Testing Prospect Theory
in policy debates in the European Union

Christine Mahoney
Associate Professor of Politics & Public Policy
University of Virginia

C.Mahoney@virginia.edu

Co-authors: Heike Klüver, University of Konstanz, Germany
Marc Opper, University of Virginia, USA

Research Coalition

InterEURO
Networks, strategies and influence in the EU

- **InterEURO NSF/ESF-funded study on Interest Groups in the EU**
  - 35 researchers; 8 member states + US, 6 thematic clusters
  - 120 cases
  - 28,000 documents so far…
  - www.intereuro.eu

University of Antwerpen

Universiteit Antwerpen

University of Barcelona

Universitat de Barcelona

University of Bochum

RUB

University of Gothenburg

GÖTEBORGS UNIVERSITET

University of Leiden / Pennsylvania State University

Universiteit Leiden | PENNSTATE

University of Ljubljana

University of Ljubljana

Newcastle University

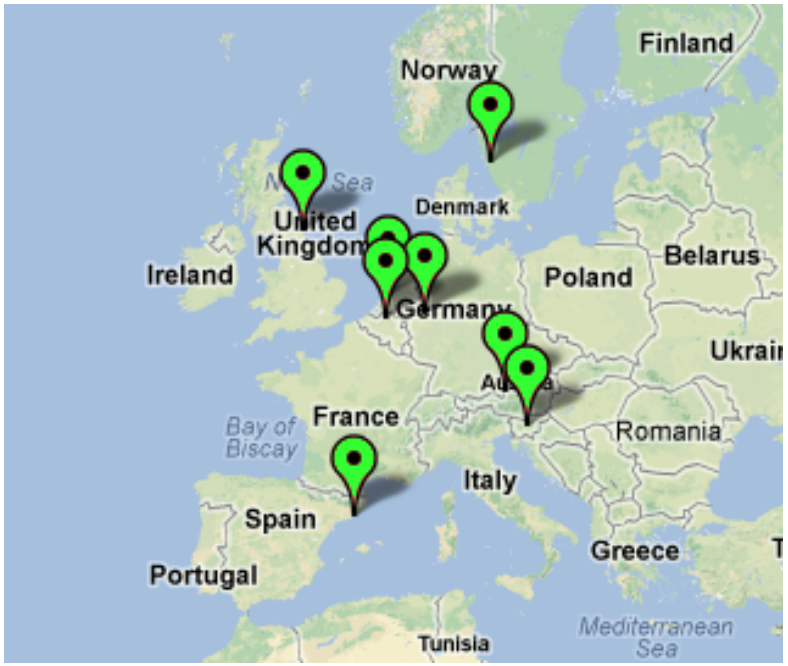
Newcastle University

University of Salzburg

UNIVERSITÄT SALZBURG

University of Virgina

UNIVERSITY of VIRGINIA



Outline

- Framing Literature
  - Framing defined
  - Framing literature
  - Framing literature gaps
- Research Questions & Hypotheses
- Quantitative text analysis
- Research design
  - Proof of Concept
- Testing Prospect Theory

Framing Defined

- **Framing:** Selecting and highlighting some features of reality while omitting others (Entman 1991)
- Framing can determine:
  - which interests mobilize
  - how many actors mobilize
  - what policy options are considered
  - ultimate policy outcomes

- (Baumgartner & Jones 1993)

Framing Defined

- **Framing:** Selecting and highlighting some features of reality while omitting others (Entman 1991)
- Framing can determine:
  - which interests mobilize
  - how many actors mobilize
  - what policy options are considered
  - ultimate policy outcomes

- (Baumgartner & Jones 1993)

Interest Groups…

Strategically use political rhetoric to steer a political debate into a direction that strengthens their position on a legislative proposal

Framing Literature

- **Political Science & Communications**
  - Focus on the effect of framing by **elites** on the **mass public**
- **Marketing**
  - Focus on the effect of framing by **marketers** on the **mass public**
- **Social Psychology**
  - Focus on the effect of frames on **individual subjects** through **controlled experiments**

Framing Literature Gaps

- No research on the effect of framing by **interest groups** on **policymakers**
  - Reason to believe policymakers will respond in different ways than the mass pubic since the **influence of framing depends** on whether (Chong & Druckman 2007):
    - the person is **Politically Knowledgeable** (Kinder & Sanders 1990)
    - has strong **Predispositions** on the issue (Brewer & Gross 2003)
    - there is exposure to **Competing Frames** (Sniderman & Theriault 2004)
    - the framer is considered a **Credible** source (Druckman 2001)
  - Policymakers are operating in the real world, not in a controlled experimental environment

Framing Literature Gaps

- Majority of studies focus on on a **single case study**, and the specific frames surrounding that case, so findings are not generalizable
  - Schonhardt-Bailey (2008) – Partial-birth abortion ban
  - Gabel & Scheve (2007) – European integration
  - Jacoby (2000) – Government spending
  - Peffley & Hurwitz (2007) – Death penalty
  - Winter (2006) – Welfare and Social Security
  - Althaus & Kim (2006) – Gulf war
  - Berinsky & Kinder (2006) – Kosovo crisis
  - Haider-Markel & Joslyn (2001) – Gun policy
  - Sharp & Joslyn (2003) – Pornography policy
  - Shah, Watts, Domke, and Fan (2002) – Monica Lewisnky scandal
- The cases **selected** for those studies tend to be **highly salient, controversial and partisan**, yet the majority of issues that are the object of lobbying do not exhibit these characteristics
  - Baumgartner & Leech (2001)

Research Questions

- There has been no systematic data across a **large number of issues** to answer:
  - What frames are most common in lobbying communications? (exception: Mahoney 2008)
  - What frames are most effective at shaping policy outcomes in their proponents favor?
  - Do the findings of experimental framing studies hold in real-world policymaking settings?

Hypotheses

1. The power of **different dimensions**:
   - "It's the Economy stupid"
   - National Security
   - Public Health
   - Environment

Hypotheses

1. The power of **different dimensions**:
   - "It's the Economy stupid"
   - National Security
   - Public Health
   - Environment

2. The power of **emotive rhetoric and words**:
   - "Equivalency effects" – "when different but logically equivalent phrases cause individuals to alter their preferences" (Druckman 2001, Tversky & Kahneman 1987)
   - Death Tax vs. the Estate Tax
   - Partial Birth Abortion vs. Late Term Abortion
   - Death Panels vs. ???

Hypotheses

3. Prospect theory **(Negative vs. Positive Frames)**
   - Kahneman & Tversky's Classic Experiment:
     - Out of 600: 200 people will **die** vs. 400 people will be **saved**
     - **Negative frames** encourage people to take risks
   - Negative frames are more persuasive (Kahneman & Tversky 1979,1981)
   - Negative framing works best when issue involvement is high, while positive framing works best when issue involvement is low (Maheswaran & Myers-Levy 1990)

Hypothesis

Prospect theory hypothesis **translation to the real world:**

- **Negative frames** encourage people to take risks
- Policy change away from the status quo is inherently **risky** (and viewed that way by policy makers)
- Clusters of interest groups using a "loss" frame will be more influential and encourage the Commission to move toward their position

- **Difficulty**: if groups use a "loss frame" to discuss some new and imagined future status quo it muddles Loss and Risk

New approaches to old questions

- **Quantitative Text Analysis**
  - **Hand coding** – a classification scheme is developed; texts are divided into quasi sentences and coded as pro/con, left/right (ex: Comparative Parties Manifesto most well-known & widely used hand-coding project)
  - **Wordscores** –Laver et al. (2003) developed a fully automated text analysis program for measuring policy positions. By comparing the relative frequencies of words in 'reference texts' (documents for which policy positions on predefined policy dimensions are known) with relative frequencies in 'virgin texts' (unknown policy positions), one can calculate the probability that one is reading a particular reference text.
  - **Wordfish** – The most recent innovation in quantitative content analysis is Wordfish (Proksch and Slapin, 2008; Slapin and Proksch, 2008). It is a statistical scaling model that allows policy positions of texts to be estimated on a predefined policy dimension simply by drawing on word frequencies in texts without relying on reference documents

Quantitative Text Analysis

- **Approach:** Combination of cluster and correspondence analysis that are based on co-occurrences of words in different texts (Schonhardt-Bailey 2008)
- **Assumption**: Words that co-occur "in similar contexts tend to have similar meaning" and "documents that contain similar word patterns tend to have similar topics" (Lancia 2007: 25)
- **Cluster analysis**: Identification of frames using an unsupervised ascending hierarchical cluster analysis
- **Correspondence analysis**: Running a correspondence analysis on cluster memberships and word occurrences to assess dimensionality of policy debates
- **Spatial analysis**: Interest groups and European Commission (at *t*1 & *t*2) are located in the 2 dimensional policy space

Research design

- **Random Sample of Cases**
  - 120 issues in broader InterEURO project
  - 44 cases with standard usable consultations held
- **Documents**
  - 3,774 Interest groups documents: Submissions to online consultations of the European Commission
  - Institution documents for each case: European Commission Communication and preamble of legislative proposal; European Parliament summary and the ultimate act
- **Process**
  - Manual processing; automatic processing; T-LAB analysis; coding of identified frames; case-level analysis

Proof of Concept

- **Sample Case –** CO_2 Car emissions debate
  - Feb 2007 - Commission adopted a Communication laying out a variety of measures to reduce automobile CO_2 emissions to 120g/km by 2012:
    - Mandatory restrictions on emissions
    - An increase in use of biofuels
    - Code of good practice on car advertising
  - March 2007 – Public consultation opens
  - July 2007 – Public consultation closes
  - December 2007 – Commission adopted its official legislative proposal

- By analyzing the **Communication** and the final Commission **Proposal**, along with all submitted consultation documents, we examine the framing strategies and their effectiveness in changing the Commission's text during the policy formation stage

Identified clusters

Chi2 Rank	Cluster 1: Press	Cluster 2: Industry	Cluster 3: Environment
1	advertising	target	lpg
2	press	political	energy
3	media	value	gas
4	promotional	function	fuel
5	print	approach	fuels
6	literature	automotive	biodiesel
7	publishers	models	oil
8	survey	segments	fuelled
9	believe	reduction	duty
10	restrictions	product	natural
11	marketing	complementary	light
12	information	system	methane
13	claim	technologies	biogas
14	freedom	N1	biomethane
15	penalties	rental	diesel
No of texts	3	7	15
% of texts	12%	28%	60%

Proof of Concept

- Cluster 1 – Press Frame (12%)
  - FAEP (European Federation of Magazine Publishers)
  - "**Publishers** would strongly oppose any political measure that has the potential to create an imbalance in the **advertising** revenues of the **press** as this would have a severe impact on the independence and diversity of the **press**"
- Cluster 2 – Industry/Economic Frame (28%)
  - VDA (German Automobile Manufacturing Association)
  - "A policy discriminating against premium vehicles would damage a key area for generating **value** added and employment in the European **automotive** industry, and primarily in the German **automotive** industry"

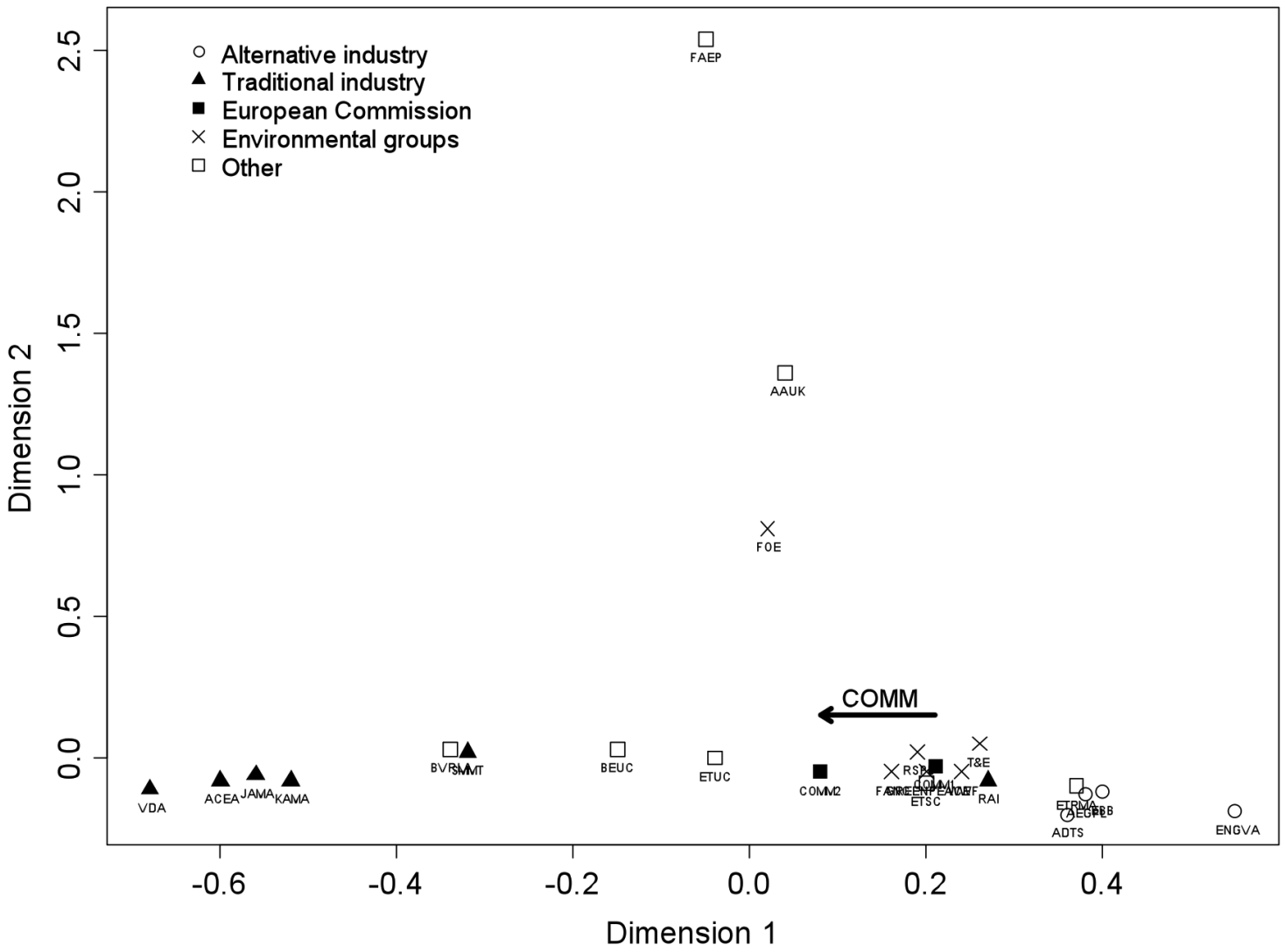
Proof of Concept

- Cluster 3 – Environmental Frame (60%)
  - Greenpeace
  - "The European Union has recently made some key decisions on its long-term climate policy. In this climate protection context, harmonized EU-wide measures on cars are required. For the EU to reduce **energy waste** by 20% and **greenhouse gas** emissions by 30% by 2020, in line with the objective of keeping global temperature rise below 2 degrees Celsius, road transport's growing carbon dioxide emissions have to be urgently curbed and its fuel efficiency dramatically improved."

Cluster Membership

Name	Group type	Best Solution	Cluster Membership Scores		
			Press	Industry	Environment
ADTS	Alt. Industry	Environment	0.11	0.31	0.58
AEGPL	Alt. Industry	Environment	0.10	0.19	0.72
EBB	Alt. Industry	Environment	0.13	0.23	0.64
ENGVA	Alt. Industry	Environment	0.09	0.19	0.73
COMM1	Commission	Environment	0.22	0.36	0.42
COMM2	Commission	Industry	0.23	0.39	0.38
FANC	Environ. Group	Environment	0.23	0.36	0.41
FOE	Environ. Group	Press	0.54	0.24	0.22
GREENPEACE	Environ. Group	Environment	0.23	0.35	0.43
RSPB	Environ. Group	Environment	0.25	0.35	0.41
TANDE	Environ. Group	Environment	0.27	0.31	0.43
WWF	Environ. Group	Environment	0.22	0.33	0.45
BEUC	Other	Industry	0.25	0.43	0.32
BVRLA	Other	Industry	0.19	0.54	0.27
ETRMA	Other	Environment	0.21	0.30	0.49
ETSC	Other	Environment	0.20	0.36	0.44
ETUC	Other	Industry	0.24	0.41	0.35
AAUK	Press	Press	0.68	0.16	0.16
FAEP	Press	Press	0.88	0.06	0.06
ACEA	Trad. Industry	Industry	0.18	0.56	0.26
JAMA	Trad. Industry	Industry	0.19	0.55	0.26
KAMA	Trad. Industry	Industry	0.19	0.53	0.28
RAI	Trad. Industry	Environment	0.22	0.36	0.43
SMMT	Trad. Industry	Industry	0.24	0.46	0.30
VDA	Trad. Industry	Industry	0.15	0.60	0.25

Two-dimension policy space for the CO_2 emissions debate



Cross-validation

		T-LAB
Dimension 1	**Hand-Coding**	0.76***
	Wordfish	0.74***
	Wordscores	0.50**
Dimension 2	**Hand-Coding**	0.34*
	Wordfish	0.05
	Wordscores	0.10

*p<0.1, **p<0.05, ***p<0.01

Exploring the second dimension

Actor	% of sentences devoted to impact on press industry Positive	Negative
AAUK	0.00	48.28
ACEA	0.00	0.00
ADTS	0.00	0.00
AEGPL	0.00	0.00
AVELE	0.00	0.00
AVERE	0.00	0.00
BEUC	2.67	0.00
BVRLA	0.00	0.00
COMM 1	6.52	0.00
COMM 2	0.00	0.00
EBB	0.00	0.00
ENGVA	0.00	0.00
ETRMA	0.00	0.00
ETSC	0.00	0.00
ETUC	0.00	0.00
FAEP	0.00	60.71
FANC	4.08	0.00
FOE	18.46	0.00
GREENPEACE	0.00	0.00
JAMA	0.00	1.96
KAMA	0.00	0.00
RAI	0.00	0.00
RSPB	0.00	0.00
SMMT	0.00	0.69
T&E	2.34	0.00
VDA	0.00	0.00
WWF	1.06	0.00

Testing Prospect Theory

- 44 Cases with usable standard consultations
- 3,774 Interest groups involved across those issues
- Following T-Lab analysis of all 44 cases
- Randomly selected 10 documents from each cluster (or frame) and human coders carefully read these documents to code the frames employed by interest groups based on their qualitative judgment.
- Overall, 1,700 documents were analyzed by human coders

Testing Prospect Theory

- **Gain** - any document that stated that the proposal in question would represent a positive deviation from the status quo.
  - An example of this would include a group arguing that the integration of asylum seekers into the domestic labor market and the provision of pre-vocational and language training would contribute to the growth of the economy.

- **Loss** - any document whose authors stated that the proposal in question would represent a negative deviation from the status quo
  - An example of this would include a group that argues that not implementing a certain piece of legislation could result in the injury or deaths of citizens.

- **Neutral** - if groups did not clearly frame their policy positions with reference to gains or losses
  - An example of this would be a group that argues a centralized system of road safety "should be funded by a [percentage] of the tickets it generates: when a non-resident would pay the ticket, involved bodies should split the revenue."

Testing Prospect Theory

- Coding at both the group- and cluster-level
- Cluster-level coding was carried out by coding the cluster according to the frame that was most common.
  - In a cluster of fifteen documents, if four documents used environmental frames and 11 used economic frames, the cluster was coded as 'economic.'
  - In the same cluster, if three documents used 'gain' frames and 12 used 'neutral' frames, the entire cluster would be coded as 'neutral.'

Testing Prospect Theory

- Only 24% of consultation documents utilize gain or loss language

Frame Type	Frequency	Percentage
Gain	224	11%
Loss	187	13%
Neutral	1289	76%
Total	1700	100%

Testing Prospect Theory

- Only 11% of clusters/frames utilize gain or loss language

Frame Type	Frequency	Percentage
Gain	8	5%
Loss	9	6%
Neutral	136	89%
Total	153	100%

Testing Prospect Theory

- Hypothesis from Prospect Theory:
  - Clusters using a loss frame to describe their position should see the Commission move toward their position
- Even if the Commission moved toward every one of the 9% of clusters using a loss frame this wouldn't be statistical evidence of the power of loss frames. While the Commission moved toward and away the other 91% of clusters not using loss framing.

Conclusion

- **Framing:** At the core of understanding political outcomes, but little systematic data
- **Problem:** Methodological difficulties in systematically studying framing & influence
- **Goal**: Introducing QTA to the study of interest group framing & influence
- **Case study:** Results highly correlate with estimates obtained from Hand-coding, Wordfish and Wordscores
- **Innovation**: QTA approach allows for identifying frames and for multidimensional policy debates
- **Theory Testing:** One of the most replicated theories in the lab appears to have limited applicability in the complex real world setting of public policymaking

Recent related publications:

- "Identifying frames: A comparison of research methods." With Frida Boräng, Rainer Eising, Heike Klüver et al. ***Interest Groups & Advocacy*** (2014) Volume 3 Number 2
- "Measuring Interest Group Framing Strategies in Public Policy Debates." With Heike Klüver. ***Journal of Public Policy*** (forthcoming 2015)
- "Framing in context: how interest groups employ framing to lobby the European Commission" With Heike Klüver and Marc Opper. ***Journal of European Public Policy*** (2015)