

The Majestic Documents: A Forensic Linguistic Report

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1. Introduction

1.1. *What Are the Majestic Documents?*

The term “Majestic documents” refers generally to thousands of pages of purportedly classified government documents that prove the existence of a Top Secret group of scientists and military personnel—Majestic 12—formed in 1947 under President Harry Truman, and charged with investigating crashed extraterrestrial spacecraft and their occupants. Majestic 12 personnel allegedly included a number of noteworthy political, scientific, and military figures, including: Rear Admiral Roscoe Hillenkoetter, the first CIA Director; Dr. Vannevar Bush, wartime chair of the Office of Scientific Research; James Forrestal, Secretary of the Navy and first Secretary of Defense; General Nathan Twining, head of Air Materiel Command at Wright-Patterson Air Force Base and later Chairman of Joint Chiefs of Staff; and Dr. Donald Menzel, an astronomer at Harvard University. More specifically, the Majestic documents refer to a series allegedly classified documents leaked from 1981 to the present day by unidentified sources concerning Majestic 12 and the United States government’s knowledge of intelligent extraterrestrials and their technology.¹ The documents date from 1942 to 1999.

Due to the explosive nature of their content, the Majestic documents are considered by many to be the core evidence for a genuine extraterrestrial reality and alien visitation of planet Earth in the 20th century. United States government personnel have denied their authenticity, primarily on an opinion rendered by AFOSI, the U.S. Air Force counter-intelligence office. The AFOSI report focused on certain features of the documents it considered historically anachronous and other historical inconsistencies (see Section 1.2 below). The charges of the AFOSI have been coherently rebutted, and so both validation and debunking efforts has resulted in a stalemate.

This impasse notwithstanding, other documents discovered before and after the alleged leaking of the Majestic documents appear to validate the existence of the group Majestic-12. In 1985, a document referring to a joint National Security Council (NSC) MJ-12 “Special Studies Project” group was discovered by Jaime Shandera in the National Archives.² This document, a 1954 memorandum from Robert Cutler to General Nathan Twining, became known by UFO researchers as the Cutler-Twining memo. The Cutler-Twining memo shared certain stylistic traits with a 1953 memorandum between Cutler and Twining discovered in 1981 among General Twining’s papers at the Library of Congress. Canadian documents discovered in 1978, three years before the first alleged leak of the first Majestic documents, note the existence of a highly-classified UFO study group operating within the Pentagon’s

¹ See the chronological listing of the reception of the Majestic documents reconstructed by Dr. Robert Wood and Ryan Wood, <http://www.majesticdocuments.com/sources.php>, accessed June 5, 2007. A table summary of the circumstances of the source and provenance of each document can be found in Dr. Robert Wood, “Mounting Evidence for the Authenticity of MJ-12 Documents,” paper presented at the International MUFON Symposium, Irvine, CA; July 21, 2001, 5. Accessed at http://209.132.68.98/pdf/rmwood_mufon2001.pdf on June 5, 2007.

² Shandera was one of the early recipients of the Majestic documents.

U.S. Research and Development Board, and headed by Dr. Vannevar Bush. Although the name of the group is not given, these Canadian documents appear to support the existence of Majestic 12. While this may be the case, proof for the existence of Majestic 12 does not logically translate into authentication for the Majestic Documents themselves or their content on other points.

1.2. *Previous Research on the Majestic Documents*

The Majestic documents have undergone thorough forensic authentication with respect to non-linguistic issues and methods.³ The primary researchers who have put considerable effort into authenticating the documents are Stanton Friedman⁴ and the father-son team of Dr. Robert and Ryan Wood.⁵ These researchers have tested the documents in the following ways:⁶

1. Physical dating of the ink, pencil and paper
2. Dating by matching the reproductive process (typography) of the typewriter, printer, copy machine, or mimeographic machine
3. Dating by use of language of the period
4. Watermarks and chemical composition of paper
5. Comparison of handwriting
6. Comparison with known events of record
7. Comparison with known styles for government memoranda and correspondence
8. Comparison with known or expected security procedures
9. Logic of content
10. Records of provenance
11. Eyewitness testimony of individuals mentioned in documents

The Wood team was able to solicit the expertise of specialists in their authentication effort. For comparison of typewriter impressions, watermarks, James Black served as their primary expert. Mr. Black is a Fellow of the Questioned Documents Section of the American Academy of Forensic Sciences and a former chairman of the Questioned Documents Subcommittee of the American Society of Testing and Materials.⁷ For examination of paper, ink, and watermarks, the Wood team sought the services of the Speckin Forensic Laboratories. The Speckin website states that the laboratory is:

³ See Wood, "Mounting Evidence," 6-10

⁴ Stanton Friedman's website biography reads in part: "Stanton Friedman received the BSc and MSc degrees in physics from the University of Chicago in 1955 and 1956. He was employed for 14 years as a nuclear physicist for such companies as GE, GM, Westinghouse, TRW Systems, Aerojet General Nucleonics, and McDonnell Douglas on such advanced, classified, eventually cancelled, projects as nuclear aircraft, fission and fusion rockets, and nuclear powerplants for space." Accessed at <http://www.v-j-enterprises.com/sfbio.html> on June 5, 2007.

⁵ Dr. Robert Wood holds a B.S. in Aeronautical Engineering from the University of Colorado and a Ph.D. in Physics from Cornell University. He spent 43 years in research and development with Douglas Aircraft and McDonnell Douglas before retiring in 1993. Ryan Wood holds a B.S. in Mathematics and Computer Science from California Polytechnic State University at San Luis Obispo. He has held various positions in marketing, consulting, and sales for Intel Corporation, Digital Equipment, and Toshiba.

⁶ See Stanton T. Friedman, *Top Secret / Majic* (New York: Marlowe and Company, 1996); idem; "Final Report on Operation Majestic Twelve," unpublished paper, 1990; Wood, "Mounting Evidence"; idem., "Validating the New Majestic Documents," paper presented at the International MUFON Symposium, St. Louis, MO; July 15, 2000; Robert M. and Ryan Wood, "Another Look at Majestic," *MUFON UFO Journal* No. 371, March 1999.

⁷ Wood, "Mounting Evidence," 6-7.

. . . [A]n International forensic firm specializing in consulting with plaintiff and defense lawyers involving issues concerning: Forgery, Sequencing of Entries, Alterations, Additions, Rewritings, Ink Dating and Paper, Typewriting, Facsimiles, Photocopies, Fingerprints, Narcotic and Street Drug Analysis, Analytical and Forensic Chemistry, DNA, Firearms and Toolmark Examination, Shoe and Tire Prints, Handwriting, Crime Scene Reconstruction Criminal Forensic Matters and Computer Forensics.⁸

A variety of concerns have been raised in the course of forensic authentication procedures and publication of these efforts, such as apparent anachronistic statements, possible typewriter impression inconsistencies, grammatical errors, departures from standard styles, printing flaws, and virtually identical signatures on different documents. Examples of each of these concerns have been catalogued and answered by the Wood team.⁹

To date such criticisms of the Majestic Documents have failed to deliver conclusive evidence of forgery. However, Stanton Friedman has successfully detected several fakes among the cache. The forgeries were photocopies of authentic documents with certain content and vocabulary changes designed to alter the content toward a discussion of Majestic 12. These forgeries are explained and illustrated on Friedman's website.¹⁰ The presence of these forgeries do raise the spectre that all the Majestic documents may be contrived, especially since an estimated seventy percent of the documents are photocopies. However, it is important to note that no other fakes have been conclusively detected.

Notwithstanding the examinations noted above, the Majestic documents have never been subjected to scientific linguistic analysis to determine the validity of their authorship. While the Wood team and Mr. Friedman mention in several of the cited publications and websites that the Majestic documents have also undergone "linguistic" testing, the same publications and online sources offer no evidence of such testing. The Wood team and Mr. Friedman fail to define what they mean by terms like "linguistic testing" or "linguistic analysis," and offer no proof that genuine forensic linguistic analysis of the type conducted for this paper ever took place as part of their authentication efforts. Additionally, while the Speckin Forensic Laboratories website mentions that the company does work in "computer forensics" (see above), the Woods offer no evidence in their writings or website that Speckin ever tested the Majestic documents in this way.

Only Stanton Friedman makes any attempt to describe an effort to have the Majestic documents tested linguistically and, as his description makes clear, no modern forensic computational linguistic work was actually done:

At the suggestion of attorney Bob Bletchman, I had obtained 27 examples of Hillenkoetter's various writings from the Truman Library. Dr. Wescott reviewed these and the EBD [Eisenhower Briefing Document] and stated in an April 7, 1988, letter to Bob . . . 'In my opinion there is no compelling reason to regard any of these communications as fraudulent or to believe that any of them were written by anyone other than Hillenkoetter himself. This statement holds for the controversial presidential briefing memorandum of November 18, 1952, as well as for the letters, both official and personal.'¹¹

⁸ Accessed at <http://www.4n6.com> on June 5, 2007.

⁹ Wood, "Mounting Evidence," 9-10.

¹⁰ See http://www.v-j-enterprises.com/mj12_update3.html#bottom accessed on June 6, 2007.

¹¹ See http://www.v-j-enterprises.com/mj12_update2.html#bottom accessed June 6, 2007.

The above account contains no information on what Dr. Wescott (now deceased) did with the documents given to him. Several considerations suggest that Dr. Wescott likely did little more than look at the documents, rather than conducting actual tests. First, the development of the field of computational linguistics and the use of computers for natural language processing of necessity followed the development of computers and processing power. In 1988 these research methods were known, but not widely available. Second, Dr. Wescott's areas of expertise included neither authorship attribution research or computer forensic linguistics. Rather, the focus of Dr. Wescott's work was anthropological linguistics.¹² Despite his distinguished academic year, a search of linguistics databases produces no evidence that Dr. Wescott ever did any work in these areas. This is no doubt because his teaching career ended at roughly the time these fields were beginning to blossom.

These observations are significant, since training as a linguist, especially one that earned his Ph.D. in 1948, does not guarantee one has any knowledge of any given subfield within one's discipline. For example, what would a podiatrist know about heart surgery? A cardiologist about neuro-medicine? A defense attorney about patent law? A microbiologist about frogs? The answer to all would be very little—enough to perhaps converse with other non-specialists, but not nearly enough to be considered competent by specialists. The point is that a doctoral degree in linguistics hardly guarantees and sort of expertise in a specific sub-discipline of linguistics, especially one that dovetailed with computer science. Dr. Wescott had perhaps used a computer by 1988, but his academic record gives no indication that he was either proficient in their use or involved in applying computers to language processing and authorship attribution. Consequently, he would be disqualified from having anything meaningful to contribute to any discussion of computational methods of authorship attribution.

It should also be noted that Dr. Wescott's assessment lacks conviction. At best his amateur opinion in this sub-discipline of linguistics offers the conclusion that he has no basis to draw an actual conclusion. As UFO researcher Paul Kimball points out, Wescott himself made it clear that he had given no conclusive answer or endorsement to authenticity. In a letter to the *International UFO Reporter*, Wescott wrote: "I have no strong conviction favoring either rather polarized position in the matter . . . I wrote that I thought its [the EBD] fraudulence [was] unproved . . . I could equally well have maintained that its authenticity is unproved . . . inconclusiveness seems to me to be of its essence."¹³

This is all that is offered in terms of linguistic testing and evidence for the Majestic documents. The thoroughness and care with which Friedman and the Woods have addressed other forensic issues is sorely lacking with respect to modern methods of linguistic analysis, specifically designed to determine (or rule out the possibility) of authorship of documents. The absence of demonstrable testing data in any form of publication puts the burden of proof on these and other researchers to prove they have indeed subjected the Majestic documents to linguistic analysis.

1.3. *Nature and Objectives of the Current Study*

This study fills the existing research void created by the absence of strictly linguistic approaches to the problem of authenticating the Majestic documents. The goal of the research presented in this study was to determine whether the Majestic documents that

¹² See http://www.utc.edu/Research/SunTrustChair/chair_previous_wescott_index.html accessed June 6, 2007.

¹³ *International UFO Reporter*, vol. 13, no. 4, July / August 1988, p. 19. Cited by Paul Kimball, "MJ-12 – The Wescott 'Analysis' Red Herring," *The Other Side of the Truth*, July 14, 2005, accessed at http://redstarfilms.blogspot.com/2005_07_01_archive.html on June 6, 2007.

carry a signature were indeed written by the people to whom authorship is attributed. Toward achieving this goal, the study employed state-of-the-art computational linguistic methods of authorship attribution. In some cases, these techniques have been pioneered by Dr. Carol Chaski, a recognized leader in this type of linguistic research.¹⁴ These methods have been employed, validated, and approved numerous times in various courts of law. It is the opinion of the authors that the utilization of these methods is the most reliable and testable means of authenticating or refuting the authorship attribution of those Majestic documents that bear the name of an author.

The focus of this study, as noted, is validation or falsification of the authorship attributions of the Majestic documents. As such, the scientific methods employed for this study cannot be used to validate the content of any of the Majestic documents whose authorship proves genuine. The computational methods of the research cannot determine the truth of written content. It can only determine whether or not that content was written by the attributed author. Refutation of attributed authorship would prove a document is a forgery, and so the content of that document would therefore be considered spurious. The converse is not true, however. Authentication of authorship means only that the document was written by the person to whom it is attributed. This suggests that the content is genuine, but does not actually prove that to be the case. Additionally, computational methods of authorship attribution lend nothing to the necessary enterprise of interpreting written content. The study should be characterized as preliminary because further testing that could be applied to the documents is currently cost prohibitive. As funding becomes available, other methods will be applied for redundancy and validation of the results presented in this paper.

The remainder of this paper details the application of computational linguistic methods to determine the authenticity of authorship attributions of the Majestic documents. The paper is divided into the following sections:

- Description of the Majestic documents included and excluded in the study
- Overview of the linguistic testing methods used in the study
- Explanation and interpretation of the test results
- Overview of how these same methods have held up in courts of law
- Suggestions for future linguistic research of the Majestic documents

2. Authorship Attribution Study of the Majestic Documents

2.1. Source of the Majestic Documents for Testing

The Majestic documents tested were obtained online via www.majesticdocuments.com, the website repository for the Majestic documents maintained by Dr. Robert Wood and his son Ryan Wood. The Woods have had the Majestic documents posted free to the public for several years as part of their efforts to expose the public to this material.

2.2. Selection of the Majestic Documents for Testing

For authorship attribution testing to be undertaken, the document under question must have been attributed to some author. As such, *only those documents among the Majestic documents that specifically bear the name of a signatory author were considered for testing.* Famous Majestic documents such as the Eisenhower Briefing, for example, were not tested

¹⁴ Dr. Chaski holds an M.A. and Ph.D. in linguistics from Brown University. Computational linguistics is one of her specialties, and her work in this field has been recognized and validated through peer review, numerous legal cases, and scientific grant funding. See <http://www.linguisticevidence.org/FLCV.htm>.

because there is no claim in the briefing as to the author of the briefing. Researchers and amateurs refer to the Eisenhower Briefing as though its authorship by Dwight D. Eisenhower was self-evident. The document itself makes clear that Eisenhower was not the author, as the very first page informs the reader that the briefing was “prepared for President-elect Dwight D. Eisenhower.” Another famous Majestic document not bearing an author name and therefore excluded from testing is the SOM1-01 manual for Extraterrestrial Entities and Technology, Recovery and Disposal. Additionally, the Einstein-Oppenheimer document could not be tested because it represents overlapping authorship.

Another criterion was applied to the list of documents that passed the initial litmus test of bearing an author name. The testing methods employed require that a document be more substantial than a couple sentences, and so length was an issue. The need for length notwithstanding, a document of this brevity that met the third criteria below would have been included in testing due to content importance. There was no instance, however, of a document of insufficient length being important enough in terms of content to still test that document. An example of a document too brief for testing would be the “Malcolm Grow to Lt. Gen. Twining — Aero Medical Laboratory” (20 September 1947), which is a single sentence.

The third criteria was pragmatic, and driven in part by cost considerations. Of those documents that bore a signature and were of sufficient length (more than a sentence or two), preference for testing was given to those documents that contained specific reference to the existence of extraterrestrial biological entities (EBEs) or claims of an extraterrestrial origin for salvaged wreckage. Any document that appeared important for validating the extraterrestrial hypothesis (ETH) as an explanation to UFOs was included in the testing. For example, a document that mentioned the retrieval or transport of wreckage from Roswell or some other event famous for its connection to the UFO question may have been deferred for testing if there was nothing in the document that specifically pointed to the ETH or an EBE. The mere mention of “Roswell” or “Wright Patterson” would not be sufficient to mandate testing. In brief, there has to be something compelling about the document for it to merit testing.

Fourth, some of the Majestic documents could not be tested because they contained no prose text. An example is the document entitled, “Majestic Twelve Project, Purpose and Table of Contents (Summer, 1952?).” This document is simply a table of contents. Even if a document of this nature had an attributed author, it could not be tested by linguistic means.

Lastly, documents that were clearly secondhand in nature were not chosen for testing. An example is the lengthy Bowen manuscript. While the Wood team labels this document as “high interest,” it is not written by a person who would be “in the know” with respect to the high levels of security needed to be a primary witness to either evidence for the ETH and EBEs or to discussions within Majestic Twelve. While it may be true that, as the Wood team states, “Bowen was personally connected to many top people,”¹⁵ it defies coherence to argue, on one hand, that Majestic-12 and its activities were so secret that evidence of its existence only became available in the 1980s, and on the other, to suggest that members of Majestic-12 were sharing the nation’s most highly classified secrets with an outsider like Mr. Bowen. The secondary nature of the Bowen manuscript is acknowledged by the Wood team, as they note its status as “a well written snapshot of the public history of flying saucers from 1947 to 1954.”¹⁶ The operative word in this comment is “public,” which reveals its peripheral importance in terms of content.

¹⁵ See <http://www.majesticdocuments.com/documents/1948-1959.php> (bottom of the page); accessed June 9, 2007.

¹⁶ Ibid.

2.3. Preparation of the Majestic Documents for Testing

The Majestic documents tested by Dr. Chaski were typed and proofed by Dr. Michael S. Heiser, Amy C. Ward, and Joe E. ("Free") Ward, of Roswell, NM. Only the prose content of the documents was typed out for testing, along with salutations and benedictions. Date formulas, stamps, handwritten annotations, military file numbers, memoranda headings, etc. were not typed out since authorship attribution testing concerns the testing of written prose content for author-particular stylistics. Misspellings and ungrammatical errors in usage were preserved in the prose content reproduced for testing. Documents were saved as text (.txt) files.

2.4. The Majestic Documents Chosen for Authorial Verification

The following spreadsheet chart (Chart 1) contains the seventeen documents allegedly written by nine authors that were tested by Dr. Chaski. Unknown to Dr. Chaski, I included several documents previously demonstrated as fraudulent by Stanton Friedman (see Section 2.7). I did so to test Dr. Chaski's analysis independently. The identity of these fraudulent documents is revealed below under the test results.

Chart 1

Unverified				
Author #	Claimed Author	Document Name	Words	Characters
1.1	Franklin D Roosevelt	FDR to Army Chief of Staff G. Marshall 1942	199	977
1.2	Franklin D Roosevelt	FDR memo on Non-Terrest Science 1944	396	1876
2.1	Harry S Truman	Truman to Nathan Twining July 9 1947	220	1135
2.2	Harry S Truman	Truman to Sec Forrestal 1947	81	439
3.1	Dwight D Eisenhower	Eisenhower to Nathan Twining July 9 1947	221	1142
3.2	Dwight D Eisenhower	Eisenhower to Dir of Central Intelligence 1953	400	2139
4.2	John F Kennedy	Kennedy to Director of CIA	151	713
5.1	George C. Marshall	Marshall to FDR March 1942	230	1252
5.2	George C. Marshall	Marshall to Humelsine Sept 27 1947	462	2169
6.1	Roscoe Hillenkoetter	R. Hillenkoetter to JIC Sept 1947	307	1714
6.2	Roscoe Hillenkoetter	R. Hillenkoetter to Menzel	216	958
6.3	Roscoe Hillenkoetter	R. Hillenkoetter to Truman	249	1231
7.1	Nathan Twining	Nathan Twining air accident report	793	4027
7.2	Nathan Twining	Nathan Twining White Hot Report	3060	16689
7.3	Nathan Twining	Nathan Twining to General Schulgen	592	3156
8.1	Vannevar Bush	V. Bush to Pres. Truman	457	2405
9.1	Allen Dulles	Allen Dulles MJ report	356	1984

2.5. Documents of Verified Authorship Against Which the Majestic Documents Were Tested

Thirty documents whose composition by the nine authors to whom the Majestic documents were attributed served as the data pool for computational stylistic comparison.¹⁷ The chart below (Chart 2) reveals that these “known author” documents were selected with

Chart 2

KNOWN Author	Document Name	Words	characters
1. Franklin D Roosevelt	FDR to Pope Pious XII 1942	192	942
	FDR to Winston Churchill 1941	152	721
	FDR to Marshall 1942 3rd sample	160	796
	FDR to Marshall 1942 4th sample	216	1094
	FDR to Marshall 1942 1st sample	161	748
2. Harry S Truman	Truman to Dwight Eisenhower	154	650
	Truman to George Marshall	105	449
	Truman to Bohnen Whole	301	1307
	Truman to J. Edgar Hoover 4a	293	1451
	Truman to J. Edgar Hoover 6	217	1086
3. Dwight D Eisenhower	Eisenhower to Winston Churchill	678	3090
	Eisenhower to CD Jackson	345	1656
	Eisenhower to Prof Clyde Miller	590	2817
4. John F Kennedy	JFK to NASA	163	798
	JFK Letter to L Rockefeller	154	795
	JFK Letter to N Khrushchev	495	2538
5. George Marshall	G Marsall FOIA 1942 LA memo to FDR	194	974
	G Marshall to FDR 1942	121	645
	G Marshall 1947 for FDR Whole	361	1752
	G Marshall to FDR 1942 2nd sample	299	1500
6. Roscoe Hillenkoetter	R Hillenkoetter to Truman 1948	390	2071
	R Hillenkoetter to Truman 1948 2nd sample	690	3691
	R Hillenkoetter to Truman 1948 3rd sample	238	1220
7. Nathan Twining	N Twining SIOP-2	3818	19970
	N Twining SIOP-4 interspersed	1483	7543
8. Vannevar Bush	V Bush letter to multiple recipient	303	1575
	V Bush to FDR 1941	156	799
	V Bush to FDR 1942	214	1043
	V Bush to J Desch 1942	311	1402
9. Allen Dulles	A Dulles Known 1	673	3562
	A Dulles Known 2	390	2076

sensitivity to sameness of word and character count, genre, chronological era, and recipient. While the enterprise of authorship attribution by computational linguistic methods does not

¹⁷ Numbers and names of these documents were invented by Dr. Heiser as a means of categorization. The “known author” documents in the spreadsheet above were drawn from a larger number of possible documents.

require sameness of subject matter for document comparison, several of the “known author” documents contained similar subject matter (e.g., space technology). In some instances, the “known author” document references an event in one of the unverified documents (e.g., the 1942 Los Angeles sighting).

2.6. Overview of the Linguistic Testing Methods Used in the Study

The material in this section draws heavily upon the peer-reviewed article by Dr. Chaski.¹⁸

Dr. Chaski explains that, when it comes to document attribution in the legal world, methods for determining authorship “must work in conjunction with the standard investigative and forensic techniques which are currently available.”¹⁹ Determining authorship of a typewritten document, whether originally or subsequently put into electronic form, can be approached three ways: “. . . biometric analysis of the computer user; qualitative analysis of ‘idiosyncrasies’ in the language in questioned and known documents; and quantitative, computational stylometric analysis of the language in questioned and known documents.”²⁰

With respect to the Majestic documents, the first method is not possible—there is no way to analyze actual keystroke pattern dynamics. This method is technically non-linguistic. The second method “assesses errors and “idiosyncrasies” based on the examiner’s experience.”²¹ This method also has the disadvantage of requiring the pre-existence of a stylistic database against which to measure presumed idiosyncrasies. Chaski elaborates:

This approach, known as forensic stylistics, could be quantified through databasing, as suggested by McMenamin (2001), but at this time the databases which would be required have not been fully developed. Without the databases to ground the significance of stylistic features, the examiner’s intuition about the significance of a stylistic feature can lead to methodological subjectivity and bias. Another approach to quantifying is counting particular errors or idiosyncrasies and inputting this into a statistical classification procedure. When the forensic stylistics approach was quantified in this way by Koppel and Schler (2000), using 100 “stylemarkers” in a Support Vector Machine (Vapnik 1995) and C4.5 (Quinlan 1993) analysis, the highest accuracy for author attribution was 72%.²²

The third approach, stylometry, “is quantitative and computational, focusing on readily computable and countable language features, e.g. word length, phrase length, sentence length, vocabulary frequency, distribution of words of different lengths.”²³ Stylometric analysis also may include analysis of function word frequency and punctuation.²⁴

¹⁸ Carol E. Chaski, “[Who’s at the Keyboard? Authorship Attribution in Digital Evidence Investigations](#),” *International Journal of Digital Evidence* 4:1 (Spring, 2005). Accessed online, June 10, 2007.

¹⁹ Chaski, “Keyboard,” 1.

²⁰ *Ibid.*

²¹ *Ibid.*

²² *Ibid.*, 2. See the bibliography for the articles cited by Chaski.

²³ *Ibid.*, 2.

²⁴ See Carol E. Chaski, “Empirical Evaluations of Language-Based Author Identification Techniques,” *International Journal of Speech, Language and the Law* 8:1 (2005): 5; John Olsson, “Using Groups of Common Textual Features for Authorship Attribution,” Forensic Linguistics Institute, Nebraska Linguistics Institute (n.d.), 1-10; accessed at <http://www.thetext.co.uk/authorship/authorship.doc>, June 12, 2007; Michael Gamon, “Linguistic Correlates of Style: Authorship Classification with Deep Linguistic Structures,” Microsoft Research, Microsoft Corp.; accessed at http://research.microsoft.com/nlp/publications/coling2004_authorship.pdf, June 11, 2007; Shlomo Argamon, and

As one of the leaders in the field of the development of authorship attribution techniques that meet legal standards for evidence, Dr. Chaski has developed “a computational, stylometric method which has obtained 95% accuracy and has been successfully used in investigating and adjudicating several crimes involving digital evidence.”²⁵ Chaski elaborates on her method (ALIAS²⁶):

[My] syntactic analysis method (Chaski 1997, 2001, 2004) has obtained an accuracy rate of 95%. The primary difference between the syntactic analysis method and other computational stylometric methods is the syntactic method’s linguistic sophistication and foundation in linguistic theory. Typical stylometric features such as word length and sentence length are easy to compute even if not very interesting in terms of linguistic theory, but the more difficult to compute features such as phrasal type are also more theoretically grounded in linguistic science and experimental psycholinguistics.²⁷

As noted above (Sec. 1.3), with respect to the Majestic documents, Dr. Chaski’s testing was not as thorough as it could have been due to expense. Variations on the capabilities of ALIAS were employed to test the Majestic documents. The testing is therefore referred to as preliminary in this paper. Future testing will allow a full exploitation of the capabilities of ALIAS.

Specifically, the method employed in this initial round of testing by Dr. Chaski was an “n-gram” approach. N-gram approaches involves pattern detection of a specific number (n) of parts-of-speech labels or words in sequence. Once these sequences are found, they can be sorted by similarity.²⁸ (Chaski, “Keyboard,” 5). In regard to her own pioneering techniques in the field—which were used for testing the Majestic documents—Dr. Chaski noted:

“N-gram approaches for author identification have been very successful on large documents, approaching 98% accuracy verified. I wanted to make sure that an n-gram approach would also work on short documents. Another problem is that some n-gram approaches are very biased toward document length, so the wordier person always gets selected as the author. I was able to fix both problems and get ~90% accuracy on short documents with verbose known authors not being favored over concise known authors or vice versa. The exact details are proprietary, as this is a real advance in the field.”²⁹

One final word on the testing enterprise is necessary. It is acknowledged that many of the Majestic documents were not handwritten or even typed by the author to whom they are attributed. The typical practice, especially for presidents, would be to verbally dictate the content of correspondence to a secretary who would type and reproduce the content. This reality is not at odds with Dr. Chaski’s testing methods since memoranda and correspondence are not be produced by distinct psycho-linguistic processes. In other words,

Shlomo Levitan, “Measuring the Usefulness of Function Words for Authorship Attribution,” Illinois Institute of Technology; accessed at http://lingcog.iit.edu/doc/paper_162_argamon.pdf, June 11, 2007.

²⁵ Ibid., 1.

²⁶ ALIAS is a computer program written by Dr. Chaski. Dr. Chaski’s method is currently under patent pending status with the U.S. Patent Office.

²⁷ Ibid., 2. See the bibliography for works cited.

²⁸ See Chaski, “Keyboard,” 5.

²⁹ Personal communication with the author in email, June 12, 2007.

there is no significant linguistic difference between dictating a letter as one would desire it be written and the mental connection to the act of typing those thoughts oneself.

2.7. Explanation of the Test Results

Explanation

In testing the Majestic documents, **the first step** involved taking the KNOWN documents of Chart 2, undisputedly authored by the person whose authorship is attributed to them, and combining them together to get a “stylistic pool” of data for each author. For example, in Chart 2 we saw that there were five KNOWN documents authored by Franklin D. Roosevelt against which the UNVERIFIED Majestic documents allegedly authored by Franklin D. Roosevelt would be compared. The documents were combined into one “KNOWN Document” pool:

KNOWN Author	Document Name	Words	characters
1. FDR	FDR to Pious XII 1942 TXT	192	942
	FDR to Churchill 1941 TXT	152	721
	FDR to Marshall 1942 3rd samp TXT	160	796
	FDR to Marshall 1942 4th samp TXT	216	1094
	FDR to Marshall 1942 1st samp TXT	161	748
		881	4301

The second step was to run computational stylistic comparisons between each UNVERIFIED document to its corresponding set of KNOWN documents (its “KNOWN document pool”). The result was a “similarity score” that assessed how similar the stylistic elements of the KNOWN documents were to the UNVERIFIED Majestic document allegedly authored by the same person who authored those in the KNOWN document pool.

The third step was to compare each KNOWN document pool to all the other KNOWN document pools for similarity scores. The purpose of this step was to detect how similar or dissimilar one KNOWN document pool was to another KNOWN document pool. Why is this important? One would assume (correctly) that it should be obvious that nine groups of “KNOWNS” are going to be dissimilar to each other, showing no evidence of having been written by common authors, since one is certain going into the exercise that the authors are all different. By obtaining similarity scores for all the KNOWN document pools when compared to each other (which really amount to dissimilarity scores), one can then see if the similarity score for the KNOWN document pool of one author compared to the UNVERIFIED document claiming the same author is significantly better (more similar), as one would expect. In other words, one expects more similarity between the UNVERIFIED document and its KNOWN document pool than between the KNOWN document pool and documents certainly written by different authors. This would only be logical.

For example, in the FDR example above, if there were greater similarity between the KNOWN FDR documents and the other KNOWN documents written by Truman, Eisenhower, etc. than between the UNVERIFIED FDR documents, that would reflect very badly on the authenticity of the UNVERIFIED document. If authentic, the UNVERIFIED document should be very similar to its KNOWN counterparts, *not the opposite*.

The fourth step was to rank all of the resulting similarity scores. The similarity score of the UNVERIFIED document to its corresponding KNOWN document pool was ranked

alongside the similarity scores of the KNOWN document pools compared to each other. In the rankings, **the lowest numerical figure** represents the KNOWN document pool that was **most like** the UNVERIFIED document. Therefore, in the following chart, **the lowest numerical figure is listed in the top slot for each UNVERIFIED document. The lowest similarity score identifies the real author in 90.7% of the validation tests.** Hence, the lowest similarity score identifies the most likely author. **The bottom line** is that if the UNVERIFIED document was genuine, one would expect its KNOWN document pool group to occupy the first slot in the spreadsheet chart – i.e., to have the lowest numerical score, since the lowest numerical score reflects the greatest similarity. That would be a “match” with respect to linguistic authorship validation.

Results

The results are illustrated below in the next several pages. On the lefthand side the Questioned document is listed in blue (cf. Chart 3 above). To the immediate right of the Questioned document name (e.g., the first one, “FDR-Q1”) is the “top slot.” The top slot is filled with a Known document pool name (e.g., “JFK-m1.3”) and its similarity score. The top slot is surrounded by a thick black border. **A linguistic match—a verification of authorship authenticity—occurs when the top slot has a blue Known document pool name right next to the blue Questioned document name.** These matches are also highlighted in yellow. The **blue** coloring is to highlight where the UNVERIFIED document and its corresponding KNOWN pool fall in relation to one another. **A match** would have the **blue** UNVERIFIED document and its corresponding pool directly next to each other—since the KNOWN pool would be occupying the first slot. The **red** coloring, **turquoise** highlighting, and **yellow** highlighting will be explained below.

FDR-Q1	JFK-m1.3	1.013222222
	DDE-m1.3	1.071385366
	Twining-m1.2	1.221858824
	FDR-m1.5	1.362602632
	VBush-m1.4	1.363922222
	Dulles-m1.2	1.524508889
	Truman-m1.5	1.53546
	RHH-m1.3	1.558713333
	GCM-m1.4	1.604431818
FDR-Q2	JFK-m1.3	0.823638889
	DDE-m1.3	1.59477561
	FDR-m1.5	1.655939474
	Twining-m1.2	1.685084314
	GCM-m1.4	1.702613333
	RHH-m1.3	1.829902222
	Dulles-m1.2	1.945048889
	Truman-m1.5	2.038491429
	VBush-m1.4	2.451962162

TRUMAN-Q1	JFK-m1.3	0.982797222
	DDE-m1.3	1.044939024
	FDR-m1.5	1.136267568
	Twining-m1.2	1.228698039
	RHH-m1.3	1.325253333
	Dulles-m1.2	1.342722727
	GCM-m1.4	1.455161364
	Truman-m1.5	1.474897059
	VBush-m1.4	1.641366667
TRUMAN-Q2	JFK-m1.3	0.619072222
	DDE-m1.3	0.642502439
	FDR-m1.5	0.648672973
	RHH-m1.3	0.656048889
	Twining-m1.2	0.724562745
	VBush-m1.4	0.729902778
	Dulles-m1.2	0.762095455
	GCM-m1.4	0.899486364
	Truman-m1.5	1.048394286

DDEisenhower-Q1	JFK-m1.3	1.038175
	DDE-m1.3	1.0625
	FDR-m1.5	1.208932432
	Twining-m1.2	1.237368627
	Dulles-m1.2	1.354336364
	RHH-m1.3	1.387717778
	GCM-m1.4	1.464
	Truman-m1.5	1.485179412
	VBush-m1.4	1.684888889
DDEisenhower-Q2	Twining-m1.2	2.459141176
	Dulles-m1.2	2.603782609
	FDR-m1.5	2.958119048
	RHH-m1.3	2.994264444
	JFK-m1.3	3.111713953
	GCM-m1.4	3.371866667
	DDE-m1.3	4.526462222
	VBush-m1.4	4.567460465
	Truman-m1.5	4.567709302

JFK-Q1	GCM-m1.4	1.465465217
	Dulles-m1.2	1.582319565
	FDR-m1.5	1.6490925
	JFK-m1.3	1.88823
	Twining-m1.2	1.917092157
	RHH-m1.3	2.134604255
	DDE-m1.3	2.141125
	Truman-m1.5	2.14863
	VBush-m1.4	2.829307317

GCMarshall-Q1	RHH-m1.3	1.64422
	GCM-m1.4	1.717468182
	Twining-m1.2	1.786856863
	JFK-m1.3	2.11307619
	Dulles-m1.2	2.262193182
	FDR-m1.5	2.658723256
	DDE-m1.3	3.084484091
	Truman-m1.5	3.11664878
	VBush-m1.4	3.383557143
GCMarshall-Q2	Truman-m1.5	2.78824878
	FDR-m1.5	2.952511111
	DDE-m1.3	3.131513043
	JFK-m1.3	3.166102381
	RHH-m1.3	3.418040426
	GCM-m1.4	3.432455319
	VBush-m1.4	3.593740476
	Dulles-m1.2	4.430829167
	Twining-m1.2	5.14362549

RHHillenkoetter-Q1	Twining-m1.2	2.487417647
	Dulles-m1.2	2.622144681
	GCM-m1.4	2.798054348
	FDR-m1.5	3.162626667
	JFK-m1.3	3.220471111
	RHH-m1.3	3.320617021
	Truman-m1.5	4.545223913
	DDE-m1.3	4.55504375
	VBush-m1.4	5.186741304
RHHillenkoetter-Q2	Truman-m1.5	1.980402778
	GCM-m1.4	2.111636364
	DDE-m1.3	2.288144186
	Twining-m1.2	2.607001961
	FDR-m1.5	2.697617073
	JFK-m1.3	2.8091
	RHH-m1.3	3.133524444
	Dulles-m1.2	3.198736957
	VBush-m1.4	3.319607895
RHHillenkoetter-Q3	DDE-m1.3	1.421129268
	FDR-m1.5	1.560635135
	RHH-m1.3	1.62612
	JFK-m1.3	1.635513514
	Twining-m1.2	1.812292157
	GCM-m1.4	1.917002222
	Truman-m1.5	2.255572222
	Dulles-m1.2	2.324773333
	VBush-m1.4	2.648110811

TWINING-Q1	JFK-m1.3	2.135897727
	FDR-m1.5	2.682664286
	RHH-m1.3	2.733641304
	Twining-m1.2	2.83787451
	GCM-m1.4	3.082436957
	Dulles-m1.2	3.4944
	Truman-m1.5	3.684188372
	DDE-m1.3	3.748934783
	VBush-m1.4	4.395774419

TWNING-Q2	JFK-m1.3	1.718466667
	FDR-m1.5	3.450687234
	GCM-m1.4	4.031661702
	Dulles-m1.2	5.085297872
	RHH-m1.3	5.100904255
	Twining-m1.2	5.396827451
	DDE-m1.3	5.453008511
	Truman-m1.5	7.45646087
	VBush-m1.4	9.701395745
TWNING-Q3	Twining-m1.2	1.914798039
	GCM-m1.4	2.318426087
	RHH-m1.3	2.545447826
	JFK-m1.3	2.664539024
	FDR-m1.5	2.756173171
	Dulles-m1.2	2.766138298
	Truman-m1.5	3.4124875
	DDE-m1.3	3.609133333
	VBush-m1.4	3.9703075

VBUSH-Q1	JFK-m1.3	1.488512195
	Twining-m1.2	1.985258824
	RHH-m1.3	1.986793478
	FDR-m1.5	2.082035714
	GCM-m1.4	2.456534043
	DDE-m1.3	2.476153488
	Dulles-m1.2	2.627421277
	VBush-m1.4	3.138534146
	Truman-m1.5	3.217558537

DULLES-Q1	JFK-m1.3	1.742639024
	Twining-m1.2	1.827598039
	RHH-m1.3	2.110697872
	Dulles-m1.2	2.240582609
	GCM-m1.4	2.335251064
	FDR-m1.5	2.374309091
	DDE-m1.3	3.227495455
	VBush-m1.4	3.483479545
	Truman-m1.5	3.755922727

It is important to understand that **only those matches in the top slot are to be considered as likely authentic**. According to Dr. Chaski, the true author would occupy the top slot in 90.7% of the validation tests of her method. The rest of the ranked similarity scores therefore do **NOT** represent some sort of sliding authenticity scale—as though something in the second or third slot has a decent percentage change of being authentic. Only the top slot meets the acceptable standards of validation and evidence. All that the remaining ranking slots show is the degree of dissimilarity a Known document pool had with the Questioned document *in comparison with the top slot*.

The results show that, **of the seventeen Majestic documents tested by Dr. Chaski, only one shows a strong likelihood of being authored by the author whose name they bear**: Twining-Q3 (“Twining to General Schulgen”). **Yellow** highlighting marks this match. At best, then, according to the state-of-the-art linguistic methods of authorship attribution developed by Dr. Chaski, only one of the Majestic documents that bear an author name and which were not previously shown to be fraudulent can be considered as likely authentic according to linguistic testing.

The **turquoise** highlighting denotes the fraudulent documents detected by Stanton Friedman that were included in the testing. The reader should note that Dr. Chaski’s tests invalidated all of the fraudulent control documents. These documents are: Truman Q1 (“Truman to Nathan Twining July 9 1947”), Marshall Q2 (“Marshall to Humelsine Sept 27 1947”), Hillenkoetter Q3 (“R. Hillenkoetter to Truman”), and Twining Q2 (“Nathan Twining White Hot Report”).³⁰

The **red lettering** is of special interest. In eight of the seventeen documents tested, the JFK Known document pool was found to be the closest linguistic match to the document under testing. This suggests—but does not prove—that each of those documents may have had the same author and would therefore be forgeries conducted by the same person.

3. Commentary on the Test Results

3.1. *A Positive Contribution to Ufology*

Although some readers might quickly conclude that this preliminary report severely damages the validity of the UFO phenomenon, such a conclusion would be misguided. The genuineness of the UFO phenomenon, whatever its true nature might be, does not depend on the Majestic documents. It would be far more accurate to say that the test results cast significant doubt on the wisdom of using the Majestic documents tested by Dr. Chaski to draw any conclusions about UFOs. Since the documents are very likely fraudulent, no arguments should be based on them. They cannot be held up by researchers as valid evidence for anything associated with UFOs, except perhaps a will to deceive on the part of someone, or a desire to move people to a certain conclusion about UFOs.

So how do the test results make a positive contribution to ufology? I believe this is the case in several respects.

³⁰ Friedman has discovered other fraudulent documents among the Majestic documents besides those included in our testing. See “Update on Operation Majestic 12 Documents (page 3),” accessed at http://www.v-j-enterprises.com/mj12_update3.html, June 6, 2007.

First, the report ought to encourage researchers and interested amateurs to focus on the demonstrably real abundance of physical evidence that stands behind the thousands of people who have seen things in the sky that defy precise scientific identification.³¹ This abundance includes a great deal of documentary evidence from official government agencies that existed prior to the appearance of the Majestic documents.³² If nothing else, perhaps this study will help researchers not be unnecessarily distracted by data that is unreliable.

Second, the test results validate the persistent work of Stanton Friedman, including his positions on the fraudulence of certain Majestic documents. Friedman's stance on the fraudulence of several Majestic documents has not been embraced by some important UFO researchers, namely Dr. Robert and Ryan Wood. Dr. Chaski's testing ought to compel Friedman's opponents on these documents to concede the point, at least with respect to those fraudulent documents included in our testing.

Third, the test results represent the application of genuine science to UFO studies. This in turn argues for continued testing. The question still exists as to whether some of the Majestic documents *lacking* a named author—and thus not included in this round of testing—may be genuine. While authorship attribution testing cannot be applied directly to these documents, now that such testing has been conducted on documents bearing author names, the results of those tests can potentially be applied to testing the other Majestic documents (see Section 4 below).

Lastly, since Dr. Chaski's methods have met the standards of peer review within her profession and the standards of evidence in the legal profession, the document that has passed linguistic testing—and any documents that pass subsequent testing—should be considered very likely of genuine authorship.

3.2. *Unfavorable Implications for the Extraterrestrial Explanation for UFOs*

First, it must be observed that none of the author-bearing Majestic documents that refer to the recovery of alien bodies or contact with extraterrestrials passed the computational linguistic testing. This being the case, it would be fair to say that, as far as those Majestic documents which bear an author name, the alien hypothesis has been noticeably weakened. However, the reader is reminded that: (a) other Majestic documents that have no author name and so could not be tested do contain such dramatic references; and (b) other UFO-related documents outside the Majestic cache (but which are themselves unprovenanced) occasionally contain such language.³³ That such language is present in other documents of course does not prove that there are extraterrestrials and that extraterrestrial visitations to

³¹ See for example, Peter A. Sturrock, *The UFO Enigma: A New Review of the Physical Evidence* (repr. Aspect, 2004); Paul Hill, *Unconventional Flying Objects* (Hampton Roads, 1995). Dr. Sturrock holds a PhD in astrophysics. His career included work done at the Atomic Energy Research Establishment (UK) and Stanford University, where he is professor emeritus. The late Dr. Hill was an aeronautical research engineer for NASA.

³² Tens of thousands of pages of material related in some way to UFOs—much of it deriving from Freedom of Information Act (FOIA) requests—is available to researchers at John Greenewald's website, The Black Vault (<http://www.theblackvault.com/>). The book that most convincingly chronicles documentary evidence for UFOs aside from the Majestic documents is that of Richard Dolan, *UFOs and the National Security State: Chronology of a Coverup, 1941-1973* (Hampton Roads, 2002).

³³ It is difficult to find any documents that specifically refer to alien bodies or extraterrestrial biological entities (EBEs) that are provenanced (i.e., that have a known origin). In fact, such documents are rare. Among the copious documentary evidence for the UFO phenomenon, it seems that references to bodies are limited to a handful of documents, such as the Eisenhower Briefing Document, the Majestic 12 First Annual Report, the SOM1-01 Manual, (all of which have no attributed author), the Einstein-Oppenheimer Draft (dual authorship), and the Sarbacher memo (unprovenanced).

earth have occurred. Obviously, just because an opinion is expressed in writing does not make that opinion a reality, and just because the author of a document suspected or believed a particular idea does not make that idea a reality.

Second, the test results cast a shadow over the Majestic documents as reliable data *en toto*. It seems quite obvious, given the work of Friedman and Dr. Chaski, that a concerted disinformation attempt was in play with respect to the leaks of the Majestic documents. Such a state of affairs calls to remembrance Greg Bishop's recent expose on the deliberate manipulation of Dr. Paul Bennewitz by the U.S. government to both perpetuate UFO mythology and penetrate UFO groups.

Third, it is possible that further testing will succeed in linking the stylistics of other Majestic documents that do not bear author names with certain Majestic documents which have failed the linguistic testing already conducted. That is, it might be that the stylistics of a forged or faked Majestic document could be matched to other Majestic documents which were not tested. If such matching emerges, even more Majestic documents will be tainted by the association and thus come under suspicion as forgeries or fakes.

4. Prospects for Future Testing

If funding is obtained, much more work could be done by Dr. Chaski on the Majestic documents. Basically, the additional work would fall into two areas:

- 1) Additional language features could be added to the testing. Dr. Chaski has already used methods that have been validated over 90% of the time. The results obtained thus far could be assured to an even higher degree by further testing. New testing will not reverse the results already obtained, but can make the results even more assured and allow the researcher to make specific statements (in terms of probabilities) about the documents.
- 2) Perhaps more importantly, more nuanced testing would produce data that would allow Dr. Chaski to compare the stylistics of those Majestic documents that were tested against those that were not, particularly those that lack author attribution. Comparison of stylistics might allow the researcher to arrive at a statistical likelihood that certain documents might have been written by the same hand.

Conclusion

In drawing this report to a close, readers are again reminded of the preliminary nature of the report. Only a portion of the Majestic documents were tested, for the reasons given in Section 2.2. To move linguistic research of the Majestic documents beyond the preliminary status, more research must be undertaken. The major obstacle to this progress is funding. Hopefully the value of this research will be apparent to those interested in applying scientific methods to the study of UFOs, and appropriate funding will be found.

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