

Aspects of Power Overlooked by Power Indices

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The main points of the presentation

Two classes of indices

Two agenda procedures

More votes, less power

Power and proximity of outcomes

The main points

- ▶ The indices of *a priori* voting power focus on dichotomous choice situations
- ▶ There are many ways of making choices in multiple-alternative settings
- ▶ To reduce a multiple-alternative choice situation to a sequence of dichotomous choices, presupposes an agenda
- ▶ Agenda-control is often accompanied with considerable influence over outcomes
- ▶ In multiple-alternative settings, more seats may give less influence (local non-monotonicity)
- ▶ Indices equating power with proximity of outcomes and ideal points are challenged by aggregation paradoxes
- ▶ There are no plausible choice rules that would satisfy preference proximity in a technical sense

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Seriously: what's the difference?

<i>country</i>	<i>no. of votes</i>	<i>S-S index</i>	<i>std P-B index</i>	<i>DP index</i>	<i>Holler index</i>
F, G, I, UK	10	.1167	.1116	.0822	.0809
S	8	.0955	.0924	.0751	.0743
B, G, N, P	5	.0552	.0587	.0647	.0650
A, S	4	.0454	.0479	.0608	.0613
D, Fi, Ir	3	.0353	.0359	.0572	.0582
L	2	.0207	.0226	.0440	.0450

Table: The Shapley-Shubik, Penrose-Banzhaf, Deegan-Packel (DP) and Holler Index Values of Countries in the EU-15 for the Rule 62/87.

The main points of the presentation

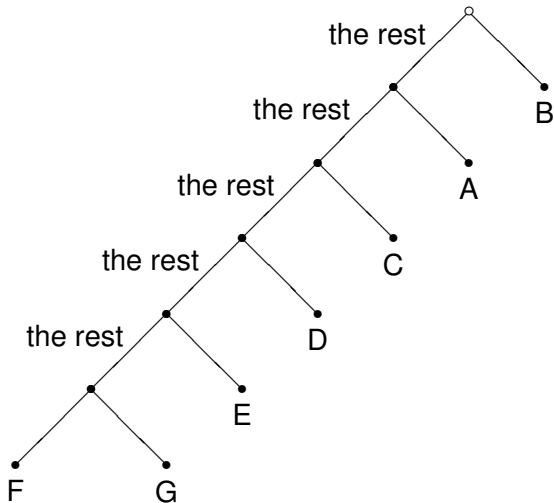
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A successive agenda



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Figure: A successive agenda

Amendment agenda

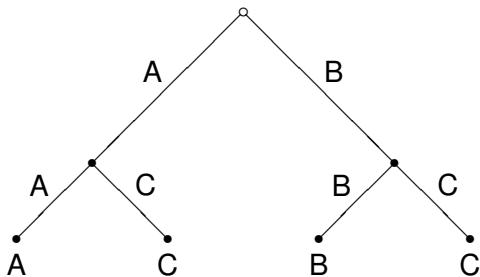


Figure: The amendment agenda

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Results on agenda systems I

1. Condorcet losers are not elected (not even under sincere voting),
2. sophisticated voting avoids the worst possible outcomes, i.e those outside the Pareto set
3. Condorcet winner is elected (even under sincere voting) by the amendment procedure,
4. the strong Condorcet winner is elected by both systems.

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Results on agenda systems II

1. McKelvey's (1979) results on majority rule and agenda-control.
2. All Condorcet extensions are vulnerable to the no-show paradox (Moulin 1988, Pérez 2001).
3. Pareto violations are possible.

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Non-monotonicity of runoff

<i>22 voters</i>	<i>21 voters</i>	<i>20 voters</i>
A	B	C
B	C	A
C	A	B

Table: Additional support paradox

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No-show paradox and runoff

5 voters	5 voters	4 voters
A	B	C
B	C	A
C	A	B

Table: No-Show Paradox

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Schwartz' paradox

party A 23 seats	party B 28 seats	party C 49 seats
a	b	c
b	c	a
c	a	b

Table: Schwartz' Paradox

Motion b has been presented and that also an amendment to it c is on the table. Hence the amendment agenda:

- ▶ motion b vs. amendment c ,
- ▶ the winner of the preceding vs. a

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Baigent's result

Theorem

Anonymity and respect for unanimity cannot be reconciled with proximity preservation: choices made in profiles more close to each other ought to be closer to each other than those made in profiles less close to each other (Baigent 1987).

I.e. if a small group of voters changes its mind about preference ranking, the change in outcomes can be larger than had a large group of voters changed its mind. That is, smaller groups can, under any reasonable voting rule, have larger impact on outcomes than larger groups.

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Ambiguity of closeness

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<i>issue</i>	<i>issue 1</i>	<i>issue 2</i>	<i>issue 3</i>	<i>maj. alt.</i>
<i>criterion A</i>	X	X	Y	X
<i>criterion B</i>	X	Y	X	X
<i>criterion C</i>	Y	X	X	X
<i>criterion D</i>	Y	Y	Y	Y
<i>criterion E</i>	Y	Y	Y	Y

Table: Ostrogorski's Paradox