



Social Science Automation, Inc. offers a wide range of text analysis products and services. Using unstructured data, the Profiler Plus Text Coding Platform performs sophisticated analysis in combination with industry-specific coding schemes. Working together, these systems help to answer your most challenging questions.

Behavior and Events from News (BEN)

The **B**ehavior and **E**vents from **N**ews coding scheme is one such coding scheme used with Profiler Plus to generate “event data” from an English language news feed (typically BBC Monitoring). In development since January 2008, BEN has been used successfully for an Air Force Research Laboratory (AFRL) project and a Defense Advanced Research Projects Agency (DARPA) project.

Event Data

The BEN coding scheme is an enhancement to the Conflict and Mediation Event Observations (CAMEO) coding scheme developed by the Kansas Event Data System Project in conjunction with their research on third-party mediation. CAMEO organizes “event data” into the following four general categories:

- Verbal Cooperation
(ex: appeals for humanitarian aid)
- Material Cooperation
(ex: delivery of humanitarian aid)
- Verbal Conflict
(ex: threats and criticism)
- Material Conflict
(ex: protests and arrests)

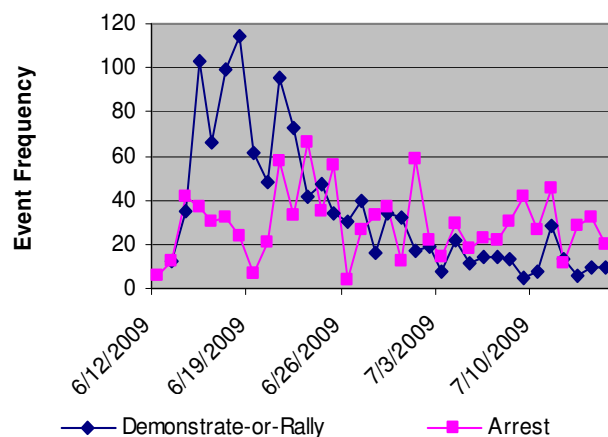
The Question BEN Answers

The primary question that BEN seeks to answer is “**who did what to whom where and when?**” BEN uses a grammatical connections component to tie all verb subjects and objects to CAMEO events. This component works with both simple and complex sentence structures.

BEN can help you with your most challenging issues:

- Trend analysis – look at event data over time to spot trends in specific geographies or specific events across geographies
- Decision making assistance – BEN can help your organization make better decisions based on analysis of event data
- Prediction and planning support - Spot trends in build up of tension over time to assist in prediction of potential unrest and allow for government response planning

Iranian Elections 2009



A trend analysis of all BBC Monitoring articles from Iran surrounding the disputed election of 2009 was created using BEN. The analysis shows demonstrations peaking soon after the disputed election results and arrests outnumbering demonstrations thereafter.

Who, Whom, and Where

The BEN coding scheme relies on Social Science Automation's SALT component (Specific actors, Actors, Locations and Targets) to provide both entity and location identification. In addition to specific lexicons for countries, cities, regions, terrorist groups, armed groups, terrorist companies, terrorist leaders, coalition party leaders and ethnic minorities, this component also uses capitalization, syntactic rules and limited semantic information (committees are composed of people) to identify entities.

The location identification component assigns locations by sentence, allowing multiple locations to be correctly coded from documents relevant to more than one country. When no location is explicitly referenced within a sentence, the component assigns the location coded in the closest previous sentence to that sentence. For example, in the two sentences: "***Riots erupted in Myanmar. Many people were injured.***" the location component assigns Myanmar as the location of the first sentence. Then, because there is no explicit reference found in the second sentence, the location component assigns Myanmar as the location of this sentence also. The component would continue to assign Myanmar as the location of every subsequent sentence until another location was coded.

Flexible Output Format Offers Ease of Use

The BEN output data is delivered in a flexible and universal XML format. This offers you the most accessibility to the data as you analyze your results. BEN currently generates XML output of this general form:

```
<record>
  <document-id>foobar.txt</document-id>
  <datetime>2009/07/27</datetime>
  <sentence-number>12</sentence-number>
  <text>demanding</text>
  <rule>demand</rule>
  <event-code>100</event-code>
  <event-group>VerbalConflict</event-group>
  <sentence>It adds that the protesters are demanding the revoking of a 1952 old fashioned law
and its replacement with a new law that regulates their profession .</sentence>
  <subject>protesters</subject>
  <object />
  <location>Egypt</location>
  <location-fips>EG</location-fips>
  <part-of-speech>verb</part-of-speech>
</record>
```

About Social Science Automation

Since 1997, Social Science Automation, Inc. has provided state-of-the-art automated text analysis products and services to business, government, and academic clients. Founded by Dr. Michael Young and Dr. Margaret Hermann, the company identified a need within government organizations for automated text analysis services and expert consultation. Since then, Social Science Automation, Inc. has diversified its offerings to include solutions for media analysis, campaign and election media evaluation, athlete achievement, profiling, and forensic psycholinguistics.