Dauphin and Fortin, 2001; Abdel-Rahmen El Lahga , Dauphin, Fortin, Lacroix, 2010)

But : Structural assumptions such as separability (one consumption wrt others, e.g: durables, public goods, leisure, etc…)

But : Rejection power of rank test ?

Motivation 1
Household Decision-Making Models

Changing method to test efficiency :

Experiment

Why?

Does not need heavy econometric methods

No structural assumptions necessary since environment is controlled (welfare functions=pay-offs)

Simple and straightforward

Motivation 2
Experiments on Social Dilemmas

- Large literature on cooperation in social dilemmas **between strangers**
- In « Prisonner Dilemma », self interested payoff maximization predicts opportunism
  - one-shot
  - anonymous
- However one of the main (and surprising result) is that cooperation is strongly present.

Motivation 2
Experiments on Social Dilemmas

- What will happen in case of interaction people knowing each other ? (family members, friends, member of a group ?)
- This is expected to generate high levels of cooperation
  - Repeated game effects, reputation, reciprocity.
  - Reduction of strategic uncertainty.
  - Other regarding preferences (Fehr and Schmidt, 1999; Bolton and Ockenfels, 2000).

Motivation 2
Experiments on Social Dilemmas

- Some of the aspects characterizing couples have already been studied.
  - Belonging to the same group (Goette et al., 2006; Bernhard et al., 2006).
  - Getting to “know” others before interacting (Bochet et al., 2006; Bohnet and Frey, 1999).
  - But only few exceptions with participants who know each other before the experiment (Reuben and van Winden, 2008).

Motivation 2
Experiments on Social Dilemmas

Very few experimental evidences on couples

… Do they really cooperate more ?

… Why ?

Literature – experiments on couples

Experimental studies on ‘true’ couples:

- Risk aversion (De Palma et Picard., 2011; Carlsson et al., 2009).
- Couple decision in risky environment (Bateman and Munro, 2003; Munro et al. 2005).
- Saving decisions (Ashraf, 2009).
- Insurance (Robinson, 2008)
- Cooperation in a public good game (Peters et al., 2004; Iversen et al., 2006; Mani, 2010).

TASKS & PREDICTIONS

➔ Test Efficiency using a Prisonner Dilemma, one shot

Why a PD ? Very simple and widespread experiment no evidence on couples up to now. Reference on strangers is known.

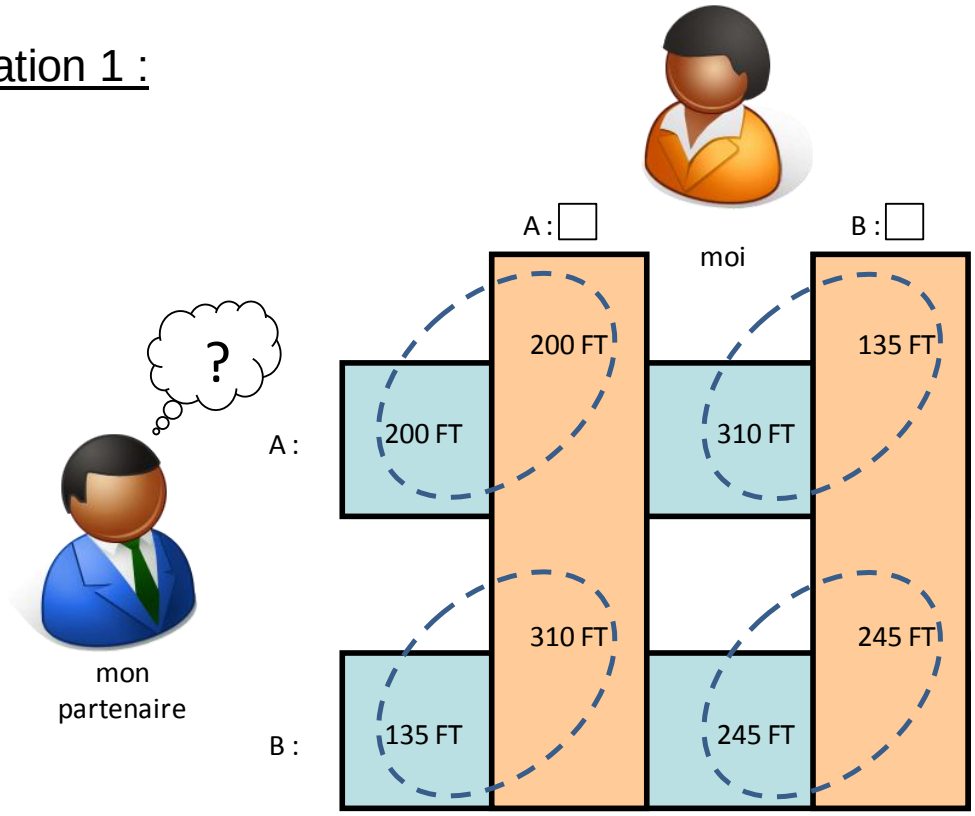
Interpretation: public good contribution game with a discrete investment choice (yes/no)

This task is artificial but represents variety of couples' situations where behavior cannot be observed by the partner which leaves the opportunity to free-ride. e.g. when earnings or effort can be hidden to the partner. Cooperation strongly depends on trust and beliefs about the partner's actions

Prisonners Dilemma Task

1. with partner
2. with unknown other (same sex as partner)
3. with partner

situation 1 :



Note concerning anonymity

- One decision per task was randomly selected for payment
- Only total earnings were given to participants
- Impossible to deduce from earnings the choice of their partner!
- Individual pay-offs given secretly and individually at the end of the experiment

Prediction for strangers : straightforward and well-known

(I) Cooperative models : Efficient issue is BB

(II) Non-cooperative models

(standard experimental case) : depending on other-regarding preferences and beliefs about partner's action AA,AB or BB

And for couples ? Not so simple

Spouses play a repeated game in real life and they still could share the money earned in the laboratory after the experiment *(this sharing remains unobserved)*

➔ So, experimental control when working with couples is imperfect: individual pay-offs ≠ individual welfare

➔ So, predictions depend on unobserved intra-HH sharing norm « micro-norm »

Micro-norm ~ Sharing Rule

Single individuals: Experimental pay-off = welfare

Individuals in a HH: Pay-off distribution in the couple → **Sharing-rule** → individual welfare

Chiappori, 1988; Chiappori and Ekeland, 2009

« characteristic of the marriage contract that is not observable », Chiappori, 1992

Formally, we can denote a micro norm as a function (ρ) defining own (x_1) and others (x_2) consumption in each partners earnings (y_1 and y_2):

$x_1=\rho_1(y_1,y_2)$; $x_2=\rho_2(y_1,y_2)$.

Micro-norm ~ Sharing Rule

Cases:

Micro-norm can have the "income-pooling" property (unitary model or non-cooperative models where the Warr theorem applies): $x_1=\rho_1(y_1+y_2)$; $x_2=\rho_2(y_1+y_2)$

Generally, in the collective model or in non-cooperative model, one recognizes that $x_i=\rho_i(y_1,y_2)$ where $\rho'_i>0$. If each individual can consume up to his income, then we can consider the special case $x_1=y_1$, $x_2=y_2$.

! This corresponds to the "usual" case considered by experimentalists who work on couples but many sharing-rules might exist !

Distribution Task

- Selects a dictator in the HH with proba ½
- Dictator giving comparing efficiency with equality
- A priori no strategic interaction in this simpler task
- Provides a scale allowing prediction of « pro-social » attitudes but in a « couple version »

→ *To explore the « Why?» question…*

Joint payoff: 400 vs 450 (mult. α = 1.125)


moi


ma partenaire


moi


ma partenaire

1 :	200 FT	A : ☐	200 FT	0 FT	B : ☐	450 FT	aucune préférence	☐
2 :	200 FT	A : ☐	200 FT	75 FT	B : ☐	375 FT	aucune préférence	☐
3 :	200 FT	A : ☐	200 FT	150 FT	B : ☐	300 FT	aucune préférence	☐
4 :	200 FT	A : ☐	200 FT	225 FT	B : ☐	225 FT	aucune préférence	☐
5 :	200 FT	A : ☐	200 FT	300 FT	B : ☐	150 FT	aucune préférence	☐
6 :	200 FT	A : ☐	200 FT	375 FT	B : ☐	75 FT	aucune préférence	☐
7 :	200 FT	A : ☐	200 FT	450 FT	B : ☐	0 FT	aucune préférence	☐

Joint payoff: 400 vs 600 (mult. α = 1.5)

option A:

option B:

8 :	200 FT	A : ☐	200 FT	0 FT	B : ☐	600 FT	aucune préférence ☐
9 :	200 FT	A : ☐	200 FT	100 FT	B : ☐	500 FT	aucune préférence ☐
10 :	200 FT	A : ☐	200 FT	200 FT	B : ☐	400 FT	aucune préférence ☐
11 :	200 FT	A : ☐	200 FT	300 FT	B : ☐	300 FT	aucune préférence ☐
12 :	200 FT	A : ☐	200 FT	400 FT	B : ☐	200 FT	aucune préférence ☐
13 :	200 FT	A : ☐	200 FT	500 FT	B : ☐	100 FT	aucune préférence ☐
14 :	200 FT	A : ☐	200 FT	600 FT	B : ☐	0 FT	aucune préférence ☐

Prediction

(I) Cooperative models : BBBBBBB

(II) Non-cooperative models with income-pooling: BBBBBBB

If BBBBBBB is not observed, *assuming a micro-norm*, we can deduce other-regarding preferences of family members…

We now consider the case where $x_i=y_i$

GAME 1: Joint payoff: 400 vs 450 (mult. α


moi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moi


ma partenaire

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7 :	200 FT	A : ☐	200 FT	450 FT	B : ☐	0 FT	aucune préférence ☐

Joint payoff: 400 vs 450 (mult. α = 1.125)

Irrational


moi


ma partenaire


moi


ma partenaire

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6 :	200 FT	A : ☐	200 FT	375 FT	B : ☐	75 FT	aucune préférence ☐
7 :	200 FT	A : ☐	200 FT	450 FT	B : ☐	0 FT	aucune préférence ☐

Joint payoff: 400 vs 450 (mult. α = 1.125)

Own payoff maximizer


moi


ma partenaire


moi


ma partenaire

1 :	200 FT	A : ☒	200 FT	0 FT	B : ☐	450 FT	aucune préférence ☐
2 :	200 FT	A : ☒	200 FT	75 FT	B : ☐	375 FT	aucune préférence ☐
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4 :	200 FT	A : ☐	200 FT	225 FT	B : ☒	225 FT	aucune préférence ☐
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6 :	200 FT	A : ☐	200 FT	375 FT	B : ☒	75 FT	aucune préférence ☐
7 :	200 FT	A : ☐	200 FT	450 FT	B : ☒	0 FT	aucune préférence ☐

Joint payoff: 400 vs 450 (mult. α = 1.125)

Couple's payoff maximizer (Income pooler - IP)




	moi		ma partenaire		moi		ma partenaire	
1 :	200 FT	A : ☐	200 FT		0 FT	B : ☒	450 FT	aucune préférence ☐
2 :	200 FT	A : ☐	200 FT		75 FT	B : ☒	375 FT	aucune préférence ☐
3 :	200 FT	A : ☐	200 FT		150 FT	B : ☒	300 FT	aucune préférence ☐
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5 :	200 FT	A : ☐	200 FT		300 FT	B : ☒	150 FT	aucune préférence ☐
6 :	200 FT	A : ☐	200 FT		375 FT	B : ☒	75 FT	aucune préférence ☐
7 :	200 FT	A : ☐	200 FT		450 FT	B : ☒	0 FT	aucune préférence ☐

Joint payoff: 400 vs 450 (mult. α = 1.125)

Partner's payoff maximizer


moi


ma partenaire


moi


ma partenaire

1 :	200 FT	A : ☐	200 FT	0 FT	B : ☒	450 FT	aucune préférence	☐
2 :	200 FT	A : ☐	200 FT	75 FT	B : ☒	375 FT	aucune préférence	☐
3 :	200 FT	A : ☐	200 FT	150 FT	B : ☒	300 FT	aucune préférence	☐
4 :	200 FT	A : ☐	200 FT	225 FT	B : ☒	225 FT	aucune préférence	☐
5 :	200 FT	A : ☒	200 FT	300 FT	B : ☐	150 FT	aucune préférence	☐
6 :	200 FT	A : ☒	200 FT	375 FT	B : ☐	75 FT	aucune préférence	☐
7 :	200 FT	A : ☒	200 FT	450 FT	B : ☐	0 FT	aucune préférence	☐

Joint payoff: 400 vs 450 (mult. α = 1.125)

Symmetric efficiency-equality trader (1/3)

low inequality aversion




	moi		ma partenaire		moi		ma partenaire	
1 :	200 FT	A : ☒	200 FT		0 FT	B : ☐	450 FT	aucune préférence ☐
2 :	200 FT	A : ☐	200 FT		75 FT	B : ☒	375 FT	aucune préférence ☐
3 :	200 FT	A : ☐	200 FT		150 FT	B : ☒	300 FT	aucune préférence ☐
4 :	200 FT	A : ☐	200 FT		225 FT	B : ☒	225 FT	aucune préférence ☐
5 :	200 FT	A : ☐	200 FT		300 FT	B : ☒	150 FT	aucune préférence ☐
6 :	200 FT	A : ☐	200 FT		375 FT	B : ☒	75 FT	aucune préférence ☐
7 :	200 FT	A : ☒	200 FT		450 FT	B : ☐	0 FT	aucune préférence ☐

Joint payoff: 400 vs 450 (mult. α = 1.125)

Symmetric efficiency-equality trader (2/3)

Medium inequality aversion




	moi		ma partenaire		moi		ma partenaire	
1 :	200 FT	A : ☒	200 FT		0 FT	B : ☐	450 FT	aucune préférence ☐
2 :	200 FT	A : ☒	200 FT		75 FT	B : ☐	375 FT	aucune préférence ☐
3 :	200 FT	A : ☐	200 FT		150 FT	B : ☒	300 FT	aucune préférence ☐
4 :	200 FT	A : ☐	200 FT		225 FT	B : ☒	225 FT	aucune préférence ☐
5 :	200 FT	A : ☐	200 FT		300 FT	B : ☒	150 FT	aucune préférence ☐
6 :	200 FT	A : ☒	200 FT		375 FT	B : ☐	75 FT	aucune préférence ☐
7 :	200 FT	A : ☒	200 FT		450 FT	B : ☐	0 FT	aucune préférence ☐

Joint payoff: 400 vs 450 (mult. α = 1.125)

Symmetric efficiency-equality trader (3/3)

High inequality aversion

	moi		ma partenaire		moi		ma partenaire	
1 :	200 FT	A : ☒	200 FT		0 FT	B : ☐	450 FT	aucune préférence ☐
2 :	200 FT	A : ☒	200 FT		75 FT	B : ☐	375 FT	aucune préférence ☐
3 :	200 FT	A : ☒	200 FT		150 FT	B : ☐	300 FT	aucune préférence ☐
4 :	200 FT	A : ☐	200 FT		225 FT	B : ☒	225 FT	aucune préférence ☐
5 :	200 FT	A : ☒	200 FT		300 FT	B : ☐	150 FT	aucune préférence ☐
6 :	200 FT	A : ☒	200 FT		375 FT	B : ☐	75 FT	aucune préférence ☐
7 :	200 FT	A : ☒	200 FT		450 FT	B : ☐	0 FT	aucune préférence ☐

Joint payoff: 400 vs 450 (mult. α = 1.125)

Self-asymmetric efficiency-equality trader (1)


moi


ma partenaire


moi


ma partenaire

	moi		ma partenaire		moi		ma partenaire	
1 :	200 FT	A : ☒	200 FT		0 FT	B : ☐	450 FT	aucune préférence ☐
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Joint payoff: 400 vs 450 (mult. α = 1.125)

Self-asymmetric efficiency-equality trader (2)


moi


ma partenaire


moi


ma partenaire

	moi		ma partenaire	moi		ma partenaire	
1 :	200 FT	A : ☒	200 FT	0 FT	B : ☐	450 FT	aucune préférence ☐
2 :	200 FT	A : ☒	200 FT	75 FT	B : ☐	375 FT	aucune préférence ☐
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7 :	200 FT	A : ☐	200 FT	450 FT	B : ☒	0 FT	aucune préférence ☐

Joint payoff: 400 vs 450 (mult. α = 1.125)

Self-asymmetric efficiency-equality trader (3)


moi


ma partenaire


moi


ma partenaire

	moi		ma partenaire	moi		ma partenaire	
1 :	200 FT	A : ☒	200 FT	0 FT	B : ☐	450 FT	aucune préférence ☐
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Joint payoff: 400 vs 450 (mult. α = 1.125)

Self-asymmetric efficiency-equality trader (4)




	moi		ma partenaire		moi		ma partenaire	
1 :	200 FT	A : ☒	200 FT		0 FT	B : ☐	450 FT	aucune préférence ☐
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Joint payoff: 400 vs 450 (mult. α = 1.125)

Partner-asymmetric efficiency-equality trader




	moi		ma partenaire		moi		ma partenaire	
1 :	200 FT	A : ☒	200 FT		0 FT	B : ☐	450 FT	aucune préférence ☐
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Which characteristics might affect efficiency ?

→ *From economic theory*

- **Marriage contract effect; Date at marriage**

(Pavoni, 2000; Rasul, 2006)

- **Presence of public goods in the family**

(Becker et al., 1977)

- **Variables reflecting external opportunities**

→ *Others*

- **Psychological characteristics of the couple**

Protocol

- Experimental study with 100 established couples from the urban area of Toulouse, june 2008.
- Paper and pencil experiment.
- Duration: approx. 2 hours.
- Average earnings (payed anonymously!):

  39 Euro per person.

The lab

Timeline of the experiment

1. Experimental parts to measure:
   - **Prisoners' dilemma game**
   - Risk aversion elicitation (Holt & Laury)
   - **Dictator distribution game**
   - Free-form bargaining game
   - Risk aversion in couple
2. **Demographic questionnaire**
   - time as couple
   - children
   - income
   - Education, …
3. **Psychological questionnaire of couple satisfaction.**
   - Dyadic adjustment scale (Spanier, 1976).

   (consensus, satisfaction, cohesion)

Selection : demographics

Age range	population census	participants
20-29	31,62 %	43,56 %
30-39	26,40 %	32,67 %
40-49	23,58 %	11,39 %
50-59	18,40 %	12,38 %
Occupation		
employed	65,87 %	80,20 %
unemployed	11,21 %	7,43 %
Inactive	22,93 %	14,36 %

results: demographics

Socio-professional characteristics	population census	participants
1 – Farmers	0,16 %	0,00 %
2 – Tradesmen, Shopkeepers and Business Owners	4,16 %	3,89 %
3 – Mangers and Secondary / University Teachers	14,48 %	23,89 %
4 – Intermediate Professions	21,21 %	36,67 %
5 – White collar workers (police; shops)	22,24 %	28,33 %
6 – Blue collar workers	13,28 %	5,56 %
7 – Retired	1,43 %	0,56 %
8 – Other inactive	23,02 %	1,11 %

Demographics

Household variables:	Overall mean (standard deviation)	
Married (dummy)	0.4406	(0.4977)
Children (dummy)	0.3960	(0.4903)
Household assets (in 1000 euros)	181.4834	(317.2376)

Individual variables:	Men	Women
Age	35.2970 (9.9865)	33.4752 (9.8525)
Years of study above age of 16	7.3523 (3.9771)	7.3011 (3.4358)
Individual monthly net income	1663.39 (954.71)	1335.92 (715.13)

TABLE I: OVERVIEW OF DEMOGRAPHIC VARIABLES OF PARTICIPANTS (100 COUPLES)

Household variables:	**Overall mean**	**(std dev)**					
Married (dummy)	0.44	(0.50)					
Years as couple	7.86	(8.83)					
Children (dummy)	0.40	(0.49)					
Children younger than 3 (dummy)	0.14	(0.35)					
Number of children by couple	0.65	(0.93)					
Household assets (in 1000 euros)	181.48	(317.24)					
Joint account (dummy)	0.57	(0.50)					
Individual variables:	**Overall mean**	**(std dev)**	**Men**	**(std dev)**	**Women**	**(std dev)**	**Corr. in couple**
Age	34.39	(9.94)	35.30	(9.99)	33.48	(9.85)	0.899
Years of study above age of 16	5.78	(4.04)	5.96	(4.18)	5.59	(3.90)	0.179
Employed (dummy)	0.80	(0.40)	0.80	(0.40)	0.80	(0.40)	0.127
Unemployed (dummy)	0.07	(0.26)	0.09	(0.29)	0.06	(0.24)	0.068
Inactive (dummy)	0.14	(0.35)	0.13	(0.34)	0.16	(0.37)	0.076
If employed: hours worked per week	36.26	(8.18)	38.54	(6.51)	33.97	(9.03)	0.057
Weekly hours of household work	7.00	(6.40)	6.27	(5.10)	7.72	(7.44)	0.201
Individual monthly net income	1499.65	(857.23)	1663.39	(954.71)	1335.92	(715.13)	0.212
Knows perfectly income of partner (dummy)	0.56	(0.50)	0.62	(0.49)	0.50	(0.50)	0.074
Overestimation of partners income (dummy)	0.07	(0.26)	0.03	(0.17)	0.12	(0.33)	0.296
Underestimation of partners income (dummy)	0.23	(0.42)	0.25	(0.43)	0.21	(0.41)	-0.124
Correct estimation of partners income (dummy)	0.70	(0.46)	0.72	(0.45)	0.67	(0.47)	0.040
Individual assets (in 1000 euros)	47.97	(112.64)	51.71	(114.48)	44.23	(111.21)	-0.011
Individual debts (in 1000 euros)	8.66	(32.82)	14.12	(44.55)	3.19	(10.92)	-0.055
Lived in couple before (dummy)	0.28	(0.45)	0.28	(0.45)	0.29	(0.46)	0.291
Individual bank account (dummy)	0.79	(0.41)	0.80	(0.40)	0.78	(0.42)	0.640

method

results: prisoners dilemma

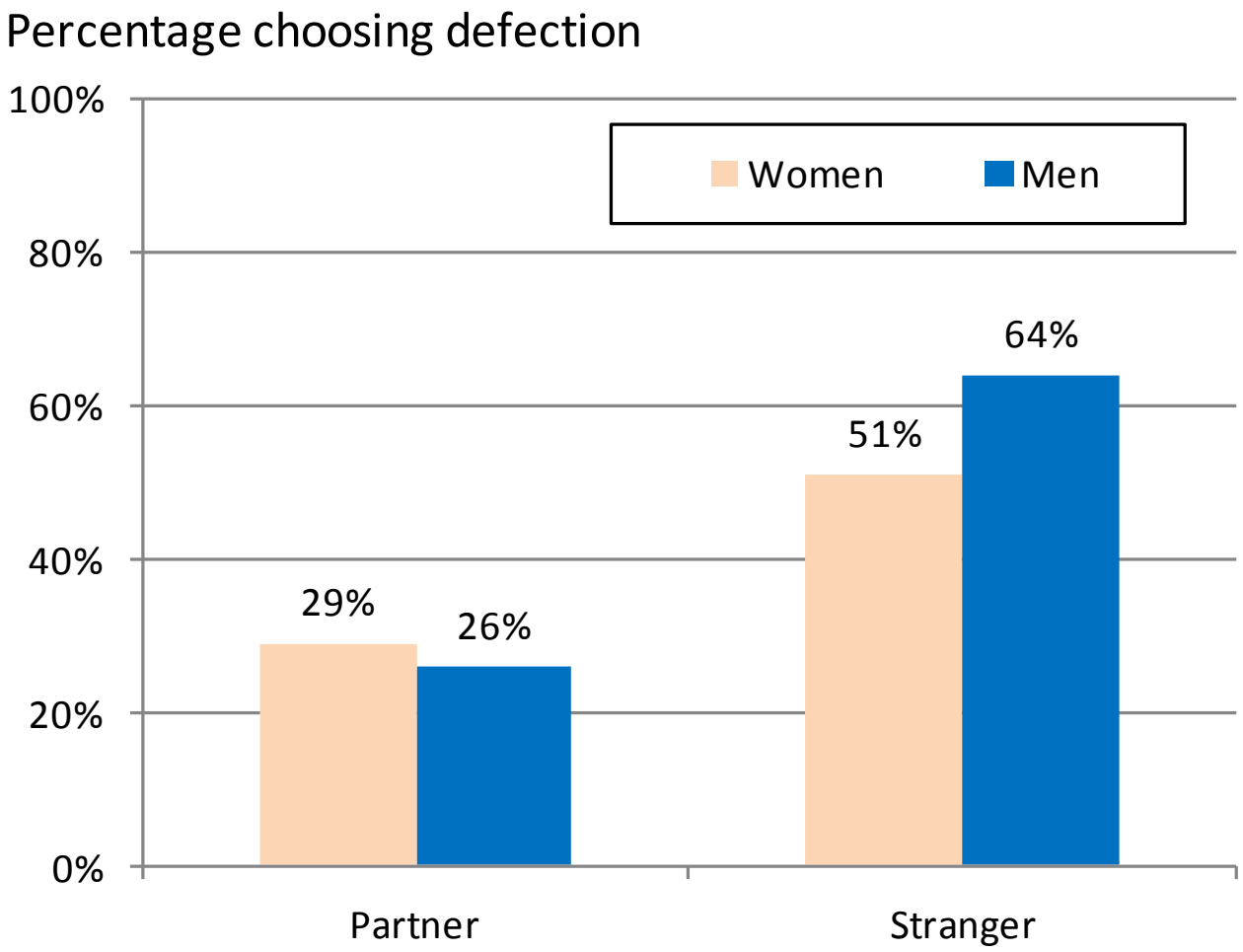
- symmetric game (partner + stranger)

A:	D	C
D	200, 200	310, 135
C	135, 310	245, 245

- asymmetric game (row player facing higher effort cost)

B:	D	C
D	200, 200	310, 160
C	110, 310	220, 270

RESULTS


Percentage choosing defection
100%
80%
60%
40%
20%
0%
Women
Men
29%
26%
51%
64%
Partner
Stranger

Prisonner Dilemma Task

- 27,5% defection rate within the couple
- Significant difference strangers/couples
- Defecting with strangers is not correlated with defecting with partner
- Gender difference significant 10% level

Joint Behavior

a) Spouses

N = 100 couples		Woman D	Woman C
Man	D	10	16
	C	19	55

b) Strangers

N = 100		Woman D	Woman C
Man	D	31	33
	C	20	16

Distribution Task

	Men	Women
Maximizing own payoff	**0**	**0**
Maximizing couple's payoff	**64**	**52**
Sensitive to efficiency-equality tradeoff (*)		
Symmetric	14	15
Asymmetric – selfish	**8**	**14**
Asymmetric – altruistic	8	9
Maximizing other's payoff	0	0
Irrational (did not select B for row 4)	6	10
Total	100	100

Sign of opportunism ~ 11%. Sign of efficiency ~ 55%. Others are very symmetric: average share for self=45% for asymetric individuals. Small gender effect.

How can we explain this?

Confusion ?

Robustness check:

Replication of the game: cooperation rate increases from 72,5 to 86% (familiarization effect: significant at 10% level)

Still, defection remains 95% confidence interval: from 6,2% to 21,3%

Distribution task:

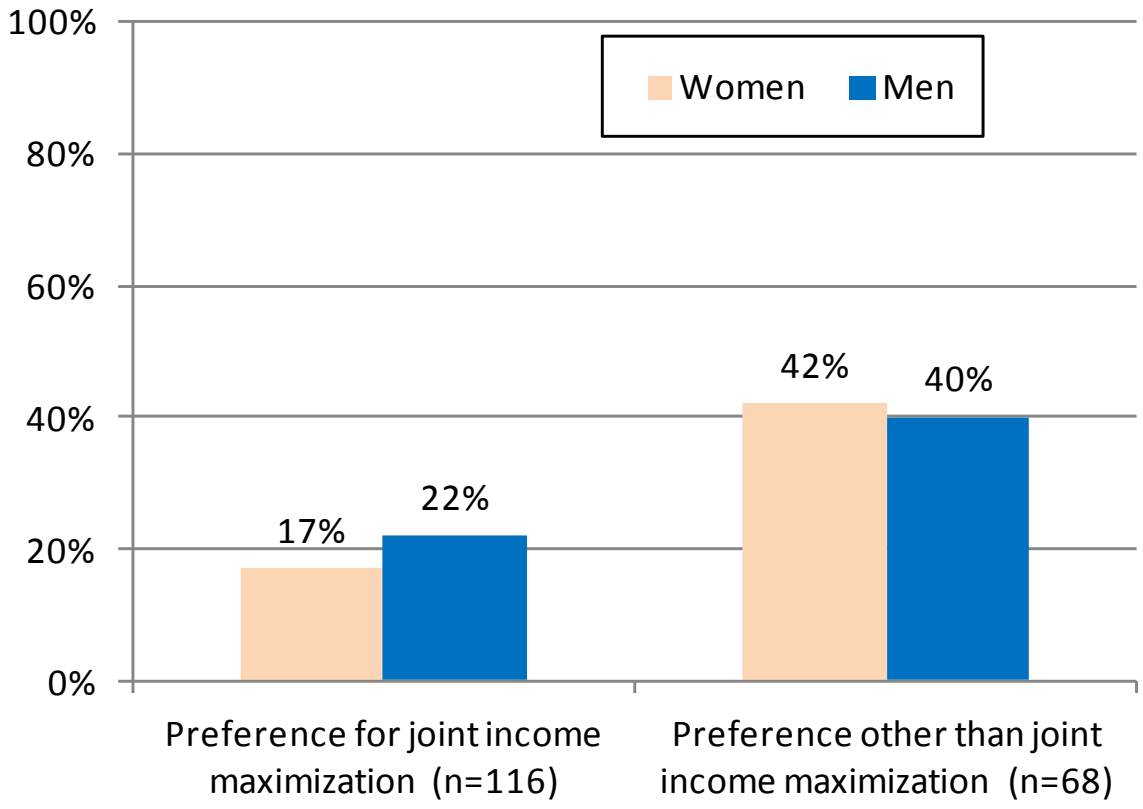
When the stake increases (efficiency gain +50% instead of 25%), **efficient choices raise from 58% to 67%**.

This does not look like confusion but reveals than some people trade efficiency gains against other kinds of motivations

Consistency accross games

« irrationnal » individuals in the decision task do not defect more often in the prisonner dilemma.

People who maximize joint income in the distribution task are more likely to cooperate in the prisonner dilemma. Consistency is not perfect but overall participants seem to understand the game!



Links between Observable Characteristics and Defection

Bivariate probit model of defection in the prisonner dilemma

→ Correlation of unobservables within the couple (share common unobserved characteristics explaining defection ?
Unobservable related to the micro-norm affect both behavior ?)

Observed Characteristics

- Of the individual
- Of the couples
- Of the individual characteristics with respect to her partner
- Psychological

Couple characteristics and Defection in the PD

	Women			Men		
Age	-0.059	(0.038)		0.055	(0.031)	*
Duration of relationship	0.036	(0.041)		-0.024	(0.033)	
Married without children	0.319	(0.546)		0.362	(0.487)	
Not married, with children	1.049	(0.601)	*	0.374	(0.529)	
Married, with children	1.190	(0.480)	**	0.056	(0.555)	
Constant	0.412	(0.929)		-2.502	(0.853)	***
Observations	85					
Rho	0.176					
	(0.228)					
Log likelihood	-88.036					

*Bivariate probit model. Standard errors in parentheses . * significant at 10%; ** significant at 5%; *** significant at 1%*

- No effect of duration of marriage on efficiency
- Effect of children in an apparently counterintuitive way (wrt economic models)
- Effect if children and marriage appear coherent with sociological theories of female dissatisfaction within marriage

→ Further check using psychological scale of harmony in the couple… effect remains

(is this linked with the chosen scale ?)

Remarriage opportunities and Defection

a) Age	Women	Men
Own	0.007	0.032 **
	(0.016)	(0.016)
Difference(*)	-0.004	0.066 *
	(0.035)	(0.037)
Constant	-0.881	0.265 ***
	(0.556)	(0.209)
Rho	0.265	
	(0.209)	
Log likelihood	-91.572	

b) Education (years of study)	Women	Men
Own	-0.081	-0.023
	(0.050)	(0.048)
Difference(*)	0.058	0.072 *
	(0.039)	(0.041)
Constant	-0.184	-0.582 *
	(0.311)	(0.310)
Rho	0.254	
	(0.211)	
Log likelihood	-92.496	

c) Income (in 1000 €)	Women	Men
Own	-0.165	-0.218
	(0.224)	(0.232)
Difference(*)	0.000	0.342
	(0.156)	(0.223)
Constant	-0.429	-0.419
	(0.356)	(0.359)
Rho	0.231	
	(0.201)	

b) Assets (in 100,000 €)	Women	Men
Own	0.065	0.038
	(0.197)	(0.247)
Difference(*)	-0.010	0.178
	(0.131)	(0.217)
Constant	-0.673 ***	-0.715 **
	(0.172)	(0.175) *
Rho	0.262	
	(0.204)	

e) Previous couple experience (dummy)	Women	Men
Own	-0.001	-0.435
	(0.416)	(0.430)
Difference(*)	-0.623 *	0.743 *
	(0.356)	(0.408)
Constant	-0.673 ***	-0.561 ***
	(0.184)	(0.180)
Rho	0.201	
	(0.202)	
Log likelihood	-92.713	

Women who have more couple experience cooperate more
Men who have more couple experience cooperate less

Correlated with age: older men cooperate less.

Pooled analysis, compared with strangers

	Strangers			Couples		
Male	0.392	(0.193)	**	-0.012	(0.207)	
Age	-0.016	(0.015)		0.006	(0.014)	
Married without children	0.040	(0.330)		0.363	(0.351)	
Not married, with children	-0.450	(0.333)		0.596	(0.348)	*
Married, with children	0.155	(0.314)		0.733	(0.322)	**
Years of study	-0.005	(0.024)		-0.016	(0.025)	
Constant	0.623	(0.427)		-1.079	(0.434)	**
Observations	184			184		
Log likelihood	-120.495			-101.870		

Cooperation of strangers is generally not predictable using observables.

… But cooperation within couples is…

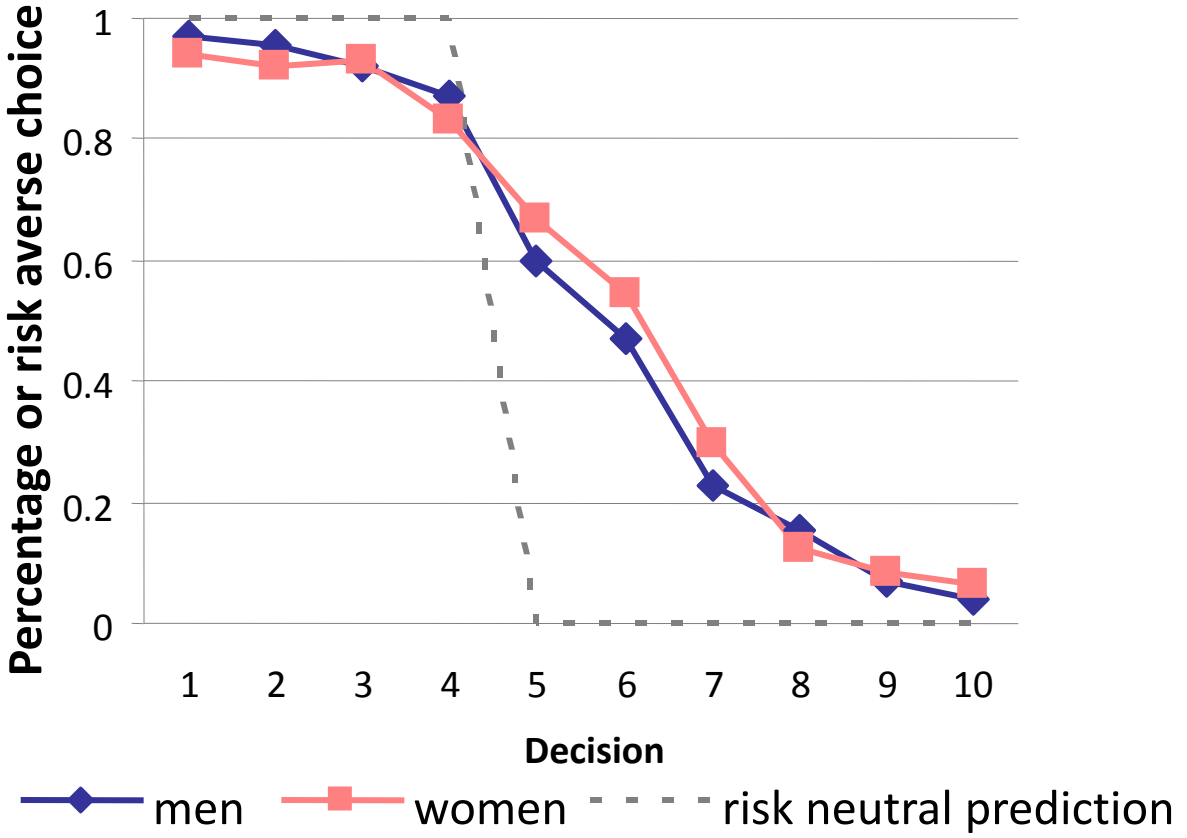
Conclusion

- Couples do generally cooperate but not always… (around 20% do not)
- There is some “noise” in the prisonner dilemma but still signs of defection are robusts
- Signs of opportunism are weak
- The motivation underlying observed defection seems to be highly driven by pay-off inequality aversion
- Puzzling effect of marriage and children… link with unbalanced satisfaction in the couple?
- Overall theoretical approaches undertaken do not fully account for these behaviors (selfishness of non-cooperative models is not proven here, caring à la Becker does not allow for inequality aversion)

Appendix

results: risk aversion

- Risk aversion: no difference between men/women.



results: psychological measure

Variable	Men	Women	Correlation in couple
Consensus	4.0502 (0.4500)	4.0981 (0.4056)	0.3392
Satisfaction	3.9743 (0.4891)	4.0164 (0.4924)	0.5917
Cohesion	3.3310 (0.5850)	3.3910 (0.7295)	0.2194