

The Light that Shone in the Darkness

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Abstract

On the Shroud of Turin is evidence that the dead body of a man who had suffered torture and crucifixion arose into a vertical position before momentarily shining brighter than the Sun. The implications of this are considered for our understanding of space, time, matter and gravity. Also the implications are considered for our understanding of the nature of humanity and sentient awareness in general. It is considered whether these two lines of enquiry might one day lead to a unified understanding of the nature of existence itself.

1. INTRODUCTION

There is evidence that the shroud image was formed by a short, intense burst of radiant energy¹. It would seem that the dead body which the shroud wrapped rose into a vertical position² before momentarily shining brighter than the Sun. It is suggested that there is evidence that thought, light and matter are inter-related³. It is further suggested that the nature of this relation implies that our corporeal state is a symptom of restriction of mind. An inference derives from this that simply undoing these restrictions ('metanoiate'?) has the power to release the tension of space which we call matter, thereby transforming it into light³. Erwin Schrödinger, one of the founders of quantum theory, made a compelling argument for the eternal nature of consciousness⁴. If he was correct, then all sentient beings must have been one in the initial singularity which gave rise to the 'big bang'. This "all together" state of sentience beyond time and space precedes the state of separation and limitation that define a physical universe. Since separation is the hallmark of limit it would follow that the exhortation to "love thy neighbour as thyself" is simply a 'route map' for returning to our original status.

Substantial evidence points to the Turin Shroud being the burial cloth of the historical Jesus (Yeshua ben Yosef). During his lifetime also he is reported on at least one occasion to have been seen to shine like the Sun. It is suggested that the capacity to do this can be logically derived to be a natural consequence of living a life which reflected this knowledge of neighbour and self as being one and the same³.

If the shroud image is a photograph of a resurrection event then can we address such an event with rational enquiry? There is evidence that the blood stains on the cloth happened while the body was lying flat but that the image is the image of an upright man suspended above the ground². The implications of this for our understanding of gravity, space and time are considered.

To understand how a corpse arose and shone brighter than the Sun perhaps we need to consider whether the state of being alive is more than just a certain configuration of atomic states. Does being 'alive' imply an unbroken line of connection, which extends to the space-time singularity at the origin of the physical universe, and could an equivalent singularity have been evident once again in a tomb in 1st Century Judaea?

2. BACKGROUND

The body image and the blood stains on the Turin Shroud are clearly formed by different mechanisms. The blood stains can be shown forensically to have been formed by direct contact with the dead body. More specifically they can be shown to have been formed by direct contact within the first two hours after death². The blood stains show evidence consistent with the man on the shroud having been whipped by roman flagra by two assailants and having had a cap of thorns pressed onto his scalp before being crucified and then finally being stabbed in the side⁵.

The body image, however could not have been formed by a contact process but appears to have been caused by a short intense burst of radiant energy which appears to have emanated from the dead body wrapped in the shroud.

The image is confined to the surface fibrils only and is not present under the blood stains. The clear implication from this is that the image formed at some point after the blood stain transference and therefore since the blood stains on the cloth occurred after the death of the man on the shroud it follows that the image formation process also occurred after his death.

The obvious questions that follow from this are what might cause a dead body to produce a sudden short intense burst of radiant energy and why is the Turin

line of connection from the pre big bang singularity state until 'now'. This would imply that life only begins where life already exists and therefore that all life is connected to the original singularity state.

Evidence suggests that the dead body that was wrapped in the cloth arose and shone momentarily brighter than the Sun^{1,2}. Many people have speculated that the moment that the image formed may correspond with a resurrection event. This would mean that life began again within a body which had already died and therefore from a situation in which the connection to the original singularity state had already been broken.

Who was this man?

When considering the identity of the man on the Shroud it seems impossible to ignore the considerable evidence suggesting he was none other than Jesus of Nazareth. He had been tortured, whipped and crucified and had a cap of thorns placed on his head⁵. There is evidence that these events happened in March or April in the environs of Jerusalem⁸ at some point between 6 and 66 AD.

Crucifixion is widely reported to have been a Roman method of execution. According to Roman Law a crucified person remained on the cross as food for birds of prey⁹. The practice of *burial* of a crucifixion victim was confined to only a small region of the Empire and only for a very short period. In 6 AD Augustus removed the Jewish king Archelaos (son of Herod I) and installed a Roman procurator for Judaea and Samaria who had the authority of the death sentence. At the same time, however, the Jewish government was still in existence, which required burial before sunset according to Jewish law. This exceptional double rule was finished by the Jewish revolt against the Romans in 66 AD. Consequently we have evidence consistent with a date for the crucifixion of the man on the shroud between 6 AD and 66 AD¹⁰.

If one were to summarise the teachings and life of Jesus of Nazareth one could say that the dictum of "love thy neighbour as thyself" would be very apt. Could this be a clue to the process which caused the image to form?

My suggestion is that mind and matter are a continuum and that as living human beings we are an amalgam of both. I have also suggested that the origin of matter itself was the result of a choice for separation from an original singularity and that matter is defined as a localization of force. If mind and matter are a continuum then so too are freedom of will and force. I have argued that it is our limitation or restrictions of mind which differentiate us from each other and from the original singularity and that these restrictions are expressed through thought and actions which are divisive such as selfishness, arrogance, racism etcetera. I have suggested that it is the reduction in power of the 'unenforcedness' or 'peace' within us which is responsible for our physicality and ultimately for the physical universe itself. If this is so, then it would make sense that if someone lives a life which consistently unites through compassion and recognition of the fundamental union of all sentient being, then this force could be reduced in the location in which their will predominates

i.e. their physical body. Einstein's equations show that mass is responsible for the curvature (or distortion) of space and time. Mass, in turn is seen as the condensation of energy, which itself is defined as the capacity to 'do work'. This describes the latent enforcement within matter. I should clarify that when referring to mass I am not referring to the amount of matter within a human body. I am clearly not suggesting that people who are thin have less restricted minds than others! What I am suggesting is that the atoms in his body themselves may have become lighter and also that the distortion of space and time were reduced in his immediate vicinity.

The implications of this hypothesis would be that if the mass of his body had reduced to the extent that it had around the same density as the air around it, then this might have been what caused it to be suspended above the ground as seen on the shroud image².

As the density of the human body is slightly more than that of water a 70kg man would occupy roughly $70 \times 0.9 = 63$ litres of space. The density of air at 20°C and one atmosphere of pressure is around 1.25 kg/metre³ which equates to 1.25 grams per litre. (Actually the presence of water vapour in air would reduce this a little below this figure.) It follows that if the mass of the body of a 70kg man were reduced such that it had around the same density as air, then the mass would be reduced to around $63 \times 1.25 = 79$ grams or 0.079 kg.

Substituting into Einstein's equation $E=mc^2$ we have

$$\text{Energy} = 7.9 \times 10^{-2} \times (3 \times 10^8)^2 = 7.1 \times 10^{13} \text{ Joules}$$

Extrapolating from the experiments in which linen discolouration was achieved experimentally with ultraviolet lasers it is possible to calculate roughly how much energy would have been responsible for forming the image if a burst of ultraviolet light from the body of the man were indeed the mechanism of image formation.

Di Lazzaro et al¹ have calculated that the 'fluence' (total radiation energy per unit surface area of the cloth) which might have been responsible for discolouration of the cloth to form the image was in the range of 24 to 43 Joules/centimetre²

As the body surface is around $17 \times 10^3 \text{ cm}^2$ this would equate to a total transfer of energy to the cloth in a range between 0.41 to 0.73 megajoules. This would mean that the proportion of energy released from the body would have been roughly between one part in 100 million and one part in 170 million assuming that all the energy reached the cloth.

It is interesting to note that the population of Earth 2000 years ago has been estimated to be of a similar order of magnitude at around 200 million¹¹.

It is a well known phenomenon in quantum mechanics that under certain circumstances when matter drops to what is known as a lower energy level it does so in an instantaneous stepwise manner releasing the amount of energy by which it has reduced in the form of a unit of light which is called a 'photon'. This generally happens at

the atomic level. However, the image on the shroud suggests that the radiant burst may have happened as a unified phenomenon from the whole body. This could suggest that his body could have been acting as a single quantum unit- something akin to that which physicists describe as a Bose Einstein condensate perhaps.

Bose Einstein condensates are usually found at very low temperatures but Professor Sir Roger Penrose and the anaesthesiologist Prof. Stuart Hameroff have proposed a theory which suggests that the condensates can exist even at body temperature, for example in the human brain¹².

4. CONCLUSIONS

If the man on the shroud were indeed Jesus of Nazareth and his image appeared on the linen after his dead body arose into a vertical position before shining brighter than the Sun then it is a challenge to speculate about the physical mechanisms which might be responsible for these processes. It has been argued that to understand this process perhaps we need to reconsider the nature of mind and matter and the connection between them.

It has been suggested that this may give us a clue to a rational understanding of the origin of the physical universe and to the nature and potential of all human beings.

If mind and matter are a continuum then this might resolve the paradoxes inherent in both the materialist and dualist notions of mind. It might then be easier to understand how sentient living beings can exist within a material Universe and also clarify a scientific basis for freedom of will as the motive power behind primary causation.

The Nobel laureate quantum physicist Erwin Schrödinger presented a compelling argument to suggest that mind is eternal⁴. Evidence suggests that at the big bang singularity a state of complete union existed beyond space and time.

It has been suggested that if mind is eternal and all was once one then all sentient beings were once one. Since we are describing a state beyond time, which is therefore unchanging, it would follow that fundamentally we still are one.

When considering our fundamental nature and the nature of the physical universe in this way, it is interesting to speculate whether it might have been the choice to experience separation which propelled the big bang and the appearance of space, time and matter. This choice would also thereby have begun the drift into disorder and chaos which science describes as the second law of thermodynamics.

If this is so, then perhaps if we were to recognize the fundamental union of all sentient beings through empathy and compassion, then we would be able to 'love our neighbour as ourselves.'

It has been suggested that the continuum of mind and matter implies a continuum of will and force and that we exist as an amalgam of both polarities as physical human beings. This implies that our freedom of will is based

upon the fact that we preserve, within our physical being, remnants of unenforcedness, which connect back through a continual line to the original singularity at the origin of the Universe.

Living in ways which promote more separation through individual goal orientation based upon qualities such as selfishness, arrogance, racism etcetera would then perhaps reduce the dominance of this 'peace' within us as we follow the entropic drift to become lesser in scope. The entropic drift refers to the incessant, inexorable dismantling of order into chaos according to what is described by physics as the second law of thermodynamics.

However if we are able to follow the example of the man on the shroud and truly love our neighbour as ourselves then perhaps we can reverse this process and achieve a state where there is no decay or suffering.

It has been suggested that if this is carried to its full conclusion, then perhaps changes could begin to happen to the very atoms within our bodies such that the reduction in force leads to a reduction in mass and the body begins to shine. This luminous property is reported to have occurred in the context of Jesus on a mountain, but also, intriguingly it appears that we may have physical evidence of this having happened again in the tomb based upon the image on the Turin Shroud.

The release of a tiny proportion of the mass energy of the body as light would have been sufficient to have created the body image on the Shroud. Had it been a little less then we would have had no image. Had it been a little more then the cloth would have been destroyed. Perhaps 2000 years ago Jesus deliberately left us a clue which he knew would later be unravelled by science. He may have left a clue for those who, like Thomas needed to see to believe.

He may have left us a clue to affirm all that he taught and did and to prove to us that if we can truly follow his example then all things will be possible for us.

5. REFERENCES

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