

# Climate Change and Interstate Conflict

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  - First, climate change is itself associated with industrialization and other processes that have been connected with interstate peace.
    - Even if the direct effects of global warming exacerbate conflict, the indirect impact of climate change (through democracy and economic development) can be pacifying and more important substantively.
    - Economic development appears to be changing where conflict occurs, making the south more violent while northern regions are peaceful.

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  - Using seasonal climate patterns, I show that nations respond to predictable changes in temperature by altering where they fight.
  - Seasonal change does not seem to affect when or whether states fight.

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  - Some goods/resources/prerogatives are valuable but are also difficult to steal (i.e. intellectual and financial capital, identities/trust/loyalty)

# Systemic Conflict Levels

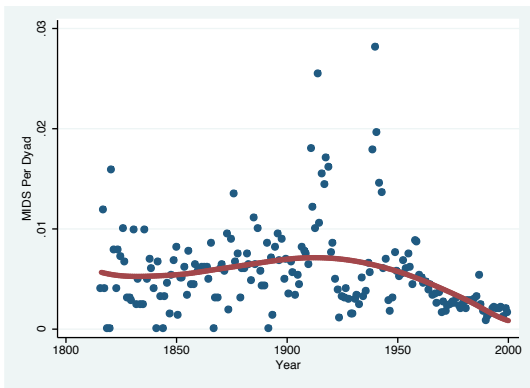


Figure: Frequency of MID Onsets per Year (weighted by # of dyads)

# Global Climate Change

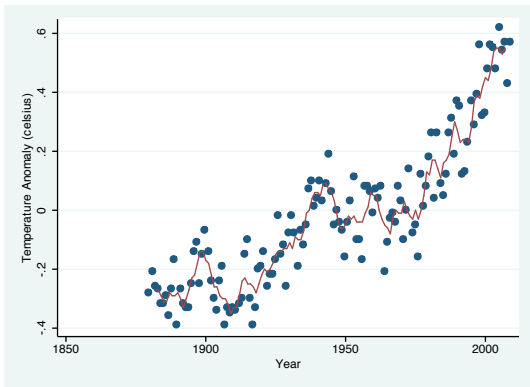


Figure: Global Temperatures (annual averages and five year moving average)

# Systemic Democracy and Economic Development

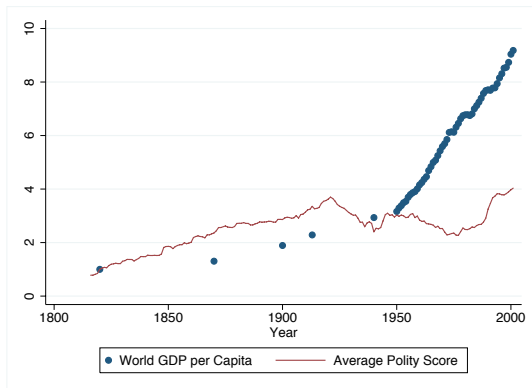


Figure: Global Historical Trends in Development and Democracy

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    - Increases (state capacity), later decreases conflict (factor endowments)

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- Where: *The latitude of disputes should tend to vary with the season.*

# Table 1

Table 1: Predicting Militarized Interstate Disputes with Temperature Anomalies, Democracy and Economic Development (Negative Binomial Regression, annual MID counts 1816–2000)

Model:	1.1	1.2	1.3	1.4	1.5
MID Onset	Coeff. (S.E.)	Coeff. (S.E.)	Coeff. (S.E.)	Coeff. (S.E.)	Coeff. (S.E.)
Temperature	-0.344 (0.369)	-0.341 (0.372)	-0.310 (0.356)	-0.364 (0.346)	-0.416 (0.330)
Temperature <sup>2</sup>					-1.397 (1.051)
Democracy	-0.0488 (0.0543)	-0.0472 (0.0641)	-0.0733 (0.0643)	-0.0651 (0.0580)	-0.0636 (0.0576)
Democracy <sup>2</sup>				0.0511 (0.0325)	0.0503 (0.0318)
Development		0.0162 (0.283)	3.907 *** (1.142)	3.390 ** (1.101)	3.765 *** (1.137)
Development <sup>2</sup>			-1.181 *** (0.325)	-1.050 *** (0.310)	-1.165 *** (0.323)
# Countries	-0.00801 (0.00527)	-0.00814 (0.00583)	-0.00810 (0.00555)	-0.00996 † (0.00550)	-0.0110 † (0.00565)
Year	0.0214 (0.0862)	0.0185 (0.0967)	-0.165 † (0.0925)	-0.177 † (0.0916)	-0.170 † (0.0917)
Year <sup>2</sup>	0.0000653 (0.000712)	0.0000876 (0.000787)	0.00121 † (0.000732)	0.00137 † (0.000725)	0.00123 † (0.000740)
Year <sup>3</sup>	-0.00000109 (0.00000190)	-0.00000165 (0.00000208)	-0.00000236 (0.00000192)	-0.00000289 (0.00000191)	-0.00000230 (0.00000199)
Intercept	-0.211 (3.271)	-0.0954 (3.707)	6.634 (3.503)	7.024 * (3.463)	7.055 * (3.440)
ln( $\alpha$ )	-1.999 *** (0.249)	-1.998 *** (0.251)	-2.125 *** (0.264)	-2.156 *** (0.253)	-2.178 *** (0.255)
N	122	122	122	122	122
Log-likelihood	-397.228	-397.227	-392.838	<-390.873	>-390.155

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# Seasonal Conflict

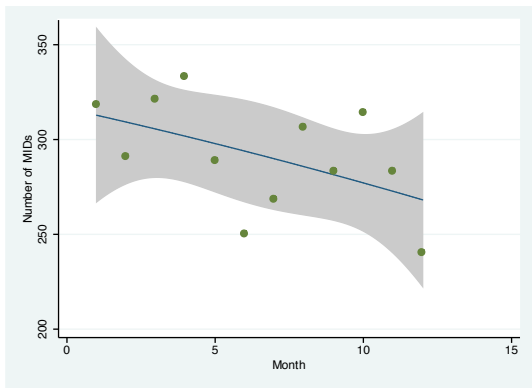


Figure: MIDs per Month (Northern Hemisphere)

# Seasonal Conflict II

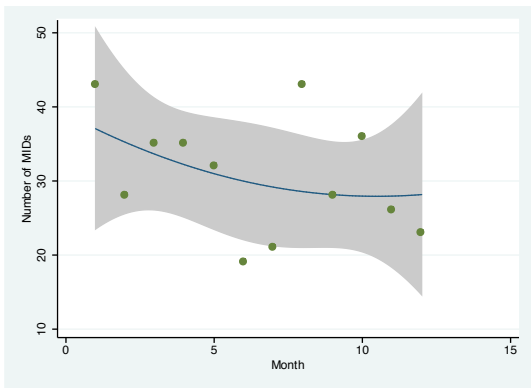


Figure: MIDs per Month (Southern Hemisphere)

# Seasonal Conflict III

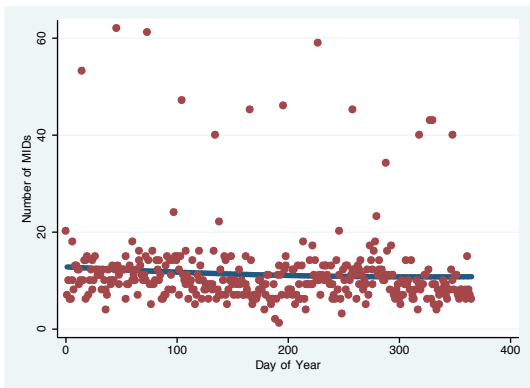


Figure: MIDs per Day (Northern Hemisphere)

Table: Effect of Seasonal Change on MIDs (Neg. Bin. Reg., 1816 – 2000)

Model:	2.1		2.2	
D.V.:	All MIDs		MID Onsets	
Variable	Coeff.	(S.E.)	Coeff.	(S.E.)
Day of Year	-0.001	(0.001)	-0.001	(0.001)
Day of Year <sup>2</sup>	0.000	(0.000)	0.000	(0.000)
Year	0.000	(0.001)	-0.003 ***	(0.001)
Intercept	3.156 †	(1.628)	8.289 ***	(1.910)
$\ln(\alpha)$	-1.642 ***	(0.099)	-1.446 ***	(0.112)
N	365		365	
Log-likelihood	-1136.282		-973.712	
$\chi^2_{(3)}$	3.82		16.825	

Table: Effect of Seasonal Change on MID Latitude (OLS, 1816 – 2000)

Model:	3.1		3.2	
D.V.:	Latitude, All MIDs		Latitude, MID Onsets	
Variable	Coeff.	(S.E.)	Coeff.	(S.E.)
Day of Year	0.034 ***	(0.008)	0.052 ***	(0.012)
Day of Year <sup>2</sup>	-0.000082 ***	(0.00002)	-0.00013 ***	(0.00003)
Year	- 0.032 ***	(0.006)	- 0.059 ***	(0.008)
Intercept	92.341 ***	(11.675)	143.179 ***	(15.865)
N	3496		1923	
F (3,3492;3,1919)	16.373		23.92	
Significance levels :	† : 10%	* : 5%	** : 1%	*** : 0.1%

# Seasonality and the Location of Conflict

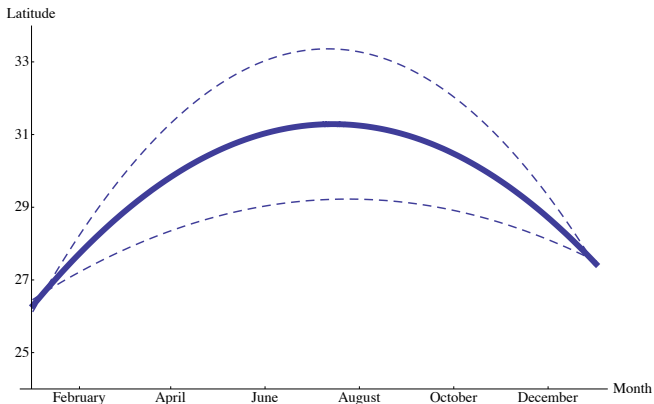
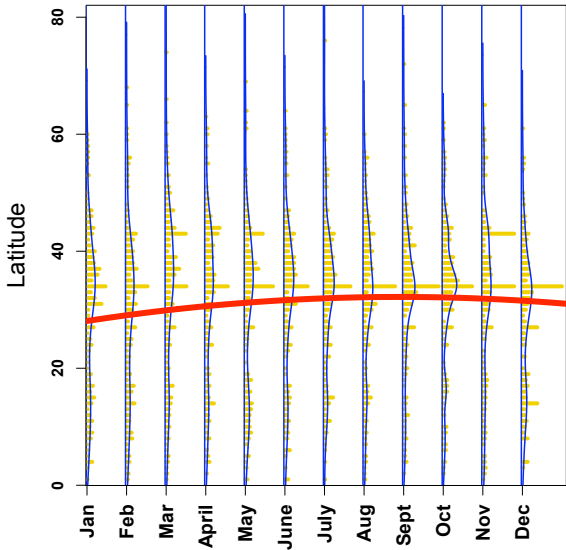


Figure: Where States Fight (Latitude Predicted By Season, N. Hemisphere)

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# The Effects of Uncertainty

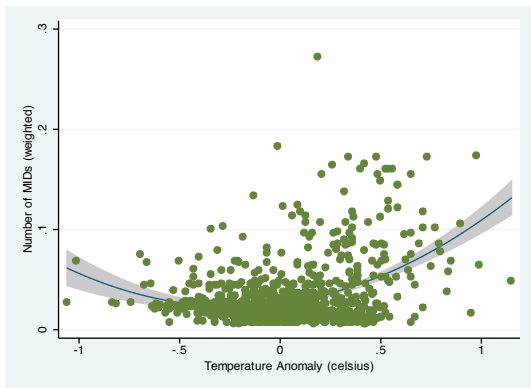


Figure: Temperature Anomalies and Militarized Disputes

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    - Plan to explore how development/climate/conflict interact