

The Frosted Glass Bust and The Shroud

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In the article 'Action Man and The Shroud' (1), I compared the image formed on a photographic sheet, wrapped around a glowing, luminously painted Action Man doll, with that on the Turin Shroud. I found that it shared *some* of the photographic negative and the 3D properties of the Shroud's image. This suggested that the image of the Turin Shroud *might* have been formed in a similar way: radiation of some kind leaving the surface of the human body that was wrapped in the cloth that then interacted, albeit weakly, with the cloth itself. A recent paper (2) on the present status of the image forming theories, says:

the image was formed by radiation damage to the molecules in the linen. This radiation, by its intensity and direction, carried the information from the body to the cloth, which was necessary to form the image. Thus, this radiation came from the body, but may not have been emitted just from the surface of the body. More likely, it was emitted from within the body as it was wrapped within the Shroud, since bones (teeth, bones in the hands, etc.) can apparently be seen in the image, like an X-ray.... The presence of the front and back images without side images is most easily explained by the radiation, when it was emitted in the body, being vertically collimated both up and down (Ref. 19). The primary cause of the discoloration of the fibres is most likely charged particles that, when deposited on the cloth, produced static discharges from the top fibres facing the body to discolour the fibres by electrical heating and/or possibly ozone production (Ref. 20).... Experiments have shown that ultraviolet light (Ref. 3), infrared light (Ref. 17), and protons (Ref. 18) can discolour linen fibres.

In the conclusion to the Action Man article, I suggested the results might be more successful by using a frosted glass statue, lit from inside and similarly wrapped inside a photographic sheet of paper. The aim of this article is to follow up and explore this idea.

I purchased a frosted glass bust of Jesus. See Fig.1 below. The head measures about 4 cm chin to top (1.5 in). The base of the statue was the only part that was unfrosted. I tidied up my old-fashioned chemical dark room that had not seen the red light for the best part of ten years. Strangely, the chemicals left from that time with a sell by date of sept 2013 were still working perfectly! Divine providence?

Originally, I had wanted the light source to glow from inside the glass statue, but I wasn't going to risk drilling a hole up the axis of the glass statue. I tried lighting it from beneath, through the unfrosted base, but the light wasn't able to reach all the facial features very well, so instead I tried shining the light onto the back of the head of the statue from behind. See Fig. 2. A side view of the bust is shown in Fig. 3.

The Bust



After various attempts, I used a cardboard box within the dark room itself to act as the holder for the photographic paper. See Fig.4 below.



Fig.4 Top view of set up

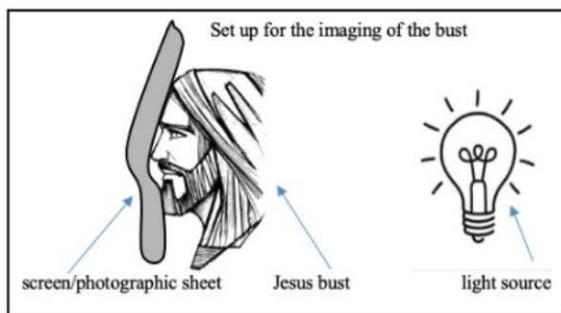


Fig.5 Side view of experimental set up for imaging the frosted glass bust



Fig. 6 Screen image of bust

In the middle of one side of the cardboard box, I created a 5 x 6 cm tracing paper screen and stood the bust inside the box so that the tip of the nose was pushed against this screen. This of course distorted the screen so it was shaped a bit like a cloth that would have been laid from above onto a horizontal face that was looking up, as might have been the case for the Man in the Shroud. In the opposite side of the box, I cut a similar sized hole through which ordinary daylight could enter.

Daylight was used to backlight the frosted bust and a 'positive' image formed on the tracing paper screen. See Fig. 6. Note that it looks a bit like the illuminated face of the bust (Fig. 2), but slightly blurred, due to most of the face not being in contact with the tracing paper and hence

the light being more scattered. Note the forehead is clearly the brightest part of the image, as is the tip of the nose.



Fig. 7 Negative image from translucent screen

I asked Hugh Farey (Former BSTS Newsletter Editor) if he would kindly make a negative of this image and his attempt is shown in Fig. 7 left. As the original image was a positive, then the negative image was no real surprise. I then asked Hugh if he could do the 3D test on this image, as he had done previously on the Action Man and the Soldering Iron images (3). His result is shown in Fig. 8 below and it does seem to show some 3D properties similar to the image on the Turin Shroud. The 3D image seems to be angled slightly to one side and that was

because I had not positioned the original bust parallel to the screen. Also, the face around the nose does seem to be depressed, as if the nose has been pushed in, a bit like a dent one might get in a damaged ping pong ball. It was noticed that in spite of the statue having a frosted surface, it wasn't fully translucent and still retained some directionality: the centre of the beam of light was pointed towards the forehead, hence that part of the face was receiving more light. I also noticed that by tilting the bust forwards or backwards, I could get more contact with the chin and less with the forehead or vice versa and this variation also affected the brightness density across the image.



Figure 8. 3D image taken from negative

The photographic image



Fig. 9 Image on photographic sheet

It was now possible to perform the real test. With this exploratory experiment, I wanted to see if the image formed on a photographic sheet placed in front of the face of a backlit frosted glass statue would share the Turin Shroud's negative and 3D properties. What I had done above was to just directly photograph the image projected onto a translucent screen. Now, I replaced the tracing paper screen with a sheet of photographic paper (all under red light in the darkroom of course). I put in the statue with its nose pushed up against the photographic sheet, then illuminated the statue from behind,



Fig. 10 Negative of photographic image

using one of those bright blue/white LEDs, for about 10s at a distance of 20cm from the statue. I then developed the paper in the old fashioned, chemical way. On photographic paper, where light reacts, the paper is darkened, so one gets a negative from this process. See Fig. 9 above left. It should in theory have looked like the negative in Fig.7 and it does, but just slightly more blurred and the nose is now pointing more forward than before. The result in Fig. 9 was the best of about ten attempts!

Once again, I asked Hugh Farey to make a negative of this negative image and the result is shown in Fig. 10 above right. It should look like a positive, as in Fig. 6, which was the original image caught on the translucent screen and indeed it does, with the expected greater blurriness.

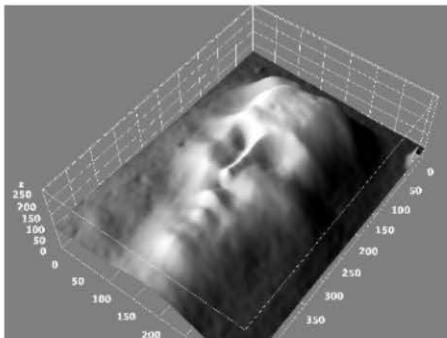


Fig. 11 3D image from photograph image

This image was then put to the 3D test and this is shown in Fig.11 left. It can be seen that this version shows an even greater amount of three dimensionality than the previous one. The face isn't depressed around the nose and one gets the impression that the face protrudes much more convexly.

Conclusion

The image does seem to show a similar kind of photographic negative property and three-dimensionality to the image on the Turin Shroud. The frosted bust image seems to have something of the forward-facing properties of the Shroud's image, even though the light should be leaving the bust in all directions. That might be due to the proximity of the face to the screen so that the radiation hasn't travelled far enough to spread out very much.

There are some limitations: the photographic paper is rigid compared to the flexibility of a cloth; hence it doesn't follow the contours of the face so well. The photographic sheet does not include the sides of the head. Although most of the backlighting still continued forward, it would be useful to see what might have been seen sideways. A model for the image on the Shroud might have been better gained from a light source *within* the glass statue.

What next? A *full* model of a frosted glass statue in the pose of the Man in the Shroud and replacing the photographic sheet with a more flexible photosensitive material sheet might let us see if this promising exploratory result can be reproduced on a larger scale.

References (1) The Shroud and the Action Man (BSTS No.78:) <http://bit.ly/39lGG3t>

(2) Status of Research on the Turin Shroud by Robert A Rucker: <http://bit.ly/2SY4kTr>

(3) How to make a Shroud Image with a soldering iron (BSTS No.79): <http://bit.ly/2QsD8dP>