"Multilateral Versus Unilateral Sanctions Reconsidered: A Test Using New Data"
Correction to Original Analysis July 2014

It has recently been brought to our attention by Pepijn van Haren[1] that the empirical analysis in our article "Multilateral Versus Unilateral Sanctions Reconsidered: A Test Using New Data" Vol. 53(4): 1075-1094 contains some errors. The paper used the first version of the Threat and Imposition of Sanctions Data (TIES) to re-test some hypotheses related to the effectiveness of multilateral versus unilateral sanctions. Prior to TIES release, most of the empirical studies utilized the third version of Hufbauer, Schott, and Elliott (HSE) data released in 1991. These studies largely concluded that unilateral sanctions were more effective than multilateral sanctions. Our analysis with TIES demonstrated the opposite conclusion: multilateral sanctions appeared more effective in producing success than unilateral sanctions. However were recently alerted that two variables in our analysis were miscoded. TIES labels missing values as "-99". The target costs and sender costs variables mistakenly left the "-99" values in them rather than re-coding them as "."

Upon getting this alert, we re-analyzed all of our findings from the original piece, and found that the key substantive results stand. Consistent with our original conclusions, we found that multilateral sanctions are more effective than unilateral ones. We again did not find support for the selection effects and public goods explanations, but did find support for the spatial theory. The central conclusions of the paper are therefore unchanged, though the values for the coefficients are different when the errant "-99" values are removed.

We identified the source of the problem stemming from some coding errors in the original version of TIES. We originally identified impositions using information from the imposition variables. When re-analyzing the data after being alerted to the error, we noticed that there were still 20 cases in the data that do not qualify as impositions. This comprised 3.83% of the original dataset. Since these cases ended in the threat stage, there was no information on what occurred in the imposition stage, leading to the errant "-99" values on both target and sender costs. After removing these errant cases, there were still some that were coded "-99" for target and sender costs. We therefore began by dropping the cases that ended in the threat stage based on the final outcome variable. After doing so, we replicated the analysis in the entire paper.

Our original conclusion was that our data did not provide sufficient evidence to support either the selection effects argument and the public goods argument, but that the spatial theory of sanctions could not be falsified. This conclusion still holds when the data are corrected. To illustrate this, we go through each of the models. Tables 1-4 examine the selection effect hypotheses.

[1] University College London

Table 1. Effects of Issues on Multilateral Sanctions Coalitions

	Original			*Corrected*		
	Non-Security	**Security**	**Total**	**Non-Security**	**Security**	**Total**
Unilateral	381	61	442	371	57	428
	86%	14%	100%	87%	13%	100%
	90%	62%	85%	91%	61%	85%
Multilateral	42	38	80	38	36	74
	53%	47%	100%	51%	49%	100%
	10%	38%	15%	9%	39%	15%
Total	423	99	522	409	93	502
	81%	19%	100%	81%	19%	100%
	$Chi^2 = 50.05$		$Chi^2 = 52.18$			
	Pr. = .000		Pr. = .000			

We see that the results of Table 1 are only marginally affected. Similarly, the results from Table 2 and Table 2 are also marginally affected by the correction:

Table 2. Effectiveness of Security Oriented Sanctions

	Original			*Corrected*		
	Non-Security	**Security**	**Total**	**Non-Security**	**Security**	**Total**
Unilateral	349	55	404	335	49	384
	86%	14%	100%	87%	13%	100%
	83%	56%	77%	81%	53%	76%
Multilateral	74	44	118	74	44	118
	63%	37%	100%	63%	37%	100%
	17%	44%	23%	18%	47%	24%
Total	423	99	522	409	93	502
	81%	19%	100%	81%	19%	100%
	$Chi^2 = 44.31$		$Chi^2 = 35.98$			
	Pr. = .000		Pr. = .000			

Table 3a. Effectiveness of Multilateral Sanctions (Non-Security Disputes)

	Original			*Corrected*		
	Unilateral	**Multilateral**	**Total**	**Unilateral**	**Multilateral**	**Total**
No Success	327	22	349	317	18	335
	94%	6%	100%	95%	5%	100%
	86%	52%	83%	85%	47%	82%
Success	54	20	74	54	20	74
	73%	27%	100%	73%	27%	100%
	14%	48%	17%	15%	53%	18%
Total	381	42	423	371	38	409
	90%	10%	100%	91%	9%	100%

$Chi^2 = 29.32$ Pr. = .000

$Chi^2 = 33.72$ Pr. = .000

Table 3b. Effectiveness of Multilateral Sanctions (Security Disputes)

	Original			*Corrected*		
	Unilateral	**Multilateral**	**Total**	**Unilateral**	**Multilateral**	**Total**
No Success	38	17	55	34	15	49
	69%	31%	100%	69%	31%	100%
	62%	45%	56%	60%	42%	53%
Success	23	21	44	23	21	44
	52%	48%	100%	52%	47%	100%
	38%	55%	44%	40%	58%	47%
Total	61	38	99	57	36	93

	62%	38%	100%	61%	39%	100%

$Chi^2 = 2.92$ $Chi^2 = 2.86$
Pr. = .087 Pr. = .091

Despite the loss of the 20 erroneous cases, the results from Tables 1-3 are largely left intact and the central results hold. Table 4 likewise does not change significantly:

Table 4a. Effectiveness of Multilateral Sanctions (HSE Criteria)

	Original			*Corrected*		
	Unilateral	**Multilateral**	**Total**	**Unilateral**	**Multilateral**	**Total**
No Success	49	23	72	43	20	63
	68%	32%	100%	68%	32%	100%
	66%	44%	57%	63%	41%	54%
Success	25	29	54	25	29	54
	46%	54%	100%	46%	54%	100%
	34%	56%	43%	37%	59%	18%
Total	74	52	126	68	49	117
	59%	41%	100%	58%	42%	100%

$Chi^2 = 6.03$ $Chi^2 = 5.75$
Pr. = .014 Pr. = .016

Table 4b. Effectiveness of Multilateral Sanctions (Non-HSE Criteria)

	Original			*Corrected*		
	Unilateral	**Multilateral**	**Total**	**Unilateral**	**Multilateral**	**Total**
No Success	316	16	332	308	13	321
	95%	5%	100%	96%	4%	100%
	86%	57%	84%	86%	52%	83%
Success	52	12	64	52	12	64
	81%	19%	100%	81%	19%	100%
	14%	43%	16%	14%	48%	17%

Total	368	28	396	360	25	385
	93%	7%	100%	94%	6%	100%
	$Chi^2 = 15.85$		$Chi^2 = 18.99$			
	Pr. = .000		Pr. = .000			

We therefore see that the selection effects results are robust to the loss of these cases. We next retest the public goods hypotheses. In the original paper, our conclusion was that "We therefore must reject the public goods explanation, and next move to our tests of the spatial hypotheses" (1089). The re-testing must therefore demonstrate that the correct values for target and sender costs do not fundamentally alter the conclusion that the public goods hypotheses are unsupported. In our original paper, the coefficients for the interaction term between multilateral and institution is only significant and in the anticipated direction in the Issues/Costs model, or Model 3 in Table 5 (p. 1089). The following table replicates this Table using the corrected target and sender cost measures:

Table 5. Effectiveness of Multilateral Sanctions

Variable	Base β (s.e.)	Interaction β (s.e.)	Issue/Costs β (s.e.)	Full β (s.e.)	HSE β (s.e.)
Multilateral	.782 (.18)***	.52 (.31)*	. 42 (.38)	**-.38 (.56)**	.46 (.5)
Institution	.498 (.15)***	.41 (.17)**	-.05 (.21)	.33 (.6)	**.63 (.43)**
Interaction	---	.41 (.39)	**.55 (.48)**	.77 (.94)	-.43 (.68)
Security Issue	---	---	.36 (.21)*	.47 (.36)	.21 (.32)
Target Costs (Corrected)	---	---	.92 (.00)***	.76 (.41)*	.82 (.25)***
Sender Costs (Corrected)	---	---	-.41 (.39)	-1.05 (.5)**	-.46 (.38)
GDP per cap. Sender	---	---	---	-.002 (.03)	---
GDP per cap. Target	---	---	---	.015 (.04)	---
Joint Dem,	---	---	---	-.23 (.37)	---
Affinity (S)	---	---	---	.34 (.62)	---
Target Durability	---	---	---	.14 (.13)	---
Sender RPC	---	---	---	-.59 (.45)	---
Distance	---	---	---	-.00 (.00)	---
US	---	---	---	.62 (.41)	---
Cold War	---	---	---	.04 (.3)	---
Duration	---	---	---	-.005 (.05)	---
Constant	-1.01 (.08)	-.996 (.08)	-1.67 (.36)	.47 (1.1)	-1.33 (.52)
N	500	500	450	124	104
Log Lik.	-247.01	-246.43	-197.57	-73.02	-60.89
Wald chi^2	51.27	51.37	59.32	23.03	18.66

*p<.10; **p<.05; ***p<.01

The key difference between the corrected model and the original ones is that the interaction term is no longer significant in the Issues/Cost model, as it was in the original. However, like the original, support for the public goods hypotheses does not exist. This mirrors our original conclusion that we must reject the public goods explanation. Substantively, although the estimated coefficients are different in the corrected model, the interpretation is identical: there is no support for the public goods explanation.

Let us now turn to the third test of the spatial hypotheses. We did argue in the original piece that there was empirical support for this hypotheses. We predicted that the Chaos term, which captured cases that were multilateral, multi-issue, but were not issued through an institution, should be negative and statistically significant. Table 6 replicates the test with the corrected target and sender cost variables:

Table 6. Spatial Theory Explanation of Sanctions

Variable	Base β (s.e.)	Issue/Costs β (s.e.)	Full β (s.e.)	HSE β (s.e.)
Multilateral	.77 (.2)***	.92 (.24)***	.65 (.45)	.5 (.36)
Multi-Issue	.85 (.22)***	.59 (.24)**	.95 (.42)**	.34 (.28)
No Institution	-.43 (.16)***	.08 (.19)	-.21 (.43)	-.18 (.35)
Chaos	-1.61 (.65)***	-2.27 (.81)***	-3.36 (1.1)***	-1.59 (.95)*
Security Issue	---	.24 (.22)	.26 (.39)	.31 (.33)
Target Costs (Corrected)	---	. 97 (.22)***	.1.14 (.41)***	.91 (.22)***
Sender Costs (Corrected)	---	-47 (.4)	-1.25 (.5)**	-.58 (.38)
GDP per cap. Sender	---	---	-.01 (.03)	---
GDP per cap. Target	---	---	-.004 (.04)	---
Joint Democracy	---	---	-.13 (.38)	---
Affinity (S)	---	---	.63 (.63)	---
Target Durability	---	---	.24 (.15)	---
Sender RPC	---	---	-.62 (.51)	---
Distance	---	---	-.00 (.00)	---
US	---	---	.82 (.44)	---
Cold War	---	---	-.28 (.33)	---
Duration	---	---	-.03 (.05)	---
Constant	-.65 (.14)	-1.78 (.41)	-.68 (1.2)	-1.25 (.58)
N	502	451	124	105
Log Lik.	-238.02	-184.17	-67.23	-59.29
Wald chi^2	60.44	74.74	37.91	25.21

$\Pr.chi^2$	.000	.000	.003	.000

*p<.10; **p<.05; ***p<.01

Table 6 demonstrates that although the values of the coefficients are different, each coefficient is in the same direction as the original models. More importantly, the chaos variable remains negative and statistically significant in each model, indicating support for the spatial hypotheses. These results mirror our original conclusions from the article. We also see that unlike the original article, there is weak support for the chaos hypothesis in the model using only the HSE criteria. We did not get this result in the original estimations. We can therefore state that the original conclusion that the data tended to support the spatial hypotheses over the alternatives holds up after correcting for the errors in target and sender costs.

We are pleased that the substantive conclusions of the article do not change. We would also like to point out that some of the errors that led to several of the problems with the analysis have now been corrected in the latest version of TIES 4.0, available at http://www.unc.edu/~bapat/TIES.htm. The new dataset spans from 1945-2005. The new data also corrects for several of the errors in the original version of TIES. We recommend that all users of TIES use the new version as opposed to the old one because of the greater coverage, number of cases, and corrected errors. We also have published two articles doing some preliminary examinations of these data, both of which are not yet in print but available online:

Morgan, T. Clifton, Navin Bapat, and Yoshi Kobayashi. 2014. "The Threat and Imposition of Sanctions: Updating the TIES dataset." Conflict Management and Peace Science. Forthcoming.

Navin A. Bapat, Tobias Heinrich, Yoshiaru Kobayashi, and T. Clifton Morgan. 2013. Determinants of Sanctions Effectiveness: Sensitivity Analysis Using New Data. International Interactions. Forthcoming.

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