UCL | **IIPP** | **Institute for Innovation and Public Purpose**

What Role for Artificial Intelligence in Social Conflict Prediction and Resolution?: A Critical View

Josh Entsminger, MA, PhD Candidate

Three Takeaways

1. Applying AI to address symptomatic issues risks entrenching and accelerating the wrong solutions to the wrong problems.

2. Debiasing AI, or improving AI ethics on the technical side, wont remove operational and institutional concerns

3. AI requires more public sector capabilities, not less.

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What AI is, and isn't.

AI overall:

the use of machines to perform tasks that would otherwise require human intelligence

Machine Learning:

How to avoid coding all the rules required to perform tasks, such as optimization and prediction

What AI isn't:

The universal solution

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Peace- and Conflict-Tech

Peace and conflict tech are far broader than AI.

Investigations of potential uses for AI across peace and conflict environments is expanding, for example:

Conflict zone chatbots for data collection

Twitter analysis for resource dropping

Moral speech / Hate-speech detection

Conflict early warning systems

Civil conflict prediction

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Consensus is lacking on the potential for AI to address conflict situations

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Social Conflict in Peru
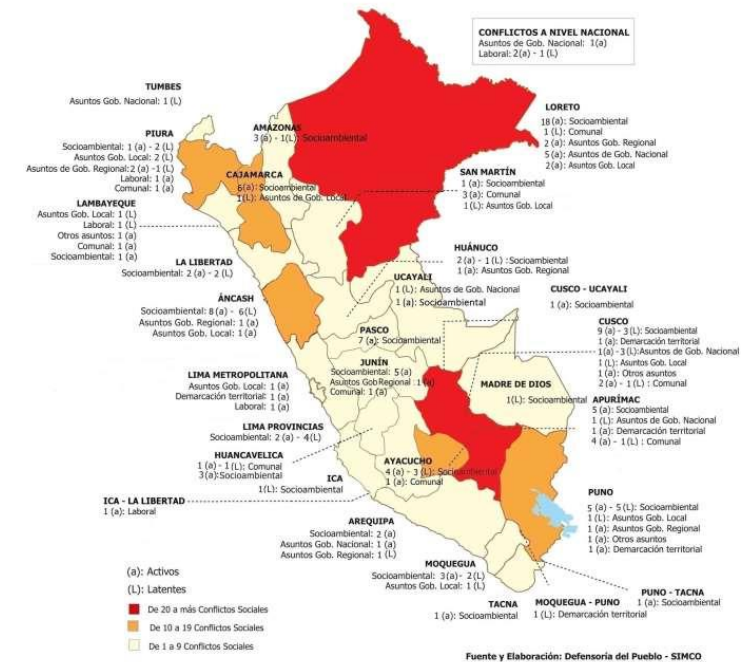
Social Conflict Report. No 207 (May 2021)

140 pages

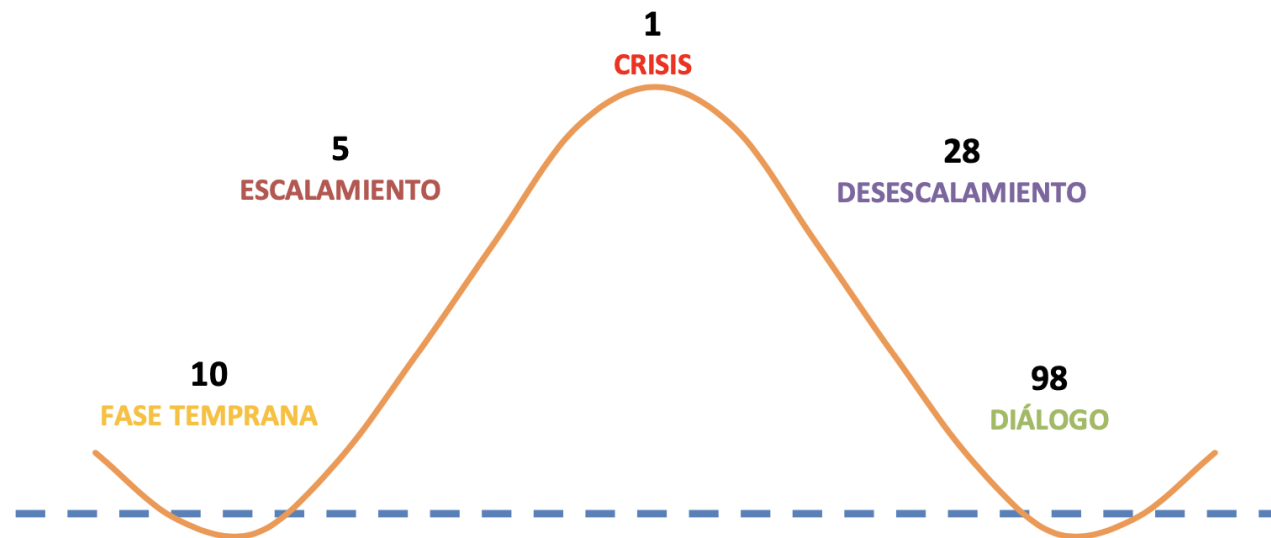191 Conflicts

237 collective protest actions

22 early warnings from Ombudsman's Office

98 cases dealt through dialogue mechanisms

Social Conflict Phase Assessment

Gráfico N° 5
PERÚ: CONFLICTOS ACTIVOS SEGÚN FASE, MAYO 2021
(Número de casos)

1
CRISIS

5
ESCALAMIENTO

28
DESESCALAMIENTO

10
FASE TEMPRANA

98
DIÁLOGO

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Social Conflict Spectrum

Social and economic conflicts, compounded by environmental and climate concerns, yield higher number of enabling variables for conflict escalation and violence

So what can AI do?

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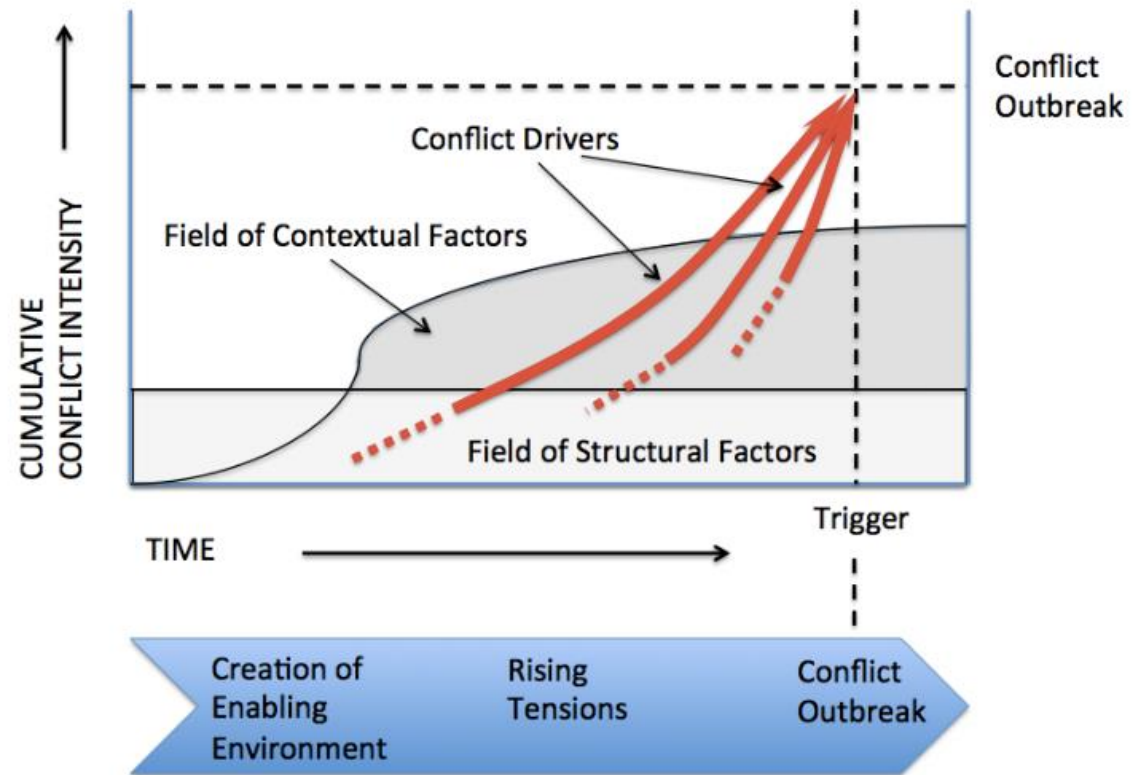
Consider three potential problems

How to increase the amount of structured data from external data sources? (Radio, news, social media, TV, etc)

> e.g. automatic speech recognition; sentiment analysis

How to organize internal information flows within a conflict mediation organization?

> e.g. memo-compiling, automatic ranking

How to predict the onset of conflict and social unrest events (with enough lead to time to change conflict escalation)?

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1 – Organize external information

Automate the process of data extraction from public and private information streams

Or

Mechanism for greater inclusion of external members and stakeholders into data collection process

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Efforts are increasing in conflict and non conflict environments

Ushahidi

OpenStreetMap

UNGP ASR

nature
human behaviour

LETTERS
https://doi.org/10.1038/s41562-018-0353-0

Moralization in social networks and the emergence of violence during protests

Marlon Mooijman [1,6*], Joe Hoover [2,3,6*], Ying Lin[4], Heng Ji[4] and Morteza Dehghani [2,3,5*]

USING MACHINE LEARNING TO ANALYSE RADIO CONTENT IN UGANDA
Opportunities for Sustainable Development and Humanitarian Action

The GDELT Project

Watching Our World Unfold

A Global Database of Society

Supported by Google Jigsaw, the GDELT Project monitors the world's broadcast, print, and web news from nearly every corner of every country in over 100 languages and identifies the people, locations,

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2 – Organize internal information

Simplify and automate internal data aggregation and analysis work

Or

Identify potential internal biases in conflict prioritization and resolution mechanism selection

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Potential is already seen

Peruvian Ombudsman monthly social conflict reports analysis using knowledge management and artificial intelligence tools

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3 – Predict conflicts

Improve prediction of time, location, and intensity of conflict events

Predicting a conflict with a 2 hour lead time vs predicting conflict with a 2 month to 10 year lead time

In order to do what?

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Conflict and Social Unrest Prediction

Mix of efforts across sectors and national-global levels to both track conflicts (building robust data sets) and predict them:

US DOD IARPA Mercury Challenge

Integrated Crisis Early Warning System (ICEWS)

Alan Turing Institute Urban Analytics for Resilient Defence

Carnegie Protest Tracker

CrisisWatch

Lockheed Martin Crisis Early Warning System

Political Instability Task Force

And many, many others.

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Multi-Source Models for Civil Unrest Forecasting*

Gizem Korkmaz, **Jose Cadena**, **Chris J. Kuhlman**, **Achla Marathe**, **Anil Vullikanti**, and **Nare͏ Ramakrishnan**

Abstract

Civil unrest events (protests, strikes, and "occupy" events) range from small, nonviolent protests that address specific issues to events that turn into large-scale riots. Detecting and forecasting these events is of key interest to social scientists and policy makers because they can lead to significant societal and cultural changes. We forecast civil unrest events in six countries in Latin America on a daily basis, from November 2012 through August 2014, using multiple data sources that capture social, political and economic contexts within which civil unrest occurs. The models contain predictors extracted from social media sites (Twitter and blogs) and news sources, in addition to volume of requests to Tor, a widely used anonymity network. Two political event databases and country-specific exchange rates are also used. Our forecasting models are evaluated using a Gold Standard Report (GSR), which is compiled by an independent group of social scientists and subject matter experts. We use logistic regression models with Lasso to select a sparse feature set from our diverse datasets. The experimental results, measured by F1-scores, are in the range 0.68 to 0.95, and demonstrate the efficacy of using a multi-source approach for predicting civil unrest. Case studies illustrate the insights into unrest events that are obtained with our method. The ablation study demonstrates the relative value of data sources for prediction. We find that social media and news are more informative than other data sources, including the political event databases, and enhance the prediction performance. However, social media increases the variation in the performance metrics.
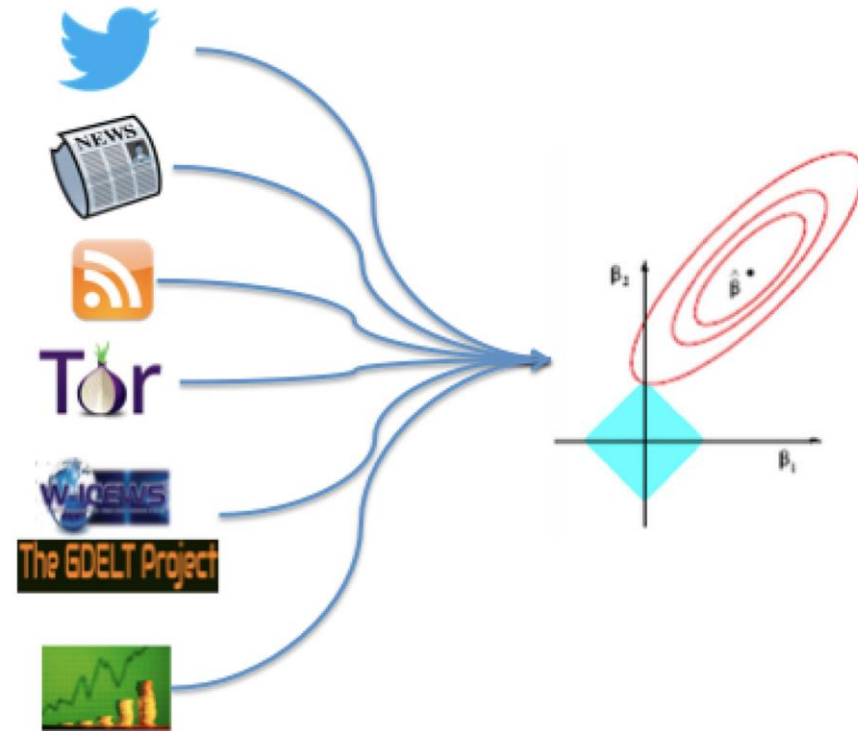
Fig. 1.
Several data sources are used in a Lasso regression to forecast civil unrest events. The data sources include Twitter, news, blogs, Tor (The Onion Router), political event databases (ICEWS and GDELT), and exchange rate.

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So, what should be considered?

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Technical Level

How is an AI solution designed, maintained, and deployed?

Biased data sets and unsuitable algorithm selection can lead to systematically misleading and inappropriate results, high error rates, and harmful consequences.

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Operational Level

How are the results of an AI solution discussed, evaluated, made transparent, used, and critiqued?

Automating memo drafting and information aggregation tasks can lead to mistaken selected input, leading to mistaken prioritization of information or event types in analysis stage. Task automation can lead to channelling and institutional freezing, creating difficulties for changing approach later, as well as unintended consequences in organisational culture.

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Institutional concerns

How does the design and use of an AI system impact the perceived social function or mission of the organization or institution using that solution?

Decreasing information parity among negotiating actors can lead to greater mistrust in authorities. Increased reliance on conflict prediction leads to resource allocation and operational investment at what stage of social conflict

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Problem Selection

The most important question in any AI project, and extremely so in conflict contexts:

What is the real problem to be addressed?

Is the problem to which AI is applied a real problem or a symptomatic problem?

If AI is applied to the symptomatic problem, what unintended consequences could emerge?

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Beware the Solutionist trap

Two sides to the trap:

The application of a solution to a problem without fully understanding the problem or reducing problem complexity in order to fit the solution.

and

The invention of problems to which solutions can be applied.

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Ethics, Power, and Legal Concerns

The fourth wave of AI ethics has a clear message:

Ethical improvement to a system without understanding power relations among actors involved will fail to address core problems.

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Capability concerns

Public sector dynamic capabilities are required to manage a solution if externally sourced, or to build and develop an internal solution.

The interpretation, evaluation, critical assessment, and deployment of AI solutions within public functions or public sector operations demands greater capabilities.

Hard to offset prior lack of capabilities without high long-term operational costs or issues.

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Expanding a National AI for Good Strategy for Peru

Single programs may need broader coherence for training and public sector capacity development

Investment into key talent and AI dev streams can be aligned with broader stakeholder alignment on the key problems AI can help address earlier in conflict spectrum to avoid conflict escalation

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Where ends are agreed, the only questions left are those of means, and these are not political but technical, that is to say, capable of being settled by experts or machines.

-Isaiah Berlin, Two Concepts of Liberty