Photographic Printing on Non-Traditional Surfaces

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ABSTRACT

The use of liquid emulsion is an alternative photographic printing process that allows the printer to paint a light sensitive emulsion on (almost) any desired surface. Experimentation has been done to determine what surfaces work well with liquid emulsion and how each surface affects the image quality and visual communication. Surfaces being tested include canvas, linen, wood, steel, glass, and watercolor paper. The emulsion is painted on in a darkroom and allowed to dry. Once dry the surface can be exposed to a negative as a normal piece of photographic paper would be. The developing process is slightly different from printing on fiber based paper and no stop bath is used. While wet the image is very delicate, but after drying the emulsion embeds into the surface that was coated. At this point light surfaces reveal the image better but darker surfaces have a subtle quality that requires the viewer to take a closer look. The matte finish works well with smooth, semi-shiny surfaces like wood and will likely print well on shiny surfaces such as the glass and steel. The watercolor paper and canvas produce soft images, which works well for some photographs. Brush marks are left behind and can add more visual appeal for some, but not all images. Not all images work on every surface tested. As it goes, every image created has been an experiment.

INTRODUCTION

I studied abroad in Florence, Italy at Santa Reparata International School of Art (SRISA) in the fall of 2008. While there I took an Experimental Photography class, something that has not been offered at the University of Wisconsin-La Crosse (UW-L). I learned several experimental techniques but I focused on printing with liquid emulsion. Liquid emulsion, sometimes referred to by its common brand name Liquid Light, is a liquid version of the light sensitive photo emulsion that is present on photo paper. It can be applied to many different surfaces, both two-dimensional and three dimensional, but I focused on two dimensional surfaces. The substrates I printed on include watercolor paper, canvas, linen, wood, glass and metal.

METHOD

I used a product called Rollei Black Magic, variable contrast, because it was the only brand available to me in Florence, although most brands should act similarly. I worked in a darkroom equipped with red and yellow safe lights, although the yellow lights were on low and farther away from the table I worked on. (There are warnings on label that indicate sensitivity to yellow light. Anyone using liquid emulsion should do a small test in their darkroom before coating extensively.) The emulsion was heated in the container, in water to prevent burning. Once the emulsion was warm enough to pour the amount needed was transferred into a tempered glass container. Thin coats of the liquid emulsion were applied with a soft wide paintbrush but a foam brush works as well. A hair dryer was used to help speed drying time in between coats and after the final coating. One coat was sufficient for paper, canvas, and linen. Three or more thin coats were needed for wood, glass, and metal. Multiple thin coats worked better than one thick coat. Smaller pieces of the same substrate also need to be coated similarly to work as test strips. I coated two for every large print I expected to make. I printed as usual for black and white fiber based prints, using appropriate filters. Developing time was between two and two and a half minutes. No stop bath was used. The photos were fixed for 2 minutes and washed carefully in cold water. (Hot water, even warm water, will melt the emulsion off the substrate.) After the image dried the emulsion embedded in the substrate. After the emulsion embedded in the substrate the images were re-fixed and re-washed for longevity. Before coating the wood was sanded, but not sealed, the glass was coated with a hardener, to break the surface tension, and the metal was coated with polyurethane, to prevent any contact between the substrate and the silver in the emulsion. Printing was conducted both at SRISA in Florence and at UW-La Crosse.

RESULTS

As expected, results varied with the substrate. I love the results on canvas, linen and wood. The canvas gave the sharpest, darkest images. The canvas was a tight enough weave that the emulsion sat mostly on top and only absorbed into the fabric a little bit. The texture from the weave and brushstrokes are visible. There are areas where the emulsion did not coat, leaving holes in the image but I really like the rough spots. The linen I used was a looser weave and the emulsion soaked all the way through. The linen was a little darker than the canvas. That, combined with the emulsion soaking in, created a very delicate image, one that invited the viewer to get closer. The wood produced some of my favorite images. Brush strokes can be seen and because the wood was not sealed the lines in the wood became more pronounced. The water color paper produced interesting images but they are not my favorite. The emulsion filled in all the texture of rough watercolor paper. The glass was slightly disappointing, I was able to get one good image but it was still very blurry and very light. It was difficult to see the image unless it was against a white background. Ideally the image would be dark enough to be distinguished while hanging free from all backgrounds. The only piece of metal I was able to print on was exposed to light when another student opened the door to the special projects darkroom. Interestingly, I did not know if the door was opened far enough to compromise the image or not. I continued with my last coat and printed. I could see the image develop up, but it was faint. After placing the piece of metal in the fix though the top layer of silver (the layer that still looked a little white) was cleared away and the rest of the emulsion (the emulsion that had been exposed inadvertently) had turned completely black. I know that the image was dark enough and would have worked had it not been exposed while I was coating. I was also able to melt the emulsion off with hot water to reuse the metal. See below for images.

THE IMAGES

I would like to discuss the images I choose to work with and their impact on the final product. I did not plan what kind of images to take before getting to Italy. I wanted the experience of living in Italy to guide the images. Within the first week I noticed all of these little Michelangelo *David* statues for sale at market stands and in tourist shops. They were everywhere, not just in Florence, where the original *David* is held, but in Venice, Rome, Naples and all kinds of small tourist towns. They seemed, not to follow the tourists, but to anticipate any possible location a non-native would go, guiding us from one town to the next. I started photographing the *David* statues and they took on a bit of a personality. The more I photographed the more the statues represented the over consumption of Americans. It seems that we need to prove that we were there, that something happened, that we are connected to high art and culture. We buy anything and everything, including some very poor replications. The photographs I made with liquid emulsion are not reproducible like black and white photographs. They can be reproduced but they are more like prints made from paintings. In this sense I made an original, unique photograph, of a replica, of a masterpiece. I plan to continue working with these photographs, buy replicating and then packaging them. This would bring them closer to same replications that are purchased by tourists. The photographs would become packaged replicas, of a unique photograph, of a replica, of a masterpiece.
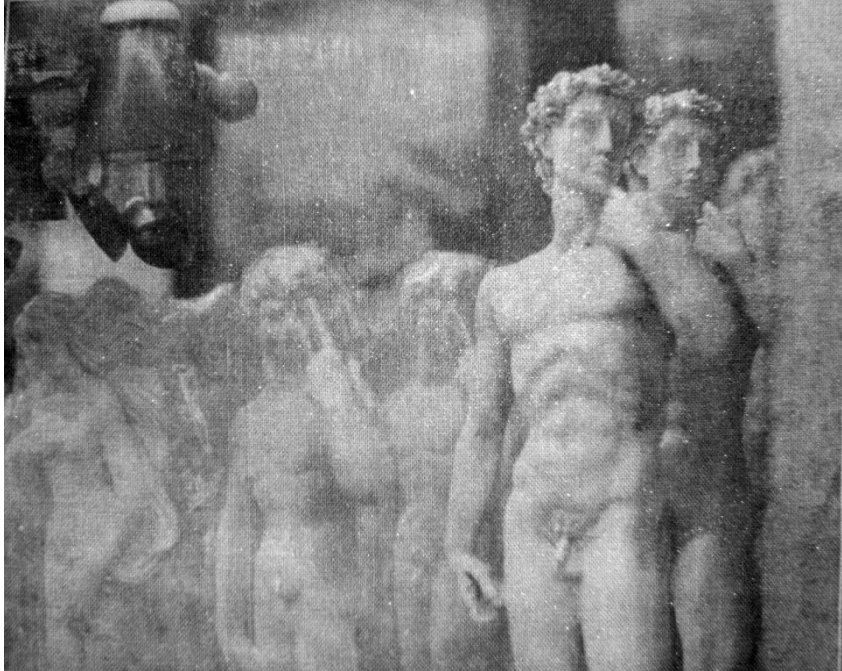
Figure 1. On watercolor paper
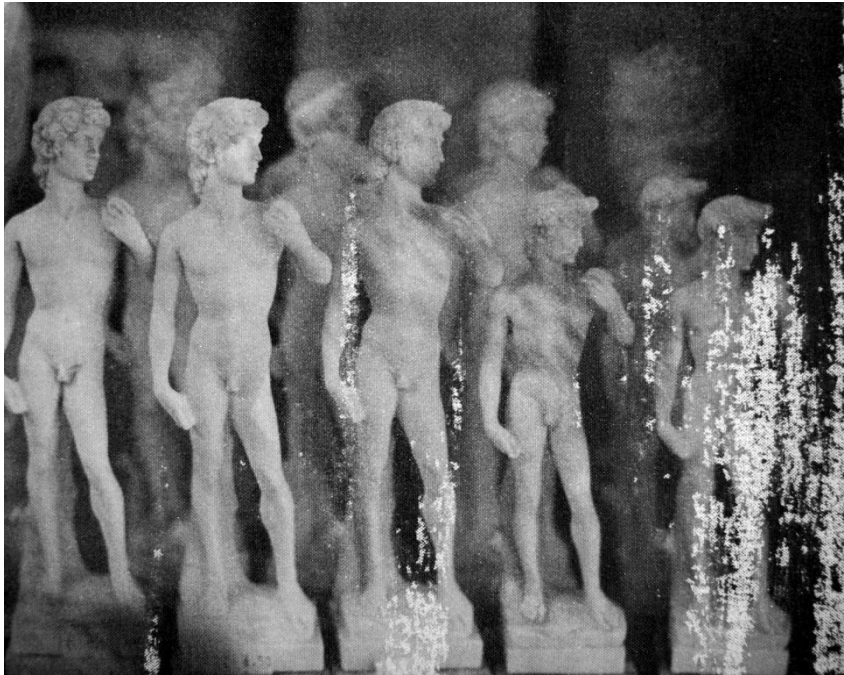
Figure 2. On canvas
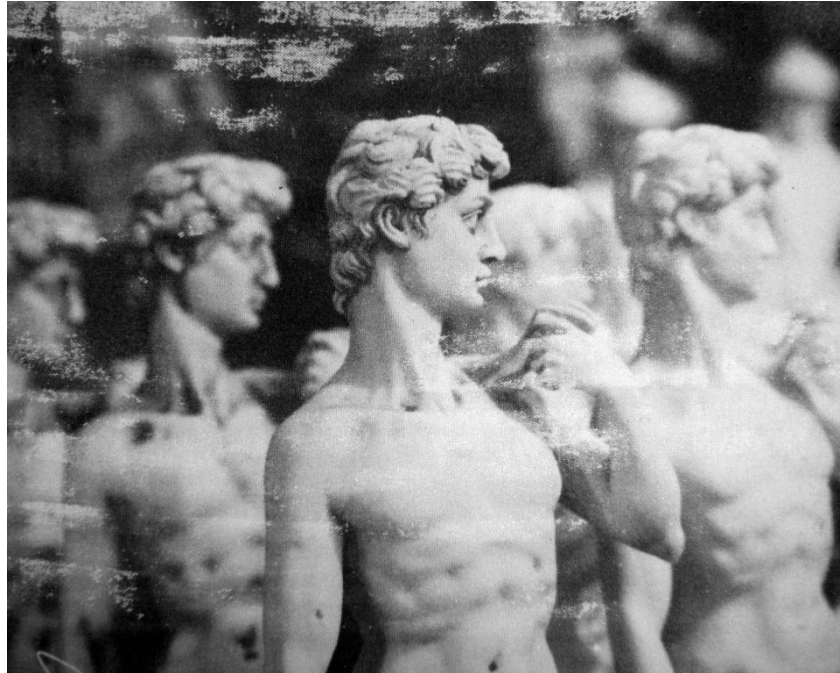
Figure 3. On canvas

Figure 4. On canvas

Figure 5. On linen

Figure 6. On glass

Figure 7. On wood

Figure 8. On wood

Figure 9. On wood

ACKNOWLEDGEMENTS