Evaluating Conflict Dynamics

Many Conceptualizations, A Novel Empirical Approach

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Conflict Dynamics Widely Discussed

- Time since the last event (Beck, Katz and Tucker 1998; Carter and Signorino 2010)

- Action-reaction (Axelrod 1984; Goldstein and Pevehouse 1997; Lebo and Moore 2003; Brandt, Colaresi and Freeman 2008)

- Distinct stages within a conflict (Levy 1995; Diehl 2006; Senese and Vasquez 2008)

- Time-varying covariate effects (Box-Steffensmeier, Reiter and Zorn 2003)

- Long-term effects and path dependence (Fearon 2005; Ross 2004; Goddard 2006)

Agreement that dynamics entail change over time.

Little agreement on much else.

Implications of Conceptual Ambiguity

- Theoretical mechanisms
- Econometric testing

Overview

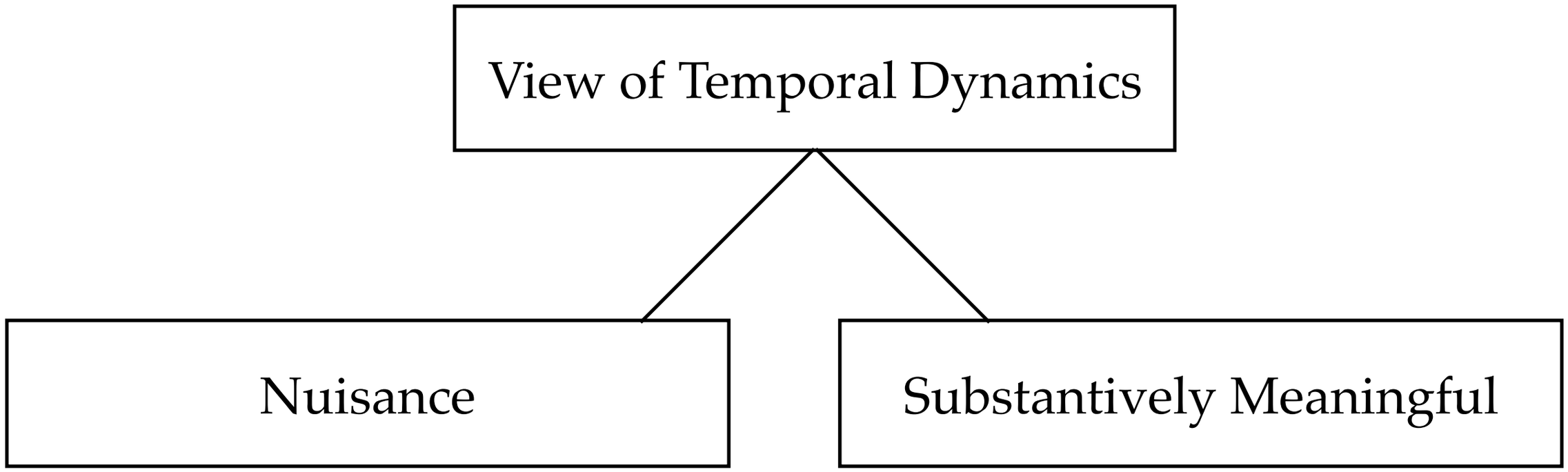
- Conceptualization of conflict dynamics
- Application to territorial disputes
- Multi-state event history models
- Results
- Discussion

A Nested Conceptualization of Conflict Dynamics

View of Temporal Dynamics

View of Temporal Dynamics

Nuisance


View of Temporal Dynamics
Nuisance
Substantively Meaningful

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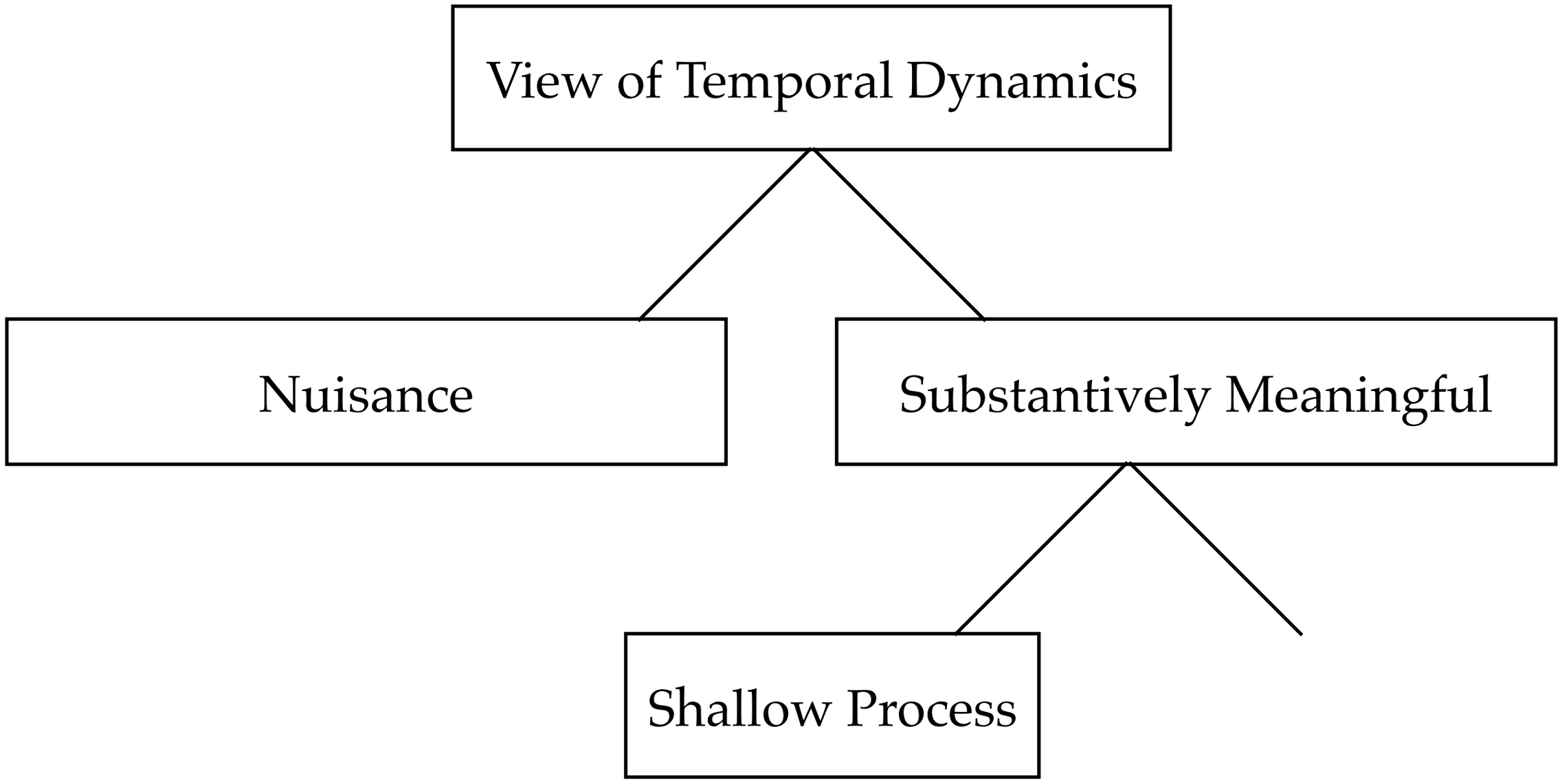
View of Temporal Dynamics
Nuisance
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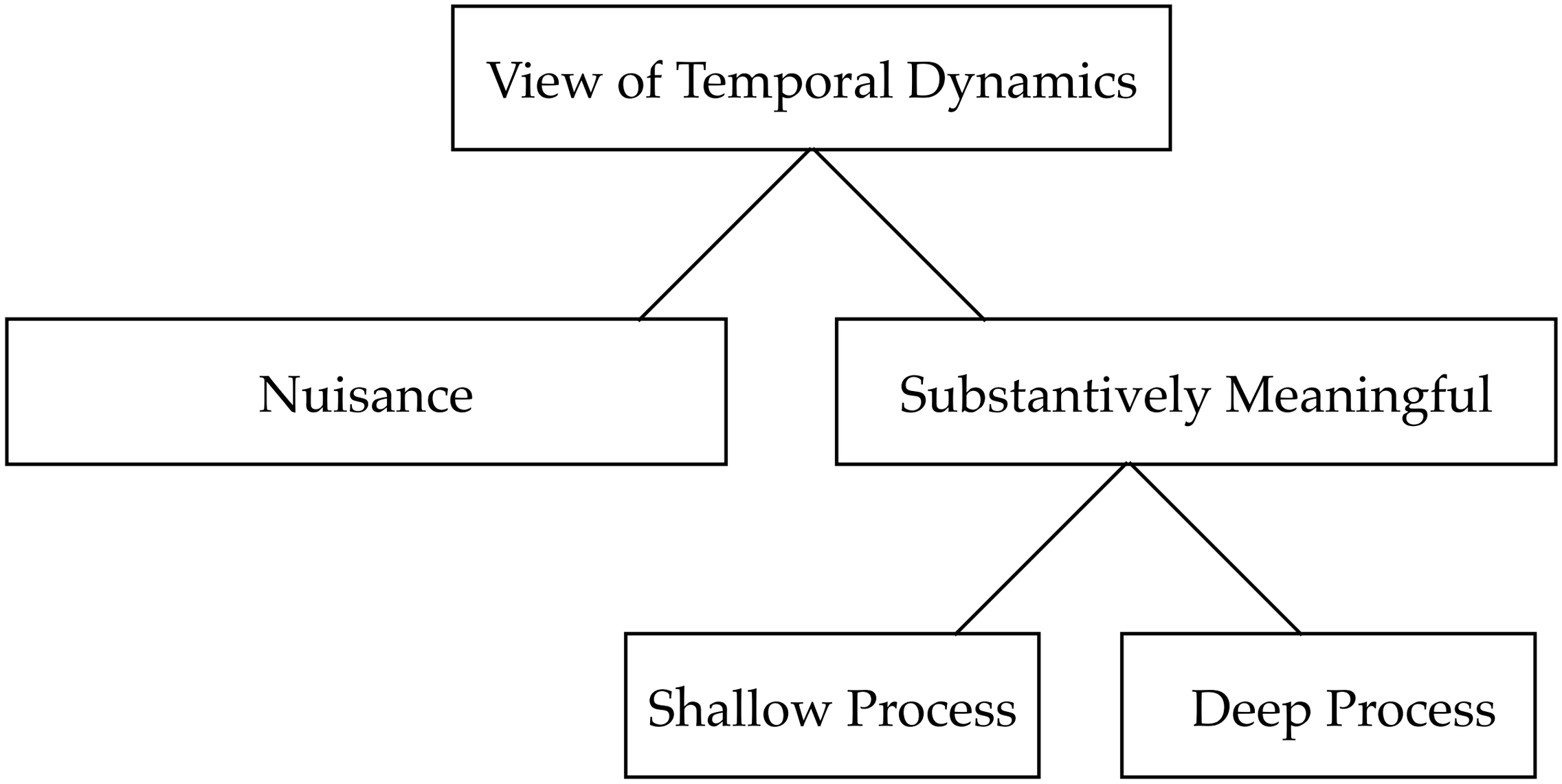
Shallow Process


View of Temporal Dynamics
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Shallow Process
Deep Process

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- Multiple stages within the conflict process

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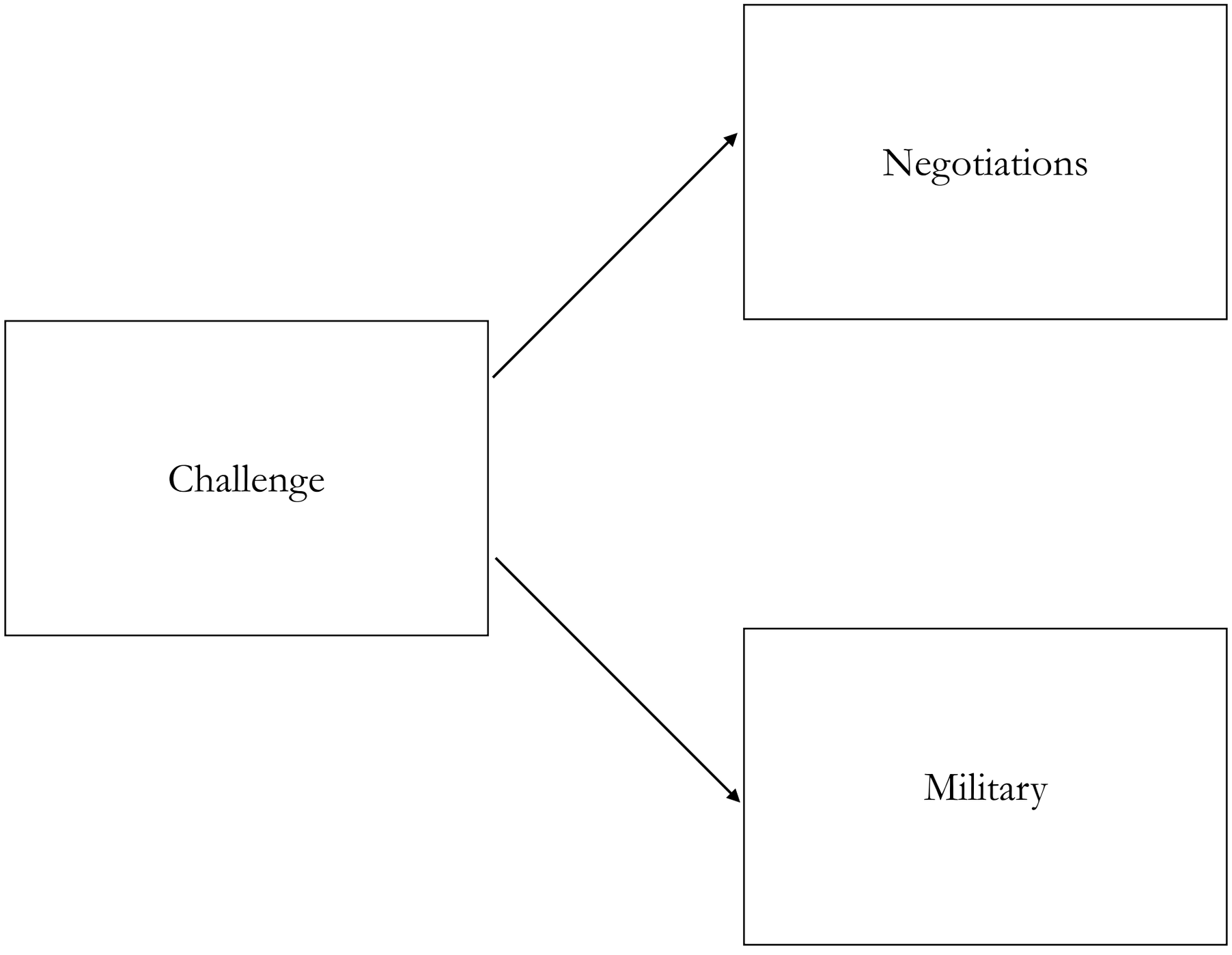
- Multiple possible paths through the process
- Covariate effects vary across different transitions

Empirical Implications for Territorial Disputes

Data

- Evolution of territorial disputes, 1919-1995 (Huth and Allee 2002)
    - 347 territorial disputes from all regions
    - Directed dyad unit of analysis
- Possible resolution methods
    - Formal negotiations
    - MID

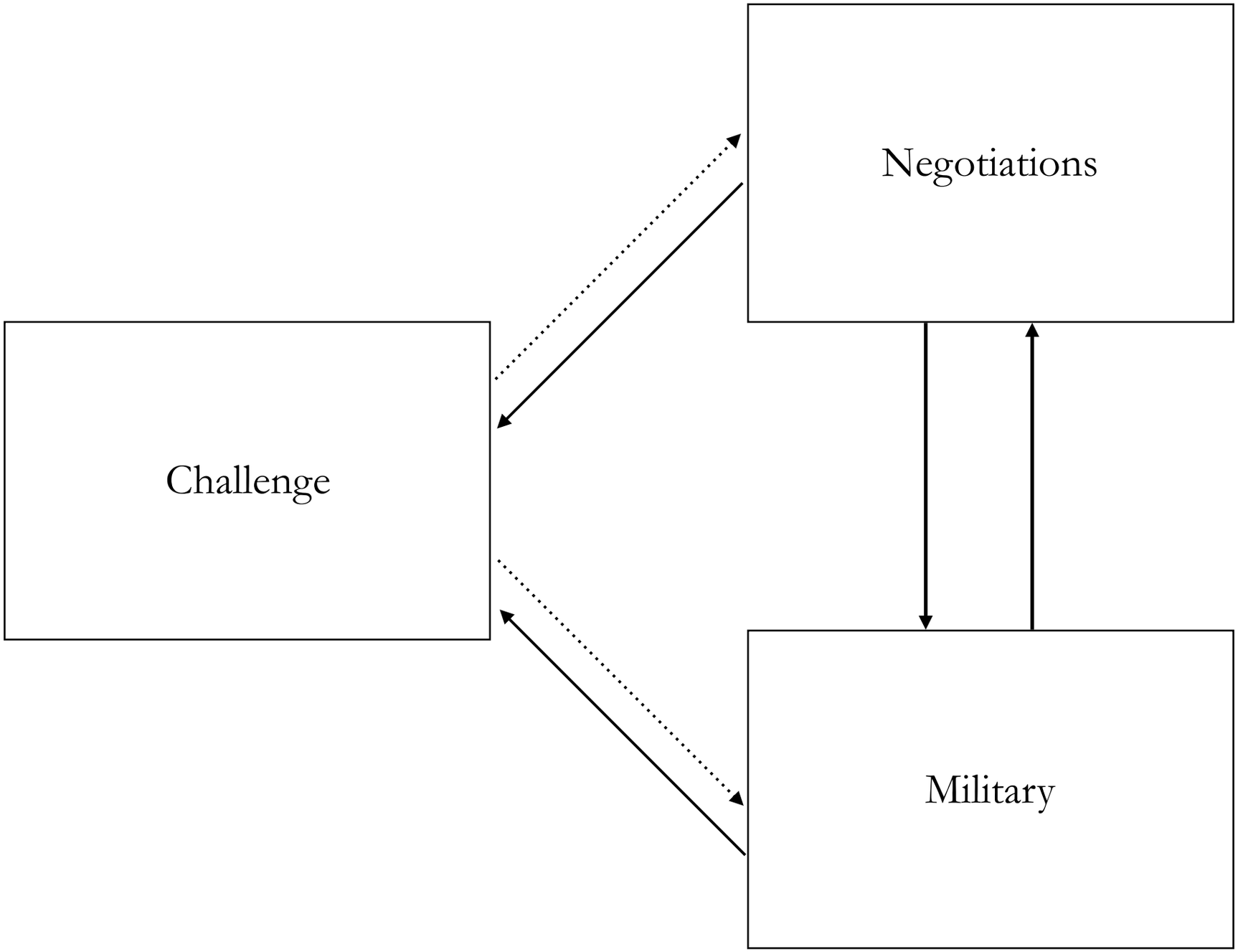
Standard Analysis



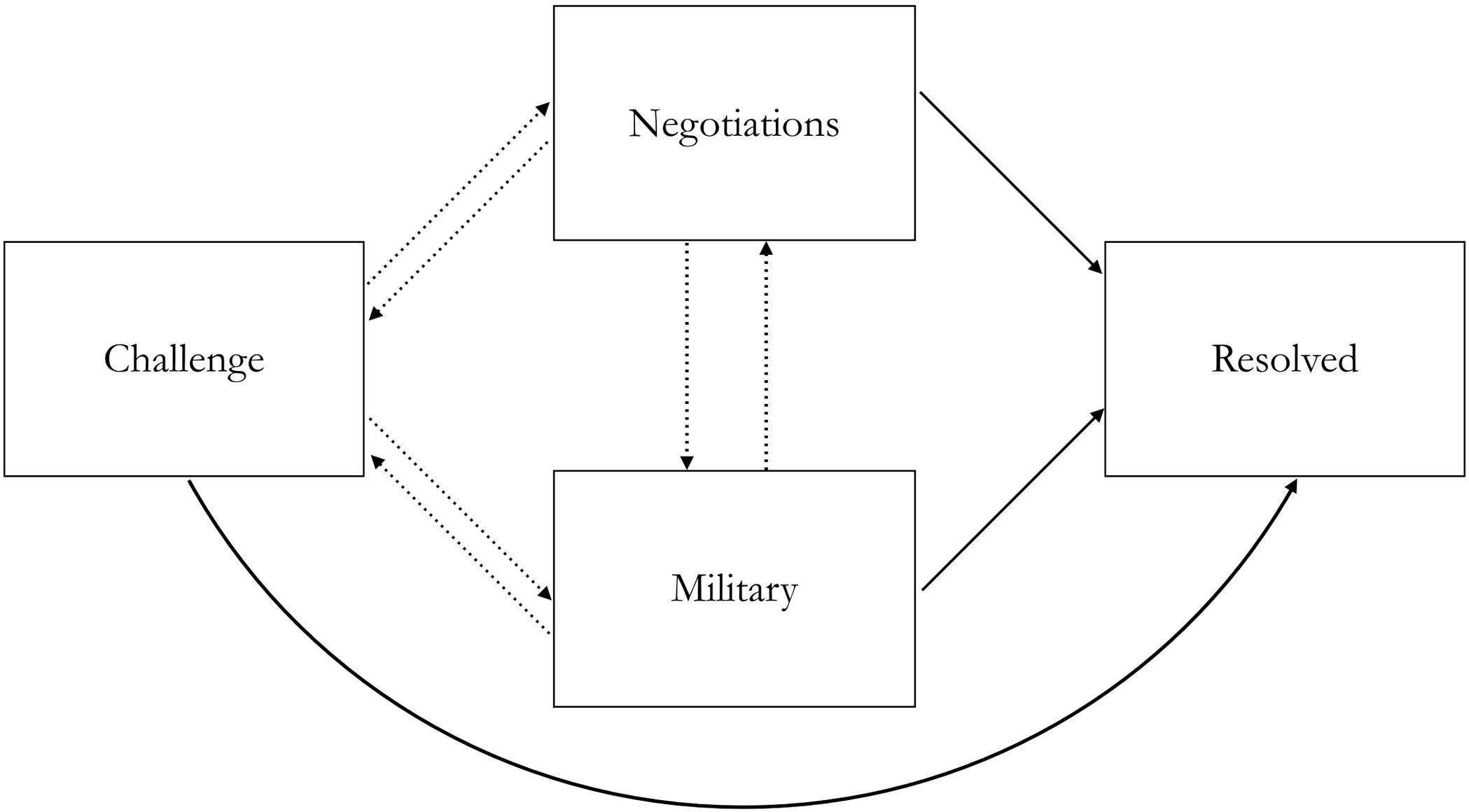
The Sequential Nature of Territorial Disputes

Initial Transition	*Subsequent Transition*		
	Challenge	Negotiation	Military
Negotiations	1514	–	16
(Row Total %)	(86.6%)		(0.9%)
Military	315	13	–
(Row Total %)	(81.6%)	(3.4%)	

Modeling Sequential Transitions



Fully Dynamic Model



Multi-state Event History Models

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- Extension of the semi-parametric Cox model
- Estimated as: $\alpha_{q0}(t)e^{\beta^T Z_q}$
  - Stratify baseline hazard by each transition, q
  - Transition-specific covariates Z_q
- Aggregate cumulative hazards into SxS matrix A(t) to estimate transition probability matrix: $\mathbf{P}(s,t) = \Pi_{u\in(s,t]}(\mathbf{I} + \Delta\mathbf{A}(u))$

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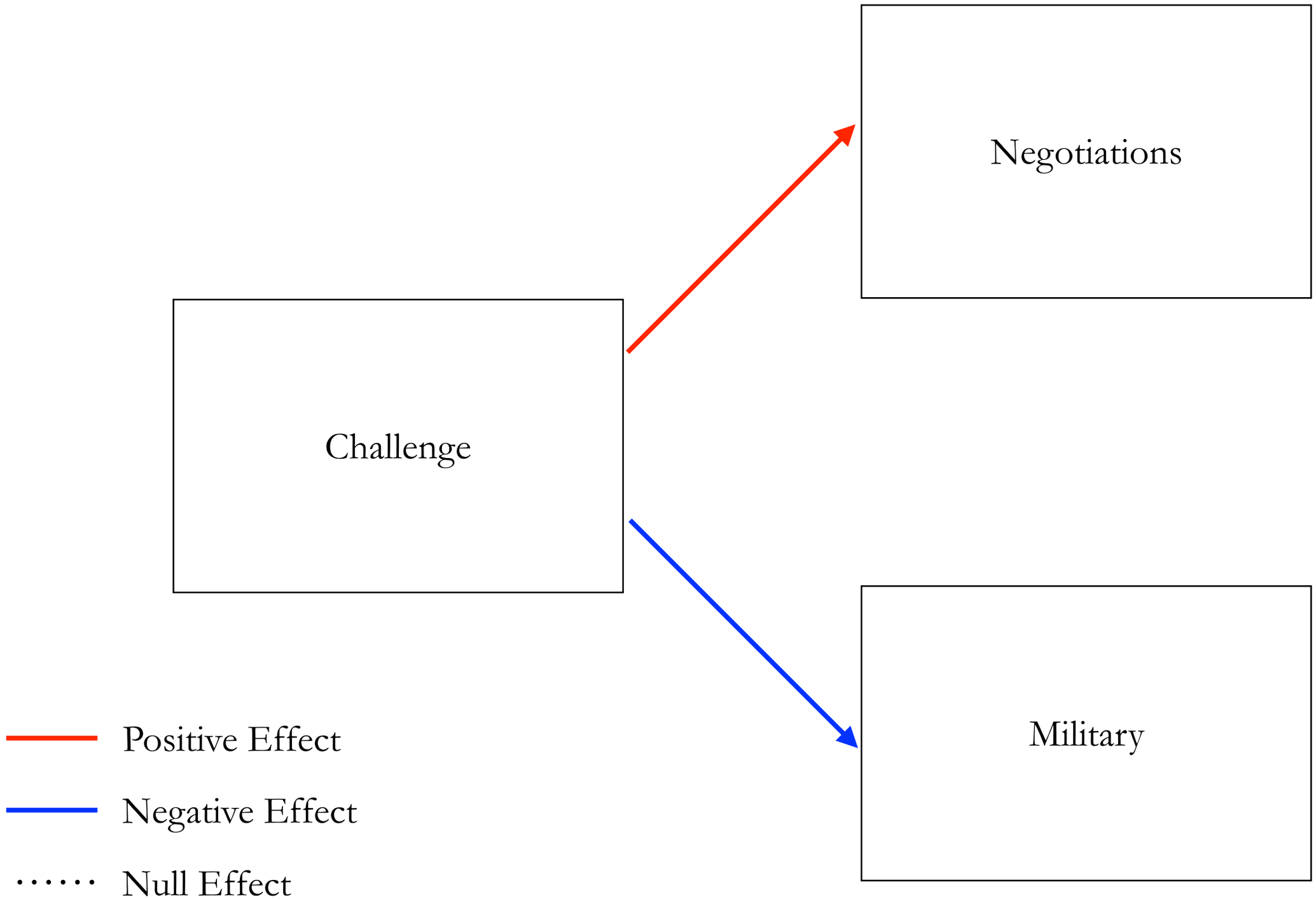
- Covariate effects vary based on context
- Model heterogeneity in *how* a dispute arrives at a particular stage

Data - Independent Variables

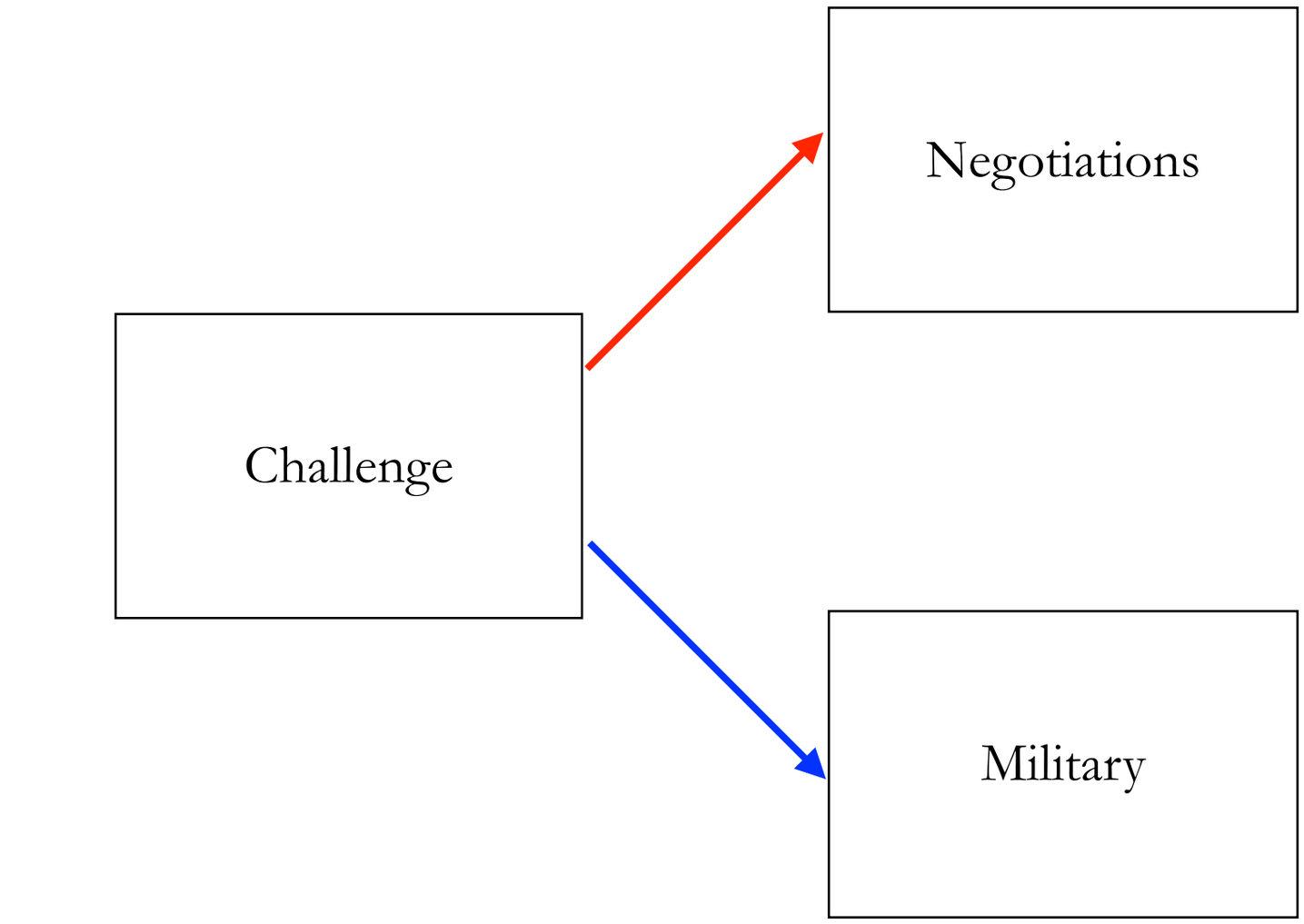
- Target/Challenger regime type
- Ratio of military capabilities
- Strategic value of territory
- Target/Challenger engaged in other dispute

Results

Challenger Democracy - Huth and Allee (2002)



Challenger Democracy - Multi-state Analysis



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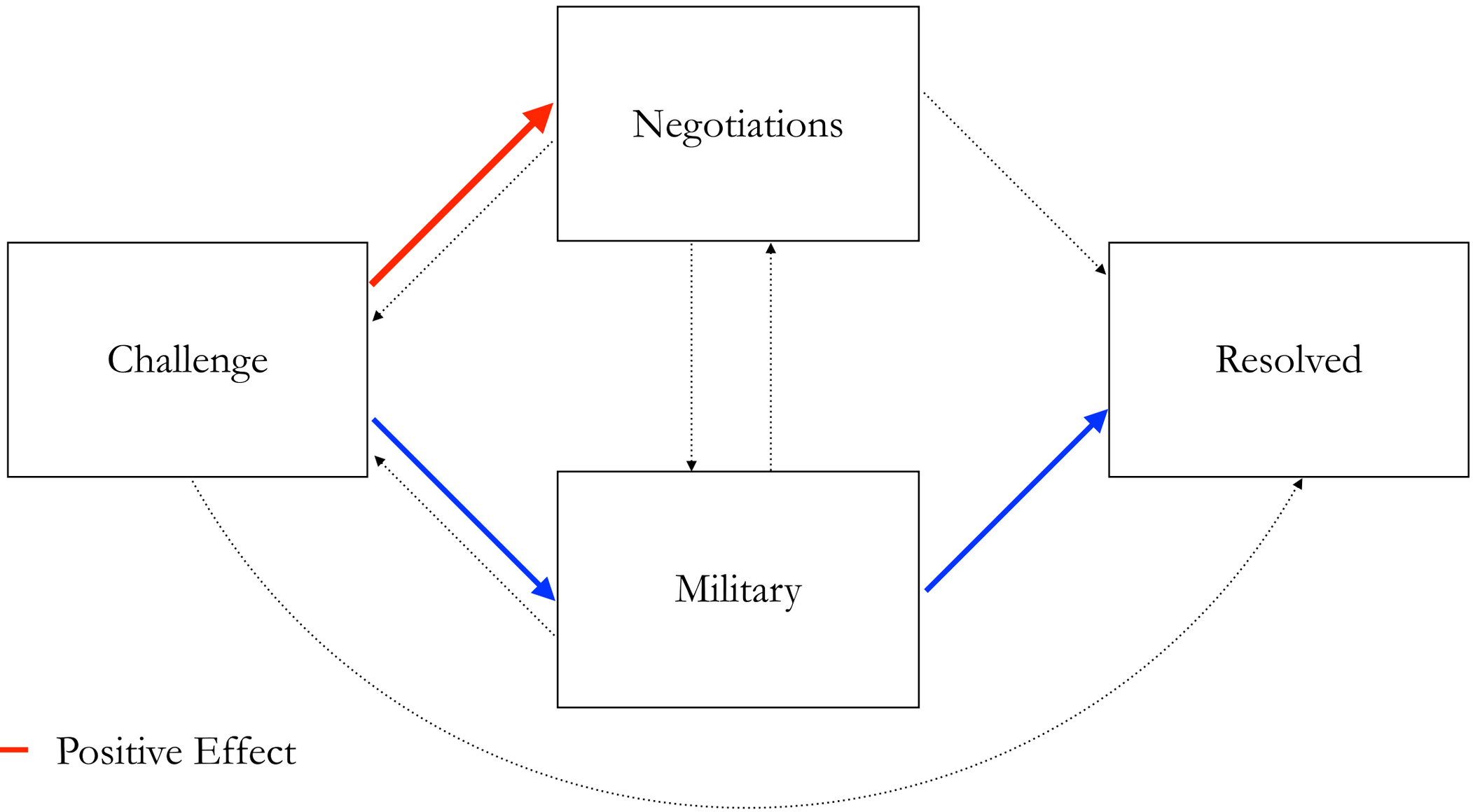
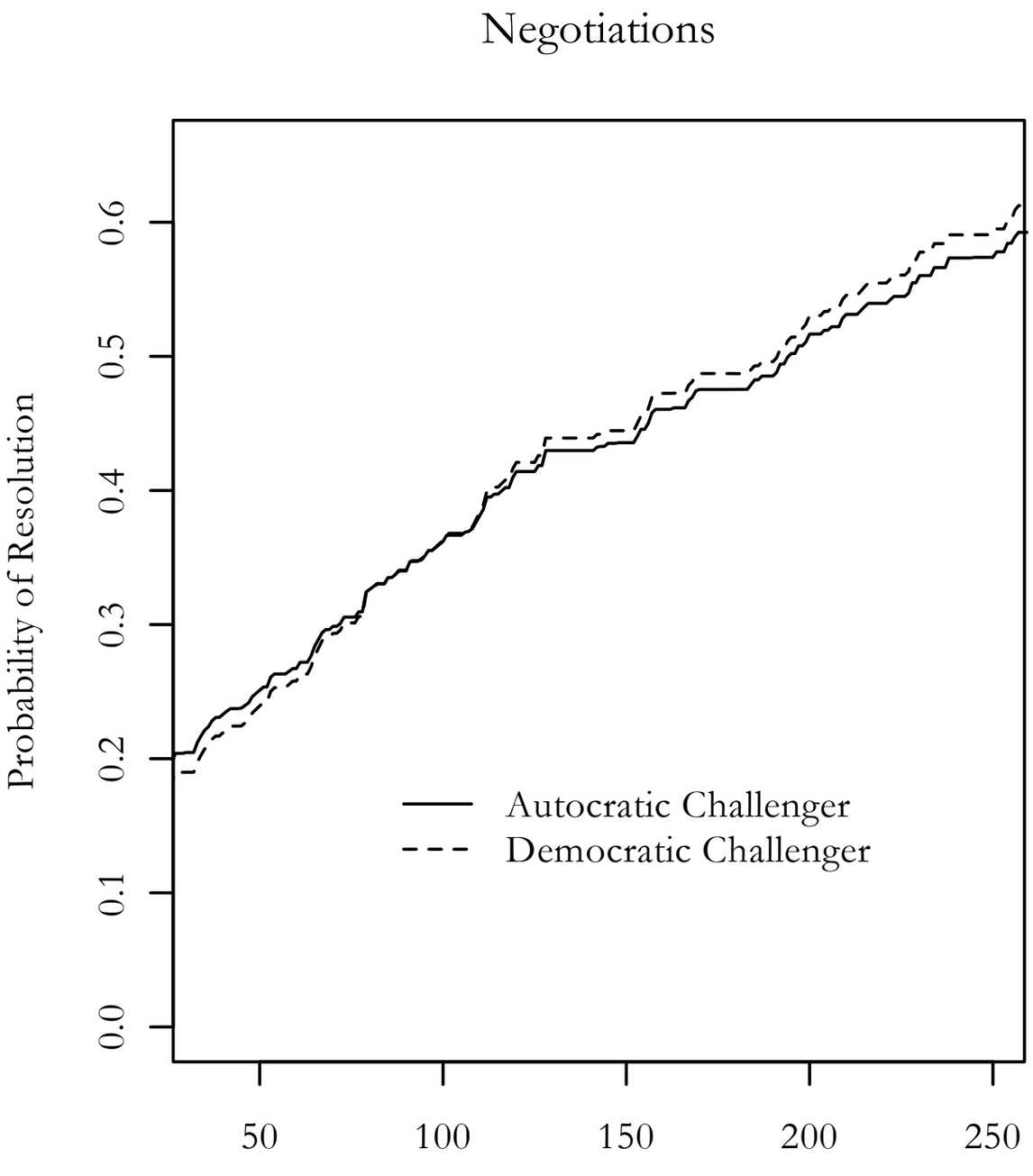
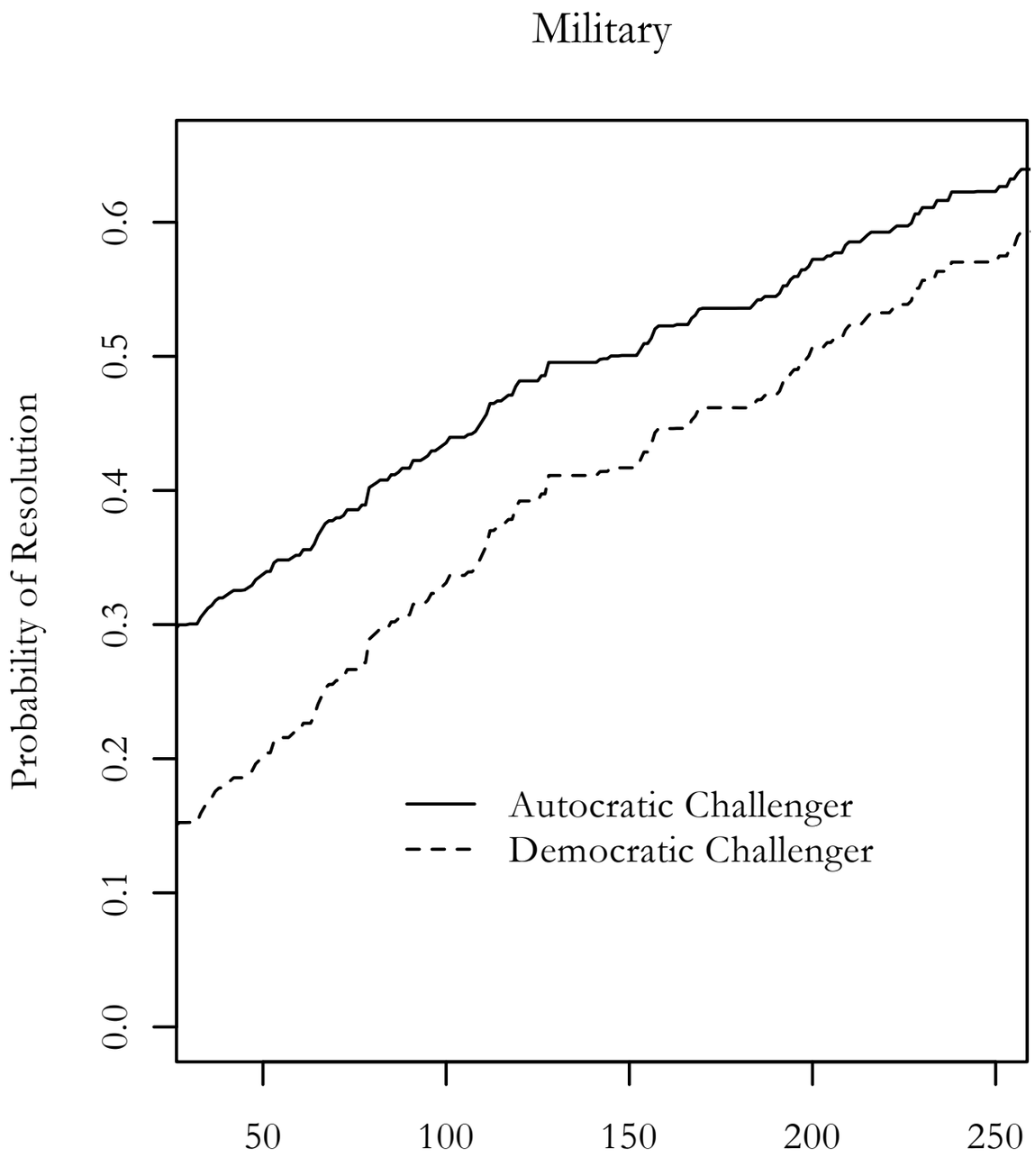
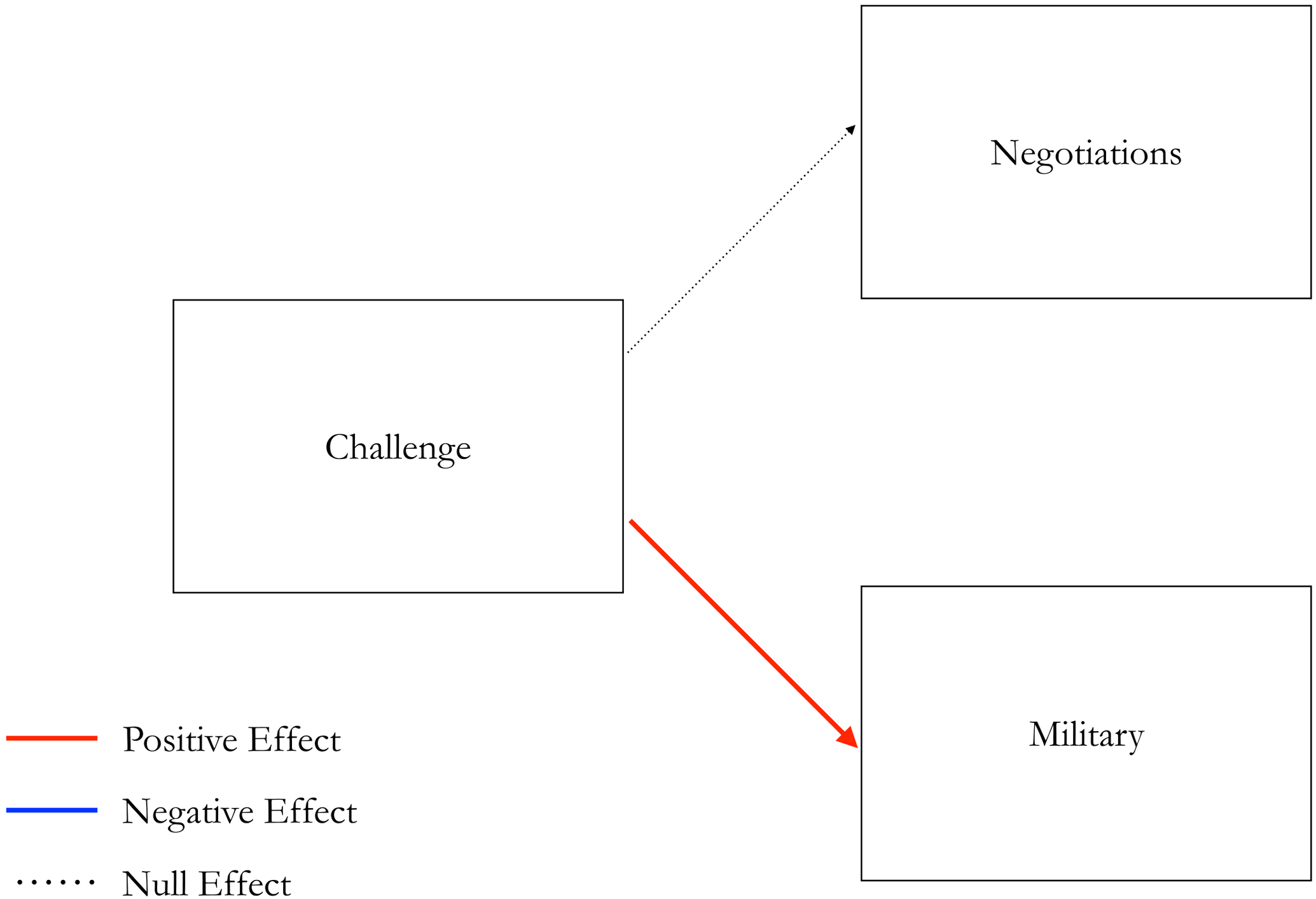


Context-Specific Effect of Regime Type





Military Ratio - Huth and Allee (2002)



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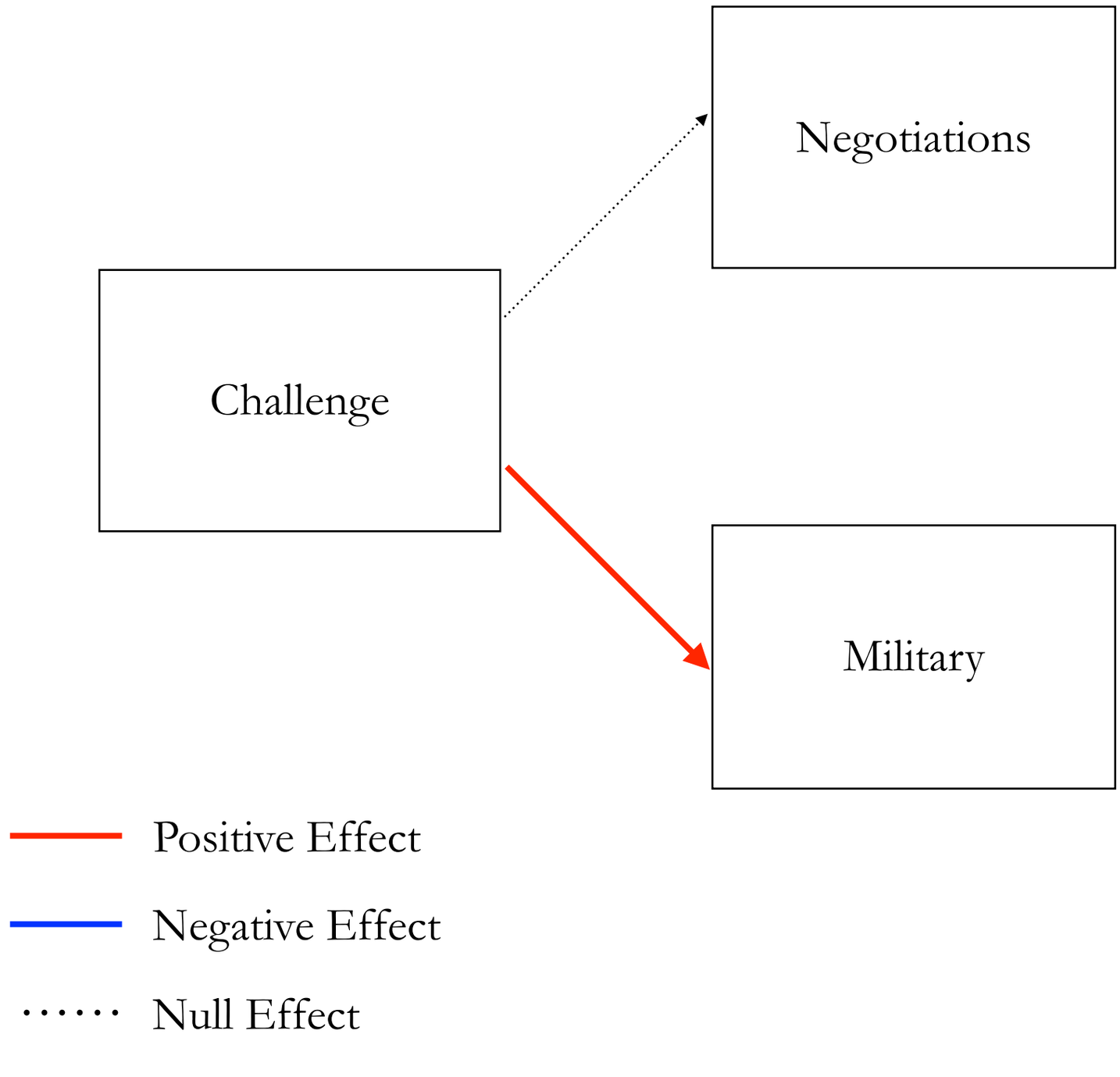

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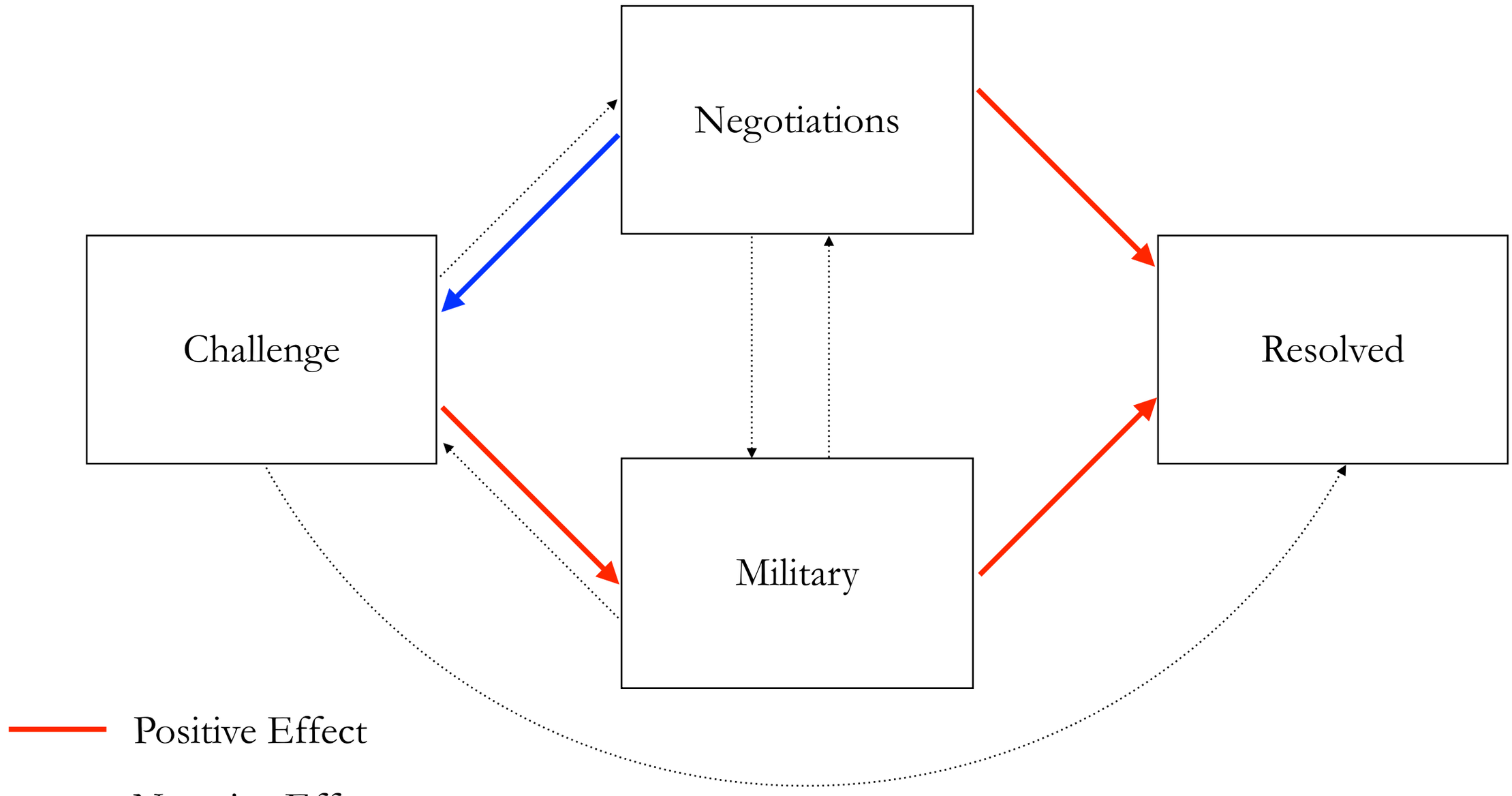

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- Importance of deep conceptualization of process
- Identify covariate effects beyond initial stage
- Context-dependent effects of covariates
- Assess covariate effect on process as a whole, rather than individual transitions

Conclusions

- Importance of clarifying "dynamics"
- Implications of deeper conceptualization of dynamics
- Multi-state event history models
  - Model many implications of deep conceptualization
  - Inherently flexible
- Cumulate findings into more coherent process

Thank you

Appendix

TABLE 1 Multi-state Model of the Territorial Dispute Process

	C → N	C → M	C → R	N → C	N → M	N → R	M→ C	M → N	M → R
Ratio of Military Capabilities	-0.150	1.236***	0.310	-0.295**	0.746	0.702*	2.466	-0.090	1.472*
	(0.103)	(0.218)	(0.507)	(0.113)	(1.128)	(0.297)	(1.718)	(0.290)	(0.734)
Strategic Value	0.228***	0.377**	-0.032	0.128*	0.337	-0.010	-0.058	-0.316*	0.468
	(0.055)	(0.116)	(0.281)	(0.062)	(0.590)	(0.170)	(0.777)	(0.159)	(0.364)
Target Engaged in Other Dispute	-0.097†	0.348**	0.396	-0.051	1.417*	0.168	-0.516	-0.313*	-0.268
	(0.057)	(0.122)	(0.264)	(0.065)	(0.618)	(0.176)	(0.883)	(0.144)	(0.364)
Challenger Engaged in Other Dispute	-0.028	0.250*	0.521*	0.072	0.292	0.318†	-0.395	-0.058	0.219
	(0.063)	(0.122)	(0.266)	(0.072)	(0.689)	(0.178)	(0.743)	(0.157)	(0.365)
Challenger Regime Type	0.018***	-0.046***	0.013	0.004	0.002	-0.006	0.038	0.011	-0.063*
	(0.004)	(0.009)	(0.017)	(0.004)	(0.038)	(0.010)	(0.050)	(0.011)	(0.026)
Target Regime Type	-0.002	-0.001	0.015	-0.006	-0.033	0.001	0.076	0.028**	-0.031
	(0.004)	(0.008)	(0.017)	(0.004)	(0.040)	(0.010)	(0.053)	(0.010)	(0.023)

† = $p \leq 0.10$, * = $p \leq 0.05$, ** = $p \leq 0.01$, *** = $p \leq 0.001$, two-tailed tests.

NOTE: C = Challenge; N = Negotiations; M = Military; R = Resolved

TABLE 2 Semi-Markov Multi-state Model of the Territorial Dispute Process

	C → N	C → M	C → R	N → C	N → M	N → R	M→ C	M → N	M → R
Previous Stage – Negotiations	0.747***	0.538**	0.778†	---	---	---	-1.528***	-0.329	-0.410
	(0.083)	(0.188)	(0.416)				(0.381)	(1.216)	(0.663)
Previous Stage – Military	0.717***	1.973***	1.067*	-0.344	---	-0.267	---	---	---
	(0.108)	(0.189)	(0.491)	(0.307)		(0.720)			
Ratio of Military Capabilities	-0.111	1.000***	0.363	-0.294**	0.746	0.705*	2.374	-0.211	1.357†
	(0.104)	(0.215)	(0.506)	(0.114)	(1.128)	(0.297)	(1.736)	(0.286)	(0.748)
Strategic Value	0.171**	0.256*	-0.099	0.126*	0.337	-0.011	-0.011	-0.211	0.496
	(0.055)	(0.118)	(0.283)	(0.062)	(0.590)	(0.170)	(0.790)	(0.159)	(0.368)
Target Engaged in Other Dispute	-0.080	0.311*	0.438†	-0.052	1.417*	0.168	-0.536	-0.278†	-0.243
	(0.057)	(0.121)	(0.263)	(0.065)	(0.618)	(0.176)	(0.880)	(0.143)	(0.364)
Challenger Engaged in Other Dispute	-0.040	0.256*	0.519*	0.071	0.292	0.318†	-0.322	-0.108	0.300
	(0.063)	(0.122)	(0.262)	(0.072)	(0.689)	(0.178)	(0.779)	(0.160)	(0.386)
Challenger Regime Type	0.017***	-0.037***	0.013	0.004	0.002	-0.006	0.039	0.013	-0.062*
	(0.004)	(0.009)	(0.017)	(0.004)	(0.038)	(0.010)	(0.050)	(0.011)	(0.026)
Target Regime Type	-0.001	-0.003	0.016	-0.006	-0.033	0.001	0.073	0.021*	-0.033
	(0.004)	(0.008)	(0.017)	(0.004)	(0.040)	(0.010)	(0.054)	(0.010)	(0.023)

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