

# The Shroud Body Image Generation. Immanent or Transcendent Action?

**GIOVANNI FAZIO**

Dipartimento MIFT, Università di Messina, Italy

gfazio@unime.it

ORCID: 0000-0002-3971-521X

**Abstract.** In this article, we shall study the mechanism of the Shroud body image formation with the help of both natural sciences and religion. The various possibilities can be divided into three groups of hypothesis: the first one is that of the fake, the second one is the miracle and the third one of the natural event. The first hypothesis is discarded by the interdisciplinary work of the STURP (The Shroud of Turin Research Project) team. Their results do not support the hypothesis that the blood stains and the body image are due to a forger. In our opinion, even if the Miracle by God is possible, the proposed hypotheses of the supernatural event are theologically unacceptable. So, the natural one remains well supported by the “Ockham’s razor”. Obviously, this last model must be verified by experimental evidence. However, this result is not contrary to the hypothesis that the body image is the one of the Nazarene.

**Keywords:** Shroud Body Image; Fake hypothesis; Miracle; Natural event; Nazarene.

## Introduction

The Shroud of Turin is a linen cloth showing the image, frontal and dorsal, of a scourged and crucified man. The importance of this archaeological finding is due to the fact that for many people it is the burial linen of Jesus

of Nazareth; for others, it is a fake because it appeared in Western Europe around 1350 AD.

Nowadays, after various decades of studies, the above sheet is the reason for strong reactions among scientists whom have various opinions, creating human relationships that do not help to obtain a definitive result. In fact, today there are two numerous groups of Shroud scientists. The first one believes that the body image is due to a miraculous event. On the contrary, the second one is certain that it is a Medieval forgery. To these two, we can add a third group of scientists much less numerous than the other two. These scientists consider the body image formation a complex event that could be explained by the laws of natural sciences.

In May 1898, the photographs of the Shroud of Turin, made by Secondo Pia, an amateur photographer, showed the 2D characteristic of the body image. This result has been the start of scientific researches aimed at the authenticity of the relique. So, at the beginning of the XX Century, when the Shroud appeared to be a challenge to the human comprehension, there were various authoritative scientists who decided to solve this charming problem. Despite the profuse engagement, they have not achieved their goal.

Now, more than a Century has passed and the approach of the scientists to the Linen of Turin has not changed. Only the number of scientists has increased, a few of value and many self-styled scholars who are only useful to increase the confusion that already exists (Fazio 2016). So, in this paper, we will make some considerations on the different mechanisms of the Shroud body image formation related to hypotheses regarding the fake, the miracle and the natural event. We will use both the scientific knowledge and the religious one considering only natural and supernatural events. In this way, the hypotheses of the fake and the natural event are part of the Immanent, while the hypothesis of the Miracle is part of the Transcendent.

## 1. Fake hypothesis

This idea was born with the Shroud to deny the existence of Jesus Christ of the Gospels. These scientists, not of Christian faith, often atheists or agnostics,

support their hypothesis as the Linen of Turin appeared in the Middle of the 14th Century, when the known West was invaded by fake Relics, coming from the Middle East together with others produced in Europe by Medieval forgers.

Moreover, the results of the Radiocarbon dating, at Arizona, Oxford and Zurich Laboratories, showing conclusive evidence that the linen of the Shroud is medieval, had to be taken into account. In fact, the age of the Shroud has been measured, with the above method, as AD 1260–1390, with at least 95% confidence (Damon et al. 1989).

So, in scientific literature, articles appeared that hypothesize different processes aimed to demonstrate that the Shroud is a forgery. We, for example, shall cite for the readers some of these articles (Nickell 1989; Allen 1993; Garlaschelli 2010; Borrini, Garlaschelli 2019).

To analyze this hypothesis, we must consider the interdisciplinary work of the STURP (The Shroud of Turin Research Project). The team, at first, announced its programs (Jumper, Mottern 1980) and later, in 1978, performed in Turin various experiments with the intention to explain the Shroud and all its characteristics. These last ones have been described in the Summary of STURP's Conclusion (1981): "...We can conclude for now that the Shroud is that of a real human form of a scourged, crucified man. It is not the product of an artist. The blood stains are composed of hemoglobin and also give a positive test for serum albumin..."

Finally, after the various scientists had published the conclusion related to the part of work of their concern, a group of members of the STURP team published a final article (Jumper et al. 1984). In the Abstract of the latter, we can read: "...The data, taken together, do not support the hypothesis that the images on the Shroud are due to an artist".

The interdisciplinary scientific work of the above cited team is complete enough and can cancel the false hypothesis. In fact, all the attempts failed when the obtained results were compared with the ones produced by the STURP team (Morris, Schwalbe, London 1980; A Summary of STURP'S Conclusion 1981; Mottern, London, Morris 1981; Pellicori 1981; Heller, Adler 1981; Dinegar 1981; Schwalbe, Rogers 1982; Jackson, Jumper, Ercofine 1984; Jumper et al. 1984).

Schwartz (Editor of STERA Inc.) affirms: today, of the Shroud, we know what it is not; unfortunately, we do not know what it is. In other words, we know that the Shroud of Turin is not a fake but, at the same time, we do not know what it is.

## 2. Supernatural event

Approaching this topic, it is ever so difficult as we will discuss of phenomena that are transcendental events. In fact, the scholars of the natural sciences have not the instruments to investigate the Miracles, while for the supporters of the above events, the funerary linen known as “the Shroud”, is already that of Jesus Christ of the Gospels.

Generally, the investigation area of the natural scientists (the one of the immanent), has a boundary within which they can study all the events that occur. In the external part of the above border there is the region of the transcendental events where the natural sciences have no possibility to investigate the phenomena that occur in this region. The scientist observing the obtained results, can only affirm that such an event took place, without being able to affirm anything about how it happened.

For better understanding, it is opportune to remember the Miracles of Lourdes. Here, the Bureau Médical operates, an International Commission of scientists, who establishes when a probable supernatural event is a Miracle. Among these scientists there are Catholics, Atheists, Agnostics and some Anticlerical. The characteristics that the above event must have are various. For our purpose, we are interested only in one of these: the instantaneity (the event occurs in zero time). This means that, when we are in the presence of a Miracle, the biological modifications necessary for the healing of the sick take place at infinite velocity. A result that will **always** be for the Natural Sciences **incomprehensible**.

The Miracle must be such an extraordinary event to leave man astounded and unable to understand what has happened. Human beings can, at most, ascertain that such a phenomenon has occurred. The scientist **will never be able** to describe what happened in a time equal to zero.

The articles supporting these events are many. Among them, we shall consider the writings, aimed at obtaining the Shroud body image formation mechanism, of four authoritative scientists: Antonacci, with the body that instantly disappears and particle radiation would be given off naturally with image formation (2000); Fanti, with the corona discharge (2011); Di Lazzaro et al., with the short laser pulses in the ultraviolet vacuum (2012); Jackson, with the body dematerialization and the linen that because of gravity crosses the body (2017).

The Analysis of these four articles shows a miraculous formation of the Shroud body image with four different modalities. Thus, we should deduce that the same supernatural event can occur in different ways. On the contrary, “the Miracle is a sensitive fact operated by God outside the laws of nature”. Man, using logical reasoning, will never come to an explanation. In fact, if it was possible with logic to understand the above event, it would become a scientific truth and, therefore, would be repeatable. In other words, these phenomena are not explicable by scientific laws (The New American Bible 2010).

Moreover, the Authors of the New Testament did not speak in their writings of a Sindon with image (The New American Bible 2010). Why? The answer is simple: the absence of image is due to the fact that it is latent and appears after years or decades (Fazio, Mandaglio 2011). Therefore, its formation is not due to the action of the Omnipotent.

To be clear, we believe in the Resurrection of Jesus Christ described in the Gospels. Consequently, we do not exclude the Miracle as a possible event depending by God and by God only. In our case (the one of the Shroud body image formation), the yellowed fibrils distribution on the Linen of Turin has a stochastic trend that the “Ockham’s razor” prefers such a mechanism because it includes the smallest number of special assumptions. Therefore, the natural explanation has the highest probability of being closest to the truth. However, no certainty.

Finally, we want to underline that the Relics are not part of the Christian creed. Therefore, also if the Shroud is a fake (and we do not believe this), nothing, in the Christian religion, will change. However, we shall look at the

experiments at ENEA Research Centre with attention because their results could be very useful to understand how the linen structure at a microscopic level changes.

### 3. Natural event

This hypothesis, observing the behavior of the readers, is the one that arouses less interest. In fact, the latter are more curious towards both the Shroud–miracle and the Shroud–fake because they provoke shock and so major interest.

We have always thought about natural mechanism for the Shroud body image formation. In fact, the yellowed fibrils, grouped in small bundles, constitute a distribution without continuity but not random. For us, this is the result of a probabilistic process looking for a natural explanation of the Shroud body image formation.

Therefore, a natural mechanism. For us, the stochastic one seems to be the right hypothesis to explain the body image. In fact, for this choice, we can find support in the characteristics of the yellowed fibrils distribution:

- 1) the probability to yellow a fibril is a function of the received energy,
- 2) the optical density of the fibrils is independent from the energy.

To confirm our hypothesis, a correlation, density of yellowed fibrils *versus* cloth– body distance, exists.

Now, because all the yellowed fibrils have the same optical density, neglecting the natural differences existing among the linen threads and/or the manufacturing procedure, we can affirm that the above distribution is stochastic (Fazio, Mandaglio 2011, 2012; Fazio et al. 2015, 2017). To have such an effect, a weak energy source is necessary and in an ancient sepulcher there is the thermal one of the corpse enveloped in the burial linen deposited on the deathly stone. Effects of this type (stochastic) cease only if the transmitted energy (in our case from the corpse to the sheet) is zero.

Recently, we have written a paper that describes, step by step, the formation of the Shroud body image (Fazio, Mandaglio, Anastasi 2019). Here, in our opinion, the thermal energy is sufficiently weak to trigger

a stochastic process with an interaction between heat and linen cellulose structure. The action of the thermal energy occurred by all the three mechanisms. Irradiation, conduction and convection triggered a stochastic process, characteristic for its result that is latent. In our case the above time is about years or decades. The result is the formation of the body image on the Shroud of Turin. However, only an experimental control will affirm if the stochastic hypothesis is the right one.

It is also important to note that to be certain of the uniqueness of the image, we must have the corpse outside the burial linen before the emission of the nitrogen compounds (amines). Thus and only thus, we can be certain that these emissions will not be absorbed from the linen cloth. Therefore, it will be prevented from damaging the thermic effects due to the heat transfer from the body to the Shroud.

#### 4. Discussion and Conclusions

Although we are convinced of a natural process, we have analyzed the possible mechanisms of the Shroud body image formation. The hypotheses regarding the fake, the miracle and the natural event have been evaluated together with the respective mechanisms of formation.

The fake hypothesis must be discarded because it does not reproduce all the characteristics of the above body image. Moreover, as the work of the STURP team widely demonstrates (Jumper et al. 1984), the body image has various characteristics that totally exclude the possibility of forgery. We can cite, for example, that on the Shroud, the blood stain formation (yielded by the enveloped human body) precedes the body image formation and the thickness of body image is about 20–30 micron.

The same result is obtained for the miraculous hypothesis. Beyond the difficulties with such a topic, we observed that the same event is presented with different descriptions. Man can only affirm that the Shroud body image has been yielded by a supernatural action (Antonacci 2000; Fanti 2010; Di Lazzaro et al. 2012; Jackson, 2017). In fact, they cannot describe the event step by step. Only the Omnipotent is able to generate Miracles and no man

can understand and describe it. Thus, the final results of these works, taken together, discard the above hypothesis.

Now, in the abstract of this article, we have affirmed how our natural process of body image formation is not incompatible with the hypothesis that the man of the Shroud is Jesus Christ of the Gospels. This picture is due to the correspondence among the injuries suffered by the Nazarene as described in the Holy Books and the evidence regarding the Shroud. In fact, a careful comparison highlights this perfect correspondence among Writings and vision (Barbet 1963; Bucklin 1982 and 1997; Zugibe 2005; Bergeron 2012).

In 2012, we analyzed the abrupt changes that appear in the dorsal part of the Shroud body image. These anomalies are different from the ones present in the frontal part because they do not depend on the manufacturing procedure. So, we have explained their presence with the aromas and/or burial ointments used (Curciarello et al. 2012). This result has been confirmed in a work (Boi 2017) performed to search for pollen on the Shroud of Turin. In fact, this last scientist showed that the pollen found belonged to plants used for the production of burial ointments and perfumes. This result confirms that the linen of our concern is a true shroud, as the ones used in ancient times to envelope the corpses after a treatment with burial ointments and/or perfumes.

Finally, we must remember that our natural hypothesis of image formation wants the corpse to be out of the sheet before the emission of nitrogen compounds (amines). In the Holy Scriptures, it is clear that Jesus Christ would have risen and appeared to the Apostles (New Testament, Synoptic and John).

### **Acknowledgements**

The author wishes to thank G. Sturniolo, Chairman of the Centro Studi “Padre Ruggeri” in Messina, for the interesting discussions in Theology. Letterio Ruggeri was for us a Priest of profound spirituality, Educator in the Catholic Christian Religion, a Teacher of life and a Humble servant of Jesus Christ.



## References

- Antonacci Mark. 2000. *The Resurrection of the Shroud*. M. Evans and Co. Publishing, New York.
- Allen Nicholas P.L. 1993. "Is the Shroud of Turin the first recorded photograph?" *South Afric. J. Art Hist.* 11: 23–32.
- "A Summary of STURP'S Conclusions". *STERA Inc., Barrie M. Schwartz Editor*. <https://www.shroud.com/78conclu.htm> 1981.
- Barbet Pierre. 1963. *A Doctor at Calvary*. translated from the French, Image Book, Garden City, New York.
- Bergeron Joseph W. 2012. "The crucifixion of Jesus: Review of hypothesized mechanisms of death and implications of shock and trauma-induced coagulopathy." *J. Forensic Legal Med.* 19: 113–116.
- Boi Marzia. 2017. "Pollen on the Shroud of Turin: The Probable Trace Left by Anointing and Embalming." *Archaeometry* 59: 316–330.
- Borrini Matteo and Luigi Garlaschelli. 2019. "A BPA Approach to the Shroud of Turin." *J. Forensic Sci.* 64: 137–143.
- Bucklin Robert. 1982. "The Shroud of Turin: a Pathologist's Wiewpoint." *Legal Med. Annu.* (C., Wecth Editor, Stanford University): 33–39.
- Bucklin Robert. 1997, "An Autopsy on the Man of the Shroud." Available online <https://www.shroud.com/bucklin.htm>
- Curciarello Francesca, Veronica De Leo, Giovanni Fazio and Giuseppe Mandaglio. 2012. "The abrupt changes in the yellowed fibrils density in the Linen of Turin." *Radiat. Eff. Def. Solidis* 167: 224–228.
- Damon Paul E., et al. 1989. "Radiocarbon dating of the Shroud of Turin." *Nature* 337: 611–615.
- Di Lazzaro Paolo, Daniele Murra, Enrico Nichelatti, Antonino Santoni and Giuseppe Baldacchini. 2012. "Superficial and Shroud-like coloration of linen by short laser pulses in the vacuum ultraviolet." *Appl. Opt.* 51: 8567–8578.
- Dinegar Robert H. 1981. "The Shroud of Turin – A Look at the Overall Picture." *The Living Church* May 17: 9–11.
- Fanti Giulio. 2010. "Hypothesis Regarding the Formation of the Body Image on the Turin Shroud. A Critical Compendium." *J. Imaging Sci. Technol.* 55: 060507–1–14.
- Fazio Giovanni. and Giuseppe Mandaglio. 2011. "Stochastic distribution of the fibrils that yielded the Shroud body image." *Radiat. Eff. Def. Solidis* 166: 476–479.
- Fazio Giovanni and Giuseppe Mandaglio. 2012. "Can a latent image explain the characteristics of the body image?" *Radiat. Eff. Def. Solids* 167: 220–223.
- Fazio Giovanni, Veronica De Leo, Francesca Curciarello and Giuseppe Mandaglio. 2015. "Comparison among the shroud body image formation mechanisms by linen fibrils distributions." *J. Tex. Institute* 106: 896–899.

- Fazio Giovanni, Giuseppe Mandaglio and Antonio Anastasi. 2017. "Revisiting a pure stochastic mechanism to explain the body image formation on the Linen of Turin." *J. Tex. Institute* 108: 1552–1555.
- Fazio Giovanni. 2016. "The scientific approach vs the open 'Linen of Turin questions' is it the right one?" *J. Tex. Institute* 107: 1607–1609.
- Fazio Giovanni, Giuseppe Mandaglio and Antonio Anastasi. 2019. "Describing, step by step, the Shroud body image formation." *Heritage* 2: 34–38.
- Garlaschelli Luigi. 2010. "Life-Size Reproduction of the Shroud of Turin and its image." *J. Imaging Sci. Technol.* 54: 040301–1–14.
- Heller John H. and Alan D. Adler. 1981. "A Chemical Investigation of the Shroud of Turin." *Canadian Soc Forensic Sci. J.* 14: 81–103.
- Jackson John P., Eric J. Jumper and William R. Ercoline. 1984. "Correlation of image intensity on the Turin Shroud with 3D structure of a human body shape." *Appl. Opt.* 23: 2244–2270.
- Jackson John P. 2017. "The Shroud of Turin. A Critical Summary of Observation." Data and Hypothesis. Ver. 4.0. <http://www.shroudofturin.com/Resources/CRTSUM.pdf>.
- Jumper Eric J. and Robert W. Mottern. 1980. "Scientific investigation of the Shroud of Turin." *Appl. Opt.* 19: 1909–1912.
- Jumper Eric G., Alan D. Adler, John P. Jackson, Samuel F. Pellicori, John H. Heller and James R. Druzik. 1984. "A comprehensive examination of the various stains and images on the Shroud of Turin" *ACS Adv. Chem. Archaeol. Chem. III* 205: 447–476 and references therein.
- Morris Roger A., Larry A. Schwalbe and Ronald J. London. 1980. "X-Ray Fluorescence Investigation of the Shroud of Turin." *X-Ray Spectrometry* 9: 40–47.
- Mottern Robert W., Ronald J. London and Roger A. Morris, 1981. "Radiographic Examination of the Shroud of Turin– a Preliminary Report." *Material Evaluation* 58: 39–44.
- Nickell Joe. 1989. "Unshrouding a Mystery, Science, Pseudoscience and the Cloth of Turin." *Skept. Inquires* 13: 296–299.
- Pellicori Samuel F. and Mark S. Evans, 1981. "The Shroud of Turin through the microscope." *Archaeology* 34: 34–43.
- Schwalbe Larry A. and Raymond N. Rogers. 1982. "Physics and Chemistry of the Shroud of Turin. A summary of the 1978 investigation." *Anal. Chim. Acta* 135: 3–49.
- United States Conference of Catholic Bishop, *The New American Bible, Revised Edition.* (Confraternity of Christian Doctrine Inc. Washington DC, 2010).
- Zugibe Frederick T. 2005. *The Crucifixion of Jesus: A Forensic Inquiry.* M. Evans and Co. Publishing. New York.