

Photopolymer: a technique between innovation, theory, and artistic potential

“Historically, printmaking has been characterized by innovation, invention and technological development; an ongoing process that is still present”¹

Approximately forty years ago, printmakers worldwide began experimenting with the idea of finding safer and more environment-friendly materials, known today as non-toxic printmaking. The transformation started with intaglio, specifically etching, one of the most hazardous of all printmaking techniques, as it involves working with acid, toxic acid fumes and the use of solvents such as turpentine and white spirit. Despite considerable health risks, print studios, art schools and artists are surprisingly reluctant to give up their traditional toxic systems.² Why is that still the case, when nowadays all printmaking techniques can be performed non-toxically?

The innovation in intaglio is twofold: first, etching is transformed by using acrylic-based experimental grounds and etching salts. And second, by using photopolymer, an organic coating used in the electronic industry, prompting a new intaglio technique into being. After lamination onto a printing plate, photographic images, as well as drawings, can be exposed with ultraviolet light, developed in water, and printed as an intaglio plate. This is a hybrid technique that requires insight and a vast amount of tinkering from printmakers and photographers.

On the one hand I have noticed an increasing demand for technical information in my educational practice, but on the other, awareness of artistic and theoretical potential seems to be of secondary interest. Why should you use this technique, what does it have to offer? Are these new materials merely a substitute for their toxic predecessors? As a non-toxic printmaker, Mark Graver states in his textbook, *“Materials rather than the technique have scientifically changed when switching to a non-toxic system.”*³ Or do these new materials have a far greater impact and are in fact an open invitation and a *“catalyst for artists from all over the world to re-think and re-invent printmaking in an unconventional, innovative and safer manner?”*⁴

In order to re-think printmaking in safer manner, raise awareness of its potentials and understand the possible impact of non-toxic materials and techniques on printmaking, I feel that more detailed knowledge is needed - and more theorizing from a printmaker’s perspective.

What are the intrinsic properties and tactile qualities of photopolymer?

1. What are the distinctive aspects of photopolymer in terms of technique: methods, tools, materials, and attitudes of a maker?
2. Where can I place photopolymer in historical traditions and theoretical discourse on printmaking and photography?
3. How should the aesthetic potential and quality of photopolymer be applied and judged in artistic and teaching practices?

To answer these questions, I will follow three lines of inquiry: how should we address the technical, theoretical, and aesthetical aspects of photopolymer in both artistic and educational practice?

When I started experimenting four years ago with non-toxic and photopolymer in my studio and introduced these techniques in the *offcourses* at Minerva Art Academy, I was struck by the striking resemblance of photopolymer with the historical and experimental photographic processes.⁵

They share the same inquisitive, alchemical mode of thinking described by James Elkins as: “...struggling with materials and not quite understanding what is happening.”⁶ There are similar (and inevitable) failures, imperfections that slow the creative process down and are an integral part of the printed image. Technique and material can generate ideas, as a maker “does not “make through thinking,” ...but “thinks through making,” as anthropologist Tim Ingold argues.⁷

But at the same time technique delimits what can be expressed. These boundaries can be interpreted as the “syntax of language” as William. M. Ivins, Emeritus Curator of Prints, on printmaking states. Ivins regards prints as a visual representation for communication and printmaking as a language with a linear syntax, in which the technique determinates the expression of line and so delimits the messages it can convey. Printmaking is thus understood as a language with a pictorial syntax of line.⁸ Although Ivins concluded that photography does not have a syntax, photographer and photo-historian William Crawford argues differently. “

*My answer is that there is a photographic syntactical structure for the “language” of photography and that it comes, not from the photographer, but from the chemical, optical, and mechanical relationships that make photography possible. My argument is that the photographer can only do what the technology available at the time permits him to do.*⁹

If technique and material are essential and language the common denominator, what then is the syntax of photopolymer? Photographic technique at heart, when printed, has a distinct feeling of printmaking: a tactile surface, with relief, and a *sense of ink*. Can this hybrid nature perhaps be understood through the metaphor of “*métissage*”: as the crossing between species?¹⁰ While there is an abundance of theory on photographic print, the theory of prints and printmaking itself, is lacking (or insufficient).

¹¹ This lack of theory is not unnoticed in the field of printmaking but asks for a much-needed theoretical examination from within printmaking.¹²

Artist

As an artist printmaker and photographer, I will address the question of the theory of printmaking in the art of landscape as the field of subject and source of inspiration. Why landscape? Because 'landscape' is not only a genre with a respectable art historical tradition, but, in the context of this research, an ideal testing-ground where the three lines of inquiry - technical, theoretical, and aesthetic potentials of photopolymer - are mapped, analysed and tested. In addition, I shall base this inquiry on concrete experiences with a phenomenological approach: a reflexive and open attitude towards all things encountered as experienced, thereby trying to come as close as possible to understanding what is achieved by printmaking through the practice of writing and artmaking.¹³ I find a concordance between inquiry into the nature of photopolymer and landscape as a ‘site-specific’ place that can be visualized, understood, and made tangible in a way comparable with the phenomenological approaches of place and landscape by philosopher Merleau-Ponty and architectural historian and theorist Norberg-Schulz amongst others.¹⁴

Teacher

My teaching environment is the print studio, where all disciplines can work alongside each other: collaborating with students, analysing the technical and aesthetic performance of photopolymer and discussing artworks in a reciprocal learning environment. The print studio is a place or platform where knowledge is gathered, built up and exchanged by sharing my expertise and preliminary outcomes with students. Insights gained and formulated by students will feed the

research. This print studio will therefore become a research centre, a digital platform or physical space based at Minerva Art Academy, in close collaboration with printmakers, theorist, artists, and students, and used to explore and explicit the artistic, technical, and theoretical possibilities from artistic and educational practices and to develop a theoretical framework to place photopolymer within contemporary printmaking.

Theoretical concepts will thus emerge from praxis from the ground up, not fully determined in advance by me as a sole researcher but in close collaboration with artists from the ARC, amongst theorists and fellow artists, and in teaching environments with students open to all disciplines.¹⁵ Within these communities, distinctive elements and categories will be formed over time, analysed in the processes of artmaking, teaching, and learning, and further theorized upon in a constant reflective loop in multiple learning communities.

Method

I will perform this research with A/r/tography; an educational artistic research methodology that explores in nonlinear but rhizomatic ways. Outcomes are analysed through eight “renderings”¹⁶ functioning as conceptual thinking frames to guide the research. In A/r/tography “*métissage*” is regarded as a metaphorical third space where three roles of artist/ teacher/researcher and three forms of thought; knowing, doing, and making, interweave in the reflective act of making art and writing¹⁷. This constant bouncing back and forth of theory and praxis in-between roles forces the researcher into the centre of the research. Although not necessarily personal, the research is not objectified but inherently about the self as inquiry is seen as **experience**. It is both a complex and intuitive methodology embedded in research. And, to add yet another layer, I will inquire into the performance and map out its opportunities and pitfalls as a research method.

Aims

With this research, I aim to contribute to the artistic and theoretical discourse on contemporary printmaking in the form of publications and expositions of (preliminary) research outcomes and visual and textual dialogues in artists’ books. I hope to contribute to the further implementation of non-toxic techniques, the ‘green wave’ in printmaking¹⁸. Raise awareness of the problem of toxicity in arts, specifically in printmaking. Is your art worth dying for?¹⁹ Melodramatic perhaps, but oddly enough not a strong enough incentive to alter hazardous traditions in printmaking. Education seems the best way forward as it is through education that future printmakers will become the non-toxic teachers of the next generation.

Notes

¹ Jan Pettersson, Jan, ed. *Printmaking in the Expanded Field : A Pocketbook for the Future, Collected Texts and Thoughts*. Oslo, Norway: Oslo National Academy of the Arts, 2017 p. 19

² "At the most, 25% of schools and universities are using nontoxic techniques," Ferstman says. "A lot of people are still holding onto the traditional ways because they don't want to be re-trained."

Alicia P. Gregory. *Not Dying for Their Art*. Odyssey, Magazine for the University of Kentucky. 2000

"...Perhaps the widest assortment of dangerous chemicals in the arts are, in fact, found in the various types of printmaking." Scott Fields. *Exposing Ourselves to Art*. Environmental Health

Perspectives, Volume 105, Number 3, March 1997

"but many print artists continue to value artistic results over health concerns. They are skeptical, unaware, confused, and disagree about the effectiveness of newer safer printmaking methods. They default to toxic traditional methods because they know that they work." [Research group safer printmaking University of Saskatchewan](#)

³ Mark Graver. *Non-Toxic Printmaking*. Printmaking Handbook. London: A & C Black, 2011. p.7

⁴ Keith Howard. *The Contemporary Printmaker : Intaglio-Type & Acrylic Resist Etching*. 2003. Henrik Bøegh and Filip Le Roy. *Niet-Toxisch Etsen Handboek : Zuurbestendige Acrylaten, Fotopolymeerfilm, Fotopolymeerplaten, Etsen*. 2006. p.12

⁵ [Home is Where the Heart is](#). Offcourse 2020 on Photopolymer and the concept Home. [Printkitchen](#). Offcourse 2019 on non-toxic printmaking experiments.

⁶ James Elkins. 2019. *What Painting Is : How to Think about Oil Painting Using the Language of Alchemy*. Milton: Taylor & Francis Group. p 19

⁷ "A work of art, I insist, is not an object but a thing and, as Klee argued, the role of the artist—as that of any skilled practitioner—is not to give effect to a preconceived idea, novel or not, but to join with and follow the forces and flows of material that bring the form of the work into being. The work invites the viewer to join the artist as a fellow traveller, to look with it as it unfolds in the world, rather than behind it to an originating intention of which it is the final product." Tim Ingold. *The Textility of Making*. Cambridge Journal of Economics 34, no. 1 (2010): 91–102.

Rob Withagen, and John van der Kamp. *An Ecological Approach to Creativity in Making*. New Ideas in Psychology 49 (2018): 1–6.

⁸ William Mills Ivins. *Prints and Visual Communication*. London: Routledge & K. Paul, 1953.

⁹ William Crawford, *The Keepers of Light: A History & Working Guide to Early Photographic Processes*. New York. Morgan & Morgan, 1979. p.7

¹⁰ Le Robert- 1. *Croisement, mélange de races* 2. *Croisement entre sujets de la même espèce*.

¹¹ "The theoretical discussion concerning printmaking/ the print is remarkably thin when compared to technical manual and historical background where there is an abundance of"

Jan Pettersson, *Printmaking in the Expanded Field*. 2017. p. 23

Kathryn Reeves *Re-vision of Printmaking in Perspectives on Contemporary Printmaking : Critical Writing Since 1986* Manchester University Press, 2018 p.72

Ruth Pelzer-Montada. *The Attraction of Print: Notes on the Surface of the (Art) Print*, Art Journal, 67, no.2, 74-91, 2008. p.74

Ruth Weisberg. *The Syntax of the print In Search of an Aesthetic Context*. The Tamarind Papers: Technical, Critical and Historical Studies on the Art of the Lithograph 9, 2 1986. p. 52

¹² "as a craft and material based artform, artist printmakers and researchers should engage in artistic, as well as theoretical examinations, off all relevant questions involved in a contemporary setting": Jan Pettersson ed. *Printmaking in the Expanded* 2017. p. 47

¹³ Maurice Merleau-Ponty, and R Bakker. *Voorwoord Tot De Fenomenologie Van De Waarneming*. 2E red. Agora Editie. Kampen: Kok Agora, 1986. p.8

¹⁴ "As Norberg-Schulz states, human identity conditions place identity. In order to understand what is behind a place's identity, Norberg-Schulz tries to identify what are the concrete features of places. A place's structure and character on various scale-levels is analysed through Vesaas's concepts of jord, himmel and synsrand. It is about what we walk on, what we see around us, and what is above us. All these aspects affect how we experience a place. It is determined by the heaven, the earth and the optic array." Akkelies van Nes. "The Heaven, the Earth and the Optic Array: Norberg Schulz's Place Phenomenology and Its Degree of Operability." *Footprint 2* (2008). pp. 113-34.

¹⁵ [Artistic research in the north](#). ARC is a group of artists/researchers initiated by Dr. Anke Coumans, with the support of the professorships of the knowledge center Art & Society and the RE:search:gallery.

¹⁶ Jan Pettersson. ed. *Printmaking in the Expanded Field* : 2017 p.224

¹⁷ Rita L. Irwin. *A Metonymic Métissage*

¹⁸ [GreenPrint: SafePrint](#) as proposed by Marnix Everaert teacher and cofounder of the Vrije Grafiek Academie voor Beeldende Kunst in Gent. I visited him in 2016. He is a point of reference and inspiration for safer printmaking techniques in Europe with an international network.

¹⁹ Mark Graver. 2011 p. 118

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