

An Unrealistic Approach and Analysis of the Blood Flows on the Shroud of Turin

by Mark Antonacci*

A recent paper by Matteo Borrini and Luigi Garlaschelli titled “A BPA Approach to the Shroud of Turin” was recently published in the *Journal of Forensic Sciences*¹. This paper contains the bloodstain patterns from two sets of experiments in which:

- 1.) blood from an overhead bag was released through a small thin tube located at the back of the wrist of one of the authors, and which
- 2.) blood flows were made on a plastic mannequin by pressure being applied on a small sponge soaked in blood.

From these experimental results, which differ from comparable blood flows on the Shroud of Turin, the authors conclude the blood flow patterns on the Shroud are unrealistic and indicate they were the result of artistry or were faked. In this article I will briefly explain how both sets of experiments are flawed in several respects, how the blood flows on the Shroud are quite realistic, and how the authors’ conclusions are necessarily flawed. All of the comments that I will make about the blood marks on the multiply-wounded crucifixion victim wrapped in the Shroud are supported by decades of research by numerous pathologists, physicians, anatomists, battlefield surgeons, scientists and forensic experts cited throughout both of my below books.

The first thing that should be noted is that in both sets of experiments the authors used blood with an anticoagulant. This prevents blood from coagulating as it naturally does when it leaves a human body. The anticoagulant helped cause the blood in their two sets of experiments to be too runny and more fluid than the blood on the man in the Shroud. According to Italian physicist Paolo Di Lazzaro, who has seen both the illustrations and the film that accompanied the four year old experiments, the blood was too fluid and almost looks like colored water.²

In the authors’ first set of experiments, the thin blood flowed straight down from one of the author’s wrists to his elbow when his forearm was in the vertical position. In contrast, the blood flows on the man in the Shroud run from his wrists to his elbows in two different partially horizontal angles. These two streams are seen on both forearms of the man in the Shroud and are quite realistic with the positions that a victim would be in during a crucifixion.

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When a crucifixion victim was suspended from a cross he couldn't breathe because he couldn't exhale. In order to exhale, and thus breathe, he had to push himself up with his nailed feet and pull himself up by his nailed wrists. When he raises the trunk of his body, he raises his shoulders, which alters the horizontal axis of his arms around 10° or so, causing two partially horizontal blood flows.

By continuing in this see-saw manner, a crucifixion victim could stay alive on the cross for as much as a couple of days. The crucified victim that was wrapped in the Shroud of Turin appears to have already been severely scourged, crowned with thorns, beaten about the head and face, had scrapes across his shoulders, and had fallen. Although a crucifixion victim in this condition could not have prolonged his life for days, he could have lived a few more hours by continuing this up and down movement.

Over the course of a few hours, blood containing serum would have continued to flow toward the elbows in partially horizontal streams that were sent from a weakening, but still beating heart. As Dr. Di Lazzaro also notes, the tortured man in the Shroud was likely dehydrated. If this man was the historical Jesus, he would not have eaten nor drunk since the previous day. All of these tortures would eventually lead to the man's death. The victim's dehydration and the coagulation of his blood would have caused his blood to be more viscous and to flow slower, as would the sweat, dirt and swelling on his body.

The bloodstain patterns produced in the authors' artificial experiments are very unrealistic in other aspects from those of a crucifixion victim. As would have existed with an actual crucified victim, serum from the coagulated blood has been identified on the blood flows at the wrist and forearm of the man in the Shroud, as well as on numerous other blood marks and blood flows throughout his tortured body, including his side wound and the small of his back. The lack of serum or coagulated blood on *any* of the authors' bloodstains is another unrealistic trait.

The authors also make the point that there is a gap in the blood flows between the wrist and the lower forearm of the man in the Shroud. They should clearly know better. Everyone who looks at the full-length frontal image can tell that the man's buriers have intentionally placed both of his hands across his groin for purposes of modesty. This gap area, seen on both lower forearms, would have been a very logical area for the buriers to hold when moving the man's forearms and hands, which were in rigor mortis. In addition, these parts of the forearm could have been held by those who were carrying or transporting the body from the cross to the tomb.

In the second set of experiments, the authors took synthetic blood with anticoagulant and soaked a small sponge in it. This sponge was attached to the end of a flat stick that was in the shape of a yard stick, but only about half as long. In another incorrect manner, they attempted to simulate the post-mortem spear wound and blood flows of the man in the Shroud by holding the

stick *horizontally* and showing the small flat sponge against a standing plastic mannequin. This resulted in blood splaying or spreading in three or four streams along the front and side of the smooth plastic mannequin.³ Now you don't need to be a physician or scientist to recognize that this is not how a crucified corpse would have been stabbed or bled.

Because of the factors discussed earlier, the blood from the right side wound of the crucified victim on the Shroud would also be thicker than the blood used in the authors' experiments. In addition to blood and serum, there was a large amount of clear watery fluid that also escaped from the pleural cavity in the chest of the man in the Shroud. Both the post-mortem blood and watery fluid oozed from the side wound by gravity in one flow after the man's right auricle, which fills with blood upon death, was pierced by a spear. This wound is located a few inches below the heart. It would have been inflicted by an *upward* thrust into the dead crucifixion victim still on the cross and would account for the largest amount of blood and fluid on the Shroud.

The authors' inability to duplicate or understand the presence of the horizontal blood flows across the small of the back also contributes to their erroneous conclusions regarding the blood on the Shroud. I once asked STURP scientist Don Lynn to explain the horizontal flow across the lower back of the man in the Shroud. He explained to me that STURP scientists once poured water down the right side of a young man who was voluntarily suspended in the vertical position that the man in the Shroud appeared to be in when he died on the cross. Dr. Lynn said the water not only ran down the front of the volunteer's right side, but that it curved when it got to the narrower lower part of his front hip and went around to his lower back. While no one can say for certain how the post-mortem fluids ran across the lower back of the man in the Shroud, STURP's experiment indicates it could have happened while the man was in the vertical position.

In addition, think of the various positions that the man in the Shroud would have been in after the post-mortem fluid flowed down his right side. After the victim was taken down from the cross, he could have been laid horizontally at the foot of the cross. He would most likely have then been carried or transported horizontally to his burial tomb. This would have continued as he was carried horizontally into the tomb and laid horizontally within his burial shroud. While most of the time the body would likely have been face up, there could have been times when he was face down or even somewhat on his side, especially when he was being taken down from the cross. So, the blood could have transferred across his lower back in any number of ways.

One way the blood could *not* have transferred across the *lower* back was from another erroneous method utilized by the authors in their last experiment. Here they took the same stick with the same kind of sponge and soaked it in the same synthetic blood containing anticoagulants. However, in this experiment they shoved the stick and bloodied sponge against the middle of the right side of a plastic mannequin that was lying on a table in the horizontal

position. The authors even tilted the table 5° clockwise and counterclockwise. While the blood again ran in three streams, they ran from the mid-right side of the mannequin's chest, *around* its right side, and onto the middle of the mannequin's back—where it collected in a puddle on the fabric that covered the table and laid under the mannequin.⁴

While this didn't duplicate the post-mortem blood flow across the *lower* back of the man in the Shroud, it *does* show that blood can travel horizontally across the back when the body is in a horizontal position(s). I don't know whether the authors realized that when a human body is in a supine or reclined position that the middle part of the back has much greater contact with the underlying surface than does the lower back or "small of the back." (This can be confirmed by a simple experiment in which a person lays on a hard wood floor with their shirt off in front of an observer or next to a mirror. The observer will see that the person makes contact with the floor at the middle of his back and at his buttocks, but not at the small of his back.) If the authors would have undertaken similar horizontal experiments near the lower side of the mannequin's or a person's back, they might have seen that a large quantity of blood and watery fluid could have traveled all the way across the lower back of their horizontal model, since it could flow unencumbered by the lower back's contact with an underlying surface.

In so many ways, the authors' methods were inappropriate, causing them to make erroneous comparisons between their blood flows and those on the Shroud. Worse yet, the authors employed the logic that, because the blood flows on the Shroud did not match their erroneous experimental results, the Shroud's blood flows appeared to be unrealistic and the work of an artist. The authors couldn't be more backwards in their analyses and conclusions. The results of their necessarily simulated and unrealistic blood flows could not match the realism of even some of the many blood marks and blood flow patterns that appear throughout a real crucifixion victim who was wrapped in the Shroud of Turin.

ENDNOTES

1. M. Borrini and L. Garlaschelli, “A BPA Approach to the Shroud of “Turin,” *Journal of Forensic Sciences*, onlinelibrary.wiley.com.
2. A. Tornielli, “ ‘The Shroud’s fake blood stains’. But this new research raises many doubts,” Vatican Insider La Stampa, <http://www.lastampa.it/2018/07/17/vaticaninsider/the-shrouds-fake-blood-stains-but-the-new-research-raises-many-doubts-xILDm9GogvYLFbVsxizeI/pagina.html>
3. See Fig. 7, “A BPR Approach to the Shroud of Turin.”
4. See Figs. 8(a) and 8(b), “A BPR Approach to the Shroud of Turin.”