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Lecture 5: Premediation analysis case, Many Parties

Negotiation Analytics 30C02000

Johanna Bragge
PhD, Senior University Lecturer

Department of Information and Service Management / Information Systems Science

https://people.aalto.fi/johanna_bragge

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Case: Premediation Analysis of the Energy Taxation Dispute in Finland

- Case summarized at course book pages 379-380

- Based on Bragge, J. (1997), *PhD Dissertation*, Helsinki School of Economics
- Bragge, J. (2001), article, *European Journal of Operational Research*, 132(1), pp. 1-16.

The concept of premediation analysis is based on Howard Raiffa's article on *"Mock Pseudo-Negotiations With Surrogate Disputants"* , Negotiation Journal, April 1985

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Negotiator's dilemma

- Before negotiations all parties have a strong tendency to think the same way:

  "If the other party is open and agreeing, I should take advantage of that and claim a lot for myself.

  On the other hand, if the other party is strict and demanding, I must also behave the same way to protect myself."

➡ Leads into a competitive setting (*claiming value*), where parties in turn claim value for themselves only.

➡ Makes co-operative moves (*creating value*) much more difficult in negotiations!

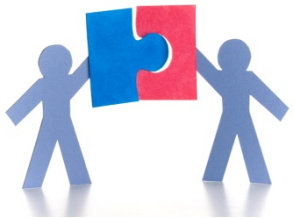
Creating value in negotiations

- Searching for jointly beneficial agreements
- Improving them
- Preventing the dispute from escalation or a stalemate

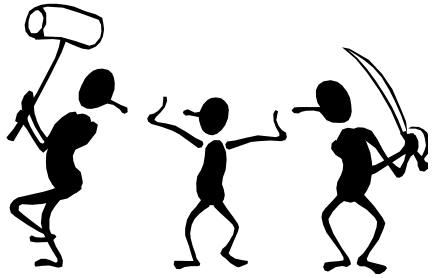
➡ In order to create value, one must
  - Share information more openly
  - Increase communication
  - Encourage creativity
  - Emphasize joint problem solving
  - Channel bursts of anger in a structured manner.

Important!

The mediator has to remember
(or to change)
the basic orientation of the negotiations:
conflict should not be regarded as
a competition to be won,
but a problem to be solved



Premediation analysis



- based on Howard Raiffa's article on *"Mock Pseudo-Negotiations With Surrogate Disputants"* , Negotiation Journal, April 1985, Vol. 1, Issue 2, pp. 111-115.

- Idea
  - is for an outside, **analytical mediator** to demonstrate the value of negotiations to disputants who are not co-operating with each other.
- Surrogate disputants
  - are **persons who know well the domain of the dispute** and who can express the views of the party they represent "inherently", but who are not necessarily the real negotiators concerning the conflict.
- Report
  - the premediation analysis will be fully reported in order **to influence the subsequent behavior of the real disputants**.

Premediation analysis is *symmetrically* prescriptive/descriptive approach as all disputing parties are helped equally.

Contents of the report

① History of the dispute

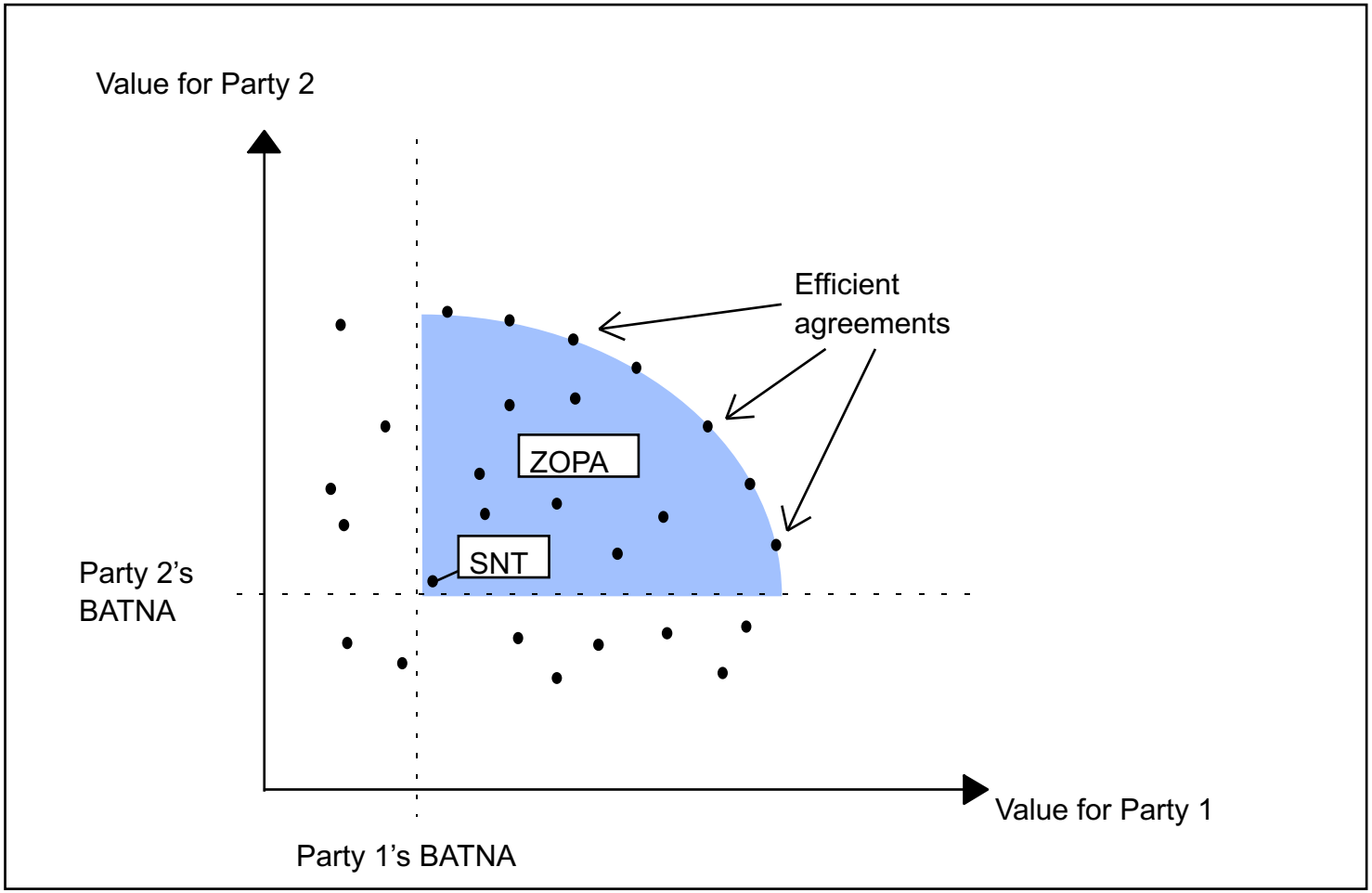
② Analysis of the interests of the disputing parties
- fundamental objectives
- quantitative analysis of preferences

③ Identification of efficient agreements

④ Analysis of the no-agreement state
- **BATNA** = **B**est **A**lternative **T**o a **N**egotiated **A**greement
- Zone of Possible Agreement (**ZOPA**)

⑤ Single Negotiating Text (**SNT**)
- crafted as a starting point for *possible* real negotiations.

Premediation analysis in a nutshell

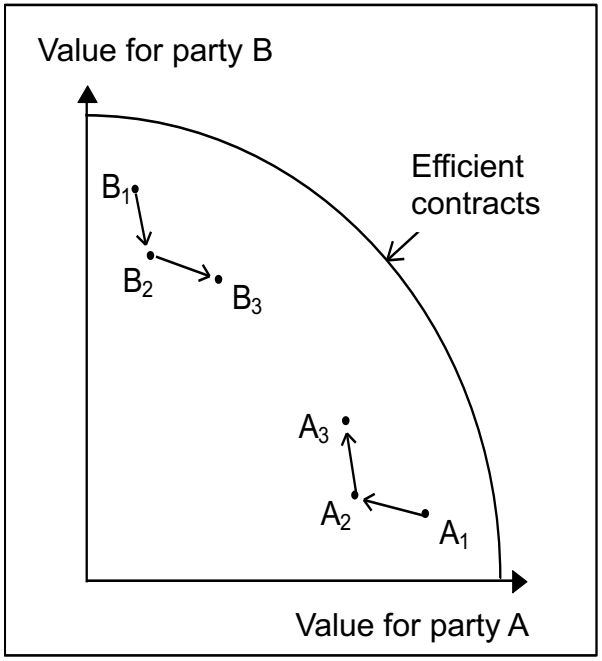


BATNA = Best Alternative to a Negotiated Agreement
SNT = Single Negotiating Text
ZOPA = Zone of Possible Agreement

Source: Bragge (1997), p. 26

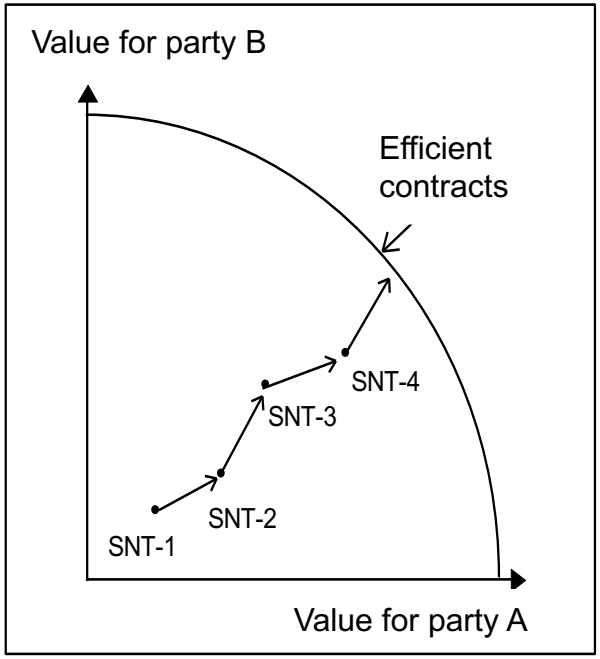
Traditional vs. SNT-type negotiations

Traditional
"dance of packages"



Win-Lose

SNT approach



Win-Win

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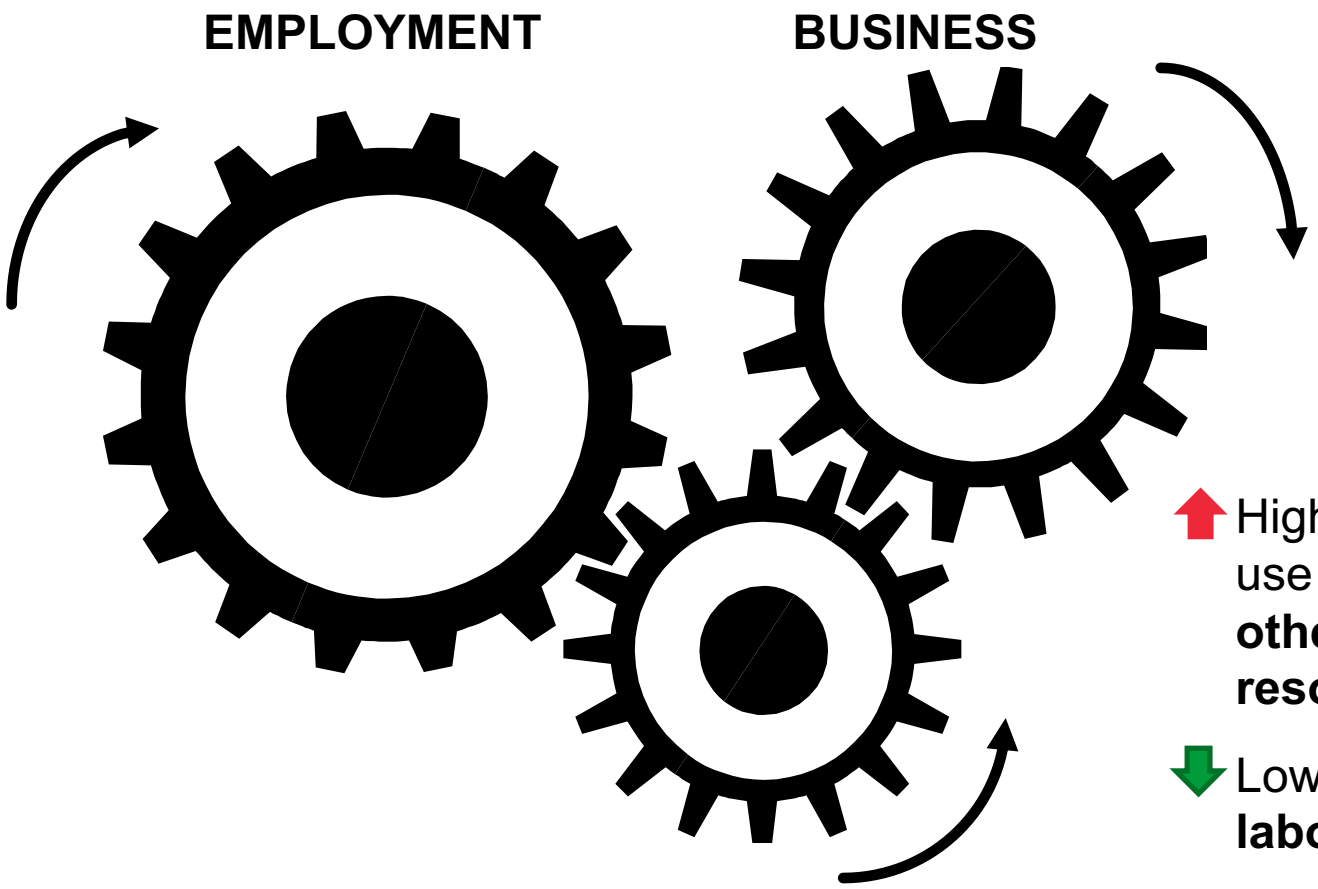
SNT = Single Negotiating Text

Source: Bragge (1997), p. 152

Case dispute: Economic growth without increasing material use and pollution?



- Higher taxes on the use of **energy and other environmental resources**
- Lower taxes on **labour**

Some facts about energy taxation

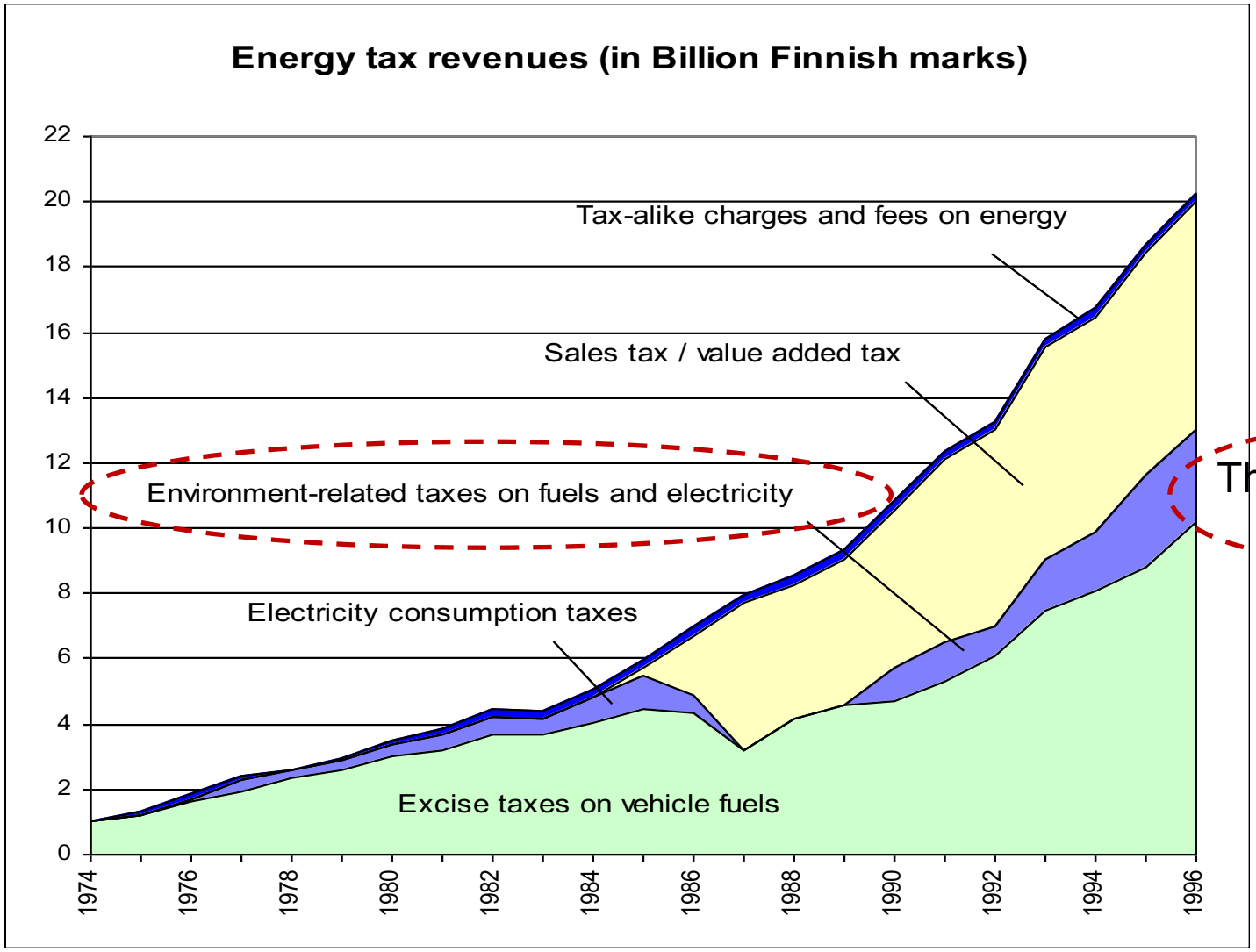
- Case here: *environment-related* energy taxation

  Belongs to **economic instruments**: "internalizing" the exploitation of the environment into production costs and prices.

  The aim: **spurring energy savings and reduction of emissions, esp. carbon dioxide (CO_2)**, and concurrently shifting the emphasis of taxation away from labour towards consumption.

- Finland as the *pioneer country*
  - Finland was the first country to introduce explicit CO_2 taxes on fossil fuels in 1990
  - also Sweden, Norway, Denmark and the Netherlands had imposed similar taxes by the middle of 1990's
  - EU had made directive proposals (1992/1995) on introducing union-wide energy taxes.

Energy tax revenues in Finland up to 1996



Sources: Statistics Finland, 1996; Energy Federation of Finnish Industries. The values for 1996 are estimates.

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Source: Bragge (1997), p. 87

European Union and energy taxation

- European Commission's CO_2/energy tax proposal 1992
  - planned to take effect in 1993 in all EU-countries
  - conditionality clause concerning major competitor countries in OECD ("if they don't take similar taxes into use, we won't either")
  - diverging interests of member countries, **no unanimous decision was reached**
  - implementation was deferred
- Amended proposal of the European Commission 1995
  - almost the same as the original proposal
  - the implementation of EU-harmonized taxes was suggested to be preceded by **a transitional period in 1996-1999**, during which the member countries were free to set their own tax rates.

Energy taxation in Finland

- 1990: CO_2 tax on fossil fuels
- 1994: Finland adopted the main ideas of the '92 EU-proposal
  - energy taxes were targeted right at the primary energy level
  - the taxes were based on a "75/25 model" (75% based on CO_2 emissions and 25% on the energy content)
  - in 1994 the taxes were almost at the level EU had suggested for the starting year (total tax yield FIM 1.8 Billion)
- in 1995 the taxes were raised by 1 Bln (to FIM 2.8 Bln)
- the taxes were not raised for 1996
- Council of State's decision in principle: emphasis in electricity taxation towards the end product (not fuels)

Industry's arguments against unilateral energy taxation

- jeopardizes international competitiveness
  - development of other industrialized countries should be followed; Finnish industry compensates high transportation costs with low-priced energy
  - **half of Finnish exports were products of energy intensive industries**
  - e.g. UPM-Kymmene's (in forest industry) exports accounted for 20% of Finnish exports (and 20% of energy used)
  - **8 firms paid 75-80 % of the energy taxes paid by the industry (1 Bln)**
  - 1995 industry's energy tax burden was 3-fold compared to the average of the EU's industry
- hampers the functioning of Nordic electricity markets
- the taxes are only fiscal, not genuine environmental taxes
- possibilities to make investments get worse, also those meant for energy saving and environmental conservation
- lack of long-term development in energy taxation

Analyzing the interests of the industry and the environmentalists

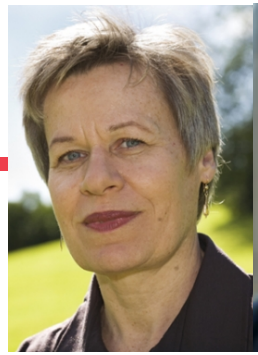
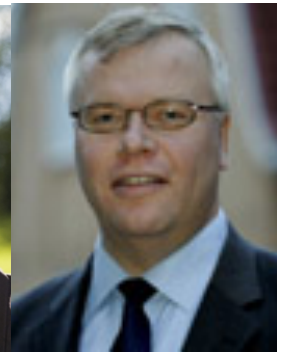
Environmentalists

- Member of the Parliament **Osmo Soininvaara**, Green Parliament Group (GP)
- Snr. Researcher **Kimmo Louekari**, Council of the Green League (GL)

- Industrialists
  - Head of Department for Sustainable Development **Tellervo Kylä-Harakka**, Confederation of Finnish Industries and Employers (IE)
  - Secretary General for Energy Policy **Pertti Salminen**, Energy Federation of Finnish Industries (EF)
- Interviews for the analysis conducted in June-August 1995
  - EU's amended proposal (COM, 1995) was just launched

➔ ***energy taxation for the transitional period in 1996-2000 as a basis for the interviews***



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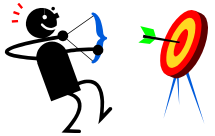
Analysis of the interests of the disputants

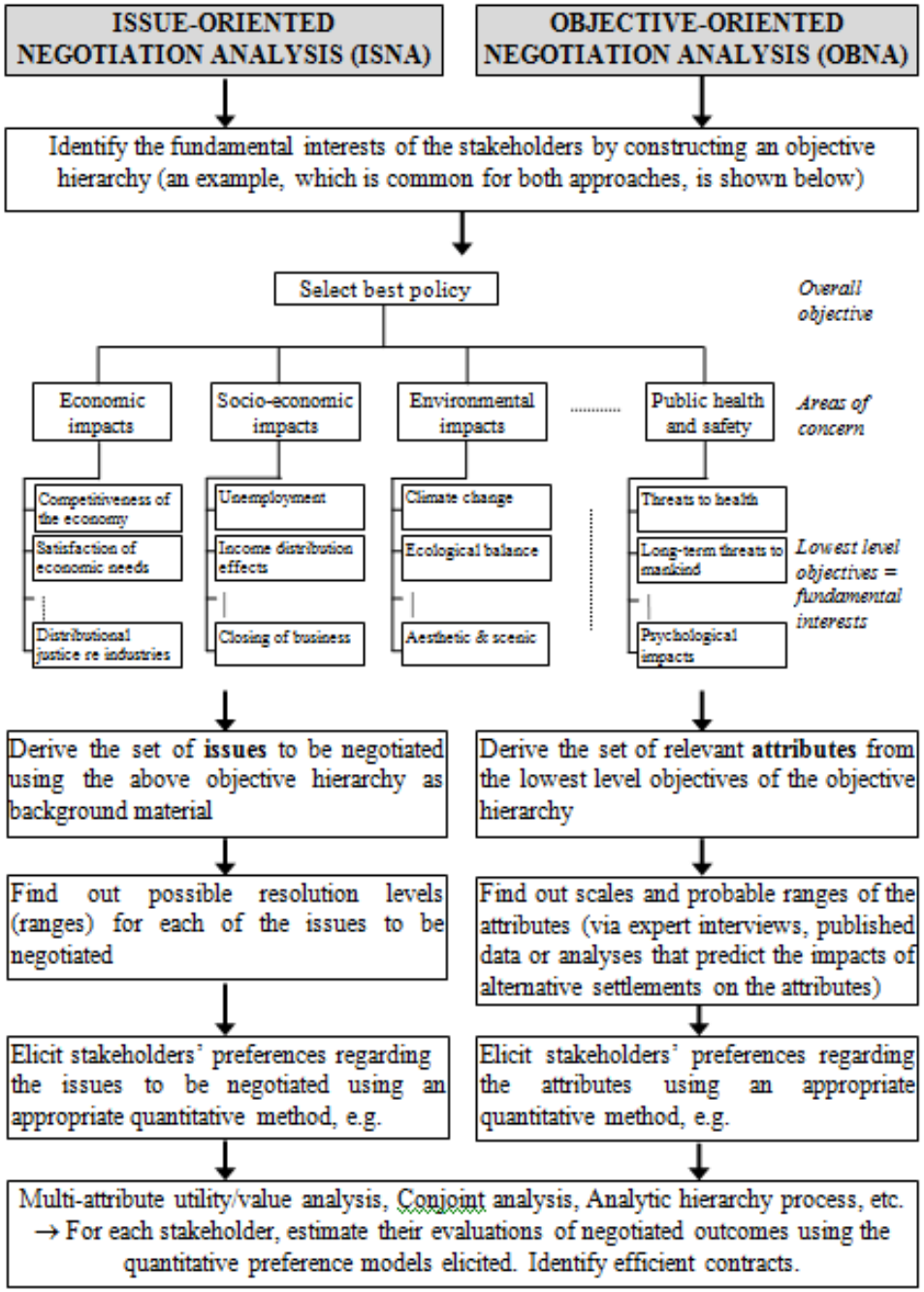
-  Building objective hierarchies
- Formulating issues to be negotiated 
- Analytic Hierarchy Process (AHP) as a “warm-up” task for preference elicitation
  - Employing AHP’s absolute measurement mode (“rating” mode)
- Conjoint analysis for actual preference elicitation
  - full-profile method for estimating individual additive main-effects models (dummy regression analysis estimated by OLS)

$$Y^r = b_0 + \sum_{i=1}^{n} \sum_{k=1}^{k_i - 1} b_{ik} d_{ik}^r$$

  - final preference models estimated using simple Bayesian regression (Cattin *et al*. 1983, JMR), which combines prior information (AHP) and experimental information (OLS).

Two choices for negotiation analysis: ISNA & OBNA

ISNA was chosen to be applied, as it was difficult to get reliable estimates for attributes such as CO_2 emissions and unemployment rate using economic models (to simulate probable outcomes of various tax policy options).



Source: Bragge (1997), p. 40

Examples of individual objective hierarchies

Objective hierarchy of GP (Green Parliamentary Group)

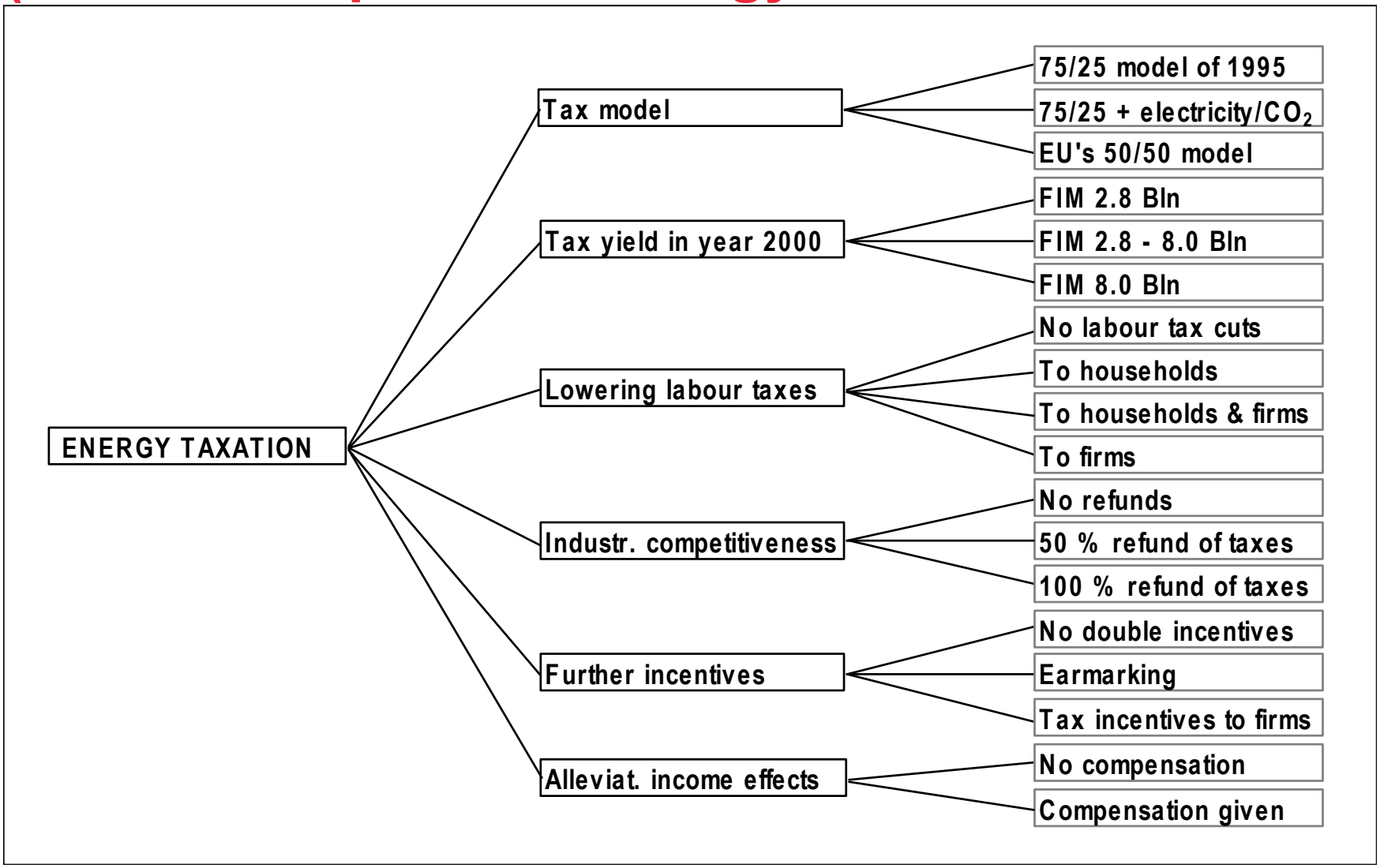
- **Economy**
  - ⇒improving employment through lowering taxes and charges on labour
  - ⇒promoting an ecological change in the structure of the economy
  - ⇒avoiding increases in income differences
  - ⇒safeguarding stable economic growth
  - ⇒improving the balance of public finances
  - ⇒maintaining the balance of foreign trade
  - ⇒promoting the competitiveness of the economy
    - ⇒promoting investments
    - ⇒safeguarding the competitiveness of the industry
    - ⇒promoting the competitive advantage related to innovations in environmental technology
- **Environment**
  - ⇒reducing carbon dioxide and other energy-related emissions
  - ⇒reducing consumption that strains the environment
- **International co-operation**
  - ⇒fulfilling international obligations
  - ⇒maintaining a voice in environmental issues (remaining as a pioneer)
  - ⇒promoting the introduction of international energy taxes
- **Energy management**
  - ⇒promoting the development of an ecologically sustainable energy production structure
    - ⇒increasing the use of renewable bioenergy
    - ⇒promoting the use of low-carbon fossil fuels (natural gas) instead of high-carbon fuels
  - ⇒taking care of the proper operation of the Nordic electricity exchange
- **Fairness**
  - ⇒intra-generational fairness
    - ⇒between individuals
    - ⇒between geographical areas
  - ⇒inter-generational fairness
- **Tax administration**
  - ⇒aiming at long-term and consistent development concerning energy tax decisions
  - ⇒furthering administrative simplicity and cost-effectiveness

Objective hierarchy of EF (Energy Federation of Finnish Industries)

- **Economy**
  - ⇒safeguarding the competitiveness of the economy
    - ⇒safeguarding the competitiveness and profitability of the export industry
    - ⇒safeguarding the competitiveness and profitability of the domestic industry that competes with imports
    - ⇒promoting competitive advantage related to innovations in environmental technology
  - ⇒maintaining stable economic growth
  - ⇒safeguarding employment
  - ⇒improving the balance of public finances
  - ⇒maintaining the balance of foreign trade
  - ⇒maintaining the purchasing power of households
- **Environment**
  - ⇒reducing carbon dioxide and other energy-related emissions
  - ⇒minimizing the fiscal features of energy taxes and increasing their environmental effectiveness (e.g. by granting tax incentives for environmental investments)
- **International co-operation**
  - ⇒fulfilling international obligations (esp. regarding the Rio convention)
  - ⇒promoting uniformity in energy taxation measures with other countries
- **Energy management**
  - ⇒maintaining low energy prices as a competitive advantage
  - ⇒safeguarding the availability of and self-sufficiency in energy
    - ⇒with respect to electricity production
    - ⇒with respect to primary energy
  - ⇒safeguarding continuity in research and development
  - ⇒safeguarding the proper operation of the Nordic electricity exchange
  - ⇒avoiding double taxation with respect to combined heat and power production
  - ⇒maintaining crisis-preparedness
- **Fairness**
  - ⇒between industries
  - ⇒between firms
  - ⇒between individuals
- **Tax administration**
  - ⇒aiming at long-term and consistent development concerning energy tax decisions
  - ⇒furthering administrative simplicity and cost-effectiveness

Source: Bragge (1997), p. 272-274

Final negotiable issues (6) and their levels (in total 648 possible energy taxation alternatives)



Source: Bragge (1997), p. 113

Warm-up task with AHP

See software used at http://www.hipre.aalto.fi

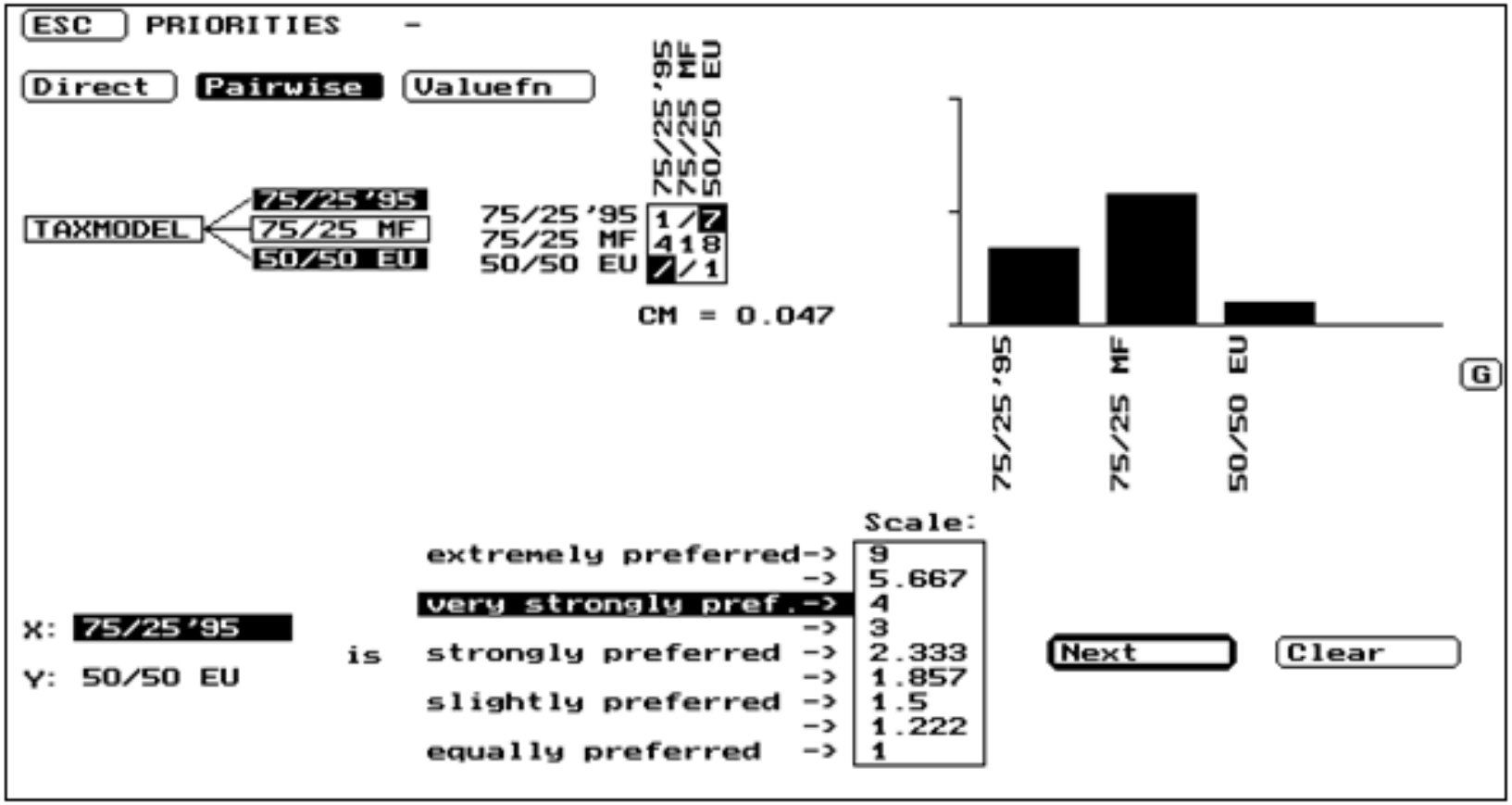


Figure 9. A computer screen from the HIPRE 3+ software. The respondent has answered three pairwise questions regarding the different levels of the tax model issue. The local priority weights are shown as bars summing to 100 % in the upper right corner. The last question has inquired about the preference for the 75/25 model of 1995 versus the original 50/50 model the EU has proposed; the former is valued four times more than the latter.

Source: Bragge (1997), p. 116

Conjoint analysis *

- commonly used in marketing research
  - for measuring consumer preferences about the attributes (factors) of a particular product
  - equally suitable also for any other field where measuring people's perceptions or judgments is important
- output from conjoint analysis
  - preferences ('part-worths' / value scores) for each factor level
  - relative importance weights of the factors

  ➔ overall utilities for different factor level combinations (full-profiles)
- full-profile conjoint method was employed
  - the respondent is asked to rank or rate a set of profiles according to preference (the set is selected using an orthogonal array design)
  - based on the respondent's ranking or rating, conjoint analysis derives the "part-worths" for each factor level using multiple regression analysis (OLS as estimation method).

* *Conjoint Analysis is taught in detail at Aalto BIZ by Management Science prof. Merja Halme at the **Models in Marketing** course in Fall periods*
https://mycourses.aalto.fi/course/view.php?id=19959

Two full-profile conjoint cards (from the 27 cards presented in this case of 648 possible options)

"Status quo" option

If the European Commission's new directive proposal is approved, how preferable would you consider this energy taxation alternative to be in the transitional period? Mark your preference on the scale below.

TAX MODEL
Current 75/25 model | 75/25 + electric./CO_2 | EU's 50/50 model

TAX YIELD IN THE YEAR 2000
FIM 2.8 Bln | 2.8 - 8 Bln (Sweden) | FIM 8 Bln

LOWERING THE TAXES AND CHARGES ON LABOUR
No labour tax cuts | To households | To househ. & firms | To firms

TAX REFUND OR REDUCTION FOR ENERGY-INTENSIVE INDUSTRIES
0 % | 50 % | 100 %

FURTHER INCENTIVES FOR ENVIRONMENTAL INVESTMENTS
No double incentives | Earmarking | Tax incentives

ALLEVIATING THE ADVERSE EFFECTS ON INCOME DISTRIBUTION
No compensation | Compensation given

-10 -8 -6 -4 -2 0 2 4 6 8 10
Totally unacceptable — Neutral — Highly acceptable

CARD U

If the European Commission's new directive proposal is approved, how preferable would you consider this energy taxation alternative to be in the transitional period? Mark your preference on the scale below.

TAX MODEL
Current 75/25 model | 75/25 + electric./CO_2 | EU's 50/50 model

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ALLEVIATING THE ADVERSE EFFECTS ON INCOME DISTRIBUTION
No compensation | Compensation given

-10 -8 -6 -4 -2 0 2 4 6 8 10
Totally unacceptable — Neutral — Highly acceptable

Source: Bragge (1997), p. 285-286

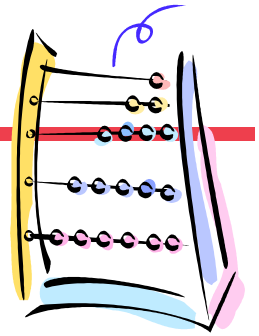
Value functions estimated for each interviewee (based on conjoint analysis and AHP)

$$Y_{GP} = -8.4 - 0.52d_{11} - 0.0d_{12} + 7.58d_{21} + 12.6d_{22} + 2.32d_{31} + 2.44d_{32} + 3.27d_{33} + 0.32d_{41} - 1.10d_{42} - 0.32d_{51} - 1.63d_{52} + 0.37d_{61}$$

$$Y_{GL} = -9.33 - 0.02d_{11} + 1.02d_{12} + 5.69d_{21} + 8.33d_{22} + 3.61d_{31} + 3.73d_{32} + 0.90d_{33} - 0.09d_{41} - 0.15d_{42} + 0.03d_{51} - 0.03d_{52} + 2.92d_{61}$$

$$Y_{EF} = 1.0 + 1.40d_{11} - 1.87d_{12} - 4.73d_{21} - 8.66d_{22} + 0.43d_{31} + 0.68d_{32} + 0.55d_{33} + 2.59d_{41} + 7.83d_{42} - 0.67d_{51} + 0.32d_{52} - 1.97d_{61}$$

$$Y_{IE} = -7.23 + 0.54d_{11} - 0.01d_{12} - 1.79d_{21} - 3.96d_{22} + 0.04d_{31} + 1.01d_{32} + 0.08d_{33} + 4.03d_{41} + 15.28d_{42} + 0.11d_{51} + 0.33d_{52} - 0.79d_{61}$$



Source: Bragge (1997), p. 137

Value function part-worths illustrated for GP

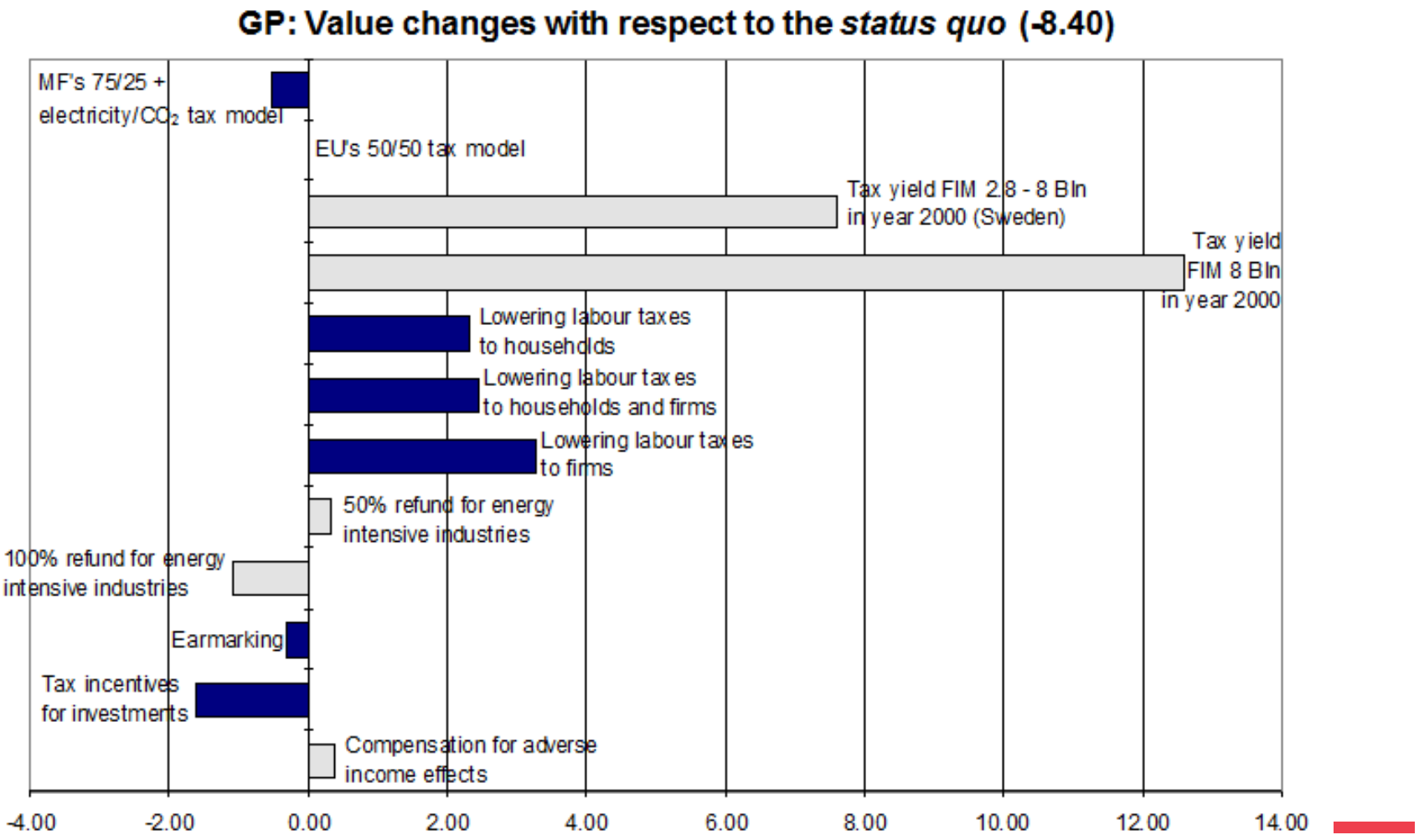


Figure 11: Preference model for GP (Green Parliamentary Group), which illustrates the value changes with respect to the overall value of the reference alternative (*status quo*, -8.4).

Source: Bragge (1997), p. 139

Value function part-worths illustrated for EF

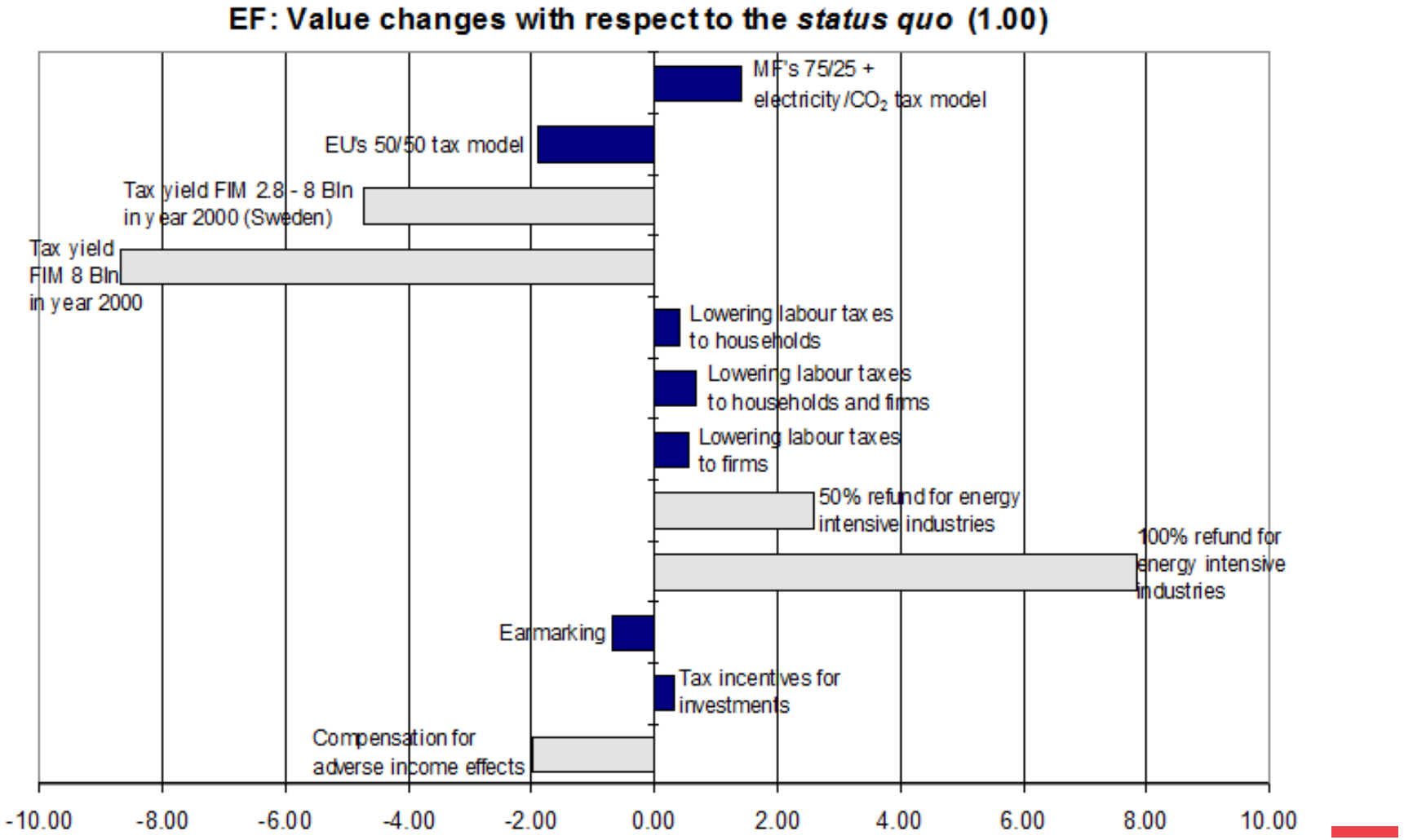
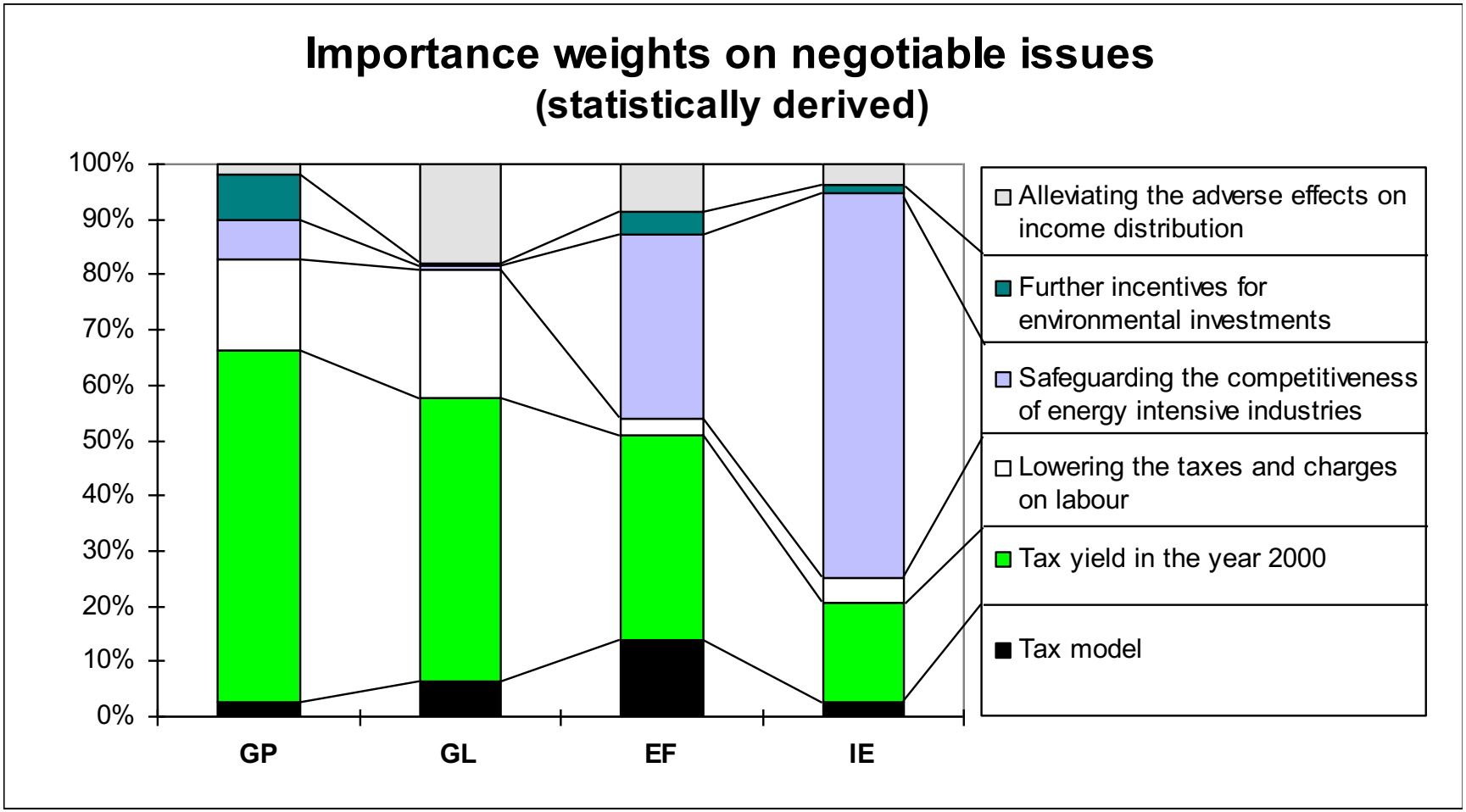


Figure 13: Preference model for EF (Energy Federation of Finnish Industries), which illustrates the value changes with respect to the overall value of the reference alternative (*status quo*, 1.0).

Source: Bragge (1997), p. 140

Comparison of weights of the disputants



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Source: Bragge (1997), p. 142

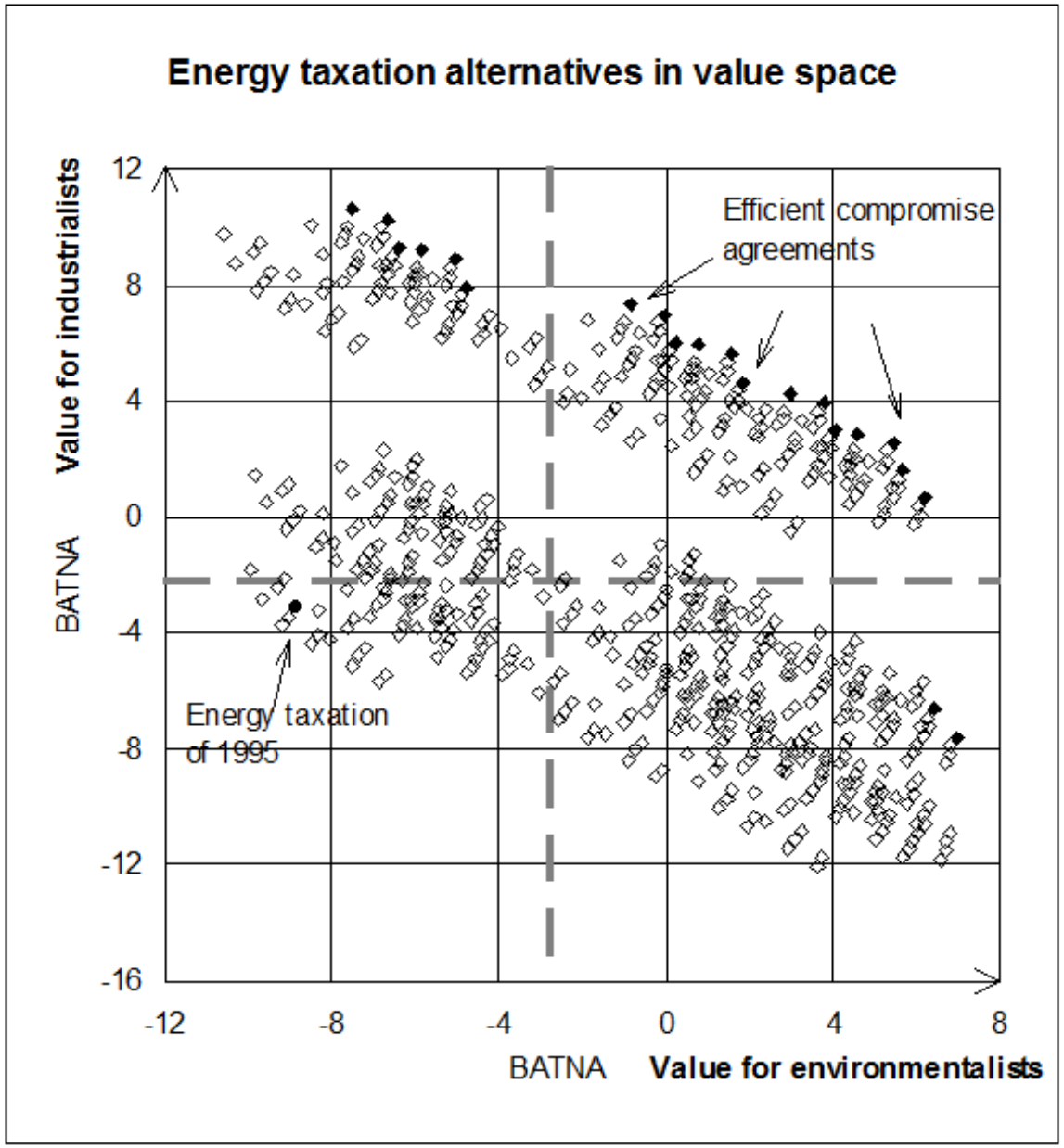


Figure 17. Energy taxation alternatives on a two-dimensional graph, where the axes represent the overall values for the environmentalists and for the industrialists. The filled circle represents the *status quo* alternative (energy taxation as of 1995) and the filled diamonds depict efficient alternatives. The dashed lines separate the alternatives that are better or worse than the BATNAs for both parties. The Zone of Possible Agreement is thus the north-east area in the figure.

Illustration of the value space

(Four parties: GP, GL, IE and EF are combined into two parties here for illustrative purposes only)

Source: Bragge (1997), p. 149

Comments about the analysis

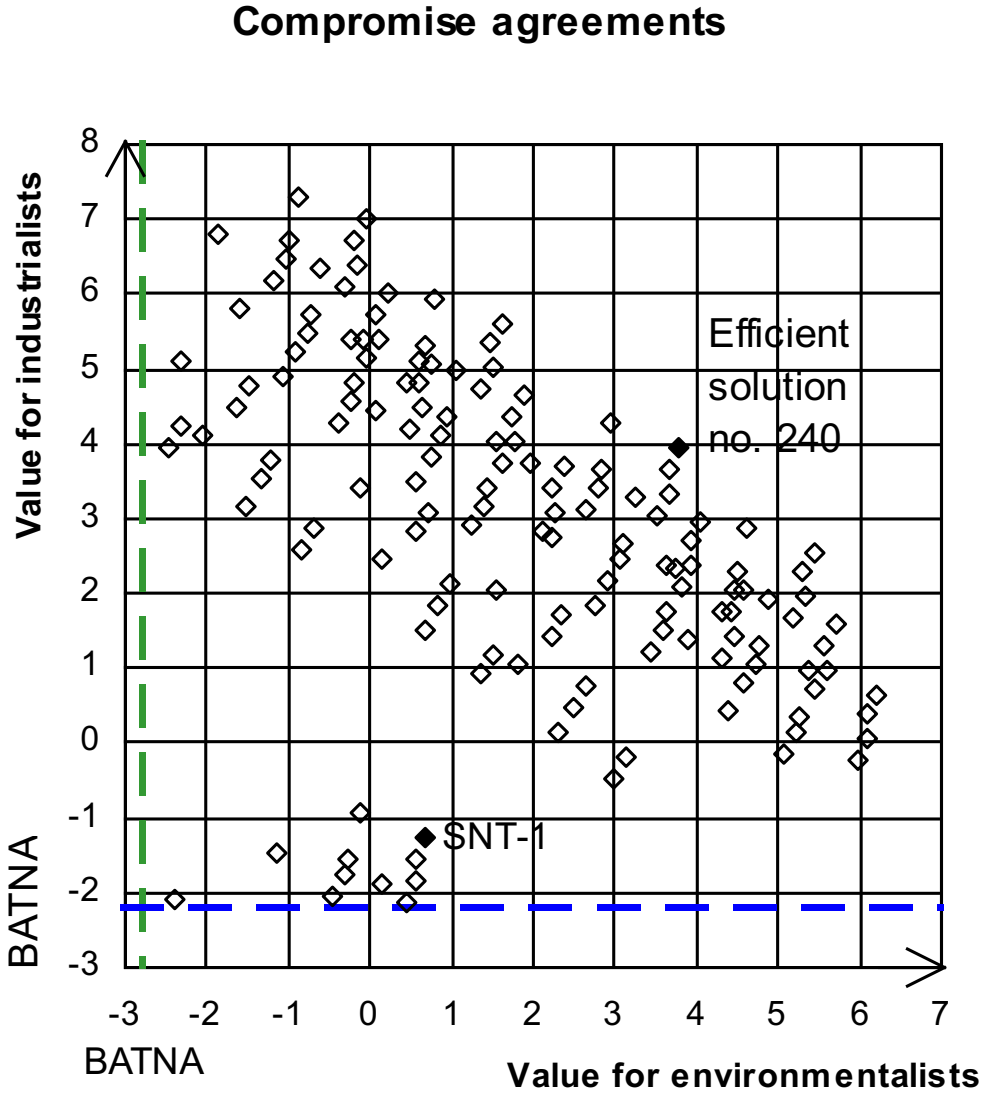
- First *common* meeting in January 1996
  - the report had been perused and commented before the meeting
  - the analytical approach was regarded to add value to a descriptive study
  - the role of the mediator was seen important (e.g. in taking the initiative)
  - results were both surprising and expected
  - **interested in continuing with face-to-face negotiations - still unofficially**

- Post-analysis negotiations
  - the SNT-1 generated in the report taken as a starting point
  - negotiations lasted two months
  - compromise solution was found in April 1996 (SNT-5)
  - negotiators wanted the mediator to publicize the results (newspaper articles, seminar presentations, contacts to state officials etc.)

Final solution

Illustration of the ZOPA - Zone of Possible Agreement.

The first SNT is marked by a filled diamond, as is also the efficient alternative (solution no. 240) that is estimated to be relatively close in value to SNT-5, the final agreement reached.



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Source: Bragge (1997), p. 179

Final solution of the post-analysis negotiations (SNT-5)

- tax model same as in 1995/96, except for electricity production: CO_2-tax halved and a consumption tax in use
- tax yield from FIM 2.8 Bln to 8 Bln by year 2000
- recycling the increased energy tax revenues by lowering taxes on labour in the best way regarding employment
- energy-intensive industrial firms in open international competition will be given refunds from the energy taxes
- no “double” incentives in addition to the price instrument for furthering environmental investments
- possible adverse income effects will not be compensated by separate measures

Government's energy tax decision for 1997

- Budget negotiations in August 1996
  - Ecological tax reform was not (again) going to be started although it was included in the Government Program formulated in 1995
  - Greens were persistent in demanding energy tax raises and cuts in labour taxes - the compromise solution found and especially the contacts created in the post-analysis negotiations had a crucial role in the breakthrough of the Greens' demands.
  - Decision made for 1997: energy tax raises by FIM 1.1 Bln and equivalent tax cuts on earned income, no increases to the total tax burden of the industry, details to be prepared by a ministerial working group (> solution reminded by and large our outline)
- New energy tax model and raises were accepted by the Parliament in December 1996
- The model was taken into use in 1997

A comment on the energy tax decision of 1996

- Managing Director Juha Naukkarinen from the Association of Electric Energy
  - *"The chosen tax model **suits well for both the Greens' and the industry's objectives**. Greens were able to open the way for energy tax increases, which they consider important. The industry gets now released from the general energy tax rate that has been uniform for all."*
  - *"The solution's more important meaning will be in its implications to the future development. **It is easier than before to raise the energy taxes in the future, as the industry's strong lobbying power and interest against the raises is now partially removed**."*

Co-operation is the key to sustainable solutions in environmental management

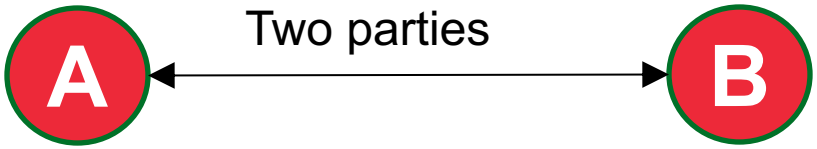
- *"Environmental issues are so complex that it is essential to build relationships with key stakeholders to make improvements rather than fight one another."*
  - Judie Mullins, Director of policy and programs for the Environmental & Energy section at General Motors

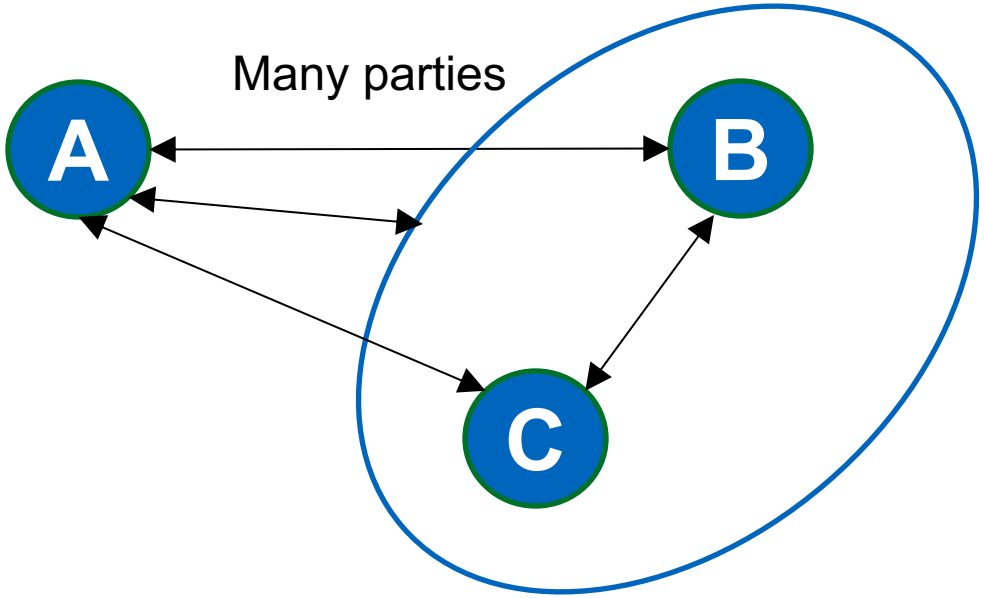
- *"The goal is to get all the people together for a win-win situation."*
  - John Flicker, President of Audubon Society

(in Dutton, G. "Green Partnerships", *Management Review*, American Management Association, Jan.1996, pp. 24-28)

Many parties

Many parties





How multiparty negotiations differ from two-party negotiations?

- The degree of complexity regarding the **parties**
  - Multiple parties
  - Multiple roles
  - A variety of dissimilar actors
  - Coalitions
- The degree of complexity regarding the **issues**
  - Multiple issues
  - Different issue valuations
  - Issues of a policy nature
  - Several ongoing and parallel negotiations
- The degree of complexity regarding the **process**
  - The potential for process manipulation
  - The greater amount of time needed
  - What decision rule to use?
  - The need for a highly managed process

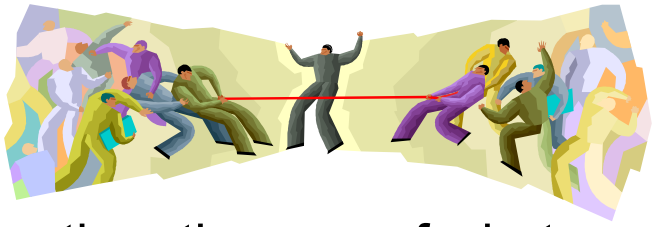
Source: A. Najam (2001). Collectives in international multilateral negotiation. Dept. Of Urban Studies and Planning, MIT.

Problems with group behavior

- People all talk at the same time
- People don´t listen carefully
- They forget what was said; no record is kept
- Discussions are disorganized and get sidetracked

- Too little time on substance, too much time on trivia
- Discussion breaks down into several parallel meetings
- Some are ”free riders”, some withdraw

Why groups do so poorly?



- Coordination loss
  - The effort put forth by a group is often less than the sum of what the members could do as individuals
  - E.g. a group pulling a rope in a tug-of-war does not pull as hard as one would expect from the participants' individual ability
- Communication overload
  - Domination is also a problem
- Cognitive overload
  - too much information to handle
- Interpersonal styles may conflict
- Disengagement
  - "free riders" or "social loafing"

Find out your preferred style of conflict resolution via a questionnaire:
http://academic.engr.arizona.edu/vjohnson/ConflictManagementQuestionnaire/ConflictManagementQuestionnaire.asp

Benefits of group decision making

- Resources
  - More manpower
  - More expertise (also in managing groups)
  - Possibility for synergies and innovative solutions
- Self-interests, arousal
  - Some people work harder when others are around
  - Like to be observed
  - Like to perform, esp. with well-liked team-mates
- Ownership (committed)
  - Accept and support better the decisions when taking part

Some prescriptive advices

- Choose carefully the members of the group
  - Invite people you need, no more
- Organize the substance of discussion
  - Agree on common purpose (what is the problem or opportunity?)
  - Use some structured, simple and easy-to-use framework to coordinate group thinking
  - Delegate
    - E.g. decompose the problem into smaller tasks, and assign the right people to each, synthesize at the end
  - Manage the conversation
    - Is there a need for a facilitator, a scribe, **a brainstorming session…**?
  - Manage time!

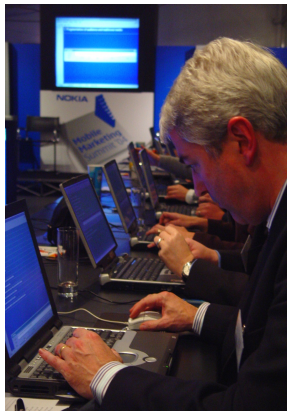
The PrOACT framework can be used also for groups to structure discussion*

1. Identify the ***Pr***oblem
2. Clarify the ***O***bjectives
3. Generate creative ***A***lternatives
4. Evaluate the ***C***onsequences of Alternatives
5. Make ***T***radeoffs

- Also 7-elements, or a simple comparison of two alternatives with pros and cons, etc. can be used to structure fruitful interactions!

** Suitable for groups with similar interests, being on the same team.*

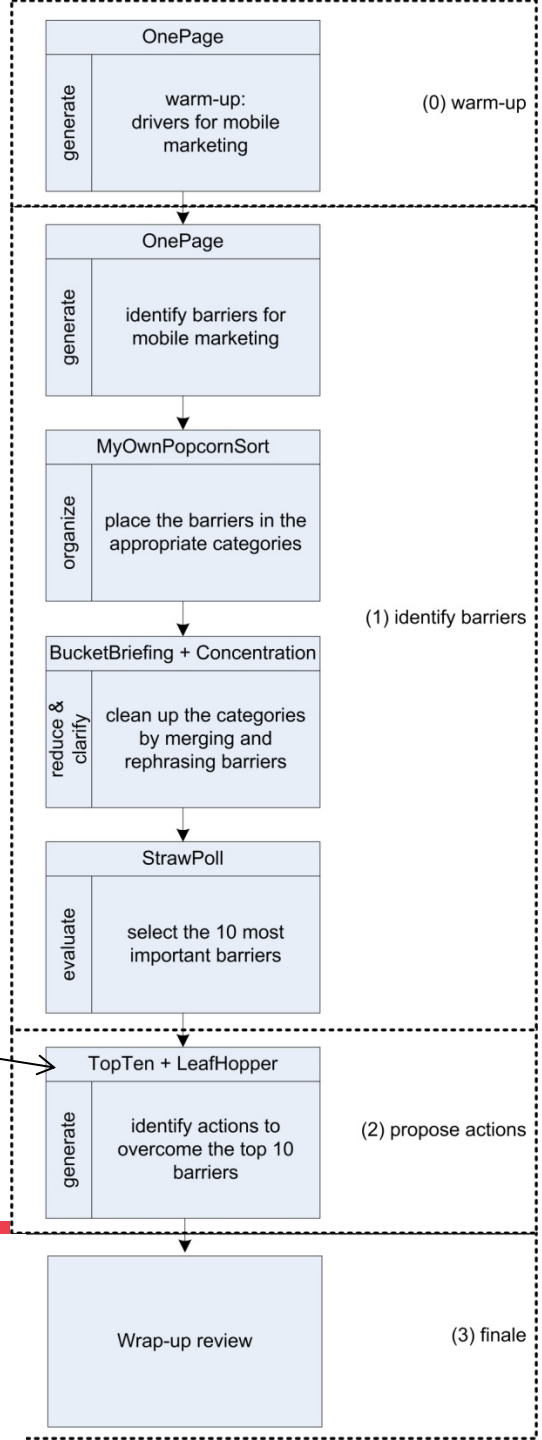
An example of a structured meeting agenda for building a tech roadmap with e-brainstorming



Agenda from Nokia Mobile Marketing Summit 2004. The **technology used** was *GroupSystems MeetingRoom*. Duration of the group decision-making session was **1,5 hours with 25 managers**. The managerial level participants represented either global brand owners or marketing agencies.

”Collaboration Engineering” (CE) with ThinkLets (Briggs, de Vreede and Nunamaker 2003, *Journal of MIS*) was used for modeling the 1,5-hour collaboration process. (e.g. *OnePage, StrawPoll*, *TopTen* are thinkLets).

ThinkLet manual http://www.lulu.com/shop/robert-briggs-and-gert-jan-de-vreede/thinklets-building-blocks-for-concerted-collaboration/paperback/product-5119917.html



Source: Bragge et al. (2011), Designing a Repeatable Collaboration Method for Setting Up Emerging Value Systems for New Technology Fields, *Journal of Information Technology Theory and Application*, 12(3). Learn more from CE from https://mycourses.aalto.fi/pluginfile.php/917787/mod_resource/content/3/CISBragge_28_02_2019.pdf