The Discrete Potential of Four-Colour Photogravure in Contemporary Art Production

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In September of 2007 we embarked on our current research project: Creating The Visual Book Through The Integration Of The Diverse Technologies Of Photogravure And Digital Processes. This project is generously funded by the Social Science and Humanities Research Council of Canada's Program for Research/Creation Grants. It is a collaboration between three artist/researchers, Marlene MacCallum, David Morrish and Pierre LeBlanc all of whom are members of the Visual Arts Program of Memorial University of Newfoundland, Sir Wilfred Grenfell campus in Corner Brook, NL, Canada.

In this research project, we explore the impact of introducing digital technologies to traditional analogue photogravure procedures to create four-colour separation photogravures. Digital tools are used in the early stages of production and the analogue methods are re-asserted midway through. The first digital step was to experiment with the potential of generating images through electronic means. Digital cameras, scanner technology and Photoshop software controls offer new options in the image-making tool set. The next application was to create digital output as an alternative to lith film positives. Photoshop provide controls not easily available in traditional wet darkroom processes. This allowed us to standardize image parameters. Current large format inkjet printers and transparent media provide both a challenge and benefit. The benefit is that we now have a greater degree of predictability and consistency in the production of film positives. The challenges are two-fold. We are working with the pixilation of the digital file and the film output and a reduced tonal range. It became necessary to develop etching and image adjustment curves

for the digital files to account for the cumulative densities of a four-plate intaglio print and the differences in etching CMYK plates. Photoshop greatly facilitated the generation of the CMYK separations and the establishment of a registration system. We also used digital technology to create our stochastic photogravure screens, but used hard-dot film-based ImageSetter output by a service bureau. The sensitizing, exposure, etching and printing methods still remain analogue in nature, but the etching procedures have evolved in response to the physical parameters (restrictions) of a digitally generated positive. The printing of four-colour photogravures also required extensive experimentation in order to develop a precise and consistent registration system. In the course of investigating the means to produce four-colour photogravures, we experimented with other applications such as printing photogravure plates over inkjet prints. We also plan to examine the potential of photopolymer (both intaglio and letterpress) when combined with gravure and inkjet.

The first half of our research has been focused on learning how to make four-colour photogravures. We have now reached a point where we can make high quality four-colour photogravures that are mimetic in quality and effect. We have written a series of handouts that provide the technical and procedural data that we have learned in the course of our research. These documents are available through our research project website: www.swgc.ca/sillis. Our focus is now on the aesthetic and conceptual implications of using these new skill sets in the production of sequentially based images and book works.

During the initial stage of our research,

we were engaged in a steep learning curve, discovering how digital tools could provide us with new options in making photogravures. The discovery process and accumulation of knowledge were significant enough to validate the experimentation. Not surprisingly, much of what we learned has broader applications than our very specific and esoteric focus. Now that we have completed this first phase, however, we must confront the rather disquieting question of the relevance of the four-colour photogravure process in the context of a contemporary art practice. Is this historical/contemporary hybrid necessary given the options of digital print and colour photographs? The labour, expensive materials, and resources required are so extensive that we have to be sure that the process has validity for us in our individual artistic practice. Simply put: what can a CMYK photogravure do that is distinctive and offers creative options not available through other mimetic processes? The remainder of this article describes our individual experimentations and conclusions in response to this question.

David Morrish – bookwork: DIED. In an initial prototype version, this artist's book contains one black and white photogravure, one four-colour photogravure and an intervening sequence of four digital inkjet prints with an embossed title page and a letterpress colophon. The point of mixing media was to examine the transformation from the photographic document to the physical impression. I was interested in the surfaces of the aging gravestones and the details of the incised letters of the word "DIED" on these stones and how they were physically echoed in the media used for the bookwork. As in past work, I assumed there would be a transformation from the

Figure 1: David Morrish, page from bookwork, DIED, CMYK photogravure print on Somerset, 17.6 x 22.6 cm, 2009.

purely photo-document to the photogravure plate and resulting print.

After the creation of the first prototype of DIED that included a CMYK photogravure, it was obvious that the color gravure was almost exactly like its inkjet counterpart printed from the same image file. Without a surrounding plate mark, the image appeared as pure color on the surface of burnished paper, not unlike the inkjet version. I was actually quite surprised at how perfect this photogravure print turned out to be. I had always assumed that 4-colour gravure would have a similar impact on an image that black and white gravure had; whereby the blacker blacks and subtle surface renditions created a surface very unlike its photographic

equivalent. (See figure 1)

The four plates, however, combined to create a smooth and seamless translation that was almost exactly how the inkjet printer laid down the colors to create an image on coated matt paper. After our labour-intensive research in order to print CMYK gravure in perfect registration, I needed to rethink why I would use it rather than the less labourious and material-intensive inkjet version.

The next stage was to rework the four-colour plates by allowing the introduction of natural processes such as corrosion the natural decay of the image on the plate to echo the impact of time and natural forces that occur to the object matter of the im-

agery. One can subject the four CMYK plates to some form of degradation, altering all or some of them to provide a less literal translation of the original photographic information. As this stage requires time for natural processes like corrosion and verdigris, it potentially takes a long time before a reprint of the plates shows the transformative effect that this will have on the image. Another option was to physically alter the plates by distressing them, foul-biting them, or abrading them. The sample image shows the letters: D-I-E-D, floating over or within the image. (See figure 2). These changes were created by re-etching specific areas (open bite and aquatint) and hand-scraping or burnishing the plate in various ways. These changes are more profound and will transform the

Figure 2: David Morrish, "DIED" reprint from altered CMYK gravure plates used for Figure 1, 19 x 24.5 cm, 2010

An interesting discovery in this research is that when printing processes approach perfection, a mimesis occurs that cause graphic processes to have similar visual and even physical qualities. It is the ambiguity of the imperfect that seems to add character and personality to the final form. I do not mean that sloppiness and mistakes make art, but that media has character—idiosyncrasies that define its physical characteristics throughout the stages of a complex process. We are finding that the characteristics of digital processes are discernable only at a micro level, and that with the right context and support, these processes are almost without character, or conversely, take on the character of the medium they are imitating. We did not research nor discuss how digital prints of watercolor or other graphic media can be reproduced, as this is obvious to most visual artists already. We are more concerned with how digital media or process can be an integral part of a distinct new form where the analogue is not negated or relegated to the background.

Marlene MacCallum: Prior to this research, my use of digital processes and tools was limited to text and communi-

image to a point far from mimetic as the separation colours reassert themselves in ink within the colour layers of the print.

Another hybrid experiment between the digital image and traditional gravure stages was to make a black and white gravure plate of an image with specific areas blocked out (left pale or white) and use the inkjet printer to print full color and detail into these local areas under the gravure impression. This hybrid print worked well in theory, but was a nightmare to register in practice. It was difficult to find an inkjet paper that could be soaked for the gravure impression without bleeding the pigment inkjet inks. We were then faced with the various shrinkages and expansions that take place throughout the stages of this process. All lead to major registration problems because the digital colour areas and the gravure black and white key-image had almost no overlap. After a string of compensating adjustments during the printing steps, we were able to make a good print, however. (See figure 3). For future hybrids of this type, it is imperative to plan images where registration of

the two layers is less critical and to create a slight overlap to compensate for error. Old printing traditions or tricks are best remembered, I suppose.

Figure 3: David Morrish, girl/Barbie and boy/Ironman, photogravure over inkjet on Entrada, each 37 x 26.5 cm, 2009
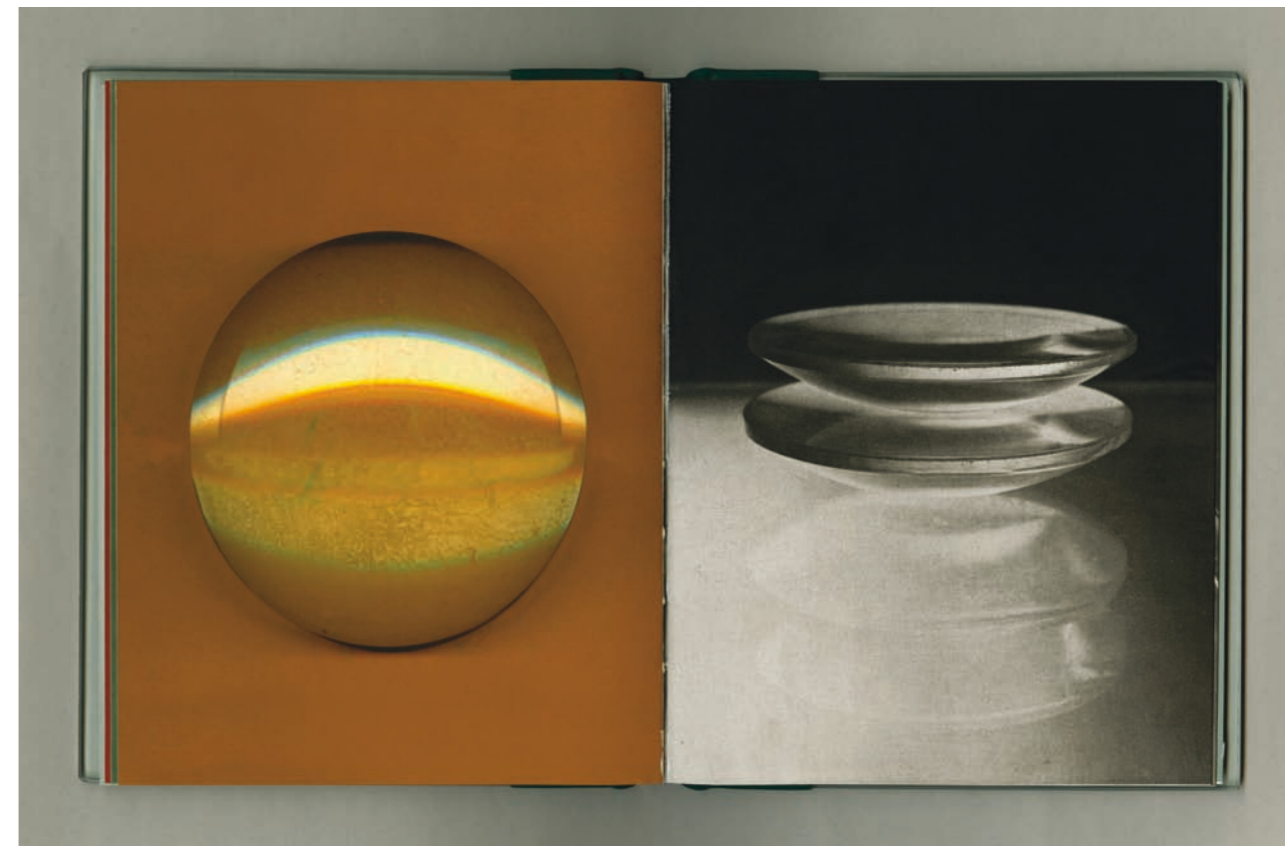

Figure 4: Marlene MacCallum, page spread from In Camera: Lens, digital inkjet print (left) and photogravure (right), hand bound bookwork with glass covers, 19.4 x 30.2 cm, 2009

cation software and equipment. My first goal was to discover digital image-making means that would be distinctly different from my existing methods. This investigation led to the creation of the bookwork, In Camera: Lens. (See figure 4) The perceptual response to paradoxical situations has been an ongoing theme in my work. . In this research I maintain my fascination with the dynamic of perceived opposing forces in the context of the different mechanical workings of historical vs. current media. The strong technological focus of our research led me to consider the tools of technology as my image source. Digital and analogue photogravure images are juxtaposed and layered in this work. The components of defunct optical instruments are represented through two simultaneous points of view: the machine (the flatbed scanner) and the eye (the side-on view of the camera). The colour

image shows the scanner's translation of two stacked lenses and is a digital inkjet print while the black and white image is a medium format film camera translation of the same situation, printed in photogravure. The camera's perspective has become the ubiquitous eye in generating visual records. The contrast between these two translations reminds us of the role of mechanical devices in our interpretation of the world.

My next focus was to investigate how media-related decision-making influences outcome. I set the task of translating a single digitally generated image source via three print media: four-colour screen-printing, digital inkjet printing and four-colour photogravure. Each of the three prints resulted in different interpretations, confirming that the image is not external to its form of presentation, but rather

the media is instrumental in creating the meaning of the piece. The four-colour photogravure became the starting point for the bookwork, Quadrifid. (See figure 5) This bookwork is an exploration of the four-colour separation plates. The potential of the process lies not in the creation of a seamless colour reproduction but in the printing permutations that can deviate from the preconceived use of a colour-separation method. Colour separation photogravure creates an amalgam of a historical photographic process and current digital technology, maintaining the ink on paper process for its specific qualities while taking advantage of digital capabilities. I now realize that much of the distinction of the four-colour photogravures in our earlier prints were artifacts of the digital processing. At that point we did not fully understand the implications of over-adjustments or curves applied in wrong

Figure 5: Marlene MacCallum, Quadrifid, view from above of the two sections showing the four colour separation plates printed in both black and colour, hand bound bookwork, 28.5 x 27.7 cm (page size), 2009

Figure 6: Marlene MacCallum, 66CS and 61EVR from the in-progress book work Townsite Layered, four-colour photogravures, 14 x 17.6 cm, 2009

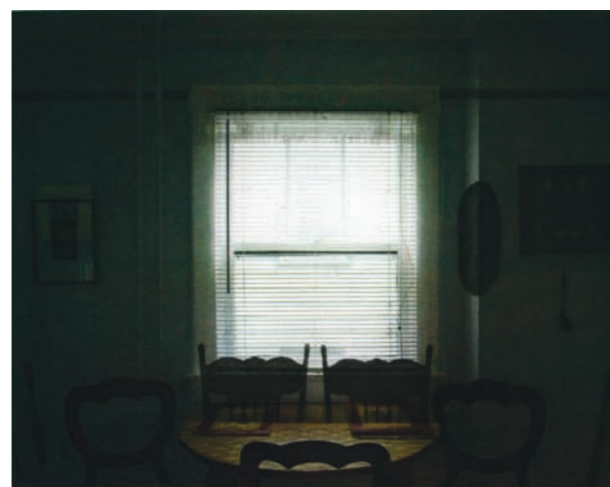Figure 7: Marlene MacCallum, 66CS Pentimento and 61EVR Pentimento from the in-progress book work Townsite Layered, multi-plate photogravure variations, 14 x 17.6 cm, 2009

mode. Since then we have gained a level of control where we can produce four-colour photogravures that are mimetic to the image source. This provides a new challenge in identifying the distinct necessity for four-colour photogravure.

One of my latest projects, Townsite Layered, provides me with the opportunity to examine the impact of mimetic vs. mediated image-making methods. I am currently re-approaching an earlier piece, The Townsite House Project. I live in Corner Brook's Townsite area and photographed in six homes that have the same floor plan as mine. I set out to provide the visual equivalence of the uncanny experience of being in homes that are the same yet not the same as mine. The earlier version consists of one bookwork and thirty-four silver gelatin photographic prints. I am now reworking the photographic diptychs

and triptychs into a second bookwork. For this, I have created two four-colour photogravure images that expand on the visual and conceptual contrasts and comparisons that are key to the piece. (See figures 6 and 7) The initial photographic explorations were done in black and white film. The sixth and final home was photographed in colour using a digital camera. The first version of the project sets up an oppositional relationship between the photographic record and interpretive print translation. The addition of colour imagery and a new bookwork adds a viewing experience that triggers a more complex response. By using four-colour photogravure, the images can be presented as either a document that is mimetic to the photographic source or by interspersing plates from the two sources a layered image-memory is created. These pentimenti echo the architectural palimpsest theme that runs throughout

the project. Another crucial aspect to the uniqueness of four-colour photogravure is that each layer occurs through a discrete printing. This is in direct contrast to the simultaneously produced surface of a digital print (as discussed by Dr. Paul Coldwell in his presentation at IMPACT6, Towards a Consideration of the Role of Surface Within Digital Fine Art Printmaking). The separate press runs allow for variation within printing order, shifting the image information and colour balance while creating a unique surface.

The final example is of another in-progress bookwork, Trompe l'Oreille. (See figure 8) This work was prompted by an interest in the role of illumination in both photography and the history of the book. The image of the framed ear was the catalyst. A series of images of ears or ear-like forms have been found or created to make a work that

addresses the deceptive nature of appearances. A variety of multiple producing technologies were used in creating the source images and as such the piece has a secondary theme on the impact of these processes on the resulting image. The final images, however, will be primarily photogravures; either four-colour or black & white. In this instance, the distinctness of the photogravure surface serves to create visual coherency. By compressing the images into one type of visual surface, the difference between the image sources is played down and the eerie similarities are enhanced.

In order to view more works by these two artists, please visit our websites: marlenemaccallum.com and davidmorrish.com

Figure 8: Marlene MacCallum, page spread from the in-progress bookwork, Trompe l'Oreille, black & white photogravure from pinhole negative (left) and four-colour photogravure from digital scan (right), 20 x 50.8 cm, 2009