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Digital Resources to Support Quantitative Scholarship in Presidential Studies

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Digital Resources to Support Quantitative Scholarship in Presidential Studies

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Abstract: With the increased in digitized content available, new presidential research avails itself to more quantitative analysis. More digitized resources from government agencies, private and university repositories allow presidential scholars access to a broader universe of content. Data for analysis includes digitized documents, oral histories and datasets. Presidential scholars and researchers have the option to collaborate with programmers, computer scientists and graduate students to become acquainted with current repositories and experiment with new technologies such as text mining and the R programming language.

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INTRODUCTION

We are the cusp of a revolution in Presidential research. This revolution is fueled by digitization and enabled by innovative forms of quantitative scholarship utilizing digital resources and datasets that have recently become available. This article will look at signs and seeds of the revolution, and will outline ways in which presidential scholars can enrich their research programs with new digital resources and datasets, techniques such as text-mining, programming languages such as R, and tools like Tableau. While quantitative research came to presidency studies some time ago, the resources currently available create the opportunity to expand significantly what we know about the presidency. Thorough assessment of what is now available to scholars is a key step toward realizing the full potential of this quantitative revolution.

Broadly speaking, scholars have approached study of the presidency by focusing on different aspects of the office, and sometimes on the occupants of the office. Barber (1972) offered a set of classificatory divisions of presidential *character* types: active and passive, positive and negative. He placed past American presidents within that framework according to their background experiences, behavior and personality. Skowronek (1993) offered a different kind of classificatory structure as he sought to depict presidential regimes within cycles of institutional order. In his conceptualization, presidents move simultaneously within “political” and “secular” time as their terms are shaped by world/national events and by their relationship to preceding presidential regimes. Fisher (1995) has contributed volumes of careful analysis of legislative history and decisional law to help us understand how the presidency stands in relation to Congress and the courts. Others have followed his lead in tracing the development of constitutional (and extra-constitutional) doctrine, through case law, on the office of the presidency. Interbranch relations are another orientation utilized productively by scholars of the presidency. Works proceeding from the perspectives just enumerated have utilized diverse

methodologies, including qualitative, descriptive and statistical analysis. In recent years, however, the field has been invigorated by a turn on the part of many presidency scholars to quantitative methodology. In 1981, leading presidential studies scholar George Edwards called for the greater use of quantitative methods in studying the presidency, citing the skepticism with which researchers outside the field viewed the enterprise of presidency studies. Edwards suggested that methodological rigor was needed, which would include definition and measurement of concepts, the rigorous specification and testing of propositions, the employment of appropriate quantitative methods, and the use of empirical theory to develop hypotheses and explain findings (1981:146). Edwards believed that employing these methodological innovations would confer legitimacy on the field, which would lead in turn to greater respect for presidential studies from the wider scholarly community.

Of course, the need to establish the legitimacy of scholarship through the use of quantitative methods reflects an academic dispute over what constitutes knowledge and how that knowledge is produced. If only statistically analyzed empirical data counts, then what is the status of case law interpretation, constitutional analysis, or theorizations about presidential regime succession (see, for example, Skowronek 1993). Certainly, the value of different forms of scholarship is in part a function of the specific question being investigated. The discussion of the source and extent of executive privilege, to take one example, must proceed from analysis of Article II and court decisions (Berger 1974; Rozell 2010; Prakash 1999). For his part, Edwards notes that those other kinds of scholarship do in fact contribute to the body of knowledge about the presidency (1981:146), and most scholars would agree with him.

Nonetheless, presidency scholars have taken Edwards' suggestion to heart, and the 36 years following his article have seen a proliferation of a wide range of uses for quantitative methodology in studying the presidency. Recent work appearing in *Political Research Quarterly*, *Presidential Studies*

Quarterly and the *Oxford Handbook on the American Presidency* includes experimental research, survey research, study of approval ratings and analysis of executive orders.

In short, the quantitative study of the presidency has gained momentum in the years following Edwards' call for its greater use, and the data on which this research is focused are diverse. It would aid the quantitative turn in presidency studies if sources of data could be systematically organized and presented, along with indications of how to access it. The next section of this article will detail the varieties of quantitative research that have developed in the years following Edwards' call for a quantitative turn in presidency studies.

PART II: DIRECTIONS IN QUANTITATIVE RESEARCH

Textual analysis. Various forms of textual analysis have been used to study the presidency by political scientists and scholars in other disciplines including computer science and engineering. Thomas Smits (2017), in "Bridging the gap between quantitative and qualitative research in digital newspaper archives," references a particular type of study that draws on – and reflects – the quantitative shift. He examines "Content analysis of 150 years of British periodicals," a study led by Professor Nello Christianini of the University of Bristol. This research is based on six categories and the 'use frequency' of n-grams¹: the number of times a (combination of) word(s) appears in relation to all the words of the corpus in a specific year. By applying n-grams, researchers are able to measure the relative importance of certain words, or combinations of words. (Smits, 2). The n-gram methods allow researchers to identify historic events from the newspapers, such as "coronations, the election of a new pope, and outbreaks of several contagious diseases." (Smits, 2). Presidential "events" that could be identified

¹ The Johns Hopkins Guide to Digital Media - N- gram - http://search.credoreference.com/content/entry/jhupjohns/n_gram/0

include: x, y, z. As Smits states, other researchers, including Presidential scholars and political science faculty can transition to a new format of researching to see “how quantitative analysis can be used to substantiate existing theories”. (Smits, 4). This can help bridge the gap between qualitative and quantitative research and will help political scientists to “distinguish ‘traditional’ methods from their ‘digital’ counterparts.” Traditional research methods are needed, to define questions, contextualize a corpus and the results of data driven research. (Smits, 4). The google n-gram viewer can be viewed at <https://books.google.com/ngrams>. Any search terms can be entered for analysis. King (1993) called for scholars to identify presidential event, rather than taking presidents as a unit of analysis.

Textual analysis, text mining and text searching are research techniques that can be conducted in Excel, R or displayed in Tableau. There are a lot of scholars mining presidential speech. One recent example includes John T. Woolley and Gerhard Peters’ (2017) study, “The Contemporary Presidency: Do Presidential Memo Orders Substitute for Executive Orders? New Data.” These authors use a text-search strategy for reliably identifying, among published presidential documents, orders not titled “executive order” or “proclamation.” Given the inconsistent use of terms and titles in these documents, they refer to them as “memo orders” and identify over 1,600 memo orders in the archives of the American Presidency Project (APP) from 1977 to 2012.

In "Does it Matter What They Said? A Text Mining Analysis of the State of the Union Addresses of USA Presidents," Steven Crockett and Carl Lee depict a case study using text mining technique to analyze the patterns of the president's State of the Union address in USA. Again this is one example of many. The speeches analyzed include the recent four USA presidents, Bush (1989-1992), Clinton (1993 - 2000), G.W. Bush (2001-2008), and Obama (2009-2011). Using two different text mining techniques, the authors identify six clusters from the 23 speeches using one technique and obtain seven topics based on the other technique. Interestingly, this is a conference proceeding from an Institute of Electrical and

Electronics Engineers conference. This type of quantitative research demonstrates a crossover from Presidential Studies to computer science, mathematics and engineering.

Since, more content is now available in bulk, scholars that want to use textual analysis can benefit from collections such as the Library of Congress's Chronicling America Newspaper Archive. This archive offers optical character recognition (OCR) downloads, which is becoming more common. OCR is a process that allows printed or written characters to be recognized optically and converted into machine-readable code that can be input into a computer². With the Chronicling America collection, researchers can download text for textual analysis to look at word patterns for a body of work, in newspapers to analyze presidential administrations, proclamations or speeches.

Academic library subscriptions to databases such as JSTOR now have built in tools for textual analysis. [JSTOR's Text Analyzer](#) allows researchers to "deposit" a document into the Text Analyzer to match key search terms with JSTOR's content. This is an efficient method to match the researcher's terms within JSTOR's Thesaurus.

The following table samples current Presidential Studies Scholarship and provides keywords related to that scholarship. Search results were obtained from Google Scholar and limited to include results from 2012 to the present. Keywords included a combination of American presidency, presidential research, text mining and data visualization.

<<INSERT TABLE 1 HERE>>

² Ocr. (2010). In S. M. H. Collin (Ed.), *Dictionary of computing* (6th ed.). London, UK: Bloomsbury. Retrieved from <http://ezproxy.shu.edu/login?url=http://search.credoreference.com/content/entry/acbcomp/ocr/0?institutionId=441>

The eight articles in the table above show cross disciplinary representation in Presidential Studies, Engineer and Computer Science journals and conference proceedings.

Access and discoverability. It is important for presidential documents to be discoverable through search engines, Google Scholar and academic library search portals. To yield the best results, current search terminology should include a combination of the terms digital library, digital repository, digital collections, data archive, dataset or finding aid.

The Presidential Documents Archive (http://www.presidency.ucsb.edu/index_docs.php) at the American Presidency Project contains 128,879 documents as of January 9, 2018. These range from messages and papers of the Presidents, daily and weekly compilations of Presidential Documents to Executive Orders and proclamations. The breakdown of the 5 largest categories in this collection are displayed in the graph below.

<<INSERT GRAPH 1>>

Digital Presidential content is also generated by Freedom of Information Act (FOIA) requests, which provide public access to government information in an electronic format³. There are FOIA Electronic Reading Rooms at the Central Intelligence Agency, the Defense Intelligence Agency and the National Archives, plus the Department of State, and they contain presidency-related documents for researchers. According to NARA's *Guidance on Presidential Records*, new Presidential Libraries (from Reagan to Obama), holdings are governed by the Presidential Records Act (PRA) of 1978. This means

³ H.R. 3802 (104th): Electronic Freedom of Information Act Amendments of 1996. Retrieved from: <https://www.govtrack.us/congress/bills/104/hr3802>.

that presidential records are exempt from public release for five years after a Presidential administration ends. During those five years, archivists process and prepare materials for researchers to use. At the end of five years, all Presidential records become subject to Freedom of Information Act (FOIA) requests. These requests must be made in writing and cite the Freedom of Information Act and then be submitted to the appropriate Library. Libraries governed by the PRA process FOIA requests from the public. The responses to these requests (provided they are granted) are publicly available to requestors and to anyone interested in conducting research on the subjects covered by FOIA requests. Instructions to submit FOIA requests through NARA and the Presidential Libraries is located here:

<https://www.archives.gov/foia/foia-guide#how>.

Smith and Stern state that as more presidential records are born digital, challenges arise for NARA and presidential libraries (107). Starting with President Obama, NARA changed their policies to state that Obama's presidential records will be available in digital format to make the records as accessible as quickly as possible.⁴ Additionally, Presidential archivists have long lists of what projects need to be digitized, and some of the smaller libraries may send materials out to be digitized. Therefore, with planning, researchers may be able to request digitization of materials to coincide with their research projects. This possibility is open to individual scholars, masters or doctoral students, and students completing class assignments.

NARA's Guidance on Presidential Records reports that "as of September 30, 2016, approximately 238,000 cubic feet, or 88% of the nearly than 270,000 cubic feet of textual and non-textual holdings in the Presidential Libraries have been processed. The percentage of materials processed at the individual Libraries tend to follow a chronological trend. The older Libraries (Hoover, Roosevelt, and Truman) each have processed more than 90% of their holdings, while the middle

⁴ <https://www.archives.gov/press/press-releases/2017/nr17-54>

Libraries have all processed more than half their holdings for public access. The most recent Libraries (from Reagan forward) have processed less than 50% of their holdings. To find content, researchers can check Presidential Library websites, the Electronic FOIA Reading Rooms or the [Online Public Access](#) (OPA) portal.

The Presidential Papers are overseen by the Library of Congress's Manuscript Division. The microfilm editions of the papers of George Washington, Thomas Jefferson, James Madison and Abraham Lincoln (almost 370,000 images) were digitized by the Library of Congress between 1998 and 2005. (Ruth, 20). Work to digitize the rest of the presidential microfilm collections started in 2010, resulting in 3 million more images that will be put online, including 462,600 images from the Theodore Roosevelt Papers. According to Janice E. Ruth, assistant chief to the Library's Manuscript Division, collections are being migrated to a new web platform which allows better access on mobile devices and across collections. The Papers of Franklin Pierce, James K. Polk and Ulysses S. Grant are going online in 2017, plus a new version of the Abraham Lincoln papers. The smaller collections of Millard Fillmore and James Buchanan will also be available.

<<INSERT GRAPH 2>>

PART III: PRESIDENTIAL LIBRARIES AND OTHER COLLECTIONS

Presidential libraries. This section focus on presidential papers and libraries. These collections include digitized documents, datasets and oral history transcripts. The most recognized resources for Presidential Research include Presidential Libraries, (the 14 Presidential Libraries managed by NARA), the Miller Center at the University of Virginia and the American Presidency Project hosted at the University of California, Santa Barbara. Newer sources include the Fred W. Smith National Library for

the Study of George Washington at Mount Vernon, and “Connecting Presidential Collections,” a new Digital Humanities Project from University of Virginia’s Miller Center and IMLS. There are dozens of other repositories hosted at university libraries, historical societies and government agencies. A listing of these resources can be viewed at the Seton Hall University Libraries: library.shu.edu/presresearch.

Digitization is part of the workflow at NARA, APP and other repositories, so more material is processed and available for researchers regularly. Crockett and Lee report that more than 80% of data are in text form. Additional data can assist presidential studies scholars to generate more quantitatively based scholarship. With more discoverable data and documents, presidential content is easier for scholars to locate in the digital research environment. This can allow scholars, archivists and technologists to have conversations about digitization priorities and collaborations with more quantitative outputs. These outputs are also seen in campus wide Digital Humanities efforts. Digital Humanities is an umbrella term to produce academic scholarship with technical outputs. Cornell University describes it as “the integration of digital tools and techniques in scholarly work is currently an area of fruitful collaboration and exploration in the humanities, social sciences.” By forging relationships with graduate assistants and computer programmers, presidential scholars and other political science researchers may become more aware of n-gram viewers, text mining techniques and the R programming language to take their research into the next phase of the revolution.

This potential for communication and coordination among users creates a very interesting opportunity for scholars to *shape* the content of archives and libraries rather than simply using what already exists. The content can then change to accommodate users’ needs, and those modifications will make the collections more user-friendly for future scholars.

Digital Presidential resources are utilized by scholars and graduate students, many of whom may be collaborating from different locations and will be able to access materials simultaneously. The

availability in these U.S. Presidential Resources can be integrated into the classroom, into online courses, to enhance student and faculty digital literacy with oral history, images and new technologies that complement new scholarship in presidential research.

Finding records for specific administrations. Presidential resources are often spread among many physical and digital locations. For example, the John Adams Library is located at the Boston Public Library. Over 1,200 volumes are digitized and accessible through the Internet Archive and [Librarything](#). The Miller Center at the University of Virginia is another excellent source for Presidential Research. It has comprehensive resources about the Presidency, including speeches and oral histories, and secret white house tapes. At the Miller Center, John Adam’s profile is available at <https://millercenter.org/president/adams> and includes biographical essays. Additionally, the [Connecting Presidential Collections](#) (CPC) is a free centralized site for searching across presidential collections. This collection is also housed at the Miller Center and funded by the Institute of Museum and Library Services (IMLS). According to the CPC’s website, “Presidential materials are spread far and wide (geographically, technologically, and otherwise). This means researchers and learners must consult a large number and variety of resources if they are to have any hope of conducting comprehensive research, with no "map" to guide their way.” Therefore, by using CPC, researchers would be guided to additional John Adam’s sources, including the Massachusetts Historical Society and the [Founders Online Archive](#) at the National Archives.

James Buchanan’s Papers are at the American Presidency Project, the Archives at Dickinson College (his alma mater), but using the Biographical Directory of the United States Congress refers to more than 30 additional research libraries where additional Buchanan documents can be found. Because so much material is now available digitally, a search for “James Buchanan papers” or James Buchanan finding aid, digital library, digital repository, digital collections or repository will help researchers find

their way to those additional digitized documents. At the Library of Congress, the [Presidents of the United States: Resource Guides](#) will direct researchers to government and non-government resources. It should be noted that researchers should also check [whitehouse.gov](#), [senate.gov](#) and [house.gov](#) for Congressional records related to a particular president. The Office of the Historian (U.S. Department of State) contains historical documents including Foreign Relations of the United States (FRUS) and Travels of US Presidents. The *Foreign Relations of the United States* (FRUS) series provides the official documentary historical record of major U.S. foreign policy decisions and significant diplomatic activity. This collection is managed by State Department historians.

Anniversaries and events often drive publicity of Presidential collections. On the 100th Anniversary of JFK's birth, digital collections were publicized and most were ready for text mining and digital humanities projects. Drury and Herbeck write that Presidential Libraries and museums serve not simply to recreate presidential history but also "educate and enshrine a president's favorable legacy on tens of thousands of visitors a year."

Growing digital collections can have the same impact on visitors and researchers (176). Academic researchers have access to more digitized documents, broadcasts, presidential debates, state of the union addresses and photographs each year. Additionally, the search for usable data from these types of sources will help political science researchers with quantitative research for analytics.

The digital collections at the John F. Kennedy Presidential Library and Museum are ready to be used for data mining or digital humanities projects. They range from Kennedy's Personal Papers to Department of Defense Cuban Missile Crisis Briefing Materials. There are over 40 digital collections and researchers can search) to search by documents (by folder), moving images, museum artifacts, oral histories, photographs, and sound recordings. Ulyatt stated that with resources being digitized regularly, they can be accessed by a wider audience online including students, scholars and academics (119).

Content ranges from the Berlin Crisis to Vietnam to the Cuban missile crisis. Civil rights content includes Kennedy's assistance with easing tensions of James Meredith to enroll in the University of Mississippi in 1962 (121).

Through its website, the JFK Presidential library provides access to 150 terabytes of information, including approximately 593,500 paper documents, 22,642 photographs, 1,436 sound recordings, and 121 moving images, according to James Roth, library deputy director. It is the most extensive digitization effort in the presidential library system.

In *Digitizing Camelot*, Kelly Francis, assistant digital archivist for textual collections, says that when the museum receives an order for digitized copies of a document, the archive staff will scan the entire folder containing the information. "Once the folder is done and we can publish it to the website, then it's done and available to everyone," Francis said.

Publishing information in its entirety is a guiding principle at the library. The website notes that providing "file level" access to data has the advantage of making digital archiving more efficient for archivists—who make the information discoverable through metadata. An added benefit: Providing access to unabridged folders also mirrors the research room experience.

In 2006 Hackman wrote about the role of Presidential Museums and Libraries and their role in the legacy of a President. Museum exhibits might not explore issues that would negatively portray a president. Some digital collections and digital libraries that are attached to Presidential libraries (NARA administered or otherwise) might not yield proper "historical context and balanced interpretation" about a president's legacy because the site is in part a monument. However, scholars can drill down to find the primary documents or data that resides in those documents.

Since 2010, the [Fred W. Smith National Library for the Study of George Washington](#) has been available to researchers and contains a wide and rich array of resources covering George Washington,

Mount Vernon, and Colonial America. Digital Collections from the Washington Library include original manuscripts, letterpress copies, and retained copies or handwritten drafts from Washington's secretaries.

Other presidential content. Digital content available to presidential scholars includes audio recordings (phone conversations), historical records and papers. Over time, more of this material will be digitized. According to the Richard Nixon Presidential Library's Guide to Holdings, the Nixon Library's collection comprises 46+ million pages of textual Presidential and non-Presidential materials. The Audiovisual Materials section contains 350,000 photographs, 4,000 videotapes, over 4,469 official White House sound recordings, and 2.2 million feet of motion picture film.

Online editions of the Public Papers of the Presidents are created with collaboration of the Office of Presidential Libraries and the Office of the Federal Register. Online versions are available for Presidents Ronald Reagan, George H. Bush, Bill Clinton, George W. Bush and Barack Obama. In 1957, the Office of the Federal Register (OFR) began publishing this series as an official publication of United States Presidents' public writings, addresses, and remarks (1 CFR 10). The series provides an historical reference covering the administrations of Presidents Hoover, Truman, Eisenhower, Kennedy, Johnson, Nixon, Ford, Carter, Reagan, Bush, and Clinton. (The papers of President Franklin Roosevelt were published privately before the commencement of the official Public Papers series).

Repositories, such as APP and NARA, inventory their growing list of "digital objects," i.e., this means single scanned documents. Many offer these documents in folders, to replicate the research room process. According to John T. Woolley, founder of the American Presidency Project (APP), their repository has 128,000 docs. From these documents, 105,721 (83%) can be associated with a specific President. Says Woolley, "BUT not all of those are "presidential" in the sense that they are not officially attributable to the President (speaking, messaging, issuing statements). Instead, they are from other

Executive Office of the President sources, such as the Office of the Press Secretary or the Office of Management and Budget. There are a wide range of sources for these documents including especially MAPP, PPPUS, WCPD, DCPD, Fed Register, and CFR.” (L. DeLuca, personal communication, August 1, 2017). The collection will include tweets in the future.

APP also plans to complete its set of Statements of Administration Policy starting with 1985. They will add White House "pool reports" starting with Obama. They already have all executive orders starting with Truman and in the future they will gradually add text of all Proclamations for the same period. Executive orders from further back in time will also be filled in.

The remaining 20,981 documents are almost all associated with Presidential selection (mostly candidate statements and speeches but also including: party platforms; debate transcripts). According to Woolley, they initially wanted to provide the main published collections online for the benefit of students (MAPP, PPPUS). As the project has progressed they have almost completed that conversion. They want to stay current and include related documentation. “For contemporary users, we want to be up-to-date and as complete as we can be. For historical users, we want to be complete as well, but locating those materials can be a much slower process,” says Woolley.

Requests from presidential scholars do indeed play a role in shaping the APP say Woolley. “They have more impact when they come with supporting funding (e.g., Samuel Kernell's SAPs project). Mostly scholars want dumps of documents for their analysis without really thinking about contributing to the collection in any way--or, even more remarkably, thinking hard about gaps and holes we may have. The interest of presidency scholars has been very important in the way the documents have been grouped into subsets. And, occasionally somebody will find a document or set of documents we do not yet have and send us relevant digital images. “Once again, the ability of scholars to shape the collection they are using is a salutary development.

<<INSERT GRAPH 3 HERE>>

<<INSERT GRAPH 4 HERE>>

Data-centric sources. Presidential scholars are likely to be familiar with Inter-university Consortium for Political and Social Research (ICPSR). Part of the Institute for Social Research at the University of Michigan, ICPSR hosts data archive of greater than 250,000 files of research in the social and behavioral sciences, with many thematic collections related to political science and public opinion. A search for “presidential power” returns 341 datasets including these examples:

- [United States Presidential Inaugural Addresses, 1789-2009 \(ICPSR 24303\)](#)
- [United States Presidential Televised Debates of the 20th Century \(ICPSR 24302\)](#)
- [Presidential Uses of Force During the Cold War: Aggregation, Truncation, and Temporal Dynamics \(ICPSR 1254\)](#)

These datasets can easily searched by variables. While some data on ICPSR is freely available to the public, other data is for subscribing institutions. At time of publication, there were 861 [Member-funded](#) (861) datasets and 490 [Federally-funded \(public\)](#) examples of relevant datasets for presidential scholars. ICPSR contains The Social Science Variables Database (SSVD), which allows researchers to combine 4 million variables to focus their research.

This interface is excellent for quantitative research. You can search by study, variable and/ or publication at <https://www.icpsr.umich.edu/icpsrweb/ICPSR/studies>. For example a search by publication for "Presidential Studies Quarterly" shows 40 publications that can be used for research and can be exported to Google Scholar. Interestingly, there is the option to search by publication under studies. A search for "Presidential Studies Quarterly" under studies has 140 results. These studies

reference publications in PSQ. Even if you are not a subscriber to ICPSR, you can see the variables that were used in a study if you wanted assistance in setting up your own study.

In a recent symposium-in-print, Edwards (2017:149) suggests that quantitative studies utilize public opinion polls at the Roper Center, now housed at Cornell University (<https://ropercenter.cornell.edu/>). A subscription-based service, the Roper Center has an archive of 20,000 datasets generated from public opinion surveys as far back as the 1930s. Elections and politics are well represented in these data. Roper's Presidential Approval Tool can compare up to 3 presidents to look at approval including highs and lows and a graph builder based on Roper Center for Public Opinion Data. Similarly, [The Odum Institute for Research in Social Science](#) at the University of North Carolina – Chapel Hill hosts and manages the University of North Carolina Dataverse. The Dataverse Project is an open-source repository to preserve, publish and analyze data. There are 2400 datasets about presidential power, specific administrations and presidential success in Supreme Court nominations available at: <https://dataverse.unc.edu/>.

Audio-visual materials. Oral histories are an important component of presidential research. Interviews can be converted into transcripts for viewing in museum exhibits, and some libraries offer taped recordings of interviews and speeches. Transcripts available online are searchable as text. Greenwell describes that “even the best of transcripts cannot convey all of the subtleties and nuances of the interview, listening to a taped interview may provide researchers with benefits they had not expected. Even slight changes in a person’s tone or timing can result in significant changes in interpretation (1997:602).” He adds that “researchers have always considered the oral history collections of the presidential libraries valuable resources.” The

Columbia Center for Oral History (CCOH) was founded in 1948 by historian and journalist Allan Nevins. With over 10,000 interviews, this is one of the largest oral history collections in the world.

The Miller Center houses Presidential Speeches, Interviews with the Administration, and secret White House tapes. Their Presidential Recordings Program (PRP) features annotated transcripts of the Kennedy, Johnson and Nixon White House tapes. The Presidential Recordings Digital Edition (PRDE), the online portal for annotated transcripts of the White House tapes.

CONCLUSION

This assessment of trends and resources will hopefully facilitate discussion among presidency researchers and enhance their awareness of new digital initiatives that are available to them and their students. It is hoped that the suggestions offered here for how to use these resources will also prove helpful and will enhance quantitative scholarship by connecting scholars with publicly available data. In particular, digital humanities projects involving text mining will be facilitated by the techniques and research sources covered here. Quantitative presidential scholarship will also benefit from research outside the discipline of political science that utilizes Presidential Libraries – works from history, data science and the archival world, to take a few examples. Trans-disciplinary research will lead to greater understanding of the interplay between automation, born digital documents (since x administration), institutional priorities at NARA and other important organizations such as the Presidency Project, and the Miller Center.

The goal here is to inform presidential scholars about currently digitized presidential resources, including documents, images and data. With grants, digital initiatives, and simply more people looking, new content becomes available daily. Uncovering hidden collections can help to promote the growth of

quantitative research. In addition to familiarity with newer repositories and understanding a bit about the digitization process, political science researchers can help drive priorities of presidential collections, based on FOIA requests or collaborating with archivists.

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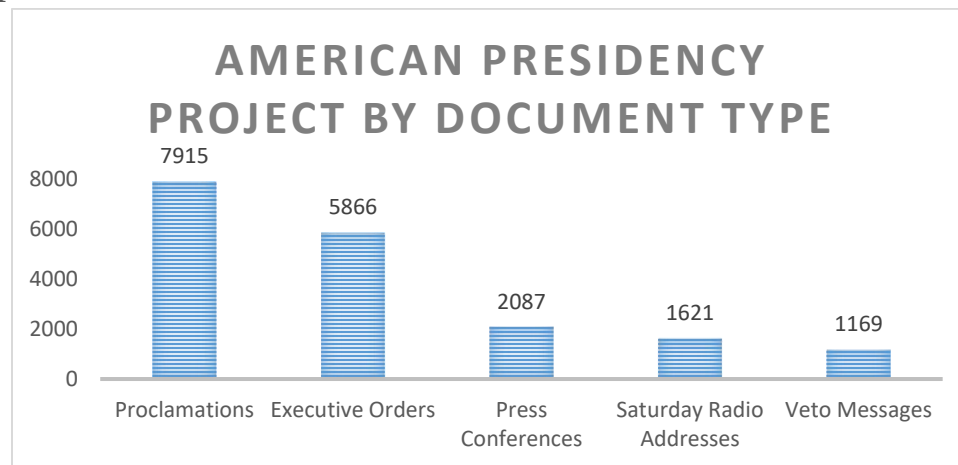
TABLES, WORD CLOUDS AND GRAPHS

TABLE 1

Article	Keywords
Woolley, J. T., & Peters, G. 2017. The Contemporary Presidency: Do Presidential Memo Orders Substitute for Executive Orders? New Data. <i>Presidential Studies Quarterly</i> , 47(2), 378-393. doi:10.1111/psq.12374.	Text-search, presidential documents, memo orders, American Presidency Project, archives, Federal Register
Crockett, Steven and Carl Lee. 2012. "Does it Matter What They Said? A Text Mining Analysis of the State of the Union Addresses of USA Presidents," <i>2012 13th ACIS International Conference on Software Engineering, Artificial Intelligence, Networking and Parallel/Distributed Computing</i> , Kyoto, 77-82.	Data, text mining, U.S. Presidents, State of the Union address, clustering
Mohr, John W., Wagner-Pacifi, Robin., Breiger, Ronald L., & Bogdanov, Petco. 2013. Graphing the grammar of motives in National Security Strategies: Cultural interpretation, automated text analysis and the drama of global politics. <i>Poetics</i> , 41(Topic Models and the Cultural Sciences), 670-700. doi:10.1016/j.poetic.2013.08.003.	National security, graphic methods, graph grammars, Culture, world politics
Bihl, Trevor J., & Kenneth W. Bauer Jr. 2017. Statistical Analysis of High-Level Features from State of the Union Addresses. <i>International Journal of Information Systems & Social Change</i> , 2: 50-73. https://dl.acm.org/citation.cfm?id=3050083.3050086 (October 16, 2017).	Classification analysis, clustering, logistic regression, presidency, speech analysis, state of the union, text mining, SUA, knowledge discovery, readability, classification, logistic regression
Schonhardt-Bailey, Cheryl., Yager, Edward., & Lahlou, Saadi. 2012. Yes, Ronald Reagan's Rhetoric Was Unique-But Statistically, How Unique? <i>Presidential Studies Quarterly</i> , 42(3), 482-513. doi:10.1111/j.1741-5705.2012.03990.	Textual analysis, Ronald Reagan, Rhetoric, Civil Religion, State of the Union, Woodrow Wilson, Barack Obama
Farrell, Lance. n.d.. Text mining strikes gold in political discourse., from https://sciencenode.org/feature/text-mining-strikes-gold-in-political-discourse.php (November 9, 2017).	Columbia University, digital humanities, data mining, discourse streams, state of the union, text mining

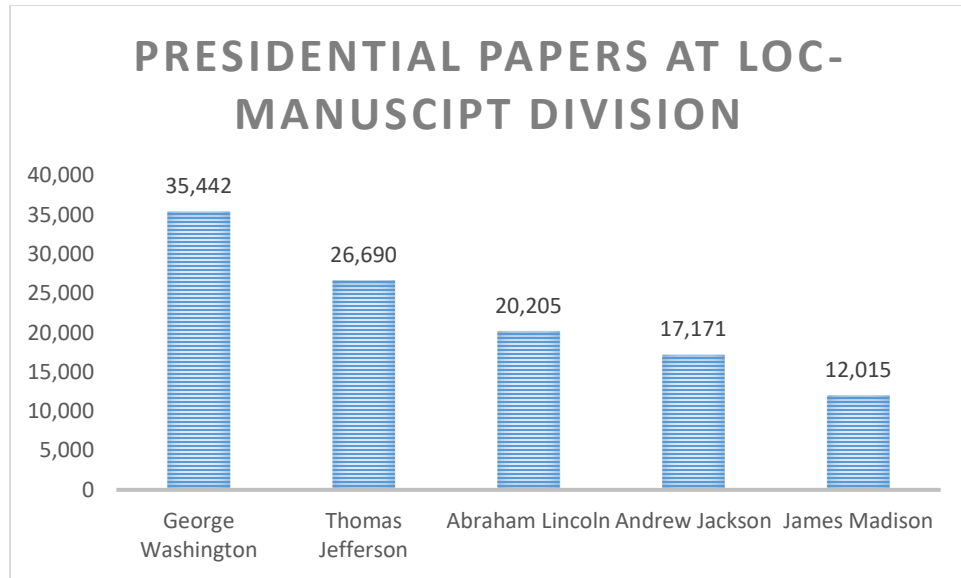
Gollnick, Bert. 2017. Text Mining: US Inauguration Speeches of All Presidents on Smartdatawithr.com, January 22. http://smartdatawithr.com/en/text-mining-us-inauguration-speeches-of-all-presidents/ (November 9, 2017).	text mining, R Data-Mining, US president, inauguration speeches, sentiment
Joynt, Martha K. 2003. The Contemporary Presidency: Communications Operations in the White House of President George W. Bush: Making News on His Terms. <i>Presidential Studies Quarterly</i> 2: 366.	White House, press, presidential communications, publicity

GRAPH 1



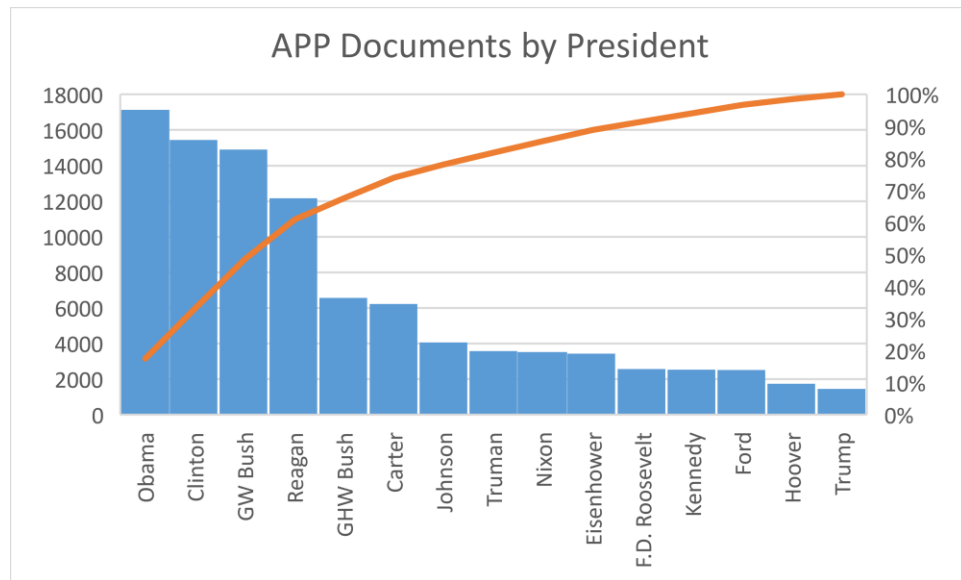
Source: American Presidency Project, 2017

GRAPH 2



Source: Library of Congress

GRAPH 3



GRAPH 4

