

Oben K. Bayrak, PhD.

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Research Interests

My main research is in **Behavioral and Experimental Economics**, with a focus on **decision making under uncertainty** and **environmental and resource economics**.

Current Position

- Postdoctoral Research Fellow (Jan Wallander and Tom Hedelius Foundation Fellowship)
- January 2017-Present
- Centre for Environmental and Resource Economics
- Swedish University of Agricultural Sciences

Education

- **PhD in Economics**
Centre for Environmental and Resource Economics,
Swedish University of Agricultural Economics, Sweden, from 31
January 2013 to 13 May 2016.
 - **Award/Scholarship:** Tore Browaldh Fellowship
 - **Dissertation:** “Preference Cloud Theory: Modelling Imprecise Preferences and a New Theory for Decision under Risk”
 - **Supervisors:**
 - Bengt Kriström (Swedish University of Agricultural Sciences, Sweden)
 - John D. Hey (University of York, UK)
 - Kelly De Bruin (Umeå University, Sweden)
- **MSc. in Behavioral and Experimental Economics**
University of Nottingham, UK, 2010 – 2011
 - **Award/Scholarship:** CEDEX Award (Centre for Decision Research and Experimental Economics)
 - **Dissertation:** Bank-run Experiments and towards a New Approach
 - **Supervisor:** Chris Starmer (University of Nottingham)

- **MSc. in Finance**
Sabanci University, Turkey, 2008 – 2009
 - **Award/Scholarship:** Sakip Sabanci Scholarship
- **BA. Economics**
Sabanci University, Turkey, 2004 – 2008
 - **Award/Scholarship:** Sakip Sabanci Scholarship

Teaching Experience

- **Lecturer:** Valuation Theory, 2014, master level
- **Teaching Assistant:** Stated Preferences, 2014 and 2015, PhD level
- **Other courses:** Finance, macroeconomics, microeconomics and game theory.

Refereeing Experience

- Journal of Environmental Economics and Management

Conference Presentations and Departmental Seminars

ESA (European Science Association), European Meeting, 2015, Heidelberg, Germany.

- Preference Cloud Theory

ESA (European Science Association), European Meeting, 2015, Heidelberg, Germany.

- Endowment Effect or Artefact: The Case of Interval Valuations

Public Economic Theory Association (PET 15), 16th Annual Conference, 2015, Luxembourg.

- Endowment Effect or Artefact: The Case of Interval Valuations

Spanish Association of Law and Economics, Annual Conference, 2015, Santander, Spain.

- Endowment Effect or Artefact: The Case of Interval Valuations

The Ulvön Conference on Environmental Economics, 2014, Sweden

- Endowment Effect or Artefact: The Case of Interval Valuations

University of Gothenburg, Economics Department, Sweden, 2014.

University of Aachen, Economics Department, Germany, 2014.

University of Amsterdam, Center for Research in Experimental and Political Decision Making, Netherlands, 2014.

Erasmus University, Econometric Institute, Netherlands, 2014.

Professional Experience

CERE (Center for Environmental and Resource Economics), Sweden

- 2016 – Present
- Postdoctoral Research Fellow

CERE (Center for Environmental and Resource Economics), Sweden

- 2012 – 2016
- Researcher, PhD student

The Association of Capital Market Intermediary Institutions of Turkey, Turkey

- 2011 – 2012
- Researcher
- Turkish Capital Markets Association has been established as the self-regulatory organization in the Turkish capital markets in 2001.
<http://www.tspakb.org.tr/eng/>

Standard Ünlü Investment Bank, Turkey

- 2009
- Equity Research Department

Finansbank, Turkey

- 2009
- Treasury Research and Sales

Languages and Other Skills

Languages: Turkish (Native), English (Fluent), German (Basic)

Software: R, Stata, Eviews, GAMS, z-tree and other experimental economics softwares

References

- **Prof. Bengt Kriström**, Swedish University of Agricultural Sciences, Center for Environmental and Resource Economics

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- **Prof. John D. Hey**, University of York

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- **Prof. Chris Starmer**, University of Nottingham

chris.starmer@nottingham.ac.uk

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1. Is there a valuation gap? The case of interval valuations, with Bengt Kriström published in *Economics Bulletin*, 36(1), 218–236.

We extend the literature on the willingness-to-pay/willingness-to-accept (WTP/WTA) disparity by testing two hypotheses, distilled from the literature. We also introduce a modified mechanism for eliciting the subjective valuation range if the individual cannot articulate the subjective value as a precise amount confidently. We elicited valuations for four goods: three ordinary market goods and a lottery ticket. Under the conventional setting in which subjects are asked to state a single precise amount, we observed a significant disparity for the lottery ticket. On the other hand, our key finding is that the disparity disappears under the intervals treatment, suggesting that response format is important, given that earlier experimental studies invariably uses point values (i.e. open ended questions about WTP/WTA). Moreover, for the risky prospect we observe that from their admissible range the buyers state the lower bound as their WTP whereas sellers state the upper bound as their WTA. We conclude that this type of behavior can to some extent explain the observed disparity at least for the risky prospects.

2. Expected Utility Theory with Imprecise Probability Perception: Explaining the Preference Reversals with John D. Hey published in *Applied Economics Letters*, DOI: 10.1080/13504851.2016.1240332

This paper presents a new model for decision-making under risk, which provides an explanation for empirically-observed Preference Reversals. Central to the theory is the incorporation of probability perception imprecision, which arises because of individuals' vague understanding of numerical probabilities. We combine this concept with the use of the Alpha EU model and construct a simple model which helps us to understand anomalies, such as preference reversals and valuation gaps, discovered in the experimental economics literature, that standard models cannot explain.

3. Preference Cloud Theory: Imprecise Preferences and Preference Reversals, with John D. Hey, peer-reviewed conference contribution Economic Science Association, 2015, Heidelberg, available at [SSRN](#)

This paper presents a new theory, called Preference Cloud Theory, of decision-making under uncertainty. This new theory provides an explanation for empirically-observed Preference reversals. Central to the theory is the incorporation of preference imprecision which arises because of individuals' vague understanding of numerical probabilities. We combine this concept with the use of the Alpha model (which builds on Hurwicz's criterion) and construct a simple model which helps us to understand various anomalies discovered in the experimental economics literature that standard models cannot explain.

4. Understanding the Preference Imprecision

Recent experimental findings in the literature suggest that even most literate and numerate individuals cannot articulate and state their preferences confidently. This raises additional doubts about the existing modelling approaches for decision making under uncertainty because all of them implicitly assume that individuals have precise preferences; either in a standard way like Expected Utility Theory or in a non-standard way such as Rank Dependent Utility, Prospect Theory and its variants. Existing attempts to incorporate the imprecision is limited to modelling it as the stochastic component of a deterministic theory. However, these stochastic components represent and explain the errors in choice such as calculation errors and inattentiveness to the experimental task. Thus, these kinds of specifications do not capture the meaning of imprecision completely: One part of imprecision can be a result of the errors that individuals make, but another part should be understood as the ‘incommensurability’ or difficulty of reaching a decision. Another problem with the preference imprecision is that it contradicts with the standard representations of preference relationships due to the violation of monotonicity. This paper constructs a new understanding of preference imprecision by providing a critical review of the related literature and introduces a new preference relation which is based on the new concept: level of willingness.

5. Another Solution for Allais Paradox: Preference Imprecision, Dispersion and Pessimism, *Revise and Resubmit Judgement and Decision Making*, available at [SSRN](#)

Although there are alternative models which can explain the Allais paradox with non-standard preferences, they do not take the emerging evidence on preference imprecision into account. The imprecision is so far incorporated into these models by adding a stochastic specification implying the errors that subjects make. However, there is also the inherent part of the preference imprecision which does not diminish with experience provided in repeated experiments and these stochastic specifications cannot explain a significant portion of the observed behavior in experiments. Moreover, evidence on imprecision suggests that subjects exhibit higher imprecision for a lottery with a higher variance. This paper presents a new model for decision under risk which takes into account the findings of the literature. Looking at the indifference curves predicted by the new model, the new model acts like a mixture of Expected Utility Theory and Rank Dependent Utility Theory depending on which part of the probability triangle the lottery is located.

6. Experiments on Self-selected Intervals, with B. Kriström, P. Banerjee and M. Nilsson (in progress)

7. An Assessment of a New Theory: Preference Cloud Theory and The Models of Decision under Risk, with John Hey, (in progress)

8. Public Good Experiments and Integrated Assessment Models, with Kelly de Bruin, (in progress)

This study brings the two methods together: experimental economics and integrated assessment models of climate change. We use the experiments as the test-beds of the assumptions that are made in computerized models and enrich the models in a more realistic way. We also answer important questions such as “Do people perceive the issue of climate change as a regional or global issue?”, “Do they care about other regions?” To answer these questions we modify the public good experiments and present three goods to the subjects: global public good, regional public good and private good. The contribution table (strategy method) will also allow us to tell insights about the conditional cooperation patterns to public goods at regional and global level.

9. Experiments on Market Stability Reserve Scheme of EU-ETS, with Sara le Roux (in progress)

10. A Natural Field Experiment: Economic Analysis of a TV Game Show, “The Greed”

11. Residential End Use Electricity Demand and the Implications for Real Time Pricing in Sweden, with Chandra K. Krishnamurthy and Mattias Vesterberg, under review Energy Economics, available at [SSRN](#)

Using a unique and highly detailed data set of energy consumption at the appliance-level for 390 Swedish households, seemingly unrelated regression (SUR)-based end-use specific load curves are estimated. The estimated load curves are then used to explore possible restrictions on load shifting (e.g. the office hours schedule) as well as the cost implications of different load shift patterns. The cost implications of shifting load from “expensive” to “cheap” hours, using aggregate spot price data, is computed to be very small; roughly 2-5% daily cost reduction from shifting load up to seven hours ahead, indicating small incentives for households (and suppliers) to adopt dynamic pricing of electricity. In addition, end-use-specific income elasticities are also estimated, for the first time for Sweden, using again a SUR framework. The estimated income elasticities are large and significant, varying from a high of 0.8-1.25 for heating to a low of 0.2–0.5 for lighting. Aggregate income elasticity is also high, varying from 0.5 to 0.81. Our results have important implications for Swedish energy policy, in particular for the Swedish government’s stated goal of real time pricing.

12. Endowment Effect or Artefact: The Case of Interval Valuations Public Economic Theory Association (PET 15), 16th Annual Conference, 2015, Luxembourg.

13. Book: A new theory for decision making under risk: Preference Cloud Theory, work in progress.