

Experimental Economics in Consumer Studies

Jutta Roosen
Technische Universität München

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Experimental economics

- Method of controlled experimentation in the investigation of economic phenomena.

Study objects

- individual decision making
- the coordination of economic actors via market mechanisms
- cooperation of economic agents in non-market environments

Development of the experimental method

- First contribution by Chamberlin, 1948
- Nobelprize in 2002 to Vernon Smith “for having established laboratory experiments as a tool in empirical economic analysis, especially in the study of alternative market mechanisms” and Daniel Kahneman “for having integrated insights from psychological research into economic science, especially concerning human judgment and decision-making under uncertainty”.

Procedure and goals of the experimental method

- Hypotheses tested often come from game and decision theory
- Other applications based on the cooperation between economists and behavioural scientists
- Results have been integrated into
 - game theory
 - decision theory
 - behavioural economics
 - ...

The experimental method

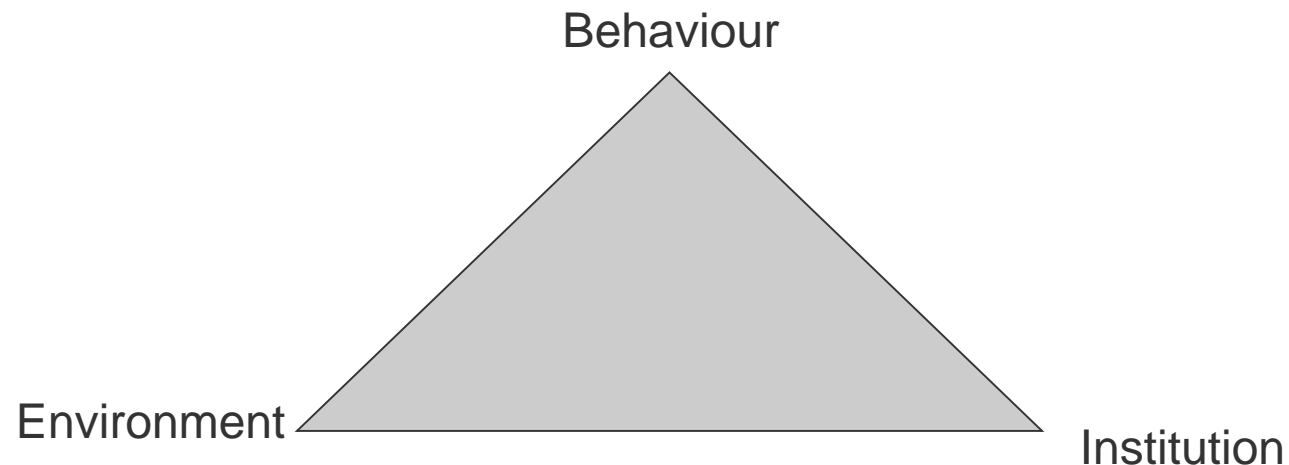
- Controlled environments for the investigation
- Simplify the decision making context and ways of interaction of economic agents to a large degree
- Identify structure giving elements and causal relationships
- Computer labs.
- When interaction then actors are anonymous
- Individual decisions are transferred to the group, e. g. in form of individual bids they are willing to pay or for which they are willing to offer a good
- Outcomes are evaluated
- Experiments are designed to be incentive compatible

Important areas of experimental economics

- Role and efficiency of alternative market mechanism (Smith)
- Altruistic behavior, human reciprocity and inequity aversion as analysed for instance in ultimatum and dictator games (Guth et al.) that analyse the level of cooperation between economic agents
- The rationality of economic decision making under uncertainty and the influence of loss aversion and endowment effects (Tversky and Kahneman)
- The rationality of economic decision making regarding intertemporal choice (Loewenstein and Prelec)
- Evaluation of good and services in auction experiments measuring willingness to pay (Bohm)

Ingredients of an economic experiment

- Formulation of hypotheses to be tested,
- Experimental subjects (students, consumers, business persons etc.)
- Variations in the experimental conditions.
- Posing economic (monetary) incentives in the decisions to be made



Based on Smith, 1982

Induced-value versus homegrown-value experiments

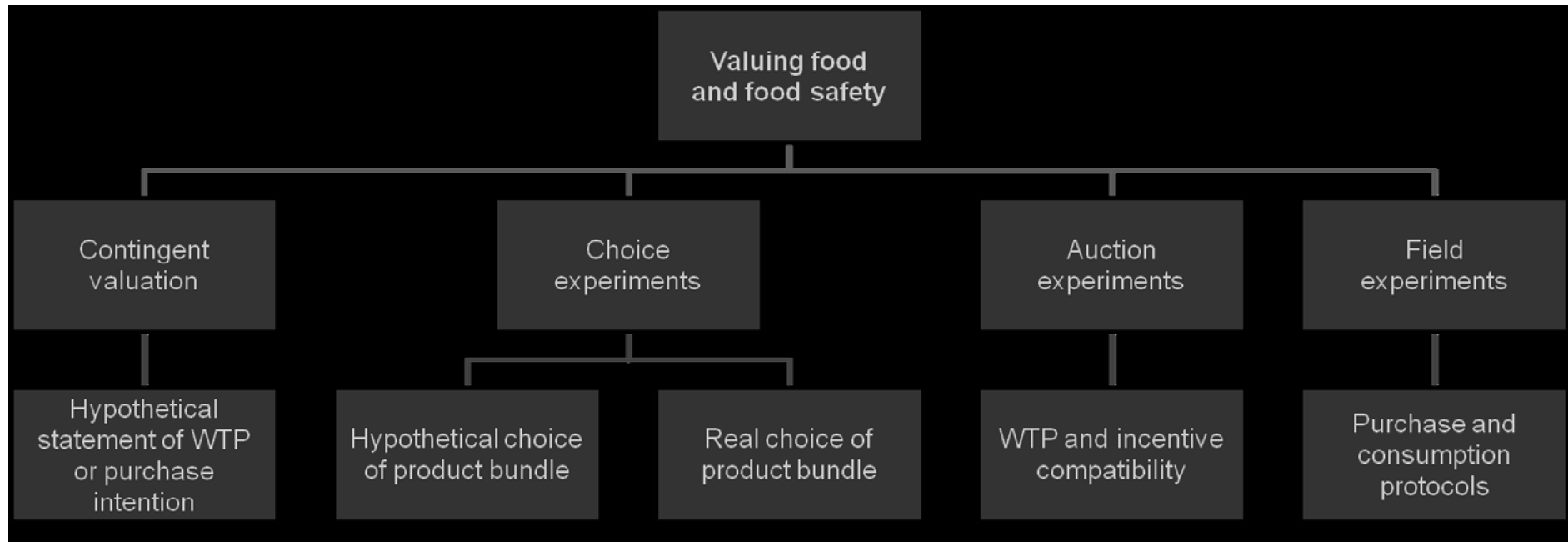
- **Induced-value experiments:** uncontrolled heterogeneity among economic subjects is reduced by using induced values determining the individual pay-offs for the experiment.
- **Homegrown-value experiments:** Use of the true preference revealing property of the 2nd price auction and variants thereof can be employed in economic experiments to measure willingness to pay values.

Level of control versus realistic choice context

- **Laboratory experiments:**
Provide the maximum level of control to the environment and institution.
- **Field experiments:**
Experimental set-up is brought into an environment in which decisions usually take place. Field experiments help to assess the external validity of experiments.
- **Natural experiments:**
Resulting from different policies in natural social settings. Typically not counted within the method of experimental economics.

Experiments with applications to consumer and food

- Measuring the value of food safety and food risks
- Measuring the value of information on food product characteristics
- Including values of food product characteristics in welfare analysis to assess the effectiveness of market regulation and consumer protection measures
- Understanding food choice: integrating sensory analysis in economic experiments



Measuring the value of food safety and food risks

Hayes, Shogren, Shin and Kliebenstein (1995): Valuing Food Safety in Experimental Auction Markets. American Journal of Agricultural Economics 77 (1), 40-53.

- WTP to exchange a meat sandwich of a given risk of pathogen contamination against a “safe” meat sandwich (risk 1 : 1 000 000)
- True WTP revealing property of second-price auction
- Multiple round second-price auction (10 rounds in each information environment)
- Evaluation of safety under subjective beliefs and objective beliefs about risks

Advantage of experimental auction method

- Incentives to reveal true willingness to pay
- Multiple rounds → Learning how the market works
 - Concern about consumers' valuations influencing each other (value affiliation)
- Evaluation of different information environments → How does new information influence the bids
 - Order in which information is given influences the bid amount (Fox, Hayes and Shogren, 2002)
 - Information per-se effect (Bougherara and Combris, 2009)
 - Information choice (Roosen et al., 2010)

Use of experimental results – The value of information

Marette, Roosen and Blanchemanche (2008): Taxes and subsidies to change eating habits when information is not enough: an application to fish consumption. Journal of Regulatory Economics 34: 119-143.

- Assessment of consumer policy choices
- Based on evidence of consumer experiments
- Real choice experiment between different types of fish (sardines versus tuna)
- Assessment of tax and subsidy programme compared to a consumer information programme using budget balancing rules or not.



Economic effects of regulation

- Tax/subsidy programme à la Pigou helps to internalize non-informed consumers
- Cost of information policy makes it very expensive if not effective
- Results on the best way of informing consumers are necessary
- See, e.g., Wansink, B., Sonka, S., Hasler, C., 2004. Front-label health claims: when less is more. *Food Policy* 29, 659–667.

Comparison laboratory versus field experiments

- Several studies look at validity of laboratory and field experiments
 - Lusk and Fox, Economic letters, 2003
 - Marette, Roosen, Blanchemanche, Food Policy, 2008.
- Results show larger responses in the field compared to the lab
- Influence of wide range of substitutes
- Influence of commitment cost

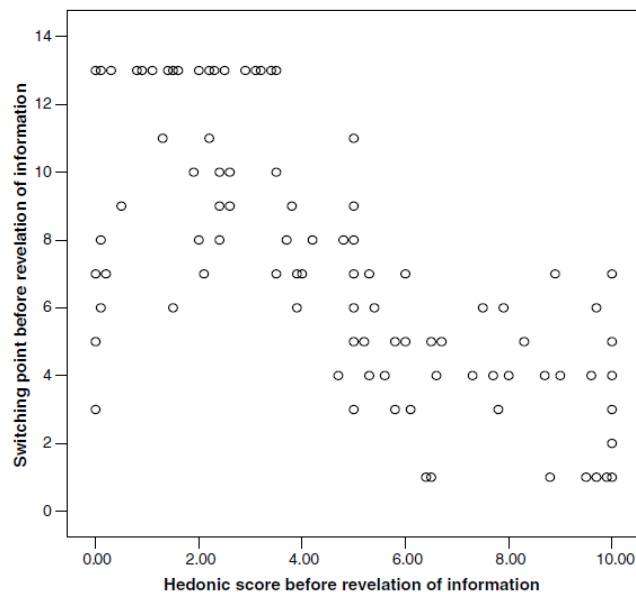
Integration of lab experiments and sensory analysis-1

- Experimental results show that food product valuation is influenced by information, sensory experience and learned behaviour
 - Include sensory experience in experimental methods
 - See e.g. Combris et al., Food Quality and Preferences, 2009
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Integration of lab experiments and sensory analysis-2

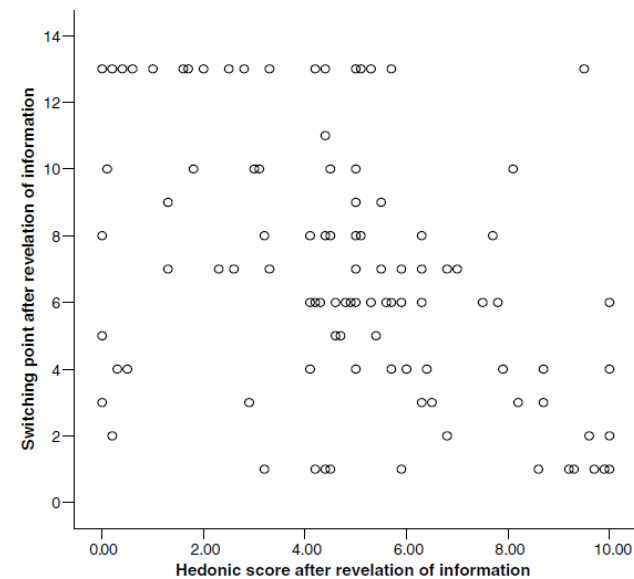
- Include sensory experience in experimental methods
Roosen, Marette, Blanchemanche and Verger, 2007: The Effect of Product Health Information on Liking and Choice. Food Quality and Preference, 18, 759-770.

Before information



(Spearman correlation coeff -0.767)

After information



(Spearman correlation coeff -0.481)

Conclusions

- Economic experiments useful to evaluate and elicit choices and values
- More research needed to assess external validity
- Integration with food choice situation important for external validity
- Guidance for policy making regarding market intervention and information policy
- Helpful in assessing means of consumer information