Improvise Application: KEDS

Visual Analysis of Geopolitical Events from Newswire Reports

The Kansas Event Data System (KEDS) uses automated coding of English-language news reports to generate political event data. In collaboration with Dr. Phil Schrodt, the director of the 10-year old KEDS project in the Department of Political Science at the University of Kansas, we are using the Improvise visualization environment to develop an interactive visual tool for exploring and analyzing KEDS data sets.

The broad question addressed by the tool is this: What geographic and temporal patterns of political activity can be discovered in international events reported by major news services? The tool targets intelligence analysts, policy advisors, journalists, and social scientists who focus on political relationships between international actors. Such actors may include the governmental, military, diplomatic, health, and educational institutions of individual states as well as international organizations, resistance movements, and terrorist groups.

The tool displays three tables that summarize events over time for each event code (type of event), source actor, and target actor. A red-to-blue color gradient indicates the cooperative or conflictual political weight of events, as determined by their codes; "neutral" events appear in beige tones. A zoomable world map colors states according to the average weight of their events. A scrollable, wrapping calendar colors dates similarly, indicating the overall number and severity of events on each day.

Analysts can drill-down into events by selecting arbitrary subsets of codes, sources, targets, and dates, then cross-filter on those subsets in different views. As a result, analysts can ask specific questions about relationships between groups of actors, kinds of actions, and patterns of events over time. Asking sequences of questions involves drilling "sideways" by selecting items, toggling filters, and panning and zooming in the map and calendar.

The screen capture below shows an example of this process. The analyst indicates interest in attitudes toward the United States around 9/11 by selecting USA and USAGOV as event targets. Filtering the calendar, map, and other views reveals a sharp increase in events in the several weeks after 9/11, suggesting worldwide political concern for the United States.

Benefit: The KEDS tool provides intelligence analysts, policy advisors, journalists, and social scientists with a highly interactive visual interface for probing geographic and temporal patterns in political relationships between groups of international actors.

Collaborator:
• University of Kansas, Department of Political Science

Funded by: Department of Homeland Security

Early Development
Lab Prototype
Commercial Product
Jan 2008

For more information, contact:
Alan MacEachren, (814) 865-7491, maceachren@psu.edu
www.geovista.psu.edu/NEVAC