

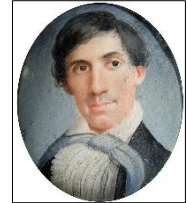
Art History, Computer Vision...and the Face of Abraham Lincoln

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This research paper explores the discovery and analysis of a miniature portrait that may represent the earliest known image of Abraham Lincoln.



Abstract

Are we there yet?

All the puzzle pieces are here: a 2" miniature portrait on ivory dated circa 1840-1842, discovered alongside a letter detailing the owner's familial ties to Mary Todd Lincoln. This portrait's distinctive features echo President Lincoln's unique facial asymmetry. However, despite intensive investigation, no historical document has been found to definitively link this miniature to Lincoln.

This research aims to bridge art and science to determine whether this painting represents the earliest image of Abraham Lincoln, potentially opening avenues for future collaborations in identifying historical faces from the past.

*A key contributor to this effort is Dr. David Stork, an Adjunct Professor at Stanford University and a leading expert in computer-based image analysis. Dr. Stork holds 64 U.S. patents and has authored over 220 peer-reviewed publications in fields such as machine learning, pattern recognition, computational optics, and the image analysis of art. His recent book, *Pixels and Paintings: Foundations of Computer-Assisted Connoisseurship*¹, fosters a dialogue between art scholars and the computer vision community.*

Introduction

In 1991 a miniature portrait painted on ivory was discovered in the New Jersey home of **Mildred Downing Bradbury** (1902-1990) during the sale of her residence. The painting was found in a prominent spot on a living room coffee table in the Bradbury home, as if it was a treasured item. Next to this painting was a letter addressed to Mildred's aunt, noting Mildred's family connection to Mary Todd Lincoln.

Could this painting be the earliest known image of President Lincoln?

Items left in the home, including family genealogy books and letters.



Mildred Downing



Mildred Downing Bradbury Home

Mildred and her husband Gail (Brad) Bradbury were brilliant but reclusive. They were both well educated...she received her master's degree in economics, and he was a high school chemistry teacher. They were childless, and when their property went on the market in 1991 it was sold "as is"...every corner of the home cluttered with garbage and hidden family artifacts, including this painting.

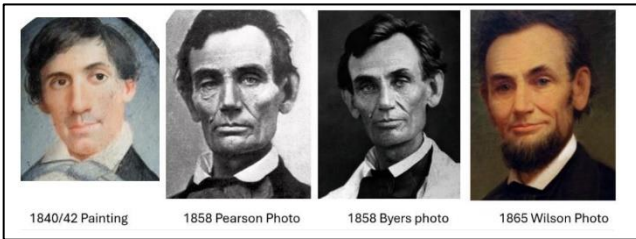
The Miniature



Miniature painting 1-7/8" x 2-1/8"

This oval miniature portrait measuring approximately 2 inches (the size of 4 US postage stamps) is painted in watercolor and gouache on an ivory wafer. Despite its age the artwork remains remarkably preserved.

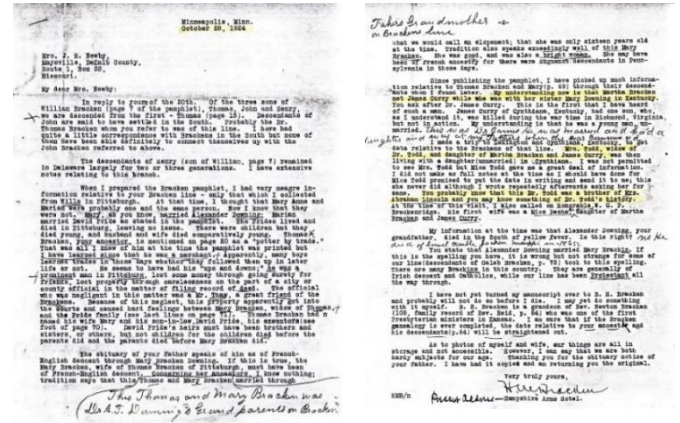
Miniatures like this were popular before the invention of photography, often kept in protective cases. This particular piece was created 20 years before the first known painting of Lincoln and six years before his earliest photograph. Although it may not immediately resemble the familiar image of Lincoln, its features—combined with familial ties and the historical context—merit closer examination.



The Letter

A letter accompanying the painting was addressed to Mildred's aunt, Mrs. J. H. Newby. Mary-Jane Downing Newby (1848-1941) was Alexander Downing's first child. Alexander was Mildred's grandfather.

The Dr. Todd and Mrs. Todd referred to in this letter is Mary Todd Lincoln's brother George Todd and his wife, Ann Curry Todd. Mildred's grandfather Alexander was raised as a sibling to his first cousin, Ann Curry Todd.



I made a trip to Lexington and Cynthiana, Kentucky, to get data relative to the Brackens of that line. Mrs. Todd, widow of Dr. Todd, and daughter of Martha Bracken and James Curry, was then living with a daughter (unmarried) in Cynthiana. I was not permitted to see Mrs. Todd but Miss Todd gave me a great deal of information. I did not make as full notes at the time as I should have done for Miss Todd promised to put the date in writing and send it to me; this she never did although I wrote repeatedly afterwards asking her for same. You probably know that this Dr. Todd was a brother of Mrs. Abraham Lincoln and you may know something of Dr. Todd's history. At the time of this visit, I also called on Honorable W. C. P. Breckenridge. His first wife was a Miss Desha, daughter of Martha Bracken and James Curry.

Excerpt from letter found next to the miniature in the home of Mildred Downing

Provenance

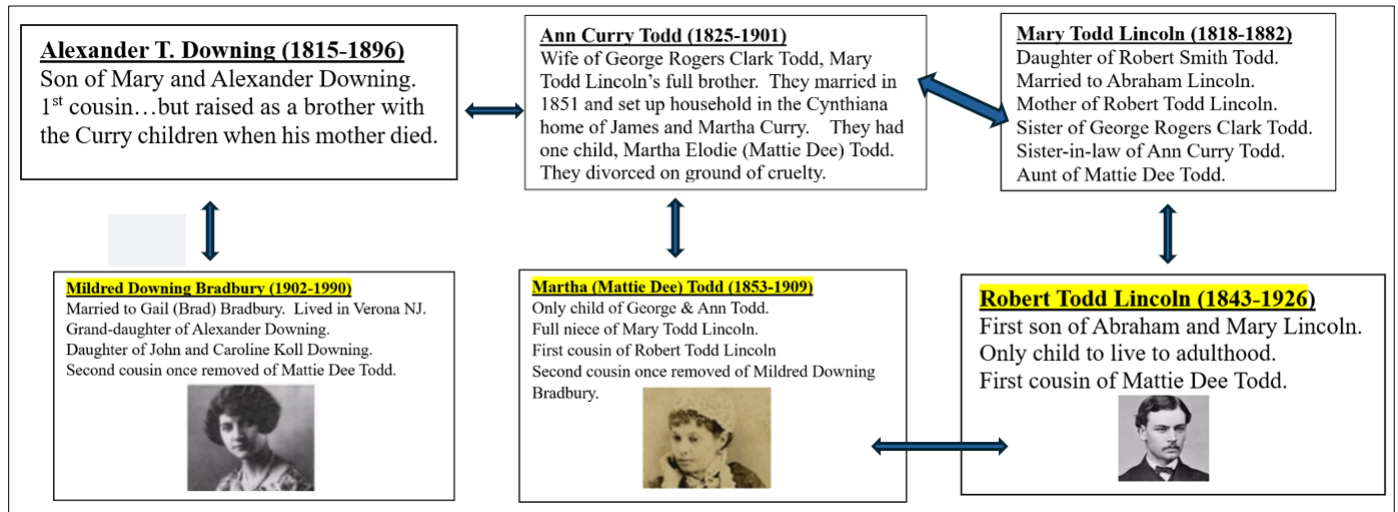
The portrait's provenance traces back to Mildred's grandfather, Alexander Downing. Alexander grew up with Ann Curry Todd, who married Mary Todd Lincoln's youngest brother, George Rogers Clark Todd.

After their marriage in October 1851, George and Ann Todd lived in Ann's parents' home. They had one child, Martha ("Mattie Dee") Todd, born in 1853. Mattie Dee was Mary Todd Lincoln's niece and Robert Todd Lincoln's first cousin. Her second cousin once removed was Mildred, the owner of this miniature.

Art historian Patricia Moss has produced a masterful genealogy report of this family which can be found in her 350-page study.²



- **The miniature belonged to Mildred Downing Bradbury**
- **Her father, Alexander Downing and Ann Curry Todd were cousins, but they grew up together as siblings after Alexander lost his mother.**
- **Ann married George Todd, Mary Todd Lincoln's brother.**



Mattie Dee Todd (1853-1909) and the Todd/Lincoln Family Connection:

There is much written about George and Ann Curry Todd's only child, Martha (Mattie Dee) Todd.

Mattie was raised in Cynthiana, a town just north of her Lexington relatives. Mattie's father, Dr. George Rogers Clark Todd, was Mary Todd Lincoln's youngest brother.

Mattie remained close with her Lexington relatives, and her photo appears twice in the Todd family album³:

Photo taken at Mullen Studio in Lexington marked "Mattie Todd, daughter of George Todd, postmaster for 16 years"

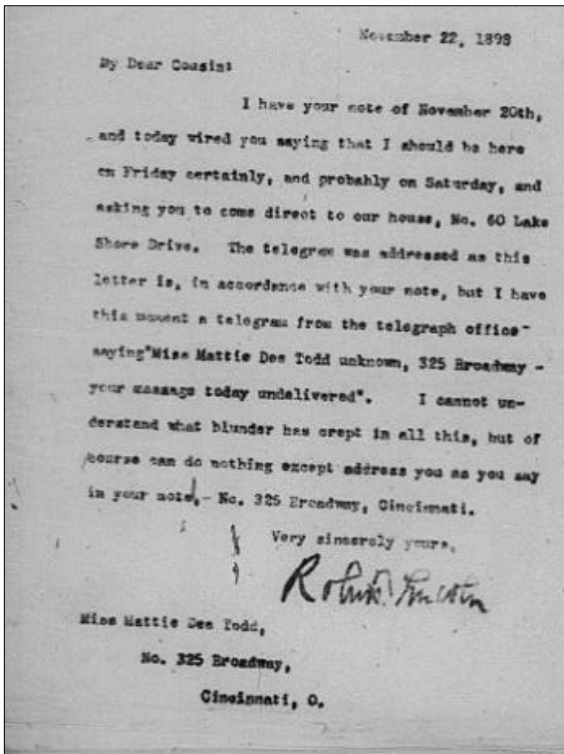


Mattie received gifts from her Todd relatives, including rare oranges from her uncle Clement White⁴, whose wife was half-sister of Mrs. President Lincoln, as well as a vase that belonged to her aunt Mary Lincoln⁵

Although a democrat, Mattie Dee Todd was appointed postmaster of Cynthiana through the direct support of her first cousin, Robert Todd Lincoln...a position she held for 16 years. There is a decades-long trail of correspondence between Mattie and her cousin Robert⁶.

In both 1884 and 1887 Robert wrote detailed letters in support of Mattie maintaining her position as postmaster, and another brief note written in 1899. In November of 1898 Mattie and Robert corresponded regarding Mattie visiting Robert:

“My dear Cousin: I have your note of November 20th, and today wired you saying I should be here on Friday certainly, and probably on Saturday, and asking you to come direct to our house, No. 60 Lake Shore Drive”. There is no known additional correspondence that they actually met on this Thanksgiving weekend.



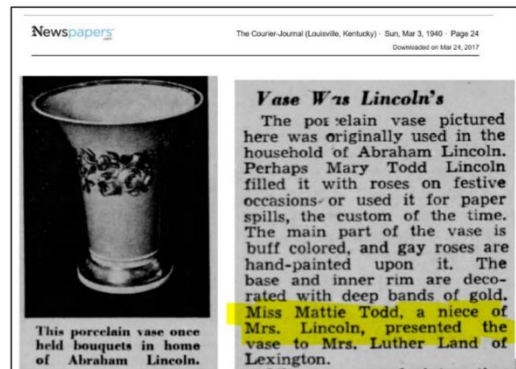
Their final correspondence appears to be on November 21, 1908, when Robert wrote to Mattie at a Cincinnati Hospital: “Very sorry for news in your letter. Am anxious to have word about you when anything has been done”.

Less than two months later, on 01/14/1909 an article in the *Leader* newspaper reports⁷: “The death of Miss Mattie D. Todd at Cynthiana on Tuesday removes another close relative of the family of President Abraham Lincoln in Kentucky and brings sorrow to many relatives and friends in Lexington, where Miss Todd frequently visits and where she was almost as well known by the older residents as in her hometown of Cynthiana”.

Although it was reported by Robert Todd Lincoln that his cousin Mattie Todd was committed to a sanitarium in Cincinnati, newspapers report that she died at her home at the age of 56 from cancer.



Mattie’s aunt Emilie Helm (half-sister of Mary Lincoln) also served as postmistress of Elizabethtown Ky for 12 years. In fact, through the influence of Robert Todd Lincoln, both Emilie and Mattie, Robert Lincoln’s aunt and first-cousin, served at the same time for 12 years as post-mistresses in Kentucky, both leaving this position in 1895.



Timeframe / Location

Research into this miniature began in 1998 when I wrote a letter in 1998 to Sotheby's asking if this could possibly be an early painting of Lincoln. An expert in miniature painting responded, dating this to **approximately circa 1840**, and painted by the "American School". In addition, it was noted "In light of the family connection, one could suggest it might be of him". This early 1840 timeline, specifically 1840-1842, has been supported by a host of experts, most notably historian Patricia Moss of Fine Art Investigations, who details this in her in-depth work on this subject.

Lincoln the Lawyer:

In 1840 Lincoln resided in Springfield, Illinois, practicing law and serving in the Illinois Legislature. He was elected to the Illinois Legislature in 1834, and re-elected in 1836, 1838 and 1840. In 1836 Lincoln stopped working as a surveyor and in 1837 received his license to practice law. These early years were a financial struggle, but by the 1838-1839 legislative session, Lincoln served on at least fourteen committees and worked behind the scenes to manage the program of the Whig minority.

John Todd Stuart, one of the most prominent and successful lawyers in Springfield, encouraged Lincoln to study law, lent Lincoln his law books, and the two men were partners from 1837 to 1841. By 1840 Lincoln was drawing \$1000 annually from the law practice, along with his salary as a legislator...a healthy income at that time. However, when Stuart was reelected to Congress, Lincoln was no longer content to carry the entire load. In April 1841 he entered a new partnership with Stephen T. Logan.

Within a few years of his relocation to Springfield, Lincoln earned \$1200 to \$1500 annually⁸, at a time when the governor of the state received a salary of \$1200 and circuit judges only \$750.



1840-1845 Card Players. Second from left is James H. Matheny, Lincoln's best man at his 1842 wedding.⁹

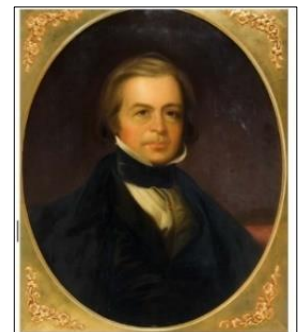
Early 1840's Society:

Lincoln met his future wife in 1839 when she moved into the home of her sister, Elizabeth Edwards, in Springfield Il.

Lincoln was 30 years old. He and Mary Todd dated, became engaged in 1840, broke that engagement on the "fatal first" of January 1841, then resumed their relationship in 1842. Lincoln visited his closest friend, Joshua Fry Speed during the summer of 1841 at his Farmington home in Louisville, Ky. He assisted Speed in his courtship of Fanny Henning while visiting her in Lexington that summer¹⁰. Both Speed and Lincoln married in 1842, Speed to Fanny Henning, Lincoln to Mary Todd.

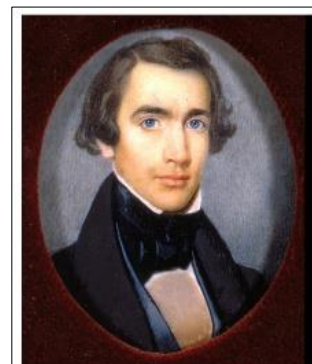
Miniature Portrait Paintings:

Miniatures were treasured keepsakes, often commissioned to mark significant life milestones. They symbolized love, commitment, and deep personal connections. Notably, both Mary Todd's father and Abraham Lincoln's close friend, Joshua Speed, had miniature portraits painted under similar circumstances.

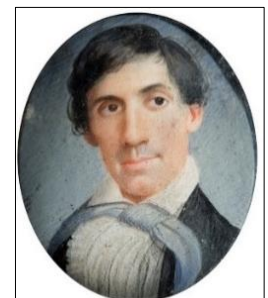


Miniature painting of Robert S. Todd painted by Matthew Jouett 1825-1827

Mary Todd's father had his likeness painted when he became engaged to Betsy Humphreys. Likewise, Mary Todd and Abraham Lincoln's betrothal in 1842 coincides with the likely creation of this miniature. At the time, miniatures were commonly gifted to commemorate weddings, major life events, or even as memorials after death. Similarly, Joshua Speed, Lincoln's best friend, was married in 1842 and had his own miniature portrait created during that period.¹¹



1842 Portrait Miniature of Joshua Fry Speed



1840-1842 Paintin

Lincoln's Unique Facial Features & Asymmetry:

This painting depicts a young man whose likeness is being compared to photographs of an older Abraham Lincoln. While it is well-known that artists often exercise “artistic license” in their work, Lincoln’s face was highly distinctive and uniquely recognizable.

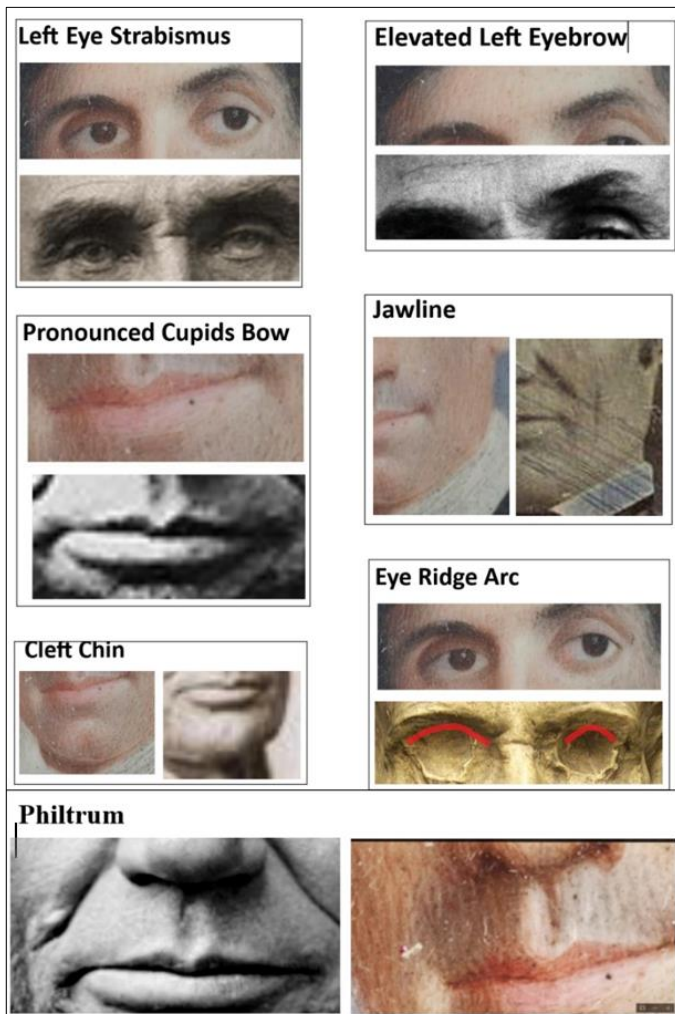
This miniature has undergone analysis by a forensic artist, a sculptor with expertise in cranial structure, and a contemporary expert who has studied Lincoln’s face for decades. Their examination reveals that the facial target points on this miniature align either “perfectly” or are “consistent” with Abraham Lincoln’s distinctive features.

Artist Albert Jasper Conant described Lincoln’s face as follows:

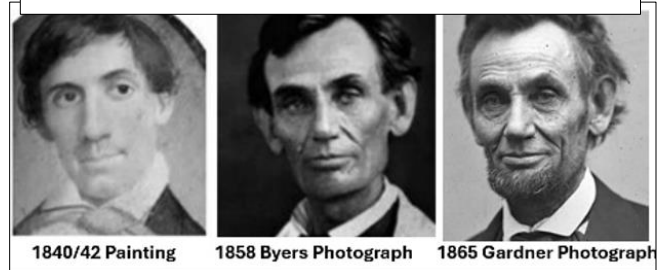
His features were irregular and angular- -the line of the nose was straight on one side and slightly curved on the other; the lower lip on the right side was fuller than on the left, as if swollen from a blow or the sting of an insect, while the lines of the lower part of his face met in sharp angles on each side of his mouth.

The New York Times “Reading Lincoln’s Face” Editorial, Aug. 15, 2007

...”to notice how the ridges over Lincoln’s eyes trace very different arcs, to grasp the shift in elevation and scale from one side of his face to the other...you have to be able to look past one of the most familiar images in your life. And that, as it happens, is incredibly hard to do”....”No matter how hard you try to notice only the details, they resolve again and again into the whole Lincoln”.



- **Left Eye Strabismus.** Lincoln’s left eye was misaligned. When the left eye is covered, the right eye looks straight forward, when the right eye is covered, the left eye wanders.
 - **Left eyebrow significantly raised.**
 - **Eye ridge** – The bony ridges over his eyes trace very different arcs.
 - **Lips** – Lincoln’s lips form a pronounced cupid’s bow. Cover one side of his lips and he frowns, the other side and he smiles.
 - **Philtrum** – The vertical groove between the nose and upper lip appears identical.
- Additional distinct features:*
- **Ball of nose and nostrils almost exact**
 - **Crease at the end of lower lip**
 - **Cleft (dimpled) chin**
 - **Overall shape of the head**
 - **Low angle of jaw**
 - **Heavy upper eyelid**
 - **Head tilt to the right**



Lincoln's Mole

Abraham Lincoln is well known for the mole on the right side of his face. Most painters and many photographers used artistic license to eliminate this mole from his appearance.

It was surprising to discover an intriguing feature when the miniature is magnified – a blemish on the right cheek. However, what makes this detail particularly curious is that it is visible only under very specific conditions...a magnified photograph taken in natural light. Here you can see the blemish magnified and highlighted for clarity. This blemish is not visible to the naked eye under standard lighting conditions.

While previous microscopic and infrared imaging found no evidence of a mole or intentional marking, advancements in imaging and technology over the past decade open new possibilities.

Some of the newer and advanced methods could potentially reveal details about the blemish on the sitter's proper right cheek, particularly with the advancements in imaging and analysis.



Magnified blemish on right side of face



AI toolbox

As noted, it is challenging to compare a painted portrait to photographic images with the standard tools for facial recognition. Artists would often flatter their clients or exaggerate their features. Some specific tools that have been introduced over the past several years include digital brush-stroke analysis, style transfer analysis, portrait pose analysis, and edge detection. Below shows the use of edge detection to compare a 1858 photo against the 1840's painting. This technology defines the raised left eyebrow trailing off at the end, the head tilt, the jaw line.

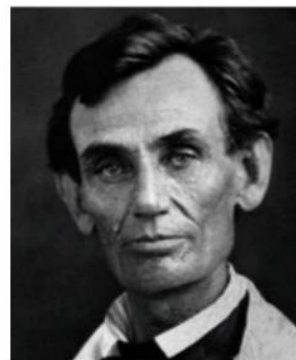
For reference, edge detection was performed on the 1842 Joshua Fry Speed miniature as well.



1840-1842 Miniature Painting



Edge detection applied to Miniature



1858 Byers Photograph of Lincoln



Edge detection applied to Byers photo



1842 Painting of Joshua Fry Speed



Edge Detection of Speed Painting

Lincoln's Eyes:

Lincoln's eyes are perhaps the most striking feature in this miniature portrait, sparking considerable curiosity. Below addresses both the color and shape of his eyes.



It is important to note that the size of this painting is 1-7/8" x 2-1/8". The size of each iris (the colored part of the eye surrounding the pupil) is smaller than 1/16 inch (less than 2mm...the size of a crayon tip)



Abraham Lincoln is well-documented as having strabismus in his left eye, a condition where the eyes are not properly aligned. Strabismus manifests in four main forms:

- **Esotropia:** One eye turns inward ("crossed eyes").
- **Exotropia:** One eye turns outward.
- **Hypertropia:** One eye is positioned higher than the other.
- **Hypotropia:** One eye is positioned lower than the other.

Lincoln's strabismus was intermittently hypertropic, where his left eye appeared higher than the right. Interestingly, this painting depicts **exotropia** (the left eye turning outward). Given the scale of the artwork, it's notable that the iris size the artist worked with is smaller than 1/16 inch (2mm), which makes precision challenging.

Eye Color:

Since color photography did not exist during Lincoln's lifetime, all photographic records of him are in black and white. As a result, our understanding of Lincoln's eye color relies on descriptions from his contemporaries and portraits painted during his life. This miniature was created between 1840 and 1842, nearly 20 years before the earliest documented painted portrait of Lincoln.

Lincoln himself described his eyes as "grey." Of the 13 contemporaries¹² who commented on his eye color, the majority described them as:

- **Dark grey** (5 mentions),
- **Grey** (4 mentions),
- **Dark** (2 mentions),
- **Greyish-brown** (3 mentions).

Some sources also reference hazel eyes, and certain portrait artists depicted him with lighter eye colors. This variability could reflect artistic interpretation or subtle changes in lighting and artistic technique.

Joshua Fry Speed's Miniature:

As a comparison, consider the miniature of Joshua Fry Speed, Lincoln's closest friend. This portrait was painted in 1842 during Speed's engagement to Fanny Henning. When compared to an 1862 portrait of Speed and his wife Fanny by G.P.A. Healy, notable differences in eye color and shape are evident, underscoring the artistic license often exercised by artists.



FACIAL RECOGNITION and AI

Significant advancements in technology have occurred since this miniature was first discovered. At the time, the World Wide Web was in its infancy, and a search for “facial recognition” would have yielded no results.

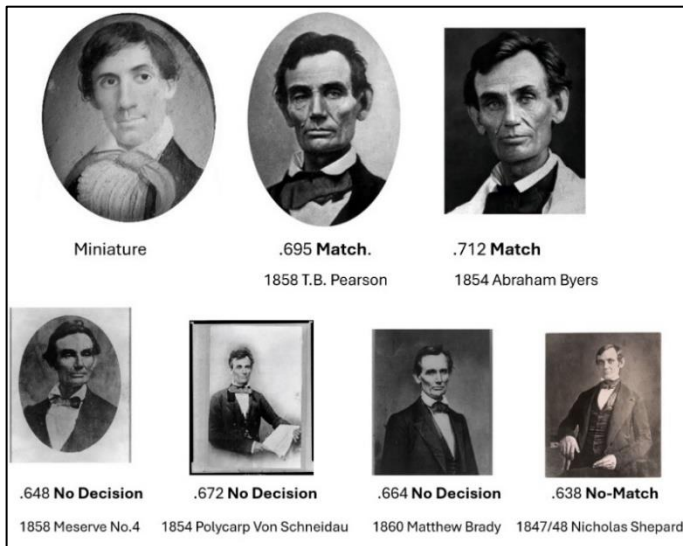
One of the early pioneers in applying facial recognition technology to portrait art was the University of California at Riverside (UCR). In 2015, Dr. Conrad Rudolph, a distinguished professor of Medieval Art History, led a team of researchers as the project director for FACES (Faces, Art, and Computerized Evaluation Systems). The FACES project aimed to establish foundational parameters for using facial recognition technology to analyze works of portrait art.

In 2015, Dr. Rudolph kindly agreed to collaborate with his team of computer scientists to study this miniature. The methodology for their work is detailed in *FACES: Faces, Art, and Computerized Evaluation Systems*¹³. Using the UCR algorithm, the team conducted extensive testing, comparing the miniature to six photographs of Abraham Lincoln. The results of their analysis are summarized below:

The results of our testing of the Lincoln miniature have come back. The results cover the spectrum from non-match “no decision” to match (ND, no decision, means that there are complicating factors; those may be clarified as the technology progresses, but they remain unclear for now).

As you can see, there are two solid matches. The “no decisions” might be thought of as borderline, and a probable non-match with the earliest photograph.

As a matter of principle, we are insistent that this technology does not prove the identity of its subjects either absolutely or relatively (when we say match, we mean “probable match”). But its results, when probable, match what is known with a given unknown. Typically, this is something that is unlikely to be accidental, and so the results tend to be believable. What it really does is provide a new category of quantifiable data for researchers to factor into their own analyses.



That was in 2015. Since then, the fields of artificial intelligence (AI) and computer vision have experienced unprecedented growth, particularly in recent years. As of 2024, an internet search for “face recognition” now yields over 15 million results from a single search engine. Several platforms have emerged that allow users to perform reverse image searches or compare images directly. Among the most popular tools for these purposes are Google, Google Lens, Megvii Face++, and the Russian search engine Yandex.

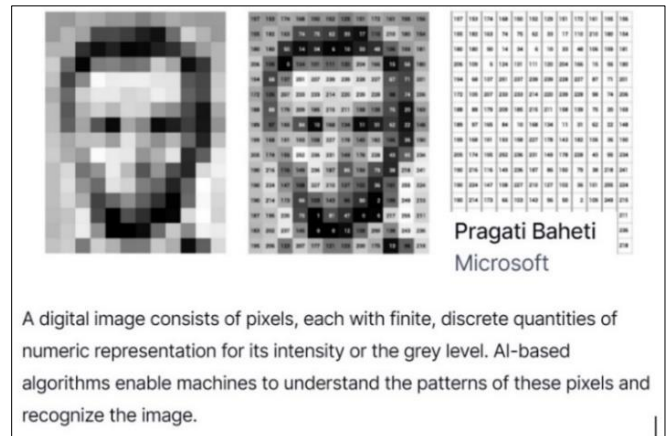
This miniature portrait, with its exceptionally clear frontal view, is ideally suited for such applications. However, consideration needs to be taken into account that these algorithms are trained for photos, not paintings where artistic license is used.

Google/Google Lens

How does Google Search By Images work?

Google’s “Search by Image” feature analyzes an uploaded image to identify its most distinctive visual characteristics, including colors, points, lines, and textures. These features are used to create a query, which is then processed against billions of images in Google’s database. The algorithm identifies and returns matching or visually similar images in the final results.

Unlike traditional text-based searches, Search by Image prioritizes visual similarities, which can lead to a wide range of results depending on the distinct features of the uploaded image and Google’s existing database.



Google 2021:

An older version of Google Reverse Image Search used in 2021 resulted in feedback on “asymmetrical face” and 5 matches to Abraham Lincoln in the top 16 “visually similar” image results. This feedback corresponds with Lincoln’s unusually asymmetrical face.

Google 2022:

A Google reverse image search performed in 2022 resulted in five matches to Lincoln images:

Google 2024

Google 2024 Cropped Face Image results:

April 2024 - Google reverse search shows 2 Lincoln images in top 4 matches.

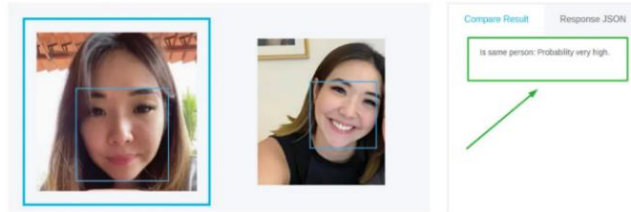
There were 9 additional Lincoln matches in the 34 returned results.

Google Lens:

Megvii Face++ Search Results:

Megvii Technology, a Chinese company, founded in 2011 and widely known for its Face++ system, is one of the world leaders in facial recognition and artificial intelligence technology. While they might be best known for Face++, Megvii uses artificial intelligence and machine vision in a variety of amazing ways.

Face Similarity Application



1. **Probability very high** = similarity percentage approaching 99% ,
2. **Probability Normal** = likeness > 70-80%,
3. **Probability very Low** = Not similar is not the same person.

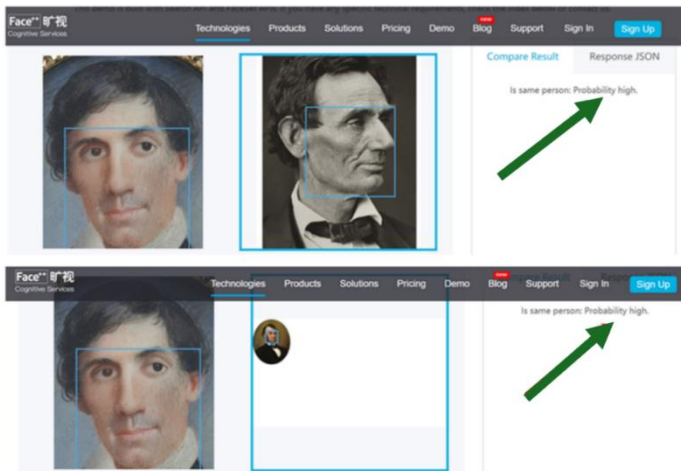
Face++ comparisons with 1860 Hesler photo and 1865 Bowser painting of Lincoln resulted in a "high probability" that this is the same person:

Accuracy Higher than 99%, in Real World

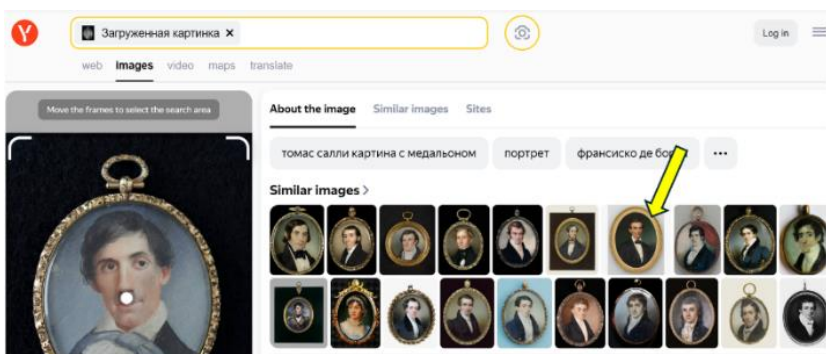
Powered by Face++ award-winning deep learning algorithms, and large-scale training database, Face SDK offers compare accuracy higher than 99% in real world applications. Stable and reliable.

Robust Algorithm to Handle Most Extreme Scenarios

Constantly refined in real-world applications, Face++ smart algorithm can handle most of extreme scenarios and influences, including blocking, improper illumination and head pose, multiple people.



Russian Search Engine Yandex results:



Experts / Professional Opinions:

Sotheby's:

My initial attempt at researching this miniature was with a letter I sent to Sotheby's. The response was encouraging...an expert in American miniature art paintings believed this to be painted by the "American School circa approx. 1840". This same authority "has reviewed the information that you sent and agrees that there is a similarity to the circa 1848 photo of Lincoln"¹⁴. "But without the right documents"...

Harold Holzer, Lincoln Scholar:

In early 2000 I wrote to the Metropolitan Museum of Art enclosing images and information on the miniature. Carrie Rebor Barrett, Associate Curator, American Paintings and Sculpture responded "You may not know that one of the preeminent Lincoln scholars, Harold Holzer, heads our communications department. We would both like it very much if you would be willing to show us the miniature in person". The name Harold Holzer needs no introduction as the leading authority on all things Lincoln. We met shortly thereafter. Mr. Holzer was most generous with his time, and we've kept in touch over the years.

In 2016 I again met with Mr. Holzer along with Art Historian Patricia Moss at Hunter College in NYC. Moss updated Harold with her work on this miniature. He was most gracious and concluded "It's most impressive research. Will we ever be able to prove without doubt that the portrait is of Lincoln? I'm just not certain, although you've created such a provocative set of circumstances"¹⁵. But again "without the right documents"....

Henry Bracken Jr., Bracken family genealogist

Among the thousands of books left in this NJ home was a genealogy pamphlet dated 1899 of Mildred's ancestors entitled "William Bracken of New Castle County Delaware and his Descendants". I found one of these descendants, Henry Bracken Jr., on the internet and contacted him in 2004. He was extremely knowledgeable about this genealogy and told me H.M Bracken continued his work with a 597 page book, which he had copies made and sent to me. I had put all the information I accumulated at this time on a website. Henry wrote that "I have visited your web site and found it most interesting. I think you have drawn the proper conclusion relative to this portrait and have a lot of proven family connections to support them. Moreover, the likeness is in my opinion indisputable".

NYC Sculptor:

In 2010 I was contacted by a NYC artist and Lincolnphile, who had seen my website and was "passionately interested in the possibility of new images existing of the great man". As a sculptor, he studied the existing photos of Lincoln and even owned his own copy of the Leonard Volk life mask. He wrote of the miniature:

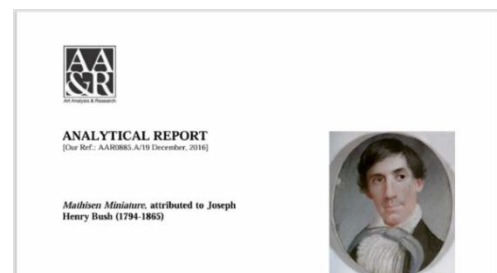
"Your miniature can stand alone on its own merits, I think. Whether or not it can be proved beyond a shadow of a doubt is the problem. I can see an artist trying to capture a likeness of someone who has many facial characteristics of a man who could be Lincoln.

Perhaps my interest in Lincoln's visage is a bit acute...I find his face to be one of the most interesting I have ever seen and studied. But I am sure others would come to the early conclusion I have were they to take the time to really look at the attributes of your miniature and the known photos of Lincoln.

Lincoln's low angle of the jaw is present and accounted for. The shape of the ball of the nose and rendering of the nostrils in your min. are also almost exactly like those of Lincoln's in 2-3 different photos I have found that show him from a certain angle. Finding these specific Lincoln photos helps to match/compare the angle the artist would have been viewing the sitter's face to achieve the miniature you have. Once you have this angle, you can study other features to see if they line up. Certain differences do exist...eye size and color are two major differences...(though eye shape and eyebrow construction/placement seem similar). This is where the artistic element of interpretation makes things muddy where a photo would not. So, it isn't conclusive but, it is very promising in my mind".

Nica Gutman, Art Analysis & Research:

In 2016 an analysis by reputable NYC Art Analysis & Research was conducted, resulting in a 20-page report by Nica Gutman Rieppi and Dr. Nicholas Eastaugh. This detailed report was inconclusive as it relates to the subject of the miniature or the artist this is attributed to, Joseph Henry Bush. "however, the study therefore lays out the results of the stereomicroscopy and technical imaging so that stylistic considerations can be assessed by experts on Abraham Lincoln and Joseph Henry Bush".



Patricia Moss, Fine Art Investigations

Patricia Moss (MA Art History, MA History) is an art historian specializing in 19th century American portraits and an experienced genealogist. That's about all I knew of Patricia when I first contacted her in 2012. I had no idea this would be the start of a long-term and on-going relationship. Patricia is a most profound art detective and connoisseur. Two things Patricia does not do...take short-cuts or sugar-coat.

For years she worked methodically to solve the identity of this miniature, using logic in each step of her investigation. Calling on both her own and others' expertise on dating, provenance, connoisseurship, historical research and scientific examination, she was over two years into this research before she became convinced this may be the earliest likeness of Lincoln.

Her work culminated in a 350-page detailed book of her findings in 2016. This research paper focused on the artist of this miniature painting.

Patricia deep-dived into every aspect surrounding this painting and the possible artist. She concluded the date this was painted was between 1840 and 1842 (the time when Lincoln became engaged to Mary Todd). His clothing indicates it was painted during the summer. **Patricia determined the artist was Joseph Henry Bush**, who was painting in Louisville during Lincoln's visit to Joshua Speed during the summer of 1841. Pat's investigative methodology "incorporates the ethical and judicial standards of the three-legged stool approach to art authentication: Provenance, Connoisseurship and Scientific examination".

Moss states "*The Mathisen Miniature does not look like the engraving of a Mathew Brady photograph on a five-dollar bill. It does not look like the profile on a Lincoln head penny. It does not look like the stately sculpture by Daniel Chester French at the Lincoln Memorial. The Mathisen Miniature does not even look presidential. Nor does it look like some of the awkward, seldom seen photographs because it is a work of art. The Mathisen Miniature is meant to be pleasing to the eye. More than simply pleasing, it may be an authentic representation of the man who was Abraham Lincoln before he was 'Abraham Lincoln'.*"

She concludes,...

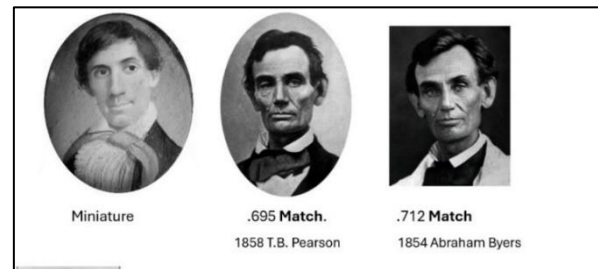
But there is no documentation. There is no hard evidence. Despite all my hard work, the Mathisen Miniature is not a mystery, but it remains a puzzle. A mystery "cannot be answered...A mystery is an attempt to define ambiguities... Puzzles can be solved; they have answers." Just as the image of a jigsaw puzzle with a few missing pieces, can be recognizable, the Mathisen Miniature, might well be seen, by those who examine the evidence, as the earliest known image of the 16th president of the United States".

Again...no documentation. An interesting project. Maybe even the discovery of the earliest image of our beloved 16th president. But....no documentation.

Professor Conrad Rudolph, University of California Riverside (UCR)

Dr. Conrad Rudolph of UCR is a distinguished professor and pioneer in the use of facial recognition to identify subjects of historical portrait paintings. In 2015 Dr. Rudolph and his team of scientists agreed to use the technology they developed on the miniature, which resulted in a solid match to two photographs of Lincoln,

See a more detailed description on Page 9 of this report titled "Facial Recognition and AI".



Dr. Rudolph added "*the miniature is not a photograph, and it would have been normal for the artist to try to "flatter" Lincoln. One thing to remember is that FACES is not actually trained for photos, only works of portrait art. To train it for photos in relation to works of art would be a new project. I have no doubt but that this type of program will be refined (by someone else) in the future*".

Conclusion

While the Mathisen Miniature aligns closely with known features of Abraham Lincoln, the lack of direct documentation prevents definitive attribution. However, the integration of advanced AI technologies and art connoisseurship holds promise for future breakthroughs. Continued interdisciplinary collaboration could ultimately solve this puzzle and redefine how we authenticate historical artifacts.

Are we there yet?

Not entirely. But it appears that this is swiftly and steadily moving in this direction.



- ¹ Stork, David. *Pixels and Paintings*, Wiley 2024
- ² Moss, Patricia. *The Mathisen Miniature*. 2016
- ³ Explore UK Helm and Todd Family Photographs and Papers Box 4 Items 187 & 188
- ⁴ Harrison County Courier Mar 16 1889 Pg. 1 Col. 2
- ⁵ The Courier-Journal, Louisville Ky Mar 3 1840 Pg. 24
- ⁶ Robert Todd Lincoln Letterpress Books index. Todd, Miss M.D., Vol. 12 p. 187; Vol 22 p. 534; Vol.33 p. 310, 311, 315; Vol 4 p. 231, 335 Vol 41 p. 418
- ⁷ Leader Newspaper Record Id: 646274 01/14/1909 p. 1 col. 6
- ⁸ Current, Richard N. "Abraham Lincoln". *Encyclopedia Britannica*, 10 Sep. 2024
- ⁹ Photograph "Young gentlemen at cards". Copyright Sangamon County Historical Society.
- ¹⁰ Lincoln Lore Fort Wayne IN Oct. 1966 No. 1544
- ¹¹ "The True Mary Todd Lincoln" by Betty Boles Ellison, 2014 McFarland & Company, Inc., Jefferson, NC

¹² See chart below for reference to eye color.

SOURCE	Details	Color Description
1 The Life of Abraham Lincoln" by Hon Isaac N. Arnold	personal friend of 25 years	dark grey
2 1896 "Remembrances of Abraham Lincoln" w sketch of his life	Joshua Fry Speed, Lincoln's closest friend	his eyes were gray
3 Charles Sandburg, The Prairie Years	from the Vincennes (Indiana Star)	dark eyes
4 Charles Sandburg, The Prairie Years	Douglas description of Lincoln	dark-gray eyes
5 Personal Recollections of Lincoln by James R. Gilmore	Mr. Edmund Kirke	eyes dark gray
6 Francis F. Brown, "The every-day Life of Abraham Lincoln"	Lincoln's own self-description	gray eyes
7 Francis F. Brown, "The every-day Life of Abraham Lincoln"	"a gentleman who knew Lincoln intimately"	fine dark gray eyes
8 Francis F. Brown, "The every-day Life of Abraham Lincoln"	witness at an 1854 trial in Danville IL	eyes of a grayish-brown color
9 Francis F. Brown, "The every-day Life of Abraham Lincoln"	Mr. John G. Nicolay, who knew him intimately	gray, deep-set eyes
10 Francis F. Brown, "The every-day Life of Abraham Lincoln"	Leonard Volk, Lincoln sculptor	beaming, dark, full eyes
11 1861 A memoir of Abraham Lincoln by Robert Black	Biography from 1861 Lincoln contemporary	his eyes dark gray
12 Lincoln's Photographs: A Complete Album by Lloyd Ostendorf	Account of Martin P.S. Flindlaub	eyes were bright, keen, and a luminous gray
13 "Personal Recollections of Mr. Lincoln"	by Marquis de Chambarn	gray-brown eyes
14 Recollections of Lincoln by James Grant Wilson	detailed from his 1858 meeting w Lincoln	his grayish-brown eyes

- ¹³ Rudolph, Conrad. *FACES: Faces, Art, and Computerized Evaluation Systems*¹³ – A Feasibility Study of the Application of Face Recognition Technology to Works of Portrait Art (IRSA No. 75 [XXXVIII], 2017).
- ¹⁴ Sotheby's Appraisal Letter, 1998
- ¹⁵ Holzer, Harold. Personal correspondence, 2016.

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