



CONTENT ANALYSIS IN POLITICAL SCIENCE

»» Words Matter in Political Science

Politics, political theory and political change are often expressed through the spoken and written word and political science is influenced by many other disciplines including: economics, history, law, sociology, philosophy and psychology.

Political analysis involves researching news articles, magazines, advertisements, speeches, press releases, social media and much more. The volume of available text has exploded in the digital age. This explosion is partly due to the rapid move to store and distribute documents in electronic text databases. The easiest way to acquire text in this form is from online databases. Lexis/Nexis, Factiva, and ProQuest, for example, facilitate batch downloads of text files. More sources are being added all the time; The U.S. House of Representatives recently launched a new Web site dedicated to the distribution of all current House Resolutions under study. Text data stored on Web sites can also be extracted with automated scraping methods that make acquiring data easier (Jackman, 2006). The most difficult to acquire are texts found in archives or yet-to-be scanned books. But preparing these texts for analysis can be straightforward—using a high-quality scanner and OCR software, it is possible to convert archival materials into computer-readable texts (see the data collection process in Eggers and Hainmueller, 2009).

»» Why use a Content Analysis Software?

It is extremely time consuming, expensive and in many cases impossible to read each and every document related to one's research. Text analytics software makes it possible to systematically import and analyze very large volumes of text documents without spending months of fastidious reading or vast sums on hiring coders.

The software gives researchers the flexibility of manual computer assisted, or fully automated coding of documents. It can dramatically assist you in your research by automatically identifying keywords, key phrases, themes, topics, images, speakers and sentiment.



As stated in Grimmer & Stewart, 2013 *"Automated content analysis methods have demonstrated performance across a variety of substantive problems and rather than replace humans, computers amplify human abilities"* and that *"the most productive line of inquiry is to identify the best way to use both human and automated methods for analyzing text."*

We agree and this is why Provalis Research's solution offers the possibility of combining the computer assisted manual coding of QDA Miner and the automated or semi-automated text analysis techniques of WordStat.

Analyze textual data from many sources

Political scientists have applied automated content analysis across a diverse set of texts. This includes archives of media data (Young & Soroka, 2011); floor speeches in legislatures from across the world (Quinn et al., 2010); presidential, legislator, and party statements (Grimmer, 2010); proposed legislation and bills (Adler & Wilkerson, 2011); committee hearings (Jones, Wilkerson, & Baumgartner, 2009); treaties (Spirling, 2012); newspapers and Twitter feeds (Conway, Kenski, & Wang, 2015); political science papers; and political text from many other sources.



»» Perform Content Analysis with QDA Miner and WordStat

Exploring large amounts of text data and assigning text to categories is the most common use of text analysis software in political science.

For example, WordStat's text mining abilities such as *topic modeling* and *clustering* can automatically identify relevant topics and compare topic frequencies between politicians, political parties or discourse. When we compared topics mentioned during the 2008 US presidential campaign, we saw instantly that "health care" was more frequently mentioned by Democratic candidates than Republican candidates. A *crosstab* and *correspondence analysis* plot can be used to compare words, phrases or topics between different candidates and identify those that are more frequently mentioned by a specific politician or group of politicians by the similarity of their speeches.

The content analysis capabilities of WordStat are also frequently used by political researchers. *Dictionary methods* use the relative frequency of key words and key phrases to measure the presence of each category in texts. One may also apply *supervised machine learning* methods to replicate the familiar manual coding task, but with a computer. First, human coders are used to classify a subset of documents into a predetermined categorization scheme. Then, this training set is used to train the computer, which then classifies the remaining documents.

Build and Apply Content Analysis Dictionaries

Using WordStat, you can build dictionaries with key words, key phrases and proximity rules to focus on specific subjects or areas of interest. For example, in analyzing different speeches from different candidates in an election cycle you could build a dictionary related to certain policy discussions you wished to focus on such as foreign policy, economics, domestic policy, the environment, immigration, national security, etc.

One can not only measure what politicians or other actors are talking about but also the tone of their discourse by using or building a sentiment analysis dictionary. In our white paper on **Sentiment Analysis with WordStat** we discuss the pros and cons of different methods of sentiment analysis and how it has been used by others in different fields.

Transforming text into quantitative data

IMPORTING DATA: You can import data directly from Email, web survey platforms, Facebook, Twitter, Reddit, reference management tools, RSS feeds, MS Word, RTF, HTML, PDF, EXCEL, MS Access, CSV, SPSS, the document conversion wizard allows you to import from databases such as Lexis/Nexis.

CODING AND ANNOTATING: In QDA Miner, documents can be coded and annotated manually or with several computers assistance tools, such as Boolean text searches, query-by-example searches, section retrieval, and several other techniques. The unique cluster retrieval tool is a very efficient way of coding similar tweets, short comments, or responses to open-ended questions. The availability of all these tools gives you the option of performing pure qualitative coding by systematically reading and manually tagging the text or using computer assistance to speed up the process.

WORDS AND PHRASE FREQUENCIES: WordStat can process more than 300,000 words per second producing frequency counts of significant words, extract common phrases and produce visual displays such as bar charts, bubble charts, word clouds and more.

AUTOMATICALLY IDENTIFY TOPICS: WordStat's text mining abilities can quickly identify relevant topics across different speakers or texts to explore what politicians or political discourse may have in common or what sets them apart.

COMPARATIVE ANALYSIS: Political scientists commonly place certain texts or text subjects into categories and compare them with other documents, the frequency they occur or what actor is or is not espousing them. For example, one group may be proposing an isolationist policy while another is proposing a more interventionist one. One party may be pushing free trade while another is advocating higher tariffs. The software's ability to compare frequencies of words, phrases or content categories across different sources or find changes over time can help you identify the evolution of these positions overall and for specific actors. »»

VISUAL PRESENTATION: You can create presentation quality visual representations with a variety of charts or maps such as bar charts, line charts, word clouds, dendrograms, 2D or 3D multidimensional scaling plots, heatmaps, network graphs, and correspondence plots.

GEOCODING AND MAPPING: Both QDA Miner and WordStat can extract geographic information such as longitude and latitude, postal codes, IP addresses, place names and use that information to plot maps of interactive data points, heatmaps and distribution maps. These

tools can help you present your analysis by showing how a particular political concept built over time from one region to another or how strong voting blocks in different areas of a state or regions influenced the outcome of a specific election or waned over time.

Explore what the software can do for you. You can try out all the capabilities of QDA Miner and WordStat by downloading a 30-day trial version from our website provalisresearch.com.

» Sample of Studies in Political Science using QDA Miner and WordStat

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