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The voynich manuscript book pdf

Detail from a page of the Voynich Manuscript Beinecke Rare Book and Manuscript Library at Yale University Will the Voynich Manuscript, an early 15th century document kept at Yale University and known as the world's most mysterious book, finally reveal its secrets? Any attempts to decipher the manuscript's unique text, made up of a mixture of handwritten Latin letters, Arabic numbers, and unknown characters, have so far failed. Because of the many mysteries surrounding its content, it has featured in TV shows, books, music, and even video games. Now, after three years of analysis, the German Egyptologist Rainer Hannig from the Roemer- und Pelizaeus Museum in Hildesheim, believes he has cracked the code to translating the work, and found the manuscript's language to be based on Hebrew. "Countless decipherment attempts were made," Hannig writes in an article in German explaining his methodology. "A lot of languages were proposed, such as Latin, Czech, or amongst others Nahuatl (spoken by the Aztecs), just to name a few... The word-structure leaves only one possible explanation: the manuscript was not composed in an Indo-European language." Pages from the Voynich Manuscript Beinecke Rare Book and Manuscript Library at Yale University From his analysis, Hannig concluded that the text must be a Semitic language, and given the European imagery in the book's illustrations, he narrowed the options to Arabic, Aramaic, or Hebrew—languages spoken by European scholars of the Middle Ages. After identifying a connection between certain Voynich characters and Hebrew, he managed to translate the first words, and then full sentences. "The actual translation of the Voynich-book will need a couple of years work, even if specialists in Hebrew language, who are well versed in mediaeval Hebrew and the terminology of botanical and medical texts, take over the analysis," Hannig writes. "The character of the script, the pronunciation which one needs to get used to, the peculiarity and the vocabulary of the period will cause a lot of trouble even to a native speaker of [Hebrew]." Over the years, professional codebreakers and scholars of various disciplines have attempted to solve the mystery of the Voynich Manuscript. Some already suspected that Hebrew was the language behind the script, including the authors of a computer algorithm-based study published in 2016, although experts questioned the methodology used and no reliable translation was produced. Others have claimed the manuscript to be a forgery and the text itself a hoax. A page from the Voynich Manuscript Beinecke Rare Book and Manuscript Library at Yale University Adding to the mystery, the manuscript's 240 vellum pages bear illustrations of plants, floating heads, signs of the zodiac, fantastic creatures (including dragons), castles, women bathing, and astronomical symbols. Scholars have used these illustrations to organise the manuscript's content into six major sections: botanical, astronomical and astrolgical, biological, cosmological, pharmaceutical, and recipes. However, without the ability to read the text, its true content has remained elusive. Even the name of the manuscript's author remains a mystery.The Voynich Manuscript came to light in 1912, after Wilfrid Voynich, a rare books dealer in London, bought the manuscript in Italy. It had earlier belonged to the Holy Roman Emperor Rudolf II, and probably John Dee, the infamous astrologer at British Queen Elizabeth I's court. Since 1969, the manuscript has been kept in the Beinecke Rare Book and Manuscript Library at Yale University. A conference is planned to take place in Hildesheim this August for scholars to discuss the breakthrough. A mysterious, undeciphered manuscript Order from Yale University Press here Edited by Raymond Clemens, with an introduction by Deborah Harkness, The Voynich Manuscript is produced from new photographs of the entire original and accompanied by expert essays that invite anyone to understand and explore the enigma. Many call the fifteenth-century codex, commonly known as the "Voynich Manuscript," the world's most mysterious book. Written in an unknown script by an unknown author, the manuscript has no clearer purpose now than when it was rediscovered in 1912 by rare books dealer Wilfrid Voynich. The manuscript appears and disappears throughout history, from the library of the Holy Roman Emperor Rudolf II to a secret sale of books in 1903 by the Society of Jesus in Rome. The book's language has eluded decipherment, and its elaborate illustrations remain as baffling as they are beautiful. For the first time, this facsimile, complete with elaborate folding sections, allows readers to explore this enigma in all its stunning detail, from its one-of-a-kind "Voynichese" text to its illustrations of otherworldly plants, unfamiliar constellations, and naked women swimming through fantastical tubes and green baths. The essays that accompany the manuscript explain what we have learned about this work—from alchemical, cryptographic, forensic, and historical perspectives—but they provide few definitive answers. Instead, as New York Times best-selling author Deborah Harkness says in her introduction, the book "invites the reader to join us at the heart of the mystery." Written in Central Europe at the end of the 15th or during the 16th century, the origin, language, and date of the Voynich Manuscript—named after the Polish-American antiquarian bookseller, Wilfrid M. Voynich, who acquired it in 1912—are still being debated as vigorously as its puzzling drawings and undeciphered text. Described as a magical or scientific text, nearly every page contains botanical, figurative, and scientific drawings of a provincial but lively character, drawn in ink with vibrant washes in various shades of green, brown, yellow, blue, and red. Based on the subject matter of the drawings, the contents of the manuscript fall into six sections: 1) botanicals containing drawings of 113 unidentified plant species; 2) astronomical and astrolgical drawings including astral charts with radiating circles, suns and moons, Zodiac symbols such as fish (Pisces), a bull (Taurus), and an archer (Sagittarius), nude females emerging from pipes or chimneys, and courtly figures; 3) a biological section containing a myriad of drawings of miniature female nudes, most with swelled abdomens, immersed or wading in fluids and oddly interacting with interconnecting tubes and capsules; 4) an elaborate array of nine cosmological medallions, many drawn across several folded folios and depicting possible geographical forms; 5) pharmaceutical drawings of over 100 different species of medicinal herbs and roots portrayed with jars or vessels in red, blue, or green, and 6) continuous pages of text, possibly recipes, with star-like flowers marking each entry in the margins. For a complete physical description and foliation, including missing leaves, see the Voynich catalog record. Read a detailed chemical analysis of the Voynich Manuscript (8 p., pdf) History of the Collection Like its contents, the history of ownership of the Voynich manuscript is contested and filled with some gaps. The codex belonged to Emperor Rudolph II of Germany (Holy Roman Emperor, 1576-1612), who purchased it for 600 gold ducats and believed that it was the work of Roger Bacon. It is very likely that Emperor Rudolph acquired the manuscript from the English astrologer John Dee (1527-1608). Dee apparently owned the manuscript along with a number of other Roger Bacon manuscripts. In addition, Dee stated that he had 630 ducats in October 1586, and his son noted that Dee, while in Bohemia, owned "a booke...containing nothing butt Hieroglyphicks, which booke his father bestowed much time upon: but I could not heare that hee could make it out." Emperor Rudolph seems to have given the manuscript to Jacobus Horcicky de Tepenecz (d. 1622), an exchange based on the inscription visible only with ultraviolet light on folio 1r which reads: "Jacobi de Tepenecz." Johannes Marcus Marci of Cronland presented the book to Athanasius Kircher (1601-1680) in 1666. In 1912, Wilfrid M. Voynich purchased the manuscript from the Jesuit College at Frascati near Rome. In 1969, the codex was given to the Beinecke Library by H. P. Kraus, who had purchased it from the estate of Ethel Voynich, Wilfrid Voynich's widow. References Goldstone, Lawrence and Nancy Goldstone. 2005. The Friar and the Cipher: Roger Bacon and the Unsolved Mystery of the Most Unusual Manuscript in the World. New York: Doubleday. Romaine Newbold, William. 1928. The Cipher of Roger Bacon. Philadelphia, Pennsylvania: University of Pennsylvania Press. Manly, John Mathews. 1921. "The Most Mysterious Manuscript in the World: Did Roger Bacon Write It and Has the Key Been Found?", Harper's Monthly Magazine 143, pp.186–197. Illustrated codex handwritten in an unknown writing system Voynich manuscriptBeinecke Rare Book and Manuscript Library,Yale UniversityA floral illustration on page 32Also known asBeinecke MS 408TypecodexDateunknown, parchment dated to early 15th century[1][2]Place of originpossibly Italy[1][2]Language(s)unknownpossibly natural[3] or constructed language[4][5]a very small number of words were found in Latin and High German[4]Scribe(s)unknownAuthor(s)unknownsuggested:Roger Bacon,[6][7]Wilfrid Voynich himself,[7]Jakub of Tepenecz,[8]Athanasius Kircher,[9]Raphael Mishovsky,[6]Antonio Averlino Filarete,[10]Cornelis Drebbel,[11]Anthony Ascham[4] etc.Compiled byunknownIlluminated byunknownPatronunknownDedicated tounknownMaterialvellumSize= 23.5 cm × 16.2 cm × 5 cm (9.3 in × 6.4 in × 2.0 in)Formatone column in the page body, with slightly indented right margin and with paragraph divisions, and often with stars in the left margin.[12]The rest of the manuscript appears in the form of graphics i.e. diagrams or markings for certain parts related to illustrations;the manuscript contains foldable partsConditionpartially damaged and incomplete;240 out of 272 pages found (≈ 88%) [13][10][12].i.e. 18 out of 20 quires found(272 pages i.e. 20 quires is the smallest estimated number, and it contains > 170,000 characters)[14]Scriptunknownpossibly an invented script[15]Very small number of words found in Latin script[4][13]Contentsherbal, astronomical, balneological, cosmological and pharmaceutical sections + section with recipessillumination(s)color ink, a bit crude, was used for painting the figures, probably later than the time of creation of the text and the outlines themselves[13]Additions–Exemplar(s)two manuscript copies which Baresch sent twice to Kircher in RomePreviously kept? → Rudolf II, Holy Roman Emperor → Jakub of Tepenecz → Georg Baresch → Athanasius Kircher (copies) → Jan Marek Marci (Joannes Marcus Marci) → rector of Charles University in Prague → Athanasius Kircher → Pieter Jan Beckx → Wilfrid Voynich → Ethel Voynich → Anne Nilil → Hans Peter Kraus → Yal[e4][9][12][16][17]Discoveredearliest information about the existence comes from a letter that was found inside the covers of the manuscript, and it was written in either 1665 or 1666AccessionMS 408Othercryptography case which has not been solved or deciphered Evidence of retouching of text; page 3; f1r Retouching of drawing; page 131; f72v3 The Voynich manuscript is an illustrated codex hand-written in an unknown, possibly meaningless writing system.[18] The manuscript is named after Wilfrid Voynich, a Polish book dealer who purchased it in 1912.[19] The vellum on which it is written has been carbon-dated to the early 15th century (1404–1438), and the text may have been composed in Italy during the Italian Renaissance.[1][2] However, its origins and authorship are not unambiguously known, and remain the subject of study and speculation. Some of the pages are missing, with around 240 remaining. The text is written from left to right, and most of the pages have illustrations or diagrams. Some pages are foldable sheets of varying sizes. The Voynich manuscript has been studied by many professional and amateur cryptographers, including American and British codebreakers from both World War I and World War II.[20] The manuscript has never been demonstrably deciphered, and the mystery of its meaning and origin has excited the popular imagination, making it the subject of novels and speculation. None of the many hypotheses proposed over the last hundred years have been independently verified.[21] In 1969, the Voynich manuscript was donated by Hans P. Kraus to Yale University's Beinecke Rare Book and Manuscript Library, where it remains.[22][12][23] Description Codicology The codicology, or physical characteristics of the manuscript, has been studied by researchers. The manuscript measures 23.5 by 16.2 by 5 cm (9.3 by 6.4 by 2.0 in), with hundreds of vellum pages collected into 18 quires. The total number of pages is around 240, but the exact number depends on how the manuscript's unusual foldouts are counted.[12] The quires have been numbered from 1 to 20 in various locations, using numerals consistent with the 1400s, and the top righthand corner of each recto (righthand) page has been numbered from 1 to 116, using numerals of a later date. From the various numbering gaps in the quires and pages, it seems likely that in the past the manuscript had at least 272 pages in 20 quires, some of which were already missing when Wilfrid Voynich acquired the manuscript in 1912. There is strong evidence that many of the book's bifolios were reordered at various points in its history, and that the original page order may well have been quite different from what it is today.[13][10] Parchment, covers, and binding Radiocarbon dating of samples from various parts of the manuscript was performed at the University of Arizona in 2009. The results were consistent for all samples tested and indicated a date for the parchment between 1404 and 1438.[24] Protein testing in 2014 revealed that the parchment was made from calf skin, and multispectral analysis showed that it was unwritten on before the manuscript was created. The parchment was created with care, but deficiencies exist and the quality is assessed as average, at best.[24] The parchment is prepared from "at least fourteen or fifteen entire calfskins".[25] Some folios are thicker than the usual parchment thickness, such as folios 42 and 47.[26] The goat skin[27] binding and covers are not original to the book, but date to its possession by the Collegio Romano.[12] Insect holes are present on the first and last folios of the manuscript in the current order and suggest that a wooden cover was present before the later covers, and discolouring on the edges points to a tanned-leather inside cover.[24] Ink Many pages contain substantial drawings or charts which are colored with paint. Based on modern analysis using polarized light microscopy (PLM), it has been determined that a quill pen and iron gall ink were used for the text and figure outlines. The ink of the drawings, text and page and quire numbers have similar microscopic characteristics. Energy-dispersive X-ray spectroscopy (EDS) performed in 2009 revealed that the inks contained major amounts of carbon, iron, sulfur, potassium, and calcium and trace amounts of copper and occasionally zinc. EDS did not show the presence of lead, while X-ray diffraction (XRD) identified potassium lead oxide, potassium hydrogen sulphate and syngenite in one of the samples tested. The similarity between the drawing inks and text inks suggested a contemporaneous origin.[13] Paint Colored paint was applied (somewhat crudely) to the ink outlined figures, possibly at a later date. The blue, white, red-brown, and green paints of the manuscript have been analyzed using PLM, XRD, EDS, and scanning electron microscopy (SEM). The blue paint proved to be ground azurite with minor traces of the copper oxide cuprite. The white paint is likely a mixture of eggwhite and calcium carbonate, while the green paint is tentatively characterized by copper and copper-chlorine resinates; the crystalline material might be atacamite or another copper-chlorine compound. Analysis of the red-brown paint indicated a red ochre with the crystal phases hematite and iron sulfide. Minor amounts of lead sulfide and palmierite were possibly present in the red-brown paint.[13] The pigments were considered inexpensive.[24] Retouching Computer scientist Jorge Stolfi of the University of Campinas highlighted that parts of the text and drawings are modified, using darker ink over a fainter earlier script. Evidence for this is visible in various folios, for example f1r, f3v, f26v, f57v, f67r2, f71r, f72v1, f72v3 and f73r.[28] Text Page 119; f66r, showing characteristics of the text Page 191; f107r, text detail Every page in the manuscript contains text, mostly in an unidentified language, but some have extraneous writing in Latin script. The bulk of the text in the 240-page manuscript is written in an unknown script, running left to right. Most of the characters are composed of one or two simple pen strokes. Some dispute exists as to whether certain characters are distinct, but a script of 20–25 characters would account for virtually all of the text; the exceptions are a few dozen rarer characters that occur only once or twice each. There is no obvious punctuation.[4] Much of the text is written in a single column in the body of a page, with a slightly ragged right margin and paragraph divisions and sometimes with stars in the left margin.[12] Other text occurs in charts or as labels associated with illustrations. There are no indications of any errors or corrections made at any place in the document. The ductus flows smoothly, giving the impression that the symbols were not enciphered; there is no delay between characters, as would normally be expected in written encoded text. Extraneous writing Only a few of the words in the manuscript are thought to have not been written in the unknown script:[17] f1r: A sequence of Latin letters in the right margin parallel with characters from the unknown script, also the now-unreadable signature of "Jacobi J Tepenecz" is found in the bottom margin. f17r: A line of writing in the Latin script in the top margin. f70v–f73v: The astrological series of diagrams in the astronomical section has the names of 10 of the months (from March to December) written in Latin script, with spelling suggestive of the medieval languages of France, northwest Italy, or the Iberian Peninsula.[29] f66r: A small number of words in the bottom left corner near a drawing of a nude man have been read as "der Mustel", a High German[17] phrase for "a widow's share". f116v: Four lines written in rather distorted Latin script, except for two words in the unknown script. The words in Latin script appear to be distorted with characteristics of the unknown language. The lettering resembles European alphabets of the late 14th and 15th centuries, but the words do not seem to make sense in any language.[30] Whether these bits of Latin script were part of the original text or were added later is not known. Transcription Various transcription alphabets have been created to equate the Voynich characters with Latin characters to help with cryptanalysis,[31] such as the Extensible (originally: European) Voynich Alphabet (EVA).[32] The first major one was created by the "First Study Group" led by cryptographer William F. Friedman in the 1940s, where each line of the manuscript was transcribed to an IBM punch card to make it machine readable.[33][34] European Voynich Alphabet: Capital EVA letters are sometimes used to illustrate different variations of the same symbol. Statistical patterns The text consists of over 170,000 characters.[14] with spaces dividing the text into about 35,000 groups of varying length, usually referred to as "words" or "word tokens" (37,919); 8,114 of those words are considered unique "word types".[35] The structure of these words seems to follow phonological or orthographic laws of some sort; for example, certain characters must appear in each word (like English vowels), some characters never follow others, or some may be doubled or tripled, but others may not. The distribution of letters within words is also rather peculiar: Some characters occur only at the beginning of a word, some only at the end, and some always in the middle section.[36] Many researchers have commented upon the highly regular structure of the words.[37] Professor Gonzalo Rubio, an expert in ancient languages at Pennsylvania State University, stated: The things we know as "grammatical markers" – things that occur commonly at the beginning or end of words, such as 's' or 'd' in our language, and that are used to express grammar, never appear in the middle of 'words' in the Voynich manuscript. That's unheard of for any Indo-European, Hungarian or Finnish language.[38] Stephan Vonfelt studied statistical properties of the distribution of letters and their correlations (properties which can be vaguely characterized as rhythmic resonance, alliteration or assonance) and found that under that respect Voynichese is more similar to the Mandarin Chinese pinyin text of the Records of the Grand Historian than to the text of works from European languages, although the numerical differences between Voynichese and Mandarin Chinese pinyin look larger than those between Mandarin Chinese pinyin and European languages.[39] [better source needed] Practically no words have fewer than two letters or more than ten.[14] Some words occur in only certain sections, or in only a few pages; others occur throughout the manuscript. Few repetitions occur among the thousand or so labels attached to the illustrations. There are instances where the same common word appears up to three times in a row[14] (see Zipf's law). Words that differ by only one letter also repeat with unusual frequency, causing single-substitution alphabet decipherings to yield babble-like text. In 1962, cryptanalyst Elizabeth Friedman described such statistical analyses as "doomed to utter frustration".[40] Illustrations A detail from the balneological section of the manuscript Detail of page 50, f25v; resembling a dragon Detail of page 158, f86r; the castle The illustrations are conventionally used to divide most of the manuscript into six different sections, since the text itself cannot be read. Each section is typified by illustrations with different styles and supposed subject matter[14] except for the last section, in which the only drawings are small stars in the margin. The following are the sections and their conventional names: Herbal, 112 folios: Each page displays one or two plants and a few paragraphs of text, a format typical of European herbals of the time. Some parts of these drawings are larger and cleaner copies of sketches seen in the "pharmaceutical" section. None of the plants depicted are unambiguously identifiable.[12][41] Astronomical, 21 folios: Contains circular diagrams suggestive of astronomy or astrology, some of them with suns, moons, and stars. One series of 12 diagrams depicts conventional symbols for the zodiacal constellations (two fish for Pisces, a bull for Taurus, a hunter with crossbow for Sagittarius, etc.). Each of these has 30 female figures arranged in two or more concentric bands. Most of the females are at least partly nude, and each holds what appears to be a labeled star or is shown with the star attached to either arm by what could be a tether or cord of some kind. The last two pages of this section were lost (Aquarius and Capricornus, roughly January and February), while Aries and Taurus are split into four paired diagrams with 15 women and 15 stars each. Some of these diagrams are on fold-out pages.[12][41] Balneological, 20 folios: A dense continuous text interspersed with figures, mostly showing small nude women, some wearing crowns, bathing in pools or tubs connected by an elaborate network of pipes. The bifolio consists of folios 78 (verso) and 81 (recto); it forms an integrated design, with water flowing from one folio to the other.[24][41] Cosmological, 13 folios: More circular diagrams, but they are of an obscure nature. This section also has foldouts; one of them spans six pages, commonly called the Rosettes folio, and contains a map or diagram with nine "islands" or "rosettes" connected by "causeways" and containing castles, as well as what might be a volcano.[12][41][42] Pharmaceutical, 34 folios: Many labeled drawings of isolated plant parts (roots, leaves, etc.), objects resembling apothecary jars, ranging in style from the mundane to the fantastical, and a few text paragraphs.[12][41] Recipes, 22 folios: Full pages of text broken into many short paragraphs, each marked with a star in the left margin.[12][41] Five folios contain only text, and at least 28 folios are missing from the manuscript.[41] Purpose Page 66, f33v, has been interpreted to represent a sunflower The overall impression given by the surviving leaves of the manuscript is that it was meant to serve as a pharmacopoeia or to address topics in medieval or early modern medicine. However, the puzzling details of the illustrations have fueled many theories about the book's origin, the contents of its text, and the purpose for which it was intended.[14] The first section of the book is almost certainly herbal, but attempts have failed to identify the plants, either with actual specimens or with the stylized drawings of contemporaneous herbals.[43] Only a few of the plant drawings can be identified with reasonable certainty, such as a wild pansy and the maidenhair fern. The herbal pictures that match pharmacological sketches appear to be clean copies of them, except that missing parts were completed with improbable-looking details. In fact, many of the plant drawings in the herbal section seem to be composite: the roots of one species have been fastened to the leaves of another, with flowers from a third.[43] The basins and tubes in the balneological section are sometimes interpreted as implying a connection to alchemy, yet they bear little obvious resemblance to the alchemical equipment of the period.[citation needed] Astrological considerations frequently played a prominent role in herb gathering, bloodletting, and other medical procedures common during the likeliest dates of the manuscript. However, interpretation remains speculative, apart from the obvious Zodiac symbols and one diagram possibly showing the classical planets.[14] History Joannes Marcus Marci, who sent the manuscript to Athanasius Kircher in 1665 or 1666 Voynich among his books in Soho Square Much of the early history of the book is unknown,[44] though the text and illustrations are all characteristically European. In 2009, University of Arizona researchers performed radiocarbon dating on the manuscript's vellum and dated it between 1404 and 1438.[2][45][46] In addition, McCrone Associates in Westmont, Illinois, found that the paints in the manuscript were of materials to be expected from that period of European history. It has been suggested that McCrone Associates found that much of the ink was added not long after the creation of the parchment, but the official report contains no statement to this effect.[13] The first confirmed owner was Georg Baresch, a 17th century alchemist from Prague. Baresch was apparently puzzled about this "Sphynx" that had been "taking up space uselessly in his library" for many years.[9] He learned that Jesuit scholar Athanasius Kircher from the Collegio Romano had published a Coptic (Egyptian) dictionary and claimed to have deciphered the Egyptian hieroglyphs; Baresch twice sent a sample copy of the script to Kircher in Rome, asking for clues. His 1639 letter to Kircher is the earliest confirmed mention of the manuscript that has been found to date.[16] Whether Kircher answered the request is not known, but he was apparently interested enough to try to acquire the book, which Baresch refused to yield. Upon Baresch's death, the manuscript passed to his friend Jan Marek Marci (also known as Johannes Marcus Marci), then rector of Charles University in Prague. A few years later, Marci sent the book to Kircher, his longtime friend and correspondent.[16] Marci also sent Kircher a cover letter (in Latin, dated August 19, 1665 or 1666) that was still attached to the book when Voynich acquired it: [9][47][48][49][50][51][52] Reverend and Distinguished Sir, Father in Christ: This book, bequeathed to me by an intimate friend, I destined for you, my very dear Athanasius, as soon as it came into my possession, for I was convinced that it could be read by no one except yourself. The former owner of this book asked your opinion by letter, copying and sending you a portion of the book from which he believed you would be able to read the remainder, but he at that time refused to send the book itself. To its deciphering he devoted unflagging toil, as is apparent from attempts of his which I send you herewith, and he relinquished hope only with his life. But his toil was in vain, for such Sphinxes as these obey no one but their master, Kircher. Accept now this token, such as it is and long overdue though it be, of my affection for you, and burst through its bars, if there are any, with your wonted success. Dr. Raphael, a tutor in the Bohemian language to Ferdinand III, then King of Bohemia, told me the said book belonged to the Emperor Rudolph and that he presented to the bearer who brought him the book 600 ducats. He believed the author was Roger Bacon, the Englishman. On this point I miss judgement; it is your place to define for us what view we should take thereon, to whose favor and kindness I unreservedly commit myself and remain At the command of your Reverence, Joannes Marcus Marci of Cronland Prague, 19th August, 1665 [or 1666] The "Dr. Raphael" is believed to be Raphael Sznajdhr-Mishovsky.[53] and the sum value be about 2 kg of gold. While Wilfrid Voynich took Raphael's claim at face value, the Bacon authorship theory has been largely discredited.[17] However, a piece of evidence supporting Rudolph's ownership is the now almost invisible name or signature, on the first page of the book, of Jacobus Horcicky de Tepenecz, the head of Rudolph's botanical gardens in Prague. Jacobus may have received the book from Rudolph II as part of the debt that was owed upon his death.[44] Wilfrid Voynich acquired the manuscript in 1912. No records of the book for the next 20 years have been found, but in all likelihood, it was stored with the rest of Kircher's correspondence in the library of the Collegio Romano (now the Pontifical Gregorian University).[16] It probably remained there until the troops of Victor Emmanuel II of Italy captured the city in 1870 and annexed the Papal States. The new Italian government decided to confiscate many properties of the Church, including the library of the Collegio.[16] Many books of the university's library were hastily transferred to the personal libraries of its faculty just before this happened, according to investigations by Xavier Ceccaldi and others, and those books were exempt from confiscation.[16] Kircher's correspondence was among those books, and so, apparently, was the Voynich manuscript, as it still bears the ex libris of Petrus Beckx, head of the Jesuit order and the university's rector at the time.[12][16] Beckx's private library was moved to the Villa Mondragone, Frascati, a large country palace near Rome that had been bought by the Society of Jesus in 1866 and housed the headquarters of the Jesuits' Ghislieri College.[16] In 1903, the Society of Jesus (Collegio Romano) was short of money and decided to sell some of its holdings discreetly to the Vatican Library. The sale took place in 1912, but not all of the manuscripts listed for sale ended up going to the Vatican.[54] Wilfrid Voynich acquired 30 of these manuscripts, among them the one which now bears his name. [16] He spent the next seven years attempting to interest scholars in deciphering the script, while he worked to determine the origins of the manuscript.[4] In 1930, the manuscript was inherited after Wilfrid's death by his widow Ethel Voynich, author of the novel The Gaffly and daughter of mathematician George Boole. She died in 1960 and left the manuscript to her close friend Anne Nilil. In 1961, Nilil sold the book to antique book dealer Hans P. Kraus. Kraus was unable to find a buyer and donated the manuscript to Yale University in 1969, where it was catalogued as "MS 408".[17] sometimes also referred to as "Beinecke MS 408". [12] Timeline of ownership The timeline of ownership of the Voynich manuscript is given below. The time when it was possibly created is shown in green (early 1400s), based on carbon dating of the vellum.[44] Periods of unknown ownership are indicated in white. The commonly accepted owners of the 17th century are shown in orange; the long period of storage in the Collegio Romano is yellow. The location where Wilfrid Voynich allegedly acquired the manuscript (Frascati) is shown in green (late 1800s); Voynich's ownership is shown in red, and modern owners are highlighted blue. Timeline of Voynich manuscript ownership Authorship hypotheses Many people have been proposed as possible authors of the Voynich manuscript, among them Roger Bacon, John Dee or Edward Kelley, Giovanni Fontana, and Voynich. Early history Rudolf II, portrait by Hans von Aachen. Marci's 1665/1666 cover letter to Kircher says that, according to his friend the late Raphael Mishovsky, the book had once been bought by Rudolf II, Holy Roman Emperor and King of Bohemia for 600 ducats (66.42 troy ounce actual gold weight, or 2.07 kg). (Mnishovsky had died in 1644, more than 20 years earlier, and the deal must have occurred before Rudolf's abdication in 1611, at least 55 years before Marci's letter. However, Karl Widemann sold books to Rudolf II in March 1599.) Ernest Board's portrayal of Bacon in his observatory at Merton College According to the letter, Mishovsky (but not necessarily Rudolf) speculated that the author was 13th century Franciscan friar and polymath Roger Bacon. [6] Marci said that he was suspending judgment about this claim, but it was taken quite seriously by Wilfrid Voynich, who did his best to confirm it.[16] Voynich contemplated the possibility that the author was Albertus Magnus if not Roger Bacon.[55] Mathematician John Dee may have sold the manuscript to Emperor Rudolf around 1600. The assumption that Bacon was the author led Voynich to conclude that John Dee sold the manuscript to Rudolf. Dee was a mathematician and astrologer at the court of Queen Elizabeth I of England who was known to have owned a large collection of Bacon's manuscripts. Edward Kelley might have created the manuscript as a fraudDee and his scribe (spirit medium) Edward Kelley lived in Bohemia for several years, where they had hoped to sell their services to the emperor. However, this sale seems quite unlikely, according to John Schuster, because Dee's meticulously kept diaries do not mention it.[16] If Bacon did not create the Voynich manuscript, a supposed connection to Dee is much weakened. It was thought possible, prior to the carbon dating of the manuscript, that Dee or Kelley might have written it and spread the rumor that it was originally a work of Bacon's in the hopes of later selling it.[56] Fabrication by Voynich Some suspect Voynich of having fabricated the manuscript himself.[7] As an antique book dealer, he probably had the necessary knowledge and means, and a lost book by Roger Bacon would have been worth a fortune. Furthermore, Baresch's letter and Marci's letter only establish the existence of a manuscript, not that the Voynich manuscript is the same one mentioned. These letters could possibly have been the motivation for Voynich to fabricate the manuscript, assuming that he was aware of them. However, many consider the expert internal dating of the manuscript and the June 1999[44] discovery of Baresch's letter to Kircher as having eliminated this possibility.[7][16] Eamon Duffy says that the radiocarbon dating of the parchment (or, more accurately, vellum) "effectively rules out any possibility that the manuscript is a post-medieval forgery", as the consistency of the pages indicates origin from a single source, and "it is inconceivable" that a quantity of unused parchment comprising "at least fourteen or fifteen entire calfskins" could have survived from the early 15th century.[25] Giovanni Fontana One of Giovanni Fontana's fantastical illustrations, c. 1420–1430 It has been suggested that some illustrations in the books of an Italian engineer, Giovanni Fontana, slightly resemble Voynich illustrations.[57] Fontana was familiar with cryptography and used it in his books, although he did not use the Voynich script but a simple substitution cipher. In the book Secretum de thesauro experimentorum ymaginacionis hominum (Secret of the treasure-room of experiments in man's imagination), written c. 1430, Fontana described mnemonic machines, written in his cypher.[58] At least Bellicornum instrumentorum liber and this book used a cryptographic system, described as a simple, rational cipher, based on signs without letters or numbers.[59] Other theories Sometime before 1921, Voynich was able to read a name faintly written at the foot of the manuscript's first page: "Jacobi J Tepenecz". This is taken to be a reference to Jakub Hořický de Tepenecz, also known by his Latin name Jacobus Sinapius. Rudolph II had ennobled him in 1607, had appointed him his Imperial Distiller, and had made him curator of his botanical gardens as well as one of his personal physicians. Voynich (and many other people after him) concluded that Jacobus owned the Voynich manuscript prior to Baresch, and he drew a link from that to Rudolf's court. In confirmation of Mishovsky's story, Jacobus's name is still clearly visible under ultraviolet light; however, it does not match the copy of his signature in a document located by Jan Hurych in 2003.[1][8] As a result, it has been suggested that the signature was added later, possibly even fraudulently by Voynich himself.[1] Some pages of the manuscript fold out to show larger diagrams. Baresch's letter bears some resemblance to a hoax that orientalist Andreas Mueller once played on Athanasius Kircher. Mueller sent some unintelligible text to Kircher with a note explaining that it had come from Egypt, and asking him for a translation. Kircher reportedly solved it.[60] It has been speculated that these were both cryptographic tricks used by Kircher to make him look foolish.[60] Raphael Mishovsky, the friend of Marci who was the reputed source of the Bacon story, was himself a cryptographer and apparently invented a cipher which he claimed was uncrackable (c. 1618).[61] This has led to the speculation that Mishovsky might have produced the Voynich manuscript as a practical demonstration of his cipher and made Baresch his unwitting test subject. Indeed, the disclaimer in the Voynich manuscript cover letter could mean that Marci suspected some kind of deception.[61] In his 2006 book, Nick Pelling proposed that the Voynich manuscript was written by 15th century North Italian architect Antonio Averlino (also known as "Filarete"), a theory broadly consistent with the radiocarbon dating.[10] Language hypotheses The Voynich manuscript is written in an unknown script. Many hypotheses have been developed about the Voynich manuscript's "language", called Voynichese: This section possibly contains original research. Please improve it by verifying the claims made and adding inline citations. Statements consisting only of original research should be removed. (January 2017) (Learn how and when to remove this template message) Ciphers According to the "letter-based cipher" theory, the Voynich manuscript contains a meaningful text in some European language that was intentionally rendered obscure by mapping it to the Voynich manuscript "alphabet" through a cipher of some sort—an algorithm that operated on individual letters. This was the working hypothesis for most 20th-century deciphering attempts, including an informal team of NSA cryptographers led by William F. Friedman in the early 1950s.[34] The main argument for this theory is that it is difficult to explain a European author using a strange alphabet—except as an attempt to hide information. Indeed, even Roger Bacon knew about ciphers, and the estimated date for the manuscript roughly coincides with the birth of cryptography in Europe as a relatively systematic discipline.[citation needed] The Vigenère square or table may have been used for encryption and decryption. The counterargument is that almost all cipher systems consistent with that era fail to match what is seen in the Voynich manuscript. For example, simple substitution ciphers would be excluded because the distribution of letter frequencies does not resemble that of any known language; while the small number of different letter shapes used implies that nomenclator and homophonic ciphers would be ruled out, because these typically employ larger cipher alphabets. Polyalphabetic ciphers were invented by Alberti in the 1460s and included the later Vigenère cipher, but they usually yield ciphertexts where all cipher shapes occur with roughly equal probability, quite unlike the language-like letter distribution which the Voynich manuscript appears to have. However, the presence of many tightly grouped shapes in the Voynich manuscript (such as "or", "ar", "ol", "al", "an", "ain", "aiin", "air", "aiir", "am", "ee", "eee", among others) does suggest that its cipher system may make use of a "verbosé cipher", where single letters in a plaintext get enciphered into groups of fake letters. For example, the first two lines of page f15v (seen above) contain "ror or" and "or or oro r", which strongly resemble how Roman numbers such as "CCC" or "XXXX" would look if verbosely enciphered.[62] The theory that the encryption system started from a fundamentally simple cipher and then was augmented by adding nulls (meaningless symbols), homophones (duplicate symbols), transposition cipher (letter rearrangement), false word breaks, and more is also entirely possible. Codes According to the "codebook cipher" theory, the Voynich manuscript "words" would actually be codes to be looked up in a "dictionary" or codebook. The main evidence for this theory is that the internal structure and length distribution of many words are similar to those of Roman numerals, which at the time would be a natural choice for the codes. However, book-based ciphers would be viable for only short messages, because they are very cumbersome to write and to read.[citation needed] Shorthand In 1943, Joseph Martin Feely claimed that the manuscript was a scientific diary written in shorthand. According to D'Imperio,[17] this was "Latin, but in a system of abbreviated forms not considered acceptable by other scholars, who unanimously rejected his readings of the text". Steganography This theory holds that the text of the Voynich manuscript is mostly meaningless, but contains meaningful information hidden in inconspicuous details—e.g., the second letter of every word, or the number of letters in each line. This technique, called steganography, is very old and was described by Johannes Trithemius in 1499. Though the plain text was speculated to have been extracted by a Cardan grille (an overlay with cut-outs for the meaningful text) of some sort, this seems somewhat unlikely because the words and letters are not arranged on anything like a regular grid. Still, steganographic claims are hard to prove or disprove, since stegotexts can be arbitrarily hard to find. It has been suggested that the meaningful text could be encoded in the length or shape of certain pen strokes.[63][64] There are indeed examples of steganography from about that time that use letter shape (italic vs. upright) to hide information. However, when examined at high magnification, the Voynich manuscript pen strokes seem quite natural, and substantially affected by the uneven surface of the vellum.[citation needed] Natural language Statistical analysis of the text reveals patterns similar to those of natural languages. For instance, the word entropy (about 10 bits per word) is similar to that of English or Latin texts.[3] In 2013, Diego Amancio et al argued that the Voynich manuscript "is mostly compatible with natural languages and incompatible with random texts".[65] The first page includes two large red symbols, which have been compared to a Chinese-style book title, upside-down.[66] The linguist Jacques Guy once suggested that the Voynich manuscript text could be some little-known natural language, written plaintext with an invented alphabet. He suggested Chinese in jest, but later comparison of word length statistics with Vietnamese and Chinese made him view that hypothesis seriously.[66] In many language families of East and Central Asia, mainly Sino-Tibetan (Chinese, Tibetan, and Burmese), Austroasiatic (Vietnamese, Khmer, etc.) and possibly Tai (Thai, Lao, etc.), morphemes generally have only one syllable:[67] and syllables have a rather rich structure, including tonal patterns. Other intriguing similarities are the apparent division of the year into 360 degrees of the ecliptic (rather than 365 days), in groups of 15 and starting with Pisces, which are features of the Chinese agricultural calendar (èr shí sì jié qì, 二十四节气/節氣).[citation needed] In 1976, James R. Child of the National Security Agency, a linguist of Indo-European languages, proposed that the manuscript was written in a "hitherto unknown North Germanic dialect".[68] He identified in the manuscript a "skeletal syntax several elements of which are reminiscent of certain Germanic languages", while the content itself is expressed using "a great deal of obscurity".[69] In February 2014, Professor Stephen Bax of the University of Bedfordshire made public his research into using "bottom up" methodology to understand the manuscript. His method involves looking for and translating proper nouns, in association with relevant illustrations, in the context of other languages of the same time period. A paper he posted online offers tentative translation of 14 characters and 10 words.[70][71][72][73] He suggests the text is a treatise on nature written in a natural language, rather than a code. In 2014, Arthur O. Tucker and Rexford H. Talbert published a paper claiming a positive identification of 37 plants, six animals, and one mineral referenced in the manuscript to plant drawings in the Libellus de Medicinalibus Indorum Herbis or Badianus manuscript, a fifteenth-century Aztec herbal.[74] Together with the presence of atacamite in the paint, they argue that the plants were from Colonial New Spain and represented the Nahuatl language, and date the manuscript to between 1521 (the date of the Conquest) and circa 1576, in contradiction of radiocarbon dating evidence of the vellum and many other elements of the manuscript. However, the vellum, while creation of it was dated earlier, could just have been stored and used at a later date for manuscript making. The analysis has been criticized by other Voynich manuscript researchers,[75] pointing out that—among other things—a skilled forger could construct plants that have a passing resemblance to theretofore undiscovered existing plants.[76] In 2014, a team led by Dr Diego Amancio of the University of São Paulo's Institute of Mathematical and Computer Sciences published a paper detailing a study using statistical methods to analyse the relationships of the words in the text. Instead of trying to find the meaning, Amancio's team used complex network modelling to look for connections and clusters of words. By employing concepts such as frequency and intermittence, which measure occurrence and concentration of a term in the text, Amancio was able to discover the manuscript's keywords and create three-dimensional models of the text's structure and word frequencies. Their conclusion

was that in 90% of cases, the Voynich systems are similar to those of other known books such as the Bible, indicating that the book is an actual piece of text in an actual language, and not well-planned gibberish.[65] The use of the framework was exemplified with the analysis of the Voynich manuscript, with the final conclusion that it differs from a random sequence of words, being compatible with natural language. Even though our approach is not aimed at deciphering Voynich, it was capable of providing keywords that could be helpful for decipherers in the future.[65] Constructed language See also: Philosophical language The peculiar internal structure of Voynich manuscript words led William F. Friedman to conjecture that the text could be a constructed language. In 1950, Friedman asked the British army officer John Tiltman to analyze a couple of pages of the text, but Tiltman did not share this conclusion. In a paper in 1967, Brigadier Tiltman said: After reading my report, Mr. Friedman disclosed to me his belief that the basis of the script was a very primitive form of synthetic universal language such as was developed in the form of a philosophical classification of ideas by Bishop Wilkins in 1667 and Dalgarno a little later. It was clear that the productions of these two men were much too systematic, and anything of the kind would have been almost instantly recognisable. My analysis seemed to me to reveal a cumbersome mixture of different kinds of substitution.[4] The concept of a constructed language is quite old, as attested by John Wilkins's Philosophical Language (1668), but still postdates the generally accepted origin of the Voynich manuscript by two centuries. In most known examples, categories are subdivided by adding suffixes (fusional languages); as a consequence, a text in a particular subject would have many words with similar prefixes—for example, all plant names would begin with similar letters, and likewise for all diseases, etc. This feature could then explain the repetitious nature of the Voynich text. However, no one has been able yet to assign a plausible meaning to any prefix or suffix in the Voynich manuscript.[5] Hoax Page 175; f99r, of the pharmaceutical section Page 135; f75r, from the balneological section showing apparent nymphs The unusual features of the Voynich manuscript text, such as the doubled and tripled words, and the suspicious contents of its illustrations support the idea that the manuscript is a hoax. In other words, if no one is able to extract meaning from the book, then perhaps this is because the document contains no meaningful content in the first place. Various hoax theories have been proposed over time. In 2003, computer scientist Gordon Rugg showed that text with characteristics similar to the Voynich manuscript could have been produced using a table of word prefixes, stems, and suffixes, which would have been selected and combined by means of a perforated paper overlay.[77][78] The latter device, known as a Cardan grille, was invented around 1550 as an encryption tool, more than 100 years after the estimated creation date of the Voynich manuscript. Some maintain that the similarity between the pseudo-texts generated in Gordon Rugg's experiments and the Voynich manuscript is superficial, and the grille method could be used to emulate any language to a certain degree.[79] In April 2007, a study by Austrian researcher Andreas Schinner published in Cryptologia supported the hoax hypothesis.[18] Schinner showed that the statistical properties of the manuscript's text were more consistent with meaningless gibberish produced using a quasi-stochastic method, such as the one described by Rugg, than with Latin and medieval German texts.[18] Some scholars have claimed that the manuscript's text appears too sophisticated to be a hoax. In 2013 Marcelo Montemurro, a theoretical physicist from the University of Manchester, published findings claiming that semantic networks exist in the text of the manuscript, such as content-bearing words occurring in a clustered pattern, or new words being used when there was a shift in topic.[80] With this evidence, he believes it unlikely that these features were intentionally "incorporated" into the text to make a hoax more realistic, as most of the required academic knowledge of these structures did not exist at the time the Voynich manuscript would have been written.[81] In September 2016, Gordon Rugg and Gavin Taylor addressed these objections in another article in Cryptologia, and illustrated a simple hoax method that they claim could have caused the mathematical properties of the text.[82] In 2019 Torsten Timm and Andreas Schinner published an algorithm that could have been used by a Medieval author to generate meaningless text which matches the statistical characteristics of the Voynich Manuscript.[83] Glossolalia Script invented by Hildegard von Bingen Detail of the nymphs on page 141; f78r In their 2004 book, Gerry Kennedy and Rob Churchill suggest the possibility that the Voynich manuscript may be a case of glossolalia (speaking-in-tongues), channeling, or outsider art.[15] If so, the author felt compelled to write large amounts of text in a manner which resembles stream of consciousness, either because of voices heard or because of an urge. This often takes place in an invented language in glossolalia, usually made up of fragments of the author's own language, although invented scripts for this purpose are rare. Kennedy and Churchill use Hildegard von Bingen's works to point out similarities between the Voynich manuscript and the illustrations that she drew when she was suffering from severe bouts of migraine, which can induce a trance-like state prone to glossolalia. Prominent features found in both are abundant "streams of stars", and the repetitive nature of the "nymphs" in the balneological section.[84] This theory has been found unlikely by other researchers.[85] The theory is virtually impossible to prove or disprove, short of deciphering the text. Kennedy and Churchill are themselves not convinced of the hypothesis, but consider it plausible. In the culminating chapter of their work, Kennedy states his belief that it is a hoax or forgery. Churchill acknowledges the possibility that the manuscript is either a synthetic forgotten language (as advanced by Friedman), or else a forgery, as the preminent theory. However, he concludes that, if the manuscript is a genuine creation, mental illness or delusion seems to have affected the author.[15] Decipherment claims Since the manuscript's modern rediscovery in 1912, there have been a number of claimed decipherings. William Romaine Newbold One of the earliest efforts to unlock the book's secrets (and the first of many premature claims of decipherment) was made in 1921 by William Romaine Newbold of the University of Pennsylvania.[citation needed] His singular hypothesis held that the visible text is meaningless itself, but that each apparent "letter" is in fact constructed of a series of tiny markings discernible only under magnification.[citation needed] These markings were supposed to be based on ancient Greek shorthand, forming a second level of script that held the real content of the writing.[citation needed] Newbold claimed to have used this knowledge to write out entire paragraphs proving the authorship of Bacon and recording his use of a compound microscope four hundred years before van Leeuwenhoek.[citation needed] A circular drawing in the astronomical section depicts an irregularly shaped object with four curved arms, which Newbold interpreted as a picture of a galaxy, which could be obtained only with a telescope.[4] Similarly, he interpreted other drawings as cells seen through a microscope.[citation needed] However, Newbold's analysis has since been dismissed as overly speculative[86] after John Matthews Manly of the University of Chicago pointed out serious flaws in his theory. Each shorthand character was assumed to have multiple interpretations, with no reliable way to determine which was intended for any given case. Newbold's method also required rearranging letters at will until intelligible Latin was produced. These factors alone ensure the system enough flexibility that nearly anything at all could be discerned from the microscopic markings. Although evidence of micrography using the Hebrew language can be traced as far back as the ninth century, it is nowhere near as compact or complex as the shapes Newbold made out. Close study of the manuscript revealed the markings to be artefacts caused by the way ink cracks as it dries on rough vellum. Perceiving significance in these artefacts can be attributed to pareidolia. Thanks to Manly's thorough refutation, the micrography theory is now generally disregarded.[87] Joseph Martin Feely In 1943, Joseph Martin Feely published Roger Bacon's Cipher: The Right Key Found, in which he claimed that the book was a scientific diary written by Roger Bacon. Feely's method posited that the text was a highly abtivated medieval Latin written in a simple substitution cipher.[17] Leonell C. Strong Leonell C. Strong, a cancer research scientist and amateur cryptographer, believed that the solution to the Voynich manuscript was a "peculiar double system of arithmetical progressions of a multiple alphabet". Strong claimed that the plaintext revealed the Voynich manuscript to be written by the 16th-century English author Anthony Ascham, whose works include A Little Herbal, published in 1550. Notes released after his death reveal that the last stages of his analysis, in which he selected words to combine into phrases, were questionably subjective.[88] Robert S. Brumbaugh In 1978, Robert Brumbaugh, a professor of medieval philosophy at Yale University, claimed that the manuscript was a forgery intended to fool Emperor Rudolf II into purchasing it, and that the text is Latin enciphered with a complex, two-step method.[17] John Stojko In 1978, John Stojko published Letters to God's Eye,[89] in which he claimed that the Voynich Manuscript was a series of letters written in vowelless Ukrainian.[55] The theory caused some sensation among the Ukrainian diaspora at the time, and then in independent Ukraine after 1991.[90] However, the date Stojko gives for the letters, the lack of relation between the text and the images, and the general looseness in the method of decryption all speak against his theory.[55] Stephen Bax In 2014, applied linguistics Professor Stephen Bax self-published a paper claiming to have translated ten words from the manuscript using techniques similar to those used to successfully translate Egyptian hieroglyphs.[91] He claimed the manuscript to be a treatise on nature, in a Near Eastern or Asian language, but no full translation was made before Bax's death in 2017.[92] Nicholas Gibbs In September 2017, television writer Nicholas Gibbs claimed to have decoded the manuscript as idiosyncratically abbreviated Latin.[93] He declared the manuscript to be a mostly plagiarized guide to women's health. Scholars judging Gibbs' hypothesis to be trite. His work was criticized as patching together already-existing scholarship with a highly speculative and incorrect translation; Lisa Fagin Davis, director of the Medieval Academy of America, stated that Gibbs' decipherment "doesn't result in Latin that makes sense." [94][95] Greg Kondrak Professor Greg Kondrak, a natural language processing expert at the University of Alberta, together with his graduate student Bradley Hauer, used computational linguistics in an attempt to decode the manuscript.[96] Their findings were presented at the Annual Meeting of the Association for Computational Linguistics in 2017, in the form of an article suggesting that the language of the manuscript is most likely Hebrew, but encoded using alphagrams, i.e. alphabetically ordered anagrams. However, the team admitted that experts in medieval manuscripts who reviewed the work were not convinced.[97][98][99] The claim is also disputed by an expert in the Hebrew language and its history.[100] Ahmet Ardiç In 2018, Ahmet Ardiç, an electrical engineer with a passion for researching Turkic languages, linguistics and etymological roots claimed the Voynich script is a kind of Old Turkic written in a 'poetic' style, that often displays 'phonemic orthography' meaning the author spelled out words the way he, or she, heard them. He claims to have deciphered and translated over 30% of the manuscript.[101][102] Ardiç published a YouTube video detailing his claims.[103] His submission to the Digital Philology journal of Johns Hopkins University was rejected in 2019.[104] Gerard Cheshire In 2019, the journal Romance Studies published a paper by Gerard Cheshire titled "The Language and Writing System of MS408 (Voynich) Explained".[105] Cheshire, a biology research assistant at the University of Bristol, claimed to have deciphered the manuscript in two weeks using a combination of "lateral thinking and ingenuity." [106][107] He suggested that the manuscript is "a compendium of information on herbal remedies, therapeutic bathing and astrological readings", with a focus on female physical and mental health, reproduction, and parenting; and that the manuscript is the only known text written in proto-Romance.[108] He said: "The manuscript was compiled by Dominican nuns as a source of reference for Maria of Castile, Queen of Aragon." [109] However, experts in medieval documents disputed this interpretation vigorously.[110] with the executive editor of Medieval Academy of America Lisa Fagin Davis denouncing the paper as "just more aspirational, circular, self-fulfilling nonsense" [108] Approached for comment by Ars Technica,[110] Davis gave this explanation: As with most would-be Voynich interpreters, the logic of this proposal is circular and aspirational: he starts with a theory about what a particular series of glyphs might mean, usually because of the word's proximity to an image that he believes he can interpret. He then investigates any number of medieval Romance-language dictionaries until he finds a word that seems to suit his theory. Then he argues that because he has found a Romance-language word that fits his hypothesis, his hypothesis must be right. His "translations" from what is essentially gibberish, an amalgam of multiple languages, are themselves aspirational rather than being actual translations.— Fagin Davis The University of Bristol subsequently removed a reference to Cheshire's claims from its website.[111] referring in a statement to concerns about the validity of the research, and stating: "This research was entirely the author's own work and is not affiliated with the University of Bristol, the School of Arts nor the Centre for Medieval Studies". [112][113] As of June 22, 2020, Cheshire has published his translations of ten pages of the 100 or so that seem to be about medicinal plants.[114][115][116][117] Facsimiles Many books and articles have been written about the manuscript. Copies of the manuscript pages were made by alchemist Georgius Barschius in 1637 and sent to Athanasius Kircher, and later by Wilfrid Voynich.[118] In 2004, the Beinecke Rare Book and Manuscript Library made high-resolution digital scans publicly available online, and several printed facsimiles appeared. In 2016, the Beinecke Library and Yale University Press co-published a facsimile, The Voynich Manuscript, with scholarly essays.[119] The Beinecke Library also authorized the production of a print run of 898 replicas by the Spanish publisher Sileo in 2017.[120][121] Cultural influence The manuscript has also inspired several works of fiction, including the following Author(s) Year Title Colin Wilson 1974 The Return of the Loigor Leanna Krohn 2001(2013) Datura tai harha jonka jokainen näkee (Eng: Datura: or, A Delusion We All See) Lev Grossman 2004 Codex Scarett Thomas 2004 PopCo Michael Cordy 2008 The Source Alec Scarow 2011 Time Riders: The Doomsday Code Jonathan Mabery 2012 Assassin's Code Linda Sue Park 2012 The 39 Clues – Cahills vs. Vespers, book 5. Trust No One Robin Wasserman 2012 The Book of Blood and Shadow Jeremy Robinson Sean Ellis 2013 Prime Dominic Selwood 2013 The Sword of Moses Deborah Harkness 2014 The Book of Life The "voynich", biomechanical creatures from an alternate future which transition from servitors to opponents in Dan Simmons' paired novels Illum/Olympos, are named in reference to the manuscript.[citation needed] Between 1976 and 1978,[122] Italian artist Luigi Serafini created the Codex Seraphianicus containing false writing and pictures of imaginary plants in a style reminiscent of the Voynich manuscript.[123][124][125] Contemporary classical composer Hanspeter Kyburz's 1995 chamber work The Voynich Cipher Manuscript, for chorus & ensemble is inspired by the manuscript.[126] In 2015, the New Haven Symphony Orchestra commissioned Hannah Lash to compose a symphony inspired by the manuscript.[127] The novel Solenoid (2015), by Romanian writer Mircea Cartarescu uses the manuscript as literary device in one of its important themes.[128][129] In the third season episode of the CBS crime drama Elementary titled "Under My Skin", the character of Sherlock Holmes studies the Voynich manuscript, stating that he disbelieves theories that the manuscript is extraterrestrial in origin. Images from the manuscript appear in multiple locations in The Witcher 3: Wild Hunt – Blood and Wine, a game based heavily in Eastern European folklore.[citation needed] The Voynich Manuscript also appears in the games Assassin's Creed IV Black Flag and Assassin's Creed Rogue and is cited as having been stolen from a man named Peter Beckford. The manuscript plays a significant role in Leanna Keyes's 2020 play, Dr. Voynich and Her Children, in which the title character (a transfigureine herbalist in a dystopic American future) rescues the text from the Beinecke Library and uses it to perform abortions.[130] See also Asemic writing Automatic writing Babel ciphers Book of Soya Codex Gigas Copiale cipher False document Fictional language Oera Linda Book Rohonc Codex Rongorongo Undeciphered writing systems Vinland map References References ^ a b c de Steindl, Klaus; Sulzer, Andreas (2011). "The Voynich Code — The World's Mysterious Manuscript". 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