

The Ink That Glows

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When I first picked up a spitsticker in 2009 I had no idea of the direction my work would take. Yet in hindsight there seems to be an obvious theme: portraiture. What started out as an unconscious interest has developed into something of an obsession. I'm fascinated by how something so simple can have so much depth. The closer one looks at a body, face, mouth, etc, the more intricate it becomes. Curves within curves, shadows within shadows, colours within colours.

Capturing all this in a wood engraving requires many layers and lots of time. However, asking models to pose for several months is impractical (financially, but also unfair in a freezing cold studio) so I began working from high-res photos. However, the millions of colours inherent in a photograph were overwhelming and difficult to reduce into 10 or 15 layers. This led me to take up oil painting the photos as a way of simplifying the colour palette and breaking the image down into layers.

As I explored oil painting, I was struck by the wealth of materials and techniques it offered. This stood in contrast to the relatively straightforward process of wood engraving, which hasn't strayed far from its industrial and commercial origins. I started to wonder: could some of these techniques be adapted and combined with wood engraving?

One such technique is *glazing*, which involves painting thin translucent layers of certain oil paints, mixed with a glazing medium, to create visual effects unachievable with opaque paint. The technique adds depth and luminosity by altering the way in which light interacts with the paint film.

In 2023, I was awarded an internal research grant at the University of the West of England to investigate whether glazing could be adapted for wood engraving. My challenge was to reformulate this medium to function as a printing ink suitable for wood engraving – a process that would require significant experimentation.

Glazing is as old as oil painting and dates back to mediæval panel painters who used it to imitate gold, jewels and enamel. Their glazes were highly translucent, so not only did they depict the physical world, they also imitated the optics of the materials, such as enamel. Rather than reflecting light, the glaze would allow light to pass through it, reflect off the surface underneath, and shine back through the paint film, thereby *transmitting* the light. The resulting effect is subtle, yet significant, because it creates an image where the light comes *out* of the paint, rather than reflecting off its surface. Its unique formula also minimises the scattering of light and subsequent cloudiness associated with more opaque paints, which in turn maximises the colour saturation.

While commercially available glazing mediums exist, they have the consistency of water and are therefore unsuitable for wood engraving – which, as readers will know, requires a very thick, tacky ink. A typical glazing medium recipe, as outlined in Ralph Mayer's *The Artist's Handbook of Materials & Techniques* (1991), includes damar varnish, stand oil, turpentine, cobalt drier. To adapt this recipe for wood engraving, I made several critical changes: I substituted the stand oil with the thicker copperplate oil. I removed the turpentine, because its only purpose is to lower the viscosity, which improves its working properties for painting, but is undesirable for printmaking. This also meant replacing the damar varnish, because it contains turpentine. To add the damar gum back into the medium (but without the need for turpentine) I ground it into a powder and fused it directly with the copperplate oil.

These modifications resulted in an oil-resin mixture with the ideal viscosity for printing while maintaining the transparency and luminosity, characteristic of traditional glazing mediums. During tests, I found that driers were unnecessary because the fused oil-resin mixture dried quickly enough. Also, driers contain solvents which lower the viscosity.

To achieve the best results, glazing requires pigments which appear translucent when combined with oil. The translucency or opacity of a pigment is determined by its refractive index (RI) – this is a measurement of how much a material slows down the speed of light as it passes through it. This is important because when two materials are mixed, such as pigment and oil, the difference between their RI measurements affects the overall translucency/opacity. If the pigment and oil have a similar RI then the paint/ink will be more translucent. This is because the two materials are affecting light in a similar way and therefore internal scattering of light is minimised. However, the greater the difference between the RI of pigment and binder, the more light is scattered and therefore it will appear opaque.

For example, a traditional glazing pigment is *madder lake* which has an RI of 1.51. When compared to the RI of linseed oil (1.48) you can see the difference is 0.03, which creates a highly translucent paint/ink and is perfect for glazing. By contrast, *titanium dioxide* pigment has an RI of 2.72, which has a difference of 1.24 compared with linseed oil and creates a highly opaque white paint/ink.

By carefully selecting pigments with RIs close to that of the binder, I ensured the resulting inks were as translucent as possible, subsequently maximizing the amount of transmitted light. This in turn produced the most luminous and saturated inks.

The final piece of the puzzle was which paper to use. Oil painting requires a substrate which isn't too absorbent otherwise the oil will be leached from the paint, creating a fragile, matt, dulled paint film. However, printmaking papers are generally very absorbent, so I looked further afield to find a paper which was both suitable for printing engravings but wasn't too absorbent.

During a project a few years ago, I became aware of the Italian paper *Plike*, sold by GF Smith in the UK. Its smooth, soft surface makes it perfect for printing engravings, but it also has a rubbery, 'plastic-like' quality which reduces its absorbency. After some initial tests I found it ideal for printing glazes. There was no loss of oil into the paper, which had been evident in other papers because, after only a short time, an oily halo would appear around the print.

After extensive testing, I combined my research to produce *Hera*, a large, multi-layered, reduction wood engraving. The skin and highlights were printed with translucent pigments, combined with my reformulated glazing medium. The print showcases the unique effects of glazing, with its interplay of light and colour creating a sense of depth and luminosity. Furthermore, by rendering the skin using this technique, it mimics both the appearance and optics of real flesh, which gains its colour, partly, from the light reflecting off internal layers hidden beneath. Like the mediaeval panel painters, who recreated the optics of enamel and precious jewels, I have used the glazing technique to mimic the appearance and optics of human skin.

It is impossible to recreate the effects of glazing with a digital print, so I would encourage you to visit the SWE 87th Annual Exhibition to see *Hera* in the flesh – where it has also been awarded this year's Rachel Reckitt Prize. Later in the year I will be having a solo exhibition in August to showcase the other engravings which I have printed as part of this research project. Alongside the main engravings I will display many of the individual layers, test prints, and raw ingredients so that you can gain an understanding of the glazing process:

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