

Shroud, why the dating should be redone

Emanuela Marinelli explains in detail the admission of errors made by the laboratories themselves

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We continue [our conversation with the Shroud Emanuela Marinelli](#) who illustrates how we have arrived at the certainty that the dating with the radiocarbon method on the Shroud of 1988 is distorted.

A month ago in Catania a conference [highlighted that everything has to be redone](#). What is the news?

The laboratories that dated the Shroud in 1988 with the radiocarbon method have produced different results, not attributable to the same phenomenon. [Their article was published in Nature on February 16, 1989](#). The documentation released by the British Museum in 2017 to Dr. Tristan Casabianca paints a much more complex picture than the one presented in the article on *Nature*: for example, Arizona made eight measurements and these raw measurements show heterogeneity.

The statistical analysis of the raw data, performed by the working group coordinated by Prof. Benedetto Torrisi, Professor of Statistics at the University of Catania, with Dr. Giuseppe Pernagallo, Dr. Tristan Casabianca and the undersigned, published in *Archaeometry*, University of Oxford journal, March 22 this year ([Radiocarbon dating of the Shroud Turin: new evidence from raw data](#)), unequivocally confirms the inhomogeneity of the ^{14}C counts used for dating, probably due to a contaminant not removed by preliminary cleaning operations, a difficult problem to solve in the radio-dating of tissues, now well-known and not considered quite important in 1988, as confirmed also by Prof. Paolo Di Lazzaro, physicist at ENEA in Frascati. **The analyzed sample, chosen from a single point that was very polluted and was mended due to its peculiar characteristics, did not represent the entire sheet.** Torrisi and Pernagallo emphasized that the strong inhomogeneities between the three laboratories and within the laboratories are alarm bells that confirm the non-statistical representativeness of the fabric fragments used in the sampling.

Already in 2012, the statistical tests conducted by Prof. Marco Riani, a statistician at the University of Parma, on the data published by *Nature* [revealed that the datings provided by the three different laboratories were significantly different](#).

The statistical tests confirm not only that already on the official data the doubts on the agreeability were more than legitimate, but reinforces this thesis, bringing strong evidence of non-homogeneity as regards the raw data as well as for the datings provided by the Arizona laboratory alone.

The conclusions were summarized as follows by prof. Torrisi:

We have no more doubts, the strong heterogeneity of the data leads us to affirm that the dating expressed on *Nature* is not the correct one.

The sample scheme does not provide a statistical representativeness of the sheet. The heterogeneity between the measurements provided by the different laboratories depends on where the pieces of fabric have been cut.

The raw data clearly show the inhomogeneity of the results between the three laboratories.

Several parametric and non-parametric tests show that data homogeneity problems remain both on data published in 1989 and on raw data.

In order to increase and deepen knowledge, it would be desirable to have a new multidisciplinary study campaign, which should aim to collect as much data as possible to form a complete map of the physical, chemical and biological characteristics of the entire Shroud, to be put available to scholars, so that they can work and discuss reliable and reliable data.

A new dating is therefore necessary.

"It amazes me," said Dr. Di Lazzaro, "as the expert in statistics of the British Museum who worked on the data did not realize that something was wrong." But perhaps there is a plausible explanation. "We must consider", continues Di Lazzaro, "that in 1988 the accelerator mass spectrometer technique was the newest technique, it was in its infancy. He was still learning how to use it." Now faced with the choice of requesting another sample, admitting at that point that the technique had not succeeded in the intent and affirming the failure of the technique itself, obviously the simplest way was decided! Imagine what would have happened to admit that that technology was not suitable.

But now we need to look ahead and Dr. Di Lazzaro launches a new possibility. Despite the radiocarbon analysis today, after thirty years, it has evolved, in order to preserve the integrity of the cloth, an alternative route could be attempted. **From a chemical point of view the recent contaminant present in the cloth would be absent in that pile of carbonized fibers due to the Chambéry fire of 1532, taken in 2002 in different points of the cloth and kept at the Curia of Turin.** Having been burned, they are "protected from possible pollution after 1532, and so their measurement could give very indicative information." So you could start from there, trying to date those findings that come from all the burnt areas of the Shroud.