

ENCoRe and Beyond: Seven Contributions, Seven Challenges

Philip A. Schrodt

Parus Analytics
Charlottesville, Virginia, USA
philipschrodt.org

Keynote Address:
European Network for Conflict Research
Geneva, 22 January 2016

Slides:

<http://eventdata.parusanalytics.com/presentations.html>

Long, long ago in a galaxy...
well, pretty close at hand...

400 Years Ago: Francis Bacon establishes principles of modern science

New Method (Novum Organum) [1620]

- ▶ Scientific method based on the primacy of observation and induction
- ▶ Science should be open, in contrast to the secrecy of the alchemists
- ▶ Science should benefit society as a whole—also a contrast to the alchemists—and is deserving of state support

200 years ago: Principles of probability theory

Pierre-Simon Laplace, *Théorie analytique des probabilités*
[1812]

- ▶ Axioms of probability theory
- ▶ Central limit theory and normal distribution
- ▶ Least squares estimation
- ▶ Beginnings of a Bayesian statistical approach

Carl Friedrich Gauss, *Theoria motus corporum coelestium in sectionibus conicis solem ambientium* [1809]

Domain: Efficiently estimating planetary orbits, specifically the dwarf planet Ceres. Gauss first did this at age 24; this book extends the work to:

- ▶ General theory of statistical errors, contrasting to Newtonian determinism
- ▶ Normal, a.k.a. Gaussian, distribution
- ▶ Maximum likelihood
- ▶ Least squares estimation

100 years ago: Lewis Fry Richardson

- ▶ Leaves post at British Meteorological Service in 1916 to join Friends (Quaker) Ambulance Service in France
- ▶ Research there leads to *Mathematical Psychology of War* (1919)
- ▶ Richardson's conscientious objector status during World War I makes it impossible for him to secure subsequent academic employment, which means that instead of attending endless faculty meetings and grading exams...
- ▶ He would spend the next thirty years on the research that would become *Statistics of Deadly Quarrels* and *Arms and Insecurity*

50 years ago: *Journal of Conflict Resolution*, March 1966

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March 1966; 10 (1)

Articles

- Catherine Senf Manno
Majority decisions and minority responses in the UN General Assembly
Journal of Conflict Resolution March 1966 10: 1-20,
doi:10.1177/002200276601000101
[Full Text \(PDF\)](#) [References](#) [Request Permissions](#)

- Sheldon W. Simon
The Asian states and the ILO: new problems in international consensus
Journal of Conflict Resolution March 1966 10: 21-40,
doi:10.1177/002200276601000102
[Full Text \(PDF\)](#) [References](#) [Request Permissions](#)

- Raymond Tanter
Dimensions of conflict behavior within and between nations, 1958-60
Journal of Conflict Resolution March 1966 10: 41-64,
doi:10.1177/002200276601000103
[Full Text \(PDF\)](#) [References](#) [Request Permissions](#)

- R.J. Rummel
Dimensions of conflict behavior within nations, 1946 - 59
Journal of Conflict Resolution March 1966 10: 65-73,
doi:10.1177/002200276601000104
[Full Text \(PDF\)](#) [References](#) [Request Permissions](#)

- William Erbe
Interest in a peace organization
Journal of Conflict Resolution March 1966 10: 74-86,
doi:10.1177/002200276601000105
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50 years ago: *Journal of Peace Research*, March 1966

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- J. David Singer and Melvin Small
Formal alliances, 1815—1939: A Quantitative Description
Journal of Peace Research March 1966 3: 1-31,
doi:10.1177/002234336600300101
[Abstract](#) [Full Text \(PDF\)](#) [References](#) [Request Permissions](#)
- Tom Broch and Johan Galtung
Belligerence Among the Primitives: A re-analysis of Quincy Wright's data
Journal of Peace Research March 1966 3: 33-45,
doi:10.1177/002234336600300102
[Abstract](#) [Full Text \(PDF\)](#) [Request Permissions](#)
- Nils H. Halle
Social Position and Foreign Policy Attitudes: A Comparative Study of France, Norway and Poland
Journal of Peace Research March 1966 3: 46-73,
doi:10.1177/002234336600300103
[Abstract](#) [Full Text \(PDF\)](#) [Request Permissions](#)
- BO Ohlström
Information and Propaganda: A content analysis of editorials in four Swedish daily newspapers
Journal of Peace Research March 1966 3: 75-87,
doi:10.1177/002234336600300104
[Abstract](#) [Full Text \(PDF\)](#) [References](#) [Request Permissions](#)
- Murray L. Weidenbaum and Ben-Chieh Liu
Effect of Disarmament On Regional Income Distribution
Journal of Peace Research March 1966 3: 89-92,
doi:10.1177/002234336600300105
[Full Text \(PDF\)](#) [Request Permissions](#)
- By-Laws of the International Peace Research Institute, Oslo**
Journal of Peace Research March 1966 3: 93-94,
doi:10.1177/002234336600300106
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Seven Contributions of ENCoRe

1. Data, Data, Data!

- ▶ Disaggregated in time and space
- ▶ Near-real-time compared to many earlier conflict datasets
- ▶ Geolocated
- ▶ Sub-state conflict and actors
- ▶ Research on the quality and weak points in data sets
- ▶ Research on new data modalities: social media, cell phone records, remote sensing
- ▶ GROW^{UP}
- ▶ Data sets have now entered the mainstream, e.g. ACLED in *The Economist*



Working Groups

ENCoRe

News

Events

Calls

Working Groups

Working Group 1

Working Group 2

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Institutions

People

Contact

Short Term Scientific

Missions

[Working
Group 1](#)

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Dataset coordination: this working group serves the purpose of coordinating the creation, updating and expansion of datasets, and allow for their integration into the GROWup portal.

Database development: WG2 brings together software developers in the national research groups to exchange ideas and information about key technologies, such as database design, interface development, web programming and visualization techniques.

Analysis and forecasting: serving as a focal point for the user communities within ENCoRe, WG 3 is the main forum within which applied research can be presented and discussed.

News

The next ENCoRe Workshop will take place in Geneva on January 21-22, 2016.

Data Projects

GROW^{UP}

The GROW^{UP} data portal unites a number of datasets on ethnic groups and intrastate conflict from various sources in a single relational database. We currently offer two portals to access these data:

The GROW^{UP} [Public Front-End](#) visualizes a subset of the data, e.g. ethnic group's settlement patterns, ethnic power relations, terrain data, etc.

The GROW^{UP} [Research Front-End](#) allows to download customized datasets from our database in research-ready format, i.e., on the basis of country-year or group-year observations. For an overview of the variables provided via the RFE, see the [RFE Documentation](#).

EPR Dataset Family 2014

Some of the datasets that serve as a basis for the GROW^{UP} database have been created fully or in part by members of the ICR group. The following links provide access to these datasets.

EPR 2014

EPR 2014 is based on the original dataset [EPR v.1.1](#) and identifies all politically relevant ethnic groups and their level of access to state power for all countries of the world from 1946-2013. [>>more>>](#)

GeoEPR 2014

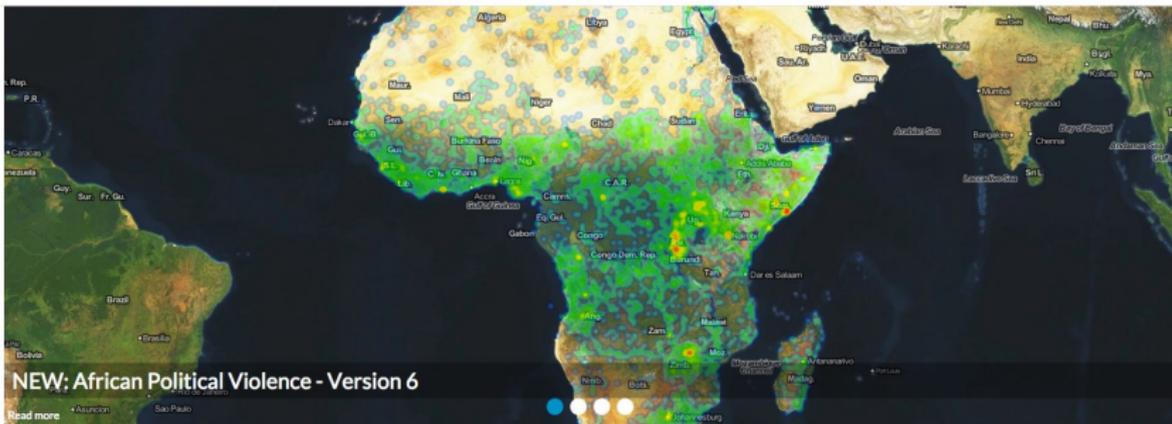
The GeoEPR 2014 dataset is based on EPR 2014 and codes the settlement patterns of politically relevant ethnic groups in independent states. [>>more>>](#)

ACD2EPR 2014

The ACD2EPR 2014 docking dataset links ACD v.4-2014 conflicts to EPR 2014 groups. [>>more>>](#)

TEK 2014

Based on the EPR 2014 dataset, the TEK 2014 dataset records transnational ethnic groups who live in more than one state. [>>more>>](#)



NEW: African Political Violence - Version 6

[Read more](#)

ACLED (Armed Conflict Location & Event Data Project) is the most comprehensive public collection of political violence and protest data for developing states. This data and analysis project produces information on the specific dates and locations of political violence and protest, the types of event, the groups involved, fatalities, and changes in territorial control. Information is recorded on the battles, killings, riots, and recruitment activities of rebels, governments, militias, armed groups, protesters and civilians. Data can be downloaded on the Data page, trend reports, working papers and other analysis from our Publications page, updated analysis on ongoing crises is found at our [Crisis Blog](#).

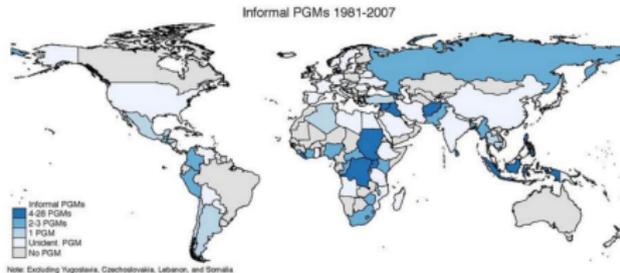
As of early 2016, ACLED has recorded over 100,000 individual events, with ongoing data collection focused on Africa and ten countries in South and Southeast Asia. The data can be used for medium- and long-term analysis and mapping of political violence across developing countries through use of historical data from 1997, as well as informing humanitarian and development work in crisis and conflict-affected contexts through realtime data updates and reports. ACLED data show that political violence rates have remained relatively stable in the past seventeen years, despite the waning of civil wars across the developing world. ACLED seeks to support research and work devoted to understanding, predicting and reducing levels of political violence.

RATE Repression And The Escalation Of Violence



A new typology of pro-government militias

November 19, 2015



Sabine Carey and Neil Mitchell. 2015. "The Monopoly of Violence and the Puzzling Survival of Pro-Government Militias." submitted to the *Annual Review of Political Science*.

👤 Sabine Carey /

📄 Publications

👍 0 Likes 🔄 Share

News



Pro-government militias and conflict

Jan 13, 2016



A new typology of pro-government militias

Nov 19, 2015

Belén González contributed to new Archigos 4.0 dataset

Oct 26, 2015

Guest post on why it is a bad idea for governments to collaborate with militias

Sep 4, 2015

2. Geo-spatial analysis

- ▶ See all of the previous slides
- ▶ GeoEPR
- ▶ PRIO-GRID
- ▶ This has opened a large number of new analytic and methodological issues, as well as the possibility of exploring a number of interesting hypotheses that could not be tested without geo-located data.

2. Geo-spatial analysis

- ▶ See all of the previous slides
- ▶ GeoEPR
- ▶ PRIO-GRID
- ▶ This has opened a large number of new analytic and methodological issues, as well as the possibility of exploring a number of interesting hypotheses that could not be tested without geo-located data.
- ▶ And endless opportunities for really cool visualizations!

3. Sub-state conflict dynamics

- ▶ Again, see examples in previous slides
- ▶ Civil war
- ▶ Ethnic conflict
- ▶ One-sided violence and conflict impact on civilians
- ▶ Militias, paramilitaries and militarized nonstate actors more generally
- ▶ Sexual violence and differential impacts of conflict on women

4. Influence of environment on conflict

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Jan 2012: Special Issue on Climate Change and Conflict

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Nils Petter Gleditsch

Whither the weather? Climate change and conflict

Journal of Peace Research 2012 49:3-9; doi:10.1177/0022343311431288

[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#)

Bert Kvaløy, Henning Finseraas, and Ola Listhaug

The publics' concern for global warming: A cross-national study of 47 countries

Journal of Peace Research 2012 49:11-22; doi:10.1177/0022343311425841

[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#) [Datasets](#)

Christopher K Butler, and Scott Gates

African range wars: Climate, conflict, and property rights

Journal of Peace Research 2012 49:23-34; doi:10.1177/0022343311426166

[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#)

Cullen S Hendrix, and Idean Salehyan

Climate change, rainfall, and social conflict in Africa

Journal of Peace Research 2012 49:35-50; doi:10.1177/0022343311426165

[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#) [Datasets](#) [Erratum](#)

Clonadh Raleigh, and Dominic Krivtsov

Come rain or shine: An analysis of conflict and climate variability in East Africa

Journal of Peace Research 2012 49:51-64; doi:10.1177/0022343311427754

[Abstract](#) [Full Text](#) [Full Text \(PDF\)](#) [Datasets](#)

On food production shocks and conflict

By halvard@prio.no on January 8, 2016

While **recent research** suggests that climatic shocks at most are weakly and inconsistently related to higher conflict risk, a more subtle and indirect association, working through negative impacts on food production, seems plausible. In a new study that is just released, we investigate the empirical evidence for such a two-step causal process. Studying the entire African continent over the past half century, we find that (unsurprisingly) weather patterns matter a whole lot for local production, with below-normal rainfall generally being associated with lower yields. We find little evidence for the second step, however, as fluctuating incomes from food production correlate weakly with various categories of political violence. The article is freely available **here**. Enjoy.

Buhaug, Halvard, Tor A. Benjaminsen, Espen Sjaastad, and Ole M. Theisen. 2015. Climate Variability, Food Production Shocks, and Violent Conflict in Sub-Saharan Africa. *Environmental Research Letters* 10(12): 125015. [Open Access]

CarbonBrief
SCIENCE ENERGY POLICY IN FOCUS DAILY BRIEFING SUBSCRIBE

HUMAN SECURITY | 6 March 2016 | 14:25

Reflections on climate-conflict research: More confusion than knowledge

PROF HALVARD BUHAUG
16.03.2016 12:25pm

HUMAN SECURITY | Reflections on climate-conflict research: More confusion than knowledge

A guest post from Prof Halvard Buhaug, Research Director and Research Professor at the Peace Research Institute, Oslo (PRIO).

5. Prediction

Exploring the Past, Anticipating the Future: A Symposium

Gerald Schneider¹, Nils Petter Gleditsch²
and Sabine C. Carey³

Article first published online: 9 MAR 2010

DOI: 10.1111/j.1468-2486.2009.00909.x

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Issue



International Studies Review
Volume 12, Issue 1, pages 1–
7, March 2010

6. Mediation and post-conflict stability

Conflict Management and Peace Science



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Impact Factor: 0.794 | Ranking: International Relations 37 out of 63 | 5-Year Impact Factor: 1.420 | 5-Year Ranking: International Relations 20 out of 65

The spatial contagion of international mediation

Tobias Böhmelt

University of Essex, UK, and ETH Zurich, Switzerland

Tobias Böhmelt, Department of Government, University of Essex, Wivenhoe Park, Colchester, CO4 3SQ, UK. Email: tb2m1@essex.ac.uk

Abstract

If conflicts cluster in space, does this also apply to international mediation? In light of the spatial dependency of armed conflicts, this paper develops a theoretical framework based on the mechanisms of *spill-over* to show how close proximity international

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This Article

Published online before print
September 10, 2014, doi:
10.1177/0898264314548113

Conflict Management and Peace Science
Volume 39(9) 2014, pp. 1325-1341

Abstract First
Full Text

Full Text (PDF)

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* Online of Record - Feb 13, 2014
OnlineFirst Version of Record - Sep 10, 2014

International Interactions: Empirical and Theoretical Research in International Relations

Volume 39, Issue 4, 2013

Special Issue: A Systematic Understanding of Gender, Peace, and Security—Implementing UNSCR 1325

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Articles

Sexual Exploitation and Abuse by Peacekeepers: Understanding Variation

DOI: 10.1080/03050629.2013.805128

Ragnhild Nordås^a & Siri C. A. Rustad^a

pages 511-534

Publishing models and article dates explained

Accepted author version posted online: 29 May 2013

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7. Peacekeeping operations and post-conflict stability

What Do the Peacekeepers Do, Where and How? New Data on UN Peace-Building Activities during Election Times

Abstract: This article introduces a new dataset on peace-building activities during election times. It presents disaggregated data on the activities of 37 peacekeeping operations (PKOs) in 99 election periods in 27 conflict-affected countries from 1990 to 2012. These activities comprise the full range of policies implemented by multidimensional peacekeeping operations. The data provide new insights into which types of peace-building activities are carried out by UN PKOs during election times, to what degree PKOs engage in these activities and how activities and engagement vary over time and countries. I outline my coding methodology and case selection, examine descriptive statistics and compare my data to another dataset on PKOs' activities. I illustrate one potential use of the data by combining six different civilian activities into a composite index of PKOs' engagement in promoting peaceful and credible elections. In line with existing literature on peacekeeping deployment, I find that PKOs engage more extensively in these activities when threats to electoral security loom larger. This evidence supports the construct validity of the composite index and its activity components.

Hannah Smidt
137 Oakley Square
London, NW1 1PA

Tel: 07925 460578
Email: hannah.smidt.13@ucl.ac.uk

Peacekeepers against ethnic violence

Jessica Di Salvatore
University of Amsterdam
j.disalvatore@uva.nl

Draft, please do not circulate.

Prepared for the ENCoRe meeting in Geneva, 20-23 Jan. 2016

[Over-generalized] contrast with topics found in North American PSSI meetings

- ▶ Correlates of War is [still] strong in this one

[Over-generalized] contrast with topics found in North American PSSI meetings

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[Over-generalized] contrast with topics found in North American PSSI meetings

- ▶ Correlates of War is [still] strong in this one
- ▶ Greater emphasis on crisis onset



[Over-generalized] contrast with topics found in North American PSSI meetings

- ▶ Correlates of War is [still] strong in this one



- ▶ Greater emphasis on crisis onset

Cynical interpretation:

Researchers in the U.S. are concerned about getting countries into trouble and researchers in Europe are concerned about getting countries out of trouble

[Over-generalized] contrast with topics found in North American PSSI meetings

- ▶ Correlates of War is [still] strong in this one
- ▶ Greater emphasis on crisis onset
Cynical interpretation:
Researchers in the U.S. are concerned about getting countries into trouble and researchers in Europe are concerned about getting countries out of trouble
- ▶ Terrorism
- ▶ Reductionist approaches such as game theory and simulation

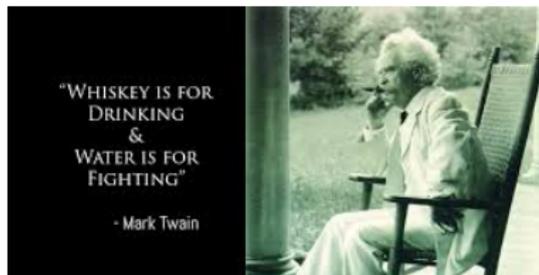


Seven Contemporary Challenges for Conflict Research

1. Implications of climate change for conflict

Possibility: It will increase

- ▶ "Fight at the water hole" hypothesis



- ▶ Sea level rise will necessarily force very large population movements: environmental refugees

Or conflict could decrease

- ▶ Resources spent on responding to climate change diverts funds from military



New York City to Get \$176 Million From U.S. for Storm Protections

Senator Chuck Schumer said the city would be awarded federal funds for a proposed project to guard against another storm like Hurricane Sandy in Lower Manhattan.

A rising tide sinks all bases. For years, the Defense Department has taken the threat of climate change pretty seriously, and is now putting actual plans in place to address it, according to a new directive from Deputy Secretary of Defense Bob Work.

Work's Jan. 14 memo requires the Under Secretary of Defense for Intelligence, Marcel Lettre, and the Director of National Intelligence James Clapper to combine forces to assess the "risks, potential impacts, considerations, vulnerabilities, and effects [on defense intelligence programs] of altered operating environments related to climate change."

The concern isn't anything new. In a report submitted to Congress last July, Pentagon planners reported that the "DoD recognizes the reality of climate change and the significant risk it poses to U.S. interests globally," and "sees climate change as a present security threat, not strictly a long-term risk." If this all appears overhyped, ask the U.S. Navy about its plans to save the world's largest naval base in Norfolk, Va. from sinking.

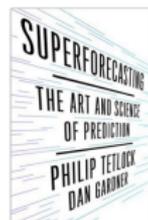
- ▶ Responses will require international cooperation
- ▶ Industrialized agriculture and urbanization invalidate the water hole analogy
- ▶ Is water really a lootable resource?

Or the effects could be geographically and culturally specific

- ▶ Herder/farmer conflicts are not new: ibn-Khaldun [1377] and William McNeil [1963] emphasized these as a major factor in pre-modern systems
- ▶ Degree of militarization of these conflicts is cultural:
 - ▶ Nigeria Plateau State: Tiv farmers and Fulani herders show a system of “fight or flight” with crop destruction, mob violence and occasional use of automatic weapons
 - ▶ Senegal: Serer farmers and Fulani (Pular) herders show a system of “tend and befriend” where managed herding provides manure fertilizer for croplands; interactions are stylized insults and inter-marriage
- ▶ Climate change will have both positive and negative effects that are dependent on geography: the U.S. military is concerned about Norfolk, Virginia but not Ft. Drum, New York (10th Mountain Division headquarters)

2. Are there regularities machine learning approaches can detect that aren't evident regression and logistic?

- ▶ General point: Tetlock and Gartner's (2015) work on “superforecasters” shows that conflict behaviors are, somehow, predictable for some humans (though not for popular pundits)
- ▶ Ward, Greenhill and Bakke (2010) show that our ubiquitous frequentist approaches do not lead to good predictive models, since this is not what a significance test is designed to do.
- ▶ Can we push above 80% accuracy and if not, why not: can we systematically characterize the sources of error?
 - ▶ 80% applies to “hard” questions: you can get any accuracy you want by making the questions sufficiently easy.



Irreducible sources of error-1

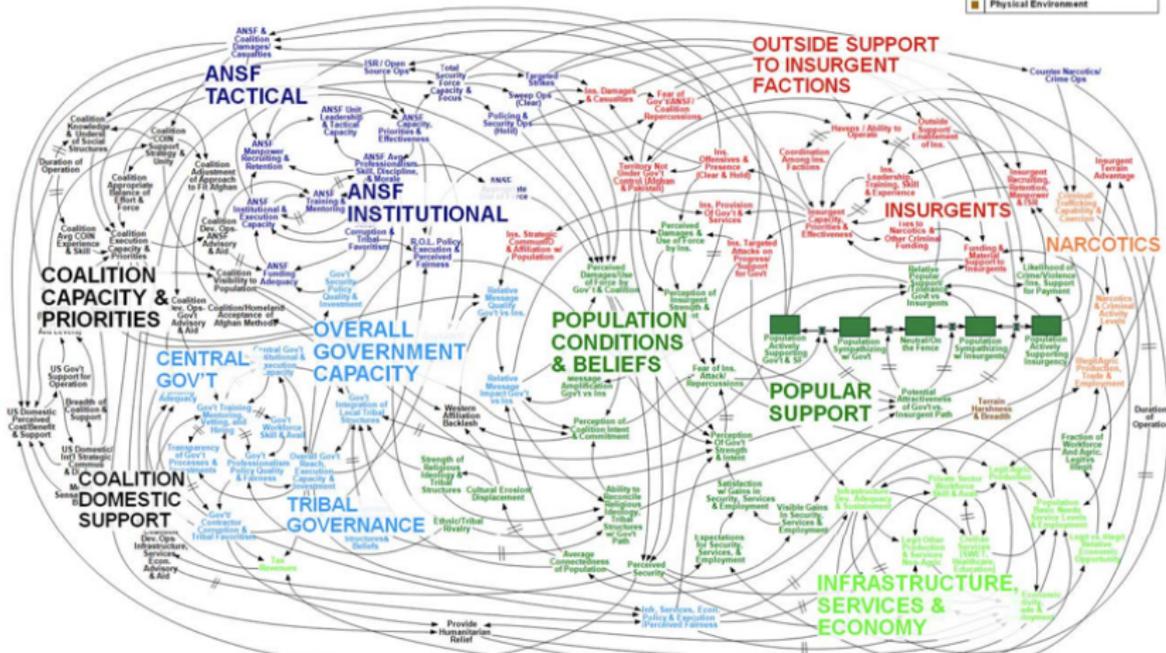
- ▶ Specification error: no model of a complex, open system can contain all of the relevant variables;

“McCrystal’s Hairball”

Afghanistan Stability / COIN Dynamics

= Significant Delay

- Population/Popular Support
- Infrastructure, Economy, & Services
- Government
- Afghanistan Security Forces
- Insurgents
- Crimes and Narcotics
- Coalition Forces & Actions
- Physical Environment



WORKING DRAFT - V3

Irreducible sources of error-1

- ▶ Specification error: no model of a complex, open system can contain all of the relevant variables;
- ▶ Measurement error: with very few exceptions, variables will contain some measurement error
 - ▶ Presupposing there is even agreement on what the “correct” measurement is in an ideal setting;
 - ▶ Predictive accuracy is limited by measurement error
 - ▶ This biases the coefficient estimates as well as the predictions
- ▶ Quasi-random structural error: Complex and chaotic deterministic systems behave as if they were random under at least some parameter combinations .
 - ▶ Chaotic behavior can occur in equations as simple as
$$x_{t+1} = ax_t^2 + bx_t$$

Irreducible sources of error-2

- ▶ Rational randomness such as that predicted by mixed strategies in zero-sum games
- ▶ Arational randomness attributable to free-will
 - ▶ Rule-of-thumb from our rat-running colleagues:
“A genetically standardized experimental animal, subjected to carefully controlled stimuli in a laboratory setting, will do whatever it wants.”
- ▶ Effective policy response: in at least some instances organizations will have taken steps to head off a crisis that would have otherwise occurred.
- ▶ The effects of natural phenomenon
 - ▶ the 2004 Indian Ocean tsunami dramatically reduced violence in the long-running conflict in Aceh

(Tetlock (2013) independently has an almost identical list of the irreducible sources of error.)

Some candidate new approaches

- ▶ Better rare events statistical methods, possibly with Bayesian adjustments
- ▶ Support vector machines and other clustering methods that work well with heterogeneous samples
- ▶ Decision trees and random forests
- ▶ Neural networks, particularly the new recurrent neural networks that are specifically designed to work with sequences
- ▶ Component-based models: see recent cover story in *Science*
- ▶ We probably can't afford it, but what about applying the IBM "Watson" system with its massive base of "common sense" knowledge to conflict analysis?

Though this is going a little far...

WIRED MAGAZINE: 16.07

SCIENCE : DISCOVERIES 

The End of Theory: The Data Deluge Makes the Scientific Method Obsolete

By Chris Anderson  06.23.08

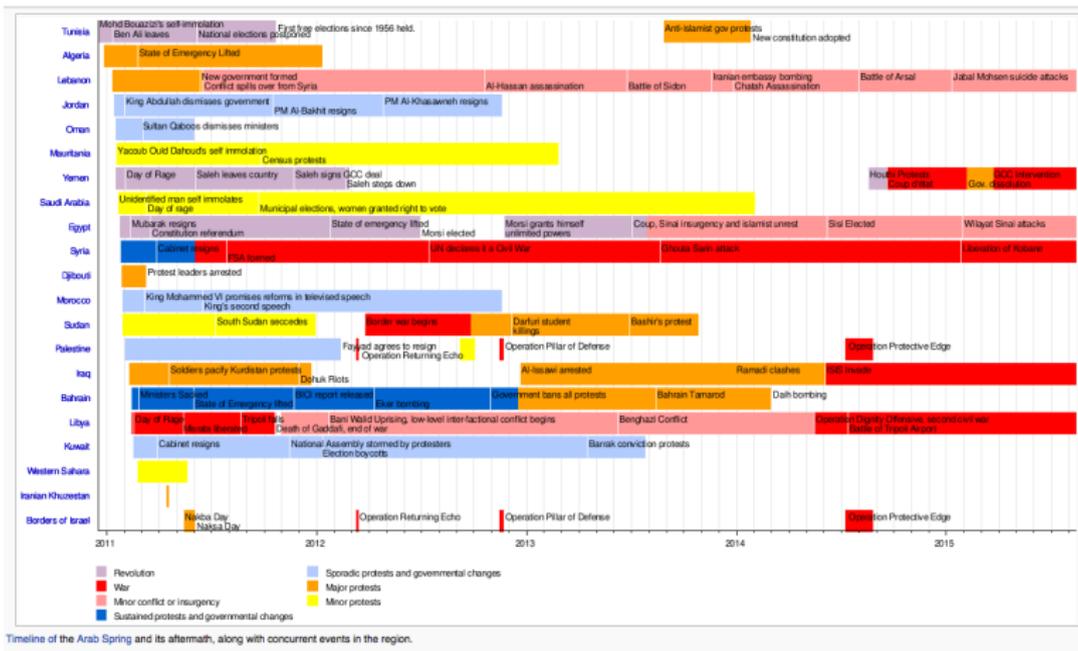


3. Are trigger models simply a cognitive illusion?

- ▶ Human experts *assert* they are basing predictions on trigger sequences but it may simply be an artifact of the dominance of episodic associative memory (Kahneman)
- ▶ To date, statistical studies have not found that detailed event-based models provide a predictive advantage over structural models at the 6 to 24 month horizon
 - ▶ Event data can *substitute* for structural data, so it necessarily contains meaningful information. But it doesn't appear to contain *additional* information.
 - ▶ However, this is using traditional aggregated linear time series models: sequence-based methods might do better

Excuse me if you've heard this one already...





Timeline of the Arab Spring and its aftermath, along with concurrent events in the region.

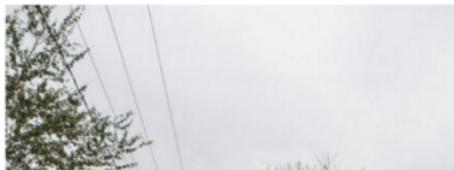
4. How many different categories of sub-state conflict are appropriate?

Probably more than just “non-state”, and ENCoRe researchers are already working at substantially greater levels of detail.

Query: Are ISIS and Central American drug gangs the same phenomenon—internationalized non-state actors controlling significant resources and territory using extreme levels of violence—or different?

Why Cartels Are Killing Mexico's Mayors

By IOAN GRILLO JAN. 15, 2016



Mexico City — ON the morning of Jan. 2, a team of hired killers set off for the home of 33-year-old Gisela Mota, who only hours before had been sworn in as the first female mayor of Temixco, a sleepy spa town an hour from Mexico

Some other queries for a typology of militarized non-state actors

- ▶ Are ISIS and al-Qaeda the same because of their [nominal?] religious orientation? ISIS and Boko Haram? Boko Haram and the Lord's Resistance Army?
- ▶ Are the 31 different militia groups in South Sudan (Reno's count ca. 2014) or the 200+ militias in Syria all the same?
- ▶ Do we now have sufficient experience with PKOs to develop this as a separate category?
- ▶ Do we need a separate theory for “coalitions of the unwilling”: Somalia, DRC, Syria and Afghanistan
- ▶ What happened to the issue of private military contractors (P. W. Singer 2003)?
- ▶ Do we need a separate theory for N-actor war?—COW still attempts to assign “Side A/Side B”

5. How close can we get to Richardson's ideal of having data on conflict at all magnitudes?

- ▶ Due to speed and volume, we need to be able to code this automatically but the sources are diverse.
- ▶ Automatic geolocation still needs work—the best existing open system seems to be one developed by a political scientist (Andrew Halterman) which that developer feels is not a good thing.
- ▶ Can we effectively adjust for differences and biases in media coverage?
- ▶ Can various social media—and keep in mind these are still evolving—be effectively used even when there are active efforts by both state and non-state actors to distort these?
- ▶ How can we use commercial remote sensing data, assuming it is affordable? For example, even annualized coverage is very good at showing abandoned cropland.

6. Can we get very long time-line data based on historical sources?

- ▶ This would partially solve the rare event issue.
- ▶ It also could get around the bias towards European and European-influenced post-colonial conflicts.
- ▶ Conflict during much of recorded history did not involve “Westphalian” nation-states, so [ironically?] it might be more relevant to our current situation than 1815-1989.
- ▶ Secondary sources are already available on Google Books
- ▶ There has been some digitizing of primary historical sources: China might be particularly important here. Some early-modern and medieval sources might be available, though digitizing may be difficult.

7. Make this relevant to the policy community

Or... resolving this presentation back to the opening key:
Francis Bacon in 1620. This is a two-way street.

- ▶ The conflict policy community needs to become as sophisticated in evaluating and integrating quantitative models as their counterparts are in economics and public health.
- ▶ Academic researchers need to focus on questions and methods relevant to policy and not just “interesting.” And/or easy to study. And/or publishable after a five-year lag. And/or accessible only on a publisher’s web site for a \$40 per article fee.
- ▶ Both sides need to work on common standards for evaluating the quantity and robustness of results.
- ▶ Both sides need to understand the vocabularies, incentives and cultures of the other.

Pournelle's Law:

No task is so virtuous that it will not attract idiots

- ▶ Need to establish with the media and policy-makers that not every forecast, especially those made using “Big Data” methods, is scientifically valid
 - ▶ It took the survey research community about thirty to forty years to establish professional credibility, though they have largely succeeded
- ▶ Conveying limitations of the methods against the hyper-confidence of pundits and individuals with secret models
 - ▶ Limitations of the data sources
 - ▶ Limitations of data coding, particularly when automated
 - ▶ Limitations of the model estimation
 - ▶ Limitations of probabilistic forecasts, particularly for rare events, even when the models are correct
- ▶ Getting past media bias towards sensationalistic and frightening stories—“New research: We’re all going to die!! Details after news on EuroVision song contest. . .”—which leads us to....

Learn to work with the media

- ▶ Policy gateway media in English
 - ▶ United States: *New York Times*, *Washington Post*, *Wall Street Journal*
 - ▶ United Kingdom: *The Economist*, *Financial Times*
- ▶ Visualizations and the CNN effect: “Policy-makers don’t read things any more”
 - ▶ This actually provides a bias *towards* quantitative data
- ▶ Learn to accurately and effectively simplify your results
 - ▶ Press releases for research results
 - ▶ Sound bites for media interviews
 - ▶ Policy briefing formats
- ▶ Blogs, web sites and other new social media. Even Twitter! (@PhilipSchrodt)
- ▶ Open access is essential when working with the media and policy communities. They aren’t going to fill out a 3-page purchase order just to see an article from Sage or JStore.

Ethical concerns

- ▶ Thus far, the academic research community has generally had the luxury of no one paying attention to any of our predictions : what if governments start paying attention?
 - ▶ “Policy relevant forecast interval” is around 6 to 24 months
 - ▶ A success story: USAID/FAO famine forecasting model
 - ▶ It is *possible* that our models could become less accurate because crises are being averted: that would be really nice.
- ▶ Difficulties in getting *anyone*, including experts (see Kahneman, Tetlock), to correctly interpret probabilistic forecasts
- ▶ Possible impact on sources
 - ▶ Local collaborators
 - ▶ Journalists (cf. Mexico)
 - ▶ NGOs to the extent we are using their information

Memo to potential funding agencies:

We aren't exactly over-spending on this topic

- ▶ A \$1-million investment in research *might* avoid a \$10-million mistake in policy. Or a \$10-million investment in research might avoid a \$4-trillion mistake in policy.
- ▶ Every half hour of every business day, the amount Google spends on the study of human behavior is roughly the same as the entire political science research budget of the United States National Science Foundation (\$8-million).

Thank you

Email:

`schrodt735@gmail.com`

Slides:

`http://eventdata.parusanalytics.com/presentations.html`

Links to data and software: `http://philipschrodt.org`

Blog: `http://asecondmouse.org`

Papers:

`http://eventdata.parusanalytics.com/papers.html`

Supplementary Slides

Balancing factors which make behavior predictable

- ▶ Individual preferences and expectations, which tend to change very slowly
- ▶ Organizational and bureaucratic rules and norms
- ▶ Constraints of mass mobilization strategies
- ▶ Structural constraints:
the Maldives will not respond to climate-induced sea level rise by building a naval fleet to conquer Singapore.
- ▶ Choices and strategies at Nash equilibrium points
- ▶ Autoregression (more a result than a cause)
- ▶ Network and contagion effects (same)

“History doesn’t repeat itself but it rhymes”

Mark Twain (also occasionally attributed to Friedrich Nietzsche)

Models matter

Arab Spring is an unprecedented product of the new social media

- ▶ Model used by Chinese censors of NSM: King, Peng, Roberts 2012
- ▶ Next likely candidates: Africa

Arab Spring is an example of an instability contagion/diffusion process

- ▶ Eastern Europe 1989-1991, OECD 1968, CSA 1859-1861, Europe 1848, Latin America 1820-1828
- ▶ Next likely candidates: Central Asia

Arab Spring is a black swan

- ▶ There is no point in modeling black swans, you instead build systems robust against them