

JESUS CHRIST IS THE MAN OF THE SHROUD*

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I consider it really strange that, after all the remarkable contributions made and brought to public attention by all those applied sciences which have become involved in the Shroud, that there could still be anyone who (for flippancy? misinformation? ill-will?) could pose the curious question: "But is the Man of the Shroud actually Jesus Christ?".

My first reaction is a desire to ask such a person, "Excuse me, from whom, or from what fact, do you expect an answer? From a seance with a spiritualist, or a consultation with the crystal ball? From the signature of one of the Evangelists, endorsing the Shroud? Or an apparition of Jesus Christ in person to confirm it for you?"

However, laying pleasantries aside and reminding myself that I am a student of *applied science*, I will take this "somebody" almost seriously and pause a moment, for his benefit, to explain one aspect already well known to many people.

To the question: "Is this true?", "Is this false?", applied sciences never answer "Yes", "No", "Well ..."; but after an accurate and serious analysis, they reply: "In regard to the matter that we want to examine, having taken into account *these observations, each one independently* of all the others, the '*mathematical hope*' is this *number* which I give you. *It is now you yourself who must judge.*"

I purposely used here the term "mathematical hope", which is exact, instead of "the number which in this case allows us to say something about the probability", because too many people employ the word "probability" with enormous freedom, embroidering it in ways that could hardly be considered serious. The clauses: "This is extremely probable", or "This is extremely improbable", can be accepted only from the exact sciences, for they immediately add a *numerical* evaluation which specifies the entire problem by a calculation of the "mathematical hope" corresponding to the independent elements which have been considered; or, now that we understand the significance of the word, we might prefer to say, by a calculation of the "probability".

Would we like an example? Here is one.

If we ask Physics: "Is it true that a brick lying on the street can take off in flight *by itself* and finish up, *by itself*, in the hands of the bricklayer who is repairing the top floor of a house?" Physics replies: "This

* This article, which appeared in *Sindon* #32, is translated and republished by kind permission of the Centro Intern. di Sindonologia and the Author, who wishes to express his thanks to the Editor for suggesting its inclusion in *Spectrum*.

could happen, as a result of a fortuitous shock caused by the molecules which make up the brick, however it is extremely improbable, and the probability that this could happen is precisely once in every hundred billion years, or more." As we see, the answer to the question "Is it true?", "Is it false?", cannot be "Yes", "No"; it must consist of—and here it is Physics speaking—a quantitative evaluation of probability.

Naturally we would like to ask, "What is this *quantitative evaluation of probability*?" Shall we think a bit how to reply?

If we toss a coin in the air (game of heads or tails), we have one possibility in two that the coin will come down, for example, tails; in this case one says that the possibility is 1 out of 2, and the value is formulated as $1/2$. If, instead, we throw a die, we have one possibility in six that we will get, for example, the "5"; in this case one says that the probability is 1 out of 6 and the value is formulated as $1/6$.

If we toss a coin and a die at the same time, the probability that we would get *simultaneously* tails and 5, (we can visualize this, and can also demonstrate it) will be $1/2$ of $1/6$, that is, $1/12$: the probability that that could happen is the *product* of the two probabilities.

And if we toss a "trick" coin with tails on both sides? In whatever way we toss it, it will always come down tails. So in this case the probability of getting tails is 1 and of getting heads is 0. From this we can conclude that the *probability 1* expresses *certainty* and the *probability 0* expresses *impossibility*.

And what about any other case, of whatever subject matter? We have seen that, to whomsoever consults them correctly, the applied sciences can offer a *number*: a *number* which, after examination, expresses the *probability*. On the *basis of that number*, the inquirer, using *his own judgment, fruit of his intelligence, his culture and his sensitivity*, will evaluate the event which interests him. For instance, it will be obvious enough, and we can agree, that a *probability very close to 1* can be accepted as an *extremely probable event* and for a *probability very close to zero*, and *extremely improbable event*.

But let us get back to our Shroud. After the first photograph (May 1898), in a period of acute secularism decidedly not very amenable to the light which the Shroud could shed, the polemics immediately flared up in France over "true" and "false" and, naturally, right away, the French raised this question which has been on our minds. One of France's most eminent scientists, *Yves Delage*, began to pursue and coordinate Shroud studies. Now besides having doctorates in Medicine and Natural Sciences (with a degree which earned him the Grand Prix of the Physical Science Institute of the Paris Academy of Sciences), Delage was professor of zoology, anatomy and comparative physiology at the Sorbonne from the time he was 32 years old. He was also Director of the Roscoff international laboratory of biology. Delage was a professed "freethinker" ("... n'ayant aucune croyance religieuse", "convictions que je respecte, bien que je ne les partage

pas"* are his own words). He was a true gentleman, as all his deeds are witness and his biography sets well in evidence. With a group of enthusiastic researchers (Rene Colson, Paul Vignon and others), he approached the study of the Shroud like the genuine scientist that he was. The results of the group's research were edited by Paul Vignon and published in the volume, *Le Linceul du Christ* (Masson, Paris 1902); a second edition that same year, and an immediate English translation). There one finds, among other things, an interesting evaluation of probability which takes into consideration only five independent elements, but on the basis of these, Delage could declare, in his famous "Reply" to the Academy of Sciences: "It is extremely probable that the *Shroud of Turin* is that which covered Jesus Christ after his death: as far as I can estimate, the probability that it is *not* seems to be equal to (or less than) 1 in 10 billions."

Of course, 1902 might seem a long time ago and the figure of Yves Delage almost an old "daguerreotype". Therefore—and also to round out this argument—let us look at a more recent and more precise example of a calculation relative to the problem under examination; we are indebted to Paul de Gail, S.J., French, who is[†] an engineer in industrial technology, and for more than fifty years a most assiduous scholar of the Shroud. In his book, *Le Visage de Jesus-Christ et son Linceul* (France-Empire, Paris 1972), he takes up, among other things, this question we have been discussing, and offers a more complete and more accurate analysis, based on only seven independent elements. In words that we have heard before, he states: "It is Jesus Christ; considering all that I can now evaluate, the possibility that it is not is equal to (or less than) 1 chance in 225 billions."

Paul de Gail's study is very interesting, also for its clearness. I present it here most willingly.

1) The Man of the Shroud had a burial sheet. Many persons, after being executed on the cross, were abandoned to birds of prey and wild beasts, or thrown into a pit. Let us admit—a very wide hypothesis—that 1 in 3 crucified persons had a regular burial with a shroud. Probability of this event: 1/3.

2) The Man of the Shroud remained a short time in the sheet, otherwise the intensity of the marks produced by the body would have become illegible [through decomposition]. To how many of the crucified was a burial sheet given, only to have it removed after such a short time? Let us say, with abundant largesse, that there was 1 in 20. Probability of this event: 1/20.

3) The Man of the Shroud separated perfectly from the Shroud, with a technic which has left the imprints of blood clots on the fabric without leaving smears or streaks of blood, as would have happened if the clots had been moist, and without flaking or impairing these clots

* "... having no religious belief whatever... convictions which I respect, even though I do not share them."

[†] Prof. Zeuli's article was written before the lamented death of Père de Gail. See "In Memoriam", pg. 34 [Ed.].

as would have happened if they had been dry. In how many cases could this operation have succeeded? The fact is so surprising that one can reply: This could happen once in a hundred times, or in a thousand. Let us limit ourselves to 1 in 50. Probability of this event: $1/50$.

4) The Man of the Shroud was fixed to the cross with nails. It seems that this type of crucifixion was reserved to special cases, but let us admit anyway, with ample leeway, that crucifixions with nails occurred 2 times out of 3. Probability of this event: $2/3$.

5) On the Man of the Shroud are seen the wounds of a crown of thorns. Some cases have been cited of Christian martyrs who, for derision, were crowned with thorns to make them resemble their Master more closely. Let us suppose, though it is certainly unrealistic, that this could have happened 1 time in 1000. Probability of this event: $1/1000$.

6) The Man of the Shroud was pierced by a lance in the right side. It was the custom to break the legs of the crucified, to hasten their death. The lance thrust and the unbroken legs constitute an unexpected fact, without any doubt a rare exception. Given the lack of precise historical data on this point, let us confine ourselves to admitting—with wide liberality—that this could have happened 1 time in 5. Probability of this event: $1/5$.

7) The face of the Man of the Shroud is of incomparable splendor, which thousands of artistic efforts have never attained. This man, crucified, found himself among criminals; but criminals do not have this expressive mask of majesty ... When we reflect on all his sufferings and tortures, then contemplate this countenance of nobility and serenity, we can be well assured that we would not find one such face in a million. And for good reason! Nevertheless, we will be content with the modest estimate of 1 in 10,000. Probability of this event: $1/10,000$.

What, then, is the probability that all these 7 characteristics, these 7 independent events to which we have limited ourselves, would be found simultaneously in any victim of crucifixion? Very simple: we need only to multiply all the single probabilities. For the coin and die, we had $1/2 \times 1/6$, which is $1/12$. Here we multiply all the respective probabilities: $1/3 \times 1/20 \times 1/50 \times 2/3 \times 1/1000 \times 1/5 \times 1/10,000$, and the product of these is 1 in 225 billions.

And in his own distinctively provocative style, our Paul de Gail concludes: "We see that if, in all history there had been 225 billion persons crucified—which is manifestly absurd!—in this astronomical assembly we have one chance, one only, to find a victim identical to the one that the Gospels, in their historicity, describe as bearing these seven characteristics". Père de Gail assures us that in all these calculations on the probability, he took only a few elements into consideration, not more than seven; and for each one he wanted to reduce to the minimum the evaluation favorable to the result. With a more extended and more precise evaluation, it would not be difficult to ascertain the probability, not as 1 in 225 billions, but 1 in 50,000 billions, or more. "If the slightest trace of doubt is not pulverized and destroyed

by these astronomical figures, it must be, perhaps, that for certain minds, too mathematical—or not mathematical enough?—numbers have nothing to say." And he concludes: "One word suffices: The crucified man in the Shroud of Turin is Jesus Christ himself."

Shall we sum up?

Some readers could be disoriented by the fact that we have differing values of probability, depending on the method followed, and so one asks how he should be guided in this affair.

Again, it is very simple. The scientist who gives a value for the probability points out immediately: "I give you this number, but it is enough that you glance, even casually, at the reasoning by which I obtained it, because on the basis of all the limitations which I emphasized as I went along,¹ it appears clear that the true probability is less than, or at the most, equal to the number which, at the end, I gave you. If another scientist gives another number, larger than mine, I would consider his work a pleasant exercise. On the other hand, if he gives a lesser value than mine, I would have no difficulty in accepting it (granted, of course, that he has arrived at that number after an accurate control of the elements on which he bases his calculations and their reciprocal independence, as I myself have done), and to substitute my results with his. In the meantime, have you thought about what that means,

$$\frac{1}{225,000,000,000}$$

one in 225 billions, in terms of a Physics result?"

But for you, my friend, who *want to know the truth* (because you seek it), the only answer is this. To your question, "Is Jesus the Man of the Shroud?" Science (agnostic), that "physico-mathematical" science (the only one to which you can turn), answers: "I will give you a number, necessarily approximate, like all the results which I give. If the number could be 1, the answer would be "no"; if it could be 0, the answer would be "yes". A calculation, precise but—I should tell you—based on very few elements, gives this number:

$$0.000000000005$$

(as an "approximate" number, is this, for you, close enough to 0?) and any more complete calculation would give you an even smaller number. In this number, your brain and all that you must know about the Shroud will give you the answer you seek".

NOTE

1. For ex., Paul de Gail, *supra*: "very wide hypothesis", "with wide liberality", "1/100 or 1/ 1000, let us limit ourselves to 1/50", etc.