

## Coated or prepared paper: new grounds where process becomes matter

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[Desenho / Drawing]



### Abstract

Alois Senefelder, developed the technique to transfer images into different surfaces while systematizing lithography and the use of transfer paper as an intermediate surface to multiply original drawings. In 1850 Firmin Gillot patented gillotage, a manual printing process based on the use of transfer paper and greasy lithographic transfer inks to reproduce original drawings onto relief printing zinc plates. His son, Charles, transformed heavily coated papers into a key intermediary surface facilitating photographic reproduction. The diversity of materials and techniques used to coat papers reflect the different directions and hide a less discussed common past. On one hand, produce an experimental and working surface where to draw, scrape or burnish as present in drawing tablets which had an additional advantage of being erasable. On the other hand, to prepare a highly finished surface as present in medieval metal-point technique, that can be used to draw, to print and take active part in image formation and syntax. Such historical variety and continuity take us to look back into these practices as a laboratory to watch and technically expand approaches to drawing and printmaking image-making practices. Preparatory layers or grounds are applied to paper for different purposes. This article proposes to investigate the physicality of artworks and relationship between recipes, suggesting their influence and important topic in art practice. Aware of the technological complexity of such techniques, we examine how such processes, instruments and materials, along history, offer a lot more to incorporate into the very heterogeneity of drawing and print production. Along with this review, we propose that such practices are located outside a strict drawing or printmaking studio and may appear combined or merely adapted to the need to produce or reproduce an image. Technological reconstruction may be retroactively used to activate contemporary art practice and confirm experimental and innovative value based on expanding prepared paper as a privileged stratum.

### Keywords

Prepared Papers,  
Technological  
Reconstruction, Transfer  
Paper, Printmaking.

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## Context

In the late 18th-century, Alois Senefelder introduced a long list of technical innovations, which were first developed for lithography. Senefelder's attention to the printing surfaces lead him to the invention of transfer papers, artificial stone or stone paper - this last being enthusiastically described by Senefelder himself as a great alternative to the regular drawing paper and even to the printing stone [1]. Nevertheless, stone paper didn't succeed in replacing limestone. As an alternative, it could not compete with limestone material characteristics as an optimal surface for lithography. Also, transfer papers are regarded more as studio tools, rather than special kinds of drawing surfaces, prized for their capacity to transfer images to the matrix with little interference. The main references in printmaking technical books briefly address the use of these prepared papers, as well as notes on their preparation which are more or less simplified [2]. However, specialised articles have been published in the late 1970s in Tamarind Papers reviews [3], and one can still find commercialized options available in the market today. Current studio operations such as producing a gum coated transfer paper, are no longer a regular task for draftsmen or printmakers, even if such use is now restricted to one single kind of paper available in the market<sup>1</sup>, against the seven different kinds listed by John Sommers in 1977<sup>2</sup>. As with stone paper, during decades, new techniques based on remaking of transfer paper as a heavy coated paper, *Gillot* paper, made of barium oxide or china clay layer, did not endure in time in drawing or printing studios: artists did not find the same stimulus that both plain paper or stone exert, and other photomechanical solutions obviated the need to continue to use prepared surface papers and one cannot find them anymore on the market<sup>3</sup>. As further remark, even if pigment-coated papers have been used since the beginning of papermaking history, such studio practices are more often connected to nineteenth century commercial printing and to the need for an inert ground capable of maintaining registration in multiple inking for chromolithography and offset lithography. Hercules Segers stands as an example with his use of unconventional approach to form, materials and working methods, including the use of coloured grounds, going well beyond any common-sense practice in Printmaking history [4]. Even if machine coated grounds were popular tools for illustration in drawing for reproduction, Georges Seurat notorious interest for textured papers, his use of *Gillot's* commercialized paper [5], coated with white pigment embossed horizontally and printed with black lines vertically is limited to a unique drawing [6]. Hence, outside a commercial sphere off printing efficiency, in fine art original context, using customised hand coated grounds on paper for drawing or printmaking, were most often an exception.

<sup>1</sup> *Dolphin* Lithography Transfer Paper

<sup>2</sup> *Charbonnel* jeune (yellow) transfer paper, transparent transfer paper, matte transfer paper and glossy paper; Prone gummed label paper; Yellow English heavy transfer paper; Rives lithographic transfer paper.

<sup>3</sup> *Gillot* paper in advertisements from 1880's refers to a card covered with a thin tough layer of compressed china clay. Black ink or crayon would be worked over this surface or black areas scraped off.

## Shift from material world

An insight into the artists working methods show a continuous process of pushing forward the established conceptions of prints and painting practices. We argue that the growing distance from the material world already made up of machine-made paper products, bought in fine art shops with narrower choices, do not help to overcome functional and aesthetic uses. Moreover, if we may identify commercial offers such as handmade papers, fine art printmaking papers, lack of value given to its material heterogeneity, impoverishes production. Nevertheless, choosing a paper implies a responsive relationship with conscious intentions or unconscious processes of the artist, and contrasts with the narrowing involved in image production, ever more critical in mechanical and digital reproduction. In hand made processes, artists may question its material constitution and use it as crucial to its effects. In its essential non-manipulated or prepared form, paper materiality needs to be identified and questioned in its composition and plasticity.



Indifference to the making goes along with a tendency to use paper without even placing basic questions. What determines a paper character? Which kind of natural materials may be used to increase surface strength, transparency, brightness, gloss, and smoothness? How can transparency be achieved with different

kinds of substances or manufacturing procedures? How to create texture? Too often we hear print practitioners discussing the best ready-made commercial solutions, no longer assuming having to continuously question material options, to act and react to their physical presence and need to continue to think through their hands in the full sense. Lack of such experimental knowledge produces a false sense of neutrality reinforced by a practice based in more literal replication of signs, processes often coming from a digital world. Nevertheless, a heightened interest in paper as the stratum for artworks persists along history. Hybrid inventions where papers get transformed and further manipulated, such as above mentioned, even if short endured were experimented by artists. An extreme version of paper manipulation may be found in stone paper, a lithographic printing matrix invented by Senefelder, made of a heavyweight paper prepared with a coating produced to replicate limestone [1]. Although requiring less chemical processing, stone paper<sup>4</sup> failed to attain the richness of stone printing and got lost in the manuals from the past. We argue, it may still hold specific qualities no longer conditioned by its historical use as matrix. During recent prospective projects on transfer papers followed by an investigation on *Gillotage* [7], participants on PurePrint research

**Fig. 1.** Graciela Machado, *Iceland*, toner printed image onto prepared surface paper, 2019, A4, executed by Graciela Machado and Marta Belkot.

4 Théodore Géricault as one of the artists testing its use, explored the technique in his work. Access: July, 2020. <https://www.harvardartmuseums.org/article/gericault-s-stone-paper>

focused their study in the actual appropriation of those chemical/physical processes and the related instrumentation. Technological reconstruction in this case contributes to enlarge the scope of its use<sup>5</sup>. Along it, research outlined the purpose and context of production of prepared surface papers, namely with the wish to reproduce character of other surfaces, such as grained stone or fabric, up to surface modification used to facilitate photomechanical printing based in printing embossed lines. Coatings compositions analysed in its alignments show similitudes with earlier formulas used for metalpoint drawing technique, or even etching white grounds [8]. Rather than attempting to determine the properties supposedly intrinsic to each technique, using equipment available in a printmaking studio, we concluded, a broad range of coatings and prepared surface papers can be replicated and reused, responding to a resurgence of interest in the practice of print and drawing<sup>6</sup>. Brushing coatings, calendaring or impressing textures, printing water-based china ink, combined with recreating recipes coatings, can be applied to reproduce complex samples as found in commercial paper brands available in the past, confirming innovative value based in prepared paper as a privileged stratum. Further, some technical solutions cited here highlight the technical dependency between practices. In some instances, it can be argued, artists who were in contact with different coating systems, also had a role in the introduction of innovative approaches. As a result, as in the past, in artworks of original artists, the distinction between various artistic media may be blurred as this is related to the questioning of the established technical boundaries and perception of each media.

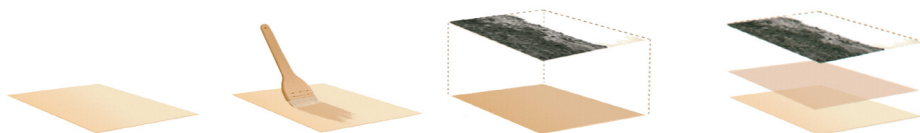
### **Collecting ideas from different preparatory systems**

*Gillot* papers, paper stone, even transfer paper, refer to standard industrial products as much as handmade coated papers, following formulas described in nineteenth up to twentieth century manuals on graphic arts, as in the one published by Senefelder himself *The invention of lithography* [9]. Through virtual access to online databases, we can partially rediscover these technological solutions, some of which had a brief life span, all fitting into the reproductive needs of the commercial printing industry of that time. Today, there is little secrecy around what could be a pioneer solution and its composition. Competing modes of making identify in semi industrialised graphic context can be found, giving us further choices, besides a profound surprise to identify how little seems to have been appropriated in a fine art print context on the topic of prepared surface papers. Further research also helps to identify related terms such as prepared paper, prepared-ground paper as key components of drawing and printing techniques, going back in drawing and painting history, and changing along various types of application. Thus, we point out, and not wishing to desiccate such terms, preparing the paper in the age of digital reproduction,

<sup>5</sup> Video that present reconstruction of *Gillotege*, in FBAUP, 2020. Available: July, 2020: <https://www.facebook.com/watch/?v=675253199675799>

<sup>6</sup> Books of specimens available in the printmaking workshop archives, FBAUP. Preview available: <https://hdl.handle.net/10216/123413> and <https://hdl.handle.net/10216/123417> and <https://hdl.handle.net/10216/123424>

makes contact to a primary need: create tactile surfaces. Further, preparing the surface might help to induce artists and illustrators to maintain the sense of exploratory aspect of the work. Experimentation with materials and methods, search for new procedures indifferent to materials requirements, may help to introduce radical innovations and methods.



**Fig. 2.** Preparation of surface prepared paper with toner printed image onto.

A more precise conception of the purpose of such interference in paper, takes us to consider exploring such techniques, by testing on how to configure continuity in ways of making somehow separated in space and time. In other words, what may relate a metalpoint ground to grained transfer paper? As much as the second may appear to be sophisticated and hard to produce, both have affinities, which may help to change and

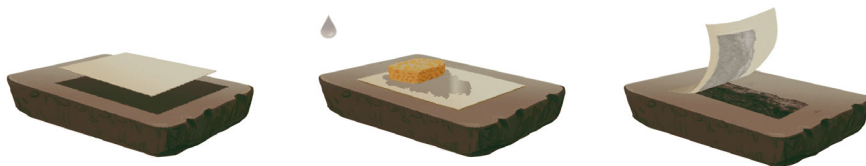


**Fig. 3.** Embossing process of texturing paper gaining grain, lines, nets, etc. with the usage of the printing press.

determine new ways to use paper<sup>7</sup>. Today, records describing more obscure failures in print history destined to disappear can be consulted in electronic facsimiles on the Internet. Advertisement sample sheets with original specimens can be looked at in illustration books, from brands such as Angerer, Gillot, Michellot or Goeshchl of Vienna [10]. Articles describing the particular approach given by artists, further disclose material references located in library archives [11] and demonstrate a relevant use of reproductive means in creative endeavours [12]. In brief, first attraction to prepared surface papers based on its extravagance in a

**Fig. 4.** Image transfer from the transfer paper to the lithographic stone.

Illustrations credits  
(Fig. 2; Fig. 3; Fig. 4.)  
David Lopes, 2020.



<sup>7</sup> Similarities between metalpoint ground and grained transfer paper relies on paper preparation. Both are besmeared with special coating formula that gives unique structure to the paper. Different binders as for metalpoint is rabbit glue and for grained transfer paper may be starch, gum or protein designated the role of the plasticity and the usage of the paper.

drawing practice, may be followed by an artist's need to experiment with other forms of image-making, some of which, contradicting the neutral properties, substrates supposedly must have to be used in drawing or historical print techniques. It is our belief, moving in between the digital and material world, may provoke a need for material heterogeneity common to *manual* image making practices. In fact, an anti-industrialist stance draws more artists to artisanal modes of production, creating works that fulfils the desire of participating in the physical process of image-making. Traditional materials used in printmaking craft exert a fascination along with technical flexibility and forward-thinking disregard for the traditional hierarchy accorded to media rendered by the practice of reconstructing methods. Another tendency among print practitioners, to emphasise the unique as opposed to reproductive role as to acknowledge and give attention to the variety of effects which can be obtained by each set of technical procedures.

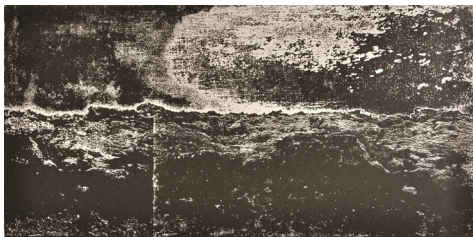
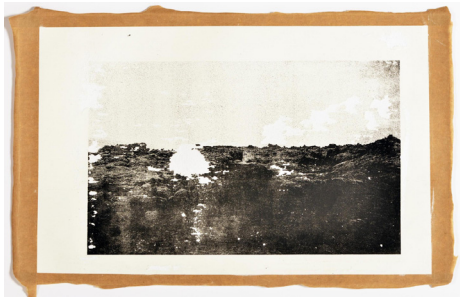
### **From digital to material: incursions based in technological reconstructions**

Art creation goes with the need to inquire about the characteristics of each technique, medium, process and think of disrupting the actual order applied in the past. The practice of contemporary art has seen a growing tendency to consider a material analysis, looking into the physicality of artworks, no matter if its technological complexity may feel exceedingly difficult, or obsolete, as when considering printmaking techniques. Such becomes aggravated with techniques imported from a post photographic industrial printing studio. Time to spend in careful reconstruction relies on interpretation of written documents and illustrations, and further insight by practicing and incorporating information. Access to resources is combined with the sort of knowledge about the making which cannot verbalise or written down and must be performed by experience. Systematic set of tests help to gain compellingly evidence of tools and materials, binders, pigments to use or modify, contradicting a fast logic, and helping to determine solutions in our present circumstances. It's not a return to original principles and processes of practices in drawing and printmaking. For applying a pigment with a binder to specific papers, remaking a multi layered scraper board, a performative transfer of skills, ideas and experiences that completes them, keeps knowledge alive and makes them far more effective. Practical tests can become an antidote to the regret for the shortening of products as the ones previously available for applications in illustration and printing industry. Former materials can be recreated and include alternative proposals for pre-made market solutions such as *Coquille* paper [13] or *Gillot* paper. Beyond practical reasons, loss of workshop tradition created an uncertainty in materials and techniques, one continues to feel the consequences. For some years new products were promoted in a non-toxic logic as print practitioners were pushed to use commercial products, one cannot replicate or distinguish ingredients. What seems more fundamental, a fascination with the technical

as such does not seem to be accepted in a serious art practice; taking time to recording and testing purely material aspects of art seems to stand in opposition to models based in intellectual achievement, and as such, a deviation. Premade industrial solutions and fear of historical formulations based on unfamiliar components, took out opportunities for print practitioners to have first-hand experience in handling such basic elements as gesso, glue, gelatine, gum, shellac, lacquers. Learning the differences in between binding materials still exhibiting a geographical origin - Bologna gesso, Syrian bitumen, Paris Plaster - goes along with cultural dimension implicit in material and practical aspects of printmaking. The symbolic, technical, political, poetical spheres cannot be separated as much when dealing with technique, layers may be operatively embedded in the technologies to be disclosed in radical new terms in contemporary art practice.

### **Technological research: expanding drawing and print practices**

Technological reconstruction in a printmaking studio helps to cut off industrial print processes prejudices and repurpose for new ends, while gaining the operating knowledge that allows image to transcend its technical making. Using reproductive printing techniques and its components, to create and reproduce printed surfaces, researchers involved in this project, contribute to expand the range of creative materials and techniques and find new plastic interactions not foreseen at first. As small as it might look at first reading, reconstructing a key method historically used to produce erasable drawing boards, helps to find filiations in between drawing and print practices, as to reconsider different strategies of image production. Technological change transformed medium surfaces, as photomechanical processes boosted the need to abbreviate reproduction and created halftone surface papers instead of smooth primed papers as in metalpoint drawing techniques. By the early XIX century, transfer lithographic paper, was an accepted drawing tool in a reproductive context, but only with lithography revival it was widely used by artists. Reconstructing prepared surface papers based on these technological inputs, demonstrates how to enrich the creative process. However, interference and mediation of technology between the idea and the final product becomes everclear in reproductive formulations. None of the studied methods were adopted in a printmaking and drawing studio-based practice. Nonetheless, we are aware, capacity to produce and reproduce techniques combining them with traditional technologies, takes part in printmaking development as a responsible media. Moreover, there is a lot more to collect in reproductive industrial contexts, not even identified as art territories. This takes us to reinforce, printmaking is linked to a mechanical process involving plate preparation and printing. It's not a process of avoiding drawing, diluting some flaws and covering it up with material effects. On the contrary, it's the place where one incorporates traditional technologies, photography and digital technologies in the drawing process.



**Fig. 5.** Heavy coated transfer paper, after process of transfer onto metal plate, to be processed as *gillotage*.

**Fig. 6.** *Gillotage* printed as zincography, with a usage of lithographic press.

**Fig. 7.** *Gillotage* printed as relief. (the same plate as above) Executed by (Fig. 5; Fig. 6; Fig. 7.) Graciela Machado, Marta Belköt and Sandra Costa Bras.

water to remove with no hesitation an unwanted first draft. From a description of Rembrandt ground, we can understand that the *white ground* was applied upon the very thin black layer. We see here the importance of aspect of the medium and its interaction with instruments: a simple white coating creates changeability and experimentation and suggests nonorthodox experimentation with grounds used as printing substrates such as in Graciela Machado (Fig. 8.). It is intriguing to think that a coated copper plate gets transformed into a paper like surface. A white ground is an anticipation of the final drawing that will be printed or an attempt to recreate the surface of the paper, as Stijnman [15] suggests. Further, if originally a drawing implement deposits a metal trace or, under pressure, a metal point may scratch the coatings and to let the acid in to carve the line, centuries after its first mention, a white ground may become a ground for flexographic prints to leave its soft imprint. A white ground confirms a practice of using the simplest effective means to achieve artistic aims [14]. A white etching ground it is an example on how eager artists may be to have a surface easy to visualize effects, as paper; also, the need for an erasable surface one may feel more confident to create spontaneously.

We insist that the interaction with stratum extends far beyond the drawing process, as surfaces where to print may become a prominent component of the drawing process. Within printmaking, artists drive to maintain feeling and spontaneity offered by the physical relationship with layered technology. Cognitive satisfaction with technical inputs, from the making of material substrates where to draw up to where to print, are not under any circumstances cut off the relationship between maker and thinking through process.

### **White grounds made to disappear. Connecting ideas.**

Pigment-coated papers generally consist of a paper base covered by a mixture of a binder and pigment. The simplest method: applying white body colour - a gum-based colour with a composition on finds in gouache or china ink will perform well. The same traditional process is used with a similar soft brush onto copper plates, attributed as *the ground of Rinebrant of Rine*. In this case, white ground is used over an impermeable ground coating as the second coating. Thus, it may be easily removed with a point as expected from any ground [14], or diluted with a sponge and



About erasable carriers, Ernst van de Wetering<sup>8</sup> discusses in detail the use of preparatory drawing devices in the seventeenth century referring to a manuscript written by Theodore de Mayern (1553-1655)<sup>9</sup>. Here, *tafetellen* or *papier à tablette* were described

**Fig. 8.** Graciela Machado, *Camara onde as imagens sobem*. Photo engraving printed onto white ground copper plate. 34x25.5 cm, 2018.



**Fig. 9.** Graciela Machado, *Iceland*, transfer tracing paper with white ground obtained by transferring a toner image into white ground prepared metal plate, 2019, A4, executed by Graciela Machado and Marta Belkot.

as common studio tools later forgotten as with white ground on the manner of Rembrandt [16]. At Rembrandt time these erasable drawing boards were still in use and two different priming formulas were used: the carbonized bones in the first mixed with saliva, in the second, gum arabic [17]. Drawing would be made with silver pens, as such being erasable with water and recoated to cover up and reuse. Such drawing implements, erasable tablets made of bounded prepared papers or wood tablets primed, show identical solutions applied to different surfaces. What we see over here, the continuity of tools and coatings: Albrecht Durer would use a copper stylus as needed in a metal point technique [16]; the same set of implements combined with white ground could be used on etching as represented in prints where young apprentices hold them. Rembrandt's use of similar grounds displays a lost continuity in between studio practices, even if surviving examples of such finished surfaces are scarce and determining white ground use ever more difficult.

<sup>8</sup> Ernst van de Wetering and cites the Mayerne two recipes for prepared paper. *Papier à tablette* shows remarkable similarities to white ground: over a black ground, a white ground is applied.

<sup>9</sup> A manuscript written by a chemist interested in painting materials and methods.

### **Comparison between ground recipes: from transfer papers to *Gillot* paper**

There is a long list of variants on the making of transfer papers as much as descriptions on how and why to use them. Most of these paper prepared surfaces are smooth and flexible, at time transparent. This last reinforces how necessities developed solutions. Introduced by Lemerrier in the 1870's, transparent autographic paper was popular among artists and illustrators [18] because of its thinness. It could be used with delicate crayon work, and gather the texture of any surface underneath it. The thin paper coated to reinforce transparency is indicated as a suitable for facsimile: attached to a drawing device, subject can be traced over an existing drawing, tracing can be easily done with key forms [19]. Humandel remarks that transfer paper being a useful application of lithography, drawing on this kind of prepared paper not being so "pleasant" as common paper [17]. It is also described that for an autographic transfer no special paper is required. A simple writing paper, drawn with the right ink can be used, but the results compared with transfer papers are inferior [20]. Depending on the purpose, transfer papers offer different kinds of applications and varieties based on sizing and coatings determines such uses. As Rhodes said, a lithographic transfer is a print, writing or drawing done on a specially prepared paper, and with special ink [21]. We can print out of stone or metal plate, letterpress block, upon light sensitive transfer paper or of transfer lithography writing and crayon. Transfer papers with its varieties can be proceeding from stone to stone or stone to plate. Moreover, Copperplate transfer paper, Letterpress to stone, Photolitho transfer paper, Litho-writing and Grained transfer paper. Among such transfer paper, some were formulated as alternatives to the compact homogeneous limestone simulating the natural grain of the stone, sawn in quarries into slabs. The refinements of the commercially prepared *Gillot* paper, one of the versions for this earlier non-photographic paper used to transfer original drawings, is just one echo of the stone textured paper described in lithographic treatises since the beginning of the nineteenth century. Our research led us to identify the difference between *Gillot* paper and transfer paper, a thin paper of fine texture coated with various kinds of size and highly gazed. We concluded, analysing the descriptions in the British Lithographer Journal [22], that *Gillot* paper is a variation of Plate transfer paper, a thick printing paper coated with a composition of Paris plaster and flour paste, that gives to the paper a matt surface. The Plate transfer paper, in addition to being used for pulling transfers from plate, it may be also used for making grained or stippled paper, coating drawing paper instead of the printing one. *Gillot* paper, a specially prepared thick paper, stands in use for its original texture for the drawing possibilities it provides, but also for the potential combination with photographic reproduction [23]. Technological innovation of the XIX century relied on drawing onto the grain of the stone and later transfer the same image with greasy lithographic ink to zinc plates and further create a relief print to produce industrialised images, published in illustrated magazines. Such technique, known as *Gillotage*, retained the origin, displaced into a zinc plate, compatible with blocks of type. A welcome solution was invented looking at

a traditional reproductive drawing technique: the crayon manner. The dawn marks on the paper, passed over by roulette, were converted to the photomechanical syntax much needed for cheaper and faster reproduction. Drawings made upon these preparations have all the fullness and richness of wash, pencil or crayon, and may be reproduced by line processes at the same cost as a pen-drawing made upon plain paper [24]. In later versions, etched plate or deeply grained stone replaces the single tool; both uses to imprint the texture. The grained paper is deeply grained, and with-sufficient body in the composition (coating), to prevent the whole mass becoming soft and flattened out at once if used as a transfer upon the stone or metal [25]. This first idea proliferated into industrially made surface papers: *papier procédé* as it was called, or scraperboard, allowed to effectively reproduce halftones making it possible to photographically transfer images into a relief block and, consequently, print [26]. During our practical reconstruction, we used deep-grained stones to recreate the merits of such a surface, expanding earlier recreations on transfer paper as these anticipated mechanical reproductions and commercial pictorialism. This approach of reconstruction, based on old formulas has an approximative character and implies inevitably adjustments. As process papers, lithographic transfer papers as much as *Gillot* paper, work as key intermediate surface on the drawing process, avoiding photomechanical reproduction and use of halftone screens.

## Results

Our own practice drives to extend the studio available techniques and recreate handmade paper coating formulas used, including the ones in the 1860s for achieving an efficient autographic reproduction. Several related techniques were brought back to a studio-based practice. We were able to apply to art practice, conducting these processes, learning about the use of such pre-photographic reproductive printing techniques as much recreating these complex embossed and printed drawing surfaces, thus expanding a range of creative backgrounds and the opportunity to develop, challenge and extend our own print and drawing practice. Our drive into the past selects methods that may help to reproduce more than visual effects: it's about expanding printing media. Printmaking rich hybrid past, offers choices, variants, materials, questions to be applied in artwork. Artists do ask themselves about how to continue their studio practice with regard to its concepts. Technical and material developments are a driving source producing convulsive stretching of the elected medium. Hence this article discusses the results of a technological reconstruction research based in the production of prepared surface papers in a fine printmaking studio workshop, combined with broader knowledge of use of preparatory grounds in drawing and printmaking. In fact, these last attempts to recreate handmade coated papers and specific grounds used in lithography and etching, helped us to review its historical application use in drawing and print based outputs and confirm the complexity and sophistication of such practices as accessible alternative methods for a contemporary art practice. Within the framework of this analysis, we connect several lines of research: 1) identify the primitive historical erasable drawing tablets formulas; 2) review techniques and surfaces used for the transfer of designs

into plates to be either etched or processed as chemical printing, 3) to select and reproduce reproductive versions based in the use of process paper and photosensitive paper, 4) improve, adapt and combine original formulas, both non-photographic and photographic, and explore specific methods suitable to current need of to produce complex surfaces in fine art printing facilities; 5) Last, to identify creative potential and develop image-making modes permeable to historical and material complexity, plastic wealth based on revised methods and basic methods for pigment coated papers up to formulations initially present in commercial printing contexts.

## Discussion

This article outlines the purpose and context of production prepared surface papers, starting in pigment coated paper, up to the transfer papers and its widespread in a variety of thick-coated papers used to facilitate photomechanical printing. Our interest in the visibility of the working process as displayed in the preparation of such papers, combined with an interest in papers functional meaning as much as their presence in a drawing and print practice. This takes us to consider reproducing such methods and techniques revisit their purpose as an intermediate step during transfer or reproduction. Process becomes matter, and along this article, we dispense prejudice upon an approach based in the urge within artistic research, to recreate such surfaces and correlated techniques learnt from reproductive context. We aim to make visible the conflicts present in preparatory processes for papers used within drawing and printmaking in previous centuries, looking up at their original purposes, reading descriptions and trying to get back a no longer in use list of raw materials. Art involves a constant inquiry about not only the concepts of artistic creation, but also the characteristics of the techniques, mediums, processes and relations along history. No overall study of the subject from an art technological recreation seems to have been attempted. Further studies are needed to handle historical dispersion. Reproductive contexts of use help to understand why there is no systematic study of the evolution of such techniques and physical processes used in drawing and printmaking and consequent assimilation by art practitioners<sup>10</sup>. It is our aim, to bring these methods into closer proximity and giving attention to the material matrix of the different media worked through [5]. We argue, analysing historical methods of preparing paper, recognising something as fundamental as each process intrinsic aesthetic experience, makes part of an interrogation of materiality and artistic experimentation in a plethora of materials and 'old media'. A point less often noted is that by reconstructing some of these applications and analysing similarities and historical continuities, the assimilation of these techniques and, indeed, interrelated technologies, may help to continuously challenge a print-based practice. Along a reconstruction project, we can comprehend the implications of such strategies and techniques for the subjectivity of the maker and viewer as well as significance as such.

<sup>10</sup> Techniques are dispersed in drawing, photography and graphic arts manuals. We also suggest, comparison between ground recipes and actual grounds used in painting for priming canvas, copper, woods, shows similarities needing further tests.

## References

1. Senefelder, A., *A Complete Course of Lithography*. 1819, London: R. Ackermann.
2. Antreasian, G.Z. and C. Adams, *The Tamarind Book of Lithography: Art & Techniques*. 1971, New York: Harry N. Abrams, Inc., Publishers.
3. Sommers, J., *Lithographic Transfer Papers*. Tamarind Technical Papers, 1977(7).
4. An Van Camp, *Hercules Segers and his 'printed paintings'* British Museum, 2012. Available July 2020: <https://www.yumpu.com/en/document/read/8197510/hercules-segers-and-his-printed-paintings-an-van-british-museum>
5. Armstrong, C., *Seurat's Media, or a Matrix of Materialities*. Grey Room 58, 2015(Winter 2015): p. 6-25.
6. Buchberg, K.D. and J. Hauptman, *George Seurat, The Drawings*. 2007, New York: Museum of Modern Art.
7. Machado, G. and M. Belkot, *Gillotage. Exploring a mid-nineteenth century relief printing technique*. PDLP Book of Abstracts, 2020.
8. Machado, G., *Tempo da gravura ou a procura de chão*. International meeting; Pure Print Porto Alegre Brasil, Porto Alegre. Organizer: Maristela Salvatori, Porto Alegre: Marcavivual, ISBN 978-85-61965-57-0, pp13-18
9. Senefelder, A., *The Invention of Lithography*. 1911, New York: The Fuchs & Lang.
10. Waterhouse, C. J. *Practical Notes on the Preparation of Drawings for Photographic Reproduction*. 1890, London: Kegan Paul, Trench, Truber & Co.
11. Morenus, L.S., *Joseph Pennell and the Art of Transfer Lithography*. Print Quarterly, 2004. 21(nº 3): p. 248-265.
12. Pennell, E. and J. Pennell, *Lithography and Lithographers*. 1915, London: T. Fisher Unwin Publisher.
13. Hodges, E. *The Guild Handbook of Scientific Illustration. Second edition*. 2003, New Jersey: John Wiley&sons Inc. Hoboken, p.143.
14. Morse, P., *Rembrandt's Etching Technique: An Example*. 2008, Project Gutenberg Ebook.
15. Stijnman, A., *Etching, Soft-ground: Materials and techniques; History*, in *The Dictionary of Arts*, J. Turner, Editor. 1996, Grove: New York. p. 561-563.
16. Wetering, E.v.d., *Rembrandt: The Painter at Work*. 2009, California: University of California Press.
17. Hinterding, E., *Rembrandt as an Etcher: the practice of production and distribution*. 2006: Sound & Vision.
18. Lemerrier, A., *La Lithographie Française de 1796 a 1896*. 1899, Paris: Ch. Lorilleux et Cle.
19. Straker, C., *Instructions in the Art of Lithography*. 1867, London: Benjamin Winstone.
20. Browne, W.C., *Practical Text Book of Lithography*. 1912, New York: The national Lithographer.
21. Rhodes, H.J., *The Art of Lithography*. 1914, London: Scott Greenwood and Son.
22. Snowdon, R., *Advanced Grade*. British Lithographer, 1892. I(5): p. 17-20.
23. Pennell, J., *Pen Drawing and Pen Draughtsmen*. 1920, New York: The Macmillan Company.
24. Harper, C.G., *A Practical hand-book of Drawing for Modern Methods of Reproduction*. 1894, London: Chapman & Hall.
25. Harrap, C. and R. Leicester, *Transferring, The practice to transferring to stone zinc and aluminium*. 1912, New York: National Lithographer.
26. Chefdeville, L., H.D. M., and C.J. Rawen, *Drawings for Reproduction by Process: Outline Work and Tint Boards, in Studio: International Art*. 1893. p. 65-72.