BDM in action – is there a social multiplier?

PEER EFFECTS, POLICY INTERVENTIONS, FOOD CONSUMPTION

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An experiment

Let's run the experiment

- go to https://www.gaelexperience.fr
- click on the blue button "*participer à une expérience en salle*"
- enter a "subject number". This is an integer from 1 to 16, we'll sort it out
- we'll follow instructions from there (they are in French, but we'll manage)

Discussion

- What is the experiment about?
- What do subjects know / don't about the product?
- What do subjects know / don't about what other subjects know about them?
- Which data do we collect?

Peer effects & policy interventions

Peer Effects

- large literature
- conformism: preferences?
- conformism: information?
- in any case: convergence

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Labeling policies

- large applied literature: WTP
- why: information?
- why: preferences?
- in any case: behavior changes

Peer effects & policy interventions

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Labeling policies

- large applied literature: WTP
- why: information?
- why: preferences?
- in any case: behavior changes

How do the two interact?

- usually WTP experiments rely on individual observations
- WTP is then linked to individual characteristics
- but (labeling) policies do not happen in a vacuum!
- do policies have different impacts in a peer context?

Research questions

- Do social interactions affect WTP of subjects? (Teyssier et al.)
- Does a food policy (e.g. labeling) have different effects in social vs. anonymous contexts?
- Do social interactions accellerate or decelerate the impact of the label?
- Are subjects conformists? Why?

Our experiment

A labeling policy in a peer-effect WTP design

- we repeatedly elicit subjects WTP
- using the BDM mechanism
- in a social context: subjects observe other subjects' WTPs
- we introduce an information shock: a label
- we then again repeatedly measure WTP
- in a social context
- control: same structure, no social context

application: food labeling

Design: treatment

TREATMENT: Impact of the observation of others' WTP on own WTP before and after information shock.			Own WTP	Other people's WTP		
						
Phase A	Product display					
Phase B	WTP elicitation	Period 1	... €	X	X	X
		Period 2	... €	... €	... €	... €
		Period 3	... €	... €	... €	... €
		Period 4	... €	... €	... €	... €
Phase C	Information shock					
Phase D	WTP elicitation	Period 1	... €	X	X	X
		Period 2	... €	... €	... €	... €
		Period 3	... €	... €	... €	... €
		Period 4	... €	... €	... €	... €
Phase E	Real purchase	One randomly drawn period is binding. BDM mechanism				

What measures can we collect?

Think about our research question. How can we answer with this data?

- this is called *identification*
- identification answers the question: which data item(s) are necessary and sufficient to actually provide an answer to my research question?

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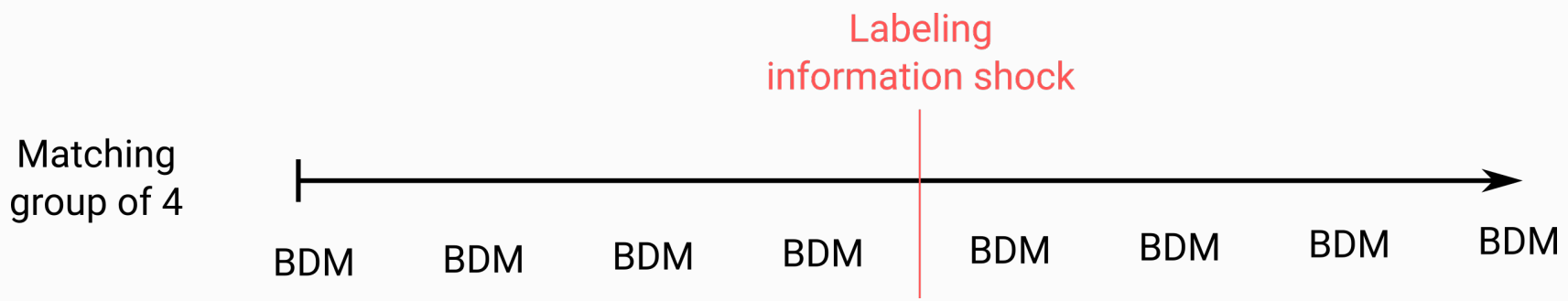
How do we identify...

- ...the individual, unconditional WTP for the product?
- ...the individual, unconditional effect of the information shock?
- ...the role of social interactions – i.e. being observed and observing?
- ...the interaction of the two?

Measures

Measures yielded by our design: treatment



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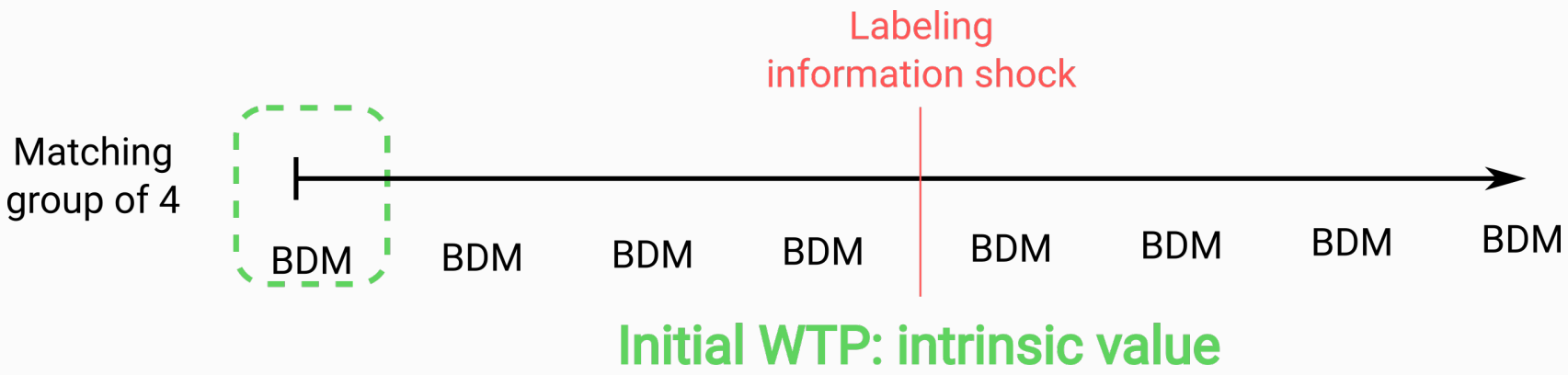

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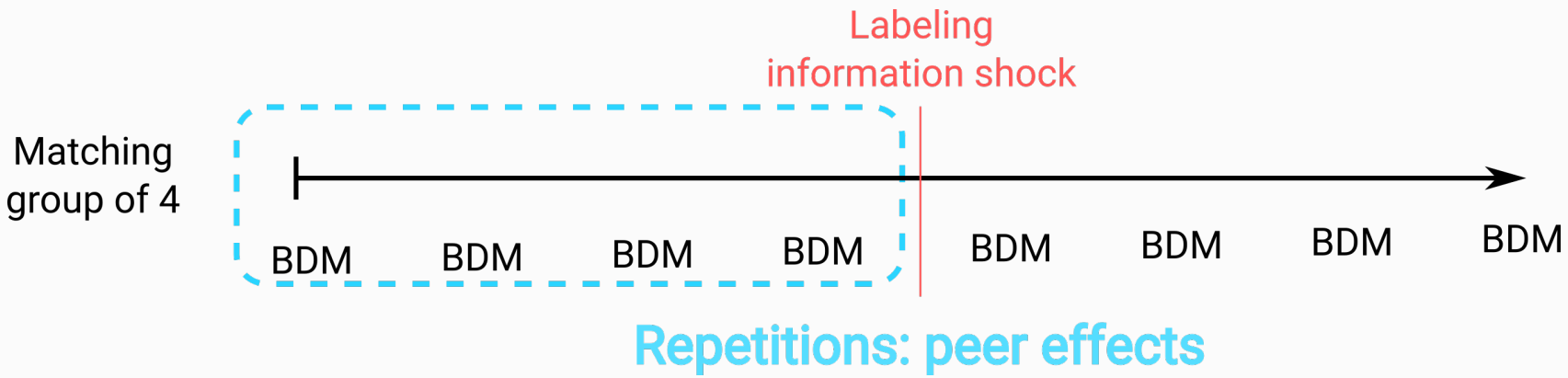

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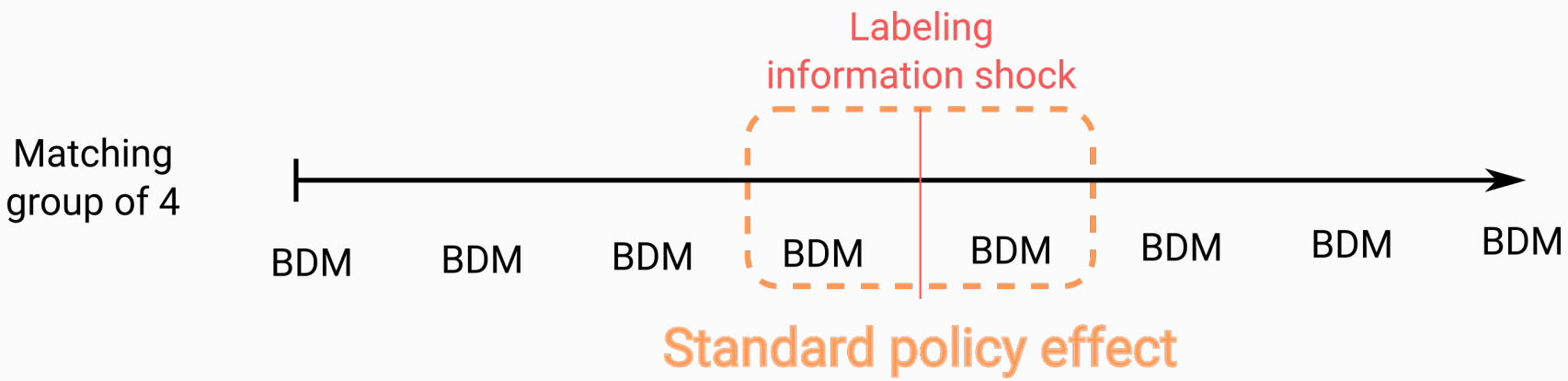

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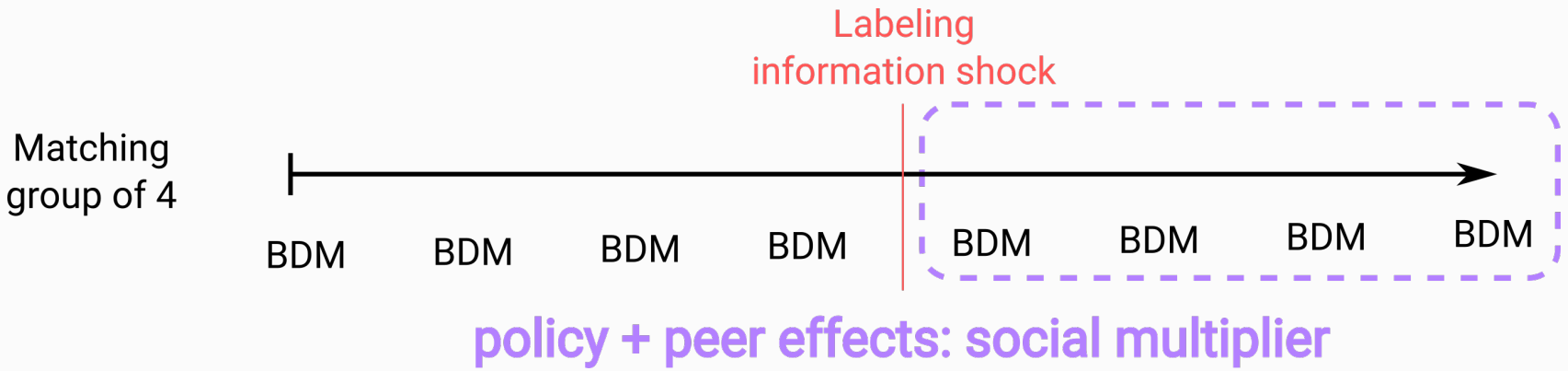
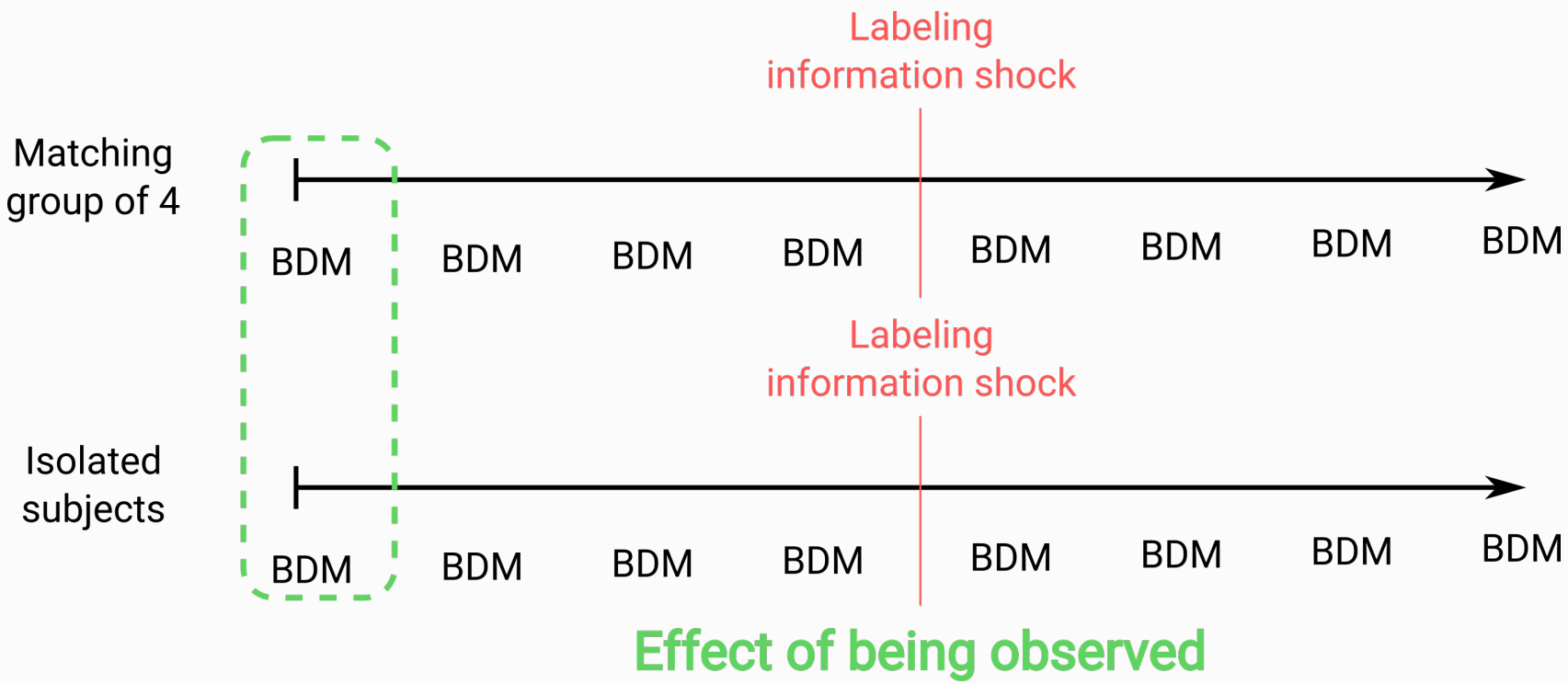


Measures

Measures yielded by our design: control *vs.* treatment



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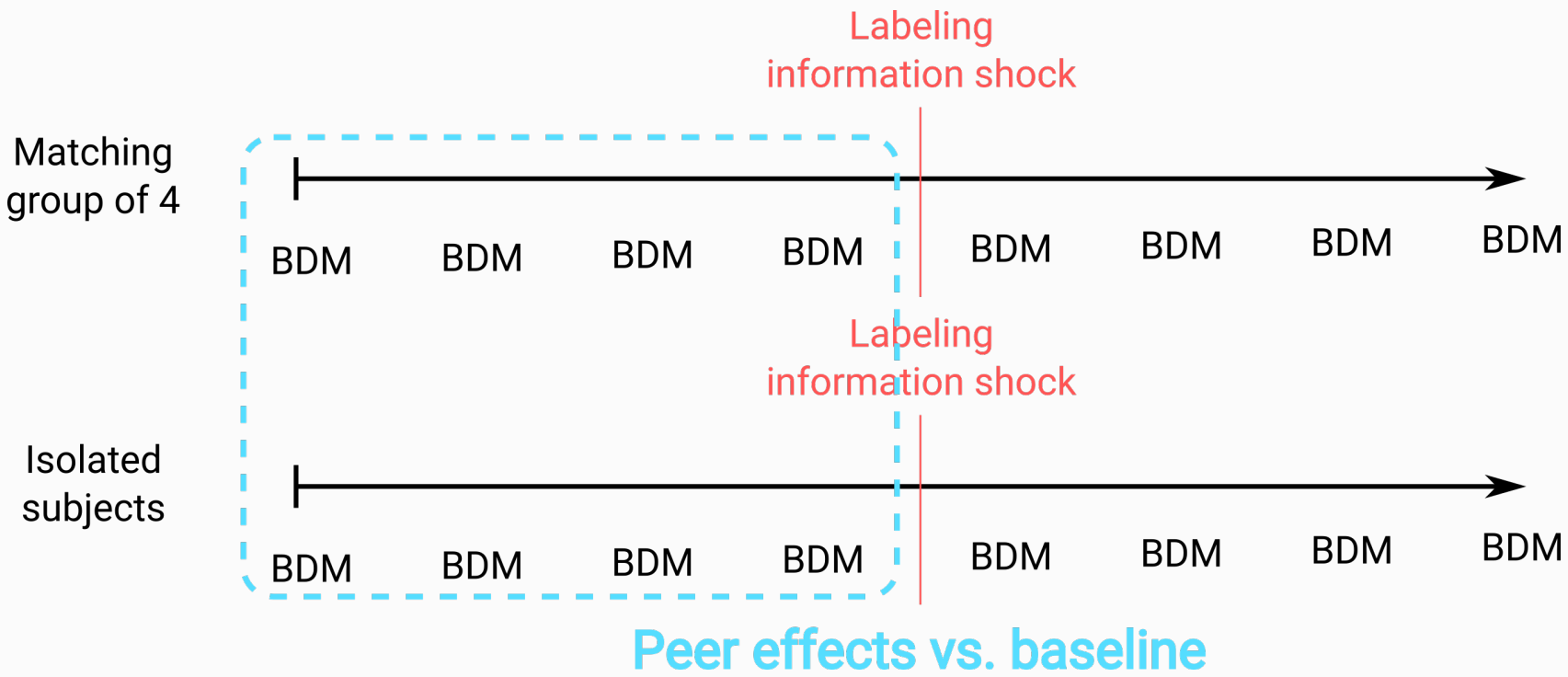

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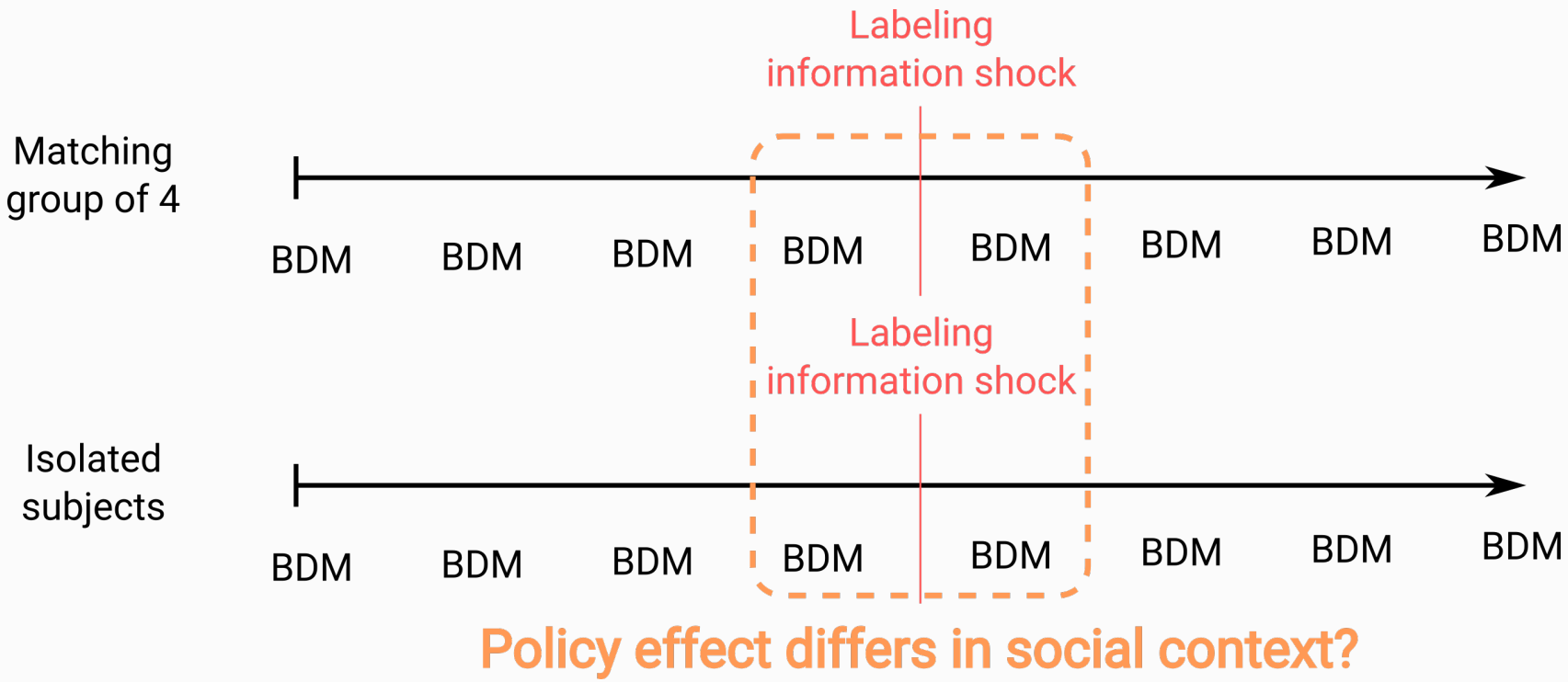

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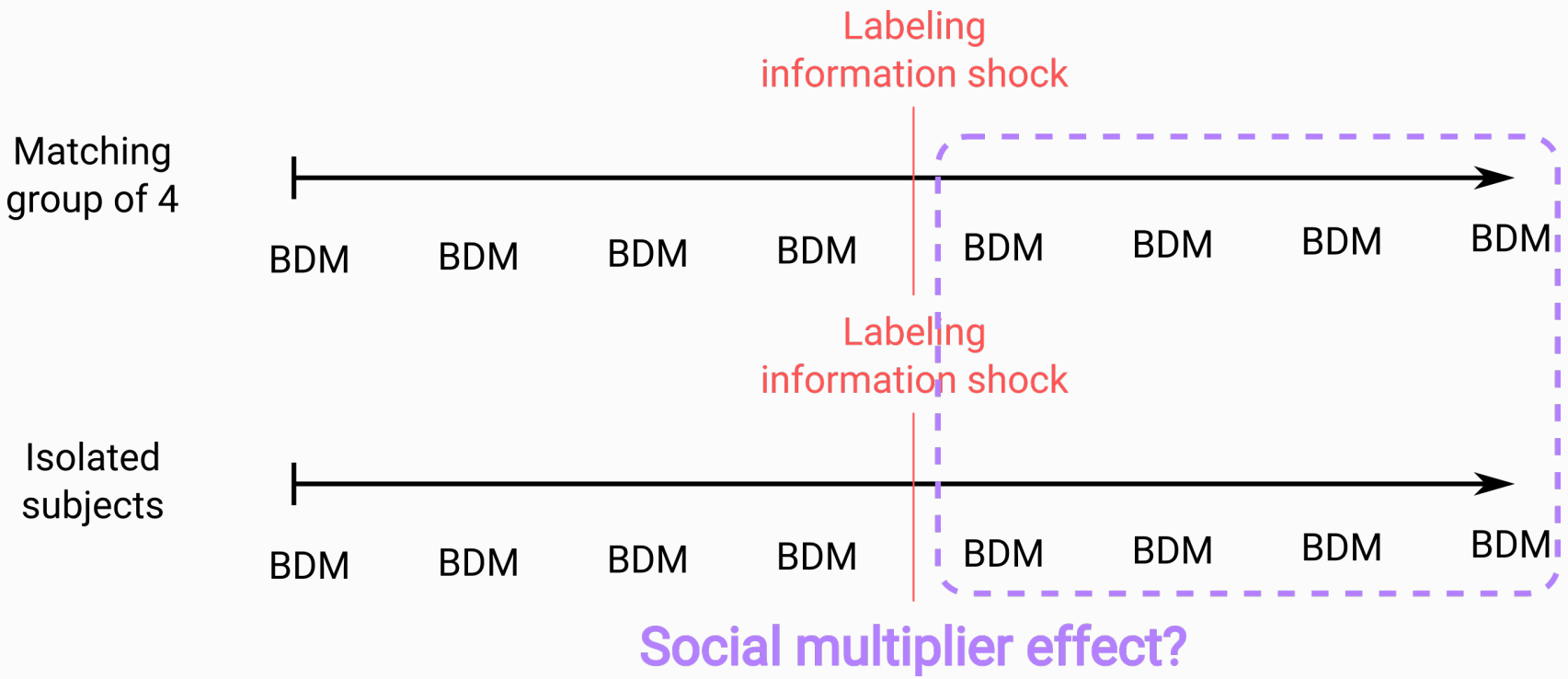

In the experimental platform of GAEL (avenue Félix Viallet , Grenoble)

160 participants

BDM learning phase

Real sale of a Coca Cola can

80 participants

80 participants

Chocolate presentation and tasting

Wine presentation (no tasting)

Draw of the price

Draw of the price

64 participants

16 participants

64 participants

16 participants

Treatment (observation)

Control (no observation)

Treatment (observation)

Control (no observation)

Four periods

Information shock + Presentation of the AB label

Four periods

Draw of the binding period + Real sale

Products

(a) Chocolate

(b) Wine

Vin rouge du Pays d'Oc, 75cl

Informations nutritionnelles :
- Valeur énergétique: 73 kcal
- Glucides : 0,2 g
- dont sucres : 0,2 g
- Lipides : 0 g
- dont acides gras saturés : 0 g
- Protéines : 0,1 g

Autres informations :
- Domaine : L'Héritage de Carillan
- Cépages : Association du Merlot et du Cabernet Sauvignon

Veuillez indiquer le montant maximum auquel vous voulez acheter (en euro et centimes).

(veuillez utiliser la virgule ou le point comme séparateur)

2.10

Enregistrer

Vin rouge du Pays d'Oc, 75cl

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Votre montant maximum lors de la période précédente

2,10 €

Montants maximums des autres participants lors de la période précédente

Participant	Vin rouge du Pays d'Oc, 75cl
1	3,60 €
2	5,40 €
3	9,87 €

Veuillez indiquer le montant maximum auquel vous voulez acheter (en euro et centimes).

(veuillez utiliser la virgule ou le point comme séparateur)

Enregistrer

Policy

Policy

- labeling policy
- easily recognized by subjects
- widely known
- overall positively perceived
- possibly strong priors

Tablette de chocolat Noir 72% de Cacao, 100g

Informations nutritionnelles :
- Valeur énergétique : 569 kcal
- Glucides : 33 g
- dont sucres : 29 g
- Lipides : 42 g
- dont acides gras saturés : 26 g
- Protéines : 9 g

Veuillez indiquer le montant maximum auquel vous voulez acheter (en euro et centimes).

(veuillez utiliser la virgule ou le point comme séparateur)

1.80

Enregistrer

Tablette de chocolat Noir 72% de Cacao, 100g

Informations nutritionnelles :
- Valeur énergétique : 569 kcal
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- Protéines : 9 g

Votre montant maximum lors de la période précédente

1,80 €

Montants maximums des autres participants lors de la période précédente

Participant	Tablette de chocolat Noir 72% de Cacao, 100g
1	0,80 €
2	1,80 €
3	4,50 €

Veuillez indiquer le montant maximum auquel vous voulez acheter (en euro et centimes).

(veuillez utiliser la virgule ou le point comme séparateur)

Enregistrer

Hypotheses

Peer effects	Bids standard deviation will decrease with social interactions
Policy	The labeling policy will have a positive impact
Social effect	The labeling policy will have a larger impact in a social context

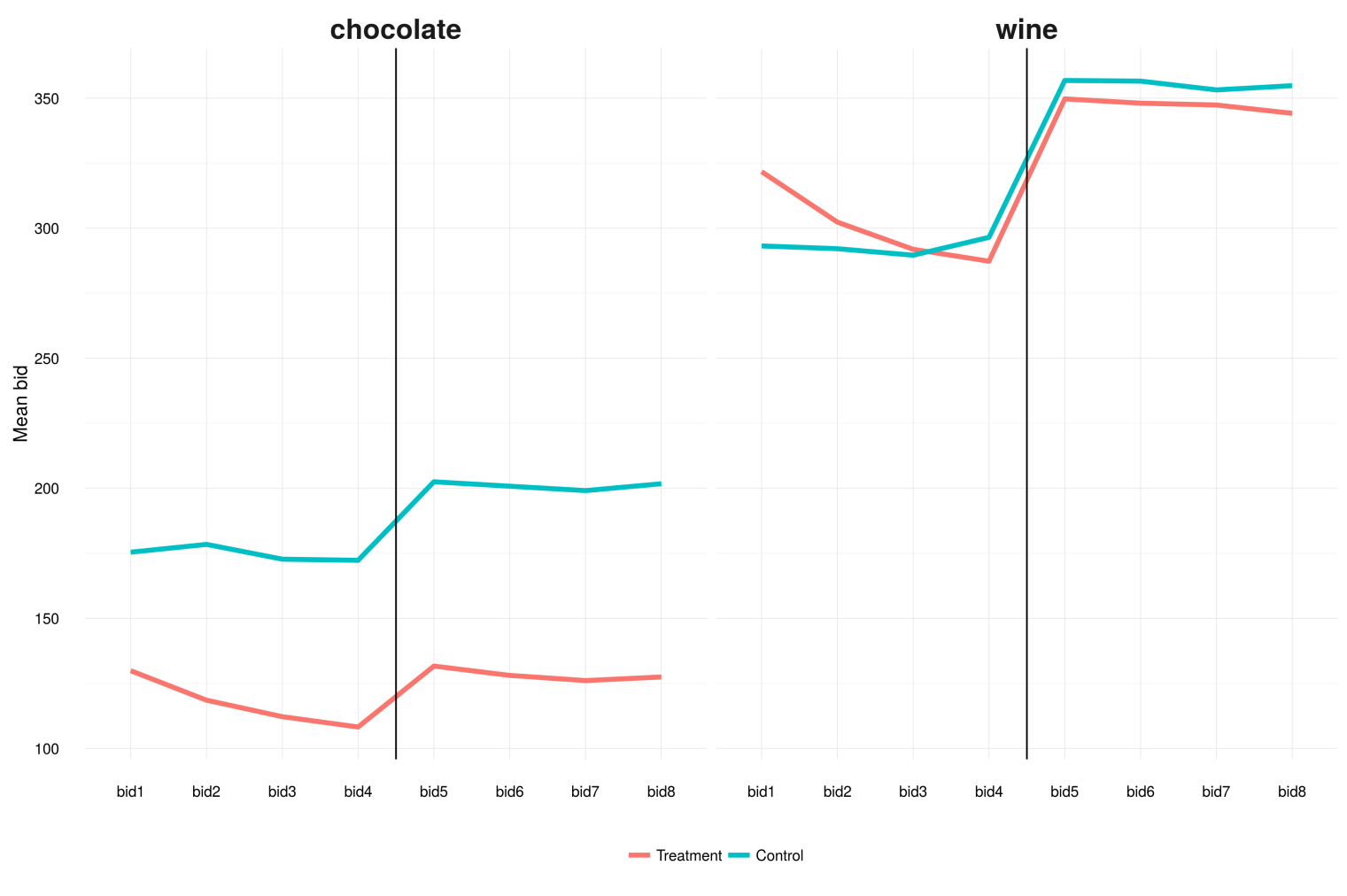
Let's have a look at the data

- on github, in the `Data` folder
- it's a .csv
- open it with any software you feel comfortable with (R? Stata? Excel?)
- let's try to find the different effects

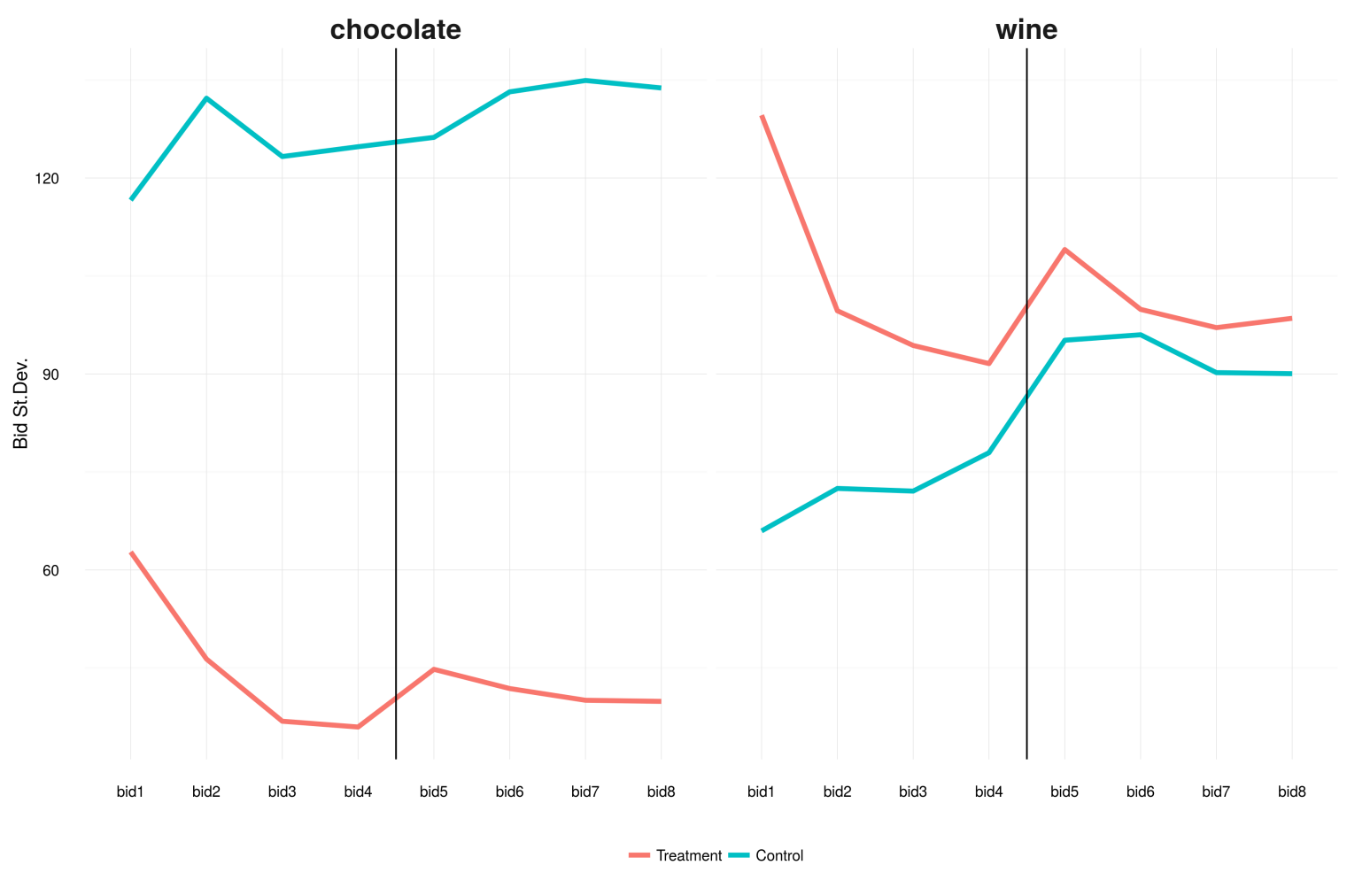
Data analysis

1. What is the initial WTP for the matched group, for each product? for the isolated group? are they statistically different?
2. Are there peer effects? i.e.: does the average WTP move over periods 1-4 in treatment differently than in control? check *both* the mean and st.dev.
3. What the is the policy impact, by product? Is it statistically significant?
4. Is the policy impact different for treatment and control?
5. Are there peer effects *after* the policy information shock?

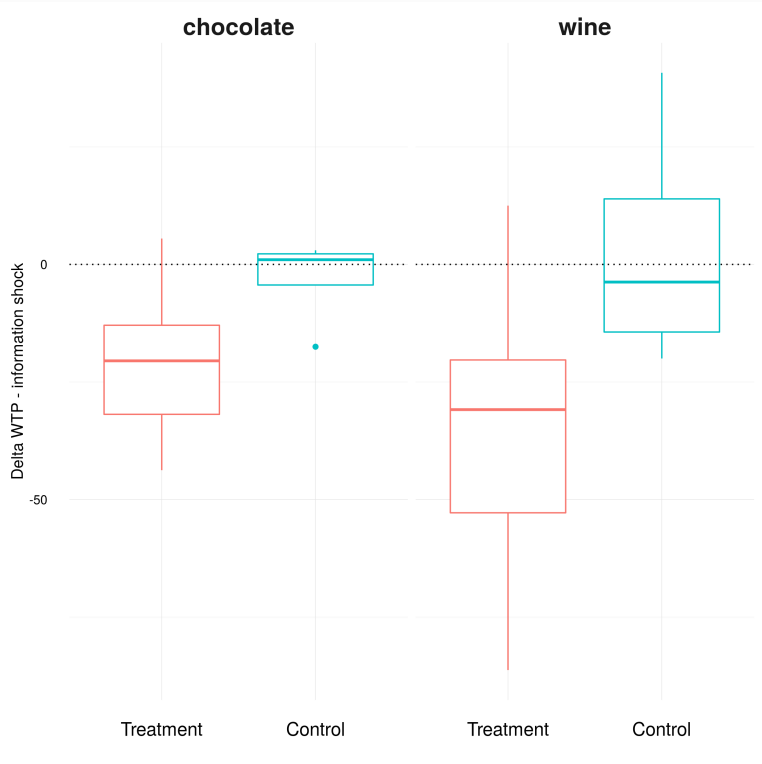
Average mean group bid



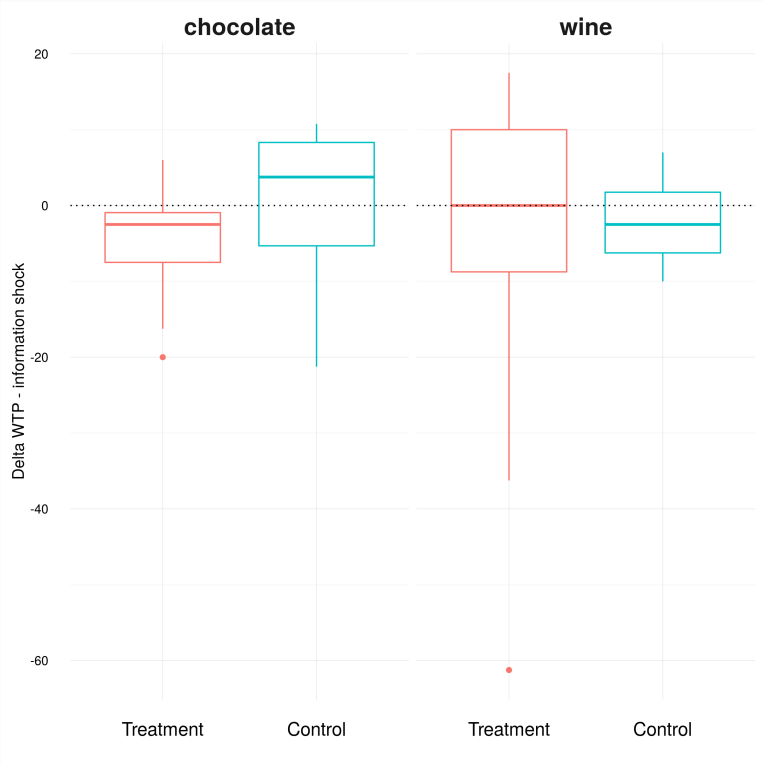
Bid standard deviation



Peer effects on WTP



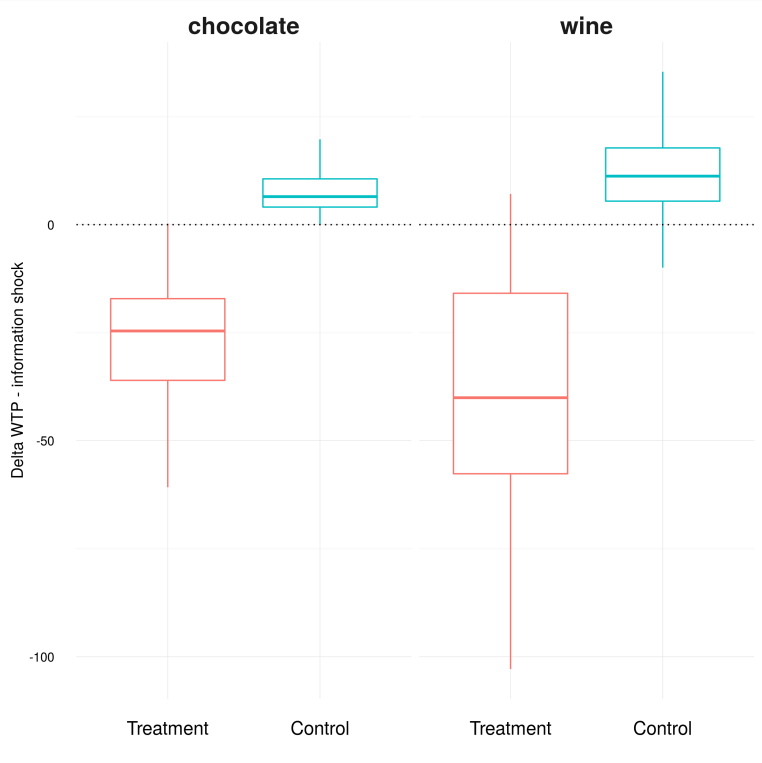
(a) Before the shock



(b) After the shock

WTP decreases with social interaction *before* the shock, not after

Peer effects on St.Dev.



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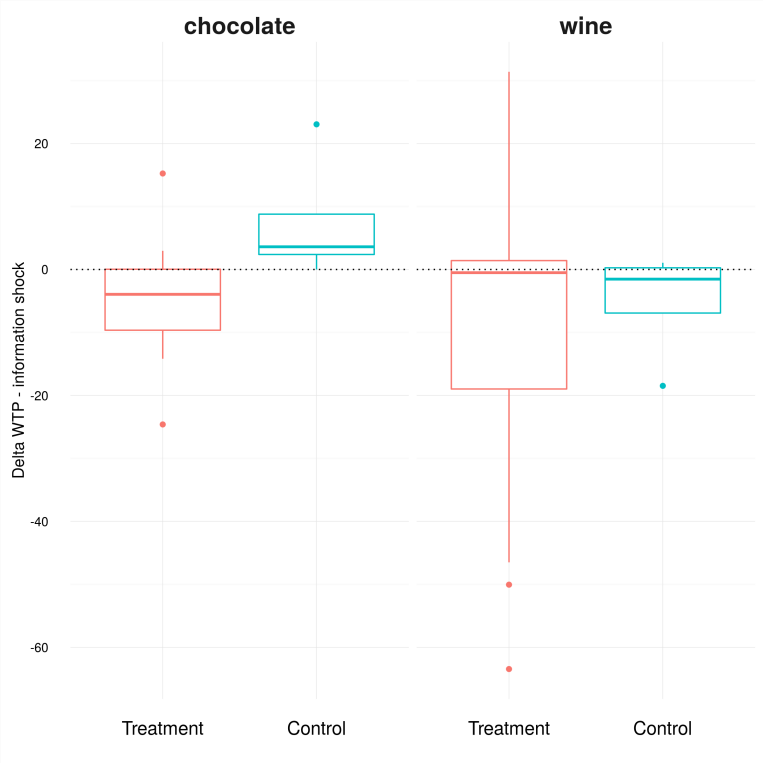

(b) After the shock

Convergence is strong in social context before the shock, stops after

(provisional) conclusions

Conformism? yes: subjects are attracted to the group avergae pre-policy

Impact on WTP? yes: downward impact pre-policy

(provisional) conclusions

Conformism? yes: subjects are attracted to the group avergae pre-policy

Impact on WTP? yes: downward impact pre-policy

Policy impact? yes: organic labeling increase WTP, irrespective of social influence (same magnitude!)

Social influence $\times$ policy? no: initial impact not different

Social influence $\times$ policy? no: convergence stops

Preliminary conclusion

conformism might not be due to a preference to be like others or to follow a social norm, but to (rational) information gathering. Once the label is introduced, subjects have well-defined preferences and do not need the others any more

Thanks