TRANPAREA

Uniwersytet Warszawski
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Are Transboundary Nature Protected Areas – International Public Goods?

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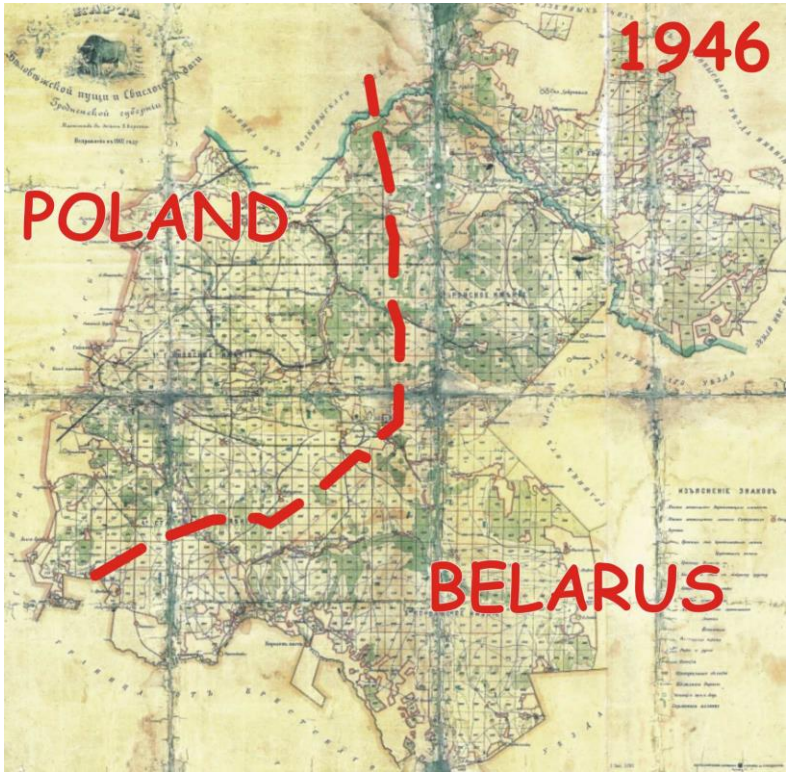
Motivation

Transboundary Nature Protected Areas (NPAs) – contiguous natural complexes, artificially divided with the state borders and protected on every side of the border

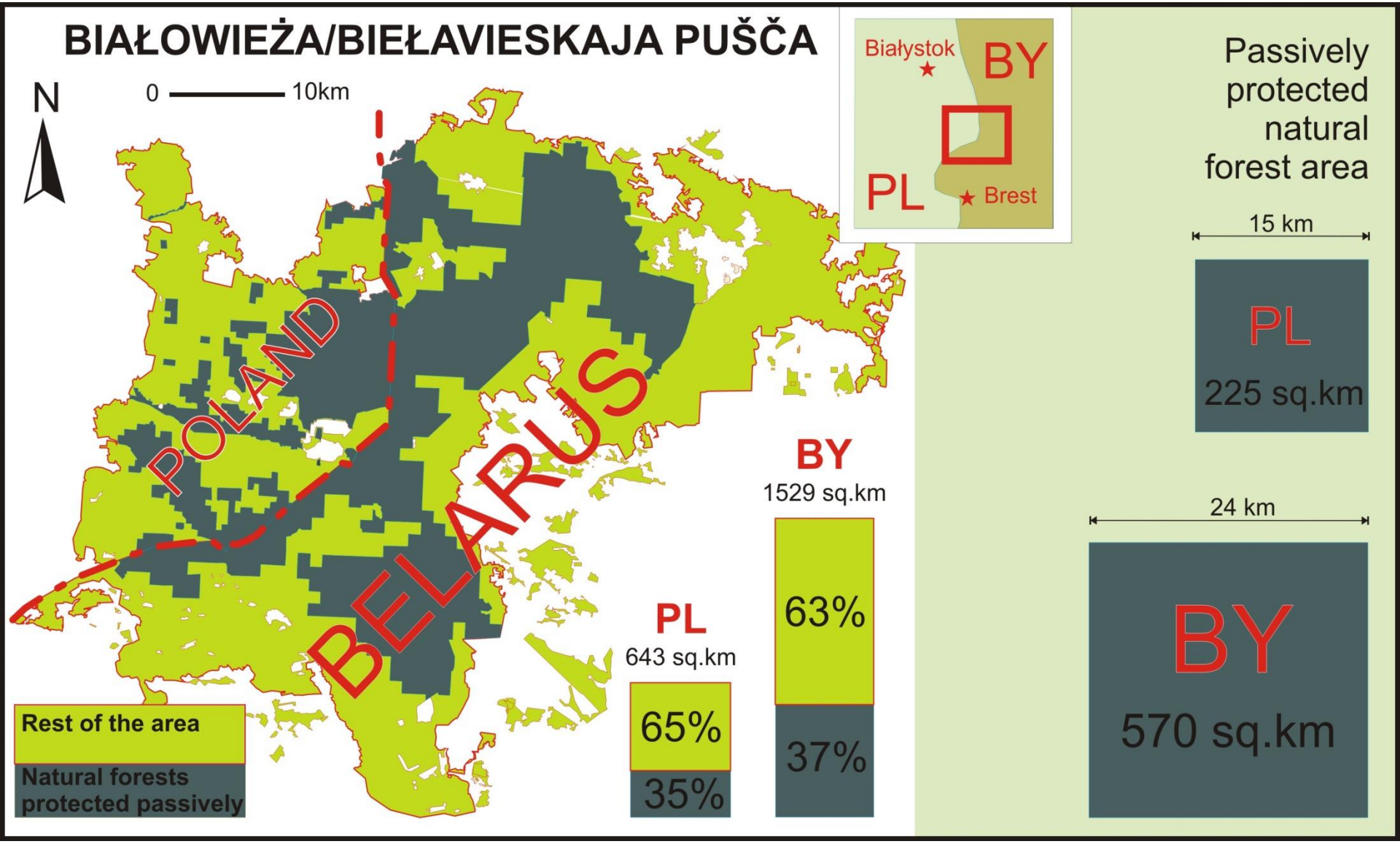
- 188 TNPA in 112 countries S=3.2mio sq.km (≅India). 17% of total PAs' [Chester, 2008]
- Significant scientific and popular literature in natural disciplines
- Scarce literature in economics [Busch, 2007] including empirical studies
- Idea of passive protection and rewilding
- Białowieża/Biełavieskaja Pušča forest



Are Transboundary NPAs **International Public Goods?**

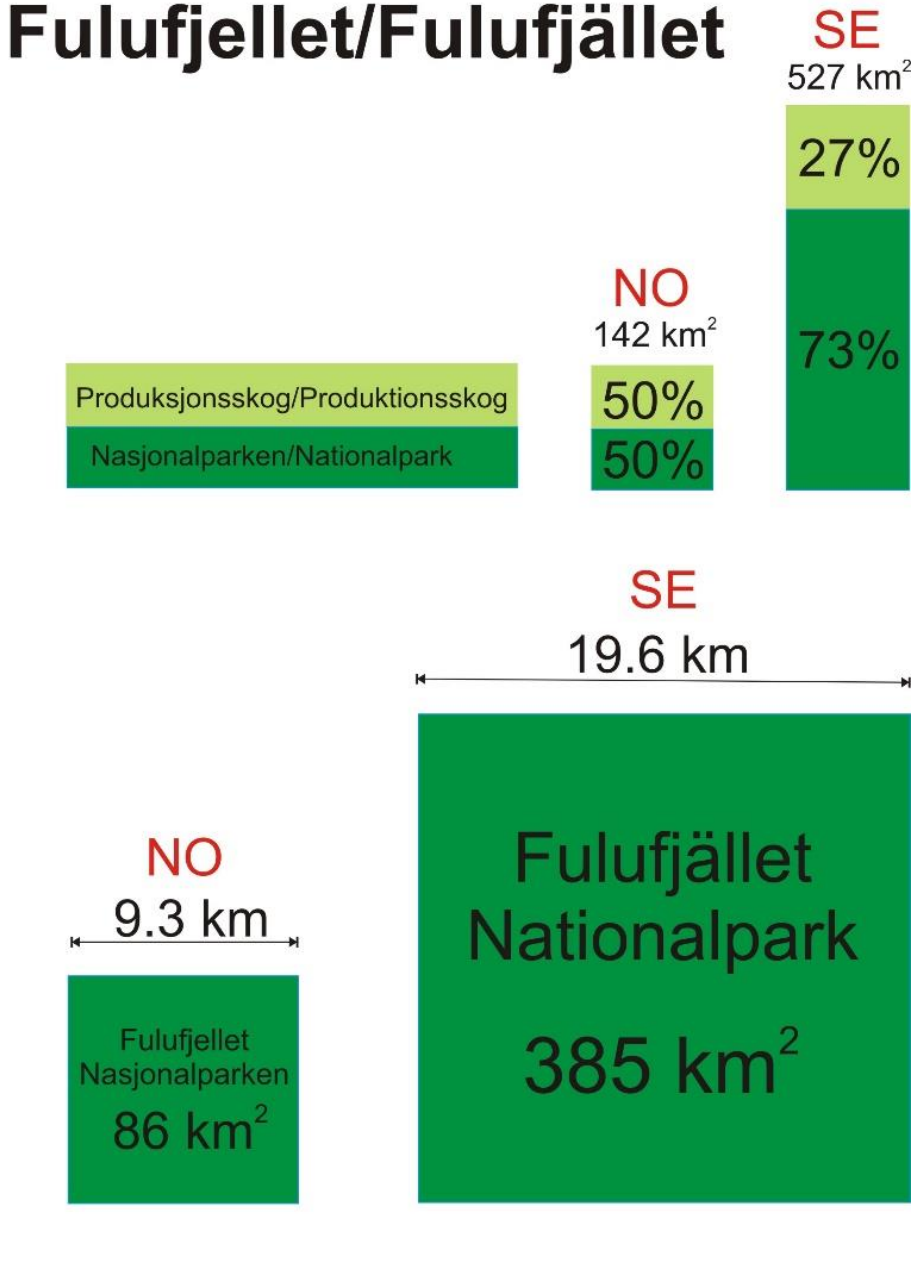
- Natural sciences: definitely
- Economics: far from trivial especially in the case of terrestrial NPAs where state borders are not a vague concept, but set real limitations and may affect preferences.
- Empirical evidence is needed if the theory is consistent with people's real preferences.
- Research hypothesis: *transboundary NPAs are International Public Goods in accordance with people's preferences*

Study sites

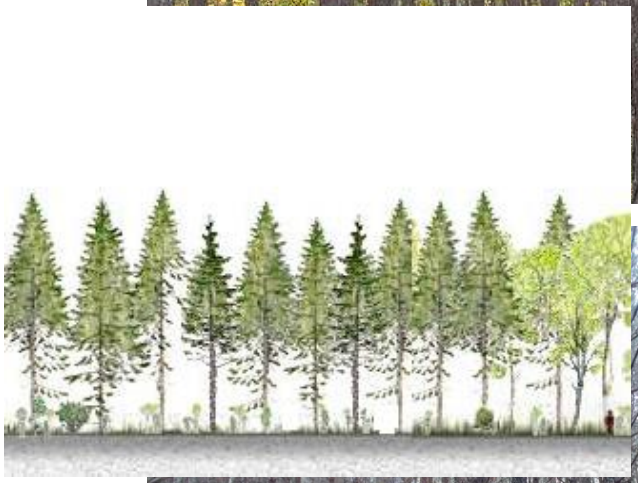

BIAŁOWIEŻA/BIEŁAVIESKAJA PUŠČA
N
0
10km
POLAND
BELARUS
Białystok
BY
PL
Brest
Passively protected natural forest area
15 km
PL
225 sq.km
24 km
BY
570 sq.km
BY
1529 sq.km
63%
37%
PL
643 sq.km
65%
35%
Rest of the area
Natural forests protected passively

Study sites


Lilladålen NR
Mörkret
N
S
Fulan
Fulufjället
Nationalpark
Gördalen
SVERIGE
Linnes
Bergaå
Morkbäckssätern
Fregn NR
Fulufjellet
Nasjonalparken
NORGE
NO
SE
0
10 km


Fulufjellet/Fulufjället
SE
527 km²
27%
73%
NO
142 km²
50%
50%
Produksjonsskog/Produktionsskog
Nasjonalparken/Nationalpark
SE
19.6 km
Fulufjället
Nationalpark
385 km²
NO
9.3 km
Fulufjellet
Nasjonalparken
86 km²

Intact Natural Forest vs. Production Forest



Empirical study setting

Methodology – stated preferences, DCM.

Comparative study – two mutually consistent bilateral surveys of people's preferences:

- Białowieża/Biełavieskaja Pušča (PL/BY, CAPI, N=1000+1000);
- Fulufjellet/Fulufjället (NO/SE, CAWI, N=1000+1000).

Payment vehicle – compulsory income tax increase, introduced and charged nationally and then transferred to bilateral target fund.

Survey scenario:

- introduces transboundary nature protected area as a common good of the both nations involved;
- contemplates rewilding.

Survey scenario: rewilding

Core idea of the scenario: passive protection regime extension => forest ecosystems' restoration in a long run.

With this respect, every spatial unit (sq.km) of the ought-to-be-protected area is the same, regardless of its particular location on either side of the border

Survey design

Efficient design: twelve modifications in the main survey.
Sixteen choice-sets for every respondent; random sequence, best choice question.

Programme attribute	**Levels for the national versions of the questionnaire (main survey)**			
	PL	**BY**	**NO**	**SE**
Extension of the strict reserve protection regime in the domestic part of the site under consideration SQ= +0 sq.km	+ 0 sq.km + 35 sq.km + 70 sq.km + 105 sq.km	+ 0 sq.km + 35 sq.km + 70 sq.km + 105 sq.km	+ 0 sq.km + 20 sq.km + 40 sq.km + 60 sq.km	+ 0 sq.km + 20 sq.km + 40 sq.km + 60 sq.km
Extension of the strict reserve protection regime in the foreign part of the site under consideration SQ= +0 sq.km	+ 0 sq.km + 35 sq.km + 70 sq.km + 105 sq.km	+ 0 sq.km + 35 sq.km + 70 sq.km + 105 sq.km	+ 0 sq.km + 20 sq.km + 40 sq.km + 60 sq.km	+ 0 sq.km + 20 sq.km + 40 sq.km + 60 sq.km
Additional sum of income tax paid annually during the next five years (2015 prices) SQ= 0	25 PLN 50 PLN 75 PLN 100 PLN	3 USD 6 USD 9 USD 12 USD	125 NOK 250 NOK 375 NOK 500 NOK	100 SEK 200 SEK 300 SEK 400 SEK

Choice-set appearance example

Wybór wariantów 1	Stan obecny	Wariant 1	Wariant 2	Wariant 3
Dodatkowe obszary w polskiej części Puszczy Białowieskiej objęte ochroną bierną	+ 0 km^2	+ 105 km^2	+ 70 km^2	+ 0 km^2
(Łączny procent ochrony biernej w polskiej części Puszczy Białowieskiej	(35%)	(51%)	(46%)	(35%)
Dodatkowe obszary w białoruskiej części Puszczy Białowieskiej objęte ochroną bierną	+ 0 km^2	+ 105 km^2	+ 0 km^2	+ 35 km^2
(Łączny procent ochrony biernej w białoruskiej części Puszczy Białowieskiej)	(37%)	(44%)	(37%)	(40%)
Dodatkowa kwota podatków od Pana/Pani dochodów pobierana raz do roku przez pięć lat	Brak	100 PLN	50 PLN	75 PLN
Proszę wybrać najlepszy wariant	☐	☐	☐	☐

Respondent's utility function specification

linear:

$V=\beta_{SD}*S_D + \beta_{SF}*S_F + \beta_{COST}*Bid.$

where

SD – additional strict reserve area on domestic side. km^2

SF – additional strict reserve area on foreign side. km^2

Bid – additional annual sum of income tax during five years to finance the conservation programme. PLN (NOK. SEK. USD)

or non-linear:

$V=\beta_{D1}*S_{D1} + \beta_{D2}*S_{D1} + \beta_{D3}*S_{D3} + \beta_{F1}*S_{F1} + \beta_{F2}*S_{F2} + \beta_{F3}*S_{F3} + \beta_{COST}*Bid$

where

S_{D1} … S_{D3} - dummy variables for the particular programmes of additional strict reserve area on domestic side. km^2

S_{F1} … S_{F3} - dummy variables for the particular programmes of additional strict reserve area on foreign side. km^2

Bid – additional annual sum of income tax during five years to finance the conservation programme. PLN (NOK. SEK. USD)

Hypothesis testing: if statistically $\beta_D = \beta_F$ =>

H0: *transboundary NPA qualifies as the* ***international public good*** *in accordance with the preferences of the appropriate population* – **cannot be rejected**

Otherwise two separate national public goods exist instead of the international one

Econometric modelling: hybrid approach

Hybrid choice models allow analysts to incorporate perceptions and cognitive processes into a Random Utility Model (RUM) framework. In this study we develop a Hybrid Mixed Logit (HMXL) model which combines the framework widely adopted for analysing DCE data, the Mixed Logit [Revelt and Train. 1998]. with the Multiple Indicators and Multiple Causes (MIMIC) model.

Factors of potential differences in preferences for protection extension domestically vs. abroad	***Appropriate attitudinal questions formulation in the questionnaire***
Difference in preferences, influenced by use value expectations	*I expect to visit the domestic side of the site under consideration in the next five years*
	I expect to visit the foreign side of site under consideration in the next five years
Difference in preferences, caused by various disproportions between the countries	*I believe that the participation of Poland (Sweden) in the programme funding should be higher than the participation of Norway (Belarus) because the Polish (Swedish) population is greater than the Belarusian (Norwegian) population*
	I believe that the participation of Poland (Norway) in the programme funding should be higher than the participation of Belarus (Sweden) because Poles (Norwegians) are wealthier
Difference in preferences, arising from suspicions towards the foreign party	*I am afraid that money spent on the protection on the foreign side of the site under consideration could be misused*
	I expect the domestic party to comply with the international agreement to a larger extent than the foreign party
Differences in preferences dependent of unilateral conservation action of the foreign party	*I expect the foireign party to extend the passive protection regime on its side of the border whether or not the bilateral programme discussed in the questionnaire is implemented*
Differences in preferences caused by “patriotic” considerations	*I prefer better to protect the domestic side of the site under consideration than its foreign side because it belongs to my country*

Econometric modelling: DCM component

RUM [McFadden. 1974]: $U_{ni} = V_{ni} + \varepsilon_{ni}$ $P_{ni} = \Pr(V_{ni} + \varepsilon_{ni} > V_{nj} + \varepsilon_{nj} \forall j \neq i)$

Under IID assumption – MNLModel $P_{ik} = \frac{e^{\beta' x_{ni}}}{\sum_j e^{\beta' x_{nj}}}$

x explanatory variables' vector. a *β* – parameters' vector. [Train. 2003].

Under assumption of preferences' heterogeneity MXL model (panel version) $P_{ni} = \int \prod_{t=1}^{T} \left[\frac{e^{\beta_n' x_{nit}}}{\sum_j e^{\beta_n' x_{njt}}} \right] \phi(\beta | b, \Omega) d\beta,$

Modelling in WTP space

[Train and Weeks. 2005] $U_{ijt} = \sigma_i a_i \left(c_{ijt} + \frac{\boldsymbol{b}_i'}{a_i} \boldsymbol{X}_{ijt} \right) + \varepsilon_{ijt} = \lambda_i \left(c_{ijt} + \boldsymbol{\beta}_i' \boldsymbol{X}_{ijt} \right) + \varepsilon_{ijt}$

For normally distributed parameters β_i: $\boldsymbol{\beta}_i = \boldsymbol{\Lambda}' \mathbf{L} \mathbf{V}_i + \boldsymbol{\beta}_i^*$

for log-normally distributed parameters (cost): $\lambda_i = \exp\left(\boldsymbol{\tau}' \mathbf{L} \mathbf{V}_i + \lambda_i^* \right)$

the conditional probability of individual i 's choices in choice set t is given by:

$$P(y_i \mid X_i, \boldsymbol{\beta}_i^*, \lambda_i^*, LV_i, \Lambda, \boldsymbol{\tau}, \boldsymbol{\theta}) = \prod_{t=1}^{T_i} \frac{\exp\left(\lambda_i \left(c_{ijt} + \boldsymbol{\beta}_i' \boldsymbol{X}_{ijt} \right) \right)}{\sum_{k=1}^{C} \exp\left(\lambda_i \left(c_{ikt} + \boldsymbol{\beta}_i' \boldsymbol{X}_{ikt} \right) \right)},$$

WTP_{LV} are given for the respondent being one σ to the right from the mean. LVi~N(0.1); therefore LVi=1

Econometric modelling: Measurement Equations

The measurement component of the hybrid choice model can be specified as follows: $\mathbf{I}_i^* = \mathbf{\Gamma}'\mathbf{LV}_i + \boldsymbol{\eta}_i$

Under this specification. the relationship between and (for the *i*-th indicator variable which takes possible. ordered values) becomes:

$$\begin{array}{lll} I_{il} = 1, & \text{if} & I_{il}^* < \alpha_{1l} \\ \vdots & \vdots & \vdots \\ I_{il} = k, & \text{if} & \alpha_{k-1l} \le I_{il}^* < \alpha_{kl} \\ \vdots & \vdots & \vdots \\ I_{il} = J, & \text{if} & \alpha_{J-1l} \le I_{il}^* \end{array}$$

where the α's are the threshold parameters to be estimated for each indicator.

This specification leads to the ordered probit likelihood form for I_i:

$$P\left(I_i \mid \mathbf{LV}_i, \mathbf{\Gamma}, \boldsymbol{\alpha}\right) = \prod_{l=1}^{L}\left(P\left(I_{il} \mid \mathbf{LV}_i, \mathbf{\Gamma}_l, \alpha_l\right)\right) = \prod_{l=1}^{L}\left(\Phi\left(\alpha_{kl} - \mathbf{\Gamma}_l'\mathbf{LV}_i\right) - \Phi\left(\alpha_{k-1l} - \mathbf{\Gamma}_l'\mathbf{LV}_i\right)\right)$$

where $\Phi(\cdot)$ denotes the normal cdf, Γ_l and α_l are the l-th row of the $\mathbf{\Gamma}$ matrix and the vector of the threshold parameters for the *l*-th indicator variable, respectively.

Survey Administeting & Sample

Pilot surveys

- BY: CAPI. N=100. July 2015
- PL: CAPI. N=100. January 2016
- NO: CAWI. N=282. September 2015
- SE: CAWI. N=458. September 2015

Main surveys

- BY: CAPI. N=900. October-December 2015
- PL: CAPI. N=901. February 2016
- NO: CAWI. N=902. October-November 2015
- SE: CAWI. N=889. October-November 2015

Total sample after protesters' removal

- BY: N=755.
- PL: N=763.
- NO: N>1000
- SE: N>1166

Results and Discussion

The following models' results will be presented and discussed below:

- MXL for PL/BY and NO/SE cases without protesters (non-linear specification)

- Hybrid MXL for BY/PL and NO/SE cases without protesters (linear specification)

Modelling Results (MXL)

	Fulufje/ället						Białowieżą					
	Norway			Sweden			Poland			Belarus		
var.	coef.	st.err.	p-value	coef.	st.err.	p-value	coef.	st.err.	p-value	coef.	st.err.	p-value
SQ	-2.2359	0.1175	0.0000	-2.1731	0.2043	0.0000	-0.9981	0.0455	0.0000	7.0416	2.2804	0.0020
BY +35 km2	1.2322	0.0565	0.0000	0.6039	0.0514	0.0000	-0.0332	0.0320	0.3002	1.2140	0.5530	0.0282
BY +70 km2	1.9547	0.0659	0.0000	0.6627	0.0550	0.0000	-0.0611	0.0376	0.1045	2.3148	0.7064	0.0011
BY +105 km2	2.2979	0.0792	0.0000	0.8482	0.0535	0.0000	-0.1483	0.0447	0.0009	0.8009	0.5846	0.1707
PL +35 km2	0.3669	0.0450	0.0000	1.0850	0.0464	0.0000	0.6499	0.0420	0.0000	0.6292	0.4894	0.1986
PL +70 km2	0.5979	0.0542	0.0000	1.6121	0.0493	0.0000	0.9386	0.0472	0.0000	-2.6637	0.7544	0.0004
PL +105 km2	0.6562	0.0551	0.0000	1.9568	0.0675	0.0000	1.1855	0.0557	0.0000	-1.7987	0.6055	0.0030
-COST (10 EUR PPP)	0.0031	0.0440	0.9433	0.0347	0.0505	0.4921	0.7096	0.0673	0.0000	-2.3243	0.2213	0.0000
	Standard deviations											
SQ	7.3737	0.3335	0.0000	7.9508	0.6947	0.0000	3.0682	0.1289	0.0000	25.6804	5.7572	0.0000
BY +35 km2	0.7054	0.0590	0.0000	0.2403	0.0631	0.0001	0.0160	0.0328	0.6256	0.2632	1.3485	0.8452
BY +70 km2	0.8682	0.0569	0.0000	0.7230	0.0504	0.0000	0.1324	0.0515	0.0101	0.1811	1.6173	0.9109
BY +105 km2	1.5723	0.0807	0.0000	0.7918	0.0608	0.0000	0.3954	0.0523	0.0000	4.5209	1.1350	0.0001
PL +35 km2	0.1841	0.0644	0.0042	0.4159	0.0656	0.0000	0.3512	0.0279	0.0000	2.3018	1.0096	0.0226
PL +70 km2	0.5073	0.0591	0.0000	0.5674	0.0475	0.0000	0.6080	0.0449	0.0000	0.2605	1.3899	0.8513
PL +105 km2	0.6936	0.0501	0.0000	1.1679	0.0532	0.0000	1.0041	0.0396	0.0000	0.0670	1.9732	0.9729
-COST (10 EUR PPP)	1.0094	0.0453	0.0000	1.1978	0.0472	0.0000	1.3377	0.0742	0.0000	0.4513	0.0840	0.0000
Model characteristics												
LL0	-17276.3682			-20010.4524			-12095.3422			-12067.9768		
LL	-10386.5666			-11862.1357			-7116.8255			-9710.7829		
McFadden R2	0.3988			0.4072			0.4116			0.1953		
Ben-Akiva R2	0.5603			0.5701			0.5979			0.4906		
AIC/n	1.2994			1.2726			1.1809			1.5935		
n	16011 (1000.69)			18668 (1166.75)			12080 (755)			12208 (763)		
k	16			16			16			16		

Results and Discussion: Fulufje/ället case

Both NO&SE demonstrate:

- similar and mirror-like performance;
- considerable heterogeneity of preferences;
- willingness to depart from status quo towards greater protection;
- positive preferences towards both domestic and foreign side extension of passive protection regime;
- WTP slightly decreasing per sq.km.

Although Scandinavian countries' respondents state mutually co-operative preferences, in accordance with LR-test the IPG hypothesis has been rejected with them.

Results and Discussion: Białowieża case

PL:

- considerable heterogeneity of preferences;
- willingness to depart from status quo;
- positive preferences or indifference towards programmes of domestic extension of the passive protection regime;
- WTP is almost linear (slightly decreasing per sq.km);
- indifference or negative preferences towards the foreign part (the greater extension contemplated – the more negative are the preferences).

BY

- preferences dominated by status quo;
- though parameters with some of programmes are positive and significant, none of them alone outweights utility loss caused by departure from SQ;
- taking the above into account – negative preferences towards any of the foreign part extension programmes

In accordance with the LR-test, IPG hypothesis failed, therefore two separate public goods exist instead of IPG in the both cases…

Hybrid MXL Model: looking for IPG-state attitudinal drivers

Utility function modified for the HMXL: $U = WTP_t *(S_d + S_f) + WTP_{af} * S_f$

IPG criterion: $WTP_{af}=0$ (z-test for WTP_{af} should hold).

Latent variables' impact:

$U = WTP_t*(S_d +S_f)+ WTP_{af}*S_f + WTP_{LVaf}*LV*S_f$

or

$U = WTP_t *(S_d +S_f)* + S_f*[WTP_{af} + WTP_{LVaf}*LV]$

where $[WTP_{af} + WTP_{LVaf}*LV]$ is simulated impact of LVs and attitudes – via appropriate measurement equations' indicators

If $|WTP_{af}|>| WTP_{af} + WTP_{LViaf}*LV_i|$ – then LV_i is a true IPG-driver

Hybrid MXL Modelling Results

	Fulufje/ället				Białowieża			
	Norway		Sweden		Belarus		Poland	
Programme attributes	Mean (S.E.)	S.D. (S.E.)	Mean (S.E.)	S.D. (S.E.)	Mean (S.E.)	S.D. (S.E.)	Mean (S.E.)	S.D. (S.E.)
SQ	-2.9070*** (0.0580)	2.1000*** (0.0620)	-3.9666*** (0.1022)	6.5341*** (0.2072)	5.4348*** (1.9008)	26.2564*** (5.8354)	-0.9597*** (0.0522)	2.6354*** (0.0924)
WTP for 100km2 extension	3.8369*** (0.1081)	2.0705*** (0.0680)	3.4944*** (0.1017)	4.0310*** (0.1224)	0.6804 (0.5350)	4.1525*** (0.9647)	1.0708*** (0.0487)	1.4928*** (0.0381)
Δ for extension abroad	-3.0087*** (0.1333)	0.6016*** (0.0965)	-1.9165*** (0.0970)	0.1537** (0.0619)	-4.3126*** (1.0558)	1.8034 (1.3133)	-1.5342*** (0.0524)	0.0554 (0.0396)
Interactions of LVs	**Measurement (S.E.)**	**Interaction with Δ (S.E.)**	**Measurement (S.E.)**	**Interaction with Δ (S.E.)**	**Measurement (S.E.)**	**Interaction with Δ (S.E.)**	**Measurement (S.E.)**	**Interaction with Δ (S.E.)**
Intend to visit 'our' part	0.4230*** (0.0826)	-1.1630*** (0.1151)	0.1325 (0.1431)	-1.1446*** (0.0724)	1.7171* (0.9002)	1.3919** (0.6490)	0.6255** (0.2736)	-0.4307*** (0.0429)
Intend to visit 'their' part	0.1960 (0.1627)	-0.9721*** (0.1007)	0.2209 (0.1716)	0.8723*** (0.0615)	1.5687 (1.0502)	0.2278 (0.6089)	0.8756*** (0.2124)	0.7842*** (0.0571)
SE/PL should pay more because - population	0.1403** (0.0563)	1.7097*** (0.1212)	0.6562** (0.3318)	0.2600*** (0.0592)	0.9522* (0.5202)	-1.3244 (0.8429)	0.1686** (0.0849)	-1.2019*** (0.0521)
NO/PL should pay more because - wealth	0.5351*** (0.1555)	0.5582*** (0.0992)	0.0291 (0.1481)	-0.3539*** (0.0610)	3.6791* (2.1351)	-0.5278 (0.6541)	0.0543 (0.1706)	-0.4338*** (0.0375)
Money transferred abroad can be misused / stolen	1.5997*** (0.5736)	0.1222* (0.0684)	0.1986 (0.1489)	-0.8397*** (0.0686)	0.0581 (0.2323)	1.2582 (0.9309)	0.2010 (0.1902)	0.2757*** (0.0390)
"We" are more responsible	0.1149* (0.0634)	-2.9280*** (0.0996)	0.3841*** (0.1462)	1.0530*** (0.0754)	0.1211 (0.2083)	-0.7364 (0.9795)	0.3256 (0.2468)	0.2912*** (0.0394)
They' will extend anyway	0.5094*** (0.1360)	0.2395** (0.1137)	0.2316 (0.1954)	0.7560*** (0.1092)	0.2589 (0.2207)	0.6232 (0.7313)	0.3190** (0.1265)	-0.7684*** (0.0428)
WTP for 'our' more – "patriotic" reasons	0.3588*** (0.1082)	-1.3335*** (0.1037)	0.7319*** (0.1353)	-1.6845*** (0.0823)	0.5481 (0.3421)	0.4359 (0.9767)	0.9183** (0.3815)	-0.0150 (0.0352)

Simulation: impact of attitudes on IPG-state

	NO	SE	BY	PL
Additional WTP for extension abroad	**-3.0087**	**-1.9165**	**-4.3126**	**-1.5342**
Intend to visit "our" part	**-4.1717**	-3.0611	**-2.9207**	**-1.9649**
Intend to visit "their" part	-3.9808	-1.0442	-4.3126	**-0.75**
SE/PL should pay more because of population disproportion	**-1.299**	**-1.6565**	-4.3126	**-2.7361**
NO/PL should pay more because of wealth disproportion	**-2.4505**	-2.2704	-4.3126	-1.968
Money transferred abroad can be misused / stolen	**-2.8865**	-2.7562	-4.3126	-1.2585
"We" are more responsible	**-5.9367**	**-0.8635**	-4.3126	-1.243
"They" will extend anyway	**-2.7692**	-1.1605	-4.3126	**-2.3026**
WTP for 'our' more - 'patriotic' considerations	**-4.3422**	**-3.601**	-4.3126	-1.5342

Initial additional WTP for extension abroad

Attitudes being IPG-drivers

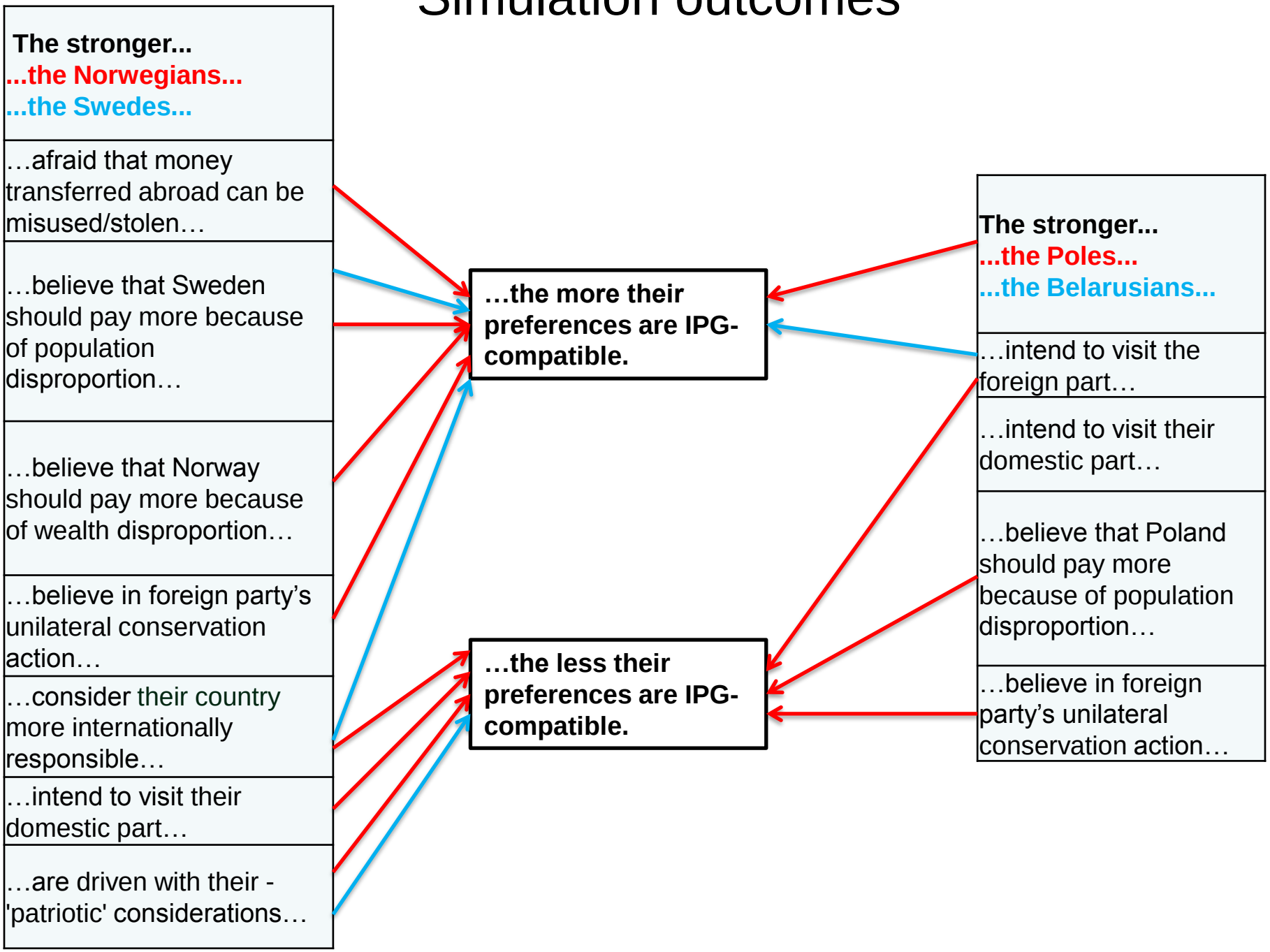
Attitudes, shifting preferences out from IPG-state

Appropriate latent variables shift preferences towards IPG-state, however without clear link to attitudes (being driven by some unobserved factors)

Appropriate latent variables shift preferences out from IPG-state, however without clear link to attitudes (being driven by some unobserved factors)

Appropriate latent variables do not shift preferences in either direction

Simulation outcomes



Conclusions

- Unlike respondents from the other three countries (who are on average willing to protect more), Belarusians seem to be satisfied with the current level of protection of their domestic segment of the transboundary site. However, being quite impressive in absolute figures (over 570 sq.km), it makes nearby the same ratio as on the opposite side of the border (37% vs. 35%).

- Scandinavian case is closer to the IPG-state as compared to the Białowieża case, due to co-operative preferences of Scandinian respondents, being dominant with them; there are also more IPG-drivers have been detected for the Scandinavian case as compared to Białowieża (six vs. two). However, those factors appeared not sufficient for ensuring the true IPG-state, which was achieved in neither of the bilateral cases nor in a single country-specific case.

- Overall pattern of dependence between attitudes on the one hand, and preferences on the other hand appears country-specific. There is also no unambiguous difference in the appropriate patterns in between Białowieża and Scandinavian bilateral cases.

- Some of the links identified between the respondents' attitudes and their preferences can be rationally explained, whilst the others seem to lack the immediate rational interpretation (e.g. doubts in the neighbour's reliability are positively linked to WTP for abroad conservation in some cases in Scandinavia; mutually contradictory dependences appear for the NO case).

Conclusions (continued)

- Unlike in other countries involved, in BY intention to visit domestic part underpins greater WTP for extension of protection abroad. Foreign part of the transboundary site is the least accessible for Belarusians (as compared to the other three countries) because of their lower income and asymmetrical border regulations. The difference in border regulations seems to be the viable factor for transboundary NPAs, influencing the difference in between the two bilateral cases.

- Whilst in NO and merely in SE consent to disproportional co-funding of the bilateral programme is linked to compliance with greater foreign part extension (to spend extra raised funds abroad), in PL the more positive the respondent is to greater contribution of PL – the less he wants to spend them abroad: *“Polish money should remain in PL.”*

- Trust in the neighbour’s unilateral conservation action leads to reverse consequences in NO and PL: whilst Norwegians seem to support it with their financial contribution, Poles do not: *“Why to pay for those who are willing to pay anyway?”*

- Whilst ‚patriotic consifderations’ are profound and rational with Scandinavians who seem to derive „patriotic premium” (Dallimer et al., 2015), a bit surprisingly, no signes of it observed in case of Białowieża.

Thank you for your attention!

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