

Dating The Shroud Of Turin: Weighing All The Evidence

Raymond J. Schneider
Bridgewater College (Emeritus)
Department of Mathematics and Computer Science
Bridgewater, VA 22812, USA

Abstract

When the Carbon 14 (C14) dating of the Shroud of Turin result was announced in 1988, the tests concluded that the shroud was woven of flax whose age was estimated to be between 1260 and 1390 A.D. This result flew in the face of many expectations of authenticity but was welcomed by many as revealing the shroud to be simply inauthentic and it was then popularly heralded as a "fake." However, this rush to judgment contradicted most of the science and scholarship previously invested in the shroud. It is perhaps a measure of the respect in which C14 dating is held that the finding tended to discredit the earlier work, yet it is a questionable scientific practice to vest one kind of result with such weight as to completely discount the results of a large body of prior work. The present paper seeks a larger perspective by providing an objective account of as many factors as possible to put the issue of dating in a more complete balance. Both the positive and negative evidence for authenticity from a variety of historical, archeological, religious, and scientific domains are presented and weighed based on review of the literature. Diagrammatic forms are used to present the evidences and gain a semi-quantitative assessment of the confidence one can have in the various dating perspectives.

1. TITLE SLIDE (43/18) 18

The Shroud of Turin either wrapped the body of Jesus of Nazareth or is a 14th century artifact.

2. JOURNEY TO TRUTH (43/17) 35

Joseph Campbell analyzed the myth of the hero's journey. Our quest is truth and we need guides.

3. THE PRIMACY OF STORY (45/26) 61

Each of our guides has a unique perspective. Whether science, history, archeology, art, personal witness, or religion, each seeks to illuminate the truth.

4. TRUTH: THE TEST OF STORY (11/11) 72

For the ultimate test of story is whether it is true.

5. WHAT IS TRUTH? [1] (20/8) 80

But "What is truth?" Pontius Pilate asked Jesus.

6. WHAT IS TRUTH? [2] (22/8) 88

Truth is the correspondence between story and reality.

7. HOW DO YOU KNOW THE TRUTH? (56/26) 114

The apostle Thomas, declared "Unless I see I will not believe." Direct witness, correct interpretation, correspondences among known truths, and coherence are the tests of truth.

8. SCIENCE CUTTING OFF DEBATE (108/69) 183

On October 13, 1988 representatives from carbon labs at Arizona, Oxford, and Zurich announced the shroud dated from between 1260 and 1390 AD. The shroud was Medieval and therefore not a true relic of Christ. For the public that settled matters. They could go back to their reality shows confident that the shroud was a fake.

9. WEIGHING THE EVIDENCE (68/51) 234

I must have missed the memo that Carbon dating was infallible. I share Richard Feynman's belief in profound existential skepticism. Confident dogmatism has caused tremendous suffering. It is more important to have questions that can't be answered than answers that can't be questioned. Ignorance is better than subscribing to something that isn't true.

10. WHAT'S WRONG WITH CARBON DATING? (188/112)

The 1988 carbon dating abandoned the original protocol. A single sample from a known contaminated site was selected. The carbon labs failed to document their work thoroughly.

A Chi-square of 6.4% shows the sample was not homogeneous. Brian Walsh showed that the dates had a linear gradient with a 70% correlation between date and location along the sample. Analysis by John Morgan on the UV-Fluorescence gave a correlation of 99.9% for the average date and the UV-Fluorescence. That's such a high correlation it strongly suggests that the date was produced by contamination that fluoresced. The 1988 carbon date is unreliable.

11. THE SAGA OF THE SUPER-FORGER (167/128) 240

The 1988 date poisoned the well. It was treated by the carbon labs as overwhelmingly authoritative. That's just not the case. Large errors in carbon dating are not unusual and this carbon dating was a very flawed process. Prof Edward Hall of Oxford University reflected the bias when he said,

“There was a million pound business in making forgeries during the fourteenth century. Someone just got a bit of linen, faked it up and flogged it.”

The scholarship done on the shroud prior to 1988 did not deserve summary dismissal. Carbon dating isn't the last word.

What must be true of this *super forger* who just "... got a bit of linen, faked it up and flogged it"?

12. FEATURES UNKNOWN TO AN ARTIFICER (163/125) 365

Against all Christian art tradition *super forger* created an image with a helmet of thorns, nails through the wrists, and a myriad of scourge marks matching a Roman instrument unused for almost a thousand years. *Super forger* put serum rings around the blood stains using real blood. He added burn holes to match a 12th century Hungarian manuscript. He added rare limestone from Jerusalem on the nose, knee, and heel. *Super forger* stitched a side strip onto the cloth with a sewing technique from the 1st century. He also added discolorations to the cloth representing a

device used to display the shroud over a hundred years before in Constantinople. *Super forger* is just super.

13. THE ALTERNATIVES MORE THAN SEVERAL REASONS (174/122) 487

Richard Feynman said if you don't have a really compelling reason for something you have to have several reasons. *Super forger* wants his fake relic to be truly remarkable so it is easier to flog it. A negative image, anatomically perfect blood stains, an image without pigment -- that's the ticket.

He added pollens to the cloth to show it traveled from Jerusalem to Edessa to Constantinople and to France. The masterful touch was putting dirt from Jerusalem to the nose, knees and feet. He mastered ancient Roman crucifixion practices by going back in a time machine and creating a separate relic which he put in circulation from Jerusalem. Implausible? let's begin at the beginning.

14. THE JOURNEY BEGINS (121/97) 584

Either the shroud is the burial cloth of Jesus Christ or it was created by our *super forger* with a time machine. He created a fake so compellingly authentic that seemingly only a paranormal forger could accomplish it. What about authenticity?

Our journey begins in a first century tomb. The two most plausible crucifixion dates are April 7, 30 A.D. or April 3, 33 A.D. In 33 A.D. a lunar eclipse occurred with the "moon turning to blood" fulfilling a passage from the prophet Joel preached by Peter on Pentecost.

15. 1-SCRIPTURE AND THE SHROUD (84/55) 639

The gospel of John reveals at least two cloths in the empty tomb, one to wrap the body and one used on his head but was now rolled up in a place by itself. We still have two such cloths: the Shroud of Turin and the Sudarium of Oviedo.

16. MISSING CLOTHS? (120/69) 708

Perhaps there were some additional cloths in the empty tomb. A sheet used to carry the body? Pilgrims report an eight foot "shroud" with no mention of an image. A cap is preserved at Cahors which could explain the lack of image at the top of the head. A shroud was also destroyed by the French Revolution at Besancon.

17. WHY THE SILENCE? (124/87) 795

Until the Edict of Milan in February 313, Christians were a persecuted minority. The existence of a shroud bearing the image of Jesus was a secret. Discovered it would have been seized and destroyed. A burial cloth it made one ritually unclean. An image of one who was God and Lord was both blasphemous and lawless to the Jews. After persecution ended the Christians could still not be certain it would not return. Best it be kept secret.

18. 2 THE ABGAR V LEGEND (169/130) 925

Eusebius's (c. 260-339/340) church history tells the legend of Abgar V, king of Edessa until 50 AD who wrote to Jesus asking him to come and cure him. Eusebius mentions no cloth or image.

Internal textual evidence dates the legend to the third century and likely under the reign of Abgar VIII (d. 212). Over time the legend grew, first to report a face of Christ painted in choice colors, then later an image created by Christ himself as a moist secretion.

Hidden away in the city walls over the Western gate and forgotten it was only rediscovered around 525. It was used in 544 in defense of the city against the Persians.

19. IAN WILSON'S CHRONOLOGY (113/71) 996

In 1978 Ian Wilson published his seminal book, "The Shroud of Turin: The Burial Cloth of Jesus Christ?" He identified the Shroud of Turin as the Image of Edessa, the Mandylion. The shroud had been taken to Edessa by Thaddeus, a disciple of the Lord and used to cure Abgar V. The Mandylion was hidden in the walls of Edessa, forgotten, and rediscovered in 525.

20. JACK MARKWARDT'S CHRONOLOGY (139/98) 1094

Jack Markwardt proposes that Peter had custody of the shroud and when church persecution began Peter went to Antioch. There it disappeared when it was concealed to protect it and the person who hid it was martyred. Only rediscovered in the aftermath of an earthquake in 528, it was evacuated to Edessa to avoid capture by the Persian army in 540. Four years later in 544 it miraculously protected the city. Neither story is particularly convincing. However, the Mandylion is in Edessa in 544 where it remains for 400 years.

21. 3 IMAGES IN TRADITION THE VIGNON HYPOTHESIS (71/49) 1143

Paul Vignon an early scientific shroud researcher noted the sudden emergence around the sixth century of images of Christ that shared many features likely modeled on the Mandylion that matched the shroud. He made particular note of fifteen features that have come to be known as the "Vignon markings."

22. DIAGRAM OF THE VIGNON MARKINGS (84/49) 1192

A single characteristic representation of Christ beginning at the time the Mandylion was rediscovered, sharing so many features with the shroud points to the Mandylion and the shroud being the same object. In all Vignon identified fifteen marks he thought derived from the shroud.

23. 4 DEPICTIONS OF THE IMAGE OF EDESSA (43/34) 1226

The Mandylion is commonly portrayed in landscape format as shown in this slide from a presentation by Ian Wilson. This suggests it is a representation of the shroud folded so only the face appears.

24. CLOTH OF OVIEDO (THE OTHER CLOTH) (66/47) 1273

The sudarium, a small towel covered with blood, is thought to be the cloth that covered the head of Jesus as he was taken down from the cross and transported to the tomb. It has an entirely different history, yet it matches the shroud of Turin.

25. MATCH WITH THE SUDARIUM (117/96) 1369

I used Mario Latendresse's Shroud Scope site to match the scale of the facial image of the shroud and the face stain region of the sudarium and then created an outline of contrast edges and overlaid it on the sudarium image. It was a good match.

Back in the late 1990's Alan Whanger using his polarizer technique made this video. It shows the match between the head wounds on the sudarium and the shroud. Both are type AB blood. Yet the two linens have not been together for at least 1400 years.

26. 5 THE MOVEMENTS OF THE SHROUD (55/40) 1409

The shroud left Jerusalem no later than about 40 A.D. while the sudarium left Jerusalem in 614 A.D. The travels of the two linens did not intersect. If they exhibit corresponding marks they came from the same body

27. 6 SOME ANCIENT WITNESSES (112/90) 1499

The Abgar legend developed over time. Eusebius speaks of the mission to Jesus seeking healing but doesn't mention an image. The *Doctrine of Addai* says that Jesus was painted in choice paints. Later still the image is transferred as a moist secretion by Jesus himself and described as "not made by human hands." Finally miraculous powers are attributed to the cloth and it saves the city of Edessa from conquest. Then in the sixth century a liturgy describes seeing an image of the dead and risen man on the linens.

28. MAX FREI POLLEN DATA (111/87) 1586

In 1973 Dr. Max Frei, a Swiss criminologist was permitted to take sticky tape samples from the shroud. He had pioneered this technique for obtaining samples at crime scenes. Pollens on the tapes placed the shroud in the Holy Land, Edessa and Constantinople. Many of the pollens were heavy, insect borne, rather than wind borne. The deposition of the pollen could be due to the manufacture of the linen, its presence in the ointments applied to the body, or from flowers laid on the shroud possibly in liturgies.

29. DR. MARZIA BOI'S CONCLUSION (43/36) 1622

Dr. Marzia Boi, in her Valencia in 2012 paper points out a possible misclassification by Frei of *Helichrysum* as *Gundelia tournefortii*. *Helichrysum* would likely have been deposited in oils or ointments used to prepare the body.

30. DR. MARZIA BOI'S CONCLUSION CONTINUED (29/21) 1643

Since they are insect borne pollens they were likely deposited during linen fabrication or in unguents used to anoint the body.

31. 544 A.D. THE MANDYLION SAVES EDESSA (48/14) 1657

Evagrius places the Mandylion firmly in Edessa in 544. But what exactly is it?

32. TETRADIPLON (55/40) 1697

The word "tetradiplon" appearing in the Acts of Thaddeus, a sixth century work, means doubled in four (in short eight layers). With the shroud this produces a landscape aspect with the disembodied head centered roughly in the middle.

33. MORE TETRADIPLON (126/90) 1787

There seems to be a slightly faded "halo" around the head possibly because it was exhibited and exposed to light with only the head showing. A similar landscape presentation of a head painted on a wooden panel was found at the location of a Knights Templar site in Templecombe, Somerset. This is a plausible link between the Mandylion, the shroud, and the Templars. Folded in the *tetradiplon* configuration the back when the head is displayed shows the prominent chest wound which may explain our next witness.

34. 7 SAVING THE SHROUD (AND 8 THE GREGORY SERMON) (126/107) 1894

In 943 a Byzantines army came to Edessa to obtain the Mandylion. Two hundred Muslim prisoners were exchanged for the Mandylion. The army returned to Constantinople in August of 944. On August 16th the arch deacon Gregory gave a sermon. He said:

“The splendor has been impressed uniquely by the drops of agony sweat sprinkled from the face... These are truly the beauties that produced the coloring of Christ’s imprint, which has been embellished further by the drops of blood sprinkled from his own side... blood and water there, sweat and image here.”

The Mandylion was more than just a head image.

35. 9 A WITNESS AT CONSTANTINOPLE (67/58) 1952

259 years later in 1203, Robert de Clari a chronicler of the 4th crusade saw a shroud. "... in which, [lit. where] Our Lord had been wrapped, which every Friday, raised itself upright, so that one could see the form of our Lord on it." The sack of Constantinople followed and the shroud enters a period of silence.

36. A CLOTH WRAPPED BODY (39/32) 1984

What is the shroud then? Jackson and Jumper conducted cloth wrapping experiments showing the image arose from a cloth wrapped body. Jumper says, "There is only one way to correctly wrap the body."

37. TELL TALE WOUNDS (55/45) 2029

The shroud depicts the passion of Christ, an anatomically perfect image even to fluorescent serum halos. It shows a first century Roman crucifixion with signature details of the crowning with thorns, the scourging, the nailing and a spear wound in the side.

38. THE IMAGE IS A NEGATIVE (66/36) 2065

Who would "fake" a negative image in the 14th or any earlier century? Artist copies of the Mandylyon transform the image into a positive. Painted shroud copies are crude and unconvincing. It shouts authenticity.

39. RARE TRAVERTINE ARAGONITE (52/40) 2105

In 1978 the STURP scientists detected dirt on the nose, knee, and heel using reflectance spectrometry. Subsequently it was classified as a form of travertine aragonite, a rare limestone identical to that found in Jerusalem.

40. THE SCOURGING AND CRUCIFIXION (49/33) 2138

The marks of the scourging are consistent with the design of first century flagrams. They are partially obscured on parts of the back probably due to carrying the cross beam called the *patibulum*.

41. ICONOCLASM DOWN THE CENTURIES (43/21) 2159

The reconstructed history of the shroud is fragmentary with extended periods of silence. One doesn't have to seek far for reasons.

42. 10.1 MELISMOS, THRENOS, EPITAPHIOI (99/46) 2205

Artistic traditions emerge after the tenth century when the image of Edessa is in Constantinople and revealed as more than just a disembodied head. The coincidence in timing points to the shroud.

43. 10.2 THRENOS, EPITAPHIOI, AND MAN OF SORROWS (81/55) 2260

The progression of images from the melismos through the variations of the threnos, epitaphioi, and then the man of sorrows suggests the gradual spreading of an awareness of the real nature of the Mandylyon as not merely a towel but the full burial shroud. The Man of Sorrows is commonly shown rising from a box.

44. 11. PRAY CODEX 1192-1195 A.D. (69/58) 2318

The Pray Codex, dating from between 1192-1195, has an illustration that shows Jesus being anointed laid out on a shroud with his arms crossed and thumbless hands. A pattern reminiscent of the herring bone weave of the shroud is seen on the detail with a set of holes matching a pattern of burn holes on the shroud.

45. 12. THE CONSTANTINOPLE DEVICE (75/61) 2379

John Jackson found a series of discolorations on the shroud which he interprets as the marks of a device used in Constantinople to raise the shroud out of a box. He reverse engineered and demonstrates the device in a BBC video. Robert de Clari reported this experience and the Man of Sorrows images record a real memory of Byzantine liturgies.

46. THREE DIMENSIONAL IMAGE (83/57) 2436

Vignon noted a relationship between image intensity and distance and attempted to explain it with his vaporograph theory. On February 19th 1976 John Jackson and Bill Mottern put a picture of the shroud on a VP-8 image analyzer and directly observed the three dimensional characteristic of the shroud image.

47. 13. CONSTANTINOPLE TO EUROPE (89/75) 2511

After the sack of Constantinople another great silence in the shroud history begins. There is some evidence that it went to Athens with Othon de la Roche who became the first Frankish Lord of Athens in 1204. He may have sent it back to France or perhaps it entered the custody of the Knights Templar and was used in their initiation rites. The story that connects the two theories has yet to be written.

48. 14. THE SHROUD APPEARS IN THE WEST (145/145) 2656

Whatever the case, the shroud reappears in secular history when it is displayed in a small church in Lirey about 1355 the property of a well known but reverent knight named Geoffrey de Charny. In March of 1349 a fire destroyed the church at Besancon and apparently also a shroud kept there. In April 1349 Geoffrey de Charny writes to Clement VI, the fourth Avignon Pope (1342-1352), seeking to establish a church at Lirey. Geoffrey married Jeanne de Vergy, a descendent of Othon de la Roche, around 1349 as well. A painting was apparently prepared to replace the shroud that had been at Besancon and the shroud we know of today as the shroud of Turin began being displayed in Lirey. The only account of the shroud's acquisition we have is a remark by Marguerite de Charnay that it was the spoils of war.

49. 15. CARBON DATING (82/82) 2738

There are only a few assumptions involved in Carbon dating. The amount of C14 originally in the sample must be known. The sample must be representative of the item being dated. There must be no contamination or selective enrichment that would skew the date. Unless these are true the date will be in error and it is not uncommon for Carbon dating to be in error. We've seen that the shroud dating has obvious problem of homogeneity and contamination. Are there any alternatives?

50. 16. ALTERNATE DATING METHODS (68/68) 2806

There are actually numerous dating alternatives although none is likely as precise as carbon fourteen dating. Ray Rogers has offered the decay of vanillin in the lignon of linen showing that under normal circumstances to have a null test for vanillin implies the object is at least 1300 years old. Giulio Fanti has recently advanced a number of mechanical tests

51. THREE NEW DATING METHODS (53/53) 2859

Giulio Fanti, professor of mechanical and thermal measurements at the Department of Industrial Engineering, University of Padua, together with associates, has pioneered the development of

new dating methods using the aging mechanical characteristics of linen fibers to estimate their age. Three separate techniques mutually corroborate the likely first century date of the shroud.

52. 17. PLAUSIBILITY (65/65) 2924

When we look at the journey we've just made and ask whether the tests of truth as reflected in direct observation by witnesses, correct interpretation, correspondences with other known truths, and coherence are reflected in our story. I think the answer is that they are except for the surprising anomaly of the aberrant carbon date. Even that has a story yet to be fully understood.

53. 18. SUMMING UP (82/82) 3006

In summing up there are two obvious conclusions. The first is that there is something wrong with the carbon date determined in 1988. It clearly is anomalous in the context of the other evidence. The other observation is that the bulk of the evidence tells a very coherent story which strongly suggests that the shroud of Turin is indeed the burial cloth of Jesus Christ. There are still missing pieces to be sure, but that is what gives the shroud its fascination.

54. THANK YOU TO BARRIE SCHWORTZ

55. REFERENCES